

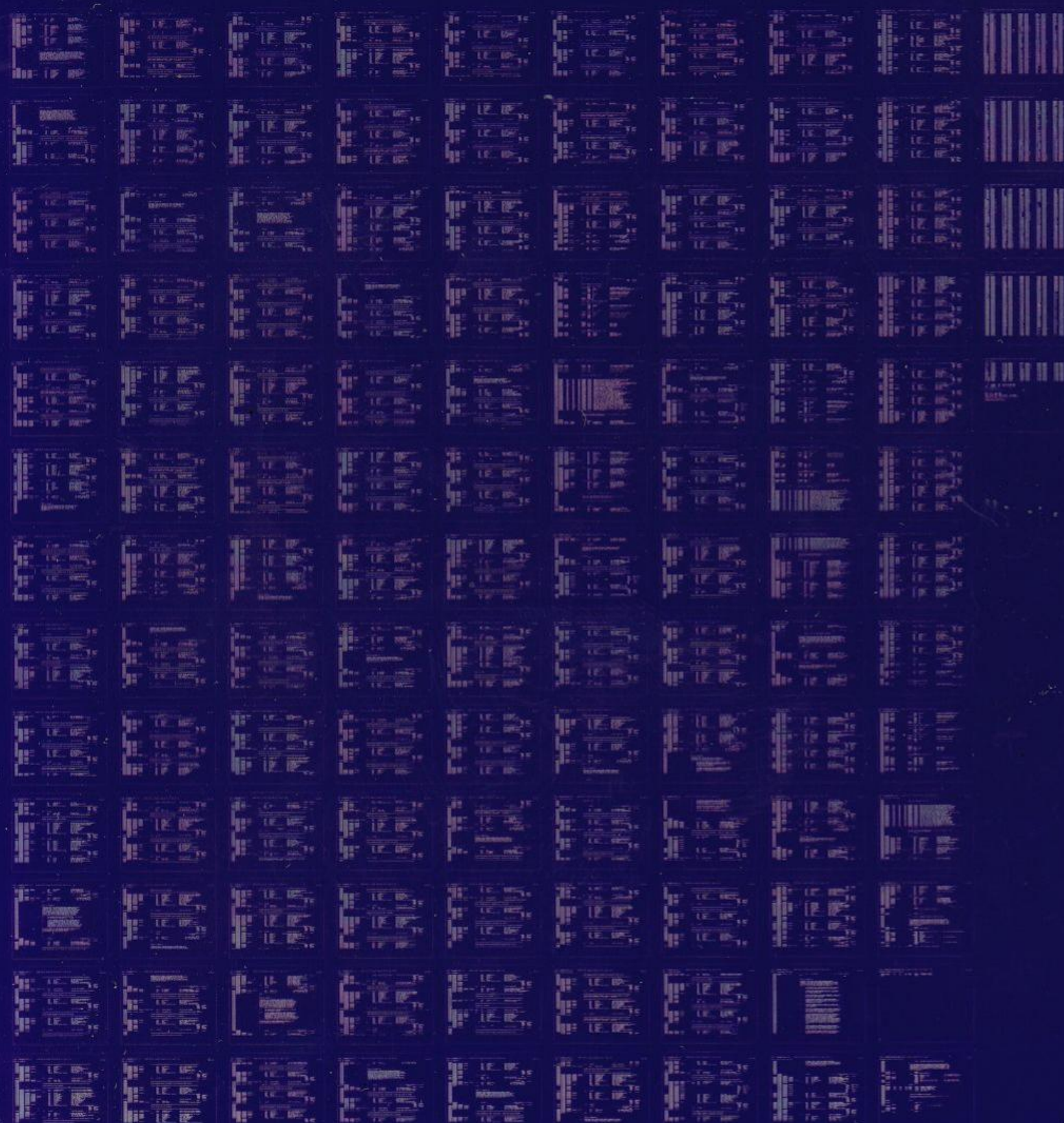
1.1.1.1	1.1.1.2	1.1.1.3	1.1.1.4	1.1.1.5	1.1.1.6	1.1.1.7	1.1.1.8	1.1.1.9	1.1.1.10	1.1.1.11	1.1.1.12	1.1.1.13	1.1.1.14	1.1.1.15	1.1.1.16	1.1.1.17	1.1.1.18	1.1.1.19	1.1.1.20	1.1.1.21	1.1.1.22	1.1.1.23	1.1.1.24	1.1.1.25	1.1.1.26	1.1.1.27	1.1.1.28	1.1.1.29	1.1.1.30	1.1.1.31	1.1.1.32	1.1.1.33	1.1.1.34	1.1.1.35	1.1.1.36	1.1.1.37	1.1.1.38	1.1.1.39	1.1.1.40	1.1.1.41	1.1.1.42	1.1.1.43	1.1.1.44	1.1.1.45	1.1.1.46	1.1.1.47	1.1.1.48	1.1.1.49	1.1.1.50	1.1.1.51	1.1.1.52	1.1.1.53	1.1.1.54	1.1.1.55	1.1.1.56	1.1.1.57	1.1.1.58	1.1.1.59	1.1.1.60	1.1.1.61	1.1.1.62	1.1.1.63	1.1.1.64	1.1.1.65	1.1.1.66	1.1.1.67	1.1.1.68	1.1.1.69	1.1.1.70	1.1.1.71	1.1.1.72	1.1.1.73	1.1.1.74	1.1.1.75	1.1.1.76	1.1.1.77	1.1.1.78	1.1.1.79	1.1.1.80	1.1.1.81	1.1.1.82	1.1.1.83	1.1.1.84	1.1.1.85	1.1.1.86	1.1.1.87	1.1.1.88	1.1.1.89	1.1.1.90	1.1.1.91	1.1.1.92	1.1.1.93	1.1.1.94	1.1.1.95	1.1.1.96	1.1.1.97	1.1.1.98	1.1.1.99	1.1.1.100
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TSV05

TSV05 CONTROL PART 3
CVTSCC0

AH-T098C-MC
2 OF 2 JAN 1986
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IDENTIFICATION

PRODUCT ID: AC-T097C-MC
PRODUCT TITLE: CVTSCCO TSV05 CTRL PART 3
DEPARTMENT: COMPUTER SPECIAL SYSTEMS/PGG
DATE: AUGUST 23, 1985

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1.0 GENERAL INFORMATION

1.1 PROGRAM ABSTRACT

THIS IS A LSI-11 RESIDENT DIAGNOSTIC WHICH CHECKS THE FUNCTIONALITY OF A TSV05 MAGTAPE SUBSYSTEM WHILE CONNECTED TO A LSI-11/23 SYSTEM (QBUS). THE PROGRAM PROVIDES ERROR MESSAGES WHICH IDENTIFY FAILING FUNCTIONS THAT AID IN THE REPAIR OF THE DEVICE. THIS DIAGNOSTIC CONSIST OF EIGHT TEST WHICH ARE EXECUTED IN SEQUENCE.

THIS DIAGNOSTIC HAS BEEN WRITTEN FOR USE WITH THE DIAGNOSTIC RUNTIME SERVICES SOFTWARE (SUPERVISOR). THESE SERVICES PROVIDE THE INTERFACE TO THE OPERATOR AND TO THE SOFTWARE ENVIRONMENT. THIS PROGRAM CAN BE USED WITH XXDP+, ACT, APT, SLIDE AND PAPER TAPE. FOR A COMPLETE DESCRIPTION OF THE RUNTIME SERVICES, REFER TO THE XXDP+ USER'S MANUAL. THERE IS A BRIEF DESCRIPTION OF THE RUNTIME SERVICES IN SECTION 2 OF THIS DOCUMENT.

1.2 SYSTEM REQUIREMENTS

LSI-11 PROCESSOR AND MEMORY
CAUTION: DIAGNOSTIC REQUIRES 32K WORDS OF MEMORY
(28K USEABLE I.E. 4K FOR I/O PAGE)
TSV05 MAGTAPE SUBSYSTEM (DRIVE AND CONTROLLER)
CONSOLE TERMINAL
PDP-11 DIAGNOSTIC SUPERVISOR (HSAAA.SYS VERSION 34 OR LATER)
PDP-11 DIAGNOSTIC LOADER/MONITOR (XXDP+)

1.3 RELATED DOCUMENTS AND STANDARDS

DIGITAL EQUIPMENT CORPORATION DOCUMENTS:

1. CHQUS XXDP+ USERS MANUAL; DOCUMENT NUMBER AC-F348E-MC
DATE: 14 JULY 1980.
2. TSV05 TRANSPORT SUBSYSTEM USER'S GUIDE; DOCUMENT NUMBER EK-TSV05-UG-001
DATE: AUGUST 1982
3. TSV05 TRANSPORT SUBSYSTEM TECHNICAL MANUAL; DOCUMENT NUMBER EK-TSV05-TM-001
DATE: AUGUST 1982
4. TSV05 TRANSPORT SUBSYSTEM INSTALLATION MANUAL; DOCUMENT NUMBER EK-TSV05-IN-001
DATE: AUGUST 1982

1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

FUNCTIONAL LSI-11 CENTRAL PROCESSOR AND MEMORY
FUNCTIONAL CONSOLE TERMINAL
FUNCTIONAL STANDALONE DIAGNOSTIC SUPERVISOR
FUNCTIONAL DIAGNOSTIC LOADER/MONITOR (XXDP+)

1.5 ASSUMPTIONS

ALL HARDWARE EXCEPT THE HARDWARE UNDER TEST IS ASSUMED TO WORK PROPERLY OR FALSE ERRORS CAN BE REPORTED.
THE TAPE BEING USED ON THE TS05 TRANSPORT IS A KNOWN GOOD REEL OF TAPE.
CVTSAA AND CVTSBA HAVE SUCESSFULLY RUN.

2.0 OPERATING INSTRUCTIONS

THIS SECTION CONTAINS A BRIEF DESCRIPTION OF THE RUNTIME SERVICES. FOR DETAILED INFORMATION, REFER TO THE XXDP+ USER'S MANUAL (CHQUS).

2.1 COMMANDS

THERE ARE ELEVEN LEGAL COMMANDS FOR THE DIAGNOSTIC RUNTIME SERVICES (SUPERVISOR). THIS SECTION LISTS THE COMMANDS AND GIVES A VERY BRIEF DESCRIPTION OF THEM. THE XXDP+ USER'S MANUAL HAS MORE DETAILS.

COMMAND	EFFECT
-----	-----
START	START THE DIAGNOSTIC FROM AN INITIAL STATE
RESTART	START THE DIAGNOSTIC WITHOUT INITIALIZING
CONTINUE	CONTINUE AT TEST THAT WAS INTERRUPTED (AFTER +C)
PROCEED	CONTINUE FROM AN ERROR HALT
EXIT	RETURN TO XXDP+ MONITOR (XXDP+ OPERATION ONLY!)
ADD	ACTIVATE A UNIT FOR TESTING (ALL UNITS ARE CONSIDERED TO BE ACTIVE AT START TIME
DROP	DEACTIVATE A UNIT
PRINT	PRINT STATISTICAL INFORMATION (IF IMPLEMENTED BY THE DIAGNOSTIC - SECTION 4.0)
DISPLAY	TYPE A LIST OF ALL DEVICE INFORMATION
FLAGS	TYPE THE STATE OF ALL FLAGS (SEE SECTION 2.3)
ZFLAGS	CLEAR ALL FLAGS (SEE SECTION 2.3)

A COMMAND CAN BE RECOGNIZED BY THE FIRST THREE CHARACTERS. SO YOU MAY, FOR EXAMPLE, TYPE "STA" INSTEAD OF "START".

2.1.1 OPERATOR COMMANDS

THE TSV05 DIAGNOSTIC IS A LSI-11 DIAGNOSTIC SUPERVISOR COMPATIBLE PROGRAM. ALL LOADING AND RUNTIME INSTRUCTIONS CAN BE REFERENCED IN THE CHQUS XXDP+ USERS MANUAL, DOCUMENT NUMBER AC-F348E-MC. THE USER ENTRY IS IN QUOTES.

BOOT THE DIAGNOSTIC MEDIA

```
.R VTSC??  
DIAG. RUN-TIME SERVICES REV D. APR 79  
CVTSC-A-0  
****TSV05 LOGIC DIAGNOSTIC****  
UNIT IS TSV05  
>DR
```

2.2 SWITCHES

THERE ARE SEVERAL SWITCHES WHICH ARE USED TO MODIFY SUPERVISOR OPERATION. THESE SWITCHES ARE APPENDED TO THE LEGAL COMMANDS. ALL OF THE LEGAL SWITCHES ARE TABULATED BELOW WITH A BRIEF DESCRIPTION OF EACH. IN THE DESCRIPTIONS BELOW, A DECIMAL NUMBER IS DESIGNATED BY "DDDDD".

SWITCH	EFFECT
----- /TESTS:LIST	EXECUTE ONLY THOSE TESTS SPECIFIED IN THE LIST. LIST IS A STRING OF TEST NUMBERS. FOR EXAMPLE - /TESTS:1:5:7-10. THIS LIST WILL CAUSE TESTS 1,5,7,8,9,10 TO BE RUN. ALL OTHER TESTS WILL NOT BE RUN.
/PASS:DDDDD	EXECUTE DDDDD PASSES (DDDDD = 1 TO 64000)
/FLAGS:FLGS	SET SPECIFIED FLAGS. FLAGS ARE DESCRIBED IN SECTION 2.3.
/EOP:DDDDD	REPORT END OF PASS MESSAGE AFTER EVERY DDDDD PASSES ONLY. (DDDDD = 1 TO 64000)
/UNITS:LIST	TEST/ADD/DROP ONLY THOSE UNITS SPECIFIED IN THE LIST. LIST EXAMPLE - /UNITS:0:5:10-12 USE UNITS 0,5,10,11,12 (UNIT NUMBERS = 0-63)

EXAMPLE OF SWITCH USAGE:

START/TESTS:1-5/PASS:1000/EOP:100

THE EFFECT OF THIS COMMAND WILL BE: 1) TESTS 1 THROUGH 5 WILL BE EXECUTED. 2) ALL UNITS WILL TESTED 1000 TIMES AND 3) THE END OF PASS MESSAGES WILL BE PRINTED AFTER EACH 100 PASSES ONLY. A SWITCH CAN BE RECOGNIZED BY THE FIRST THREE CHARACTERS. YOU MAY, FOR EXAMPLE, TYPE "/TES:1-5" INSTEAD OF "/TESTS:1-5".

BELOW IS A TABLE THAT SPECIFIES WHICH SWITCHES CAN BE USED BY EACH COMMAND.

	TESTS	PASS	FLAGS	EOP	UNITS
START	X	X	X	X	X
RESTART	X	X	X	X	X
CONTINUE		X	X	X	
PROCEED			X		
DROP					X
ADD					X
PRINT					
DISPLAY					X
FLAGS					
ZFLAGS					
EXIT					

2.3 FLAGS

FLAGS ARE USED TO SET UP CERTAIN OPERATIONAL PARAMETERS SUCH AS LOOPING ON ERROR. ALL FLAGS ARE CLEARED AT STARTUP AND REMAIN CLEARED UNTIL EXPLICITLY SET USING THE FLAGS SWITCH. FLAGS ARE ALSO CLEARED AFTER A START COMMAND UNLESS SET USING THE FLAG SWITCH. THE ZFLAGS COMMAND MAY ALSO BE USED TO CLEAR ALL FLAGS. WITH THE EXCEPTION OF THE START AND ZFLAGS COMMANDS, NO COMMANDS AFFECT THE STATE OF THE FLAGS; THEY REMAIN SET OR CLEARED AS SPECIFIED BY THE LAST FLAG SWITCH.

FLAG	EFFECT
----	-----
HOE	HALT ON ERROR - CONTROL IS RETURNED TO RUNTIME SERVICES COMMAND MODE
LOE	LOOP ON ERROR
IER*	INHIBIT ALL ERROR REPORTS
IBR*	INHIBIT ALL ERROR REPORTS EXCEPT FIRST LEVEL (FIRST LEVEL CONTAINS ERROR TYPE, NUMBER, PC, TEST AND UNIT)
IXE*	INHIBIT EXTENDED ERROR REPORTS (THOSE CALLED BY PRINTX MACRO'S)
PRI	DIRECT MESSAGES TO LINE PRINTER
PNT	PRINT TEST NUMBER AS TEST EXECUTES
BOE	"BELL" ON ERROR
UAM	UNATTENDED MODE (NO MANUAL INTERVENTION)
ISR	INHIBIT STATISTICAL REPORTS (DOES NOT APPLY TO DIAGNOSTICS WHICH DO NOT SUPPORT STATISTICAL REPORTING)
IDR	INHIBIT PROGRAM DROPPING OF UNITS
ADR	EXECUTE AUTODROP CODE
LOT	LOOP ON TEST

*ERROR MESSAGES ARE DESCRIBED IN SECTION 3.1

SEE THE XXDP+ USER'S MANUAL FOR MORE DETAILS ON FLAGS. YOU MAY SPECIFY MORE THAN ONE FLAG WITH THE FLAG SWITCH. FOR EXAMPLE, TO CAUSE THE PROGRAM TO LOOP ON ERROR, INHIBIT ERROR REPORTS AND TYPE A "BELL" ON ERROR, YOU MAY USE THE FOLLOWING STRING:

/FLAGS:LOE:IER:BOE

2.4 HARDWARE QUESTIONS

WHEN A DIAGNOSTIC IS STARTED, THE RUNTIME SERVICES WILL PROMPT THE USER FOR HARDWARE INFORMATION BY TYPING "CHANGE HW (L) ?" YOU MUST ANSWER "Y" AFTER A START COMMAND UNLESS THE HARDWARE INFORMATION HAS BEEN "PRELOADED" USING THE SETUP UTILITY (SEE CHAPTER 6 OF THE XXDP+ USER'S MANUAL). WHEN YOU ANSWER THIS QUESTION WITH A "Y", THE RUNTIME SERVICES WILL ASK FOR THE NUMBER OF UNITS (IN DECIMAL).

AFTER INITIAL STARTING OF THE PROGRAM (START COMMAND TO THE DIAGNOSTIC SUPERVISOR), THE PROGRAM WILL ISSUE THE "CHANGE HW?" QUESTION TO ASK IF THE HARDWARE PARAMETERS ARE TO BE CHANGED (BY THE OPERATOR).

ON A "N" (NO) RESPONSE TO THE "CHANGE HW?" QUESTION, THE DIAGNOSTIC WILL RUN USING THE DEFAULT VALUES FOR ALL QUESTIONS. THE DEFAULT ADDRESS AND VECTOR ARE:
TSBA/TSDB = 172520, VECTOR = 224

ON A "Y" (YES) RESPONSE TO THE QUESTION, THE FOLLOWING QUESTIONS WILL THEN BE ASKED TO ALLOW THE OPERATOR TO SELECT THE UNITS TO BE TESTED. A VALUE, IF PRESENT, LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN IF ONLY A CARRIAGE RETURN IS TYPED AS A RESPONSE. A "(D)" IN A QUESTION INDICATES THAT A DECIMAL NUMBER IS REQUIRED AS A RESPONSE. AN "(O)" INDICATES AN OCTAL NUMBER IS BEING SOLICITED. AN "(L)" INDICATES THAT A LOGICAL RESPONSE IS TO BE MADE: "Y" FOR YES, "N" FOR NO.

* UNITS (D) ? <ENTER THE NUMBER OF M7455 CONTROLLERS
PRESENT TO BE TESTED>

UNIT 0

DEVICE ADDRESS (O) 172520 ? <ENTER THE ADDRESS OF THE
TSBA/TSDB REGISTER>

VECTOR (O) 224 ? <ENTER ADDRESS OF INTERRUPT
VECTOR>

THE ADDRESS AND VECTOR QUESTIONS WILL BE ASKED FOR EACH OF THE NUMBER OF UNITS (CONTROLLERS) SPECIFIED IN THE "* UNITS?" QUESTION. LOGICAL UNIT NUMBERS ARE ASSIGNED IN ORDER, BEGINNING AT 0. UP TO FOUR UNITS CAN BE SELECTED FOR TESTING AS FOLLOWS:
UP TO 4 TSV05 CONTROLLERS PER LSI-11 AND UP TO 2 DRIVES PER CONTROLLER

2.5 SOFTWARE QUESTIONS

AFTER YOU HAVE ANSWERED THE HARDWARE QUESTIONS OR AFTER A RESTART OR CONTINUE COMMAND, THE RUNTIME SERVICES WILL ASK FOR SOFTWARE PARAMETERS. THESE PARAMETERS WILL GOVERN SOME DIAGNOSTIC SPECIFIC OPERATION MODES. YOU WILL BE PROMPTED BY "CHANGE SW (L) ?" IF YOU WISH TO CHANGE ANY PARAMETERS, ANSWER BY TYPING "Y". THE SOFTWARE QUESTIONS AND THE DEFAULT VALUES ARE DESCRIBED IN THE NEXT PARAGRAPH(S).

THE FOLLOWING QUESTIONS ARE ASKED ON A START, RESTART, OR CONTINUE. THEY ALLOW FLEXIBILITY IN THE WAY THE PROGRAM BEHAVES.

CHANGE SW (L) ? <TYPE Y TO CAUSE THE FOLLOWING
QUESTIONS TO BE ASKED>

INHIBIT ITERATIONS (L) N ? <TYPE "Y" TO PREVENT MULTIPLE
ITERATIONS OF CERTAIN TESTS.
THIS CAUSES EACH TEST PASS TO
RUN AS QUICKLY AS POSSIBLE.
ONLY QUICK-RUNNING LOGIC
TESTS USE MULTIPLE
ITERATIONS.>

2.6 EXTENDED P-TABLE DIALOGUE

WHEN YOU ANSWER THE HARDWARE QUESTIONS, YOU ARE BUILDING ENTRIES IN A TABLE THAT DESCRIBES THE DEVICES UNDER TEST. THE SIMPLEST WAY TO BUILD THIS TABLE IS TO ANSWER ALL QUESTIONS FOR EACH UNIT TO BE TESTED. IF YOU HAVE A MULTIPLEXED DEVICE SUCH AS A MASS STORAGE CONTROLLER WITH SEVERAL DRIVES OR A COMMUNICATION DEVICE WITH SEVERAL LINES, THIS BECOMES TEDIOUS SINCE MOST OF THE ANSWERS ARE REPETITIOUS.

TO ILLUSTRATE A MORE EFFICIENT METHOD, SUPPOSE YOU ARE TESTING A DEVICE, THE XY11. SUPPOSE THIS DEVICE CONSISTS OF A CONTROL MODULE WITH EIGHT UNITS (SUB-DEVICES) ATTACHED TO IT. THESE UNITS ARE DESCRIBED BY THE OCTAL NUMBERS 0 THROUGH 7. THERE IS ONE HARDWARE PARAMETER THAT CAN VARY AMONG UNITS CALLED THE Q-FACTOR. THIS Q-FACTOR MAY BE 0 OR 1. BELOW IS A SIMPLE WAY TO BUILD A TABLE FOR ONE XY11 WITH EIGHT UNITS.

* UNITS (0) ? 8<CR>

UNIT 1
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE # (0) ? 0<CR>
Q-FACTOR (0) 0 ? 1<CR>

UNIT 2
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE # (0) ? 1<CR>
Q-FACTOR (0) 1 ? 0<CR>

UNIT 3
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE # (0) ? 2<CR>

Q-FACTOR (0) 0 ? <CR>

UNIT 4

CSR ADDRESS (0) ? 160000<CR>

SUB-DEVICE # (0) ? 3<CR>

Q-FACTOR (0) 0 ? <CR>

UNIT 5

CSR ADDRESS (0) ? 160000<CR>

SUB-DEVICE # (0) ? 4<CR>

Q-FACTOR (0) 0 ? <CR>

UNIT 6

CSR ADDRESS (0) ? 160000<CR>

SUB-DEVICE # (0) ? 5<CR>

Q-FACTOR (0) 0 ? <CR>

UNIT 7

CSR ADDRESS (0) ? 160000<CR>

SUB-DEVICE # (0) ? 6<CR>

Q-FACTOR (0) 0 ? 1<CR>

UNIT 8

CSR ADDRESS (0) 160000<CR>

SUB-DEVICE # (0) ? 7<CR>

Q-FACTOR (0) 1 ? <CR>

NOTICE THAT THE DEFAULT VALUE FOR THE Q-FACTOR CHANGES WHEN A
NON-DEFAULT RESPONSE IS GIVEN. BE CAREFUL WHEN SPECIFYING
MULTIPLE UNITS!

AS YOU CAN SEE FROM THE ABOVE EXAMPLE, THE HARDWARE PARAMETERS
DO NOT VARY SIGNIFICANTLY FROM UNIT TO UNIT. THE PROCEDURE SHOWN IS
NOT VERY EFFICIENT.

THE RUNTIME SERVICES CAN TAKE MULTIPLE UNIT SPECIFICATIONS HOWEVER.
LET'S BUILD THE SAME TABLE USING THE MULTIPLE SPECIFICATION
FEATURE.

* UNITS (0) ? 8<CR>

UNIT 1
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE * (0) ? 0,1<CR>
Q-FACTOR (0) 0 ? 1,0<CR>

UNIT 3
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE * (0) ? 2-5<CR>
Q-FACTOR (0) 0 ? 0<CR>

UNIT 7
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE * (0) ? 6,7<CR>
Q-FACTOR (0) 0 ? 1<CR>

AS YOU CAN SEE IN THE ABOVE DIALOGUE, THE RUNTIME SERVICES WILL
BUILD AS MANY ENTRIES AS IT CAN WITH THE INFORMATION GIVEN IN ANY
ONE PASS THROUGH THE QUESTIONS. IN THE FIRST PASS, TWO ENTRIES
ARE BUILT SINCE TWO SUB-DEVICES AND Q-FACTORS WERE SPECIFIED. THE
SERVICES ASSUME THAT THE CSR ADDRESS IS 160000 FOR BOTH SINCE IT
WAS SPECIFIED ONLY ONCE. IN THE SECOND PASS, FOUR ENTRIES WERE
BUILT. THIS IS BECAUSE FOUR SUB-DEVICES WERE SPECIFIED. THE
"- " CONSTRUCT TELLS THE RUNTIME SERVICES TO INCREMENT THE DATA
FROM THE FIRST NUMBER TO THE SECOND. IN THIS CASE, SUB-DEVICES
2, 3, 4 AND 5 WERE SPECIFIED. (IF THE SUB-DEVICE WERE SPECIFIED
BY ADDRESSES, THE INCREMENT WOULD BE BY 2 SINCE ADDRESSES MUST
BE ON AN EVEN BOUNDARY.) THE CSR ADDRESSES AND Q-FACTORS FOR
THE FOUR ENTRIES ARE ASSUMED TO BE 160000 AND 0 RESPECTIVELY
SINCE THEY WERE ONLY SPECIFIED ONCE. THE LAST TWO UNITS ARE
SPECIFIED IN THE THIRD PASS.

THE WHOLE PROCESS COULD HAVE BEEN ACCOMPLISHED IN ONE PASS AS
SHOWN BELOW.

* UNITS (0) ? 8<CR>

UNIT 1
CSR ADDRESS (0) ? 160000<CR>
SUB-DEVICE * (0) ? 0-7<CR>
Q-FACTOR (0) 0 ? 0,1,0,...,1,1<CR>

AS YOU CAN SEE FROM THIS EXAMPLE, NULL REPLIES (COMMAS ENCLOSING
A NULL FIELD) TELL THE RUNTIME SERVICES TO REPEAT THE LAST REPLY.

2.7 QUICK START-UP PROCEDURE (XXDP+)

TO START-UP THIS PROGRAM:

1. BOOT XXDP+.
2. GIVE THE DATE AND ANSWER THE LSI AND SOHZ (IF THERE IS A CLOCK) QUESTIONS
3. TYPE "R NAME", WHERE NAME IS THE NAME OF THE BIN OR BIC FILE FOR THIS PROGRAM
4. TYPE "START"
5. ANSWER THE "CHANGE HW" QUESTION WITH "Y"
6. ANSWER ALL THE HARDWARE QUESTIONS
7. ANSWER THE "CHANGE SW" QUESTION WITH "N"

WHEN YOU FOLLOW THIS PROCEDURE YOU WILL BE USING ONLY THE DEFAULTS FOR FLAGS AND SOFTWARE PARAMETERS. THESE DEFAULTS ARE DESCRIBED IN SECTIONS 2.3 AND 2.5.

3.0 ERROR INFORMATION

3.1 TYPES OF ERROR MESSAGES

THERE ARE THREE LEVELS OF ERROR MESSAGES THAT MAY BE ISSUED BY A DIAGNOSTIC: GENERAL, BASIC AND EXTENDED. GENERAL ERROR MESSAGES ARE ALWAYS PRINTED UNLESS THE "IER" FLAG IS SET (SECTION 2.3). THE GENERAL ERROR MESSAGE IS OF THE FORM:

NAME TYPE NUMBER ON UNIT NUMBER TST NUMBER PC:XXXXXX
ERROR MESSAGE

,WHERE; NAME = DIAGNOSTIC NAME
TYPE = ERROR TYPE (SYS FATAL, DEV FATAL, HARD OR SOFT)
NUMBER = ERROR NUMBER
UNIT NUMBER = 0 - N (N IS LAST UNIT IN PTABLE)
TST NUMBER = TEST AND SUBTEST WHERE ERROR OCCURRED
PC:XXXXXX = ADDRESS OF ERROR MESSAGE CALL

BASIC ERROR MESSAGES ARE MESSAGES THAT CONTAIN SOME ADDITIONAL INFORMATION ABOUT THE ERROR. THESE ARE ALWAYS PRINTED UNLESS THE "IER" OR "IBR" FLAGS ARE SET (SECTION 2.3). THESE MESSAGES ARE PRINTED AFTER THE ASSOCIATED GENERAL MESSAGE.

EXTENDED ERROR MESSAGES CONTAIN SUPPLEMENTARY ERROR INFORMATION SUCH AS REGISTER CONTENTS OR GOOD/BAD DATA. THESE ARE ALWAYS PRINTED UNLESS THE "IER", "IBR" OR "IXR" FLAGS ARE SET (SECTION 2.3). THESE MESSAGES ARE PRINTED AFTER THE ASSOCIATED GENERAL ERROR MESSAGE AND ANY ASSOCIATED BASIC ERROR MESSAGES.

3.2 SPECIFIC ERROR MESSAGES

BELOW ARE SAMPLE ERROR MESSAGES. EACH ERROR MESSAGE REPRESENTS DIFFERENT TYPES OF ERRORS DETECTED BY THIS DIAGNOSTIC.

ERROR MESSAGE EXAMPLE 1

THIS ERROR IS INDICATIVE OF AN INCORRECT REGISTER OR STATUS WORD RETURNED TO THE DIAGNOSTIC. THE FIRST PART DEFINES THE TEST FUNCTION AND UNIT THAT FAILED. THE SECOND PART PROVIDES THE REGISTER BITS AND THEIR MNEMONICS FOR THE INCORRECT REGISTER OR STATUS WORDS. THE THIRD PART IS THE EXPECTED AND RECEIVED DATA.

TST: 016 FIFO EXERCISER TEST
CVTSC HRD ERR 01610 ON UNIT 00 TST 016 SUB 002 PC: 040624
FIFO STATUS (IN WORD 9) INCORRECT AFTER WRITE FIFO

TAPE BUS SIGNALS IN WORD #8: - DESIGNATOR <BIT #>
PARERR<15> IEOT <12> IFMK <9> IRDY<6> IRWD<2>
IRESV2<14> IIDENT<11> IHER <8> IONL<5> IFBY<1>
IRESV1<13> ICER <10> ISPEED<7> ILDP<4> IFPT<0>

TAPE BUS SIGNALS IN WORD #9:
DATMIS<7> ILW<6> OUTRDY<5> INRDY<4>

MESSAGE BUFFER ADDRESS = 047352

MESSAGE BUFFER CONTENTS:

WORD #0	EXPD: 100020	RECV: 100020	XOR: 000000
WORD #1	EXPD: 000012	RECV: 000012	XOR: 000000
WORD #2	EXPD: 000000	RECV: 000000	XOR: 000000
WORD #3	EXPD: 000010	RECV: 000010	XOR: 000000
WORD #4	EXPD: 000000	RECV: 000000	XOR: 000000
WORD #5	EXPD: 000000	RECV: 000000	XOR: 000000
WORD #6	EXPD: 000000	RECV: 000000	XOR: 000000
WORD #7	EXPD: 000000	RECV: 000000	XOR: 000000
WORD #8	EXPD: 070217	RECV: 070217	XOR: 000000
WORD #9	EXPD: 000074	RECV: 000034	XOR: 000040

ERROR MESSAGE EXAMPLE 2

THIS ERROR SHOWS A FATAL FUNCTION ERROR FROM THE TAPE DRIVE. IN THIS INSTANCE AN UNRECOVERABLE ERROR OCCURED WHICH INDICATES THAT THE CONTROLLER MAY BE DEFECTIVE.

CVTSC HRD ERR 00159 ON UNIT 00 TST 001 SUB 005 PC: 026202
TSSR NOT CORRECT AFTER SPACE RECORDS COMMAND

TSSR = 100214

TSSR BITS SET: SC,SSR

TERMINATION CLASS CODE = UNRECOVERABLE ERROR

PACKET ADDRESS = 026420

PACKET WORD # = 140010

PACKET WORD # = 000010

PACKET WORD # = 000000

PACKET WORD # = 000024

ERROR MESSAGE EXAMPLE 3

THIS ERROR SHOWS THAT THE MOTION BIT DID NOT GET SET WHILE DOING A
REWIND WITH EXTENDED FEATURES MODE ENABLED.

CVTSC HRD ERR 00121 ON UNIT 00 TST 001 SUB 002 PC: 023306
MOT BIT (XST0) NOT SET DURING REWIND (EXTENDED FEATURES MODE)
EXPD: 000312 RECV: 000112 XOR: 000200

4.0 PERFORMANCE AND PROGRESS REPORTS

AT THE END OF EACH PASS, THE PASS COUNT IS GIVEN ALONG WITH THE TOTAL NUMBER OF ERRORS REPORTED SINCE THE DIAGNOSTIC WAS STARTED. THE "EOP" SWITCH CAN BE USED TO CONTROL HOW OFTEN THE END OF PASS MESSAGE IS PRINTED. SECTION 2.2 DESCRIBES SWITCHES.

SUCCESSFUL RUN EXAMPLE (LSI-11)

DR>STA/FLA:PNT:HOE

UNITS (D) ? 1

UNIT 0

DEVICE ADDRESS (0) 172520 ? <CR>

VECTOR (0) 224 ? <CR>

CHANGE SW (L) ? N<CR>

THE ABOVE COMMAND WILL START THE DIAGNOSTIC. THE COMMAND HAS TWO SWITCHES ON WHICH ARE "PRINT EACH TEST NBR AS EXECUTED" AND "HALT ON ERROR".

TST: 001 INITIALIZE #4 TEST
TST: 002 OFF-LINE REJECT AND REWIND TEST
TST: 003 BASIC WRITE DATA TEST
TST: 004 BASIC READ DATA TEST
TST: 005 SPACE RECORDS TEST
TST: 006 REREADS TEST
TST: 007 WRITE DATA RETRY TEST
TST: 008 WRITE TAPE MARK TEST

0 ERRORS

NOTE: THE DIAGNOSTIC WILL RUN CONTINUOUSLY UNLESS A PASS NUMBER LIMIT HAS BEEN SPECIFIED WITH THE "/PASS:" SWITCH.

PROGRAM RUN TIMES

THE AVERAGE RUN TIMES OF THE PROGRAM ARE LISTED BELOW. THESE FIGURES ARE TO BE USED AS A GUIDE. THE TIMING WAS DONE ON A LSI-11 PROCESSOR WITH A LA34 CONSOLE.

THE PROGRAM RUNS IN TWO MODES; NO ITERATIONS AND DEFAULT MODE. IN THE NO ITERATIONS MODE, EACH TEST IS RUN ONCE, WITH NO ITERATIONS. IN THE DEFAULT MODE EACH TEST IS REPEATED BY THE NUMBER OF TIMES INDICATED BY THE ITERATION COUNT. NO ITERATIONS MODE IS SELECTED BY ANSWERING THE INHIBIT ITERATIONS QUESTION WITH A "Y" (YES).

TEST NUMBER	N/I SECS.	NUMBER ITER	DEF SECS.
1	3	10	7
2	3	8	5
3	38	250	212
4	60	300	240
5	60	300	240
6	120	360	240
7	120	600	480
8	22	90	68

THE TIMES REQUIRED TO RUN TESTS 1 THROUGH 8 IN ONE COMMAND:

Q.V. 7 MINUTES
DEFAULT 31 MINUTES

5.0 DEVICE INFORMATION TABLES

WHENEVER THE PROGRAM IS STARTED, VIA THE STA(RT) COMMAND, THE SUPERVISOR REQUESTS THE FOLLOWING P-TABLES PARAMETER CHANGES:

CHANGE HW (L) ?

UNITS (D) ? <ENTER THE NUMBER OF M7455 CONTROLLERS
PRESENT TO BE TESTED>

UNIT 0

DEVICE ADDRESS (0) 172520 ? <ENTER THE ADDRESS OF THE
TSBA/TSDB REGISTER>

VECTOR (0) 224 ? <ENTER ADDRESS OF INTERRUPT
VECTOR>

THE ADDRESS AND VECTOR QUESTIONS WILL BE ASKED FOR EACH OF THE NUMBER OF UNITS (CONTROLLERS) SPECIFIED IN THE "# UNITS?" QUESTION. LOGICAL UNIT NUMBERS ARE ASSIGNED IN ORDER, BEGINNING AT 0. UP TO FOUR UNITS CAN BE SELECTED FOR TESTING.

IN ADDITION, ON A START, RESTART OR CONTINUE THE SUPERVISOR REQUESTS CHANGES TO THE SOFTWARE OPERATING PARAMETERS, AS FOLLOWS:

CHANGE SW (L) ?

INHIBIT ITERATIONS (L) N ?

6.0 TEST SUMMARIES

TEST 1: INITIALIZE #4 TEST

THIS TEST VERIFIES THAT WRITING INTO THE TSSR RETURNS THE CONTROLLER TO ITS INITIALIZED STATE FROM VARIOUS CONDITIONS (I.E. LOOPBACK ENABLED, FORCING WRONG PARITY, INVERTING SENSE OF EXTENDED FEATURES SWITCH, ETC.)

TEST 2: OFF-LINE AND REJECT REWIND

THIS TEST VERIFIES BASIC TAPE-MOTION COMMAND DECODING AND BASIC OPERATION OF THE REWIND POSITIONING COMMAND. IT DOES NOT NECESSARILY DEMONSTRATE THAT THE TRANSPORT CAN BE REWOUND FROM AN ARBITRARY POSITION ON THE TAPE. SUBSEQUENT TESTS IMPLICITLY CHECK THE OPERATION OF THE REWIND COMMAND SINCE THEY MUST TYPICALLY REWIND THE TAPE IN THE NORMAL COURSE OF THEIR TEST SEQUENCES.

TEST 3: BASIC WRITE DATA

THIS TEST VERIFIES THAT THE WRITE DATA (NEXT) COMMAND OPERATES PROPERLY, UP TO THE POINT OF CHECKING THAT THE DATA WAS ACTUALLY WRITTEN ONTO THE TAPE CORRECTLY. CHECKING IN THIS TEST IS LIMITED TO VERIFYING THAT THE COMMAND TERMINATED CORRECTLY WITH THE CORRECT REGISTER, MESSAGE BUFFER AND RAM CONTENTS.

CAUTION
The LSI BUS drivers for all available address lines(16-21) are only checked when running on a LSI-11 system with more than 128K words of memory!

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

THIS TEST VERIFIES THAT THE READ FORWARD AND READ REVERSE COMMANDS OPERATE PROPERLY. VARIOUS COMBINATIONS OF ODD AND EVEN DATA BUFFER BOUNDARIES, RECORD SIZES (UP TO 64K BYTES IF MEMORY SPACE IS AVAILIABLE), AND BYTE-SWAP CONTROL ARE USED. THIS TEST OF COURSE, FURTHER VERIFIES THE WRITE DATA COMMAND BY ACTUALLY READING AND VERIFYING WRITTEN DATA. ALSO TESTED ARE PROPER TERMINATIONS ON EXCEPTIONAL OR ERROR CONDITIONS: RECORD LENGTH LONG, RECORD LENGTH SHORT, READ REVERSE AT BOT, ILLEGAL DATA BUFFER ADDRESSES, ILLEGAL CODES IN THE MODE FIELD OF THE BASIC READ COMMAND, AND DATA BUFFERS IN NON-EXISTANT MEMORY.

CAUTION
The LSI BUS drivers for all available address lines(16-21) are only checked when running on a LSI-11 system with more than 128K words of memory!

TEST 5: SPACE RECORDS

THIS TEST VERIFIES THAT THE SPACE RECORDS FORWARD AND SPACE RECORDS REVERSE POSITION COMMANDS OPERATE PROPERLY WHEN SPACING OVER NORMAL DATA RECORDS. OPERATION WHEN SPACING OVER TAPE MARKS IS VERIFIED IN A SUBSEQUENT TEST. THE BASIC WRITE DATA TEST SHOULD HAVE BEEN RUN SUCCESSFULLY FOR THIS TEST TO PRODUCE MEANINGFUL RESULTS. THIS TEST CONSISTS OF A SERIES OF SUBTESTS. IN EACH OF THE SUBTESTS, THE TAPE IS ENTIRELY WRITTEN WITH RECORDS OF VARYING SIZES AND DATA CONTENT; THE FIRST 4 BYTES OF EACH RECORD INDICATE THAT RECORD'S RELATIVE POSITION ON TAPE. AFTER EACH SPACING OPERATION, THE TAPE POSITION IS VERIFIED BY READING THE NEXT OR PREVIOUS RECORD AND COMPARING THE POSITION DATA WITH THE EXPECTED RESULT.

TEST 6: REREADS

THIS TEST VERIFIES THAT THE REREAD PREVIOUS AND REREAD NEXT COMMANDS OPERATE PROPERLY. VARIOUS COMBINATIONS OF ODD AND EVEN DATA BUFFER BOUNDRIES, RECORD SIZES (UP TO 64K BYTES IF MEMORY SPACE IS AVAILIABLE), AND BYTE-SWAP (SWP) AND OPPOSITE (OPP) CONRTOL ARE USED. ALSO TESTED ARE PROPER TERMINATIONS ON EXCEPTIONAL OR ERROR CONDITIONS: RECORD LENGTH LONG, RECORD LENGTH SHORT, READ REVERSE AT BOT, ILLEGAL DATA BUFFER ADDRESSES, AND DATA BUFFERS IN NONEXISTENT MEMORY.

CAUTION
The LSI BUS drivers for all available address lines(16-21)
are only checked when running on a LSI-11 system with more than
128K words of memory!

TEST 7: WRITE DATA RETRY

THIS TEST VERIFIES PROPER OPERATION OF THE WRITE DATA RETRY COMMAND (SPACE REVERSE, ERASE, WRITE DATA)

TEST 8: WRITE/READ TAPE MARK

THIS TEST VERIFIES THAT THE WRITE TAPE MARK COMMAND OPERATES PROPERLY. IT IS VERIFIED THAT THE TAPE MARK IS WRITTEN ONTO TAPE BY CHECKING THAT THE READ AND SPACE RECORDS COMMANDS DETECT THE TAPE MARK. IN ADDITION, SINCE WRITE TAPE MARK IS THE FIRST SUBCOMMAND UNDER THE FORMAT COMMAND BEING TESTED, IT IS VERIFIED THAT THE CLEAR VOLUME CHECK (CVC) BIT OPERATES PROPERLY AND THAT FORMAT COMMANDS WITH ILLEGAL MODE CODES ARE REJECTED.

7.0 MAINTENANCE HISTORY

REVISION A - JUNE 1983

REVISION B - JUNE 1984

UPDATED FOR NEW ORION CPU PROBLEMS, RELATING TO TIMEOUT
 ERRORS (#311 & #320) ON REWINDS.
 ELIMINATED CPU ID MESSAGE.

REVISION C - JUNE 1985

UPDATED TO PERFORM CORRECTLY WITH XXDP V2.1 EXTENDED
 MONITOR (DRSXM).

```

840          .TITLE   TSV2 - PROGRAM HEADER
841          .SBTTL   PROGRAM HEADER
842 000000    .PSECT   ABS
843
849          .MCALL   SVC
850 000000    SVC                      ; INITIALIZE SUPERVISOR MACROS
851          .ENABLE  LC
852          .NLIST   BEX,CND
858 000000    .ENABL   ABS,AMA
859          .=2000
860 002000    BGNMOD   TSV2
      002000
861
862          ;**
863          ; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
864          ; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
865          ;--
866
867
868 002000    POINTER BGNSW,BGNSFT,BGNAU,BGNDU,BGNRPT
869 002000    HEADER  CVTSC,C,0,655,.0
      002000    L$NAME::          ;DIAGNOSTIC NAME
      002000    .ASCII  /C/
      002001    .ASCII  /V/
      002002    .ASCII  /I/
      002003    .ASCII  /S/
      002004    .ASCII  /C/
      002005    .BYTE   0
      002006    .BYTE   0
      002007    .BYTE   0
      002010    L$REV::          ;REVISION LEVEL
      002010    .ASCII  /C/
      002011    L$DEPO::        ;0
      002011    .ASCII  /O/
      002012    L$UNIT::        ;NUMBER OF UNITS
      002012    .WORD    0
      002014    L$TIML::        ;LONGEST TEST TIME
      002014    .WORD    655.
      002016    L$HPCP::        ;POINTER TO H.W. QUES.
      002016    .WORD    L$HARD
      002020    L$SPCP::        ;POINTER TO S.W. QUES.

```


PROGRAM HEADER

002020	113742			
002022		L#HPTP::	.WORD	L#SOFT ;PTR. TO DEF. H.W. PTABLE
002022	002146		.WORD	L#HW ;PTR. TO S.W. PTABLE
002024		L#SPTP::	.WORD	L#SW ;DIAG. END ADDRESS
002024	002156		.WORD	L#LAST ;RESERVED FOR APT STATS
002026	114404	L#LADP::	.WORD	0
002026		L#STA::	.WORD	0
002030	000000		.WORD	0
002032		L#CO::	.WORD	0
002032	000000		.WORD	0 ;DIAGNOSTIC TYPE
002034		L#DTP::	.WORD	0 ;APT EXPANSION
002034	000000		.WORD	0 ;PTR. TO DISPATCH TABLE
002036		L#APT::	.WORD	0 ;DIAGNOSTIC RUN PRIORITY
002036	000000		.WORD	0 ;FLAGS DESCRIBE HOW IT WAS SETUP
002040		L#DTP::	.WORD	0 ;EXPANSION WORD
002040	002124		.WORD	0 ;SVC REV AND EDIT #
002042		L#PRIO::	.WORD	0 ;C#REVISION
002042	C00000		.WORD	0 ;C#EDIT
002044		L#ENVI::	.WORD	0 ;DIAG. EVENT FLAGS
002044	000000		.WORD	0
002046		L#EXP1::	.WORD	0
002046	000000		.WORD	0
002050		L#MREV::	.WORD	0
002050	003		.WORD	0
002051	003		.WORD	0
002052		L#EF::	.WORD	0
002052	000000		.WORD	0
002054	000000		.WORD	0
002056		L#SPC::	.WORD	0
002056	000000		.WORD	0 ; POINTER TO DEVICE TYPE LIST
002060		L#DEVP::	.WORD	L#DVTYP ;PTR. TO REPORT CODE
002060	003372		.WORD	L#RPT
002062		L#REPP::	.WORD	0
002062	023574		.WORD	0
002064		L#EXP4::	.WORD	0
002064	000000		.WORD	0
002066		L#EXP5::	.WORD	0
002066	000000		.WORD	0 ;PTR. TO ADD UNIT CODE
002070		L#AUT::	.WORD	L#AU ;PTR. TO DROP UNIT CODE
002070	023262		.WORD	L#DU ;LUN FOR EXERCISERS TO FILL
002072		L#DUT::	.WORD	0 ;PTR. TO INIT CODE
002072	023360		.WORD	L#DESC ;PTR. TO CLEAN-UP CODE
002074		L#LUN::	.WORD	0 ;PTR. TO AUTO CODE
002074	000000		.WORD	0
002076		L#DESP::	.WORD	L#DESC ;GENERATE SPECIAL AUTOLOAD EMT
002076	003400		.WORD	L#LOAD ;PTR. TO ERRTBL
002100		L#LOAD::	EMT	E#LOAD
002100	104035		EMT	0
002102		L#ETP::	.WORD	0
002102	000000		.WORD	0
002104		L#ICP::	.WORD	L#INIT
002104	022466		.WORD	L#INIT
002106		L#CCP::	.WORD	L#CLEAN
002106	023546		.WORD	L#CLEAN
002110		L#ACP::	.WORD	L#AUTO
002110	023466		.WORD	L#AUTO

PROGRAM HEADER

002112		L\$PRT::			;PTR. TO PROTECT TABLE
002112	022456		.WORD	L\$PROT	
002114		L\$TEST::			;TEST NUMBER
002114	000000		.WORD	0	
002116		L\$DLY::			;DELAY COUNT
002116	000000		.WORD	0	
002120		L\$HIME::			;PTR. TO HIGH MEM
002120	000000		.WORD	0	

870

DISPATCH TABLE

```

872                                     .SBTTL DISPATCH TABLE
873                                     ;**
874                                     ; THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
875                                     ; IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
876                                     ;--
877 002122                                DISPATCH 8
      002122 000010                      .WORD 8
      002124                                L$DISPATCH::
      002124 024356                      .WORD T1
      002126 025472                      .WORD T2
      002130 030152                      .WORD T3
      002132 035332                      .WORD T4
      002134 047576                      .WORD T5
      002136 056524                      .WORD T6
      002140 076106                      .WORD T7
      002142 106144                      .WORD T8

878                                     .SBTTL DEFAULT HARDWARE P-TABLE
879                                     ;**
880                                     ; THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
881                                     ; THE TEST-DEVICE PARAMETERS. THE STRUCTURE OF THIS TABLE
882                                     ; IS IDENTICAL TO THE STRUCTURE OF THE RUN-TIME P-TABLE.
883                                     ;--
884
885 002144                                BGNHW DFPTBL ;DEFAULT HARD-P-TABLE
      002144 000003                      .WORD L10000-L$HW/2
      002146                                L$HW::
      002146                                DFPTBL::
886 002146 172520                      .WORD 172520 ; 1ST (OF 2) REGISTERS.
887 002150 000224                      .WORD 224 ; INTERRUPT VECTOR
888 002152 000200                      .WORD PRI04 ; INTERRUPT PRIORITY.
889 002154                                ENDHW
      002154                                L10000:

890                                     .SBTTL SOFTWARE P-TABLE
891                                     ;**
892                                     ; THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
893                                     ; PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
894                                     ;--
895
896 002154                                BGNSW SFPTBL
      002154 000004                      .WORD L10001-L$SW/2
      002156                                L$SW::
      002156                                SFPTBL::
897 002156 000000                      TRANSTST:: .WORD 0 ; ENABLE TEST OF TRANSPORT(S) IF =1
898 002160 000000                      NOITS:: .WORD 0 ; INHIBIT ITERATION OPTION.
899                                     ; ... 0 = ITERATE.
900                                     ; ... NZ = INHIBIT ITERATE.
901 002162 000017                      LERRMAX:: .WORD 15. ; LOCAL (PER TEST) ERROR LIMIT
902 002164 000310                      GERRMAX:: .WORD 200. ; GLOBAL (PER UNIT) ERROR LIMIT
903 002166                                ENDSW
      002166                                L10001:
904 002166                                ENDMOD
905
906                                     .TITLE TSV3 - GLOBAL AREAS
907                                     .SBTTL GLOBAL EQUATES SECTION
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927 002166                                BGNMOD TSV3

```


GLOBAL EQUATES SECTION

002166
 928
 929
 930
 931
 932
 933
 934
 935
 939 002166

TSV3::

.SBTTL GLOBAL EQUATES SECTION

 ; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
 ; ARE USED IN MORE THAN ONE TEST.
 ;--

EQUALS ; GET STANDARD EQUATES.

; BIT DIFINITIONS

100000	BIT15==	100000
040000	BIT14==	40000
020000	BIT13==	20000
010000	BIT12==	10000
004000	BIT11==	4000
002000	BIT10==	2000
001000	BIT09==	1000
000400	BIT08==	400
000200	BIT07==	200
000100	BIT06==	100
000040	BIT05==	40
000020	BIT04==	20
000010	BIT03==	10
000004	BIT02==	4
000002	BIT01==	2
000001	BIT00==	1
001000	BIT9==	BIT09
000400	BIT8==	BIT08
000200	BIT7==	BIT07
000100	BIT6==	BIT06
000040	BIT5==	BIT05
000020	BIT4==	BIT04
000010	BIT3==	BIT03
000004	BIT2==	BIT02
000002	BIT1==	BIT01
000001	BIT0==	BIT00

; EVENT FLAG DEFINITIONS

; EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION

000040	EF.START==	32.	; START COMMAND WAS ISSUED
000037	EF.RESTART==	31.	; RESTART COMMAND WAS ISSUED
000036	EF.CONTINUE==	30.	; CONTINUE COMMAND WAS ISSUED
000035	EF.NEW==	29.	; A NEW PASS HAS BEEN STARTED
000034	EF.PWR==	28.	; A POWER-FAIL/POWER-UP OCCURRED

; PRIORITY LEVEL DEFINITIONS

000340	PRI07==	340
000300	PRI06==	300
000240	PRI05==	240
000200	PRI04==	200

GLOBAL EQUATES SECTION

```
000140      PRI03== 140
000100      PRI02== 100
000040      PRI01== 40
000000      PRI00== 0
```

```
      ;
      ; OPERATOR FLAG BITS
```

```
000004      EVL==      4
000010      LOT==     10
000020      ADR==     20
000040      IDU==     40
000100      ISR==    100
000200      UAM==    200
000400      BOE==    400
001000      PNT==   1000
002000      PRI==   2000
004000      IXE==   4000
010000      IBE==  10000
020000      IER==  20000
040000      LOE==  40000
100000      MOE== 100000
```

```
940
941 002166
```

```
000250
```

```
177572
177574
177576
172516
```

```
      KT11
      .SBTTL MEMORY MANAGEMENT DEFINITIONS
      ;*KT11 VECTOR ADDRESS
```

```
MMVEC= 250
      ;*KT11 STATUS REGISTER ADDRESSES
SR0= 177572
SR1= 177574
SR2= 177576
SR3= 172516
```

```
      .IF NB
      ;*USER "I" PAGE DESCRIPTOR REGISTERS
```

```
UIPDR0= 177600
UIPDR1= 177602
UIPDR2= 177604
UIPDR3= 177606
UIPDR4= 177610
UIPDR5= 177612
UIPDR6= 177614
UIPDR7= 177616
```

```
      .IF NB
      ;*USER "D" PAGE DESCRIPTOR REGISTERS
```

```
UDPDR0= 177620
UDPDR1= 177622
UDPDR2= 177624
UDPDR3= 177626
UDPDR4= 177630
UDPDR5= 177632
UDPDR6= 177634
UDPDR7= 177636
```

```
      .ENDC
      ;*USER "I" PAGE ADDRESS REGISTERS
```

```
UIPAR0= 177640
UIPAR1= 177642
UIPAR2= 177644
UIPAR3= 177646
```

```
      ;DEFINE MEMORY MANAGEMENT REGISTERS
```


MEMORY MANAGEMENT DEFINITIONS

```
UIPAR4= 177650
UIPAR5= 177652
UIPAR6= 177654
UIPAR7= 177656
  .IF NB
    ;*USER "D" PAGE ADDRESS REGISTERS
    UDPAR0= 177660
    UDPAR1= 177662
    UDPAR2= 177664
    UDPAR3= 177666
    UDPAR4= 177670
    UDPAR5= 177672
    UDPAR6= 177674
    UDPAR7= 177676
  .ENDC
  .IF NB
    ;*SUPERVISOR "I" PAGE DESCRIPTOR REGISTERS
    SIPDR0= 172200
    SIPDR1= 172202
    SIPDR2= 172204
    SIPDR3= 172206
    SIPDR4= 172210
    SIPDR5= 172212
    SIPDR6= 172214
    SIPDR7= 172216
  .IF NB
    ;*SUPERVISOR "D" PAGE DESCRIPTOR REGISTERS
    SDPDR0= 172220
    SDPDR1= 172222
    SDPDR2= 172224
    SDPDR3= 172226
    SDPDR4= 172230
    SDPDR5= 172232
    SDPDR6= 172234
    SDPDR7= 172236
  .ENDC
  ;*SUPERVISOR "I" PAGE ADDRESS REGISTERS
  SIPAR0= 172240
  SIPAR1= 172242
  SIPAR2= 172244
  SIPAR3= 172246
  SIPAR4= 172250
  SIPAR5= 172252
  SIPAR6= 172254
  SIPAR7= 172256
  .IF NB
    ;*SUPERVISOR "D" PAGE ADDRESS REGISTERS
    SDPAR0= 172260
    SDPAR1= 172262
    SDPAR2= 172264
    SDPAR3= 172266
    SDPAR4= 172270
    SDPAR5= 172272
    SDPAR6= 172274
    SDPAR7= 172276
  .ENDC
```


MEMORY MANAGEMENT DEFINITIONS

```
.ENDC
; *KERNEL "I" PAGE DESCRIPTOR REGISTERS
172300 KIPDR0= 172300
172302 KIPDR1= 172302
172304 KIPDR2= 172304
172306 KIPDR3= 172306
172310 KIPDR4= 172310
172312 KIPDR5= 172312
172314 KIPDR6= 172314
172316 KIPDR7= 172316
; IF NB
; *KERNEL "D" PAGE
DESCRIPTOR REGISTERS
KDPDR0= 172320
KDPDR1= 172322
KDPDR2= 172324
KDPDR3= 172326
KDPDR4= 172330
KDPDR5= 172332
KDPDR6= 172334
KDPDR7= 172336
.ENDC
; *KERNEL "I" PAGE ADDRESS REGISTERS
172340 KIPAR0= 172340
172342 KIPAR1= 172342
172344 KIPAR2= 172344
172346 KIPAR3= 172346
172350 KIPAR4= 172350
172352 KIPAR5= 172352
172354 KIPAR6= 172354
172356 KIPAR7= 172356
; IF NB
; *KERNEL "D" PAGE ADDRESS REGISTERS
KDPAR0= 172360
KDPAR1= 172362
KDPAR2= 172364
KDPAR3= 172366
KDPAR4= 172370
KDPAR5= 172372
KDPAR6= 172374
KDPAR7= 172376
.ENDC
```


TSV05 REGISTER AND PACKET DEFINITIONS

```

946                      .SBTTL  TSV05 REGISTER AND PACKET DEFINITIONS
947
948                      ;
949                      ; SOME GENERAL EQUATES.
950                      ;
951
952                      000004  ERRVEC==      4          ; POINTER TO ERROR VECTOR FOR BUS TIME OUT.
953                      000060  TTIVEC==     60          ; INTERRUPT VECTOR FOR CONSOLE INPUT
954                      177560  TTICSR==    177560        ; BUS ADDRESS OF CONSOLE INPUT
955                      177562  TTIBFR==    177562        ; CONSOLE INPUT DATA BUFFER
956                      177520  BDVPCR==    177520        ; BDV11 PAGE CONTROL REGISTER
957
958                      ;+
959                      ;BIT DEFINITIONS FOR TSSR REGISTER
960                      ;-
961
962                      100000  SC=      BIT15          ;SPECIAL CONDITION
963                      040000  BIE=     BIT14          ;BUS INTERFACE ERROR
964                      020000  SCE=     BIT13          ;SANITY CHECK ERROR
965                      010000  RMR=     BIT12          ;MODIFICATION REFUSED
966                      004000  NXM=     BIT11          ;NONEXISTANT MEMORY ERROR
967                      002000  NBA=     BIT10          ;NEED BUFFER ADDRESS
968                      001400  HIADDR= BIT9:BIT8       ;EXTENDED ADDRESS BITS
969                      000200  SSR=     BIT7           ;SUB SYSTEM READY
970                      000100  OFL=     BIT6           ;OFF LINE BIT
971                      000060  FATERR= BIT4:BIT5       ;FATAL TERMINATION ERROR CODES
972                      000016  TERCLS= BIT3:BIT2:BIT1  ;TERMINATION CODES
973
974                      ;+
975                      ;
976                      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 0
977                      ;(XST0)
978                      ;
979                      ;-
980
981                      100000  XSOTMK= BIT15          ;TAPE MARK DETECTED
982                      040000  XSORLS= BIT14          ;RECORD LENGTH SHORT
983                      020000  XSOLET= BIT13          ;LOGICAL END OF TAPE
984                      010000  XSORLL= BIT12          ;RECORD LENGTH LONG
985                      004000  XSOWLE= BIT11          ;WRITE LOCK ERROR
986                      002000  XSONEF= BIT10          ;NON EXECUTABLE FUNCTION
987                      001000  XSOILC= BIT9           ;ILLEGAL COMMAND
988                      000400  XSOILA= BIT8           ;ILLEGAL ADDRESS
989                      000200  XSOMOT= BIT7           ;TAPE IN MOTION
990                      000100  XSOONL= BIT6           ;TRANSPORT ON LINE
991                      000040  XSOIE=  BIT5           ;INTERRUPT ENABLE
992                      000020  XSOVCK= BIT4           ;VOLUME CHECK BIT
993                      000010  XSOPED= BIT3           ;PHASE ENCODED DRIVE
994                      000004  XSOWLK= BIT2           ;WRITE LOCKED
995                      000002  XS0BOT= BIT1           ;BEGINNING OF TAPE
996                      000001  XS0EOT= BIT0           ;END OF TAPE

```


TSV05 REGISTER AND PACKET DEFINITIONS

```

998      ;*
999      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 1
1000     ;(XST1)
1001     ;-
1002     X1.DLT = BIT15      ;DATA LATE
1003     X1.SPARE= BIT14      ;NOT USED
1004     X1.COR = BIT13      ;CORRECTABLE DATA ERROR
1005     X1.MBZ = BIT12+BIT11+BIT10+BIT9+BIT7+BIT6+BIT5+BIT4+BIT3+BIT2+BIT0 ;ALWAYS 0
1006     X1.RBP = BIT8        ;READ BUS PARITY ERROR
1007     X1.UNC = BIT1        ;UNCORRECTABLE DATA OR HARD ERROR
1008
1009     ;*
1010     ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 2
1011     ;(XST2)
1012     ;-
1013     X2.OPM = BIT15      ;OPERATION IN PROGRESS (TAPE MOVING)
1014     X2.RCE = BIT14      ;RAM CHECKSUM ERROR
1015     X2.SPARE= BIT13+BIT12+BIT11+BIT9+BIT8 ;NOT USED BY TSV05 (ALWAYS=0)
1016     X2.WCF = BIT10      ;WRITE CLOCK FAILURE (FIFO NOT EMPTIED BY TRANSPORT)
1017     X2.EXTF = BIT7       ;IF WRITE CHAR CMD THEN = EXTENDED FEATURES ENABLED
1018     X2.BUFE = BIT6       ;IF WRITE CHAR CMD THEN = BUFFERING ENABLED
1019     X2.REV = 000077      ;IF WRITE CHAR CMD THEN = MICROCODE REVISION LEVEL
1020     X2.UNIT = BIT2+BIT1+BIT0 ;IF GET STATUS THEN = CURRENTLY SELECTED UNIT NO.
1021
1022     ;*
1023     ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 3
1024     ;(XST3)
1025     ;-
1026     X3.MDE = 177400      ;MICRO-DIAGNOSTIC ERROR CODE
1027     X3.SPARE= BIT7       ;NOT USED BY TSV05
1028     X3.OPI = BIT6        ;OPERATION INCOMPLETE
1029     X3.REV = BIT5        ;REVERSE
1030     X3.TRF = BIT4        ;TRANSPORT RESPONSE FAILURE
1031     X3.DCK = BIT3        ;DENSITY CHECK
1032     X3.MBZ = BIT2+BIT1    ;NOT USED ALWAYS 0
1033     X3.RIB = BIT0        ;REVERSE INTO BOT
1034
1035     ;*
1036     ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 4
1037     ;(XST4)
1038     ;-
1039     X4.HSP = BIT15      ;HIGH SPEED
1040     X4.RCE = BIT14      ;RETRY COUNT EXCEEDED
1041     X4.TSM = BIT13      ;TRANSPORT SPECIAL MODE
1042     X4.MBZ = BIT12+BIT11+BIT10+BIT9+BIT8 ;NOT USED ALWAYS 0
1043     X4.WRC = 000377      ;WRITE RETRY COUNT FIELD
1044
1045     ;*
1046     ;
1047     ;TSSR TERMINATION CODES (BIT 0-2)
1048     ;
1049     ;-
1050
1051     TSREJ= 3+2          ;COMMAND REJECTED
1052     UNREC= 6            ;UNRECOVERABLE ERROR

```


TSV05 REGISTER AND PACKET DEFINITIONS

```

1054      ;*
1055      ;
1056      ;DEVICE REGISTER OFFSETS
1057      ;
1058      ;-
1059
1060      000000      TSBA== 0
1061      000000      TSDB== 0      ;TSDB/TSBA REGISTER
1062      000001      TSBH== 1
1063      000001      TSDBH== 1      ;TSDB/TSBA REGISTER HIGH BYTE
1064      000002      TSSR== 2      ;TSSR REGISTER
1065      000003      TSSRH== 3      ;TSSR REGISTER HIGH BYTE
1066
1067      ;*
1068      ; TSDB ADDRESS BIT DEFINITIONS
1069      ;-
1070      000003      A1716 = BIT1+BIT0      ;ADDRESS BITS 17:16 ARE IN 1:0
1071
1072      ;*
1073      ; COMMAND DEFINITIONS
1074      ;-
1075      000017      P.GETSTAT      = 17      ;GET STATUS
1076      000013      P.INIT        = 13      ;INITIALIZE
1077      000012      P.CONTROL     = 12      ;CONTROL COMMANDS
1078      000011      P.FORMAT      = 11      ;FORMAT
1079      000010      P.POSITION    = 10      ;POSITION
1080      000006      P.WRTSUB      = 6       ;SUBSYSTEM WRITE
1081      000005      P.WRITE       = 5       ;WRITE
1082      000004      P.WRTCHAR     = 4       ;WRITE CHARACTERISTICS
1083      000001      P.READ        = 1       ;READ
1084
1085      ;*
1086      ; COMMAND PACKET HEADER WORD BIT DEFINITIONS
1087      ;-
1088      100000      P.ACK      = BIT15      ;BUFFER AVAIL FOR CONTROLLER
1089      040000      P.CVC      = BIT14      ;CLEAR VOLUME CHECK
1090      020000      P.OPP      = BIT13      ;REVERSE SEQUENCE OF DATA BITS
1091      010000      P.SWB      = BIT12      ;SWAP BYTES IN MEMORY
1092      007400      P.MODE     = BIT11:BIT10:BIT9:BIT8 ;EXTENDED COMMAND MODE FIELD
1093      000200      P.IE       = BIT7       ;INTERRUPT ENABLE
1094      000140      P.FMT= BIT6:BIT5      ;PACKET HEADER TYPE (ALWAYS=0)
1095      000037      P.CMD      = 37        ;MAJOR COMMAND FIELD
1096
1097      ;*
1098      ; CONTROL COMMAND MODE CODES
1099      ;-
1099      000000      PC.RELEASE   = 0*256.      ;RELEASE BUFFER
1100      000400      PC.REWIND    = 1*256.      ;REWIND
1101      001000      PC.NOOP      = 2*256.      ;NO-OP
1102      002000      PC.IEREW     = 4*256.      ;REWIND IMMEDIATE INTERRUPT
1103      002400      PC.ERASE     = 5*256.      ;SECURITY ERASE

```


TSV05 REGISTER AND PACKET DEFINITIONS

```
1105      ;*
1106      ; CONTROLLER RAM DEFINITIONS
1107      ;-
1108      000167      RMCHBEG = 167      ; CHARACTERISTICS IO DATA BEGIN RAM ADDRESS
1109      000200      RMCHEND = 200      ; CHARACTERISTICS IO DATA END RAM ADDRESS
1110      000201      RMPKTBEG = 201      ; COMMAND PACKET BEGIN RAM ADDRESS
1111      000210      RMPKTEND = 210      ; COMMAND PACKET END RAM ADDRESS
1112      000215      RMMSGBEG = 215      ; MESSAGE BUFFER BEGIN RAM ADDRESS
1113      000234      RMMSGEND = 234      ; MESSAGE BUFFER END RAM ADDRESS
1114      ;*
1115      ;
1116      ; REGISTER DEFINITIONS IN THE MESSAGE BUFFER
1117      ;
1118      ;-
1119
1120      000006      XST0 = 6      ; EXTENDED STATUS REGISTER 0 (WORD 4)
1121      000010      XST1 = 8      ; EXTENDED STATUS REGISTER 1 (WORD 5)
1122      000012      XST2 = 10      ; EXTENDED STATUS REGISTER 2 (WORD 6)
1123      C00014      XST3 = 12      ; EXTENDED STATUS REGISTER 3 (WORD 7)
1124      000016      XST4 = 14      ; EXTENDED STATUS REGISTER 4 (WORD 8)
1125
1126      ;*
1127      ;
1128      ; OFFSETS TO WORD LOCATIONS IN PACKET DEFINITIONS
1129      ;
1130      ;-
1131
1132      000002      PKLOW = 2      ; LOW ORDER CHARACTERISTIC DATA POINTER
1133      000004      PKHI = 4      ; HIGH ORDER CHARACTERISTIC DATA POINTER
1134      000006      PKBCNT = 6      ; NUMBER OF BYTES IN DATA PACKET
1135
1136      000010      EXBCNT = 10      ; NUMBER OF BYTES IN EXTENDED DATA PACKET
1137
1138      ;*
1139      ; DATA PACKET OFFSETS FOR WRITE SUBSYSTEM COMMAND
1140      ;-
1141      000000      BSEL0 = 0      ; BYTE 0
1142      000001      BSEL1 = 1      ; BYTE 1
1143      000002      SEL2 = 2      ; WORD 2
1144      000004      SELDATA = 4      ; WORD 3
```


TSV05 REGISTER AND PACKET DEFINITIONS

```

1146      ;*
1147      ;BSEL0 SELECT CODES FOR WRITE SUBSYSTEM COMMAND
1148      ;-
1149      000000      PW.NOP          = 0          ;NO-OP
1150      000001      PW.RDRAM        = 1          ;READ RAM
1151      000002      PW.WTRAM        = 2          ;WRITE RAM
1152      000003      PW.RFIFO        = 3          ;READ FIFO
1153      000004      PW.WFIFO        = 4          ;WRITE FIFO
1154      000005      PW.RDSTAT       = 5          ;READ STATUS
1155      000006      PW.WCTL         = 6          ;WRITE TAPE CONTROL
1156      000007      PW.WFMT         = 7          ;WRITE TAPE FORMAT
1157      000010      PW.WMISC        = 10         ;WRITE MISCELLANEOUS
1158      000011      PW.WNPR         = 11         ;WRITE NPR CONTROL
1159      000020      PW.D22          = 20         ;DO MICROTEST 22
1160      000021      PW.D11          = 21         ;DO MICROTEST 11
1161      000022      PW.D13          = 22         ;DO MICROTEST 13
1162      000023      PW.NO1311       = 23         ;DISABLE MICROTEST 11 AND 13
1163      000024      PW.RDEXT        = 24         ;READ EXT. TAPE STATUS (NOT SUPPORTED BY ALL TRANSPORTS)
1164
1165      ;*
1166      ;BSEL1 CODES FOR WRITE TAPE CONTROL
1167      ;-
1168      000200      WC.IFAD          = BIT7       ;IFAD - FORMATTER ADDRESS
1169      000100      WC.IOTAD         = BIT6       ;ITAD0 - TRANSPORT ADDRESS BIT 0
1170      000040      WC.I1TAD         = BIT5       ;ITAD1 - TRANSPORT ADDRESS BIT 1
1171      000020      WC.I5RESV        = BIT4       ;IRESV5 - RESERVED #5
1172      000010      WC.IREW          = BIT3       ;IREW - REWIND
1173      000004      WC.IRWU          = BIT2       ;IRWU - REWIND AND UNLOAD
1174      000002      WC.IFEN          = BIT1       ;IFEN - FORMATTER ENABLE
1175      000001      WC.IGO           = BIT0       ;GO
1176
1177      ;*
1178      ;BSEL1 CODES FOR WRITE FORMAT
1179      ;-
1180      000200      WF.IHISP          = BIT7       ;IHISP - HIGH SPEED
1181      000100      WF.IWRT          = BIT6       ;IWRT - WRITE
1182      000040      WF.IREV          = BIT5       ;IREV - REVERSE
1183      000020      WF.IWFM          = BIT4       ;IWFM - WRITE FILE MARK
1184      000010      WF.IEDIT         = BIT3       ;IEDIT - EDIT
1185      000004      WF.IERASE        = BIT2       ;IERASE - ERASE
1186      000002      WF.I3RESV        = BIT1       ;IRESV3 - RESERVED #3
1187      000001      WF.I4RESV        = BIT0       ;IRESV4 - RESERVED #4
1188
1189      ;*
1190      ;BSEL1 CODES FOR WRITE MISCELLANEOUS SUBCOMMAND
1191      ;-
1192      000200      MS.EXT            = BIT7       ;INVERT SENSE OF EXTENDED FEATURES SWITCH
1193      000020      MS.RSFIFO         = BIT4       ;RESET FIFO AND INPUT PARITY ERRORR
1194      000010      MS.RSTAPE         = BIT3       ;RESET TAPE STATUS IN 2 FLIP-FLOPS
1195      000006      MS.ATTN           = BIT2:BIT1 ;ATTENTION TRIGGER FIELD
1196      000001      MS.RSD            = BIT0       ;RESET TIMER A,B THEN DELAY TIMES IN SEL2

```


TSV05 REGISTER AND PACKET DEFINITIONS

```

1198
1199      ; MS.ATTN SUBCODES
1200      ;
1201      000000      MSA.NOP = 0*2      ;NO-OP (NOTHING TRIGGERED)
1202      000002      MSA.VOL = 1*2      ;SIMULATE ON-LINE/OFF-LINE TRANSITION
1203      000004      MSA.NRAM= 2*2      ;FORCE NON-FATAL RAM ERROR (FORCES ERRCODE 54)
1204      000006      MSA.FRAME= 3*2      ;FORCE FATAL RAM ERROR (CAUSES SCE TO SET)
1205
1206      ; WRITE SUBSYSTEM WRITE NPR BSEL1 BIT DEFINITIONS
1207      ;
1208      000200      NP.IR      = BIT7      ;INTERRUPT REQUEST (0-1 TRANSITION)
1209      000100      NP.OUT     = BIT6      ;TAPE DATA DIRECTION OUT (0= IN)
1210      000040      NP.LOOP    = BIT5      ;ENABLE TRANSPORT LOOPBACK
1211      000020      NP.WRP     = BIT4      ;WRITE CORRECT PARITY (SET=0 TO WRITE WRONG)
1212
1213      ; READ STATUS MESSAGE BUFFER BIT DEFINITIONS
1214      ;
1215
1216      C00200      S2.DIM      = BIT7      ;WORD #9 BYTE 2 DATA IN MISS
1217      000100      S2.ILW     = BIT6      ;ILW H
1218      000040      S2.OURDY    = BIT5      ;OUT RDY H
1219      000020      S2.INRDY    = BIT4      ;IN RDY H
1220      000010      S2.ATIMR    = BIT3      ;TIMER A FLAG H
1221      000004      S2.BTIMR    = BIT2      ;TIMER B FLAG H
1222      000003      S2.UNDEF    = BIT1.BIT0 ;(UNDEFINED)
1223      100000      S1.PARIN    = BIT15     ;WORD #8 BYTE 1 PARIN H
1224      040000      S1.I2RESV   = BIT14     ;IRESV2
1225      020000      S1.I1RESV   = BIT13     ;IRESV1
1226      010000      S1.IEOT     = BIT12     ;IEOT L
1227      004000      S1.IIDENT   = BIT11     ;IIDENT H
1228      002000      S1.ICER     = BIT10     ;ICER H
1229      001000      S1.IFMK     = BIT9      ;IFMK H
1230      000400      S1.IHER     = BIT8      ;IHER H
1231      000200      S0.ISPEED   = BIT7      ;WORD #8 BYTE 0 ISPEED H
1232      000100      S0.IRDY     = BIT6      ;IRDY L
1233      000040      S0.IONL     = BIT5      ;IONL L
1234      000020      S0.ILDP     = BIT4      ;ILDP L
1235      000010      S0.IDBY     = BIT3      ;IDBY L
1236      000004      S0.IRWD     = BIT2      ;IRWD L
1237      000002      S0.IFBY     = BIT1      ;IFBY L
1238      000001      S0.IFPT     = BIT0      ;IFPT L

```


SPECIAL MACROS AND OPDEFS.

```
1240                   .SBTTL   SPECIAL MACROS AND OPDEFS.
1241
1242                   ;+
1243                   ;SAVE GENERAL REGS 1 TO 5
1244                   ;-
1245                   .MACRO   SAVREG
1246                   JSR      R5,REGSAV
1247                   .ENDM
1248
1249                   ;+
1250                   ; MACRO TO FORCE AN ERROR
1251                   ;-
1252                   .MACRO   FORCERROR           TAG,NOTSSR
1253                   .NLIST
1254                   .IIF NDF LISTALL, .NLIST
1255                   .LIST
1256                   .IF B NOTSSR
1257                   MOV      TSSR(R5),R1       ;READ TSSR
1258                   .ENDC
1259                   MOV      FORCER,FORCER       ;IS FORCER SET? (LEAVE C BIT ALONE)
1260                   BNE      TAG                ;BR IF YES
1261                   .NLIST
1262                   .IIF NDF LISTALL, .LIST
1263                   .LIST
1264                   .ENDM
1265
1266                   ;+
1267                   ; MACRO TO FORCE AN EXIT TO AVOID SECTION ITERATIONS
1268                   ; WILL EXIT TO A LABEL IF FORCER IS NEGATIVE
1269                   ; SO TO FORCE ERRORS AND EXIT ON 1 ERROR SET
1270                   ; FORCER TO 17777
1271                   ; TO FORCE ERRORS AND ITERATIONS SET FORCER TO 1.
1272                   ;-
1273                   .MACRO   FORCEEXIT           TAG
1274                   .NLIST
1275                   .IIF NDF LISTALL, .NLIST
1276                   .LIST
1277                   MOV      FORCER,FORCER       ;IS FORCER NEGATIVE?
1278                   BMI      TAG                ;BR IF YES
1279                   .NLIST
1280                   .IIF NDF LISTALL, .LIST
1281                   .LIST
1282                   .ENDM
1283
1284                   ;+
1285                   ; MACRO TO INCREMENT ERROR COUNTS
1286                   ;-
1287                   .MACRO   NEXT.ERRNO
1288                   .NLIST
1289                   ;IIF NDF LISTALL, .NLIST
1290                   ERRNO=ERRNO+1
1291                   ;IIF NDF LISTALL, .LIST
1292                   .LIST
1293                   .ENDM
```


SPECIAL MACROS AND OPDEFS.

```
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306      000000
1307
1308
1309
1310
1311
1312
1313
1314 002166 000000
1315
1316
```

```

;
;MACRO TO PERFORM XOR
;-
      .MACRO XOR      A,B
      MOV      A,-(SP)
      BIC      B,(SP)
      BIC      A,B
      BIS      (SP)+,B
      .ENDM

      EN=0      ; INITIALIZE ERROR NUMBER
      .SBTTL    FORCER - FORCE ERROR FLAG

;
; THE FOLLOWING LOCATIONS MAY BE PATCHED BY THE USER
; TO OBTAIN THE RESULTS DESCRIBED FOR EACH.
;
FORCER::      0      ; FORCE TYPE ALL HARD ERRORS (THE ONES CALLED -
                  ; - BY THE MACRO "IFERROR"). AN ERROR NEED NOT -
                  ; - EXIST, JUST ASSUME AND TYPE THE MESSAGE.
```


GLOBAL DATA SECTION

```
1318 .SBTTL GLOBAL DATA SECTION
1319
1320 ;**
1321 ;THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
1322 ;IN MORE THAN ONE TEST.
1323 ;--
1324
1325 ;
1326 ;THE FOLLOWING DATA ARE SET FOR EACH UNIT AT INIT TIME.
1327 ;SINGLE UNIT DEFAULTS (LISTED) ARE IN THE DEFAULT P-TABLE.
1328 ;
1329 002170 000000 EPRTSW:: .WORD 0 ;PRINT SWITCH
1330 002172 000000 UNITN:: .WORD 0 ;UNIT # UNDER TEST.
1331 002174 000000 QVP:: .WORD 0 ;QUICK VERIFY FLAG.
1332 002176 000000 CSRADDR:: .WORD 0 ;ADDRESS OF CSR FOR CURRENT DEVICE
1333 002200 000224 IVEC:: .WORD 224 ;INTERRUPT VECTOR
1334 002202 000200 IPRI:: .WORD PRI04 ;INTERRUPT PRIORITY.
1335 002204 000000 TSICNT:: .WORD 0 ;NUMBER OF TESTS RUN IN THIS PASS
1336 002206 000000 LOOPCNT:: .WORD 0 ;REMAINING ITERATION COUNT FOR TEST
1337 002210 000000 DEVCNT:: .WORD 0 ;NUMBER OF DEVICE UNDER TEST
1338 002212 000000 FATFLG:: .WORD 0 ;SET IF FATAL ERROR IS DETECTED IN TEST
1339 002214 000000 INTRECV:: .WORD 0 ;SET IF TAPE INTERRUPT WAS RECEIVED
1340 002216 000000 EXTFEA:: .WORD 0 ;EXTENDED FEATURES SOFTWARE SW 0-OFF;1-ON
1341 002220 000000 BENBSW:: .WORD 0 ;BUFFER ENABLE SWITCH SW 0-OFF;1-ON
1342 002222 000000 EXPD:: .WORD 0 ;EXPECTED RAM DATA FOR PRAMPKT ROUTINE
1343 002224 000000 RECV:: .WORD 0 ;RECEIVED RAM DATA FOR PRAMPKT ROUTINE
1344 002226 000000 ERRHI:: .WORD 0 ;HIGH ADDRESS MEMORY ERROR
1345 002230 000000 ERRLO:: .WORD 0 ;LOW ADDRESS MEMORY ERROR
1346 002232 000000 RAMDATA:: .BLKW 16. ;DATA READ FROM RAM PACKET OR MESSAGE BUF AREA
1347 002272 000000 RAMSIZ:: .WORD 0 ;RAM DATA SIZE FOR PRAMPKT ROUTINE
1348 002274 000000 RCVHIADD:: .WORD 0 ;RECEIVED BUFFER HIGH ADDRESS
1349 002276 000000 RCVLOADD:: .WORD 0 ;RECEIVED BUFFER LOW ADDRESS
1350 002300 000000 COUNT:: .WORD 0 ;TEST COUNT PATTERN
1351 002302 000000 DATA:: .WORD 0 ;TEST DATA
1352 002304 000000 TSTFLAG:: .WORD 0 ;TEST FLAG WORD
1353 002306 000000 TSTPTR:: .WORD 0 ;TSTBLK POINTER
1354 002310 000000 PRMNO:: .WORD 0 ;PRINT ROUTINE TEMP
1355 002312 EXPMSG:: .BLKB 100. ;EXPECTED MESSAGE BUFFER DATA
1356 002456 RECMMSG:: .BLKB 100. ;RECEIVED MESSAGE BUFFER DATA
1357 002622 TMPBFR:: .BLKB 80. ;TEMPORARY STORAGE FOR PRINT
```


TSTBLK - TEST DATA TABLE

```

1359                      .SBTTL  TSTBLK - TEST DATA TABLE
1360
1361                      ;*
1362                      ; THIS TABLE CONTAINS TEST DATA USED IN SEVERAL TESTS
1363                      ;
1364                      ; IN SEQUENCE THE DATA IS:
1365                      ;
1366                      ;     ALL ZEROS
1367                      ;     ALL ONES
1368                      ;     WALKING ONES
1369                      ;     WALKING ZEROS
1370                      ;     ALTERNATING ONES AND ZEROS
1371                      ;
1372                      ; -
1373                      ; -
1374
1375 002742                TSTBLK::
1376 002742 000000          .WORD  0                      ; ALL ZEROS
1377 002744 177777          .WORD  177777                  ; ALL ONES
1378 002746 000001          .WORD  BIT0                     ; DATA FOR WALKING ONES
1379 002750 000002          .WORD  BIT1
1380 002752 000004          .WORD  BIT2
1381 002754 000010          .WORD  BIT3
1382 002756 000020          .WORD  BIT4
1383 002760 000040          .WORD  BIT5
1384 002762 000100          .WORD  BIT6
1385 002764 000200          .WORD  BIT7
1386 002766 000400          .WORD  BIT8
1387 002770 001000          .WORD  BIT9
1388 002772 002000          .WORD  BIT10
1389 002774 004000          .WORD  BIT11
1390 002776 010000          .WORD  BIT12
1391 003000 020000          .WORD  BIT13
1392 003002 040000          .WORD  BIT14
1393 003004 100000          .WORD  BIT15
1394 003006 177776          .WORD  +CBIT0                  ; DATA FOR WALKING ZEROS
1395 003010 177775          .WORD  +CBIT1
1396 003012 177773          .WORD  +CBIT2
1397 003014 177767          .WORD  +CBIT3
1398 003016 177757          .WORD  +CBIT4
1399 003020 177737          .WORD  +CBIT5
1400 003022 177677          .WORD  +CBIT6
1401 003024 177577          .WORD  +CBIT7
1402 003026 177377          .WORD  +CBIT8
1403 003030 176777          .WORD  +CBIT9
1404 003032 175777          .WORD  +CBIT10
1405 003034 173777          .WORD  +CBIT11
1406 003036 167777          .WORD  +CBIT12
1407 003040 157777          .WORD  +CBIT13
1408 003042 137777          .WORD  +CBIT14
1409 003044 077777          .WORD  +CBIT15
1410 003046 125252          .WORD  125252                  ; ALTERNATING ONES, ZEROS
1411 003050 052525          .WORD  052525                  ; ALTERNATING ONES, ZERO OPPOSITE FROM ABOVE
1412                      .WORD  003052
1412                      TBLEND=.
```


GLOBAL ENVIRONMENT STORAGE

```

1414 .SBTTL GLOBAL ENVIRONMENT STORAGE
1415 ;
1416 ; STORAGE FOR DEVICE REGISTERS
1417 ;
1418 003052 000000 100000 000000 DUMMY: 0,100000,0,0 ; DUMMY DEVICE REGISTERS...
1419 003062 000000 000000 000000 0,0,0,0,0,0,0,0 ; ...FOR MULTI-UNIT CHECKOUT.
1420 ;
1421 ;
1422 003102 000000 DUFLG:: .WORD 0 ; "DROPPED UNIT" FLAG.
1423 ; INHIBITS CODE IN "CLEAN-UP".
1424 003104 000000 NODEV:: .WORD 0 ; FLAG TO SAY NO DEVICE.
1425 ;
1426 003106 000000 TEMP1:: .WORD 0 ; SOME TEMP LOCATIONS.
1427 003110 000000 TEMP2:: .WORD 0
1428 003112 000000 XXCOMM:: .WORD 0 ; XXDP+ COMM BLOCK POINTER.
1429 003114 000000 FREE:: .WORD 0 ; 1ST FREE MEMORY ADDRESS...
1430 003116 000000 FRESIZ:: .WORD 0 ; ...AND SIZE (IN WORDS).
1431 003120 000000 FREEHI: .WORD 0 ; LAST WORD IN FREE SPACE
1432 003122 C00000 KTFLG:: .WORD 0 ; KT11, MEM AVAIL FLAG -
1433 ; - .WORD 0 = <24K OR NO KT -
1434 ; - NZ = >24K AND KT.
1435 003124 000000 KTENABLE:: .WORD 0 ; SET BY TEST ROUTINES TO FLAG >28K UNDER TEST
1436 003126 000000 NXMFLG:: .WORD 0 ; SET IF WE CAN TEST CLEARED OTHERWISE
1437 003130 000000 NXML0:: .WORD 0 ; NXM LO ADDRESS BITS
1438 003132 000000 NXMH1:: .WORD 0 ; NXM HI ADDRESS BITS FOR DAL'S 16-21
1439 003134 000000 T23A:: .WORD 0 ; 11/23A FLAG
1440 003136 000000 T23B:: .WORD 0 ; 11/23B FLAG
1441 003140 000000 T3BFLG:: .WORD 0 ; TEST 3B FLAG +0
1442 003142 002000 PST32W:: .WORD 2000 ; 32W BLOCK ADDRESS FOR 32K START
1443 003144 000000 SIFLAG:: .WORD 0 ;
1444 003146 000000 BADDAT:: .WORD 0 ; ACTUAL DATA
1445 003150 000000 GDDAT:: .WORD 0 ; EXPECTED DATA
1446 003152 000000 LOOPFL:: .WORD 0
1447 003154 CTAB:: .WORD 0 ; CONFIGURATION TABLES.
1448 003154 000000 CTABM:: .WORD 0 ; CONFIG WORK.
1449 003156 000000 .WORD 0
1450 003160 000000 .WORD 0
1451 003162 000000 .WORD 0
1452 003164 177777 .WORD -1 ; END OF MEM TABLE.
1453 003166 CTABE::
1454 ; ERROR STATISTICS TABLE (1 WORD PER UNIT), 64 UNITS MAX:
1455 ;
1456 ; 0 = UNIT NOT TESTED
1457 ; 100000 = UNIT ONLINE, NO ERRORS
1458 ; 10XXXX = UNIT ONLINE, ENCOUNTERED XXXX ERRORS
1459 ; 160000 = UNIT DROPPED, NON-EXISTENT DEVICE REGISTER
1460 ; 160001 = UNIT DROPPED, NOT IDLE AT START
1461 ; 14XXXX = UNIT DROPPED, ENCOUNTERED XXXX ERRORS
1462 ;
1463 003166 000000 ERTABL: .BLKW 64.
1464 003366 000000 ERTABE: .WORD 0
1465 ;
1466 003370 000000 SKIPT: .WORD 0 ; 1-SKIP SUBTEST 0-NO SKIP OF SUBTEST

```


GLOBAL TEXT MESSAGES

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1468          .SBTTL GLOBAL TEXT MESSAGES
1469          ;**
1470          ; THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
1471          ; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
1472          ; MORE THAN ONE TEST.
1473          ;--
1474          ;*
1475          ; NAMES OF DEVICES SUPPORTED
1476          ;-
1477          003372          DEVTYP <TSV05>
          003372          L$DVTYP::
          003372          .ASCIZ /TSV05/
          124          123          126          .EVEN

1478          ;*
1493          ; TEST DESCRIPTION
1494          ;-
1495          003400          DESCRIPT <**** TSV05 LOGIC DIAGNOSTIC - CHK CABLES-TRANSPORT IF ERR ****>
          003400          L$DESC::
          003400          052          052          052          .ASCIZ /**** TSV05 LOGIC DIAGNOSTIC - CHK CABLES-TRANSPORT IF ERR ****/
          .EVEN

1504          ;*
1505          ; BIT TO ASCII CONVERSION FOR TSSR REGISTER
1506          ;-
1507          003500          003540          003543          003547          TSSRBIT::
1508          003520          003601          003605          003611          .WORD 1#,2#,3#,4#,5#,6#,7#,8#
1509          003540          123          103          000          1#: .ASCIZ 'SC'
1510          003543          102          111          105          2#: .ASCIZ 'BIE'
1511          003547          123          103          105          3#: .ASCIZ 'SCE'
1512          003553          122          115          122          4#: .ASCIZ 'RMR'
1513          003557          116          130          115          5#: .ASCIZ 'NXH'
1514          003563          116          102          101          6#: .ASCIZ 'NBA'
1515          003567          102          111          124          7#: .ASCIZ 'BIT9'
1516          003574          102          111          124          8#: .ASCIZ 'BIT8'
1517          003601          123          123          122          9#: .ASCIZ 'SSR'
1518          003605          117          106          114          10#: .ASCIZ 'OFL'
1519          003611          102          111          124          11#: .ASCIZ 'BIT5'
1520          003616          102          111          124          12#: .ASCIZ 'BIT4'
1521          003623          102          111          124          13#: .ASCIZ 'BIT3'
1522          003630          102          111          124          14#: .ASCIZ 'BIT2'
1523          003635          102          111          124          15#: .ASCIZ 'BIT1'
1524          003642          102          111          124          16#: .ASCIZ 'BIT0'
1525          .EVEN
1526          SFIERR: .ASCIZ 'TSSR ERROR AFTER SOFT INIT'
1527          SFHERR: .ASCIZ 'TSSR ERROR AFTER BUS RESET'
1528          003703          124          123          123          NXR: .ASCIZ / NON-EXISTANT DEVICE REGISTER/
1529          003736          040          040          116          NXR: .ASCIZ /#A ADDRESS: #06/
1530          003775          045          101          040          TSSX: .ASCIZ /#A TSBA,TSSR EXP'D: #06#A,#06#N/
1531          004016          045          101          040          TSSX: .ASCIZ /#A TSBA,TSSR REC'D: #06#A,#06/
1532          004056          045          101          040          FUSI: .ASCIZ /#N#A/
1533          004115          045          116          045          USI: .ASCIZ / UNEXPECTED INTERRUPT/
1534          004121          040          040          125          NSI: .ASCIZ / INTERRUPT EXPECTED, NOT RECEIVED/
1535          004150          040          040          111          FNOINTR: .ASCIZ /#N#A/
1536          004213          045          116          045          NOINTR: .ASCIZ / NO INTERRUPT WAS GENERATED/
1537          004217          040          040          116          IFALT: .ASCIZ / INTERRUPT FAULT/
1538          004254          040          040          111          INTX: .ASCIZ /#A CPU PC: #06#A TSBA: #06/
1539          004276          045          101          040

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GLOBAL TEXT MESSAGES

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1540 004333      040      040      042 NOINIT: .ASCIZ / "BUS-INIT" DIDN'T INITIALIZE CONTROLLER/
1541 004405      040      040      042 NSINIT: .ASCIZ / "SOFT-INIT" DIDN'T INITIALIZE THE DPU/
1542 004455      040      040      042 BRINIT: .ASCIZ / "BUS-RESET" DIDN'T INITIALIZE THE DPU/
1543 004525      000      116      000 NUL: .ASCIZ //
1544 004526      045      116      000 NULCR: .ASCIZ /#N/
1545 004531      045      101      040 EXPGOT: .ASCIZ /#A EXP'D: #06#A, REC'D: #06/
1546 004565      045      116      045 EXPGT2: .ASCIZ /#N#A EXP'D: #06#A, #06#N#A REC'D: #0#A, #06/
1547 004641      045      101      040 DUAD12: .ASCIZ /#A REG(W) WRITTEN TO: #06#A REG(R) READ; EXP'D: #06#A, REC'D: #06/
1548 004743      122      101      115 PKTRAM: .ASCIZ 'RAM Contents Do Not Match Packet Sent'
1549 005011      040      040      103 SCME: .ASCIZ / CONFIG DOESN'T MATCH MFG. MASTER/
1550 005054      127      122      111 WRTMSG: .ASCIZ 'WRITE CHARACTERISTICS Failed'
1551 005111      124      123      123 WRTERR: .ASCIZ 'TSSR Incorrect After WRITE Command, More Bits Set Than SSR'
1552 005204      124      123      123 RDERR: .ASCIZ 'TSSR Incorrect After READ Command, More Bits Set Than SSR'
1553 005276      106      101      124 SCHERR: .ASCIZ 'FATAL ERROR IN SUBTEST - CHECK TAPE, CABLES, TRANSPORT etc.'
1554 005370      105      122      122 RETERR: .ASCIZ 'ERROR IN SUBTEST - WRITE DATA RETRY FIVE TIMES FAILED'
1555 005456      045      116      045 NOMEM: .ASCIZ '#N#A ***** NO NXM ADDRESS--CANNOT TEST NXM TIMEOUT. *****N'
1556 005552      045      116      045 M8186: .ASCIZ '#N#A ***** 11/23A SYSTEM *****N'
1557 005643      045      116      045 M8189: .ASCIZ '#N#A ***** 11/23B SYSTEM *****N'
1558      .EVEN
1559      .SBTTL GLOBAL ERROR REPORT SECTION
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1566 005734      BGNMSG NXRRERR ;NON-EXISTANT DEVICE REGISTER.
1567 005734      NXRRERR: PRINTX #NXRX,NODEV ;NODEV = NEXM ADDRESS.
1568 005734      MOV NODEV, -(SP)
1569 005740      MOV #NXRX, -(SP)
1570 005744      MOV #2, -(SP)
1571 005750      MOV SP, R0
1572 005752      TRAP C#PNTX
1573 005754      ADD #6, SP
1574 005760      JSR PC, EXTEND ; PRINT EXTENSION IF REQUIRED.
1575 005764      ENDMSG
1576 005764      10002: TRAP C#MSG
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PRITSSR - PRINT TSSR CONTENTS

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1581 .SBTTL PRITSSR - PRINT TSSR CONTENTS
1582
1583 ;*
1584 ;
1585 ;ROUTINE TO DISPLAY THE CONTENTS, AND BIT DEFINITIONS, OF
1586 ;THE TSSR REGISTER. THIS ROUTINE IS NORMALLY CALLED ONLY
1587 ;BY A MESSAGE PRINTING ROUTINE
1588 ;
1589 ;INPUTS:
1590 ;
1591 ; R1 CONTENTS OF TSSR
1592 ;
1593 ;SUBORDINATE ROUTINES:
1594 ;
1595 ; CHKAMB CHECK FOR AMBIGUOUS CONTENTS
1596 ;
1597 ;-
1598
1599 PRITSSR: SAVREG ;SAVE GENERAL REGISTERS
1600 006022 MOV R1,R4 ;SAVE THE TSSR CONTENTS
1601 006026 010104 PRINTB #TSSRFOR,R4 ;PRINT THE CONTENTS OF TSSR
1602 006030 MOV R4,-(SP)
1603 006032 010446 006505 MOV #TSSRFOR,-(SP)
1604 006036 012746 000002 MOV #2,-(SP)
1605 006042 010600 MOV SP,R0
1606 006044 104414 TRAP C#PNTB
1607 006046 062706 000006 ADD #6,SP
1608 006052 010400 MOV R4,R0 ;GET TSSR BACK FOR CHKAMB
1609 006054 004737 016134 JSR PC,CHKAMB ;ARE CONTENTS AMBIGUOUS ?
1610 006060 103410 BCS S# ;BRANCH IF NOT
1611 006062 PRINTX #AMBTSSR ;SHOW CONTENTS ARE AMBIGUOUS
1612 006062 012746 006725 MOV #AMBTSSR,-(SP)
1613 006066 012746 000001 MOV #1,-(SP)
1614 006072 010600 MOV SP,R0
1615 006074 104415 TRAP C#PNTX
1616 006076 062706 000004 ADD #4,SP
1617 006102 010403 S#: MOV R4,R3 ;CONTENTS OF TSSR
1618 006104 042703 001476 BIC #HIADDR!FATERR!TERCLS,R3 ;CLEAR ALL MULTIPLE BIT FIELDS
1619 006110 001434 BEQ 20# ;NO BITS ARE SET
1620 006112 012702 002622 MOV #TMPBFR,R2 ;TEMPORARY ASCII BUFFER
1621 006116 012701 003500 MOV #TSSRBIT,R1 ;ASCII EQUIVALENT OF BITS
1622 006122 005703 10#: TST R3 ;REMAINING BITS TO CONVERT
1623 006124 001413 BEQ 15# ;BRANCH WHEN ALL ARE DONE
1624 006126 000241 CLC ;CLEAR CARRY FOR SHIFT
1625 006130 006103 ROL R3 ;SHIFT NEXT BIT TO CARRY
1626 006132 103006 BCC 13# ;BRANCH IF BIT NOT SET
1627 006134 011100 MOV (R1),R0 ;POINTER TO BIT DEFINITION
1628 006136 112022 11#: MOVB (R0)+,(R2)+ ;MOVE ASCII TO BUFFER
1629 006140 001376 BNE 11# ;MOVE ALL BITS
1630 006142 112762 000054 177777 MOVB #' ,-(R2) ;INSERT A COMMA TO TERMINATE
1631 006150 005721 13#: TST (R1)+ ;POINT TO NEXT DESCRIPTION
1632 006152 000763 BR 10# ;GET THE REMAINING BITS
1633 006154 105042 15#: CLRB -(R2) ;TERMINATE THE LINE
1634 006156 PRINTX #TSSDEF,#TMPBFR ;PRINT THE BIT DEFINITIONS
1635 006156 012746 002622 MOV #TMPBFR,-(SP)
1636 006162 012746 006676 MOV #TSSDEF,-(SP)

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PRITSSR - PRINT TSSR CONTENTS

006166	012746	000002	MOV	#2, -(SP)	
006172	010600		MOV	SP, R0	
006174	104415		TRAP	C#PNTX	
006176	062706	000006	ADD	#6, SP	
1625					
1626	006202	010403	201: MOV	R4, R3	;GET THE TSSR CONTENTS
1627	006204	042703	BIC	#1CTERCLS, R3	;CLEAR ALL BUT TERMINATION
1628	006210	016303	MOV	TCOCOD(R3), R3	;GET THE TERMINATION CODE MEANING
1629	006214		PRINTX	#TCOASC, R3	;PRINT THE TERMINATION CODE
	006214	010346	MOV	R3, -(SP)	
	006216	012746	MOV	#TCOASC, -(SP)	
	006222	012746	MOV	#2, -(SP)	
	006226	010600	MOV	SP, R0	
	006230	104415	TRAP	C#PNTX	
	006232	062706	ADD	#6, SP	
1630	006236	010403	MOV	R4, R3	;TSSR CONTENTS AGAIN
1631	006240	042703	BIC	#1CFATERR, R3	;CLEAR ALL BUT FATAL TERMINATION
1632	006244	001416	BEQ	251	;DON'T PRINT IF ZERO
1633	006246	006203	ASR	R3	
1634	006250	006203	ASR	R3	
1635	006252	006203	ASR	R3	;ALINE TERMINATION CODE FOR INDEX
1636	006254	016303	MOV	TSFCOD(R3), R3	;GET THE FATAL TERMINATION CODE
1637	006260		PRINTX	#TFCASC, R3	;PRINT THE FATAL TERMINATION CODE
	006260	010346	MOV	R3, -(SP)	
	006262	012746	MOV	#TFCASC, -(SP)	
	006266	012746	MOV	#2, -(SP)	
	006272	010600	MOV	SP, R0	
	006274	104415	TRAP	C#PNTX	
	006276	062706	ADD	#6, SP	
1638	006302	042704	251: BIC	#1CHIADDR, R4	;CLEAR ALL BUT EXTENDED ADDRESS
1639	006306	001411	BEQ	301	;DON'T PRINT IF ZERO
1640	006310		PRINTX	#TEXASC, R4	;PRINT THE EXTENDED ADDRESS BITS
	006310	010446	MOV	R4, -(SP)	
	006312	012746	MOV	#TEXASC, -(SP)	
	006316	012746	MOV	#2, -(SP)	
	006322	010600	MOV	SP, R0	
	006324	104415	TRAP	C#PNTX	
	006326	062706	ADD	#6, SP	
1641	006332	013703	301: MOV	EPRTSW, R3	;PRINT MEASGE BUFFER ADDRESS
1642	006336		PRINTX	R3	;PRINT PROPER MESSAGE
	006336	010346	MOV	R3, -(SP)	
	006340	012746	MOV	#1, -(SP)	
	006344	010600	MOV	SP, R0	
	006346	104415	TRAP	C#PNTX	
	006350	062706	ADD	#4, SP	
1643	006354	000207	RTS	PC	;RETURN TO CALLER

PRITSSR - PRINT TSSR CONTENTS

1655	006356	045	116	045	EPRT1:	.ASCIZ	'\$N\$A *****CHECK CABLES BETWEEN M7196 AND TRANSPORT*****'
1656	006446	045	116	045	EPRT2:	.ASCIZ	'\$N\$A *****CHECK TRANSPORT*****'
1662	006505	045	116	045	TSSRFOR:	.ASCIZ	'\$N\$A TSSR = #06'
1663	006525	045	116	045	TEXASC:	.ASCIZ	'\$N\$A Extended Address Bits = #06'
1664	006566	045	116	045	TCOASC:	.ASCIZ	'\$N\$A Termination Class Code = #T'
1665	006627	045	116	045	TFCASC:	.ASCIZ	'\$N\$A Fatal Termination Class Code = #T'
1666	006676	045	116	045	TSSDEF:	.ASCIZ	'\$N\$A TSSR Bits Set: #T'
1667	006725	045	116	045	AMBTSSR:	.ASCIZ	'\$N\$A TSSR Contents Are Ambiguous'
1668						.EVEN	
1669	006766	007006	007031	007057	TCOCOD:	.WORD	1\$,2\$,3\$,4\$,5\$,6\$,7\$,8\$
1670	007006	116	157	162	1\$:	.ASCIZ	'Normal Termination'
1671	007031	124	145	162	2\$:	.ASCIZ	'Termination Condition'
1672	007057	124	141	160	3\$:	.ASCIZ	'Tape Status Alert'
1673	007101	106	165	156	4\$:	.ASCIZ	'Function Reject'
1674	007121	122	145	143	5\$:	.ASCIZ	'Recoverable Error - Tape Position One Record Down'
1675	007203	122	145	143	6\$:	.ASCIZ	'Recoverable Error - Tape Was Not Moved'
1676	007252	125	156	162	7\$:	.ASCIZ	'Unrecoverable Error'
1677	007276	106	141	164	8\$:	.ASCIZ	'Fatal Controller Error'
1678						.EVEN	
1679							
1680	007326	007336	007372	007403	TSFCOD:	.WORD	1\$,2\$,3\$,4\$
1681	007336	111	156	164	1\$:	.ASCIZ	'Internal Diagnostic Failure'
1682	007372	122	145	163	2\$:	.ASCIZ	'Reserved'
1683	007403	102	165	163	3\$:	.ASCIZ	'Bus Interface or Sanity Check Error'
1684	007447	122	145	163	4\$:	.ASCIZ	'Reserved'
1685						.EVEN	

PRIPKT - PRINT THE ADDRESS/CONTENTS OF COMMAND PACKET

.SBTTL PRIPKT - PRINT THE ADDRESS/CONTENTS OF COMMAND PACKET

```

1687                                     ;*
1688                                     ;THIS ROUTINE PRINTS THE ADDRESS AND CONTENTS OF A COMMAND PACKET.
1689                                     ;THIS ROUTINE IS NORMALLY ONLY CALLED FROM A PRINT ROUTINE.
1690                                     ;
1691                                     ;INPUT:
1692                                     ;
1693                                     ;      R0      NUMBER OF WORDS IN PACKET
1694                                     ;      R3      HIGH ORDER COMMAND PACKET ADDRESS
1695                                     ;      R4      ADDRESS OF COMMAND PACKET
1696                                     ;
1697                                     ;      NOTE:   R3 IS IGNORED IF THE KTENABLE FLAG IS CLEAR.
1698                                     ;
1699                                     ;-
1700
1701 PRIPKT::
1702     007460 SAVREG                                ;SAVE THE REGISTERS
1703     007460 MOV      R0,R5                        ;SAVE NO. OF WORDS IN PACKET
1704     007464 010005 TST      KTENABLE              ;ABOVE 28K UNDER TEST?
1705     007466 C05737 003124 BNE      10$           ;BR IF YES
1706     007472 001001 CLR      R3                  ;SET HIGH ORDER ADDRESS TO 0
1707     007474 005003 10$: MOV      R3,R1           ;COPY HIGH ORDER ADDRESS
1708     007476 010301 MOV      R4,R0              ;GET LOWER ADDRESS
1709     007500 010400 ROL      R0                  ;SHIFT BIT 15 INTO C BIT
1710     007502 006100 ROL      R1                  ;AND INTO HIGH ORDER.
1711     007504 006101 PRINTB   #PKTADD,R1,R4        ;PRINT PACKET ADDRESS
1712     007506 MOV      R4,-(SP)
1713     007510 010146 MOV      R1,-(SP)
1714     007512 012746 007644 MOV      #PKTADD,-(SP)
1715     007516 012746 000003 MOV      #3,-(SP)
1716     007522 010600 MOV      SP,R0
1717     007524 104414 TRAP     C#PNTB
1718     007526 062706 000010 ADD      #10,SP
1719     007532 010300 15$: MOV      R3,R0           ;GET HIGH ORDER ADDRESS
1720     007534 001404 BEQ      20$                 ;BR IF NOT ABOVE 28K.
1721     007536 010401 MOV      R4,R1              ;GET LOW ORDER ADDRESS
1722     007540 004737 017406 JSR      PC,SETMAP     ;SETUP PAR6 MAPPING FOR 18 BIT ADDRESS
1723     007544 010004 MOV      R0,R4              ;GET RETURNED PAR6 ADDRESS BIAS
1724     007546 005001 20$: CLR      R1             ;SAVE WORD NUMBER
1725     007550 012402 25$: MOV      (R4)+,R2       ;GET PACKET CONTENTS
1726     007552 PRINTB   #PKTFRM,R1,R2             ;PRINT THE DATA
1727     007552 010246 MOV      R2,-(SP)
1728     007554 010146 MOV      R1,-(SP)
1729     007556 012746 007606 MOV      #PKTFRM,-(SP)
1730     007562 012746 000003 MOV      #3,-(SP)
1731     007566 010600 MOV      SP,R0
1732     007570 104414 TRAP     C#PNTB
1733     007572 062706 000010 ADD      #10,SP
1734     007576 005201 INC      R1                  ;NEXT WORD NUMBER
1735     007600 020105 CMP      R1,R5              ;DONE ALL PACKET WORDS?
1736     007602 002762 BLT      25$                 ;LOOP TILL ALL DONE
1737     007604 000207 RTS      PC                  ;RETURN
1738
1739     007606 045      116      045 PKTFRM: .ASCIZ  'N#A Packet Word #D1#A = #06'
1740     007644 045      116      045 PKTADD: .ASCIZ  'N#A Packet Address = #01#05'
1741     007644 045      116      045 .EVEN

```


PRIBXOR - PRINT EXPD, RECV AND XOR BYTE

```

1730 .SBTTL PRIBXOR - PRINT EXPD, RECV AND XOR BYTE
1731
1732 ;*
1733 ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE DATA BYTE
1734 ;THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.
1735 ;
1736 ;INPUTS:
1737 ;
1738 ; R1 RECEIVED DATA
1739 ; R2 EXPECTED DATA
1740 ;
1741 ;OUTPUT:
1742 ;
1743 ; R0 XOR OF EXPECTED/RECEIVED DATA
1744 ;
1745 PRIBXOR::
1746 SAVREG ;SAVE THE REGISTERS
1747 MOV R2,R3 ;EXPECTED DATA
1748 XOR R1,R3 ;FORM THE EXCLUSIVE OR
1749 MOV #C<377>,R0 ;BYTE MASK
1750 BIC R0,R1 ;SAVE LOW BYTE RECV
1751 BIC R0,R2 ;SAVE LOW BYTE EXPD
1752 BIC R0,R3 ;SAVE LOW BYTE XOR
1753 PRINTB #XORBFOR,R2,R1,R3 ;PRINT THE MESSAGE
1754 MOV R3,-(SP)
1755 MOV R1,-(SP)
1756 MOV R2,-(SP)
1757 MOV #XORBFOR,-(SP)
1758 MOV #4,-(SP)
1759 MOV SP,R0
1760 TRAP C#PNTB
1761 ADD #12,SP
1762 MOV R3,R0 ;R0 HAS XOR ON RETURN
1763 RTS PC ;RETURN TO CALLER
1764
1765 .ASCIZ 'N#A EXPD: #03#A RECV: #03#A XOR: #03'
1766 .EVEN
1767 .SBTTL PRIBXOR - PRINT EXPD, RECV AND XOR
1768
1769 ;*
1770 ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE TWO
1771 ;THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.
1772 ;
1773 ;INPUTS:
1774 ;
1775 ; R1 RECEIVED DATA
1776 ; R2 EXPECTED DATA
1777 ;
1778 ;OUTPUT:
1779 ;
1780 ; R0 XOR OF EXPECTED/RECEIVED DATA
1781 ;
1782 PRIBXOR::
1783 SAVREG ;SAVE THE REGISTERS
1784 MOV R2,R3 ;EXPECTED DATA
1785 XOR R1,R3 ;FORM THE EXCLUSIVE OR
1786 PRINTB #XORBFOR,R2,R1,R3 ;PRINT THE MESSAGE

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PRI XOR - PRINT EXPD, RECV AND XOR

010050	010346				MOV	R3,-(SP)	
010052	010146				MOV	R1,-(SP)	
010054	010246				MOV	R2,-(SP)	
010056	012746	010102			MOV	XORFOR,-(SP)	
010062	012746	000004			MOV	#4,-(SP)	
010066	010600				MOV	SP,R0	
010070	104414				TRAP	C#PNTB	
010072	062706	000012			ADD	#12,SP	
1779	010076	010300			MOV	R3,R0	;R0 HAS XOR ON RETURN
1780	010100	000207			RTS	PC	;RETURN TO CALLER
1781							
1782	010102	045	116	045	XORFOR:	.ASCIZ	'#N#A EXPD: #06#A RECV: #06#A XOR: #06'
1783						.EVEN	

PRIQU - PRINT BIT NUMBERS AS ASCII EQUIVALENT

```

1785                                     .SBTTL PRIQU - PRINT BIT NUMBERS AS ASCII EQUIVALENT
1786
1787                                     ;+
1788                                     ;
1789                                     ;ROUTINE TO CONVERT BIT VALUES TO ASCII AND PRINT THE STRING
1790                                     ;THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
1791                                     ;
1792                                     ;INPUTS:
1793                                     ;
1794                                     ;      R0      OCTAL VALUE TO CONVERT
1795                                     ;      R1      TABLE OF POINTERS TO ASCII EQUIVALENT
1796                                     ;
1797                                     ;-
1798
1799 010150                               PRIQU:
1800 010150                               SAVREG                                ;SAVE THE REGISTERS
1801 010154 000207                       RTS      PC                        ;RETURN TO CALLER
1802
1803                                     .SBTTL PRIRAM - PRINT RAM ADDRESS
1804
1805                                     ;+
1806                                     ;
1807                                     ;PRINT CONTROLLER RAM ADDRESS.
1808                                     ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
1809                                     ;
1810                                     ;INPUTS:
1811                                     ;
1812                                     ;      R4      RAM ADDRESS
1813                                     ;-
1814 010156                               PRIRAM:
1815 010156                               SAVREG                                ;SAVE R1-R5 UNTIL NEXT RETURN
1816 010162                               PRINTB  #RAMFOR,R4                ;PRINT RAM ADDRESS IN ERROR
1817                                     MOV      R4, -(SP)
1818                                     MOV      #RAMFOR, -(SP)
1819                                     MOV      #2, -(SP)
1820                                     MOV      SP, R0
1821                                     TRAP     C#PNTB
1822                                     ADD      #6, SP
1823                                     RTS      PC                        ;RETURN
1824
1825 010206      045      116      045 RAMFOR: .ASCIZ 'N#A CONTROLLER RAM ADDRESS = #06'
1826                                     .EVEN

```


PRIADD - PRINT MEMORY ERROR ADDRESS

```

1822 .SBTTL PRIADD - PRINT MEMORY ERROR ADDRESS
1823 ;*
1824 ;PRINT MEMORY ADDRESS
1825 ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
1826 ;
1827 ; IMPLICIT INPUTS
1828 ;
1829 ;
1830 ; ERRHI - HIGH ORDER ADDRESS
1831 ; ERRLO - LOW ORDER ADDRESS
1832 ;
1833 ;
1834 PRIADD:
1835 SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
1836 MOV ERRHI,R0 ;GET HIGH ADDRESS
1837 MOV ERRLO,R1 ;GET LOW ADDRESS
1838 MOV R1,R2 ;COPY LOW ADDRESS
1839 ROL R1 ;SHIFT BIT 15 TO C BIT
1840 ROL R0 ;SHIFT INTO HIGH ORDER
1841 PRINTB #PRIA0,R0,R2 ;PRINT MEMORY ADDRESS IN ERROR
      MOV R2,-(SP)
      MOV R0,-(SP)
      MOV #PRIA0,-(SP)
      MOV #3,-(SP)
      MOV SP,R0
      TRAP C#PNTB
      ADD #10,SP
      RTS PC ;RETURN

```

```

1842
1843
1844 010320 045 116 045 PRIA0: .ASCIZ 'N/A MEMORY ERROR ADDRESS = 0105'
1845 .EVEN

```

```

1846 .SBTTL PRITADD - PRINT MEMORY TEST ADDRESS
1847 ;*
1848 ;PRINT MEMORY ADDRESS
1849 ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
1850 ;
1851 ; IMPLICIT INPUTS
1852 ;
1853 ;
1854 ; ERRHI - HIGH ORDER ADDRESS
1855 ; ERRLO - LOW ORDER ADDRESS
1856 ;
1857 ;
1858 ;
1859 PRITADD:
1860 SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
1861 MOV ERRHI,R2 ;GET HIGH ADDRESS
1862 MOV ERRLO,R1 ;GET LOW ADDRESS
1863 ;MOV R1,R2 ;COPY LOW ADDRESS
1864 ;ROL R1 ;SHIFT BIT 15 TO C BIT
1865 ;ROL R0 ;SHIFT INTO HIGH ORDER
1866 PRINTB #PRITO,P1 ;PRINT MEMORY ADDRESS LOW IN ERROR
      MOV R1,-(SP)
      MOV #PRITO,-(SP)
      MOV #2,-(SP)
      MOV SP,R0
      TRAP C#PNTB

```


PRITADD - PRINT MEMORY TEST ADDRESS

1867	010416	062706	000006			ADD	#6,SP	
	010422					PRINTB	#PRIT1,R2	;PRINT MEMORY ADDRESS HIGH IN ERROR
	010422	010246				MOV	R2,-(SP)	
	010424	012746	010511			MOV	#PRIT1,-(SP)	
	010430	012746	000002			MOV	#2,-(SP)	
	010434	010600				MOV	SP,R0	
	010436	104414				TRAP	C#PNTB	
	010440	062706	000006			ADD	#6,SP	
1868	010444	000207				RTS	PC	;RETURN
1869								
1870	010446	045	116	045	PRIT0:	.ASCIZ	'#N#A MEMORY TEST ADDRESS LOW = #06'	
1871	010511	045	116	045	PRIT1:	.ASCIZ	'#N#A MEMORY TEST ADDRESS HIGH = #06'	
1872						.EVEN		

SPACE - SPACE RECORDS (FORWARD AND REVERSE) COMMAND

.SBTTL SPACE - SPACE RECORDS (FORWARD AND REVERSE) COMMAND

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1874
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1909 010556
1910 010556
1911 010562 012737 000764 010750
1912 010570 012737 140010 010740
1913 010576 005703
1914 010600 100403
1915 010602 010337 010742
1916 010606 000407
1917 010610 042703 100000
1918 010614 010337 010742
1919 010620 052737 000400 010740
1920 010626 012704 010740
1921 010632 010465 000000
1922 010636 004737 016340
1923 010642 103420
1924 010644
    010644 012727 000250
    010650 000000
    010652 013727 002116
    010656 000000
    010660 005367 177772
    010664 001375

;
;
; ROUTINE TO ISSUE A SPACE RECORDS
; COMMAND (FORWARD OR REVERSE)
;
; INPUT:
;
; R3      NUMBER OF RECORDS TO BE SPACED OVER
;          BIT15 CONTROLS DIRECTION
;          BIT15 = 0 IS FORWARD
;          BIT15 = 1 IS REVERSE
;
; R5      FIRST DEVICE UNIBUS ADDRESS
;
;          REQUIRES A WRITE CHARACTERISTICS DONE PREVIOUSLY
;
; OUTPUT:
;
; CARRY   SET - SPACE RECORDS COMMAND OK
;          CLR - SPACE RECORDS FAILED
;
;
; R0      THE CONTENTS OF R4 IS MOVED TO R0
;
;
; IMPLICIT OUTPUT:
;
;          TAPE HAS BEEN MOVED
;
; SIDE EFFECTS:
;
;
;
SPACE::
    SAVREG
    MOV     #500.,SDELAY
    MOV     #140010.80$
    TST     R3
    BMI     5$
    MOV     R3,90$
    BR      10$
    BIC     #BIT15,R3
    MOV     R3,90$
    BIS     #BIT8,80$
    MOV     #80$,R4
    MOV     R4,TSDB(R5)
    JSR     PC,WAITF
    BCS     20$
    DELAY   250
    MOV     #250,(PC)+
    .WORD   0
    MOV     L#DLY,(PC)+
    .WORD   0
    DEC     -6(PC)
    BNE     .-4

; SAVE THE GENERAL REGISTERS
; SET UP DELAY
; SET UP COMMAND, SPACE FORWARD
; CHECK FOR DIRECTION
; BR, IF REVERSE INDICATED
; LOAD UP NUMBER OF RECORDS TO SPACE
; GO DO COMMAND
; CLEAR DIRECTION BIT
; LOAD UP NUMBER OF RECORDS TO SPACE
; SET REVERSE BIT IN COMMAND PACKET
; SET UP R4 WITH PACKET ADDRESS
; SEND OUT COMMAND
; WAIT FOR SSR
; BR, IF SSR IS SET AND OK
; DELAY ABOUT .25 SECONDS

```


	010666	005367	177756		DEC	-22(PC)	
	010672	001367			BNE	. -20	
1925	010674	005337	010750		DEC	SDELAY	;BUMP DELAY COUNTER DOWN
1926	010700	001356			BNE	15;	;BR, IF MORE DELAY
1927	010702	000411			BR	60;	;BR IF TROUBLE CARRY = CLEAR
1928	010704	016501	000002	20:	MOV	TSSR(R5),R1	;READ TSSR
1929	010710	012702	000200		MOV	#SSR,R2	;SET UP EXPECTED
1930	010714	020201		25:	CMP	R2,R1	;ARE THEY OK
1931	010716	001401			BEQ	40;	;BR, IF EQUAL = OK
1932	010720	000402			BR	60;	;TROUBLE EXIT
1933	010722	000261		40:	SEC		;SET CARRY NO TROUBLE
1934	010724	000401			BR	70;	;EXIT
1935	010726	000241		60:	CLC		;CARRY CLEAR = ERROR
1936	010730			70:			
1937	010730	010400			MOV	R4,R0	;PASS PACKET ADDRESS
1938	010732	000207			RTS	PC	;RETURN
1939							
1940							
1941							
1942							
1943							
1945		010740					
1947							
1948							
1949	010740	000000					
1950							
1951	010742	000000					
1952	010744	000000					
1953	010746	000000					
1954	010750	000000					
1955							
1956							

WRTCHR - WRITE CHARACTERISTICS COMMAND

```

1958 ;*
1959 ;ROUTINE TO ISSUE A WRITE CHARACTERISTICS
1960 ;COMMAND SO THAT OTHER COMMANDS WILL BE ACCEPTED
1961 ;
1962 ;INPUT:
1963 ;      R4      ADDRESS OF PACKET FROM TEST
1964 ;      R5      FIRST DEVICE UNIBUS ADDRESS
1965 ;      REQUIRES A CALL TO SOFINIT BE DONE PREVIOUSLY
1966 ;
1967 ;OUTPUT:
1968 ;      R0      TSSR CONTENTS
1969 ;      CARRY   SET - WRITE CHARACTERISTICS COMMAND OK
1970 ;             CLR - WRITE CHARACTERISTICS FAILED
1971 ;
1972 ;IMPLICIT OUTPUT:
1973 ;
1974 ;      MESSAGE BUFFER AND OTHER BUFFERS ALL SET UP
1975 ;      SOFTWARE SWITCHES SET AS FOLLOWS:
1976 ;             EXTFEA = EXTENDED FEATURES PRESENT
1977 ;             BENBSW = BUFFER ENABLE SWITCH ON OR OFF
1978 ;
1979 ;SIDE EFFECTS:
1980 ;
1981 WRTCHR::
1982 ; SAVREG          ;SAVE THE GENERAL REGISTERS
1983 ; CLR BENBSW      ;CLEAR BUFFER ENABLE SWITCH
1984 ; CLR EXTFEA      ;CLEAR EXTENDED FEATURES SW SWITCH
1985 10: MOV R4,TSD8(R5) ;SEND OUT COMMAND
1986 ; JSR PC,CHKTSSR  ;WAIT FOR SSR
1987 ; BCS 20:         ;BR, IF SSR IS SET AND OK
1988 ; BR 60:         ;BR IF TROUBLE CARRY = CLEAR
1989 20: MOV TSSR(R5),R1 ;READ TSSR
1990 ; MOV #SSR,R2    ;SET UP EXPECTED
1991 ; BIT #OFL,R1    ;WAS OFF LINE SET IN TSSR
1992 ; BEQ 25:        ;BR, IF NO OFL SET
1993 ; BIS #OFL,R2    ;MAKE THEM LOOK ALIKE
1994 25: CMP R2,R1      ;ARE THEY OK
1995 ; BEQ 40:        ;BR, IF EQUAL = OK
1996 ; BR 60:        ;TROUBLE EXIT
1997 40: ADD #8,R4      ;POINT TO WRT CHARA DATA PACKET
1998 ; MOV (R4),R3    ;GET ADDRESS OF MESSAGE BUFFER
1999 ; BIT #X2.EXTF,XST2(R3) ;EXTENDED FEATURES BIT SET?
2000 ; BEQ 45:        ;BR IF NO
2001 ; INC EXTFEA     ;SET EXTENDED FEATURES SW SWITCH
2002 45: BIT #X2.BUFE,XST2(R3) ;BUFFER ENABLE SWITCH SET
2003 ; BEQ 50:        ;BR, IF SWITCH NOT SET
2004 ; INC BENBSW     ;SET SOFTWARE SWITCH FOR ENABLED
2005 50: SEC          ;SET CARRY NO TROUBLE
2006 ; BR 70:        ;EXIT
2007 60: CLC          ;CARRY CLEAR = ERROR
2008 ; MOV TSSR(R5),R0 ;RETURN TSSR CONTENTS
2009 70: RTS          ;RETURN
2010 ;
2011 ;

```


REWIND - POSITION TAPE (REWIND) COMMAND

```

2013 .SBTTL REWIND - POSITION TAPE (REWIND) COMMAND
2014
2015 ;*
2016 ;THIS ROUTINE WILL REWIND THE SELECTED TAPE.
2017
2018 ; CAUTION: THE ROUTINE DOES NOT WAIT FOR BOT
2019 ; TO ARRIVE. ALSO THE CALLER MUST CHECK FOR
2020 ; SSR TO SET IN THE TSSR
2021
2022 ;
2023 ;CALLING SEQUENCE:
2024 ;
2025 ; DO A SOFT INIT
2026 ; DO A WRITE CHARACTERISTICS
2027 ; JSR PC,REWIND
2028
2029 ;INPUT:
2030 ;
2031 ; R5 FIRST DEVICE UNIBUS ADDRESS
2032 ;
2033 ;
2034 ;OUTPUT
2035 ;
2036 ; R0 THE CONTENTS OF R4 IS PASSED TO R0
2037 ;
2038 ;
2039 ;-
2040 REWIND::
2041 SAVREG
2042 MOV @RMPACK,R4 ;SAVE R1-R5 UNTIL NEXT RETURN
2043 MOV R4,TSDB(R5) ;GET PACKET ADDRESS
2044 MOV @360.,R3 ;SEND PACKET ADDRESS TO EXECUTE
2045 104: JSR PC,WAITF ;ENOUGH TIME FOR 2400' REEL TO REWIND
2046 BCS 204 ;WAIT FOR SSR TO SET
2047 DELAY 250. ;LEAVE WHEN SSR IS SET
2048 MOV @250.,(PC). ;WAIT FOR .25 SECONDS
2049 .WORD 0
2050 MOV L@DLY,(PC).
2051 .WORD 0
2052 DEC -6(PC)
2053 BNE -.4
2054 DEC -22(PC)
2055 BNE -.20
2056 DEC R3 ;BUMP COUNTER DOWN
2057 BNE 104 ;KEEP GOING
2058 CLC ;CLEAR CARRY TO SET ERROR
2059 204: MOV R4,R0 ;PASS THE PACKET ADDRESS
2060 RTS PC ;RETURN
2061
2062 RMPACK: .=<..10>6177770
2063 .WORD 102010 ;POSITION COMMAND (REWIND)
2064 .WORD 0 ;NOT USED

```


CKRAM - COMPARE RAM TO I/O PACKET

```

2061 .SBTTL CKRAM - COMPARE RAM TO I/O PACKET
2062
2063 ;
2064 ;ROUTINE TO READ THE FIRST 8 BYTES FROM RAM
2065 ;MEMORY AND COMPARE THIS DATA TO A COMMAND PACKET.
2066
2067 ;INPUT:
2068
2069 ; R4 ADDRESS OF THE COMMAND PACKET
2070 ; R5 FIRST DEVICE UNIBUS ADDRESS
2071
2072 ;OUTPUT:
2073
2074 ; CARRY SET - RAM MATCHES PACKET
2075 ; CLR - RAM DOES NOT MATCH PACKET
2076
2077 ;IMPLICIT OUTPUT:
2078
2079 ; THE TABLE RAMDATA IS FILLED WITH THE
2080 ; DATA HELD IN RAM.
2081 ; RAMSIZ IS SET TO 8. FOR PRAMPKT ROUTINE
2082
2083 ;SIDE EFFECTS:
2084
2085 ; THE SUBSYSTEM IS LEFT IN MAINTENANCE MODE
2086
2087 ;-
2088
2089 CKRAM:: SAVREG ;SAVE THE GENERAL REGISTERS
2090 011204 MOV #RAMDATA,R1 ;ADDRESS TO SAVE THE RAM DATA
2091 011204 MOV #RMPKTBEG,R2 ;BYTE ADDRESS OF FIRST RAM DATA
2092 011210 012701 002232 CLR R3 ;CLEAR THE ERROR FLAG
2093 011214 012702 000201 JSR PC,CHKTSSR ;WAIT FOR SSR
2094 011220 005003 016426 000000 10$: MOVB #0,TSDB(R5) ;SET MAINTENANCE MODE
2095 011222 004737 016426 JSR PC,CHKTSSR ;WAIT FOR SSR TO SET
2096 011226 112765 000000 10$: MOV R2,TSDB(R5) ;SELECT NEXT RAM ADDRESS
2097 011234 004737 016426 JSR PC,CHKTSSR ;WAIT FOR SSR TO SET
2098 011240 010265 000000 10$: MOV TSBA(R5),(R1) ;READ THE RAM DATA
2099 011244 004737 016426 10$: MOVB (R1)+,(R4)+ ;COMPARE TO EXPECTED
2100 011250 116511 000000 10$: CMPB R3 ;BRANCH IF OK
2101 011254 122124 000000 10$: BEQ 20$ ;SET ERROR FLAG
2102 011256 001401 000000 10$: INC R2 ;ADDRESS OF NEXT RAM LOCATION
2103 011260 005203 000000 10$: INC R2 ;REACHED END YET ?
2104 011262 005202 000210 20$: CMP R2,#RMPKTEND ;BRANCH TILL ALL READ
2105 011264 020227 000210 20$: BLE 10$ ;WAS AN ERROR FOUND ?
2106 011270 003761 000210 20$: TST R3 ;BRANCH IF NOT
2107 011272 005703 000210 20$: BEQ 30$ ;CLEAR CARRY TO SHOW ERROR
2108 011274 001402 000210 20$: CLC ;AND EXIT
2109 011276 000241 000210 20$: BR 50$ ;SHOW GOOD COMPARE
2110 011300 000401 000210 30$: SEC ;SETUP RAMSIZ FOR PRAMPKT ROUTINE
2111 011302 000261 000010 002272 50$: MOV #8.,RAMSIZ ;RETURN
2112 011312 000207 000010 002272 50$: RTS PC

```


CKRAM2 - COMPARE RAM TO I/O CHARACTERISTICS DATA

```

2114          .SBTTL  CKRAM2  - COMPARE RAM TO I/O CHARACTERISTICS DATA
2115          ;*
2116          ;
2117          ;ROUTINE TO READ THE FIRST 8 OR 10 BYTES FROM RAM
2118          ;MEMORY AND COMPARE THIS DATA TO A CHARACTERISTICS DATA BLOCK.
2119          ;
2120          ;INPUT:
2121          ;
2122          ;      R4      ADDRESS OF THE CHARACTERISTICS DATA
2123          ;      R5      FIRST DEVICE UNIBUS ADDRESS
2124          ;
2125          ;OUTPUT:
2126          ;
2127          ;      CARRY   SET - RAM MATCHES PACKET
2128          ;              CLR - RA DOES NOT MATCH PACKET
2129          ;
2130          ;IMPLICIT OUTPUT:
2131          ;
2132          ;      THE TABLE RAMDATA IS FILLED WITH THE
2133          ;      DATA HELD IN RAM.
2134          ;      RAMSIZ IS SET TO 8. OR 10. FOR PRAMPKT ROUTINE
2135          ;
2136          ;SIDE EFFECTS:
2137          ;
2138          ;      THE SUBSYSTEM IS LEFT IN MAINTENANCE MODE
2139          ;
2140          CKRAM2::
2141          SAVREG          ;SAVE THE GENERAL REGISTERS
2142          MOV             @RAMDATA,R1          ;ADDRESS TO SAVE THE RAM DATA
2143          MOV             @RMCHBEG,R2         ;BYTE ADDRESS OF FIRST RAM DATA
2144          CLR             R3                  ;CLEAR THE ERROR FLAG
2145          JSR             PC,CHKTSSR          ;WAIT FOR SSR
2146          MOVB           #0,TSDB(R5)         ;SET MAINTENANCE MODE
2147          JSR             PC,CHKTSSR          ;WAIT FOR SSR TO SET
2148          MOV             R2,TSDB(R5)        ;SELECT NEXT RAM ADDRESS
2149          JSR             PC,CHKTSSR          ;WAIT FOR SSR TO SET
2150          MOVB           TSBA(R5),(R1)       ;READ THE RAM DATA
2151          CMPB           (R1),.(R4)         ;COMPARE TO EXPECTED
2152          BEQ             20$                ;BRANCH IF OK
2153          INC             R3                  ;SET ERROR FLAG
2154          INC             R2                  ;ADDRESS OF NEXT RAM LOCATION
2155          MOV             #8,,RAMSIZ         ;ASSUME EXTFEA NOT SET
2156          TST             EXTFEA             ;IS THE SOFTWARE EXTENDED FEATURES SET
2157          BEQ             25$                ;BR, IF NOT SET
2158          MOV             #10,,RAMSIZ        ;SET RAMSIZ FOR EXTEND FEATURES
2159          CMP             R2,@RMCHEND        ;AT END OF EXTENDED BUFFER
2160          BLE             10$                ;BR, IF NOT AT END YET
2161          BR              27$                ;AT END BRANCH
2162          CMP             R2,@RMCHEND-2      ;REACHED END YET ?
2163          BLE             10$                ;BRANCH TILL ALL READ
2164          TST             R3                  ;WAS AN ERROR FOUND ?
2165          BEQ             30$                ;BRANCH IF NOT
2166          CLC                     ;CLEAR CARRY TO SHOW ERROR
2167          BR              50$                ;AND EXIT
2168          SEC                     ;SHOW GOOD COMPARE
2169          RTS              PC                ;RETURN

```


CKMSG - COMPARE WRITE CHAR. MESSAGE BUFFERS

```

2171          .SBTTL CKMSG - COMPARE WRITE CHAR. MESSAGE BUFFERS
2172          ;*
2173          ;
2174          ;ROUTINE TO COMPARE A WRITE CHARACTERISTICS EXPD AND RECV
2175          ;BUFFER. THE EXPECTED AND RECEIVED BUFFERS ARE STORED FOR
2176          ;ERROR PRINT ROUTINES.
2177          ;
2178          ;INPUT:
2179          ;
2180          ;      R0      RECV MESSAGE BUFFER HIGH ORDER ADDRESS
2181          ;      R1      RECV MESSAGE BUFFER LOW ORDER ADDRESS
2182          ;      R2      EXPD MESSAGE BUFFER ADDRESS
2183          ;OUTPUT:
2184          ;
2185          ;      CARRY   SET - MESSAGE BUFFERS MATCH
2186          ;              CLR MESSAGE BUFFERS DON'T MATCH
2187          ;
2188          ;IMPLICIT OUTPUT:
2189          ;
2190          ;      EXPMSG      BUFFER IS SET TO EXPD DATA
2191          ;      RECVMSG     BUFFER IS SET TO RECV DATA
2192          ;      RCVHIADD    SET TO HIGH ORDER ADDRESS OF RECV
2193          ;      RCVLOADD    SET TO LOW ORDER ADDRESS OF RECV
2194          ;
2195          ;-
2196          CKMSG::
2197          SAVREG          ;SAVE R1-R5 UNTIL NEXT RETURN
2198          MOV             R0,RCVHIADD    ;SAVE RECV HIGH ADDRESS
2199          MOV             R1,RCVLOAD    ;SAVE RECV LOW ADDRESS
2200          TST            KTENABLE       ;TESTING ABOVE 28K?
2201          BEQ            10$           ;BR IF NO
2202          JSR            PC,SETMAP      ;RETURN ADDRESS BIASED TO PAR6 IN R0
2203          MOV            R0,R1         ;GET RETURNED ADDRESS BIASED TO PAR6
2204          10$: CLR        R4            ;WORD IN BUFFER
2205          CLR            R3            ;CLEAR ERROR SEEN FLAG
2206          MOV            R2,R5         ;GET EXPD BUFFER ADDRESS
2207          15$: MOV        (R2),EXPMSG(R4) ;SAVE EXPD FOR ERROR REPORT
2208          MOV            (R1),RECVMSG(R4) ;SAVE RECV FOR ERROR REPORT
2209          CMP            (R2)+,(R1)+    ;EXPD EQUAL RECV?
2210          BEQ            25$           ;BR IF YES
2211          INC            R3            ;SET ERROR SEEN FLAG
2212          25$: ADD        #2,R4         ;POINT TO NEXT WORD ADDRESS
2213          CMP            R4,#14        ;DONE FIRST 7 WORDS?
2214          BLE            15$           ;BR IF NO
2215          BIT            #X2.EXTF,XST2(R5) ;IS EXTENDED FEATURES SET IN EXPD?
2216          BFO            50$           ;BR IF NO
2217          CMP            R4,#16        ;DONE EXTENDED FEATURES WORD?
2218          BLE            15$           ;BR IF NO
2219          50$: TST        R3            ;ANY ERRORS SEEN?
2220          BEQ            55$           ;BR IF NO
2221          CLC              ;SET FAILURE
2222          BR             60$           ;
2223          55$: SEC              ;SET SUCCESS
2224          60$: RTS            PC        ;RETURN

```


CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

```

2226 .SBTTL CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS
2227 ;*
2228 ;ROUTINE TO COMPARE AN EXPECTED AND RECEIVED MESSAGE
2229 ;BUFFER. THE EXPECTED AND RECEIVED BUFFERS ARE STORED FOR
2230 ;ERROR PRINT ROUTINES.
2231 ;
2232 ;INPUT:
2233 ;      R0      RECV MESSAGE BUFFER HIGH ORDER ADDRESS
2234 ;      R1      RECV MESSAGE BUFFER LOW ORDER ADDRESS
2235 ;      R2      EXPD MESSAGE BUFFER ADDRESS
2236 ;      R3      NUMBER OF BYTES TO COMPARE
2237 ;
2238 ;OUTPUT:
2239 ;      CARRY   SET - MESSAGE BUFFERS MATCH
2240 ;             CLR - MESSAGE BUFFERS DON'T MATCH
2241 ;
2242 ;IMPLICIT OUTPUT:
2243 ;      EXPMSG   BUFFER IS SET TO EXPD DATA
2244 ;      RECVMSG  BUFFER IS SET TO RECV DATA
2245 ;      RCVHIADD SET TO HIGH ORDER ADDRESS OF RECV
2246 ;      RCVLOAD  SET TO LOW ORDER ADDRESS OF RECV
2247 ;-
2248 CKMSG2::
2249     SAVREG                ;SAVE R1-R5 UNTIL NEXT RETURN
2250     CMP      R3,#RECVMSG-EXPMSG;800 IS COUNT ABOVE MAX ALLOWED?
2251     BLE      5#           ;800 BR IF NO
2252     MOV      #RECVMSG-EXPMSG,R3;800
2253     PRINTF   #DEBUGMSG    ;800
2254     MOV      #DEBUGMSG,-(SP)
2255     MOV      #1,-(SP)
2256     MOV      SP,R0
2257     TRAP     C#PRINTF
2258     ADD      #4,SP
2259     5# :     MOV      R0,RCVHIADD    ;SAVE RECV HIGH ADDRESS
2260             MOV      R1,RCVLOAD    ;SAVE RECV LOW ADDRESS
2261             TST      KTENABLE      ;TESTING ABOVE 28K?
2262             BEQ      10#           ;BR IF NO
2263             JSR      PC,SETMAP     ;RETURN ADDRESS BIASED TO PAR6 IN R0
2264             MOV      R0,R1        ;GET RETURNED ADDRESS BIASED TO PAR6
2265     10# :    CLR      R4           ;WORD IN BUFFER
2266             CLR      R5           ;CLEAR ERROR SEEN FLAG
2267     15# :    MOV8     (R2),EXPMSG(R4) ;SAVE EXPD FOR ERROR REPORT
2268             MOV8     (R1),RECVMSG(R4) ;SAVE RECV FOR ERROR REPORT
2269             CMP8     (R2)+,(R1)+   ;EXPD EQUAL RECV?
2270             BEQ      25#           ;BR IF YES
2271             INC      R5           ;SET ERROR SEEN FLAG
2272     25# :    ADD      #1,R4        ;POINT TO NEXT BYTE
2273             CMP      R4,R3        ;DONE ALL BYTES?
2274             BGE      50#           ;BR IF YES
2275             BR       15#          ;DO NEXT BYTE
2276     50# :    TST      R5           ;ANY ERRORS SEEN?
2277             BEQ      55#           ;BR IF NO
2278             CLC                ;SET FAILURE
2279             BR       60#          ;
2280     55# :    SEC                ;SET SUCCESS
2281     60# :    RTS      PC          ;RETURN

```


CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

```

2278 011722      120      122      117 DEBUGMSG: .ASCIZ 'PROGRAM INTERNAL ERROR -CKMSG2 MESSAGE BUFFER EXCEEDED-' ;880
2279 012012      045      116      045 FERCM:  .ASCII /NMA ***/
2280 012023      040      040      124 ERCH:   .ASCIZ / TSSR ERROR CODE REC'D = /
2281 012056      056      056      056 SIMSG:  .ASCIZ /... AFTER DOING SOFT INIT/
2282 012111      124      105      123 TINERR: .ASCIZ /TEST: .../
2283                                     .EVEN
2284                                     ;*
2285                                     ;PRINT ROUTINE TO FATAL SOFT INIT ERRORS
2286                                     ;
2287                                     ;INPUT:
2288                                     ;
2289                                     ;      R1      CONTENTS OF TSSR AT ERROR
2290                                     ;
2291                                     ;SIDE EFFECTS:
2292                                     ;
2293                                     ;      EXECUTES DROP UNIT TO CEASE TESTING
2294                                     ;
2295                                     ;
2296                                     ;-
2297
2298 012124      BGNMSG  SFIMSG
2299 012124      SFIMSG:: JSR      PC,PRITSSR      ;PRINT CONTENTS OF TSSR REGISTER
2300 012130      004737  006022 JSR      PC,CKDROP      ;DROP UNIT, IF ALLOWED
2301 012134      004737  017272 ENDMMSG
2302 012134      L10003: TRAP      C$MSG
2303                                     ;
2304                                     ;PRINT ROUTINE TO PRINT THE CONTENTS OF
2305                                     ;TSSR AND A COMMAND PACKET OTHER THAN GET STATUS COMMAND PACKET.
2306                                     ;
2307                                     ;INPUTS:
2308                                     ;
2309                                     ;      R1      TSSR CONTENTS
2310                                     ;      R4      ADDRESS OF COMMAND PACKET
2311                                     ;
2312                                     ;-
2313
2314 012136      BGNMSG  PKTSSR
2315 012136      PKTSSR:: JSR      PC,PRITSSR      ;PRINT THE CONTENTS OF TSSR REGISTER
2316 012142      004737  006022 MOV      #4,R0      ;NO. OF WORDS IN PACKET
2317 012146      004737  007460 JSR      PC,PRIPKT      ;PRINT THE CONTENTS OF COMMAND PACKET
2318 012152      ENDMMSG
2319 012152      L10004: TRAP      C$MSG
2320 012152      104423

```


CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

```

2320
2321      ;PRINT ROUTINE TO PRINT THE CONTENTS OF
2322      ;TSSR AND A GET STATUS COMMAND PACKET.
2323
2324      ;INPUTS:
2325
2326      ;      R1      TSSR CONTENTS
2327      ;      R4      ADDRESS OF COMMAND PACKET
2328
2329      ;-      BGNMSG  PKTGETS
2330      PKTGETS:
2331      JSR      PC,PRITSSR      ;PRINT THE CONTENTS OF TSSR REGISTER
2332      MOV      #2,R0          ;NO. OF WORDS IN GET STATUS PACKET
2333      JSR      PC,PRIPKT      ;PRINT THE CONTENTS OF COMMAND PACKET
2334      ENDMSG
2335
2336      L10005:
2337      TRAP      C#MSG
2338
2339      ;PRINT TSSR ERRORS FOR INITIALIZATION TESTS
2340
2341      ;INPUTS:
2342
2343      ;      R1      TSSR CONTENTS
2344      ;      R4      ADDRESS OF COMMAND PACKET
2345
2346      ;-      BGNMSG  SFFMSG
2347      SFFMSG:
2348      JSR      PC,PRITSSR      ;PRINT CONTENTS OF TSSR REGISTER
2349      ENDMSG
2350
2351      L10006:
2352      TRAP      C#MSG
2353      .SBTTL    PKTMES  - PRINT TSSR AND MESSAGE BUFFER
2354
2355      ;PRINT ROUTINE TO PRINT THE CONTENTS OF TSSR AND MESSAGE
2356      ;BUFFER FOR ERROR REPORTS
2357
2358      ;INPUTS:
2359
2360      ;      R1      CONTENTS OF TSSR
2361      ;      R2      LOW ORDER MESSAGE BUFFER
2362      ;      R3      HIGH ORDER MESSAGE BUFFER ADDRESS
2363      ;      NOTE: R3 IS IGNORED IF KTENABLE FLAG IS CLEAR
2364
2365      ;-      BGNMSG  PKTMES
2366      PKTMES:
2367      JSR      PC,PRITSSR      ;PRINT CONTENTS OF TSSR
2368      MOV      R2,R0          ;LOW ORDER ADDRESS
2369      MOV      R3,R1          ;HIGH ORDER ADDRESS
2370      JSR      PC,PRMESS      ;PRINT THE MESSAGE BUFFER
2371      ENDMSG
2372
2373      L10007:
2374      TRAP      C#MSG

```


ADDSSR - PRINT TEST ADDRESS AND TSSR

```

2363      .SBTTL  ADDSSR - PRINT TEST ADDRESS AND TSSR
2364      ;*
2365      ;PRINT ROUTINE TO PRINT THE CONTENTS OF
2366      ;TSSR AND A MEMORY TEST ADDRESS
2367      ;
2368      ;INPUTS:
2369      ;
2370      ;      R5      FIRST DEVICE UNIBUS ADDRESS
2371      ;      ERRHI   HIGH ORDER MEMORY TEST ADDRESS
2372      ;      ERRLO   LOW ORDER MEMORY TEST ADDRESS
2373      ;
2374      ;
2375      BGNMSG  ADDSSR
012216  ADDSSR:
012216      JSR      PC,PRITADD      ;PRINT MEMORY TEST ADDRESS
2376      MOV      TSSR(R5),R1      ;GET CURRENT TSSR
2377      JSR      PC,PRITSSR      ;PRINT THE CONTENTS OF TSSR REGISTER
2378      ENDMSG
2379      L10010:
012232      TRAP      C#MSG
012232      104423

2380      .SBTTL  MSGEXP - PRINT WRITE CHAR. EXPD-RCV MESSAGE BUFFERS
2381      ;*
2382      ;PRINT ROUTINE TO PRINT WRITE CHARACTERISTIC MESSAGE BUFFER
2383      ;
2384      ;IMPLICIT INPUTS:
2385      ;
2386      ;      EXPMSG - EXPECTED MESSAGE BUFFER
2387      ;      RECMG - RECEIVED MESSAGE BUFFER
2388      ;      RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
2389      ;      RCVLOAD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
2390      ;
2391      ;
2392      ;
2393      BGNMSG  MSGEXP
012234  MSGEXP:
012234      MOV      #7,R0      ;ASSUME NO EXT FEATURES
2394      TST      EXTFEA      ;EXT FEATURES SET?
2395      BEQ      S#      ;BR IF NO
2396      MOV      #8.,R0      ;EXT FEATURE BUFFER IS 8 WORDS
2397      JSR      PC,PRMSGEXP      ;PRINT EXPD/RCV MESSAGE BUFFERS
2398      ENDMSG
2399      L10011:
012256      TRAP      C#MSG
012256      104423

```


FIFEXP - PRINT FIFO EXP/RECV DATA

```

2401 .SBTTL FIFEXP - PRINT FIFO EXP/RECV DATA
2402
2403 ;*
2404 ;PRINT ROUTINE TO PRINT FIFO EXP/RECV DATA
2405 ;
2406 ; R1 - BYTE COUNT
2407 ;
2408 ;IMPLICIT INPUTS:
2409 ;
2410 ; EXPMSG - EXPECTED MESSAGE BUFFER (CONTAINS FIFO DATA ONLY)
2411 ; RECMMSG - RECEIVED MESSAGE BUFFER (CONTAINS FIFO DATA ONLY)
2412 ;
2413 BGNMSG FIFEXP
2414 FIFEXP:
2415 PRINTX #FIF1MSG,R1 ;PRINT BYTES TRANSFERRED
2416 MOV R1,-(SP)
2417 MOV #FIF1MSG,-(SP)
2418 MOV #2,-(SP)
2419 MOV SP,R0
2420 TRAP C#PNTX
2421 ADD #6,SP
2422 PRINTX #FIF2MSG ;PRINT HEADER MSG
2423 MOV #FIF2MSG,-(SP)
2424 MOV #1,-(SP)
2425 MOV SP,R0
2426 TRAP C#PNTX
2427 ADD #4,SP
2428 MOV R1,R0 ;GET BYTE COUNT
2429 JSR PC,PRBYTEXP ;PRINT FIFO BYTES IN ERROR
2430 ENDMMSG
2431 L10012:
2432 TRAP C#MSG
2433 .ASCIZ '***A NUMBER OF BYTES TRANSFERRED = #D2'
2434 .ASCIZ '***A FIFO DATA BYTES IN ERROR:'
2435 .EVEN

```


MSGSTAT - PRINT STATUS HEADER AND MESSAGE BUFFERS

```

2423          .SBTTL MSGSTAT - PRINT STATUS HEADER AND MESSAGE BUFFERS
2424          ;*
2425          ;
2426          ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV
2427          ;
2428          ;
2429          ;IMPLICIT INPUTS:
2430          ;
2431          ;   EXPMSG - EXPECTED MESSAGE BUFFER
2432          ;   RECMMSG - RECEIVED MESSAGE BUFFER
2433          ;   RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
2434          ;   RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
2435          ;
2436          BGNMSG MSGSTAT
MSGSTAT:
2437          MOV     #STATCOD,R1      ;ASCII ADDRESS TABLE
2438          MOV     (R1)+,R0          ;DONE ALL MSG LINES?
2439          BEQ     20$,R0           ;BR IF YES
2440          PRINTX  R0               ;PRINT STATUS BIT NAMES
          MOV     R0,-(SP)
          MOV     #1,-(SP)
          MOV     SP,R0
          TRAP    C#PNTX
          ADD     #4,SP
          BR      10$,R0            ;DO ANOTHER MSG LINE
2441          MOV     #10,R0           ;NUMBER OF WORDS IN A READ STATUS BUFFER
2442          JSR     PC,PRMSGEXP      ;PRINT EXPD/RECV MESSAGE BUFFERS
2443          ENDMMSG
          L10013:
          TRAP    C#MSG
2444          STATCOD: .WORD 1$,2$,3$,4$,5$,6$,0
2445          1$: .ASCIIZ 'N$A Tape Bus Signals in Word #8:'
2446          2$: .ASCIIZ 'N$A PARERR<15> IEOT <12> IFMK <9> IRDY<6> IRWD<2>'
2447          3$: .ASCIIZ 'N$A IRESV2<14> IIDENT<11> IHER <8> IONL<5> IFBY<1>'
2448          4$: .ASCIIZ 'N$A IRESV1<13> ICER <10> ISPEED<7> ILDP<4> IFPT<0>'
2449          5$: .ASCIIZ 'N$A Tape Bus Signals in Word #9:'
2450          6$: .ASCIIZ 'N$A DATMIS<7> ILW<6> OUTRDY<5> INRDY<4>'
2451          .EVEN
2452
2453
2454

```


MSGLOOP - PRINT LOOPBACK HEADER AND MESSAGE BUFFERS

```

2456          .SBTTL MSGLOOP - PRINT LOOPBACK HEADER AND MESSAGE BUFFERS
2457          ;*
2458          ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV
2459          ;
2460          ;IMPLICIT INPUTS:
2461          ;
2462          ;      EXPMSG - EXPECTED MESSAGE BUFFER
2463          ;      RECHMSG - RECEIVED MESSAGE BUFFER
2464          ;      RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
2465          ;      RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
2466          ;
2467          ;-
2468          BGNMSG MSGLOOP
MSGLOOP:
2469          013154 012701 013216      MOV     #LOOPCOD,R1      ;ASCII ADDRESS TABLE
2470          013160 012100             10$: MOV     (R1)+,R0      ;DONE ALL MSG LINES?
2471          013162 001410             BEQ     20$              ;BR IF YES
2472          013164             PRINTX  R0                      ;PRINT STATUS BIT NAMES
2473          013164 C10046             MOV     R0,-(SP)
2474          013166 012746 000001      MOV     #1,-(SP)
2475          013172 010600             MOV     SP,R0
2476          013174 104415             TRAP    C#PNTX
2477          013176 062706 000004      ADD     #4,SP
2478          013202 000766             BR      10$              ;DO ANOTHER MSG LINE
2479          013204 012700 000012      20$: MOV     #10,R0      ;NUMBER OF WORDS IN A READ STATUS BUFFER
2480          013210 004737 014642      JSR     PC,PRMSGEXP      ;PRINT EXPD/RECV MESSAGE BUFFERS
2481          013214             ENDMMSG
2482          013214 L10014:           TRAP    C#MSG
2483          013214 104423
2484          013216 013236 013311 013410 LOOPCOD: .WORD 1$,2$,3$,4$,5$,6$,7$,0
2485          013236 045 116 045 1$: .ASCIZ '###A Tape Bus Loopback Signals in Word #8:'
2486          013311 045 116 045 2$: .ASCIZ '###A PAREPR<15> IRESV2<14> IRESV1<13>'
2487          013410 045 116 045 3$: .ASCIZ '###A IHISP=>IEOT<12> IWRT=>IIDENT<11> IREV =>ICER <10>'
2488          013507 045 116 045 4$: .ASCIZ '###A IWFM =>IFMK<09> IEDIT=>IHER <08> IFAD =>ISPEED<07>'
2489          013606 045 116 045 5$: .ASCIZ '###A ITADO=>IRDY<06> ITAD1=>IOML <05> IERASE=>ILDOP <04>'
2490          013705 045 116 045 6$: .ASCIZ '###A IREW =>IDBY<03> IRWU =>IRWD <02> IFEN =>IFBY <01>'
2491          014004 045 116 045 7$: .ASCIZ '###A IGO =>IFPT<00>'
2492          .EVEN

```


MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER

```

2488 .SBTTL MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER
2489 ;*
2490 ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RCV
2491 ;
2492 ;
2493 ;IMPLICIT INPUTS:
2494 ;
2495 ;     EXPMSG - EXPECTED MESSAGE BUFFER
2496 ;     RECHMSG - RECEIVED MESSAGE BUFFER
2497 ;     RCVHIADD - RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
2498 ;     RCVLOADD - RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
2499 ;
2500 ;-
2501 BGNMSG MSGSUB
2502 MSGSUB::
2503     MOV     #10.,R0           ;SIZE OF WRITE SUBSYSTEM BUFFER
2504     JSR     PC,PRMSGEXP      ;PRINT EXPD/RCV MESSAGE BUFFERS
2505     ENDMMSG
2506 L10015:
2507     TRAP    C#MSG
2508
2509 .SBTTL MEMADD - PRINT MEMORY ADDRESS DATA ERROR
2510 ;*
2511 ;PRINT ROUTINE TO PRINT MEMORY ADDRESS DATA COMPARE ERROR
2512 ;
2513 ;IMPLICIT INPUTS:
2514 ;
2515 ;     ERRHI - MEMORY ERROR HIGH ORDER ADDRESS
2516 ;     ERRLO - MEMORY ERROR LOW ORDER ADDRESS
2517 ;     EXP - EXPECTED DATA
2518 ;     RECV - RECEIVED DATA
2519 ;-
2520 BGNMSG MEMADD
2521 MEMADD::
2522     JSR     PC,PRIADD        ;PRINT MEMORY ADDRESS IN ERROR
2523     MOV     EXPD,R1          ;GET EXPD DATA
2524     MOV     RECV,R2          ;GET RECEIVED DATA
2525     JSR     PC,PRIXOR        ;PRINT EXPD/RCV
2526     ENDMMSG
2527 L10016:
2528     TRAP    C#MSG

```


PRAMPKT - PRINT RAM AND PACKET DATA

```

2525 .SBTTL PRAMPKT - PRINT RAM AND PACKET DATA
2526
2527 ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
2528 ;WHEN THE RAM DATA DOES NOT MATCH.
2529
2530 ;INPUTS:
2531
2532 ; R4 POINTER TO COMMAND PACKET
2533 ;IMPLICIT INPUTS:
2534 ; RAMDATA DATA AS READ FROM THE RAM
2535 ; RAMSIZ NUMBER OF BYTES IN PACKET
2536 ; IF RAMSIZ=0 THEN DEFAULT TO 8.
2537
2538 ;IMPLICIT OUTPUTS:
2539 ; RAMSIZ SET TO 0
2540
2541 PRAMPKT:
2542 SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
2543 MOV #RAMDATA,R1 ;DATA FROM THE RAM
2544 CLR R2 ;INIT BYTE NUMBER
2545 5: CMPB (R1),.(R4), ;COMPARE EXPECTED, RECEIVED
2546 BNE 7: ;BR IF NO MATCH
2547 FORCERROR 7:NOTSSR
2548 BR 10: ;880
2549 7: MOVB -1(R1),R5 ;GET RECV RAM DATA
2550 MOVB -1(R4),R3 ;GET EXPD PACKET DATA
2551 XOR R5,R3 ;XOR EXPD/RECV
2552 BIC #177400,R3 ;LOW BYTE ONLY
2553 MOVB -1(R1),RECV ;GET RECEIVED RAM DATA
2554 MOVB -1(R4),EXPD ;GET EXPECTED RAM DATA
2555 PRINTB #RAMASC,R2,RECV,EXPD,R3
2556 MOV R3,-(SP)
2557 MOV EXPD,-(SP)
2558 MOV RECV,-(SP)
2559 MOV R2,-(SP)
2560 MOV #RAMASC,-(SP)
2561 MOV #5,-(SP)
2562 MOV SP,R0
2563 TRAP C:PNTB
2564 ADD #14,SP
2565 10: INC R2 ;UPDATE BYTE COUNT
2566 TST RAMSIZ ;DEFAULT TO 8.?
2567 BEQ 15: ;BR IF YES
2568 CMP R2,RAMSIZ ;DONE ALL BYTES?
2569 BLE 5: ;BR IF NO
2570 BR 25:
2571 15: CMP R2,#8. ;DONE DEFAULT NUMBER OF BYTES?
2572 BLT 5: ;BR IF NO
2573 25: CLR RAMSIZ ;SET DEFAULT RAMSIZ
2574 RTS PC ;RETURN
2575
2576 045 116 045 RAMASC: .ASCIZ '##A BYTE: #02#A RAM: #03#A Packet: #03#A XOR:#03'
2577 .EVEN
2578

```



```

2570 .SBTTL PRMESS - PRINT CONTENTS OF MESSAGE BUFFER
2571 ;*
2572 ;THIS ROUTINE PRINTS THE CONTENTS OF
2573 ;THE 7 OR 8 WORD MESSAGE BUFFER RETURNED BY THE TSV-05.
2574 ;
2575 ;INPUT:
2576 ;      R0          LOW ORDER ADDRESS OF MESSAGE BUFFER
2577 ;      R1          HIGH ORDER ADDRESS OF MESSAGE BUFFER
2578 ;      NOTE: R1 IS IGNORED IF KTENABLE FLAG IS CLEAR
2579 ;THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
2580 ;-
2581 PRMESS: SAVREG                                ;SAVE THE REGISTERS
2582         MOV     R0,R5                          ;SAVE LOW ORDER ADDRESS
2583         TST     KTENABLE                       ;ADDRESS ABOVE 28K?
2584         BNE     100                            ;BR IF YES
2585         CLR     R1                             ;SET HIGH ORDER ADDRESS TO 0
2586         MOV     R1,R3                         ;SAVE HIGH ORDER ADDRESS
2587         ROL     R0                             ;SHIFT BIT15 TO C BIT
2588         ROL     R1                             ;SHIFT TO HIGH ORDER FOR PRINTOUT
2589         PRINTX  @PROASC,R1,R5                 ;PRINT MESSAGE BUFFER ADDRESS
2590         MOV     R5,-(SP)
2591         MOV     R1,-(SP)
2592         MOV     @PROASC,-(SP)
2593         MOV     @3,-(SP)
2594         MOV     SP,R0
2595         TRAP    C:PNTX
2596         ADD     @10,SP
2597         PRINTX  @PRIASC                        ;PRINT HEADER FOR CONTENTS
2598         MOV     @PRIASC,-(SP)
2599         MOV     @1,-(SP)
2600         MOV     SP,R0
2601         TRAP    C:PNTX
2602         ADD     @4,SP
2603         CLR     R4                             ;NUMBER OF THE NEXT WORD
2604         MOV     R5,R1                         ;COPY LOW ORDER ADDRESS
2605         MOV     R3,R0                         ;COPY HIGH ORDER ADDRESS
2606         BEQ     200                            ;BR IF NOT ABOVE 28K
2607         JSR     PC,SETHAP                     ;SETUP PAR ADDRESS IN R0
2608         MOV     R0,R5                         ;GET PAR FORMAT ADDRESS ABOVE 28K
2609         PRINTX  @PRASC,R4,(R5),              ;PRINT THE CONTENTS OF MEMORY BUFFER
2610         MOV     (R5),-(SP)
2611         MOV     R4,-(SP)
2612         MOV     @PRASC,-(SP)
2613         MOV     @3,-(SP)
2614         MOV     SP,R0
2615         TRAP    C:PNTX
2616         ADD     @10,SP
2617         INC     R4                             ;NUMBER OF THE NEXT
2618         CMP     R4,@7                         ;DONE ALL YET ?
2619         BGT     500                            ;BRANCH IF ALL DONE
2620         BLT     200                            ;PRINT FIRST 7 WORDS
2621         BIT     @X2.EXTF,XST2(R3),            ;EXTENDED FEATUTES ON ?
2622         BNE     200                            ;PRINT EXTENDED STATUS WORD
2623         RTS     PC                             ;RETURN
2624         500:                                     ;
2625         PROASC: .ASCIIZ '##A Message Buffer Address = #01#05'
2626         PRIASC: .ASCIIZ '##A Message Buffer Contents:'
2627         PRASC:  .ASCIIZ '##A Word#01#A: #0'

```


PRMESS - PRINT CONTENTS OF MESSAGE BUFFER

```

2609 .EVEN
2610 .SBTTL PRMSGEXP - PRINT EXPD/RCV MESSAGE BUFFERS
2611 ;*
2612 ;ROUTINE TO PRINT EXPECTED AND RECEIVED MESSAGE BUFFERS
2613 ; R0 - NUMBER OF WORDS IN BUFFER
2614 ;IMPLICIT INPUTS:
2615 ; EXPMSG - EXPECTED MESSAGE BUFFER
2616 ; RECMSG - RECEIVED MESSAGE BUFFER
2617 ; RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
2618 ; RCVLOAD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
2619 ;-
2620 PRMSGEXP::
2621 SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
2622 MOV R0,R5 ;SAVE NUMBER OF WORDS
2623 MOV RCVLOAD,R0 ;GET RCV LOW ADDRESS
2624 MOV R0,R4 ;COPY LOW ADDRESS
2625 MOV RCVHIADD,R1 ;GET RCV HIGH ADDRESS
2626 ROL R0 ;SHIFT BIT15 TO C BIT
2627 ROL R1 ;SHIFT TO HIGH ORDER FOR PRINTOUT
2628 PRINTX #PRMSG0,R1,R4 ;PRINT MESSAGE BUFFER ADDRESS
2629 MOV R4,-(SP)
2630 MOV R1,-(SP)
2631 MOV #PRMSG0,-(SP)
2632 MOV #3,-(SP)
2633 MOV SP,R0
2634 TRAP C#PNTX
2635 ADD #10,SP
2636 PRINTX #PRMSG1 ;PRINT HEADER FOR CONTENTS
2637 MOV #PRMSG1,-(SP)
2638 MOV #1,-(SP)
2639 MOV SP,R0
2640 TRAP C#PNTX
2641 ADD #4,SP
2642 CLR R4 ;NUMBER OF THE CURRENT WORD
2643 MOV #EXPMSG,R1 ;GET EXPD BUFFER ADDRESS
2644 MOV #RECMSG,R2 ;GET RCV BUFFER ADDRESS
2645 20$: MOV (R1),R0 ;GET EXPD
2646 MOV (R2),R3 ;GET RCV
2647 XOR R0,R3 ;XOR EXPD/RCV
2648 PRINTX #PRMSG2,R4,(R1)+,(R2)+,R3
2649 MOV R3,-(SP)
2650 MOV (R2)+,-(SP)
2651 MOV (R1)+,-(SP)
2652 MOV R4,-(SP)
2653 MOV #PRMSG2,-(SP)
2654 MOV #5,-(SP)
2655 MOV SP,R0
2656 TRAP C#PNTX
2657 ADD #14,SP
2658 INC R4 ;NUMBER OF THE NEXT
2659 CMP R4,R5 ;DONE ALL YET?
2660 BGE 50$ ;BR IF YES
2661 BR 20$ ;DO ANOTHER
2662 50$: RTS PC ;RETURN
2663 045 PRMSG0: .ASCII 'N#A Message Buffer Address = #01#05'
2664 045 PRMSG1: .ASCII 'N#A Message Buffer Contents:'
2665 045 PRMSG2: .ASCII 'N#A WORD #02#A EXPD: #06#A RCV: #06#A XOR: #06'

```


PRMSGEXP - PRINT EXPD/RCV MESSAGE BUFFERS

```

546          .EVEN
547          .SBTTL PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER
2648
2649          ;
2650          ;ROUTINE TO PRINT ERROR BYTES IN MESSAGE BUFFERS
2651          ; ONLY THE FIRST 8 ERRORS ENCOUNTERED ARE PRINTED DUE TO SCREEN SPACE
2652          ;
2653          ; R0      - NUMBER OF BYTES IN BUFFER
2654          ;
2655          ;IMPLICIT INPUTS:
2656          ;
2657          ; EXPMSG  - EXPECTED MESSAGE BUFFER
2658          ; RECMSG  - RECEIVED MESSAGE BUFFER
2659          ;
2660          PRBYTEXP
2661          SAVREG
2662          MOV     R0,R5          ;SAVE R1-R5 UNTIL NEXT RETURN
2663          CLR     PRMNO          ;SAVE NUMBER OF BYTES
2664          CLR     R4             ;INIT ERROR COUNT
2665          MOV     @EXPMSG,R1     ;NUMBER OF THE CURRENT BYTE
2666          MOV     @RECMSG,R2     ;GET EXPD BUFFER ADDRESS
2667          MOV     (R1),R0       ;GET RECV BUFFER ADDRESS
2668          BIC     @C<377>,R0    ;GET EXPD BYTE
2669          MOV     R0,PRBEXP      ;CLEAR UPPER BYTE
2670          MOV     (R2),R3       ;SAVE FOR ERROR REPORT
2671          BIC     @C<377>,R3    ;GET RECV BYTE
2672          MOV     R3,PRBREC      ;CLEAR UPPER BYTE
2673          XOR     R0,R3         ;FOR ERROR REPORT
2674          CMP     (R1),R2       ;XOR EXPD/RCV
2675          BEQ     30$           ;EXPD = RECV?
2676          INC     PRMNO         ;BR IF YES
2677          CMP     PRMNO,08      ;UPDATE ERROR COUNT
2678          BHI     30$           ;PRINTED 8?
2679          PRINTX @PRBMSG,R4,PRBEXP,PRBREC,R3 ;BR IF YES
2680          MOV     R3,-(SP)
2681          MOV     PRBREC,-(SP)
2682          MOV     PRBEXP,(SP)
2683          MOV     R4,-(SP)
2684          MOV     @PRBMSG,-(SP)
2685          MOV     @5,-(SP)
2686          MOV     SP,R0
2687          TRAP    C:PNTX
2688          ADD     @14,SP
2689          FORCEXIT 50$          ;880
2690          BR      35$          ;880
2691          30$: FORCERROR 27$,NOTSSR ;880
2692          35$:
2693          INC     R4             ;NUMBER OF THE NEXT
2694          CMP     R4,R5         ;DONE ALL YET?
2695          BGE     50$           ;BR IF YES
2696          BR      20$           ;DO ANOTHER
2697          50$: PRINTX @PRBTOT,PRMNO ;PRINT TOTAL ERROR COUNT
2698          MOV     PRMNO,-(SP)
2699          MOV     @PRBTOT,-(SP)
2700          MOV     @2,-(SP)
2701          MOV     SP,R0

```


PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER

```

015416 104415
015420 062706 000006
2690 015424 000207 TRAP C:PNTX
ADD #6,SP
RTS PC ;RETURN
2691
2692 015426 045 116 045 PRBMSG: .ASCIZ 'N#A BYTE #D2#A EXPD: #03#A RECV: #03#A (OR: #03#A
2693 015513 045 116 045 PRBTOT: .ASCIZ 'N#A NUMBER OF BYTES IN ERROR = #D2'
2694 .EVEN
2695 015560 000000 PRBEXP: .WORD 0 ;EXPD
2696 015562 000000 PRBREC: .WORD 0 ;RECV
2697 .SBTTL EXPREC - PRINT EXPD/RECV WORD DATA
2698
2699 ;
2700 ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
2701 ;
2702 ;INPUTS
2703 ;
2704 ; R1 RECEIVED DATA
2705 ; R2 EXPECTED DATA
2706 ;
2707 ;
2708
2709 015564 BGNMSG EXPREC
015564 EXPREC:
2710 015564 004737 010032 JSR PC,PRIXOR ;PRINT THE DATA
2711 015570 ENDMMSG
015570 L10017:
015570 104423 TRAP C:MSG
.SBTTL EXPBREC - PRINT EXPD/RECV BYTE DATA
2712
2713 ;
2714 ;PRINT ROUTINE TO DISPLAY BYTE EXPD/RECV DATA
2715 ;
2716 ;
2717 ;INPUTS:
2718 ;
2719 ; R1 RECEIVED DATA BYTE
2720 ; R2 EXPECTED DATA BYTE
2721 ;
2722 ;
2723 ;
2724
2725 015572 BGNMSG EXPBREC
015572 EXPBREC:
2726 015572 004737 007702 JSR PC,PRIBXOR ;PRINT THE DATA
2727 015576 ENDMMSG
015576 L10020:
015576 104423 TRAP C:MSG
2728
2729 .SBTTL RAMERR - PRINT RAM AND PACKET DATA
2730
2731 ;
2732 ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
2733 ;
2734 ;INPUTS:
2735 ;
2736 ; R4 POINTER TO COMMAND PACKET
2737 ;
2738 ;

```


RAMERR - PRINT RAM AND PACKET DATA

```

2739      ;IMPLICIT INPUTS:
2740      ;
2741      ;      RAMDATA      DATA AS READ FROM THE RAM
2742      ;      RAMSIZ      NUMBER OF BYTES IN PACKET
2743      ;                      IF RAMSIZ=0 THEN DEFAULT TO 8.
2744      ;
2745      ;IMPLICIT OUTPUTS:
2746      ;
2747      ;      RAMSIZ      SET TO 0
2748      ;
2749      ;
2750      015600      BGNMSG      RAMERR
2751      015600      RAMERR::   JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
2752      015604      004737      014066      ENDMMSG
2753      015604      L10021:    TRAP      C#MSG
2754      015604      104423
2755      ;
2756      ;      .SBTTL      RAMTADD - PRINT TEST ADDRESS, RAM AND PACKET DATA
2757      ;
2758      ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
2759      ;
2760      ;IMPLICIT INPUTS:
2761      ;
2762      ;      R4          POINTER TO COMMAND PACKET
2763      ;
2764      ;IMPLICIT INPUTS:
2765      ;
2766      ;      RAMDATA      DATA AS READ FROM THE RAM
2767      ;      RAMSIZ      NUMBER OF BYTES IN PACKET
2768      ;                      IF RAMSIZ=0 THEN DEFAULT TO 8.
2769      ;      ERRHI       HIGH ORDER TEST ADDRESS
2770      ;      ERRLO       LOW ORDER TEST ADDRESS
2771      ;
2772      ;IMPLICIT OUTPUTS:
2773      ;
2774      ;      RAMSIZ      SET TO 0
2775      ;
2776      ;
2777      015606      BGNMSG      RAMTADD
2778      015606      RAMTADD::  JSR      PC,PRITADD      ;PRINT TEST ADDRESS
2779      015612      004737      010364      JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
2780      015616      ENDMMSG
2781      015616      L10022:    TRAP      C#MSG
2782      015616      104423
2783      ;
2784      ;      .SBTTL      RAMEXP - PRINT RAM EXPD/RECV DATA
2785      ;
2786      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
2787      ;
2788      ;IMPLICIT INPUTS:
2789      ;
2790      ;      R1          RECEIVED DATA
2791      ;      R2          EXPECTED DATA

```


RAMEXP - PRINT RAM EXPD/RECV DATA

```

2790      R4      CONTROLLER RAM ADDRESS
2791      ;
2792      ;
2793      BGNMSG  RAMEXP
2794      RAMEXP: BIC      #C<377>,R1      ;SAVE EXPD RAM DATA BYTE
2795      BIC      #C<377>,R2      ;SAVE EXPD RAM DATA BYTE
2796      JSR      PC,PRIRAM      ;PRINT THE RAM ADDRESS
2797      JSR      PC,PRIXOR      ;PRINT THE DATA
2798      ENDMSG
2799      L10023:
2800      TRAP      C#MSG
2801      .SBTTL  TIMEXP - PRINT TIMER A,B AND EXP/REC
2802      ;
2803      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
2804      ;AND TIMER A,B HEADER MESSAGE
2805      ;
2806      ;INPUTS:
2807      ;
2808      R1      RECEIVED DATA
2809      R2      EXPECTED DATA
2810      ;
2811      ;
2812      BGNMSG  TIMEXP
2813      TIMEXP: PRINTX   #TIMSGO      ;PRINT HEADER
2814      MOV      #TIMSGO,-(SP)
2815      MOV      #1,-(SP)
2816      MOV      SP,R0
2817      TRAP      C#PNTX
2818      ADI      #4,SP
2819      JSR      PC,PRIXOR      ;PRINT THE DATA
2820      ENDMSG
2821      L10024:
2822      TRAP      C#MSG
2823      045 TIMSGO: .ASCIZ  'TIMER A STATUS IS IN BIT 3,TIMER B STATUS IS IN BIT 2'
2824      .EVEN
2825      .SBTTL  BADSSR - PRINT TSSR ERRORS ON DATA TRANSFERS
2826      ;
2827      ;PRINT ROUTINE FOR TSSR ERRORS ON DATA TRANSFERS
2828      ;
2829      ;INPUTS:
2830      ;
2831      R1      CONTENTS OF TSSR
2832      R2      DATA WRITTEN (8 BITS)
2833      ;
2834      ;
2835      BGNMSG  BADSSR
2836      BADSSR: MOV      R2,-(SP)      ;SAVE DATA TRANSFERRED
2837      BIC      #177400,R2      ;GET JUST ONE BYTE

```


BADSSR - PRINT TSSR ERRORS ON DATA TRANSFERS

```
2835 015776          PRINTB  #XFERASC,R2
      015776 010246      MOV    R2,-(SP)
      016000 012746 016030  MOV    #XFERASC,-(SP)
      016004 012746 000002  MOV    #2,-(SP)
      016010 010600      MOV    SP,R0
      016012 104414      TRAP   C#PNTB
      016014 062706 000006  ADD    #6,SP
2836 016020 012602      MOV    (SP)+,R2          ;RESTORE R2
2837 016022 004737 006022  JSR    PC,PRITSSR      ;DECODE TSSR CONTENTS
2838 016026          ENDMSG
      016026          L10025:
      016026 104423      TRAP   C#MSG
2839 016030      045      116      045 XFERASC:  .ASCIIZ  '#N#A Data Transferred = #03'
```


GLOBAL SUBROUTINES SECTION

```

2841 .SBTTL GLOBAL SUBROUTINES SECTION
2842
2843 ;**
2844 ; THE GLOBAL SUBROUTINES SECTION CONTAINS THE SUBROUTINES
2845 ; THAT ARE USED IN MORE THAN ONE TEST.
2846 ;--
2847 .SBTTL SOFINIT - SOFT INITIALIZE OF CONTROLLER
2848
2849 ;*
2850 ; ROUTINE TO DO A SOFT INITIALIZE OF THE CONTROLLER
2851 ; BY WRITING INTO THE TSSR REGISTER. AFTER THE INIT,
2852 ; THE TSSR REGISTER IS TESTED FOR ERRORS. ANY ERRORS
2853 ; DETECTED SHOULD BE TREATED AS DEVICE FATAL ERRORS.
2854
2855 ; INPUTS:
2856 ;
2857 ; R5 ADDRESS OF FIRST REGISTER
2858
2859 ; OUTPUTS:
2860 ;
2861 ; R0 CONTENTS OF TSSR, IF ERROR
2862 ; CARRY SET IF INIT WAS OKAY
2863 ; CLEAR IF FATAL ERROR
2864
2865 ; CALLING SEQUENCE:
2866 ;
2867 ; MOV #ADDRESS,R5
2868 ; JSR PC,SOFINIT
2869 ; BCS CONTINUE
2870 ; ERROF ;REPORT FATAL ERROR
2871 ;
2872 ;-
2873
2874
2875 016064 SOFINIT::
2876 016064 SAVREG
2877 016070 012765 000000 000002 MOV #0,TSSR(R5) ; SAVE THE REGISTERS
2878 016076 004737 016340 JSR PC,WAITF ; DO THE INIT.
2879 016102 016500 000002 MOV TSSR(R5),R0 ; WAIT FOR SSR
2880 016106 010004 MOV R0,R4 ; GET THE TSSR REGISTER
2881 016110 042704 176277 BIC #C<HIADDR!OFL>,R4 ; TSSR CONTENTS
2882 016114 052704 002200 BIS #SSR!NBA,R4 ; R4 HAS EXPECTED CONTENTS
2883 016120 020400 CMP R4,R0 ; ONLY EXPECTED BITS SET ?
2884 016122 001402 BEQ 5$ ; BRANCH IF OKAY
2885 016124 000241 CLC ; CLEAR THE CARRY FOR ERROR
2886 016126 000401 BR 10$ ; GO TO EXIT
2887 016130 000261 5$: SEC ; SET THE CARRY BIT
2888 016132 000207 10$: RTS PC ; RETURN TO CALLER

```


CHKAMB - CHECK TSSR FOR AMBIGUITY

```

2890 .SBTTL CHKAMB - CHECK TSSR FOR AMBIGUITY
2891
2892 ;*
2893 ;THIS ROUTINE TESTS THE CONTENTS OF THE TSSR REGISTER
2894 ;FOR AMBIGUITY
2895
2896 ;INPUT:
2897
2898 ;      R0      CONTENTS OF TSSR
2899
2900 ;OUTPUT:
2901
2902 ;      R0      CONTENTS OF TSSR
2903
2904 ;      CARRY   SET - NO AMBIGUITY
2905 ;             CLR - AMBIGUOUS CONTENTS
2906
2907 ;-
2908
2909
2910 CHKAMB:
2911     SAVREG
2912     MOV     R0,R4
2913     BIT     @SC,R0
2914     BNE     5$
2915     BIT     @C<NBA!OFL!SSR!HIADDR>,R0
2916     BNE     40$
2917     BR      45$
2918     BIT     @SSR,R0
2919     BNE     10$
2920     BIT     @BIT5,R0
2921     BEQ     40$
2922     BIC     @CTERCLS,R4
2923     CMP     R4,#16
2924     BNE     40$
2925     BR      45$
2926     BIT     @BIT5,R0
2927     BEQ     45$
2928     BIT     @BIT2:BIT1,R0
2929     BNE     45$
2930     CLC
2931     BR      50$
2932     SEC
2933     RTS     PC

```

;SAVE THE GENERAL REGISTERS
 ;CONTENTS OF TSSR
 ;IS BIT 15 SET ?
 ;BRANCH IF YES
 ;ANY OTHER BITS SET ?
 ;MUST BE AN ERROR
 ;RETURN WITH SUCCESS
 ;IS READY BIT SET ?
 ;BRANCH IF READY BIT IS SET.
 ;IS FATAL ERROR BIT SET ?
 ;ERROR IF NOT
 ;CLEAR ALL BUT TERMINATION CODE
 ;ALL THREE BITS MUST BE SET
 ;ERROR IF NOT SET
 ;OK IF ALL ARE SET
 ;IS FATAL ERROR BIT SET ?
 ;ERROR IF BIT IS SET WITH SSR
 ;IS THIS A FUNCTION REJECT
 ;BR, IF TSSR IS OK
 ;AMBIGUOUS CONTENTS
 ;SHOW SUCCESS - NO AMBIGUITY
 ;RETURN TO CALLER

ENAIN,DSBINT - ENABLE/DISABLE INTERRUPTS

```

2935      .SBTTL ENAIN,DSBINT - ENABLE/DISABLE INTERRUPTS
2936      ;
2937      ; DEFAULT DISPLAY INTERRUPT HANDLERS.
2938      ; IF DISPLAY TIME-OUT, REPORT DEV FATAL, AND ABORT PASS.
2939      ; OTHERWISE, SAVE DPU REGISTERS AND DISMISS.
2940      ;
2941      ;
2942      ; BIT DEFINITIONS FOR "INTMASK" AND "INTFLAG" BYTES:
2943      ;
2944      IOKCKIN=BIT7      ; DON'T CHECK FOR BAD INTERRUPTS -- TEST WILL.
2945      IOKSTP=BIT0       ; EXPECT "STOP" INTERRUPT.
2946      ;
2947      ; INTERRUPT MASK -- SAYS EXPECTING INTERRUPTS
2948      INTMASK: .BYTE 0
2949      ; INTERRUPT FLAG -- SAYS WE GOT ONE (IF POSITIVE)
2950      INTFLAG: .BYTE 0
2951      ;
2952      ; SAVED INTERRUPT VECTOR:
2953      INTVEC: .WORD 0
2954      ; SAVE CPU PC
2955      INTCPC: .WORD 0
2956      ;
2957      ; SUBROUTINE TO ENABLE INTERRUPTS:
2958      ENAIN: MOV RO,-(SP)      ; SAVE RO
2959      MOV IVEC,RO             ; GET POINTER TO VECTORS
2960      MOV @INTR,(RO)+         ; SET UP INTERRUPT VECTOR
2961      MOV @PRI07,(RO)+
2962      MOV (SP)+,RO            ; RESTORE RO
2963      MOV (SP),-(SP)
2964      MOV @0,2(SP)            ; SET CPU TO LEVEL 0
2965      RTI
2966      ;
2967      ; SUBROUTINE TO DISABLE INTERRUPTS (RAISE PRIORITY TO LEVEL 7)
2968      DSBINT: MOV (SP),-(SP)
2969      MOV @PRI07,2(SP)
2970      RTI
2971      .SBTTL INTR - INTERRUPT HANDLERS
2972      ;
2973      BGNSRV INTR             ; DEFINE INTERRUPT ENTRY
2974      INTR:: MOV @1,INTRECV    ; SET FLAG TO SHOW INTERRUPT RECEIVED
2975      CLRB INTFLAG            ; CLEAR FLAG TO SAY WE GOT INTERRUPT
2976      BITB @IOKSTP,INTMASK    ; EXPECTING STOP INTERRUPT?
2977      BNE 1$                  ; BR IF YES
2978      BISB @IOKSTP,INTFLAG    ; NO. SET THE ERROR FLAG.
2979      ;
2980      ; SAVE REGISTERS, MSG BUFFER, ETC.
2981      1$:
2982      ENDSRV
2983      L10026: RTI
2984      ;
2985      ;
2986      ;
2987      ;
2988      ;
2989      ;
2990      ;
2991      ;
2992      ;
2993      ;
2994      ;
2995      ;
2996      ;
2997      ;
2998      ;
2999      ;

```


WAITF - WAIT FOR SUBSYSTEM READY

```

2984 .SBTTL WAITF - WAIT FOR SUBSYSTEM READY
2985 ;
2986 ; SUBROUTINE TO WAIT FOR THE SUBSYSTEM READY FLAG
2987 ;
2988 ; INPUTS:
2989 ;
2990 ; R5 ADDRESS OF FIRST DEVICE REGISTER
2991 ;
2992 ; OUTPUTS:
2993 ;
2994 ; R0 CONTENTS OF LAST TSSR READ
2995 ; CARRY SET - READY BIT SET
2996 ; CLR - TIMEOUT WAITING FOR READY
2997 ;
2998 016340 000401 WAITF:: BR 1# ;NOP WHEN SUPER FIXED
2999 016342 104422 BREAK ; DO A SUPVSR BREAK FIRST.
016342 104422 TRAP C#BRK
3000 016344 012746 011000 1# : MOV #11000,-(SP) ;25-APRIL-83 REV B - 1100 MSEC TIMER
3001 016350 C16500 000002 2# : MOV TSSR(R5),R0 ;READ THE TSSR REGISTER
3002 016354 105700 TSTB R0 ;TEST FOR READY BIT SET
3003
3004 016356 100420 BMI 3# ; EXIT ON STOP FLAG.
3005 016360 DELAY 1 ; WAIT 100 USEC
016360 012727 000001 MOV #1,(PC)+
016364 000000 .WORD 0
016366 013727 002116 MOV L#DLY,(PC)+
016372 000000 .WORD 0
016374 005367 177772 DEC -6(PC)
016400 001375 BNE -4
016402 005367 177756 DEC -22(PC)
016406 001367 BNE -20
3006 016410 005316 DEC (SP) ;REDUCE DELAY COUNT
3007 016412 001356 BNE 2# ;RETRY UNTIL TIMER EXPIRES
3008 016414 000241 CLC ; C = 0, CONTROLLER STILL RUNNING...
3009 016416 000401 BR 4# ;...OR HUNG-UP AFTER 300 MSEC.
3010 016420 000261 3# : SEC ; C = 1, CONTROLLER IS STOPPED.
3011 016422 005326 4# : DEC (SP)+ ;RESTORE STACK WITHOUT CHANGING CARRY BIT
3012 016424 000207 RTS PC

```


CHKTSSR - CHECK TSSR FOR READY

```

3014 .SBTTL CHKTSSR - CHECK TSSR FOR READY
3015 ;
3016 ; THIS ROUTINE WAITS FOR READY IN THE TSSR
3017 ; AND TESTS FOR AMBIGUOUS BIT SETTINGS IN TSSR.
3018 ;
3019 ; INPUT:
3020 ; R5 ADDRESS OF CSR REGISTERS
3021 ;
3022 ; OUTPUT:
3023 ; R0 CONTENTS OF TSSR
3024 ; CARRY SET - OKAY
3025 ; CLR - NOT READY AMBIGUOUS, OR SC SET
3026 ;
3027 CHKTSSR:
3028 JSR PC, WAITF ; WAIT FOR READY
3029 BCC 20$ ; BRANCH IF TIME OUT
3030 JSR PC, CHKAMB ; TSSR AMBIGUOUS?
3031 BCC 10$ ; BR IF YES
3032 BIT #SC, R0 ; SPECIAL CONDITION SET?
3033 BEQ 15$ ; BR IF NO
3034 BIT #<SCE!BIE!RMR!NXM>, R0 ; ANY ERROR BITS SET?
3035 BEQ 15$ ; BR IF NO
3036 10$: CLC ; SET FAILURE
3037 BR 20$ ;
3038 15$: SEC ; SET SUCCESS
3039 20$: RTS PC ; RETURN TO CALLER
3040 .SBTTL NXNM - CHECK FOR NONEXISTENT MEMORY
3041 ;
3042 ; ROUTINE TO TEST FOR A NEXM IN THE RANGE (R1) THRU (R2).
3043 ; ON RETURN, IF "C" = 1, (R1) = NEXM ADDRESS.
3044 ; "C" = 0, ALL ADDRESSES OK.
3045 ;
3046 ; CALL: MOV ADR1, R1
3047 ; MOV ADR2, R2
3048 ; JSR PC, NXNM
3049 ; RETURN ; TEST "C" AND PROCEED.
3050 16466 012737 016520 000004 NXNM: MOV #2$, #04 ; SET BUSERR VECTOR.
3051 16474 012737 000200 000006 MOV #PRI04, #06
3052 16502 005003 CLR R3 ; FLAG.
3053 16504 005711 1$: TST (R1) ; TEST THE ADDRESS(ES).
3054 ; IF ANY TRAP, CONTINUE AT 2$.
3055 16506 020102 CMP R1, R2 ; OTHERWISE, CONTINUE HERE.
3056 16510 001407 BEQ 3$ ; BR IF FINISHED (NO NEXM'S).
3057 16512 062701 000002 ADD #2, R1 ; SET NEXT ADDRESS...
3058 16516 000772 BR 1$ ; ...AND CONTINUE.
3059 16520 005103 2$: COM R3 ; GOT ONE, SET FLAG...
3060 16522 012716 016530 MOV #3$, (SP)
3061 16526 000002 RTI ; ...AND DISMISS INTERRUPT...
3062 16530 3$: CLRVEC #4 ; ...AND GIVE BACK THE VECTOR.
3063 16530 012700 000004 MOV #4, R0
3064 16534 104436 TRAP C: CVEC
3065 16536 005703 TST R3 ; DID WE CATCH ONE ??
3066 16540 001401 BEQ .+4 ; NO, "C" = 0, SKIP NEXT.
3067 16542 000261 SEC ; YES, "C" = 1, (R1) = NEXM ADDR.
3068 16544 000207 RTS PC

```


TSTLOOP - CHECK ITERATION COUNT

```

3068 .SBTTL TSTLOOP - CHECK ITERATION COUNT
3069
3070 ;*
3071 ; SUBROUTINE TO EXECUTE TEST ITERATIONS.
3072 ; EXIT WITH "C" SET IF LOOPS ALLOWED AND LOOP COUNT NON-ZERO.
3073 ; LOOP COUNTER IS SET BY "BEGIN.TEST" MACRO.
3074 ;
3075 ; CALL: LOOPTO ARG
3076
3077 TSTLOOP::
3078     TST     NOITS          ; ITERATIONS INHIBITED?
3079     BNE     1$             ; YES.
3080     TST     QVP            ; NO.
3081     BMI     1$             ; LOOPS DISALLOWED IN QUICK PASS.
3082     DEC     LOOPCNT        ; BUMP LOOP COUNTER.
3083     BNE     2$
3084     1$:     CLC             ; LOOP DISALLOWED, OR DONE.
3085     BR      3$
3086     2$:     SEC             ; LOOP ENABLED.
3087     3$:     RTS     PC
3088
3089 .SBTTL TSTSETUP - PRINT TEST NAME AND INIT ERROR COUNTS
3090
3091 ;*
3092 ; PRINT THE NUMBER AND NAME OF EACH TEST AS WE GO ALONG.
3093 ; INCREMENT "TESTK" TO INDICATE THE NUMBER OF TESTS
3094 ; IN THE CURRENT RUN SEQUENCE.
3095 ; CLEAR THE ERROR COUNTER AND SIGNATURE EXTENSION FLAGS.
3096 ;
3097 ; INPUT:
3098 ;     R0      POINTER TO TEST ID ASCIZ STRING
3099 ;
3100 ; OUTPUT:
3101 ;     R5      ADDRESS OF FIRST DEVICE REGISTER
3102 ;
3103 ; IMPLICIT OUTPUTS:
3104 ;     TSTCNT  UPDATED TO COUNT TESTS PERFORMED SINCE START OR RESTART
3105 ;
3106 ; SIDE EFFECTS:
3107 ;     INTERRUPT LEVEL IS RASIED TO LEVEL OF
3108 ;     THE DEVICE UNDER TEST
3109 ;
3110 ; -
3111
3112
3113 TSTSETUP::
3114     MOV     R0, -(SP)      ; SAVE THE TEST ID MESSAGE
3115     CLR     SIFLAG         ; CLEAR "SOFT INIT" FLAG
3116     CLR     ERRK          ; CLEAR LOCAL ERROR COUNTER.
3117     CLR     EXTA          ; CLEAR ERROR EXTENSION FLAG.
3118     CLR     INTMASK       ; CLEAR INTERRUPT MASK (CHECK ERROR)
3119     MOV     UNITN, R0      ; GET THE UNIT NUMBER.
3120     ASL     R0             ; ... AND MAKE IT A WORD OFFSET.
3121     TST     NODEV         ; DID STARTUP FIND THE DEVICE?
3122     BEQ     4$            ; BR IF YES
3123     BPL     3$            ; BR IF NOT IDLE
3124
3076 016546 005737 002160
3078 016552 001006
3079 016554 005737 002174
3080 016560 100403
3081 016562 005337 002206
3082 016566 001002
3083 016570 000241
3084 016572 000401
3085 016574 000261
3086 016576 C00207
3114 016600
3115 016600 010046
3116 016602 005037 003144
3117 016606 005037 017046
3118 016612 005037 005770
3119 016616 105037 016234
3120 016622 013700 002172
3121 016626 006300
3122 016630 005737 003104
3123 016634 001430
3124 016636 100010

```


TSTSETUP - PRINT TEST NAME AND INIT ERROR COUNTS

```

3125 016640 052760 160000 003166      BIS      #160000,ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE
3126 016646      ERDF      1,NXR,NXRERR ; NO DEVICE HERE -- PRINT IT
      016646 104455      TRAP    C#ERDF
      016650 000001      .WORD    1
      016652 003736      .WORD    NXR
      016654 005734      .WORD    NXRERR
3127 016656 000407      BR       2#
3128 016660 052760 160001 003166 3#:  BIS      #160001,ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE
3129 016666      ERDF      2,NOINIT ; DEVICE NOT IDLE
      016666 104455      TRAP    C#ERDF
      016670 000002      .WORD    2
      016672 004333      .WORD    NOINIT
      016674 000000      .WORD    0
3130 016676 012737 177777 003102 2#:  MOV      #-1,DUFLG ; DROP THE UNIT
3131 016704      DODU      UNITN
      016704 013700 002172      MOV      UNITN,R0
      016710 104451      TRAP    C#DODU
3132 016712      DOCLN
      016712 104444      TRAP    C#DOCLN ; ABORT THE PASS
3133 016714 000423      BR       5#
3134
3135 016716      RFLAGS    R0 ; GET THE OPERATOR FLAGS.
      016716 104421      TRAP    C#RFLA
3136 016720 032700 001000      BIT      #PNT,R0 ; PRINT THE TEST NUMBERS?
3137 016724 001412      BEQ      1# ; BR IF NO
3138 016726 011600      MOV      (SP),R0 ; GET THE ID MESSAGE
3139 016730      PRINTF    #TNAM,R0 ; DISPLAY THE TEST ID
      016730 010046      MOV      R0,-(SP)
      016732 012746 016774      MOV      #TNAM,-(SP)
      016736 012746 000002      MOV      #2,-(SP)
      016742 010600      MOV      SP,R0
      016744 104417      TRAP    C#PNTF
      016746 062706 000006      ADD      #6,SP
3140 016752 005237 002204      INC      TSICNT ; BUMP TEST COUNTER.
3141 016756      SETPRI    IPRI ; PRIORITY THAT OF DEVICE
      016756 013700 002202      MOV      IPRI,R0
      016762 104441      TRAP    C#SPRI
3142 016764 005726      TST      (SP)+ ; FIX UP THE STACK
3143 016766 013705 002176      MOV      CSRADDR,R5 ; ADDRESS OF TSV REGISTERS ON UNIBUS
3144 016772 000207      RTS      PC
3145 016774 045 123 045 TNAM: .ASCIZ 'TSV Test'
3146      .EVEN
3147      .SBTTL TSTEND - PRINT ERRORS RECEIVED
3148
3149 ; AT END OF EACH TEST, PRINT THE NUMBER OF ERRORS RECEIVED
3150 ; IF NORMAL ERROR REPORTING IS DISABLED (FLA:IER).
3151
3152 017010      TSTEND: RFLAGS    R0
      017010 104421      TRAP    C#RFLA
3153 017012 030027 020000      BIT      R0,#IER
3154 017016 001412      BEQ      1# ; BR IF "IER" NOT SET.
3155 017020      PRINTF    #ESUM,ERRK ; PRINT ERROR COUNT.
      017020 013746 017046      MOV      ERRK,-(SP)
      017024 012746 017050      MOV      #ESUM,-(SP)
      017030 012746 000002      MOV      #2,-(SP)
      017034 010600      MOV      SP,R0
      017036 104417      TRAP    C#PNTF

```


TSTEND - PRINT ERRORS RECEIVED

3156	017040	062706	000006			ADD	#6,SP	
	017044	000207		14:		RTS	PC	
3157								
3158	017046	000000			ERRK:	0		; LOCAL ERROR COUNT.
3159	017050	045	101	040	ESUM:	.ASCIZ	/A D A ERRORS/	
3160	017067	105	122	122	EMAXDU:	.ASCIZ	/ERROR LIMIT REACHED -- DROPPING UNIT/	
3161						.EVEN		

INCERK - INCREMENT LOCAL ERROR COUNT

```

3163          .SBTTL INCERK - INCREMENT LOCAL ERROR COUNT
3164
3165          ; ROUTINES TO INCREMENT LOCAL ERROR COUNT AND CHECK FOR LIMIT:
3166
3167 017134 005237 017046      INCERK: INC      ERRK          ; INCREMENT LOCAL ERROR COUNT
3168 017140 010046          MOV      RO,-(SP)        ; SAVE RO
3169 017142 013700 002172      MOV      UNITN,RO      ; GET UNIT NUMBER,
3170 017146 006300          ASL      RO              ; ... AND MAKE IT A WORD OFFSET.
3171 017150 062700 003166      ADD      @ERTABL,RO    ; RO GETS ADDRESS OF ERROR TABLE ENTRY.
3172 017154 005210          INC      (RO)           ; INCREMENT THE DEVICE ERROR COUNT
3173 017156 032710 00 777      BIT      @7777,(RO)   ; DID WE OVERFLOW THE FIELD?
3174 017162 001001          BNE      1$            ; BR IF NO.
3175 017164 005310          DEC      (RO)           ; YES -- BACK IT UP TO 7777.
3176 017166 012600          1$: MOV      (SP)+,RO    ; RESTORE RO
3177 017170 000207          RTS      PC              ; RETURN TO CALLER.
3178
3179 017172 010046          CKEMAX: MOV      RO,-(SP)  ; SAVE RO
3180 017174 013700 002172      MOV      UNITN,RO      ; GET UNIT NUMBER
3181 017200 006300          ASL      RO              ; ... AND MAKE IT A WORD OFFSET
3182 017202 016000 003166      MOV      ERTABL(RO),RO ; GET ERROR TABLE ENTRY
3183 017206 042700 170000      BIC      @170000,RO    ; EXTRACT ERROR COUNT FIELD
3184 017212 020037 002164      CMP      RO,GERRMAX   ; IS GLOBAL LIMIT EXCEEDED FOR THIS UNIT?
3185 017216 103004          BHS      1$            ; BR IF YES
3186 017220 023737 017046 002162      CMP      ERRK,LERRMAX ; IS LOCAL LIMIT EXCEEDED FOR THIS TEST?
3187 017226 103417          BLO      2$            ; BR IF NO
3188 017230          1$: RFLAGS      RO              ; GET OPERATOR FLAGS
3189 017232 104421          TRAP      C#RFLA
3190 017236 032700 000040      BIT      @IDU,RO      ; IS DROPPING INHIBITED?
3191 017240 012737 177777 003102      BNE      2$            ; BR IF YES.
3192 017246          MOV      @-1,DUFLG             ; NO - DROP THE UNIT
3193 017246 104455          ERRDF      4,EMAXDU
3194 017250 000004          TRAP      C#ERDF
3195 017252 017067          .WORD      4
3196 017254 000000          .WORD      EMAXDU
3197 017256          .WORD      0
3198 017256 013700 002172      DODU      UNITN
3199 017262 104451          MOV      UNITN,RO
3200 017264          TRAP      C#DODU
3201 017264 104444          DOCLN      TRAP      C#DOCLN
3202 017266 012600          2$: MOV      (SP)+,RO    ; RESTORE RO
3203 017270 000207          RTS      PC              ; RETURN TO CALLER

```


CKDROP - CHECK IF UNIT SHOULD BE DROPPED

```

3198 .SBTTL CKDROP CHECK IF UNIT SHOULD BE DROPPED
3199
3200 ; CHECK IF UNIT SHOULD BE DROPPED
3201 ;
3202 017272 010046 CKDROP: MOV RO, -(SP)
3203 017274 FORCERROR 18, NOTSSR
3204 017304 RFLAGS RO
3205 017306 104421 TRAP C0RFLA
3206 017312 032700 000040 BIT 0IDU, RO
3207 017314 001010 BNE 18
3208 017316 011600 MOV (SP), RO
3209 017324 012737 177777 003102 MOV 0-1, DUFLG
3210 017324 013700 002172 DODU UNITN
3211 017332 104444 MOV UNITN, RO
3212 017334 012600 TRAP C0DODU
3213 017336 C00207 DOCLN ; ABORT THE PASS
3214 TRAP C0DCLN
3215 18: MOV (SP)+, RO
3216 RTS PC
3217
3218 .SBTTL CONFIG - DETERMINE CONFIGURATION OF SYSTEM
3219 ;
3220 ; SUBROUTINE - DETERMINE CONFIGURATION OF TSV05 SYSTEM.
3221 ;
3222 CONFIG: JSR PC, SOFINIT
3223 RTS PC
3224 .SBTTL KTON, KTOFF ENABLE/DISABLE MEMORY MANAGEMENT
3225 ;
3226 ; SUBROUTINE - ENABLE MEM MGT.
3227 ;
3228 KTON: TST KTFLG ; GOT KT?
3229 BEQ 18 ; NO.
3230 MOV 01, SRO ; YES. ENABLE KT11.
3231 18: RTS PC
3232
3233 ; SUBROUTINE - DISABLE MEM MGT.
3234 ;
3235 KTOFF: TST KTFLG ; GOT KT11?
3236 BEQ 18 ; NO.
3237 NOP
3238 NOP
3239 MOV 00, SRO ; DISABLE KT.
3240 18: RTS PC

```


SETMAP - SETUP PAR6 MAPPING

.SBTTL SETMAP - SETUP PAR6 MAPPING

```

3241
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3250
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3252
3253
3254
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3257
3258
3259
3260 017406
3261 017406
3262 017412 005737 003122
3263 017416 001433
3264 017420 010102
3265
3266 000006
3267
3268
3269 017452 042701 000177
3270 017456 020137 003122
3271 017462 103011
3272 017464 010137 172352
3273 017470 042702 160000
3274 017474 062702 120000
3275 017500 010200
3276 017502 000261
3277 017504 000401
3278 017506 000241
3279 017510 000207
3280
3281
3282
3283
3284
3285
3286
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3288
3289
3290
3291
3292
3293
3294
3295 017512
3296 017512
3297 017516 004737 017364

```

```

;
; THIS ROUTINE SETS UP KERNEL PAR6 TP HANDLE
; AN 18 BIT ADDRESS. THE OFFSET INTO THE PAGE
; IS RETURNED BIASED TO PAR6.
;
; INPUTS:
;
; R0      HIGH ORDER ADDRESS BITS
; R1      LOW ORDER ADDRESS BITS
;
; OUTPUTS:
;
; R0      OFFSET INTO BLOCK WITH PAR6 BIAS (I.E. THE ADDRESS)
; CARRY   SET IF SUCCESS
;         CLR IF ERROR
;
; SETMAP:
; SAVREG          ;SAVE R1-R4 UNTIL NEXT RETURN
; TST             ;SYSTEM HAVE ABOVE 28K?
; BEQ 10$         ;BR IF NO
; MOV R1,R2       ;SAVE LOW ORDER BITS
; .REPT 6
; ASR R0          ;CONVERT WORD ADDRESS TO 32W BLOCKS
; ROR R1          ;MAKE IT DOUBLE PRECISION
; .ENOR
; BIC #177,R1     ;ALINE FOR LOWER 4K BOUNDARY
; CMP R1,KTFLG    ;HIGHER THAN EXISTING MEMORY?
; BHS 10$         ;BR IF YES
; MOV R1,#KIPARS  ;SETUP MAPPING REGISTER PARS
; BIC #160000,R2  ;SETUP DISPLACEMENT IN PAGE
; ADD #120000,R2  ;ADD IN PARS BIAS
; MOV R2,R0       ;RETURN IN R0
; SEC            ;SET SUCCESS
; BR 15$
;
; 10$: CLC         ;SET FAILURE
; 15$: RTS        ;RETURN
; .SBTTL FILLMEM - FILL MEMORY WITH BACKGROUND PATTERN
;
; FILL MEMORY WITH A BACKGROUND PATTERN
;
; INPUTS:
;
; R0 = BACKGROUND PATTERN
; FREE = FIRST LOCATION AVAILABLE TO DIAGNOSTIC
; KTFLG = SET TO HIGHEST MEMORY LOCATION IF > 28K.
;
; OUTPUTS:
;
; NONE
;
; FILLMEM:
; SAVREG          ;SAVE R1-R5 UNTIL NEXT RETURN
; JSR PC,KTOFF    ;DISABLE KT.

```


FILLMEM - FILL MEMORY WITH BACKGROUND PATTERN

3298	017522	010003			MOV	R0,R3	;COPY TEST PATTERN
3299	017524	013701	003114		MOV	FREE,R1	;GET FIRST FREE LOCATION
3300	017530	013702	003116		MOV	FRESIZ,R2	;SIZE OF FREE SPACE BELOW 28K.
3301	017534	010321		10#:	MOV	R3,(R1)+	;STORE A BACKGROUND WORD
3302	017536	005302			DEC	R2	;DONE ALL MEMORY IN FREE SPACE?
3303	017540	003375			BGT	10#	;BR IF NO
3304	017542	005737	003122		TST	KTFLG	; GOT KT?
3305	017546	001477			BEQ	55#	; NO. GET OUT.
3306	017550	004737	017346		JSR	PC,KTON	; YES. ENABLE KT.
3307	017554	005000			CLR	R0	;HIGH ORDER ADDRESS START
3308	017556	013701	003142		MOV	PST32W,R1	;GET >28K START ADDRESS (IN 32W BLOCKS)
3309		000006			.REPT	6	
3310					CLC		;CLEAR C BIT
3311					ROL	R1	;CONVERT BLOCKS TO WORDS
3312					ROL	R0	;MAKE IT DOUBLE PRECISION
3313					.ENDR		
3314	017626	004737	017406		JSR	PC,SETMAP	;SETUP PARS MAPPING REGISTER
3315	017632	010320		30#:	MOV	R3,(R0)+	;STORE TEST PATTERN IN >28K ADDRESS
3316	017634	C20027	140000		CMP	R0,#140000	;END OF PARS MAPPING AREA?
3317	017640	103774			BLO	30#	;BR IF NO
3318	017642	162700	020000		SUB	#20000,R0	;BACKUP INTO PARS MAPPING BEGIN
3319	017646	062737	000200	172352	ADD	#200,#KIPARS	;POINT TO NEXT 4K BLOCK >28K.
3320	017654	023727	172352	006000	CMP	#KIPARS,#6000	;END OF MEMORY BELOW XMON AREA?
3321				!!!			
3322	017662	001427			BEQ	50#	;BR IF YES
3323	017664	005737	003134		TST	T23A	;11/23A?
3324	017670	001407			BEQ	35#	;NO KEEP GOING
3325	017672	013704	177572		MOV	SRO,R4	;GET SRO CONTENTS
3326	017676	042704	177761		BIC	#177761,R4	;CLEAR ALL BUT PAGE NUMBER
3327	017702	022704	000016		CMP	#16,R4	;SEE IF PAGE 7
3328	017706	001415			BEQ	50#	;EXIT IF THERE
3329	017710	005737	003136	35#:	TST	T23B	;11/23B?
3330	017714	001410			BEQ	45#	;NO KEEP GOING
3331	017716	023727	172352	007600	CMP	#KIPARS,#7600	;REACHED 18 BITS?
3332	017724	103001			BHIS	40#	;YES
3333	017726	000403			BR	45#	;NO KEEP GOING
3334	017730	012737	000020	172516	MOV	#20,SR3	;SET 22 BIT RELOCATION
3335	017736	000137	017632	45#:	JMP	30#	;KEEP GOING ON ETC.
3336	017742	004737	017364	50#:	JSR	PC,KTOFF	; DISABLE KT.
3337	017746	000207		55#:	RTS	PC	

CMPMEM - COMPARE MEMORY TO BACKGROUND PATTERN

```

3339      .SBTTL  CMPMEM - COMPARE MEMORY TO BACKGROUND PATTERN
3340
3341      ;*
3342      ; COMPARE MEMORY WITH A BACKGROUND PATTERN
3343      ;
3344      ; INPUTS:
3345      ;     R0 = BACKGROUND PATTERN
3346      ;     FREE = FIRST LOCATION AVAILABLE TO DIAGNOSTIC
3347      ;     KTFLG = SET TO HIGHEST MEMORY LOCATION IF > 28K.
3348      ;
3349      ; OUTPUTS:
3350      ;
3351      ;     CARRY - SET IF NO ERROR
3352      ;     CARRY - CLR IF ERROR
3353      ;
3354      ; IMPLICIT OUTPUTS:
3355      ;
3356      ;     ERRHI - ERROR HIGH ADDRESS
3357      ;     ERRLO - ERROR LOW ADDRESS
3358      ;     EXPD  - EXPECTED DATA
3359      ;     RECV  - RECEIVED DATA
3360      ;
3361      ; CMPMEM:
3362      ;     SAVREG
3363      ;     MOV     R0,R3      ;SAVE R1-R5 UNTIL NEXT RETURN
3364      ;     JSR     PC,KTOFF   ;COPY TEST PATTERN
3365      ;     MOV     FREE,R1    ;DISABLE KT.
3366      ;     MOV     FRESIZ,R2  ;GET FIRST FREE LOCATION
3367      ;     CMP     R3,(R1)    ;SIZE OF FREE SPACE BELOW 28K.
3368      ;     BEQ     15$       ;FREE SPACE LOCATION EQUAL TO EXPD?
3369      ;     MOV     R1,ERRLO   ;BR IF YES
3370      ;     CLR     ERRHI     ;SAVE ADDRESS IN ERROR
3371      ;     MOV     R3,EXPD    ;NO HIGH ADDRESS
3372      ;     MOV     (R1),RECV  ;SAVE EXPD FOR ERROR REPORT
3373      ;     BR      50$       ;SAVE RECV FOR ERROR REPORT
3374      ;     TST     (R1)+     ;
3375      ;     DEC     R2        ;POINT TO NEXT ADDRESS
3376      ;     BGT     10$       ;DONE ALL MEMORY IN FREE SPACE?
3377      ;     TST     KTFLG     ;BR IF NO
3378      ;     BEQ     55$       ; GOT KT?
3379      ;     JSR     PC,KTON    ; NO. GET OUT.
3380      ;     CLR     R0        ; YES. ENABLE KT.
3381      ;     MOV     PST32W,R1  ;HIGH ORDER ADDRESS START
3382      ;     .REPT    6         ;GET >28K START ADDRESS (IN 32W BLOCKS)
3383      ;     ROL     R1
3384      ;     ROL     R0
3385      ;     .ENDR
3386      ;     BIC     #177,R1   ;CONVERT BLOCKS TO WORDS
3387      ;     MOV     R0,-(SP)   ;MAKE IT DOUBLE PRECISION
3388      ;     MOV     R1,-(SP)   ;
3389      ;     JSR     PC,SETMAP  ;ALINE 4K BOUNDARY
3390      ;     MOV     R0,R4     ;SAVE HIGH ORDER
3391      ;     MOV     (SP)+,R1   ;SAVE LOW ORDER
3392      ;     MOV     (SP)+,R0   ;SETUP PAR6 MAPPING REGISTER
3393      ;     CMP     R3,(R4)    ;COPY ADDRESS BIASED TO PAR6
3394      ;     BEQ     32$       ;RESTORE LOW ORDER IN NON PAR6 FORMAT
3395      ;     MOV     R0,ERRHI   ;RESTORE HIGH ORDER IN NON PAR6 FORMAT

```


CMPMEM - COMPARE MEMORY TO BACKGROUND PATTERN

```

3396 020130 010137 002230      MOV      R1,ERRLO      ;SAVE LOW ORDER IN ERROR
3397 020134 010337 002222      MOV      R3,EXPD      ;SAVE EXPD FOR ERROR REPORT
3398 020140 011437 002224      MOV      (R4),RECV      ;SAVE RECV FOR ERROR REPORT
3399 020144 000421              BR          50$          ;
3400 020146 062701 000002      32$:  ADD      #2,R1      ;UPDATE NON PAR6 ADDRESS
3401 020152 005500              ADC      R0              ;MAKE IT DOUBLE PRECISION ADD
3402 020154 062704 000002      ADD      #2,R4      ;UPDATE PAR FORMAT ADDRESS
3403 020160 020427 140000      CMP      R4,#140000      ;END OF PAR5 MAPPING AREA?
3404 020164 103755              BLO      30$          ;BR IF NO
3405 020166 162704 020000      SUB      #20000,R4      ;BACKUP INTO PAR6 MAPPING BEGIN
3406 020172 062737 000200 172352 ADD      #200,#KIPAR5 ;POINT TO NEXT 4K BLOCK >28K.
3407 020200 023737 172352 003122 CMP      #KIPAR5,KTFLG ;END OF MEMORY?
3408 020206 101744              BLOS     30$          ;BR IF NO
3409 020210 004737 017364      50$:  JSR      PC,KTOFF      ;TURN OFF MEMORY MAPPING
3410 020214 000241              CLC                  ;SET FAILURE
3411 020216 000403              BR          60$          ;
3412 020220 004737 017364      55$:  JSR      PC,KTOFF      ;TURN OFF MEMORY MAPPING
3413 020224 000261              SEC                  ;SET SUCCESS
3414 020226 C00207      60$:  RTS      PC
3415              .SBTTL  REGSAV - SAVE R1-R5 ON STACK
3416              ;*
3417              ;
3418              ;ROUTINE TO
3419              ;SAVE R1 THROUGH R5 ON THE STACK
3420              ;
3421              ;CALLING SEQUENCE:
3422              ;
3423              ;      JSR      R5,REGSAV
3424              ;
3425              ;THIS IS A COOROUTINE WHICH TRANSFER CONTROL BACK TO
3426              ;THE CALLING ROUTINE. AT THE END OF THE CALLING ROUTINE,
3427              ;THE RTS PC RETURNS CONTROL TO THIS ROUTINE TO RESTORE
3428              ;REGISTERS.
3429              ;
3430              ;THIS ROUTINE SHOULD ONLY BE CALLED FROM ROUTINES WHICH ARE
3431              ;CALLED VIA A JSR PC INSTRUCTION
3432              ;
3433              ;-
3434
3435 020230      REGSAV:
3436 020230 010446      MOV      R4,-(SP)
3437 020232 010346      MOV      R3,-(SP)
3438 020234 010246      MOV      R2,-(SP)
3439 020236 010146      MOV      R1,-(SP)
3440 020240 010546      MOV      R5,-(SP)
3441 020242 016605 000012      MOV      10.(SP),R5
3442 020246 004736      JSR      PC,@(SP)+
3443 020250 012601      MOV      (SP)+,R1
3444 020252 012602      MOV      (SP)+,R2
3445 020254 012603      MOV      (SP)+,R3
3446 020256 012604      MOV      (SP)+,R4
3447 020260 012605      MOV      (SP)+,R5
3448 020262 000207      RTS      PC

```


GETPAT - GET 8 BIT PATTERN FROM OPERATOR

```

3450          .SBTTL  GETPAT - GET 8 BIT PATTERN FROM OPERATOR
3451          ;*
3452          ;ROUTINE TO REQUEST AN 8 BIT DATA PATTERN FROM THE OPERATOR
3453          ;
3454          ;INPUTS:          NONE.
3455          ;
3456          ;OUTPUTS:
3457          ;      RO          OCTAL NUMBER FROM THE OPERATOR
3458          ;
3459          ;CALLING SEQUENCE:
3460          ;      JSR          PC,GETPAT
3461          ;-
3462          GETPAT::
3463          1$:      SAVREG          ;SAVE THE GENERAL REGISTERS
3464          GMANID  DATASC,PATDAT,0,377,0,377,NO
3465          TRAP    C$GMAN
3466          BR      10000$
3467          .WORD   PATDAT
3468          .WORD   T$CODE
3469          .WORD   DATASC
3470          .WORD   377
3471          .WORD   T$LOLIM
3472          .WORD   T$HILIM
3473          10000$:  BNCOMPLETE      1$      ;RETRY IF ERROR
3474          BCC      1$
3475          MOV      PATDAT,RO          ;DATA PATTERN FROM OPERATOR
3476          RTS      PC                ;RETURN TO CALLER
3477
3478          ;*
3479          ;LOCAL DATA AREA
3480          ;-
3481          PATDAT:  .WORD   0          ;TEMPORARY STORAGE FOR DATA
3482          DATASC:  .ASCIZ  'ENTER DATA PATTERN'
3483          .EVEN

```


GETSEL - ISSUE MENU AND GET OPERATOR RESPONSE

```

3477 .SBTTL GETSEL - ISSUE MENU AND GET OPERATOR RESPONSE
3478 ;
3479 ;ROUTINE TO ISSUE A MENU AND GET THE OPERATOR'S RESPONSE.
3480 ;
3481 ;INPUTS:
3482 ;      R0      ADDRESS OF ASCIZ STRING OF MENU
3483 ;      R1      MAXIMUM ALLOWABLE OPERATOR RESPONSE
3484 ;
3485 ;OUTPUTS:
3486 ;      R0      NUMBER OF THE OPERATOR'S SELECTION
3487 ;
3488 GETSEL::
3489     SAVREG                ;SAVE GENERAL REGISTERS
3490     MOV      R0,R2        ;SAVE THE MENU ADDRESS
3491     MOV      R2,R3        ;START OF MENU STRING
3492     TST      (R3)         ;END OF ASCII ?
3493     BEQ      3$           ;BRANCH IF ALL LINES DISPLAYED
3494     PRINTF   0SELASC,(R3)+ ;DISPLAY THE MENU
3495     MOV      (R3)+,-(SP)
3496     MOV      0SELASC,-(SP)
3497     MOV      02,-(SP)
3498     MOV      SP,R0
3499     TRAP     C$PNTF
3500     ADD      06,SP
3501     BR       2$
3502     3$:      GMANID      MENASC,MENRES,D,-1,0,-1,NO
3503     TRAP     C$GMAN
3504     BR       10001$
3505     .WORD    MENRES
3506     .WORD    T$CODE
3507     .WORD    MENASC
3508     .WORD    -1
3509     .WORD    T$LOLIM
3510     .WORD    T$HILIM
3511     10001$: BNCOMPLETE  1$      ;RETRY IF ERROR
3512     BCC      1$
3513     MOV      MENRES,R0      ;GET THE OPERATOR'S REPLY
3514     CMP      R0,R1         ;COMPARE TO MAXIMUM ALLOWED
3515     BLOS     5$            ;BRANCH IF OK
3516     PRINTF   0MENERR       ;DISPLAY ERROR MESSAGE
3517     MOV      0MENERR,-(SP)
3518     MOV      01,-(SP)
3519     MOV      SP,R0
3520     TRAP     C$PNTF
3521     ADD      04,SP
3522     BR       1$
3523     5$:      RTS          ;RETRY
3524             PC           ;RETURN TO CALLER
3525     045     MENERR: .ASCIZ 'N/A *** Menu Selection Too Large ***'
3526     045     SELASC: .ASCIZ 'N/T'
3527     164     MENASC: .ASCIZ 'Enter Menu Selection: '
3528             .EVEN
3529     MENRES: .WORD 0

```


CHKMAN - CHECK MANUAL INTERVENTION LEGALITY

```

3510          .SBTTL  CHKMAN  - CHECK MANUAL INTERVENTION LEGALITY
3511          ;*
3512          ;
3513          ;ROUTINE TO TEST FOR MANUAL INTERVENTION LEGALITY.
3514          ;
3515          ;INPUT:
3516          ;
3517          ;      NONE.
3518          ;
3519          ;OUTPUT:
3520          ;
3521          ;      CARRY    0      MANUAL INTERVENTION NOT ALLOWED
3522          ;              1      MANUAL INTERVENTION IS OK
3523          ;
3524          ;SIDE EFFECTS:
3525          ;
3526          ;      A MESSAGE IS DISPLAYED WARNING THAT TEST IS
3527          ;      NOT EXECUTED IF MANUAL INTERVENTION IS NOT
3528          ;      ALLOWED.
3529          ;
3530          ;-
3531
3532          CHKMAN::
3533          SAVREG          ;SAVE THE REGISTERS
3534          MANUAL          ;SEE IF MANUAL INTERVENTION OK
3535          TRAP    C#MANI
3536          BCOMPLETE 1#    ;BRANCH IF ALLOWED
3537          BCS     1#
3538          PRINTF  #NOMAN  ;PRINT THE WARNING MESSAGE
3539          MOV     #NOMAN,-(SP)
3540          MOV     #1,-(SP)
3541          MOV     SP,R0
3542          TRAP    C#PNTF
3543          ADD     #4,SP
3544          CLC
3545          ;CLEAR CARRY FOR ERROR
3546          RTS     PC      ;RETURN
3547
3548          1#::
3549          NOMAN: .ASCIZ  '*** Manual Intervention not Allowed - Test Aborted ***'.
3550          .even

```


ENVIRN - SETUP FREE DIAGNOSTIC SPACE

```

3543          .SBTTL  ENVIRN  - SETUP FREE DIAGNOSTIC SPACE
3544          ;
3545          ; SUBROUTINE TO SET-UP VARIOUS ENVIRONMENTAL PARAMETERS.
3546          ;
3547 020720      ENVIRN: MEMORY R0
020720      TRAP C#MEM
3548 020722 104431      MOV R0,FREE          ; GET 1ST FREE ADDRESS...
3549 020726 062737 000002 003114      ADD #2,FREE
3550 020734 011037 003116      MOV (R0),FRESIZ      ; ...AND WORD COUNT.
3551 020740 162737 000004 003116      SUB #4,FRESIZ
3552 020746 013702 002012      MOV L#UNIT,R2      ; GET NUMBER OF UNITS
3553 020752 162737 000007 003116 10$: SUB #7,FRESIZ      ; TAKE AWAY 7 WORDS PER UNIT
3554 020760 005302      DEC R2
3555 020762 001373      BNE 10$
3556 020764 013700 003114      MOV FREE,R0          ;GET FIRST FREE ADDRESS
3557 020770 063700 003116      ADD FRESIZ,R0      ;POINT TO LAST FREE ADDRESS
3558 020774 162700 000002      SUB #2,R0          ;BACKUP 1 WORD
3559 021000 010037 003120      MOV R0,FREEHI      ;STORE LAST FREE ADDRESS
3560 021004 C00240      NOP                      ;*****
3561 021006 012701 177520      MOV #BDVPCR,R1      ;GET BDV11 PCR ADDRESS
3562 021012 010102      MOV R1,R2          ;COPY TO R2
3563 021014 062702 000002      ADD #2,R2          ;SET THE RANGE
3564 021020 004737 016466      JSR PC,XNXM      ;SEE IF WE HAVE ONE
3565 021024 103001      BCC 15$          ;OK TO SET FLAGS
3566 021026 000423      BR 40$          ;RETURN WITH FLAGS CLEAR
3567 021030 013701 177520 15$: MOV BDVPCR,R1      ;SAVE PCR CONTENTS
3568 021034 062701 000001      ADD #1,R1          ;ADD ONE TO IT
3569 021040 012702 177520      MOV #BDVPCR,R2      ;GET BDV11 PCR ADDRESS
3570 021044 005212      INC (R2)          ;TRY TO WRITE TO IT
3571 021046 013703 177520      MOV BDVPCR,R3      ;GET RESULTS
3572 021052 020103      CMP R1,R3          ;DID IT CHANGE?
3573 021054 001006      BNE 20$          ;NO, MUST BE 11/23B
3574 021056 005237 003134      INC T23A          ;SET THE FLAG
3575 021062 042737 170000 002120      BIC #170000,L#HIME ;SUPERVISOR COULD BE WRONG
3576      NOP                      ;BR 40$ FOR RELEASE
3577      PRINTF #M8186          ;TELL THE SYSTEM TYPE
3578 021070 000402      BR 40$          ;RETURN
3579 021072 005237 003136 20$: INC T23B          ;SET THE FLAG
3580      NOP                      ;BR 40$ FOR RELEASE
3581      PRINTF #M8189          ;TELL THE SYSTEM TYPE
3582 021076 40$:      RTS PC          ;RETURN
3583 021076 000207

```


KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

.SBTTL KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

```

3585
3586
3587
3588
3589
3590
3591
3592 021100
3593 021100 005037 003122
3594 021104 005037 003124
3595 021110 023727 002120 001577
3596 021116 101454
3597 021120 013700 000004
3598 021124 012737 021236 000004
3599 021132 005737 177572
3600 021136 000240
3601 021140 013737 002120 003122
3602 021146 022737 007777 003122
3603 021154 100404
3604 021156 042737 003777 003122
3605 021164 000403
3606 021166 042737 000177 003122 44:
3607 021174 010037 000004 54:
3608 021200 005000
3609 021202 012701 172340
3610 021206 012761 077406 177740 14:
3611 021214 010021
3612 021216 062700 000200
3613 021222 020027 002000
3614 021226 001367
3615 021230 012741 177600
3616 021234 000405
3617
3618 021236 012716 021244 24:
3619 021242 000002
3620
3621 021244 010037 000004 64:
3622
3623 021250 000207 94:

```

KTINIT:	CLR	KTFLG	; INIT >28K MEMORY FLAG
	CLR	KTENABLE	; INIT TEST >28K FLAG
	CMP	L#HIME,#1577	; GOT ENOUGH MEMORY (>28K)?
	BLOS	94	; NO.
	MOV	#ERRVEC,R0	; SAVE OLD ERR VEC PTR.
	MOV	#24,#ERRVEC	; SET ERR VEC PTR.
	TST	#SRO	; GOT KT11?
	NOF		; (TRAP IF NO).
	MOV	L#HIME,KTFLG	; YES. SET KT FLAG.
	CMP	#7777,KTFLG	; >256K ?
	BMI	44	; NO
	BIC	#3777,KTFLG	; ALIGN ON BOUNDARY
	BR	54	
	BIC	#177,KTFLG	; RESTORE OLD ERR VEC PTR.
	MOV	R0,#ERRVEC	; R0 = AR DATA.
	CLR	R0	; F.1 = KI REGS PTR.
	MOV	#KIPAR0,R1	; SET DESCRIPTOR REG.
	MOV	#77406,-40(R1)	; SFT KIPAR REG.
	MOV	R0,(R1)	; BUMP AR DATA BY "4K".
	ADD	#200,R0	; AT "I/O"?
	CMP	R0,#2000	; NO.
	BNE	14	; YES. SET KTPAR7 FOR I/O.
	MOV	#177600,-(R1)	
	BR	94	
	MOV	#64,(SP)	; SET UP RETURN
	RTI		; RTI TO NEXT LOCATION
	MOV	R0,#ERRVEC	; RESTORE OLD ERR VEC PTR.
	RTS	PC	

KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

3625

KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

```
3627      ;*
3628      ;      SUBROUTINE TO SET EXTENDED FEATURES SWITCH
3629      ;
3630      ;      Requires that SOFINIT and WRTCHR have been done previous to call.
3631      ;
3632      ;
3633      ;INPUTS:
3634      ;      R5      CURRENT UNIT NUMBER
3635      ;OUTPUTS:
3636      ;      The Extended Features Switch is set.
3637      ;
3638      ;-
3639
3640
```



```

3642      ;
3643      ; SUBROUTINE TO SET EXTENDED FEATURES SWITCH
3644      ;
3645      ; Requires that SOFINIT and WRTCHR have been done previous to call.
3646      ;
3647      ;
3648      ; INPUTS:
3649      ; R5      CURRENT UNIT NUMBER
3650      ; OUTPUTS:
3651      ; The Extended features Switch is set.
3652      ;
3653      ;-
3654
3655      INVERT::
3656      021252      013705      002176      mov      csraddr,r5
3657      021256      004737      016064      jsr      pc,sof nit
3658      021262      103406      bcs      25$
3659      021264      010001      mov      r0,r1
3660      021266      errrdf      errno,ofierr,sfimg
3661      021270      104455      TRAP      C$ERDF
3662      021272      001513      .WORD      843
3663      021274      003650      .WORD      ofierr
3664      021276      012124      .WORD      sfimg
3665      021276      104455      trap c$erdf
3666      25$:      ckloop
3667      021300      104406      TRAP      C$CLP1
3668      021302      013737      002172      022140      mov      unitn,t39dsw
3669      021310      012704      022120      mov      @t39pk2,r4
3670      021314      004737      010752      jsr      pc,wrtchr
3671      021320      103406      bcs      50$
3672      021322      010001      mov      r0,r1
3673      021324      errhrd      errno,wrtmsg,sf msg
3674      021326      104456      TRAP      C$ERHRD
3675      021328      001513      .WORD      843
3676      021330      005054      .WORD      wrtmsg
3677      021332      012124      .WORD      sfimg
3678      021334      104456      trap c$erhrd
3679      50$:      ckloop
3680      021336      104406      TRAP      C$CLP1
3681      021340      013701      021450      mov      t39bfr+12,r1
3682      021344      032701      000200      bit      @bit7,r1
3683      021350      001020      bne      1$
3684      021352      012737      100206      022170      10$:      MOV      @100206,CMOPKT
3685      021360      012737      022200      022172      MOV      @WSMBK,CMOPKT+2
3686      021366      012737      000006      022176      MOV      @6,CMOPKT+6
3687      021374      012737      100010      022200      MOV      @100010,WSMBK
3688      021402      012704      022170      MOV      @CMOPKT,R4
3689      021406      004737      010752      JSR      PC,WRTCHR
3690      021412      000207      1$:      RTS      PC
3691      021414      000000      T39DLY:      .WORD      0
3692      021420      021420      .<..10>E177770
3693      021420      140006      T39PACKET:      .WORD      140006
3694      021422      021430      .WORD      T39TAD
3695      021424      000000      .WORD      0
3696      021426      000012      .WORD      10.

```


KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

```

3691 021430      T39TAD:
3692 021430      T39BS0: .BYTE 0
3693 021431      T39BS1: .BYTE 0
3694 021432      T39BS2: .WORD 0
3695 021434      T39BS2: .WORD 0
3696 021436      T39BFR: .BLKW 150.
3697
3698
3700      022120      ;CHARACTERISTICS DATA BLOCK
3702 022120      T39PK2: .=<..10>E177770
3703 022120      140004      ;COMMAND PACKET FOR TEST
3704 022122      022130      ;WRITE CHARA. MEM. CMD., ACK.CVC=1
3705 022124      000000      ;ADDRESS OF SELECT DATA BLOCK
3706 022126      000012      ;STARTING VALUE OF BLOCK SIZE
3707
3708
3709 022130      T39DTA:
3710 022130      021436      ;SELECT DATA BLOCK
3711 022132      000000      ;ADDRESS OF MESSAGE BUFFER
3712 022134      000400      ;LENGTH OF MESSAGE BUFFER
3713 022136      000000      ;EAI BIT WORD
3714 022140      000000      ;DRIVE SELECT WORD ETC
3716      022150      .=<..10>E177770
3718 022150      140012      T39PK3: .WORD 140012
3719 022152      000000      .WORD 0
3720      ;MESSAGE BUFFER RELEASE COMMAND
3721      ;NOT USED
3722
3723      ;WRITE TAPE PACKET
3724
3726 022160      022160      .=<..10>E177770
3727 022162      140005      T39PK4: .WORD 140005
3728 022164      000000      ;WRITE, ACK, CVC=1 COMMAND
3729 022166      000400      T39WR: .WORD 0
3730      ;ADDRESS OF WRITE BUFFER
3731      ;MORE ADDRESS OF WRITE BUFFER
3732      ;SIZE OF RECORD
3733      022170      T39SIZ: .WORD 256.
3734
3735 022170      000000      ;
3736 022172      000000      ;COMMAND PACKET.
3737 022174      000000      .
3738 022176      000000      . = <..3>E177774 ;MUST BE ON MOD 4 BOUNDARY.
3739
3740      CMOPKT: 0
3741      0
3742      0
3743      0
3744      0
3745      ;1ST WORD IS TS05 COMMAND.
3746      ;2ND WORD IS THE BUFFER LOW ADDRESS.
3747      ;3RD WORD IS THE BUFFER HIGH ADDRESS.
3748      ;4TH WORD IS THE BYTE/RECORD/FILE COUNT.
3749
3750      ;WRITE SUB-SYSTEM MEMORY CHARACTERISTIC BLOCK.
3751      WSMBK: 0
3752      0
3753      0
3754      .EVEN
3755
3756      ;1ST WORD: SEL 0
3757      ;2ND WORD: SEL 2
3758      ;3RD WORD: SEL 4
3759
3760      ;*
3761      ;SUBROUTINE TO CHECK WHETHER OR NOT WE'LL TEST NXM
3762      ;
3763      ;
3764      ;
3765      ;INPUTS:
3766      ;OUTPUTS:
3767      ;
3768      ;The NXMFLG is set if we can test.
3769      ;The NXML0 and NXMHI addresses are setup.
3770
3771
3772
3773

```


KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

```

3754
3755
3756 022206
3757
3758 022206
3759 022212 005037 003126
3760 022216 005037 003130
3761 022222 005037 003132
3762 022226 005737 003136
3763 022232 001407
3764 022234 023727 002120 007777
3765 022242 103406
3766 022244 004737 022362
3767 022250 000427
3768 022252 005737 003134 14:
3769 022256 001413
3770 022260 023727 002120 005777 24:
3771 022266 101023
3772 022270 023727 002120 003777
3773 022276 103403
3774 022300 004737 022362
3775 022304 000411
3776 022306 023727 002120 001577 44:
3777 022314 103410
3778 022316 004737 022362
3779 022322 062737 000077 003132
3780 022330 005237 003126 134:
3781 022334 000411
3782 022336 000410 144:
3783 022340
3784 022340 012746 005456
3785 022344 012746 000001
3786 022350 010600
3787 022352 104417
3788 022354 062706 000004
3789 022360 000207 154:
3790
3791
3792
3793 022362 013701 002120
3794 022366 062701 000200
3795 022372 042701 000177
3796 022376 010102
3797 000006
3798
3799
3800 022414 010137 003130
3801 000012
3802
3803
3804 022444 042702 177700
3805 022450 010237 003132

```

MEMCK::

SAVREG

CLR NXMFLG ;SAVE THE REGISTERS

CLR NXMLO ;CLEAR THE FLAG

CLR NXMMHI ;CLEAR THE TEST ADDRESS LO

TST T23B ;CLEAR THE TEST ADDRESS HI

BEQ 14 ;IS IT A 11/23B?

NO ;NO

CMP L#HIME,#7777 ;GREATER THAN 128K

BLO 24 ;NO

JSR PC,NXMTST ;SETUP THE ADDRESS

BR 134 ;SET THE FLAG AND EXIT

TST T23A ;IS IT A 11/23A?

BEQ 44 ;NO

CMP L#HIME,#5777 ;GREATER THAN 96K

BHI 144 ;YES,23A/23B WITH 128K MEMORY

CMP L#HIME,#3777 ;GREATER THAN 64K BUT LESS THAN 92K?

BLO 44 ;NO, CHECK 24K

JSR PC,NXMTST ;SETUP THE ADDRESS

BR 134 ;SET THE FLAG AND EXIT

CMP L#HIME,#1577 ;GREATER THAN 24K BUT LESS THAN 64K?

BLO 144 ;NO, TELL THEM AND EXIT WITH FLAG CLEAR

JSR PC,NXMTST ;SETUP THE ADDRESS

ADD #77,NXMMHI ;FOOL THE 11/02 & 11/03

INC NXMFLG ;SET THE FLAG

BR 154 ;EXIT

BR 154 ;NOP FOR PRINTOUT

PRINTF #NOMEM ;TELL THEM & EXIT ***NO PRINT*****

MOV #NOMEM,-(SP)

MOV #1,-(SP)

MOV SP,R0

TRAP C#PNTF

ADD #4,SP

RTS PC ;RETURN

;* SUBROUTINE TO SETUP THE NXM ADDRESS FOR TESTING

OUTPUTS: NXMLO,NXMMHI ;SETUP WITH NXM ADDRESS

;-

NXMTST: MOV L#HIME,R1 ;GET TOP OF MEMORY

ADD #200,R1 ;MAKE IT I/O BLOCK OR OTHER NXM

BIC #177,R1

MOV R1,R2 ;RESAVE RESULTS

.REPT 6

ASL R1 ;PUT IN PLACE FOR XFER

.ENOR

MOV R1,NXMLO ;SAVE TEST ADDRESS LOW

.REPT 10

ASR R2 ;PUT IN PLACE FOR XFER

.ENOR

BIC #177700,R2 ;DON'T WANT ILA!

MOV R2,NXMMHI ;SAVE TEST ADDRESS HIGH

KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

```
3806 022454 000207          RTS      PC              ;RETURN
3807
3808 022456          ENDMOD
3817          .TITLE  TSV4    MISCELLANEOUS SECTIONS
3818
3819 022456          BGNMOD  TSV4
      022456          TSV4::
3820
3826
3827
3828
3829          .SBTTL  PROTECTION TABLE
3830 022456          BGNPROT
      022456          L#PROT::
3831 022456 177777 177777 177777 .WORD  -1, -1,  1, -1          ;NO DEVICE PROTECTION REQUIRED.
3832 022466          ENDPROT
```


INITIALIZE SECTION

```

3834 .SBTTL INITIALIZE SECTION
3835
3836 ;**
3837 ;THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
3838 ;AT THE BEGINNING OF EACH PASS.
3839 ;
3840 ;IF "START" OR "RESTART", SET QUICK-PASS FLAG AND BUS-INIT.
3841 ;IF "CONTINUE", NOTHING IS REQUIRED.
3842 ;
3843 ;--
3844 ;*
3845 ;INSERT TEMPORARY JUMP TO ODT
3846 ;-
3847 BGNINIT
022466
022466
3848 022466 005037 002216
3849 022472 005037 003126
3850 022476 012737 006356 002170
3851 022504 005037 003144
3852 022510 005037 003124
3853 022514 005037 002272
3854 022520
022520 012700 000036
022524 104447
3855 022526
022526 103023
3856 022530 023737 002172 002012
3857 022536 103070
3858 022540 005737 003102
3859 022544 100472
3860 022546 013701 002172
3861 022552 006301
3862 022554 005761 003166
3863 022560 001516
3864 022562 032761 040000 003166
3865 022570 001060
3866 022572
022572 104432
022574 000416
3867 022576
022576 012700 000035
022602 104447
3868 022604
022604 103052
3869 022606
022606 012700 000040
022612 104447
3870 022614
022614 103404
3871 022616
022616 012700 000037
022622 104447
3872 022624
022624 103031
3873 022626
3874 022626 104433

```

```

;L$INIT::
40$: CLR EXTFEA
CLR NXMFLG
MOV #EPR1,EPRSW ;SET UP PRIMARY MESSAGE FOR REPLACEMENT
CLR SIFLAG ;CLEAR "SOFT INIT" FLAG
CLR KTENABLE ;CLEAR TEST ABOVE 28K FLAG
CLR RAMSIZ ;CLEAR RAM SIZE FOR RAMERR ROUTINE
READF #EF.CONTINUE
MOV #EF.CONTINUE,R0
TRAP C$REFG
BNCOMPLETE 1$
BCC 1$
CMP UNITN,L$UNIT ;UNIT IN RANGE?
BHS 4$ ;BR IF NO.
TST DUFLG ;DROPPED UNIT?
BMI NXTU ;BR IF YES
MOV UNITN,R1
ASL R1
TST ERTABL(R1)
BEQ SETU
BIT #BIT14,ERTABL(R1) ;DROPPED?
BNE NXTU
EXIT INIT ;DO NOTHING IF "CONTINUE".
TRAP C$EXIT
WORD L10030-.
1$: READF #EF.NEW
MOV #EF.NEW,R0
TRAP C$REFG
BNCOMPLETE NXTU ;TAKE NEXT UNIT IF NOT NEW PASS.
BCC NXTU
READF #EF.START
MOV #EF.START,R0
TRAP C$REFG
BCOMPLETE 2$
BCS 2$
READF #EF.RESTART
MOV #EF.RESTART,R0
TRAP C$REFG
BNCOMPLETE 31$
BCC 31$
2$: BRESET ;1ST PASS, BUS-INIT...
TRAP C$RESET ;BUS RESET.

```


INITIALIZE SECTION

```

3875 022630 005037 002204      CLR      TSTCNT      ;NUMBER OF TESTS RUN IN PASS
3876 022634 005037 002212      CLR      FATFLG      ;CLEAR FATAL ERROR COUNT
3877 022640 005037 003134      CLR      T23A       ;CLEAR 11/23A FLAG
3878 022644 005037 003136      CLR      T23B       ;CLEAR 11/23B FLAG
3879      :      MOV      #340,-(SP)
3880      :      MOV      #204,-(SP)      ;RETURN TO DEBUGGER
3881      :      JMP      0.ODT      ;ENTER THE DEBUGGER
3882 022650 005037 003370      CLR      SKIPT      ;CLEAR THE SUBTEST "SKIPPER"
3883 022654      :      20$:
3884 022654 012737 177777 002174  MOV      #-1,QVP      ;...QUICK VERIFY...
3885 022662 004737 020720      JSR      PC,ENVIRN      ;SET ENVIRONMENT.
3886 022666 004737 021100      JSR      PC,KTINIT      ;INITIALIZE KT MEMORY MANAGEMENT
3887 022672 012700 003166      MOV      #ERTABL,RO
3888 022676 005020 30$:      CLR      (RO)+      ;CLEAR THE ERROR TABLE
3889 022700 020027 003366      CMP      RO,#ERTABE
3890 022704 103774      BLO      30$
3891 022706 000404      BR      4$
3892 022710 005037 002174 31$:      CLR      QVP
3893 022714 000137 022764      JMP      PASRPT      ;GO REPORT THE STATUS
3894
3895 022720      4$:
3896 022720 012737 177777 002172 NEWPAS: MOV      #-1,UNITN      ;INIT UNIT NUMBER...
3897 022726 005037 002210      CLR      DEVCNT      ;CLEAR COUNT OF DEVICES RUNNING
3898 022732      NXTU:      BREAK
3899 022734 005237 002172      TRAP      C#BRK
3900 022740 023737 002172 002012      INC      UNITN      ;...AND SET NEXT UNIT NUMBER.
3901 022746 103423      CMP      UNITN,L#UNIT
3902 022750 012737 177777 003102      BLO      SETU
3903 022756 000401      MOV      #-1,DUFLG
3904 022760      BR      11$
3905 022762 000240      DOCLN      ;ABORT, NO MORE UNITS.
3906 022764      TRAP      C#DCLN
3907 022764 023727 002012 000001 11$:      NOP
3908 022772 101752      PASRPT:      CMP      L#UNIT,#1      ;HOW MANY UNITS SELECTED?
3909 022774 005737 002210      BLOS      NEWPAS      ;BR IF ONLY 1
3910 023000 001747      TST      DEVCNT      ;ARE ANY STILL RUNNING?
3911 023002      BEQ      NEWPAS      ;BR IF NO
3912 023002 104421      RFLAGS      RO
3913 023004 032700 000100      TRAP      C#RFLA
3914 023010 001343      BIT      #ISR,RO      ;SHOULD WE PRINT STATISTICS
3915 023012      BNE      NEWPAS      ;BR IF NO
3916 023012 104424      DORPT      ;
3917 023014 000741      TRAP      C#DRPT
3918 023016      BR      NEWPAS
3919 023016      10$:
3920 023022 104442      SETU:      GPHARD      UNITN,RO      ;GET UNIT N P-TABLE POINTER.
3921 023024 103342      MOV      UNITN,RO
3922 023026 005037 003102      TRAP      C#GPHRD
3923 023032 005237 002210      BNCOMPLETE NXTU      ;BR IF UNIT NOT AVAILABLE.
3924 023036 012001      BCC      NXTU
3925 023040 010137 002176      CLR      DUFLG      ;CLEAR "DROPPED" FLAG.
3926      INC      DEVCNT
3927      MOV      (RO)+,R1      ;GET 1ST REGISTER ADDRESS.
3928      MOV      R1,CSRADDR      ;ADDRESS OF REGISTERS OF UNIT UNDER TEST

```


INITIALIZE SECTION

```

3925
3926 023044 012001          MOV      (R0)+,R1          ;GET VECTOR ADDRESS.
3927                      ;MOV      (R0),R2          ;GET INTERRUPT PRIORITY
3928                      ;MOV      R2,IPRI          ;SET INTERRUPT PRIORITY.
3929 023046 010137 002200    MOV      R1,IVEC          ;SET INTERRUPT VECTOR POINTER...
3930 023052 012721 016306    MOV      @INTR,(R1)+      ;...VECTOR...
3931 023056 013721 002202    MOV      IPRI,(R1)+      ;...AND PRIORITY.
3932
3933 023062          1$:          TST      QVP          ;1ST PASS ??
3934                      ;          BEQ      5$          ;NO, SKIP THE PASS 1 STUFF.
3935
3936
3937                      ;
3938                      ;1ST PASS, CHECK THAT DEVICE ADDRESSES ARE VALID, AND
3939                      ;THAT THE DISPLAY STATUS IS PROPERLY INITIALIZED.
3940                      ;
3941 023062 013701 002172          MOV      UNITN,R1
3942 023066 006301          ASL      R1
3943 023070 C52761 100000 003166  BIS      @BIT15,ERTABL(R1)      ;SAY DEVICE RUNNING
3944 023076 005037 005770          CLR      EXTA          ;CLEAR ERROR EXTENSION FLAG.
3945 023102 023727 002012 000001  CMP      L$UNIT,#1      ;ARE WE TESTING MULTIPLE UNITS?
3946 023110 101416          BLOS     10$          ;BR IF NO.
3947 023112          RFLAGS     R0          ;YES -- GET OPERATOR FLAGS.
3948 023112 104421          TRAP     C$RFLA
3949 023114 032700 001000          BIT      @PNT,R0          ;SHOULD WE PRINT UNIT #?
3950 023120 001412          BEQ      10$          ;BR IF NOT.
3951 023122          PRINTF     @PUNIT,UNITN      ;PRINT THE UNIT #
3952 023122 013746 002172          MOV      UNITN,-(SP)
3953 023126 012746 023214          MOV      @PUNIT,-(SP)
3954 023132 012746 000002          MOV      #2,-(SP)
3955 023136 010600          MOV      SP,R0
3956 023140 104417          TRAP     C$PNTF
3957 023142 062706 000006          ADD      #6,SP
3958
3959 023146          10$:          CLR      NODEV
3960 023146 005037 003104          MOV      CSRADDR,R1      ;ADDRESS OF FIRST REGISTER
3961 023152 013701 002176          MOV      R1,R2          ;START OF REGISTERS
3962 023156 010102          ADD      @TSSR,R2          ;ADDRESS OF TSSR REGISTER
3963 023160 062702 000002          JSR      PC,XNXM          ;TEST BOTH CONTROLLER REGISTERS...
3964 023164 004737 016466          BCC      2$          ;...AND BR IF ALL OK.
3965 023170 103005          MOV      R1,NODEV          ;FLAG DEVICE AS NON-EXISTENT
3966 023172 010137 003104          MOV      #-1,DUFLG        ;DROP THIS UNIT.
3967 023176 012737 177777 003102 2$:
3968 023204          ;
3969          ;FINALLY, SET CPU PRIORITY AND WE'RE DONE.
3970
3971          5$:          SETPRI     @PRI00          ;ENABLE INTERRUPTS.
3972 023204 012700 000000          MOV      @PRI00,R0
3973 023210 104441          TRAP     C$SPRI
3974
3975 023212          L10030:      ENDINIT
3976 023212 104411          TRAP     C$INIT
3977
3978 023214 045 116 045 PUNIT: .ASCIZ  /NNNA***** TESTING UNIT #D2#A *****/
3979 .EVEN

```


ADD AND DROP UNITS SECTIONS

.SBTTL ADD AND DROP UNITS SECTIONS

```

3970
3971
3972
3973
3974
3975
3976
3977 023262
      023262
3978 023262 010001
3979 023264 006301
3980 023266 052761 100000 003166
3981 023274 042761 040000 003166
3982 023302
      023302 010046
      023304 012746 023330
      023310 012746 000002
      023314 010600
      023316 104417
      023320 062706 000006
3983 023324
      023324 000167
      023326 000026
3984 023330 045 116 045 14:
3985
3986
3987 023356
      023356
      023356 104452
3988
3989
3990
3991
3992
3993
3994
3995
3996
3997
3998
3999 023360
      023360
4000 023360 012737 177777 003102
4001 023366 010001
4002 023370 006301
4003 023372 052761 140000 003166
4004 023400 000240 000240 000240
4005 023406
      023406 010046
      023410 012746 023434
      023414 012746 000002
      023420 010600
      023422 104417
      023424 062706 000006
4006 023430
      023430 000167
      023432 000030

      ;**
      ; THE ADD-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
      ; TO BE (A) ADDED TO THE TEST LIST FOR THE FIRST TIME,
      ; OR (B) RE-INSERTED IF IT HAD BEEN PREVIOUSLY DROPPED.
      ;--
      BGNAU
L$AU::
      MOV R0,R1 ; GET UNIT TO BE ADDED (R0)
      ASL R1 ; MAKE IT A WORD INDEX
      BIS #100000,ERTABL(R1) ; SET THE "ACTIVE" BIT
      BIC #40000,ERTABL(R1) ; CLEAR THE "DROPPED" BIT
      PRINTF #1$,R0
      MOV R0,-(SP)
      MOV #1$,-(SP)
      MOV #2,-(SP)
      MOV SP,R0
      TRAP C$PNTF
      ADD #6,SP
      EXIT AU
      .WORD J$JMP
      .WORD L10031-2-.
      .ASCIZ /$N$A UNIT $D$A ADDED/
      .EVEN

      ENDAU ; UNUSED.
L10031:
      TRAP C$AU

      ;**
      ; THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
      ; TO BE REMOVED FROM THE TEST LIST.
      ;
      ; SUPVSR DOES THE "DROPPING". THIS IS JUST TO TELL THE MAN.
      ; "DROPPED" UNITS ARE RE-SELECTED ON OPERATOR "STA" OR "ADD"
      ; COMMAND, OTHERWISE REMAIN INACTIVE. THE "DISPLAY" COMMAND
      ; WILL PRINT ALL DROPPED UNITS, AND THE P-TABLES OF THOSE
      ; WHICH ARE STILL ACTIVE.
      ; UPON ENTRY, R0 CONTAINS THE UNIT TO BE DROPPED.
      BGNDU
L$DU::
      MOV # -1,DUFLG
      MOV R0,R1
      ASL R1
      BIS #140000,ERTABL(R1) ; SAY DROPPED
      240,240,240 ; ??????????
      PRINTF #1$,R0
      MOV R0,-(SP)
      MOV #1$,-(SP)
      MOV #2,-(SP)
      MOV SP,R0
      TRAP C$PNTF
      ADD #6,SP
      EXIT DU
      .WORD J$JMP
      .WORD L10032-2-.

```


ADD AND DROP UNITS SECTIONS

```

4007 023434      045      116      045 1$: .ASCIZ /#N#A UNIT #D#A DROPPED/
4008                                     .EVEN
4009 023464                                     ENDDU
      023464                                     L10032:
      023464 104453                                     TRAP      C#DU
4010                                     ;**
4011                                     ; AUTO-DROP CODE SECTION.
4012                                     ;--
4013 023466                                     BGNAUTO
      023466                                     L#AUTO:
4014 023466 013705 002176                                     MOV      CSRADDR,R5
4015 023472 012703 000550                                     MOV      #360.,R3
4016 023476 004737 016340 10$: JSR      PC,WAITF
4017 023502 103420                                     BCS      20$
4018 023504                                     DELAY    250.
      023504 012727 000372                                     MOV      #250.,(PC)+
      023510 000000                                     .WORD    0
      023512 013727 002116                                     MOV      L#DLY,(PC)+
      023516 000000                                     .WORD    0
      023520 005367 177772                                     DEC      -6(PC)
      023524 001375                                     BNE      -4
      023526 005367 177756                                     DEC      -22(PC)
      023532 001367                                     BNE      -20
4019 023534 005303                                     DEC      R3
4020 023536 001357                                     BNE      10$
4021 023540 004737 017272                                     JSR      PC,CKDROP
4022 023544                                     20$:
4023 023544                                     ENDAUTO
      023544 104461                                     L10033:
      023544                                     TRAP      C#AUTO
                                     ; POINT TO DEVICE REGISTER
                                     ; ENOUGH TIME FOR 2400' REEL TO REWIND
                                     ; WAIT FOR SSR TO SET
                                     ; LEAVE WHEN SSR IS SET
                                     ; WAIT FOR .25 SECONDS
                                     ; BUMP COUNTER DOWN
                                     ; KEEP GOING
                                     ; TRY AND DROP UNIT
                                     ; UNUSED.

```


CLEAN-UP AND REPORT CODING SECTIONS

```

4025          .SBTTL  CLEAN-UP AND REPORT CODING SECTIONS
4026
4027          ;**
4028          ; THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS
4029          ; EXECUTED AT THE END OF EACH PASS (OR SUB-PASS).
4030          ; USE TO RETURN DEVICE UNDER TEST TO A NEUTRAL STATE.
4031          ;--
4032 023546      BGNCLN
4033 023546      L$CLEAN::
4034 023546 013705 002176      MOV      CSRADOR,R5          ;POINT TO DEVICE REGISTER
4035 023552 005737 003102      TST      DUFLG              ;"DROPPED" FLAG IS SET ON...
4036 023556 100405              BMI      1$                ;...AND GROSS CONTROLLER FAULT...
4037                                ;...DON'T TRY TO XCT CLEANUP CODE.
4038 023560 012765 000000 000002      MOV      #0,TSSR(R5)      ;DO SOFT INIT
4039 023566 004737 016340              JSR      PC,WAITF
4040 023572      1$:
4041 023572      2$:      ENDCLN
4042 023572 104412      L10034:      TRAP      C$CLEAN
4043          ;**
4044          ; THE REPORT CODING SECTION CONTAINS THE
4045          ; "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.
4046          ;--
4047 023574      BGNRPT
4048 023574      L$RPT::
4049 023574      PRINTS      #DEVSUM
4050 023574      MOV      #DEVSUM,-(SP)
4051 023600 012746 024036      MOV      #1,-(SP)
4052 023604 010600              MOV      SP,R0
4053 023606 104416              TRAP      C$PNTS
4054 023610 062706 000004      ADD      #4,SP
4055 023614 010246              MOV      R2,-(SP)
4056 023616 010346              MOV      R3,-(SP)
4057 023620 010446              MOV      R4,-(SP)
4058 023622 012704 003166      MOV      #ERTABL,R4          ; GET START OF ERROR TABLE.
4059 023626 005003              CLR      R3                ; CLEAR UNIT NUMBER
4060 023630 011402              1$:      MOV      (R4),R2      ; GET ERROR TABLE ENTRY & TEST IT.
4061 023632 001467              BEQ      4$                ; ZERO IF UNIT NOT RUN
4062 023634 100066              BPL      4$
4063 023636 032702 040000      BIT      #BIT14,R2          ; WAS UNIT DROPPED?
4064 023642 001015              BNE      2$                ; BR IF YES
4065 023644 042702 170000      BIC      #C7777,R2          ; GET ERROR COUNT FIELD
4066 023650      PRINTS      #DEVONL,R3,R2              ; PRINT
4067 023650      MOV      R2,-(SP)
4068 023652 010346              MOV      R3,-(SP)
4069 023654 012746 024073      MOV      #DEVONL,-(SP)
4070 023660 012746 000003      MOV      #3,-(SP)
4071 023664 010600              MOV      SP,R0
4072 023666 104415              TRAP      C$PNTS
4073 023670 062706 000010      ADD      #10,SP
4074 023674 000446              BR      4$
4075 023676 020227 160000      2$:      CMP      R2,#160000      ; WAS UNIT NON-EXISTENT?
4076 023702 001012              BNE      3$                ; BR IF NO
4077 023704      PRINTS      #DEVNXR,R3
4078 023704      MOV      R3,-(SP)
4079 023706 012746 024143      MOV      #DEVNXR,-(SP)

```


CLEAN-UP AND REPORT CODING SECTIONS

```

023712 012746 000002      MOV    #2,-(SP)
023716 010600      MOV    SP,R0
023720 104416      TRAP    C#PNTS
023722 062706 000006      ADD    #6,SP
4064 023726 000431      BR     4#
4065 023730 020227 160001      3# : CMP    R2,#160001      ; WAS UNIT NOT READY AT STARTUP?
4066 023734 001012      BNE    30#      ; BR IF NO.
4067 023736      PRINTS  #DEVNRD,R3
023736 010346      MOV    R3,-(SP)
023740 012746 024225      MOV    #DEVNRD,-(SP)
023744 012746 000002      MOV    #2,-(SP)
023750 010600      MOV    SP,R0
023752 104416      TRAP    C#PNTS
023754 062706 000006      ADD    #6,SP
4068 023760 000414      BR     4#
4069 023762 042702 170000      30# : BIC    #1C7777,R2
4070 023766      PRINTS  #DEVDR0,R3,R2
023766 010246      MOV    R2,-(SP)
023770 C10346      MOV    R3,-(SP)
023772 012746 024306      MOV    #DEVDR0,-(SP)
023776 012746 000003      MOV    #3,-(SP)
024002 C10600      MOV    SP,R0
024004 104416      TRAP    C#PNTS
024006 062706 000010      ADD    #10,SP
4071 024012 062704 000002      4# : ADD    #2,R4
4072 024016 005203      INC     R3
4073 024020 020427 003366      CMP    R4,#ERTABE
4074 024024 103701      BLO    1#
4075 024026 012604      MOV    (SP)+,R4
4076 024030 012603      MOV    (SP)+,R3
4077 024032 012602      MOV    (SP)+,R2
4078 024034      ENDRPT      ; UNUSED.
024034      L10035:
024034 104425      TRAP    C#RPT
4079
4080 024036      045      116      045 DEVSUM: .ASCIZ /#N#A DEVICE STATUS SUMMARY:#N/
4081 024073      045      101      040 DEVONL: .ASCIZ /#A UNIT #D3#A ONLINE, ERRORS = #D#N/
4082 024143      045      101      040 DEVNXR: .ASCIZ /#A UNIT #D3#A DROPPED, NON-EXISTENT REGISTER#N/
4083 024225      045      101      040 DEVNRD: .ASCIZ /#A UNIT #D3#A DROPPED, NOT READY AT STARTUP#N/
4084 024306      045      101      040 DEVDR0: .ASCIZ /#A UNIT #D3#A DROPPED, ERRORS = #D#N/
4085      .EVEN
4086
4087 024356      ENDMOD
4088

```


CLEAN-UP AND REPORT CODING SECTIONS

```

4092                .TITLE  TSV7 - HARDWARE TESTS 1-8
4093
4100
4101 024356          BGNMOD  TSV7
4102 024356          TSV7::
4107
4115                .SBTTL  TEST  1: INITIALIZE 04 TEST
4116
4117                ;*
4118                ;
4119                ;THIS TEST VERIFIES THAT WRITING INTO THE TSSR RETURNS THE
4120                ;CONTROLLER TO ITS INITIALIZED STATE FROM VARIOUS CONDITIONS
4121                ;(I.E. LOOPBACK ENABLED, FORCING WRONG PARITY, INVERTING SENSE OF
4122                ;EXTENDED FEATURES SWITCH, ETC.)
4123                ;
4124                ;-
4125 024356          BGNTST
4126 024356          C12737 006356 002170          MOV      @EPRT1,EPRTSW          ;SET UP PRIMARY ERROR MESSAGE
4127
4128                ;
4129                ;TEST 1
4130                ;
4131                ;-
4132
4133
4134
4139 024364          004737 016274          JSR      PC,DSBINT          ;DISABLE INTERRUPTS
4140 024370          012700 025314          MOV      @TST21ID,R0          ;ASCII MESSAGE TO IDENTIFY TEST
4141 024374          004737 016600          JSR      PC,TSTSETUP          ;DO INITIAL TEST SETUP
4142 024400          012737 000005 002206          MOV      @5,LOOPCNT          ;PERFORM 5 ITERATIONS
4143 024406          T21LOOP:
4144 024406          004737 025336          JSR      PC,T21REST          ;SET COMMAND PACKET
4145 024412          004737 025426          JSR      PC,T21RT2          ;SET UP OTHER COMMAND PACKET
4146
4147                ;*****
4148                ;
4149                ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
4150                ;
4151                ;*****
4152
4153 024416          012737 176750 024772          MOV      @65000,,T21DLY          ;SET DELAY ROUTINE
4154 024424          004737 016064          110: JSR      PC,SOFINIT          ;DO INITIALIZE ON CONTROLLER
4155 024430          103426          BCS      200          ;BR IF INIT WAS OK
4156 024432          012727 000250          DELAY  250          ;DELAY FOR A REWIND TO FINISH
4157
4158                MOV      @250,(PC).
4159                .WORD  0
4160                MOV      @L#DLY,(PC).
4161                .WORD  0
4162                DEC      -6(PC)
4163                BNE      -4
4164                DEC      -22(PC)
4165                BNE      -20
4166
4167                DEC      T21DLY          ;BUMP COUNTER DOWN
4168                BNE      110          ;BR, IF MORE TIME TO GO
4169                INC      FATFLG          ;BUMP COUNT
4170                MOV      R0,R1          ;CONTENTS OF TSSR REGISTER

```


TEST 1: INITIALIZE #4 TEST

```

4164 024476          ERRDF  ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
      024476      104455                                TRAP      C#ERDF
      024500      000145                                .WORD      101
      024502      003650                                .WORD      SFIERR
      024504      012124                                .WORD      SFIMSG
4165 024506
4166 024506      012704      024750      20$:      MOV      #T21PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
4167
4168      ;*****
4169      ;
4170      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
4171      ;
4172      ;*****
4173
4174 024512      013737      002172      024770      MOV      UNITN,T21DSW      ;SET UP DRIVE NUMBER
4175 024520      004737      010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4176 024524      103407      BCS      23$      ;BR, IF COMMAND ISSUED OK
4177 024526      005237      002212      INC      FATFLG      ;BUMP COUNT
4181 024532      C10001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
4182 024534      ERRHRD      ERRNO,WRTMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
      024534      104456                                TRAP      C#ERHRD
      024536      000146                                .WORD      102
      024540      005054                                .WORD      WRTMSG
      024542      012124                                .WORD      SFIMSG
4183 024544      23$:      CKLOOP
      024544      104406                                TRAP      C#CLP1
4184 024546      112737      000200      025070      MOV      #200,T21BS0      ;WRITE MISCELLANEOUS CONT/READ STATUS
4185 024554      112737      000010      025071      MOV      #10,T21BS1      ;FUNCTION SELECTION BIT
4186 024562
4187 024562      012704      025060      25$:      MOV      #T21PK2,R4      ;WRITE SUBSYS MEM PACKET
4188 024566      010465      000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4189 024572      004737      016426      JSR      PC,CHKTSSR      ;WAIT FOR SSR
4190 024576      103407      BCS      30$      ;BR, IF NO ERROR
4191 024600      010001      MOV      R0,R1      ;ERROR, SAVE TSSR
4192 024602      005237      002212      INC      FATFLG      ;BUMP COUNT
4196 024606      ERRHRD      ERRNO,T21SSR,PKTSSR      ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
      024606      104456                                TRAP      C#ERHRD
      024610      000147                                .WORD      103
      024612      025076                                .WORD      T21SSR
      024614      012136                                .WORD      PKTSSR
4197 024616      30$:      CKLOOP      ;SCOPE LOOP
      024616      104406                                TRAP      C#CLP1
4198 024620      012765      000000      000002      MOV      #0,TSSR(R5)      ;ISSUE A SOFT INITIALIZE
4199 024626      004737      016340      JSR      PC,WAITF      ;WAIT FOR JUST THE SSR BIT TO SET
4200 024632      016501      000002      MOV      TSSR(R5),R1      ;READ THE TSSR BACK
4201 024636      010102      MOV      R1,R2      ;WORK REGISTER
4202 024640      042702      176377      BIC      #C<HIADDR>,R2      ;CLEAR OUT OTHER BITS
4203 024644      052702      002200      BIS      #SSR:NBA,R2      ;SOME OF THE BITS THAT SHOULD BE SET
4204 024650      032701      000100      BIT      #OFL,R1      ;IS OFF LINE BIT SET
4205 024654      001012      BNE      38$      ;BR, IF DRIVE IS OFF LINE
4206 024656      020102      35$:      CMP      R1,R2      ;EXPECTED (R2) = RECEIVED (R1)
4207 024660      001406      BEQ      37$      ;BR, IF THEY ARE EQUAL (OK)
4208 024662      005237      002212      INC      FATFLG      ;BUMP COUNT
4212 024666      ERRHRD      ERRNO,T21AM3,EXPREC      ;"ERROR TRYING TO INIT AFTER WRITE MISC.
      024666      104456                                TRAP      C#ERHRD
      024670      000150                                .WORD      104
      024672      025173                                .WORD      T21AM3

```


TEST 1: INITIALIZE #4 TEST

```

4268
4269
4270      ;*
4271      ;LOCAL TEXT MESSAGES FOR TEST
4272      ;-
4273 025076      127      122      111  T21SSR: .ASCIZ  'WRITE MISCELLANEOUS CONTROL/READ STATUS Command Not Accepted'
4274 025173      124      123      123  T21AM3: .ASCIZ  'TSSR Init. Failed After WRITE MISCELLANEOUS CONRTOL/READ STATUS'
4275 025273      104      162      151  T21OFL: .ASCIZ  'Drive is OFFLINE'
4276 025314      111      156      151  T21ID:  .ASCIZ  'Initialization #4'
4277      .EVEN
4278
4279      ;*
4280      ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
4281      ;WRITE SUBSYSTEM MEMORY COMMAND
4282      ;-
4283
4284
4285 025336      T21REST:
4286 025336      SAVREG
4287 025342      012701  024750      MOV      #T21PACKET,R1      ;SAVE THE REGISTERS
4288 025346      012721  100004      MOV      #100004,(R1)+      ;START OF THE PACKET
4289 025352      012721  024760      MOV      #T21DATA,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK.
4290 025356      005021      CLR      (R1)+      ;ADDRESS OF CHARAISTICS DATA BLOCK
4291 025360      012721  000010      MOV      #8,(R1)+      ;EXTENDED ADDRESS
4292 025364      012721  024774      MOV      #T21BFR,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
4293 025370      005021      CLR      (R1)+      ;ADDRESS OF MESSAGE BUFFER
4294 025372      012721  000024      MOV      #20,(R1)+      ;LENGTH OF MESSAGE BUFFER
4295 025376      005021      CLR      (R1)+
4296 025400      005011      CLR      (R1)
4297 025402      012702  000020      MOV      #20,R2      ;NUMBER OF LOCATIONS TO BE CLEARED
4298 025406      012762  177777  024774  64:  MOV      #177777,T21BFR(R2)  ;ALL ONES TO MESSAGE BUFFER
4299 025414      005742      TST      -(R2)      ;NEXT LOCATION
4300 025416      020227  000000      CMP      R2,#0      ;CHECK R2 FOR ZERO
4301 025422      001371      BNE      64:      ;BR, IF NOT AT ZERO YET
4302 025424      000207      RTS      PC      ;RETURN
4303
4304
4305 025426      T21RT2:
4306 025426      SAVREG
4307 025432      012701  025060      MOV      #T21PK2,R1      ;SAVE THE REGISTERS
4308 025436      012721  100206      MOV      #100206,(R1)+      ;START OF THE PACKET
4309 025442      012721  025070      MOV      #T21BF2,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK, IE
4310 025446      005021      CLR      (R1)+      ;ADDRESS OF DATA BLOCK
4311 025450      012721  000006      MOV      #6,(R1)+      ;EXTENDED ADDRESS
4312 025454      005021      CLR      (R1)+      ;SIZE OF DATA BLOCK IN BYTES
4313 025456      012701  025070      MOV      #T21BF2,R1      ;ADDRESS OF DATA FOR WRT SUB SYS MEM
4314 025462      005021      CLR      (R1)+
4315 025464      005011      CLR      (R1)
4316 025466      000207      RTS      PC      ;RETURN
4317 025470      ENDTST
4318      025470      104401
4319
4320      .SBTTL  TEST  2: OFF-LINE AND REJECT REWIND
4321      ;*
4322      ;THIS TEST VERIFIES BASIC TAPE-MOTION COMMAND DECODING AND BASIC

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L10036: TRAP C#ETST

TEST 2: OFF-LINE AND REJECT REWIND

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4323 ;OPERATION OF THE REWIND POSITIONING COMMAND. IT DOES NOT
4324 ;NECESSARILY DEMONSTRATE THAT THE TRANSPORT CAN BE REWOUND FROM AN
4325 ;ARBITRARY POSITION ON THE TAPE. SUBSEQUENT TESTS IMPLICITLY
4326 ;CHECK THE OPERATION OF THE REWIND COMMAND SINCE THEY MUST
4327 ;TYPICALLY REWIND THE TAPE IN THE NORMAL COURSE OF THEIR TEST
4328 ;SEQUENCES. THE TEST CONSISTS OF THE FOLLOWING THREE SUBTESTS
4329 ;
4330 ;
4331 ;-
4332 BGNTST
4333 T2::
4334 MOV #EPRT1,EPRTSW ;SET UP PRIMARY ERROR MESSAGE
4335 JSR PC,DSBINT ;DISABLE INTERRUPTS
4336 MOV #TST2ID,R0 ;ASCII MESSAGE TO IDENTIFY TEST
4337 JSR PC,TSTSETUP ;DO INITIAL TEST SETUP
4338 MOV #5,LOOPCNT ;PERFORM 5 ITERATIONS
4339 ;+
4340 ;
4341 ;TEST 2. SUBTEST 1
4342 ;
4343 ;VERIFIES THAT ALL TAPE-MOTION COMMANDS (WITH VALID
4344 ;MODE CODES) TERMINATE WITH FUNCTION REJECT AND
4345 ;OFF-LINE STATUS WHEN THE TAPE TRANSPORT IS OFF-LINE.
4346 ;THE SUBTEST OPERATES BY PLACING THE CONTROLLER INTO
4347 ;EXTENDED MODE, SELECTING UNIT 7, AND ISSUING EACH
4348 ;TAPE-MOTION COMMAND, CHECKING, AFTER EACH COMMAND,
4349 ;THAT FUNCTION REJECT TERMINATION WAS ACCOMPLISHED.
4350 ;-
4351 T22LOOP:
4352 BGNSUB ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
4353 T2.1: TRAP C#BSUB
4354 JSR PC,T22REST ;SET COMMAND PACKET
4355 JSR PC,T22RT2 ;SET UP OTHER COMMAND PACKET
4356 ;*****
4357 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
4358 ;
4359 ;*****
4360 JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
4361 BCS 20$ ;BR IF INIT WAS OK
4362 INC FATFLG ;BUMP COUNT
4363 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
4364 ERROF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
4365 TRAP C#ERDF
4366 .WORD 201
4367 .WORD SFIERR
4368 .WORD SFIMSG
4369 20$:
4370 MOV #T22PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
4371 ;*****
4372 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)

```


TEST 2: OFF-LINE AND REJECT REWIND

```
4380
4381
4382
4383 025564 004737 010752      JSR    PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4384 025570 103407              BCS    23$              ;BR, IF COMMAND ISSUED OK
4385 025572 005237 002212      INC    FATFLG          ;BUMP COUNT
4389 025576 010001              MOV    R0,R1            ;SAVE CONTENTS OF TSSR
4390 025600              ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
                                TRAP    C$ERHRD
                                .WORD   202
                                .WORD   WRTMSG
                                .WORD   SFMSG
                                025600 104456
                                025602 000312
                                025604 005054
                                025606 012124
4391 025610              23$:  CKLOOP              TRAP    C$CLP1
                                025610 104406
4392 025612 013701 027070      MOV    T22BFR+6,R1      ;PICK UP XT50
4393 025616 032701 000004      BIT     #4,R1          ;IS UNIT WRITE-LOCKED?
4394 025622 001407              BEQ     24$              ;NO,PROCEED WITH TESTING
4395 025624 005237 002212      INC    FATFLG          ;BUMP COUNT
4399 025630              ERRDF  ERRNO,T22WLK,SFMSG      ;TAPE IS WRITE LOCKED
                                TRAP    C$ERDF
                                .WORD   203
                                .WORD   T22WLK
                                .WORD   SFMSG
                                025630 104455
                                025632 000313
                                025634 027672
                                025636 012124
4400 025640              DOCLN                      TRAP    C$DOCLN
                                025640 104444
4401 025642              24$:  CKLOOP              TRAP    C$CLP1
                                025642 104406
4402 025644 005737 002216      TST     EXTFEA          ;CHECK FOR EXTENDED FEATURES SW SWITCH
4403 025650 001041              BNE     50$              ;BR IF SWITCH IS ON
4404 025652 112737 000200 027161  MOVB   #200,T22BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
4405 025660 112737 000010 027160  MOVB   #10,T22BS0      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
4406 025666 012704 027150      MOV     #T22PK2,R4        ;WRITE SUBSYS MEM PACKET
4407 025672 010465 000000      MOV     R4,TSSD(R5)      ;ISSUE COMMAND
4408 025676 004737 016426      JSR     PC,CHKTSSR      ;WAIT FOR SSR
4409 025702 103407              BCS    30$              ;BR, IF NO ERROR
4410 025704 010001              MOV    R0,R1            ;ERROR, SAVE TSSR
4411 025706 005237 002212      INC    FATFLG          ;BUMP COUNT
4415 025712              ERRHRD  ERRNO,T22SSR,PKTSSR    ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                TRAP    C$ERHRD
                                .WORD   204
                                .WORD   T22SSR
                                .WORD   PKTSSR
                                025712 104456
                                025714 000314
                                025716 027200
                                025720 012136
4416 025722              30$:  CKLOOP              ;LOOP IF SELECTED
                                025722 104406              TRAP    C$CLP1
4417 025724 012704 027040      MOV     #T22PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
4418
4419
4420
4421
4422
4423
4424
4425 025730 004737 010752      JSR     PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4426 025734 103407              BCS    50$              ;BR, IF COMMAND ISSUED OK
4427 025736 005237 002212      INC    FATFLG          ;BUMP COUNT
4431 025742 010001              MOV    R0,R1            ;SAVE CONTENTS OF TSSR
4432 025744              ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
```


TEST 2: OFF-LINE AND REJECT REWIND

PC	PC+1	PC+2	PC+3	PC+4	PC+5	PC+6	PC+7	PC+8	PC+9	PC+10	PC+11	PC+12	PC+13	PC+14	PC+15	PC+16	PC+17	PC+18	PC+19	PC+20	PC+21	PC+22	PC+23	PC+24	PC+25	PC+26	PC+27	PC+28	PC+29	PC+30	PC+31	PC+32	PC+33	PC+34	PC+35	PC+36	PC+37	PC+38	PC+39	PC+40	PC+41	PC+42	PC+43	PC+44	PC+45	PC+46	PC+47	PC+48	PC+49	PC+50	PC+51	PC+52	PC+53	PC+54	PC+55	PC+56	PC+57	PC+58	PC+59	PC+60	PC+61	PC+62	PC+63	PC+64	PC+65	PC+66	PC+67	PC+68	PC+69	PC+70	PC+71	PC+72	PC+73	PC+74	PC+75	PC+76	PC+77	PC+78	PC+79	PC+80	PC+81	PC+82	PC+83	PC+84	PC+85	PC+86	PC+87	PC+88	PC+89	PC+90	PC+91	PC+92	PC+93	PC+94	PC+95	PC+96	PC+97	PC+98	PC+99	PC+100	PC+101	PC+102	PC+103	PC+104	PC+105	PC+106	PC+107	PC+108	PC+109	PC+110	PC+111	PC+112	PC+113	PC+114	PC+115	PC+116	PC+117	PC+118	PC+119	PC+120	PC+121	PC+122	PC+123	PC+124	PC+125	PC+126	PC+127	PC+128	PC+129	PC+130	PC+131	PC+132	PC+133	PC+134	PC+135	PC+136	PC+137	PC+138	PC+139	PC+140	PC+141	PC+142	PC+143	PC+144	PC+145	PC+146	PC+147	PC+148	PC+149	PC+150	PC+151	PC+152	PC+153	PC+154	PC+155	PC+156	PC+157	PC+158	PC+159	PC+160	PC+161	PC+162	PC+163	PC+164	PC+165	PC+166	PC+167	PC+168	PC+169	PC+170	PC+171	PC+172	PC+173	PC+174	PC+175	PC+176	PC+177	PC+178	PC+179	PC+180	PC+181	PC+182	PC+183	PC+184	PC+185	PC+186	PC+187	PC+188	PC+189	PC+190	PC+191	PC+192	PC+193	PC+194	PC+195	PC+196	PC+197	PC+198	PC+199	PC+200	PC+201	PC+202	PC+203	PC+204	PC+205	PC+206	PC+207	PC+208	PC+209	PC+210	PC+211	PC+212	PC+213	PC+214	PC+215	PC+216	PC+217	PC+218	PC+219	PC+220	PC+221	PC+222	PC+223	PC+224	PC+225	PC+226	PC+227	PC+228	PC+229	PC+230	PC+231	PC+232	PC+233	PC+234	PC+235	PC+236	PC+237	PC+238	PC+239	PC+240	PC+241	PC+242	PC+243	PC+244	PC+245	PC+246	PC+247	PC+248	PC+249	PC+250	PC+251	PC+252	PC+253	PC+254	PC+255	PC+256	PC+257	PC+258	PC+259	PC+260	PC+261	PC+262	PC+263	PC+264	PC+265	PC+266	PC+267	PC+268	PC+269	PC+270	PC+271	PC+272	PC+273	PC+274	PC+275	PC+276	PC+277	PC+278	PC+279	PC+280	PC+281	PC+282	PC+283	PC+284	PC+285	PC+286	PC+287	PC+288	PC+289	PC+290	PC+291	PC+292	PC+293	PC+294	PC+295	PC+296	PC+297	PC+298	PC+299	PC+300	PC+301	PC+302	PC+303	PC+304	PC+305	PC+306	PC+307	PC+308	PC+309	PC+310	PC+311	PC+312	PC+313	PC+314	PC+315	PC+316	PC+317	PC+318	PC+319	PC+320	PC+321	PC+322	PC+323	PC+324	PC+325	PC+326	PC+327	PC+328	PC+329	PC+330	PC+331	PC+332	PC+333	PC+334	PC+335	PC+336	PC+337	PC+338	PC+339	PC+340	PC+341	PC+342	PC+343	PC+344	PC+345	PC+346	PC+347	PC+348	PC+349	PC+350	PC+351	PC+352	PC+353	PC+354	PC+355	PC+356	PC+357	PC+358	PC+359	PC+360	PC+361	PC+362	PC+363	PC+364	PC+365	PC+366	PC+367	PC+368	PC+369	PC+370	PC+371	PC+372	PC+373	PC+374	PC+375	PC+376	PC+377	PC+378	PC+379	PC+380	PC+3
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TEST 2: OFF-LINE AND REJECT REWIND

4479	026114			BGNSUB		; >>>>>>>> BEGIN SUBTEST >>>>>>>>>			
	026114					T2.2:			
	026114	104402				TRAP		C#BSUB	
4480	026116	004737	030012	JSR	PC,T22REST	;SET COMMAND PACKET			
4481	026122	004737	030104	JSR	PC,T22RT2	;SET UP OTHER COMMAND PACKET			
4482									
4483									
4484									
4485									
4486									
4487									
4488									
4489	026126	004737	016064	JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER			
4490	026132	103407		BCS	20\$;BR IF INIT WAS OK			
4491	026134	005237	002212	INC	FATFLG	;BUMP COUNT			
4495	026140	010001		MOV	R0,R1	;CONTENTS OF TSSR REGISTER			
4496	026142			ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK			
	026142	104455				TRAP		C#ERDF	
	026144	000320				.WORD		208	
	026146	003650				.WORD		SFIERR	
	026150	012124				.WORD		SFIMSG	
4497	026152			20\$:					
4498	026152	012704	027040	MOV	#T22PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS			
4499									
4500									
4501									
4502									
4503									
4504									
4505									
4506	026156	004737	010752	JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS			
4507	026162	103407		BCS	23\$;BR, IF COMMAND ISSUED OK			
4508	026164	005237	002212	INC	FATFLG	;BUMP COUNT			
4512	026170	010001		MOV	R0,R1	;SAVE CONTENTS OF TSSR			
4513	026172			ERRHRD	ERRNO,WRTMSG,SFIMSG	;WRITE CHARACTERISTISC FAILED			
	026172	104456				TRAP		C#ERHRD	
	026174	000321				.WORD		209	
	026176	005054				.WORD		WRTMSG	
	026200	012124				.WORD		SFIMSG	
4514	026202	005737	002216	23\$:	TST	EXTFEA			
4515	026206	001041		BNE	50\$;CHECK FOR EXTENDED FEATURES SW SWITCH			
4516						;BR IF SWITCH IS ON			
4517	026210	112737	000200	MOVB	#200,T22BS1	;WRITE MISCELLANEOUS CONT/READ STATUS			
4518	026216	112737	000010	MOVB	#10,T22BS0	;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)			
4519	026224	012704	027150	MOV	#T22PK2,R4	;WRITE SUBSYS MEM PACKET			
4520	026230	010465	000000	MOV	R4,TSDB(R5)	;ISSUE COMMAND			
4521	026234	004737	016426	JSR	PC,CHKTSSR	;WAIT FOR SSR			
4522	026240	103407		BCS	30\$;BR, IF NO ERROR			
4523	026242	010001		MOV	R0,R1	;ERROR, SAVE TSSR			
4524	026244	005237	002212	INC	FATFLG	;BUMP COUNT			
4528	026250			ERRHRD	ERRNO,T22SSR,PKTSSR	;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS			
	026250	104456				TRAP		C#ERHRD	
	026252	000322				.WORD		210	
	026254	027200				.WORD		T22SSR	
	026256	012136				.WORD		PKTSSR	
4529	026260			30\$:	CKLOOP	;LOOP IF SELECTED			
	026260	104406				TRAP		C#CLP1	

TEST 2: OFF-LINE AND REJECT REWIND

4530	026262	012704	027040		MOV	#T22PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS		
4531									
4532									
4533									
4534									
4535									
4536									
4537									
4538	026266	004737	010752		JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS		
4539	026272	103407			BCS	50\$;BR, IF COMMAND ISSUED OK		
4540	026274	005237	002212		INC	FATFLG	;BUMP COUNT		
4544	026300	010001			MOV	R0,R1	;SAVE CONTENTS OF TSSR		
4545	026302				ERRHRD	ERRNO,WRTMSG,SFIMSG	;WRITE CHARACTERISTISC FAILED		
	026302	104456						TRAP	C#ERHRD
	026304	000323						.WORD	211
	026306	005054						.WORD	WRTMSG
	026310	012124						.WORD	SFIMSG
4546	026312				50\$: CKLOOP		;SCOPE LOOP		
	026312	104406						TRAP	C#CLP1
4547	026314	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
4548	026320	032701	000100		BIT	#OFL,R1	;CHECK FOR THE OFFLINE BIT SET		
4549	026324	001006			BNE	60\$;BR, IF OFFLINE (GOOD)		
4550	026326	005237	002212		INC	FATFLG	;BUMP COUNT		
4554	026332				ERRDF	ERRNO,T22OFL,SFIMSG	;OFF LINE SHOULD HAVE BEEN SET (BAD)		
	026332	104455						TRAP	C#ERDF
	026334	000324						.WORD	212
	026336	027375						.WORD	T22OFL
	026340	012124						.WORD	SFIMSG
4555	026342				60\$: CKLOOP		;LOOP IF SELECTED		
	026342	104406						TRAP	C#CLP1
4556	026344	012737	102210	027150	65\$: MOV	#102210,T22PK2	;POSITION COMMAND (REWIND MODE)		
4557	026352	012704	027150		MOV	#T22PK2,R4	;R4 = POINTER TO PACKET		
4558	026356	010465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND		
4559	026362	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR TO SET		
4560	026366	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
4561	026372	012702	100306		MOV	#SSR!SC!OFL!BIT1!BIT2,R2	;SET UP EXPECTED		
4562	026376	020102			CMP	R1,R2	;ARE THEY EQUAL		
4563	026400	001406			BEQ	80\$;BR, IF OK ESP. FUNCTION REJECT		
4564	026402	005237	002212		INC	FATFLG	;BUMP COUNT		
4568	026406				ERRHRD	ERRNO,T22RWJ,EXPREC	;TSSR INCORRECT AFTER TAPE MOTION CMD		
	026406	104456						TRAP	C#ERHRD
	026410	000325						.WORD	213
	026412	027544						.WORD	T22RWJ
	026414	015564						.WORD	EXPREC
4569	026416				80\$: CKLOOP		;LOOP IF SELECTED		
	026416	104406						TRAP	L#CLP1
4570	026420				ENDSUB		;>>>>>>>>>> END SUBTEST >>>>>>>>>		
	026420						L10041:		
	026420	104403						TRAP	C#ESUB
4571	026422	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		
4572	026430	103402			BLO	999\$;BR, IF LESS THAN 25		
4573	026432	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT		
4574	026436				999\$:				
4575									
4576									
4577									
4578									

TEST 2: OFF-LINE AND REJECT REWIND

4579					; VERIFIES THAT A REWIND COMMAND WITH CVC=1 CLEARS VCK
4580					; AND RETURNS PROPER STATUS IN THE MESSAGE BUFFER.
4581					;
4582					;
4583					;-
4584					
4585	026436				BGNSUB ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
	026436				T2.3:
	026436	104402			TRAP C#BSUB
4586	026440	004737	030012		JSR PC,T22REST ;SET COMMAND PACKET
4587	026444	004737	030104		JSR PC,T22RT2 ;SET UP OTHER COMMAND PACKET
4588					
4589					*****
4590					;
4591					;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
4592					;
4593					*****
4594					
4595	026450	C04737	016064		JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
4596	026454	103407			BCS 20\$;BR IF INIT WAS OK
4597	026456	005237	002212		INC FATFLG ;BUMP COUNT
4601	026462	010001			MOV R0,R1 ;CONTENTS OF TSSR REGISTER
4602	026464				ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
	026464	104455			TRAP C#ERDF
	026466	000326			.WORD 214
	026470	003650			.WORD SFIERR
	026472	012124			.WORD SFIMSG
4603	026474			20\$:	
4604	026474	012704	027040		MOV #T22PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
4605					
4606					*****
4607					;
4608					;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
4609					;
4610					*****
4611					
4612	026500	004737	010752		JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
4613	026504	103407			BCS 23\$;BR. IF COMMAND ISSUED OK
4614	026506	005237	002212		INC FATFLG ;BUMP COUNT
4618	026512	010001			MOV R0,R1 ;SAVE CONTENTS OF TSSR
4619	026514				ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTISC FAILED
	026514	104456			TRAP C#ERHRD
	026516	000327			.WORD 215
	026520	005054			.WORD WRTMSG
	026522	012124			.WORD SFIMSG
4620	026524	005737	002216	23\$:	TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SWITCH
4621	026530	001041			BNE 50\$;BR IF SWITCH IS ON
4622					
4623	026532	112737	000200	027161	MOVB #200,T22BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
4624	026540	112737	000010	027160	MOVB #10,T22BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
4625	026546	012704	027150		MOV #T22PK2,R4 ;WRITE SUBSYS MEM PACKET
4626	026552	010465	000000		MOV R4,TSDB(R5) ;ISSUE COMMAND
4627	026556	004737	016426		JSR PC,CHKTSSR ;WAIT FOR SSR
4628	026562	103407			BCS 30\$;BR. IF NO ERROR
4629	026564	010001			MOV R0,R1 ;ERROR, SAVE TSSR
4630	026566	005237	002212		INC FATFLG ;BUMP COUNT
4634	026572				ERRHRD ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS

TEST 2: OFF-LINE AND REJECT REWIND

026572	104456					TRAP	C#ERHRD
026574	000330					.WORD	216
026576	027200					.WORD	T22SSR
026600	012136					.WORD	PKTSSR
4635	026602			304:	CKLOOP		;LOOP IF SELECTED
	026602	104406				TRAP	C#CLP1
4636	026604	012704	027040		MOV	#T22PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS
4637							
4638							
4639							
4640							
4641							
4642							
4643							
4644	026610	004737	010752		JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS
4645	026614	103407			BCS	504	;BR, IF COMMAND ISSUED OK
4646	026616	005237	002212		INC	FATFLG	;BUMP COUNT
4650	026622	010001			MOV	R0,R1	;SAVE CONTENTS OF TSSR
4651	026624				ERRHRD	ERRNO,WRTMSG,SFMSG	;WRITE CHARACTERISTICS FAILED
	026624	104456					TRAP
	026626	000331					.WORD
	026630	005054					.WORD
	026632	012124					.WORD
4652	026634			504:	CKLOOP		;SCOPE LOOP
	026634	104406					TRAP
4653	026636	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS
4654	026642	032701	000100		BIT	#OFL,R1	;CHECK FOR THE OFFLINE BIT SET
4655	026646	001006			BNE	604	;BR, IF OFFLINE (GOOD)
4656	026650	005237	002212		INC	FATFLG	;BUMP COUNT
4660	026654				ERRDF	ERRNO,T22OFL,SFMSG	;OFF LINE SHOULD HAVE BEEN SET (BAD)
	026654	104455					TRAP
	026656	000332					.WORD
	026660	027375					.WORD
	026662	012124					.WORD
4661	026664			604:	CKLOOP		;LOOP IF SELECTED
	026664	104406					TRAP
4662	026666	012737	142010	027150	654:	MOV	#142010,T22PK2
4663	026674	012704	027150		MOV	#T22PK2,R4	;R4 = POINTER TO PACKET
4664	026700	010465	000000		MOV	R4,TSDB(R5)	;ISSUE COMMAND
4665	026704	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR TO SET
4666	026710	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS
4667	026714	012702	100306		MOV	#SSR!OFL!SC!BIT1!BIT2,R2	;SET UP EXPECTED
4668	026720	020102			CMP	R1,R2	;ARE THEY EQUAL
4669	026722	001406			BEQ	804	;BR, IF OK ESP. FUNCTION REJECT
4670	026724	005237	002212		INC	FATFLG	;BUMP COUNT
4674	026730				ERRHRD	ERRNO,T22RWJ,EXPREC	;TSSR INCORRECT AFTER TAPE MOTION CMD
	026730	104456					TRAP
	026732	000333					.WORD
	026734	027544					.WORD
	026736	015564					.WORD
4675	026740			804:	CKLOOP		;LOOP IF SELECTED
	026740	104406					TRAP
4676	026742	012703	027062		MOV	#T22BFR,R3	;POINTER TO MESSAGE BUFFER
4677	026746	016301	000006		MOV	XSTO(R3),R1	;PICK UP XSTO FROM MESSAGE BUFFER
4678	026752	010102			MOV	R1,R2	;SET UP EXPECTED
4679	026754	042702	000020		BIC	#BIT4,R2	;VCK SHOULD BE CLEAR
4680	026760	020102			CMP	R1,R2	;ARE THEY EQUAL

4681	026762	001406		BEQ	90:	;BR, IF OK (GOOD)		
4682	026764	005237	002212	INC	FATFLG	;BUMP COUNT		
4686	026770			ERRHRD	ERRNO,T22VCK,EXPREC	;VCK WASN'T CLEAR (BAD)		
	026770	104456					TRAP	C#ERHRD
	026772	000334					.WORD	220
	026774	027617					.WORD	T22VCK
	026776	015564					.WORD	EXPREC
4687	027000			90:				
4688	027000			ENDSUB		;>>>>>>>>>> END SUBTEST >>>>>>>>>		
	027000					L10042:		
	027002	104403					TRAP	C#ESUB
4689	027002	023727	002212	000017	CMP	FATFLG,#15.		
4690	027010	103402			BLO	999:		
4691	027012	004737	017272		JSR	PC,CKDROP		
4692	027016							
4693	027016	004737	016546		JSR	PC,TSTLOOP		
4694	027022	103002			BCC	163:		
4695	027024	000137	025522		JMP	T22LOOP		
4696	027030				EXIT	TST		
	027030	104432					TRAP	C#EXIT
	027032	001116					.WORD	L10037-
4697								
4698								
4699								
4700								
4702	027034				.BLKB	10-<. -TSV2&7>		
4704	027040				T22PACKET:			
4705	027040	100204			.WORD	100204		
4706	027042	027050			.WORD	T22DATA		
4707	027044	000000			.WORD	0		
4708	027046	000012			.WORD	10.		
4709	027050				T22DATA:			
4710	027050	027062			.WORD	T22BFR		
4711	027052	000000			.WORD	0		
4712	027054	000024			.WORD	20.		
4713	027056	000000			.WORD	0		
4714	027060	000007			.WORD	7		
4715	027062				T22BFR:	.BLKW 25.		
4716								
4717								
4718								
4720	027144				.BLKB	10-<. -TSV2&7>		
4722	027150				T22PK2:			
4723	027150	100206			.WORD	100206		
4724	027152	027160			.WORD	T22BF2		
4725	027154	000000			.WORD	0		
4726	027156	000006			.WORD	6.		
4727								
4728					.EVEN			
4729	027160				T22BF2:			
4730	027160	000			T22BS0:	.BYTE 0		
4731	027161	000			T22BS1:	.BYTE 0		
4732	027162	000000			T22S2:	.WORD 0		
4733	027164	000000			T22S3:	.WORD 0		
4734								
4735								
4736					.EVEN			

TEST 2: OFF-LINE AND REJECT REWIND

```

4737
4738 027166 100201      ;TAPE MOTION PACKET COMMAND VALUES
4739 027170 100205      T22RD: .WORD 100201      ;READ TAPE FORWARD
4740 027172 100210      T22WRT: .WORD 100205      ;WRITE TAPE FORWARD
4741 027174 100211      T22POS: .WORD 100210      ;POSITION TAPE
4742 027176 177777      T22FOR: .WORD 100211      ;FORMAT TAPE
4743                      .WORD 177777      ;END OF DATA
4744
4745
4746      ;*
4747      ;LOCAL TEXT MESSAGES FOR TEST
4748      ;-
4749 027200      127      122      111  T22SSR: .ASCIZ 'WRITE MISCELLANEOUS CONTROL/READ STATUS Command Not Accepted'
4750 027275      124      123      123  T22AM3: .ASCIZ 'TSSR Init. Failed After WRITE MISCELLANEOUS CONTRL/READ STATUS'
4751 027375      104      162      151  T22OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
4752 027450      124      123      123  T22TM: .ASCIZ 'TSSR Incorrect After Tape Motion Command To Off-Line Device'
4753 027544      124      123      123  T22RWJ: .ASCIZ 'TSSR Not Correct After REWIND With VCK Set'
4754 027617      103      126      103  T22VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
4755 027672      052      052      052  T22WLK: .ASCIZ '*****TAPE IS WRITE-LOCKED AND WILL CAUSE ERRORS*****'
4756 027757      117      146      146  T22ID: .ASCIZ 'Off-Line And Reject Rewind'
4757                      .EVEN
4758
4759      ;*
4760      ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
4761      ;WRITE SUBSYSTEM MEMORY COMMAND
4762      ;
4763      ;-
4764
4765 030012      T22REST:
4766 030012      SAVREG
4767 030016      012701 027040      MOV      #T22PACKET,R1      ;SAVE THE REGISTERS
4768 030022      012721 100204      MOV      #100204,(R1)+      ;START OF THE PACKET
4769 030026      012721 027050      MOV      #T22DATA,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK. IE
4770 030032      005021      CLR      (R1)+      ;ADDRESS OF CHARAISTICS DATA BLOCK
4771 030034      012721 000012      MOV      #10,(R1)+      ;EXTENDED ADDRESS
4772 030040      012721 027062      MOV      #T22BFR,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
4773 030044      005021      CLR      (R1)+      ;ADDRESS OF MESSAGE BUFFER
4774 030046      012721 000024      MOV      #20,(R1)+      ;LENGTH OF MESSAGE BUFFER
4775 030052      005021      CLR      (R1)+
4776 030054      012711 000007      MOV      #7,(R1)      ;SELECT DRIVE SEVEN
4777 030060      012702 000020      MOV      #20,R2      ;NUMBER OF LOCATIONS TO BE CLEARED
4778 030064      012762 177777 027062 64: MOV      #177777,T22BFR(R2) ;ALL ONES TO MESSAGE BUFFER
4779 030072      005742      TST      -(R2)      ;BUMP R2 DOWN
4780 030074      020227 000000      CMP      R2,#0      ;IS R2 AT ZERO YET
4781 030100      001371      BNE      64:      ;KEEP GOING UNTIL DONE
4782 030102      000207      RTS      PC      ;RETURN
4783
4784
4785 030104      T22RT2:
4786 030104      SAVREG
4787 030110      012701 027150      MOV      #T22PK2,R1      ;SAVE THE REGISTERS
4788 030114      012721 100206      MOV      #100206,(R1)+      ;START OF THE PACKET
4789 030120      012721 027160      MOV      #T22BF2,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK. IE
4790 030124      005021      CLR      (R1)+      ;ADDRESS OF DATA BLOCK
4791 030126      012721 000006      MOV      #6,(R1)+      ;EXTENDED ADDRESS
4792 030132      005021      CLR      (R1)+      ;SIZE OF DATA BLOCK IN BYTES
4793 030134      012701 027160      MOV      #T22BF2,R1      ;POINT TO DATA SEL AREA

```


4794	030140	005021
4795	030142	005011
4796	030144	005011
4797	030146	000207
4798	030150	
	030150	
	030150	104401

```

CLR      (R1)+
CLR      (R1)
CLR      (R1)
RTS      PC
ENDTST

```

```

;LAST LOC TO BE CLEARED
;RETURN

```

L10037: TRAP C#ETST

4799
4800
4801
4802
4803
4804
4805
4806
4807
4808
4809
4810
4811
4812
4813

```

; THIS TEST VERIFIES THAT THE WRITE DATA (NEXT) COMMAND OPERATES
; PROPERLY, UP TO THE POINT OF CHECKING THAT THE DATA WAS ACTUALLY
; WRITTEN ONTO THE TAPE CORRECTLY. CHECKING IN THIS TEST IS
; LIMITED TO VERIFYING THAT THE COMMAND TERMINATED CORRECTLY WITH
; THE CORRECT REGISTER, MESSAGE BUFFER AND RAM CONTENTS.

```

THE TEST CONSISTS OF THE FOLLOWING 7 SUBTESTS

4813				
4814	030152			
	030152			
4815	030152	012737	006356	002170
4816	030160	005037	003124	
4817	030164	004737	017364	
4822	030170	004737	016274	
4823	030174	012700	034746	
4824	030200	004737	016600	
4825	030204	004737	022206	
4826	030210	005037	003126	
4827	030214	012737	000005	002206

BGNTST

```
MOV      @EPR1,EPR5W
CLR      KENABLE
JSR      PC,KTOFF
JSR      PC,DSBINT
MOV      @TST23ID,R0
JSR      PC,TSTSETUP
JSR      PC,MEMCK
CLR      NXMFLG
MOV      @S,LOOPCNT
```

```
T3::  
;SET UP PRIMARY ERROR MESSAGE  
      ;TURN OFF KT11  
      ;TURN OFF KT11  
;DISABLE INTERRUPTS  
;ASCII MESSAGE TO IDENTIFY TEST  
;DO INITIAL TEST SETUP  
;CHECK FOR MEMORY  
;SET FLAG  
;PERFORM 5 ITERATIONS
```

4828
4829
4830
4831
4832
4833
4834
4835
4836
4837
4838

```

; VERIFIES THAT A WRITE COMMAND (ANY VALID MODE CODE)
; WITH THE CLEAR VOLUME CHECK (CVC) BIT CLEAR IS
; REJECTED IF THE VOLUME CHECK (VCK) FLAG IS SET. ALL
; VALID MODE CODES ARE CHECKED (WRITE DATA, WRITE
; RETRY).

```

4838	030222		
4839	030222		
4840	030222		
	030222		
	030222	104402	
4841	030224	004737	034762
4842	030230	004737	035054

T23LOOP:

06GNSUB

```

;)))))))))) BEGIN SUBTEST ))))))))

```

T3.1: TRAP CIBSUD

JSR PC.T23REST
JSR PC.T23RT2

```

;SET COMMAND PACKET
;SET UP OTHER COMMAND PACKET

```

4843
4844
4845
4846
4847
4848
4849

```

;.....
;
;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
;
;.....

```


TEST 3: BASIC WRITE DATA

```

4850 030234 004737 016064      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
4851 030240 103407              BCS      20$      ;BR IF INIT WAS OK
4852 030242 005237 002212      INC      FATFLG      ;BUMP COUNT
4856 030246 010001              MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
4857 030250              ERRDF      ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
                                TRAP      C$ERDF
                                .WORD     301
                                .WORD     SFIERR
                                .WORD     SFIMSG
4858 030260              20$:      MOV      #7,T23DSW      ;SET DRIVE NUMBER IN PACKET
4859 030260 012737 000007 033460 MOV      #T23PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
4860 030266 012704 033440
4861
4862 ;*****
4863 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
4864 ;
4865 ;*****
4866
4867
4868 030272 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4869 030276 103407              BCS      23$      ;BR, IF COMMAND ISSUED OK
4870 030300 005237 002212      INC      FATFLG      ;BUMP COUNT
4874 030304 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
4875 030306              ERRHRD      ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     302
                                .WORD     WRTMSG
                                .WORD     SFIMSG
4876 030316 005737 002216      23$:  TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
4877 030322 001044              BNE      50$      ;BR IF SWITCH IS ON
4878
4879 030324 112737 000200 033603 MOVB      #200,T23BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
4880 030332 112737 000010 033602 MOVB      #10,T23BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
4881 030340 012704 033550      MOV      #T23PK2,R4 ;WRITE SUBSYS MEM PACKET
4882 030344 010465 000000      MOV      R4,TSDB(R5) ;ISSUE COMMAND
4883 030350 004737 016426      JSR      PC,CHKTSSR ;WAIT FOR SSR
4884 030354 103407              BCS      30$      ;BR, IF NO ERROR
4885 030356 010001              MOV      R0,R1      ;ERROR, SAVE TSSR
4886 030360 005237 002212      INC      FATFLG      ;BUMP COUNT
4890 030364              ERRHRD      ERRNO,T23SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                TRAP      C$ERHRD
                                .WORD     303
                                .WORD     T23SSR
                                .WORD     PKTSSR
4891 030374              30$:  CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
4892 030376 012737 000007 033460 MOV      #7,T23DSW      ;SET DRIVE NUMBER IN PACKET
4893 030404 012704 033440      MOV      #T23PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
4894
4895 ;*****
4896 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
4897 ;
4898 ;*****
4899
4900
4901 030410 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4902 030414 103407              BCS      50$      ;BR, IF COMMAND ISSUED OK

```


4952			
4953			
4954			
4955			
4956			
4957			
4958			
4959			
4960			
4961			
4962			
4963			
4964			
4965	030574		
	030574		
	030574	104402	
4966	030576	013701	003116
4967	030602	000241	
4968	030604	C06101	
4969	030606	010137	033600
4970	030612	004737	034762
4971	030616	004737	035116
4972	030622	004737	035054
4973			
4974			
4975			
4976			
4977			
4978			
4979			
4980	030626	004737	016064
4981	030632	103407	
4982	030634	005237	002212
4986	030640	010001	
4987	030642		
	030642	104455	
	030644	000463	
	030646	003650	
	030650	012124	
4988	030652		
4989	030652	013737	002172
4990	030660	012704	033440
4991			
4992			
4993			
4994			
4995			
4996			
4997			
4998	030664	004737	010752
4999	030670	103407	
5000	030672	005237	002212
5004	030676	010001	
5005	030700		
	030700	104456	
	030702	000464	
	030704	005054	

```
; IN VARYING INCREMENTS (DEPENDING UPON WHETHER OR NOT
; THE DIAGNOSTIC IS RUNNING IN THE LONG VERIFICATION
; MODE). THE TAPE IS NOT REWOUND BETWEEN SUCCESSIVE
; RECORDS BUT IS REWOUND AFTER THE FINAL RECORD IS
; WRITTEN. AN INCREMENTING COUNT PATTERN IS SUPPLIED
; IN THE DATA BUFFER. AFTER EACH BLOCK IS WRITTEN, THE
; TSSR AND TSBA REGISTERS, THE MESSAGE BUFFER, AND THE
; RAM CONTENTS ARE CHECKED. (THE RAM CONTENTS ARE CHECKED
; USING THE WRITE SUBSYSTEM MEMORY COMMAND.
```

[illegible]

TEST 3: BASIC WRITE DATA

5006	030706	012124			23:	CKLOOP		;LOOP IF SELECTED	.WORD	SFMSG
	030710								TRAP	C:CLP1
	030710	104406								
5007										
5008										
5009										
5010										
5011										
5012										
5013										
5014	030712	004737	011104			JSR	PC,REWIND	;CALL THE TAPE REWIND		
5015	030716	012703	000024			MOV	#20,R3	;STARTING RECORD SIZE		
5016	030722	013737	003114	033572	65:	MOV	FREE,T23WB	;STARTING WRITE BUFFER ADDRESS		
5017										
5018										
5019										
5020										
5021										
5022										
5023										
5024	030730	012737	140005	033570		MOV	#140005,T23PK3	;WRITE DATA,CVC=1,ACK COMMAND		
5025	030736	012737	140005	033612		MOV	#140005,T23WRT	;SETUP FOR RETRY COMMAND		
5026	030744	052737	004000	033612		BIS	#4000,T23WRT	;MAKE IT A RETRY		
5027	030752	012704	033570			MOV	#T23PK3,R4	;SET UP R4 WITH PACKET ADDRESS		
5028	030756	010300				MOV	R3,R0	;SET PATTERN IN CORRECT REGISTER		
5029	030760	004737	017512			JSR	PC,FILLMEM	;FILL MEMORY WITH RECORD SIZE		
5030	030764	010337	033576			MOV	R3,T23SZ	;SET UP RECORD SIZE IN PACKET		
5031	030770	010465	000000			MOV	R4,TSDB(R5)	;ISSUE COMMAND		
5032	030774	004737	016340			JSR	PC,WAITF	;WAIT FOR SSR TO SET		
5033	031000	016501	000002			MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
5034	031004	012702	000200			MOV	#SSR,R2	;SET UP EXPECTED		
5035	031010	020102				CMP	R1,R2	;ARE THEY EQUAL		
5036	031012	001402				BEQ	80:	;BR, IF OK		
5037	031014	004737	035142			JSR	PC,T23CHK	;CHECK SPECIAL CONDITION		
5038	031020				80:	CKLOOP		;LOOP IF SELECTED		
	031020	104406							TRAP	C:CLP1
5039	031022	016501	000000			MOV	TSBA(R5),R1	;GET TSBA CONTENTS		
5040	031026	012702	033462			MOV	#T23BFR,R2	;SET UP EXPECTED		
5041	031032	062702	000016			ADD	#16,R2	;SET TO END OF MESSAGE BUFFER		
5042	031036	005737	002216			TST	EXTFEA	;CHECK FOR EXTENDED FEATURES SW SET		
5043	031042	001402				BEQ	85:	;BR, IF IT NOT SET		
5044	031044	062702	000002			ADD	#2,R2	;BUMP R2 FOR EXTRA DATA		
5045	031050	020102			85:	CMP	R1,R2	;ARE THEY EQUAL		
5046	031052	001406				BEQ	90:	;BR, IF TSBA IS CORRECT		
5047	031054	005237	002212			INC	FATFLG	;BUMP COUNT		
5051	031060					ERRHRD	ERRNO,T23BA,EXPREC	;TSBA WAS NOT CORRECT AFTER WRITE DATA		
	031060	104456							TRAP	C:ERHRD
	031062	000465							.WORD	309
	031064	034605							.WORD	T23BA
	031066	015564							.WORD	EXPREC
5052	031070				90:	CKLOOP		;LOOP IF SELECTED		
	031070	104406							TRAP	C:CLP1
5053	031072	020327	007376			CMP	R3,#7376	;ONLY CHECK RAM UNTIL ITS FULL		
5054	031076	002114				BGE	115:	;IT WRAPS AROUND ETC.		
5055	031100	004737	035054			JSR	PC,T23RT2	;MAKE SURE PACKET AND DATA ARE CLEAN		
5056	031104	012737	000400	033604		MOV	#256,T23S2	;STARTING RAM ADDRESS		
5057	031112	112737	000000	033602		MOVB	#0,T23BS0	;STOP INTERNAL TSV05 DIAGNOSTICS		

TEST 3: BASIC WRITE DATA

5058	031120	112737	000000	033603	MOVB	#0,T23BS1	;SIZE OF RAM READ
5059	031126	012704	033550		MOV	#T23PK2,R4	;SET R4 WITH PACKET ADDRESS
5060	031132	010465	000000		MOV	R4,TSDB(R5)	;ISSUE WRITE SUB SYS MEM COMMAND
5061	031136	004737	016426		JSR	PC,CHKTSSR	;CHECK TSSR AND WAIT FOR SSR TO SET
5062	031142	103407			BCS	92#	;BR, IF NO ERRORS IN TSSR
5063	031144	010001			MOV	R0,R1	;SAVE TSSR
5064	031146	005237	002212		INC	FATFLG	;BUMP COUNT
5068	031152				ERRHRD	ERRNO,T23WSS,PKTSSR	;TSSR BAD AFTER WRITE SUB SYS MEM
	031152	104456					TRAP C#ERHRD
	031154	000466					.WORD 310
	031156	034657					.WORD T23WSS
	031160	012136					.WORD PKTSSR
5069	031162			92#:	CKLOOP		;LOOP IF SELECTED
	031162	104406					TRAP C#CLP1
5070	031164	004737	035054		JSR	PC,T23RT2	;MAKE SURE PACKET AND DATA ARE CLEAN
5071	031170	012737	000400	033604	MOV	#256.,T23S2	;STARTING RAM ADDRESS
5072	031176	112737	000001	033602	MOVB	#1,T23BS0	;READ RAM COMMAND FOR WRITE SUB SYS M.
5073	031204	112737	000002	033603	MOVB	#2,T23BS1	;SIZE OF RAM READ
5074	031212	C12704	033550		MOV	#T23PK2,R4	;SET R4 WITH PACKET ADDRESS
5075	031216	010465	000000	95#:	MOV	R4,TSDB(R5)	;ISSUE WRITE SUB SYS MEM COMMAND
5076	031222	004737	016426		JSR	PC,CHKTSSR	;CHECK TSSR AND WAIT FOR SSR TO SET
5077	031226	103407			BCS	100#	;BR, IF NO ERRORS IN TSSR
5078	031230	010001			MOV	R0,R1	;SAVE TSSR
5079	031232	005237	002212		INC	FATFLG	;BUMP COUNT
5083	031236				ERRHRD	ERRNO,T23WSS,PKTSSR	;TSSR BAD AFTER WRITE SUB SYS MEM
	031236	104456					TRAP C#ERHRD
	031240	000467					.WORD 311
	031242	034657					.WORD T23WSS
	031244	012136					.WORD PKTSSR
5084	031246			100#:	CKLOOP		;LOOP IF SELECTED
	031246	104406					TRAP C#CLP1
5085	031250	005001			CLR	R1	;CLEAR REGISTER
5086	031252	005002			CLR	R2	;CLEAR REGISTER
5087	031254	013701	033502		MOV	T23BFR+20,R1	;PICK UP BYTE READ FROM RAM
5088	031260	010302			MOV	R3,R2	;SET UP EXPECTED
5089	031262	020102			CMP	R1,R2	;IS RAM DATA CORRECT
5090	031264	001406			BEQ	110#	;BR, IF OK (EQUAL)
5091	031266	005237	002212		INC	FATFLG	;BUMP COUNT
5095	031272				ERRHRD	ERRNO,T23RNC,EXPREC	;RNC-RAM NOT CORRECT
	031272	104456					TRAP C#ERHRD
	031274	000470					.WORD 312
	031276	034145					.WORD T23RNC
	031300	015564					.WORD EXPREC
5096	031302			110#:	CKLOOP		;LOOP IF SELECTED
	031302	104406					TRAP C#CLP1
5097	031304	005237	033604		INC	T23S2	;BUMP RAM ADDRESS TO BE CHECKED
5098	031310	005237	033604		INC	T23S2	;BUMP RAM ADDRESS TO BE CHECKED
5099	031314	010301			MOV	R3,R1	;GET SIZE OF RECORD
5100	031316	062701	000400		ADD	#256.,R1	;FIGURE OUT END RECORD ADDRESS
5101	031322	023701	033604		CMP	T23S2,R1	;AT END OF RAM CHECK YET
5102	031326	001333			BNE	95#	;BR, IF MORE TO CHECK
5103	031330	062703	001750	115#:	ADD	#1000.,R3	;NEXT RECORD SIZE/DATA PATTERN
5104	031334	020337	033600		CMP	R3,T23RSZ	;IS R3 OVER MAX RECORD SIZE
5105	031340	002005			BGE	120#	;IF RECORD SIZE IS TOO BIG QUIT
5106	031342	020327	177776		CMP	R3,#65534.	;END OF SUBTEST MAX RECORD SIZE
5107	031346	001402			BEQ	120#	;BR, IF COMPLETED
5108	031350	000137	030722		JMP	65#	;DO MORE RECORDS

TEST 3: BASIC WRITE DATA

	5109	031354			120#:							
	5110	031354	004737	035116		JSR	PC,T23RT3	;RESTORE PACKET				
	5111	031360	004737	035054		JSR	PC,T23RT2	;CLEAN UP PACKET				
	5112	031364	012737	102010	033550	MOV	#102010,T23PK2	;REWIND (POSITION) COMMAND				
	5113	031372	012704	033550		MOV	#T23PK2,R4	;LOAD R4 WITH PACKET ADDRESS				
	5114	031376	010465	000000		MOV	R4,TSD8(R5)	;ISSUE REWIND COMMAND				
	5115	031402	004737	016426		JSR	PC,CMTSSR	;WAIT FOR SSR TO SET				
	5116	031406	103407			BCS	130#	;BR, IF TSSR IS OK (GOOD)				
	5117	031410	010001			MOV	R0,R1	;SAVE TSSR CONTENTS				
	5118	031412	005237	002212		INC	FATFLG	;BUMP COUNT				
	5122	031416				ERRHRD	ERRNO,T23RWN,PKTSSR	;TSSR IS INCORRECT AFTER REWIND				
		031416	104456						TRAP	C#ERHRD		
		031420	000471						.WORD	313		
		031422	034076						.WORD	T23RWN		
		031424	012136						.WORD	PktSSr		
	5123	031426			130#:							
	5124	031426				ENDSUB		>>>>>>>>> END SUBTEST >>>>>>>>				
		031426						L10045:				
		031426	104403						TRAP	C#ESUB		
	5125	031430	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25				
	5126	031436	103402			BLO	999#	;BR, IF LESS THAN 25				
	5127	031440	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT				
	5128	031444			999#:							
	5129					*						
	5130					:						
	5131					: TEST 3, SUBTEST 3						
	5132					:						
	5133					: VERIFIES THAT WRITE DATA COMMANDS WITH CVC=1 AND THE						
	5134					: SWAP BYTES (SWB) BIT SET OPERATES PROPERLY. THE TEST						
	5135					: SEQUENCE IS IDENTICAL TO THAT USED IN SUBTEST 2.						
	5136					: THE RESULTS, EXCEPT FOR RAM CONTENTS, SHOULD BE THE SAME.						
	5137					:						
	5138					:						
	5139					:						
	5140					:						
	5141					-						
	5142	031444				BGN SUB		>>>>>>>>> BEGIN SUBTEST >>>>>>>>				
		031444						T3.3:				
		031444	104402						TRAP	C#BSUB		
	5143	031446	004737	034762		JSR	PC,T23REST	;SET COMMAND PACKET				
	5144	031452	004737	035054		JSR	PC,T23RT2	;SET UP OTHER COMMAND PACKET				
	5145											
	5146					*~*						
	5147					:						
	5148					: ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR						
	5149					:						
	5150					*~*						
	5151											
	5152	031456	004737	016064		JSR	PC,SOFINIT	;DO INITIALIZATION ON CONTROLLER				
	5153	031462	103407			BCS	20#	;BR IF INIT WAS OK				
	5154	031464	005237	002212		INC						

TEST 3: BASIC WRITE DATA

```
5160 031502 20$:
5161 031502 013737 002172 033460 MOV UNITN,T23DSW ;SET UP UNIT NUMBER
5162 031510 012704 033440 MOV #T23PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
5163
5164 ;*****
5165 ;
5166 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
5167 ;
5168 ;*****
5169
5170 031514 004737 010752 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
5171 031520 103407 BCS 23$ ;BR, IF COMMAND ISSUED OK
5172 031522 005237 002212 INC FATFLG ;BUMP COUNT
5176 031526 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
5177 031530 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
5178 031530 104456 TRAP C$ERHRD
5179 031532 000473 .WORD 315
5180 031534 005054 .WORD WRTMSG
5181 031536 C12124 .WORD SFMSG
5182
5183 23$:
5184 031540 012703 000024 MOV #20.,R3 ;STARTING RECORD SIZE
5185 031544 013737 003114 033572 65$: MOV FREE,T23WB ;STARTING WRITE BUFFER ADDRESS
5186
5187 ;*****
5188 ;WRITE DATA,CVC=1,ACK,SWB COMMAND
5189 ;
5190 ;*****
5191 031552 012737 150005 033570 MOV #150005,T23PK3 ;WRITE DATA,CVC=1,ACK,SWB COMMAND
5192 031560 012737 150005 033612 MOV #150005,T23WRT ;SETUP FOR RETRY COMMAND
5193 031566 052737 004000 033612 BIS #4000,T23WRT ;MAKE IT A RETRY
5194 031574 012704 033570 MOV #T23PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
5195 031600 010300 MOV R3,R0 ;SET PATTERN IN CORRECT REGISTER
5196 031602 004737 017512 JSR PC,FILLMEM ;FILL MEMORY WITH RECORD SIZE
5197 031606 010337 033576 MOV R3,T23SZ ;SET UP RECORD SIZE IN PACKET
5198 031612 010465 000000 MOV R4,T23DB(R5) ;ISSUE COMMAND
5199 031616 004737 016340 JSR PC,WAITF ;WAIT FOR SSR TO SET
5200 031622 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
5201 031626 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
5202 031632 020102 CMP R1,R2 ;ARE THEY EQUAL
5203 031634 001402 BEQ 80$ ;BR, IF OK
5204 031636 004737 035142 JSR PC,T23CHK ;CHECK SPECIAL CONDITION
5205 031642 104406 80$: CKLOOP ;LOOP IF SELECTED
5206 031644 016501 000000 TRAP C$CLP1
5207 031650 012702 033462 MOV TSBA(R5),R1 ;GET TSBA CONTENTS
5208 031654 062702 000016 MOV #16,R2 ;SET UP EXPECTED
5209 031660 005737 002216 ADD #16,R2 ;SET TO END OF MESSAGE BUFFER
5210 031664 001402 TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SET
5211 031666 062702 000002 BEQ 85$ ;BR, IF IT NOT SET
5212 031672 020102 ADD #2,R2 ;BUMP R2 FOR EXTRA DATA
5213 031674 001406 85$: CMP R1,R2 ;ARE THEY EQUAL
5214 031676 005237 002212 BEQ 90$ ;BR, IF TSBA IS CORRECT
5215 031702 104456 ERRHRD ERRNO,T23BA,EXPREC ;TSBA WAS NOT CORRECT AFTER WRITE DATA
5216 031704 000474 .WORD 316
```


TEST 3: BASIC WRITE DATA

	031706	034605					.WORD	T238A
	031710	015564					.WORD	EXPREC
5216	031712			904:	CKLOOP	;LOOP IF SELECTED		
	031712	104406					TRAP	C4CLP1
5217	031714	020327	007376		CMP	R3,#7376		
5218	031720	002115			BGE	1154		
5219	031722	004737	035054		JSR	PC,T23RT2		
5220	031726	012737	000400	033604	MOV	#256.,T23S2		
5221	031734	112737	000000	033602	MOVB	#0,T23BS0		
5222	031742	112737	000000	033603	MOVB	#0,T23BS1		
5223	031750	012704	033550		MOV	#T23PK2,R4		
5224	031754	010465	000000		MOV	R4,TSD8(R5)		
5225	031760	004737	016426		JSR	PC,CHKTSSR		
5226	031764	103407			BCS	924		
5227	031766	010001			MOV	R0,R1		
5228	031770	005237	002212		INC	FATFLG		
5232	031774				ERRHRD	ERRNO,T23WSS,PKTSSR		
	031774	104456					TRAP	C4ERHRD
	031776	C00475					.WORD	317
	032000	034657					.WORD	T23WSS
	032002	012136					.WORD	PKTSSR
5233	032004			924:	CKLOOP	;LOOP IF SELECTED		
	032004	104406					TRAP	C4CLP1
5234	032006	004737	035054		JSR	PC,T23RT2		
5235	032012	012737	000400	033604	MOV	#256.,T23S2		
5236	032020	112737	000001	033602	MOVB	#1,T23BS0		
5237	032026	112737	000002	033603	MOVB	#2,T23BS1		
5238	032034	012704	033550		MOV	#T23PK2,R4		
5239	032040	010465	000000		MOV	R4,TSD8(R5)		
5240	032044	004737	016426	954:	JSR	PC,CHKTSSR		
5241	032050	103407			BCS	1004		
5242	032052	010001			MOV	R0,R1		
5243	032054	005237	002212		INC	FATFLG		
5247	032060				ERRHRD	ERRNO,T23WSS,PKTSSR		
	032060	104456					TRAP	C4ERHRD
	032062	000476					.WORD	318
	032064	034657					.WORD	T23WSS
	032066	012136					.WORD	PKTSSR
5248	032070			1004:	CKLOOP	;LOOP IF SELECTED		
	032070	104406					TRAP	C4CLP1
5249	032072	005001			CLR	R1		
5250	032074	005002			CLR	R2		
5251	032076	013701	033502		MOV	T23BFR+20,R1		
5252	032102	010302			MOV	R3,R2		
5253	032104	000302			SWAB	R2		
5254	032106	020102			CMP	R1,R2		
5255	032110	001406			BEQ	1104		
5256	032112	005237	002212		INC	FATFLG		
5260	032116				ERRHRD	ERRNO,T23RNC,EXPREC		
	032116	104456					TRAP	C4ERHRD
	032118	000477					.WORD	319
	032122	034145					.WORD	T23RNC
	032124	015564					.WORD	EXPREC
5261	032126			1104:	CKLOOP	;LOOP IF SELECTED		
	032126	104406					TRAP	C4CLP1
5262	032130	005237	033604		INC	T23S2		
5263	032134	005237	033604		INC	T23S2		

TEST 3: BASIC WRITE DATA

5264	032140	010301			MOV	R3,R1	;GET SIZE OF RECORD
5265	032142	062701	000400		ADD	#256.,R1	;FIGURE OUT END RECORD ADDRESS
5266	032146	023701	033604		CMP	T23S2,R1	;AT END OF RAM CHECK YET
5267	032152	001332			BNE	95#	;BR, IF MORE TO CHECK
5268	032154	062703	001750	115#:	ADD	#1000.,R3	;NEXT RECORD SIZE/DATA PATTERN
5269	032160	020337	033600		CMP	R3,T23RSZ	;IS R3 OVER MAX RECORD SIZE
5270	032164	002005			BGE	120#	;IF RECORD SIZE IS TOO BIG QUIT
5271	032166	020327	177776		CMP	R3,#65534.	;END OF SUBTEST MAX RECORD SIZE
5272	032172	001402			BEQ	120#	;BR, IF COMPLETED
5273	032174	000137	031544		JMP	65#	;DO MORE RECORDS
5274	032200			120#:			
5275	032200	004737	035054		JSR	PC,T23RT2	;CLEAN UP PACKET
5276	032204	012737	102010	033550	MOV	#102010,T23PK2	;REWIND (POSITION) COMMAND
5277	032212	012704	033550		MOV	#T23PK2,R4	;LOAD R4 WITH PACKET ADDRESS
5278	032216	010465	000000		MOV	R4,TSD8(R5)	;ISSUE REWIND COMMAND
5279	032222	004737	016426		JSR	PC,CHKTSSR	;WAIT FOR SSR TO SET
5280	032226	103407			BCS	130#	;BR, IF TSSR IS OK (GOOD)
5281	032230	010001			MOV	R0,R1	;SAVE TSSR CONTENTS
5282	032232	C05237	002212		INC	FATFLG	;BUMP COUNT
5286	032236				ERRHRD	ERRNO,T23RWN,PKTSSR	;TSSR IS INCORRECT AFTER REWIND
	032236	104456					TRAP C#ERHRD
	032240	000500					.WORD 320
	032242	034076					.WORD T23RWN
	032244	012136					.WORD PKTSSR
5287	032246			130#:			
5288	032246				ENDSUB		; >>>>>>>>> END SUBTEST >>>>>>>>>
	032246						L10046:
	032246	104403					TRAP C#ESUB
5289	032250	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
5290	032256	103402			BLO	999#	;BR, IF LESS THAN 25
5291	032260	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT
5292	032264			999#:			
5293							
5294							
5295							
5296							
5297							
5298							
5299							
5300							
5301							
5302							
5303							
5304							
5305	032264				BGNSUB		; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>
	032264						T3.4:
	032264	104402					TRAP C#BSUB
5306	032266	004737	034762		JSR	PC,T23REST	;SET COMMAND PACKET
5307	032272	004737	035116		JSR	PC,T23RT3	;RESTORE PACKET
5308	032276	004737	035054		JSR	PC,T23RT2	;SET UP OTHER COMMAND PACKET
5309							
5310							
5311							
5312							
5313							
5314							
5315							

5342	032362	012124	
5343			
5344			
5345			
5346			
5347			
5348			
5349	032364	012737	104405
5350	032372	013737	003114
5351	032400	062737	000001
5352	032406	012737	000400
5353	032414	012704	033570
5354	032420	010465	000000
5355	032424	004737	016340
5356	032430	016501	000002
5357	032434	012702	100206
5358	032440	020102	
5359	032442	001406	
5360	032444	005237	002212
5364	032450		
	032450	104456	
	032452	000503	
	032454	034022	
	032456	012136	
5365	032460		
	032460	104406	
5366	032462		
	032462		
	032462	104403	

[illegible]

TEST 3: BASIC WRITE DATA

5367	032464	023727	002212	000017		CMP	FATFLG,#15.		;IS ERROR COUNT AT 25
5368	032472	103402				BLO	999#		;BR, IF LESS THAN 25
5369	032474	004737	017272			JSR	PC,CKDROP		;TRY TO DROP THE UNIT
5370	032500				999#:				
5371									
5372					;*				
5373					;				
5374					;TEST 3. SUBTEST 5				
5375					;				
5376					;VERIFIES THAT A WRITE DATA COMMAND SPECIFYING A DATA				
5377					;BUFFER STARTING IN NONEXISTANT MEMORY TERMINATES WITH				
5378					;THE PROPER ERROR STATUS WITHOUT MOVING TAPE				
5379					;				
5380					;-				
5381									
5382	032500				BGNSUB			;***** BEGIN SUBTEST *****	
	032500							T3.5:	
	032500	104402						TRAP	C#BSUB
5383	032502	C05737	003126		TST	NXMFLG		;DO WE HAVE IT?	
5384	032506	001002			BNE	10#		;BR, IF ENOUGH	
5385	032510	000137	033030		JMP	90#		;SKIP THIS TEST IF NOT	
5386	032514	004737	034762	10#:	JSR	PC,T23REST		;SET COMMAND PACKET	
5387	032520	004737	035116		JSR	PC,T23RT3		;RESTORE PACKET	
5388	032524	004737	035054		JSR	PC,T23RT2		;SET UP OTHER COMMAND PACKET	
5389									
5390					;*****				
5391					;				
5392					;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR				
5393					;				
5394					;*****				
5395									
5396	032530	004737	016064		JSR	PC,SOFINIT		;DO INITIALIZE ON CONTROLLER	
5397	032534	103407			BCS	20#		;BR IF INIT WAS OK	
5398	032536	005237	002212		INC	FATFLG		;BUMP COUNT	
5402	032542	010001			MOV	R0,R1		;CONTENTS OF TSSR REGISTER	
5403	032544				ERRDF	ERRNO,SFIERR,SFIMSG		;FATAL ERROR TSSR WAS NOT OK	
	032544	104455						TRAP	C#ERDF
	032546	000504						.WORD	324
	032550	003650						.WORD	SFIERR
	032552	012124						.WORD	SFIMSG
5404	032554				20#:				
5405	032554	013737	002172	033460	MOV	UNITN,T23DSW		;SET DRIVE NUMBER UP	
5406	032562	012704	033440		MOV	#T23PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS	
5407									
5408					;*****				
5409					;				
5410					;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)				
5411					;				
5412					;*****				
5413									
5414	032566	004737	010752		JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS	
5415	032572	103407			BCS	123#		;BR, IF COMMAND ISSUED OK	
5416	032574	005237	002212		INC	FATFLG		;BUMP COUNT	
5420	032600	010001			MOV	R0,R1		;SAVE CONTENTS OF TSSR	
5421	032602				ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTICSC FAILED	
	032602	104456						TRAP	C#ERRRD
	032604	000505						.WORD	325

TEST 3: BASIC WRITE DATA

	032606	005054					.WORD	WRTMSG
	032610	012124					.WORD	SFMSG
5422								
5423								
5424								
5425								
5426								
5427								
5428								
5429	032612							
5430	032612	005737	002216					
5431	032616	001026						
5432	032620	005237	002216					
5433	032624	112737	000200	033603				
5434	032632	112737	000010	033602				
5435	032640	012704	033550					
5436	032644	010465	000000					
5437	032650	004737	016426					
5438	032654	103407						
5439	032656	010001						
5440	032660	005237	002212					
5444	032664							
	032664	104456						
	032666	000506						
	032670	027200						
	032672	012136						
5445	032674							
	032674	104406						
5446								
5447	032676	012701	160000					
5448	032702	012702	177776					
5449	032706	004737	016466					
5450	032712	103045						
5451	032714	010137	003130					
5452								
5453								
5454	032720	005037	033574					
5455	032724							
5456	032724	012737	140005	033570				
5457	032732	013737	003130	033572				
5458	032740	012737	000100	033576				
5459	032746	012704	033570					
5460	032752	010465	000000					
5461	032756	004737	016340					
5462	032762	016501	000002					
5463	032766	012702	104210					
5464	032772	020102						
5465	032774	001414						
5466	032776	005237	033574					
5467	033002	023727	033574	000004				
5468	033010	001345						
5469	033012	005237	002212					
5473	033016							
	033016	104456						
	033020	000507						
	033022	034022						
	033024	012136						


```

*****
;WRITE DATA, ACK, CVC=1
*****
123:
TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
BNE      130:        ;BR IF SWITCH IS ON
INC      EXTFEA      ;ONLY ONE TIME
MOVB     #200,T238S1 ;WRITE MISCELLANEOUS CONT/READ STATUS
MOVB     #10,T238S0  ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
MOV      #T23PK2,R4  ;WRITE SUBSYS MEM PACKET
MOV      R4,TSD8(R5) ;ISSUE COMMAND
JSR      PC,CHKTSSR  ;WAIT FOR SSR
BCS      130:        ;BR, IF NO ERROR
MOV      R0,R1       ;ERROR, SAVE TSSR
INC      FATFLG      ;BUMP COUNT
ERRHRD   ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                TRAP      C1ERHRD
                                .WORD     326
                                .WORD     T22SSR
                                .WORD     PKTSSR

130:   CKLOOP          ;LOOP IF SELECTED
                                TRAP      C1CLP1

MOV      #160000,R1    ;NXM LOW ADDRESS START
MOV      #177776,R2    ;LIMIT CHECK FOR NXM (HIGHEST)
JSR      PC,XXNM      ;LOOK FOR NXM ADDRESS
BCC      80:          ;BR, IF NON FOUND
MOV      R1,NXMLO     ;SET ADDRESS UP FOR TEST

CLR      T23WB+2      ;CLEAR OUT THE HIGH BITS AREA

24:   MOV      #140005,T23PK3 ;WRITE DATA, ACK, CVC=1
      MOV      NXMLO,T23WB    ;SET UP WRITE BUFFER ADDRESS
      MOV      #64,T23SZ     ;SET UP BUFFER SIZE
      MOV      #T23PK3,R4    ;R4 = POINTER TO PACKET
      MOV      R4,TSD8(R5)   ;ISSUE COMMAND
      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
      MOV      TSSR(R5),R1   ;GET TSSR CONTENTS
      MOV      #SC!NXM!SSR!BIT3,R2 ;SET UP EXPECTED
      CMP      R1,R2        ;ARE THEY EQUAL
      BEQ      80:          ;BR, IF OK ESP. FUNCTION REJECT
      INC      T23WB+2      ;BUMP TO NEXT ADDRESS BIT
      CMP      T23WB+2,#4    ;CHECK TO SEE IF OVERFLOW INTO 19 BIT
      BNE      24:          ;BR, IF BITS 17 AND 18
      INC      FATFLG      ;BUMP COUNT
      ERRHRD   ERRNO,T23TH,PKTSSR ;TSSR INCORRECT AFTER WRITE COMMAND
                                TRAP      C1ERHRD
                                .WORD     327
                                .WORD     T23TH
                                .WORD     PKTSSR
25:

```


TEST 3: BASIC WRITE DATA

```

5474 033026      804: CKLOOP                                ;LOOP IF SELECTED          TRAP C#CLP1
      033026      104406                                     ;                           ;
5475 033030      904:                                     ;                           ;
5476 033030      ENDSUB                                    ;>>>>>>>>>> END SUBTEST >>>>>>>>>>
      033030      L10050:                                  ;                           ;
      033030      104403                                     ;                           ;
5477 033032      023727 002212 000017        CMP     FATFLG,#15.    ;IS ERROR COUNT AT 25
5478 033040      103402                        BLO     9994                ;BR, IF LESS THAN 25
5479 033042      004737 017272                JSR     PC,CKDROP       ;TRY TO DROP THE UNIT
5480 033046      9994:                                     ;                           ;
5481                                     ; *
5482                                     ;
5483                                     ; TEST 3, SUBTEST 6
5484                                     ;
5485                                     ; VERIFIES THAT A WRITE DATA COMMAND SPECIFYING A DATA
5486                                     ; BUFFER STARTING IN EXISTANT MEMORY BUT RUNNING INTO
5487                                     ; NONEXISTENT MEMORY TERMINATES WITH THE PROPER ERROR
5488                                     ; STATUS. A LARGE ENOUGH RECORD SIZE IS SPECIFIED SUCH
5489                                     ; THAT TAPE IS ACTUALLY MOVED AND WRITTEN.
5490                                     ; -
5491                                     ;
5492                                     ;
5493      033046      BGNSUB                                ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
      033046      T3.6:                                   ;                           ;
      033046      104402                                     ;                           ;
5494 033050      005737 003126                TST     NXMFLG         ;DO WE HAVE IT?
5495 033054      001002                        BNE     104            ;BR, IF ENOUGH
5496 033056      000137 033374                JMP     1304            ;SKIP THIS TEST IF NOT
5497 033062      004737 035116      104:      JSR     PC,T23RT3       ;RESTORE PACKET
5498 033066      004737 034762                JSR     PC,T23REST      ;SET COMMAND PACKET
5499 033072      004737 035054                JSR     PC,T23RT2       ;SET UP OTHER COMMAND PACKET
5500                                     ; *****
5501                                     ;
5502                                     ; ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
5503                                     ;
5504                                     ; *****
5505                                     ;
5506                                     ;
5507 033076      004737 016064                JSR     PC,SOFINIT       ;DO INITIALIZE ON CONTROLLER
5508 033102      103407                        BCS     204            ;BR IF INIT WAS OK
5509 033104      005237 002212                INC     FATFLG         ;BUMP COUNT
5513 033110      010001                        MOV     R0,R1          ;CONTENTS OF TSSR REGISTER
5514 033112      033112      104455      ERRDF   ERNO,SFIERR,SFMSG     ;FATAL ERROR TSSR WAS NOT OK
      033112      000510                                     ;                           ;
      033114      003650                                     ;                           ;
      033116      012124                                     ;                           ;
      033120      012124                                     ;                           ;
5515 033122      013737 002172 033460      204:      MOV     UNITN,T23DSW    ;SET DRIVE NUMBER IN PACKET
5516 033122      013737 002172 033460      MOV     @T23PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
5517 033130      012704 033440                                     ;                           ;
5518                                     ; *****
5519                                     ;
5520                                     ; WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
5521                                     ;
5522                                     ; *****
5523                                     ;
5524                                     ;

```


TEST 3: BASIC WRITE DATA

5525	033134	004737	010752		JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS	
5526	033140	103407			BCS	23:		;BR, IF COMMAND ISSUED OK	
5527	033142	005237	002212		INC	FATFLG		;BUMP COUNT	
5531	033146	010001			MOV	R0,R1		;SAVE CONTENTS OF TSSR	
5532	033150				ERRHRD	ERRNO,WRTMSG,SFMSG		;WRITE CHARACTERISTICS FAILED	
	033150	104456						TRAP	C:ERHRD
	033152	000511						.WORD	329
	033154	005054						.WORD	WRTMSG
	033156	012124						.WORD	SFMSG
5533									
5534									
5535									
5536									
5537									
5538									
5539									
5540	033160				23:				
5541	033160	012701	160000		MOV	#160000,R1		;NXM LOW ADDRESS START	
5542	033164	C12702	177776		MOV	#177776,R2		;LIMIT CHECK FOR NXM (HIGHEST)	
5543	033170	004737	016466		JSR	PC,NXM		;LOOK FOR NXM ADDRESS	
5544	033174	103051			BCC	80:		;BR, IF NON FOUND	
5545	033176	010137	003130		MOV	R1,NXML0		;SET ADDRESS UP FOR TEST	
5546	033202	012737	000000	033574	MOV	#0,T23WB+2		;SET TO 16 BIT ADDRESS	
5547	033210								
5548	033210	012737	140005	033570	24:				
5549	033216	013701	003130		MOV	#140005,T23PK3		;WRITE DATA, ACK,CVC=1	
5550	033222	162701	000500		MOV	NXML0,R1		;HIGHEST MEMORY ADDRESS LOW BITS	
5551	033226	010137	033572		SUB	#500,R1		;SET ADDRESS A LITTLE LOWER	
5552	033232	012737	000000	033576	MOV	R1,T23WB		;LOAD INTO THE PACKET	
5553	033240	012704	033570		MOV	#0,T23SZ		;SET UP BUFFER SIZE (64K BYTES)	
5554	033244	010465	000000		MOV	#T23PK3,R4		;R4 = POINTER TO PACKET	
5555	033250	004737	016340		MOV	R4,TSD8(R5)		;ISSUE COMMAND	
5556	033254	016501	000002		JSR	PC,WAITF		;WAIT FOR SSR TO SET	
5557	033260	012702	104210		MOV	TSSR(R5),R1		;GET TSSR CONTENTS	
5558	033264	020102			MOV	#SC!NXM!SSR!BIT3,R2		;SET UP EXPECTED	
5559	033266	001414			CMP	R1,R2		;ARE THEY EQUAL	
5560	033270	005237	033574		BEQ	80:		;BR, IF OK ESP. FUNCTION REJECT	
5561	033274	023727	033574	000004	INC	T23WB+2		;BUMP TO NEXT ADDRESS RANGE	
5562	033302	001342			CMP	T23WB+2,#4		;CHECK TO SEE IF WE WENT TO HIGH	
5563	033304	005237	002212		BNE	24:		;BR, IF NO OVER FLOW	
5567	033310				25:			;BUMP COUNT	
	033310	104456			INC	FATFLG		;TSSR INCORRECT AFTER WRITE COMMAND	
	033312	000512			ERRHRD	ERRNO,T23TM,PKTSSR		TRAP	C:ERHRD
	033314	034022						.WORD	330
	033316	012136						.WORD	T23TM
5568	033320							.WORD	PKTSSR
	033320	104406			80:	CKLOOP		;LOOP IF SELECTED	
5569	033322	004737	035054					TRAP	C:CLP1
5570	033326	004737	035116		JSR	PC,T23RT2		;CLEAN UP PACKET	
5571	033332	012737	102010	033550	JSR	PC,T23RT3		;RESTORE PACKET	
5572	033340	012704	033550		MOV	#102010,T23PK2		;REWIND (POSITION) COMMAND	
5573	033344	010465	000000		MOV	#T23PK2,R4		;LOAD R4 WITH PACKET ADDRESS	
5574	033350	004737	016426		MOV	R4,TSD8(R5)		;ISSUE REWIND COMMAND	
5575	033354	103407			JSR	PC,CHKTSSR		;WAIT FOR SSR TO SET	
5576	033356	010001			BCS	130:		;BR, IF TSSR IS OK (GOOD)	
5577	033360	005237	002212		MOV	R0,R1		;SAVE TSSR CONTENTS	
5581	033364				INC	FATFLG		;BUMP COUNT	
					ERRHRD	ERRNO,T23RWN,PKTSSR		;TSSR IS INCORRECT AFTER REWIND	

TEST 3: BASIC WRITE DATA

033364	104456					TRAP	C1ERMRD
033366	000513					.WORD	331
033370	034076					.WORD	T23RWN
033372	012136					.WORD	PKTSSR
5582	033374			1304:			
5583	033374			ENDSUB			
033374							
033374	104403						
5584	033376	023727	002212	000017	CMP	FATFLG, #15.	
5585	033404	103402			BLO	9998	
5586	033406	004737	017272		JSR	PC, CKDROP	
5587	033412			9998:			
5588	033412	004737	016546		JSR	PC, TSTLOOP	
5589	033416	103002			BCC	1634	
5590	033420	000137	030222		JMP	T23L0CP	
5591	033424			1634:			
5592	033424			EXIT	TST		
033424	104432						
033426	C01702						
5593							
5594							
5595							
5596							
5598	033430				.BLKB	10-<.-TSV2E7>	
5600	033440			T23PACKET:			
5601	033440	100004			.WORD	100004	
5602	033442	033450			.WORD	T23DATA	
5603	033444	000000			.WORD	0	
5604	033446	000010			.WORD	8.	
5605	033450			T23DATA:			
5606	033450	033462			.WORD	T23BFR	
5607	033452	000000			.WORD	0	
5608	033454	000012			.WORD	10.	
5609	033456	000000			.WORD	0	
5610	033460	000000		T23DSW:	.WORD	0	
5611	033462			T23BFR:	.BLKW	25.	
5612							
5613							
5614							
5616	033544				.BLKB	10-<.-TSV2E7>	
5618	033550			T23PK2:			
5619	033550	100006			.WORD	100006	
5620	033552	033602			.WORD	T23BF2	
5621	033554	000000			.WORD	0	
5622	033556	000006			.WORD	6.	
5623							
5625	033560				.BLKB	10-<.-TSV2E7>	
5627	033570			T23PK3:			
5628	033570	100005			.WORD	100005	
5629	033572	000000		T23WB:	.WORD	0	
5630	033574	000000			.WORD	0	
5631	033576	000000		T23SZ:	.WORD	0	
5632					.EVEN		
5633							
5634	033600	000000		T23RSZ:	.WORD	0	
5635							
5636							

; >>>>>>>>>> END SUBTEST >>>>>>>>>>

L10051:

TRAP C1ESUB

; IS ERROR COUNT AT 25

; BR, IF LESS THAN 25

; TRY TO DROP THE UNIT

; DO WE NEED TO ITERATE TEST

; BR, IF NO LOOP REQUIRED

; EXECUTE AGAIN

; ALL DONE THIS TEST

TRAP C1EXIT

.WORD L10043-

; *
; LOCAL STORAGE FOR THIS TEST; -
; .BLKB 10-<.-TSV2E7>

T23PACKET:

.WORD 100004

.WORD T23DATA

.WORD 0

.WORD 8.

T23DATA:

.WORD T23BFR

.WORD 0

.WORD 10.

.WORD 0

T23DSW: .WORD 0

T23BFR: .BLKW 25.

; WRITE SUBSYSTEM MEMORY COMMAND PACKET

; .BLKB 10-<.-TSV2E7>

T23PK2:

.WORD 100006

.WORD T23BF2

.WORD 0

.WORD 6.

; .BLKB 10-<.-TSV2E7>

T23PK3:

.WORD 100005

T23WB: .WORD 0

.WORD 0

T23SZ: .WORD 0

.EVEN

; T23RSZ: .WORD 0

;

;

; COMMAND PACKET FOR TEST

; WRITE CHARACTERISTICS COMMAND, WITH ACK

; ADDRESS OF CHARACTERISTICS BLOCK

; STARTING VALUE OF BLOCK SIZE

; CHARACTERISTICS DATA BLOCK

; ADDRESS OF MESSAGE BUFFER

; LENGTH OF MESSAGE BUFFER

; SELECT DRIVE 0

; MESSAGE BUFFER

; WRITE SUB SYS MEM COMMAND, AND ACK

; ADDRESS OF SELECT BLOCK DATA

; SIZE OF DATA PACKET

; WRITE COMMAND, AND ACK

; ADDRESS OF WRITE BUFFER

; SIZE OF BUFFER (EXTENT)

; LARGEST TAPE RECORD IN BYTES

TEST 3: BASIC WRITE DATA

```

5637 033602
5638 033602      010
5639 033603      200
5640 033604      000000
5641 033606      000000
5642
5643
5644 033610      000000
5645 033612      000000
5646
5647
5648
5649
5650 033614      100005
5651 033616      100405
5652 033620      102005
5653 033622      177777
5654
5655
5656
5657
5658
5659 033624      127      122      111
5660 033657      105      117      124
5661 033744      127      122      111
5662 034022      124      123      123
5663 034076      122      145      167
5664 034145      122      101      115
5665 034220      124      123      123
5666 034266      104      162      151
5667 034341      124      123      123
5668 034430      124      123      123
5669 034532      103      126      103
5670 034605      124      123      102
5671 034657      127      122      111
5672 034746      102      141      163
5673
5674
5675
5676
5677
5678
5679
5680
5681 034762
5682 034762
5683 034766      012701      033440
5684 034772      012721      100004
5685 034776      012721      033450
5686 035002      005021
5687 035004      012721      000012
5688 035010      012721      033462
5689 035014      005021
5690 035016      012721      000024
5691 035022      005021
5692 035024      012711      000000
5693 035030      012702      000030

T23BF2:
T23BS0: .BYTE      10      ;BSEL0 AREA
T23BS1: .BYTE      200     ;BSEL1 AREA
T23S2:  .WORD      0       ;SEL 2 AREA
T23S3:  .WORD      0       ;DATA AREA
;
;
T23TMP: .WORD      0       ;TEMPORARY REGISTER
T23WRT: .WORD      0       ;RETRY COMMAND
;
;EVEN
;TAPE MOTION PACKET COMMAND VALUES

T23WD:  .WORD      100005   ;WRITE DATA (NEXT)
T23WR:  .WORD      100405   ;WRITE DATA RETRY
T23CON: .WORD      102005   ;WRITE CONTINUOUS
;END OF DATA

;*
;LOCAL TEXT MESSAGES FOR TEST
;-
111 T23SSR: .ASCIZ 'WRITE Command Not Accepted'
124 T23ET:  .ASCIZ 'EOT Not Found In 12000 4k Writes. (Use Shorter Tape)'
111 T23EOT: .ASCIZ 'WRITE DATA OVER EOT GAVE NO TAPE STATUS ALERT'
123 T23TM:  .ASCIZ 'TSSR Not Correct After WRITE Command Reject'
167 T23RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
115 T23RNC: .ASCIZ 'RAM Error. Correct Data Pattern Not In Ram'
123 T23AM3: .ASCIZ 'TSSR Init. Failed After WRITE Command'
151 T23OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
123 T23WDD: .ASCIZ 'TSSR Not Correct After WRITE DATA Command. SWB Bit Set'
123 T23WDC: .ASCIZ 'TSSR Not Correct After WRITE DATA Command. Check For Tape Offline'
103 T23VCK: .ASCIZ 'CVC Set. Didn't Reset VCK In Message Buffer'
102 T23BA:  .ASCIZ 'TSBA Not Correct After WRITE DATA Command'
111 T23WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
163 T23ID:  .ASCIZ 'Basic Write'
;EVEN
;*
;ROUTINE TO RESTORE COMMAND PACKET TO START UP (DEFAULT) VALUES
;WRITE SUBSYSTEM MEMORY COMMAND
;-

T23REST:
SAVREG
MOV     #T23PACKET,R1      ;SAVE THE REGISTERS
MOV     #100004,(R1)       ;START OF THE PACKET
MOV     #T23DATA,(R1)     ;WRITE SUBSYSTEM MEM. WITH ACK
CLR     (R1)               ;ADDRESS OF CHARACTERISTICS DATA BLOCK
MOV     #10,(R1)           ;EXTENDED ADDRESS
MOV     #T23BFR,(R1)       ;SIZE OF DATA BLOCK IN BYTES
CLR     (R1)               ;ADDRESS OF MESSAGE BUFFER
MOV     #20,(R1)           ;LENGTH OF MESSAGE BUFFER
CLR     (R1)
MOV     #0,(R1)            ;SELECT DRIVE ZERO
MOV     #24,R2             ;NUMBER OF LOCATIONS TO BE CLEARED

```


TEST 3: BASIC WRITE DATA

```

5694 035034 012762 177777 033462 64: MOV #177777,T23BFR(R2) ;ALL ONES TO MESSAGE BUFFER
5695 035042 005742 TST -(R2) ;BUMP DOWN TO NEXT LOCATION
5696 035044 020227 000000 CMP R2,#0 ;R2 AT ZERO YET
5697 035050 001371 BNE 64: ;KEEP GOING UNTIL DONE
5698 035052 000207 RTS PC ;RETURN
5699
5700
5701 035054 T23RT2: SAVREG ;SAVE THE REGISTERS
5702 035054 MOV #T23PK2,R1 ;START OF THE PACKET
5703 035060 012701 033550 MOV #100006,(R1)+ ;WRITE SUBSYSTEM MEM. WITH ACK
5704 035064 012721 100006 MOV #T23BF2,(R1)+ ;ADDRESS OF DATA BLOCK
5705 035070 012721 033602 CLR (R1)+ ;EXTENDED ADDRESS
5706 035074 005021 MOV #6,(R1)+ ;SIZE OF DATA BLOCK IN BYTES
5707 035076 012721 000006 MOV #T23BF2,R1 ;POINT TO DATA SEL AREA
5708 035102 012701 033602 CLR (R1)+
5709 035106 005021 CLR (R1)+
5710 035110 005021 CLR (R1)+
5711 035112 005011 RTS PC ;RETURN
5712 035114 000207
5713 035116 T23RT3: SAVREG ;SAVE THE REGISTERS
5714 035116 MOV #T23PK3,R1 ;START OF THE PACKET
5715 035122 012701 033570 MOV #100005,(R1)+ ;WRITE TAPE. WITH ACK
5716 035126 012721 100005 CLR (R1)+ ;ADDRESS OF DATA BLOCK
5717 035132 005021 CLR (R1)+ ;EXTENDED ADDRESS
5718 035134 005021 CLR (R1)+ ;SIZE OF DATA BLOCK
5719 035136 005011 RTS PC ;RETURN
5720 035140 000207
5721
5722 ;
5723 ;ROUTINE TO RETRY WRITE DATA IN CASE OF BAD TAPE FOR TEST
5724 ;3.SUBTEST 2 & 3
5725 ;
5726 ;INPUTS: R1=TSSR
5727 ; SUBROUTINE SETS UP T23WRT FOR RETRY
5728 ;
5729 ;
5730 035142 T23CHK: SAVREG ;SAVE THE REGISTERS
5731 035142 CLR T23TMP ;CLEAR LOCAL REGISTER
5732 035146 005037 033610 BIT #SC,R1 ;IS SC SET IN TSSR?
5733 035152 032701 100000 BEQ FATAL ;NO, YOU GOT PROBLEMS!
5734 035156 001452 MOV T23BFR+10,R2 ;YES,GET XSTAT1
5735 035160 013702 033472 BIT #X1.UNC,R2 ;IS UNC SET IN XSTAT1?
5736 035164 032702 000002 BEQ 1: ;NO, CHECK COR
5737 035170 001401 BR RETRY ;YES,DO WRITE DATA RETRY
5738 035172 000405 1: BIT #X1.COR,R2 ;IS COR SET IN XSTAT1 THEN?
5739 035174 032702 020000 BNE RETRY ;YES SO RETRY
5740 035200 001002 BR FATAL ;NO, YOU GOT PROBLEMS
5741 035202 000440 EXIT: RTS PC ;RETURN
5742 035204 000207
5743
5744 035206 RETRY:
5745 035206 012703 000024 2: MOV #20.,R3 ;STARTING RECORD SIZE
5746 035212 013737 003114 033572 MOV FREE,T23WB ;STARTING WRITE BUFFER ADDRESS
5747 035220 012737 033612 033570 MOV #T23WRT,T23PK3 ;WRITE DATA RETRY COMMAND SETUP BY SUBROUTINE
5748 035226 012704 033570 MOV #T23PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
5749 035232 010300 MOV R3,R0 ;SET PATTERN IN CORRECT REGISTER
5750 035234 004737 017512 JSR PC,FILLMEM ;FILL MEMORY WITH RECORD SIZE

```


TEST 3: BASIC WRITE DATA

```

5751 035240 010337 033576      MOV      R3,T23SZ      ;SET UP RECORD SIZE IN PACKET
5752 035244 010465 000000      MOV      R4,TSDB(R5)    ;ISSUE COMMAND
5753 035250 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
5754 035254 016501 000002      MOV      TSSR(R5),R1    ;GET TSSR CONTENTS
5755 035260 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
5756 035264 020102              CMP      R1,R2      ;ARE THEY EQUAL
5757 035266 001746              BEQ      EXIT      ;BR, IF OK
5758 035270 005237 033610      INC      T23TMP      ;TRY FIVE TIMES THEN EXIT
5759 035274 022737 000005 033610 CMP      #5,T23TMP    ;DONE FIVE YET?
5760 035302 001341              BNE      2$      ;NO GO AGAIN
5761 035304 005237 002212      FATAL: INC      FATFLG      ;BUMP COUNT
5765 035310 013702 033462      MOV      T23BFR,R2    ;LOW ORDER MSGBUF
5766 035314              ERRHRD  ERRNO,SCHERR,PKTMES ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C$ERHRD
                                .WORD    332
                                .WORD    SCHERR
                                .WORD    PKTMES
5767 035324 004737 017272      JSR      PC,CKDROP      ;DROP THE UNIT
5768 035330              ENDTST
                                L10043:
                                TRAP      C$ETST
035330 104401

```

```

5769
5770      .SBTTL  TEST  4: BASIC READ DATA (FORWARD AND REVERSE)
5771      ;*
5772      ;
5773      ;THIS TEST VERIFIES THAT THE READ FORWARD AND READ REVERSE
5774      ;COMMANDS OPERATE PROPERLY. VARIOUS COMBINATIONS OF ODD AND EVEN
5775      ;DATA BUFFER BOUNDARIES, RECORD SIZES (UP TO 64K BYTES IF MEMORY
5776      ;SPACE IS AVAILIABLE), AND BYTE-SWAP CONTROL ARE USED. THIS TEST
5777      ;OF COURSE, FURTHER VERIFIES THE WRITE DATA COMMAND BY ACTUALLY
5778      ;READING AND VERIFYING WRITTEN DATA. ALSO TESTED ARE PROPER
5779      ;TERMINATIONS ON EXCEPTIONAL OR ERROR CONDITIONS: RECORD LENGTH
5780      ;LONG, RECORD LENGTH SHORT, READ REVERSE AT BOT, ILLEGAL DATA
5781      ;BUFFER ADDRESSES, ILLEGAL CODES IN THE MODE FIELD OF THE BASIC
5782      ;READ COMMAND, AND DATA BUFFERS IN NON-EXISTANT MEMORY. THE TEST
5783      ;
5784      ;
5785      ;THE TEST CONSISTS OF THE FOLLOWING 14 SUBTESTS
5786      ;
5787      ;
5788      ;
5789      ;-

```

```

5790 035332      BGNTST
035332
5791 035332 012737 006356 002170      MOV      #EPRT1,EPRTSW    ;SET UP PRIMARY ERROR MESSAGE
5792 035340 005037 003124              CLR      KTENABLE      ;TURN OFF KT11
5793 035344 004737 017364              JSR      PC,KTOFF      ;TURN KT11 OFF
5798 035350 012700 047342              MOV      #TST24ID,R0    ;ASCII MESSAGE TO IDENTIFY TEST
5799 035354 004737 016600              JSR      PC,TSTSETUP    ;DO INITIAL TEST SETUP
5800 035360 004737 022206              JSR      PC,MEMCK      ;CHECK FOR MEMORY
5801 035364 005037 003126              CLR      NXMFLG      ;SET FLAG
5802 035370 012737 000005 002206      MOV      #5,LOOPCNT    ;PERFORM 5 ITERATIONS
5803
5804      ;*
5805      ;TEST 4, SUBTEST 1
5806      ;
5807      ;

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

5808 ;VERIFIES THAT A READ DATA COMMAND WITH THE CLEAR
5809 ;VOLUME CHECK (CVC) BIT CLEAR IS REJECTED IF THE
5810 ;VOLUME CHECK (VCK) IS SET. ALL LEGAL
5811 ;COMBINATIONS OF THE COMMAND MODE FIELD ARE TESTED
5812 ;(I.E., IT IS VERIFIED THAT THE COMMAND IS REJECTED
5813 ;DUE TO VCK BEING SET RATHER THAN ERRONEOUS DECODING
5814 ;OF THE MODE FIELD.
5815 ;
5816 ;
5817 ;-
5818
5819 T24LOOP:
5820 BGNSUB                                ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
                                         T4.1:
                                         TRAP      C#BSUB
5821 035376 104402          JSR      PC,T24REST        ;SET COMMAND PACKET
5822 035400 004737 047410   JSR      PC,T24RT3       ;SET UP OTHER COMMAND PACKET
5823 035404 004737 047544   JSR      PC,T24RT2       ;SET UP OTHER COMMAND PACKET
5824 035410 004737 047502   JSR      PC,T24RT2       ;SET UP OTHER COMMAND PACKET
5825 035414 C12737 176750 045076 MOV     #65000.,T24DLY    ;LOAD UP DELAY ROUTINE
5826
5827 ;*****
5828 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
5829 ;
5830 ;*****
5831
5832 035422 004737 016064   S#:    JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
5833 035426 103426         BCS      20$                ;BR IF INIT WAS OK
5834 035430         DELAY     250                      ;DELAY AWHILE
5835 035430 012727 000250         MOV     #250,(PC)+
5836 035434 000000         .WORD    0
5837 035436 013727 002116         MOV     L#DLY,(PC)+
5838 035442 000000         .WORD    0
5839 035444 005367 177772         DEC     -6(PC)
5840 035450 001375         BNE     -.4
5841 035452 005367 177756         DEC     -22(PC)
5842 035456 001367         BNE     -.20
5843 035460 005337 045076   DEC     T24DLY            ;BUMP DELAY COUNTER
5844 035464 001356         BNE     S#                  ;BR, IF MORE DELAY REQUIRED
5845 035466 005237 002212   INC     FATFLG           ;BUMP COUNT
5846 035472 010001         MOV     R0,R1             ;CONTENTS OF TSSR REGISTER
5847 035474         ERDRF   ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
5848 035474 104455         TRAP     C#ERDF
5849 035476 000621         .WORD    401
5850 035500 003650         .WORD    SFIERR
5851 035502 012124         .WORD    SFIMSG
5852
5853 035504         20$:    MOV     #7,T24DSW          ;SET DRIVE NUMBER IN PACKET
5854 035504 012737 000007 044740 MOV     #T24PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
5855 035512 012704 044720
5856
5857 ;*****
5858 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
5859 ;
5860 ;*****
5861
5862 035516 004737 010752   JSR      PC,WRTPCHR        ;ISSUE WRITE CHARACTERISTICS

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

5854 035522 103407      BCS      24:      ;BR, IF COMMAND ISSUED OK
5855 035524 005237 00212 INC      FATFLG      ;BUMP COUNT
5859 035530 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
5860 035532      ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
      035532 104456      TRAP      C$ERHRD
      035534 000622      .WORD      402
      035536 005054      .WORD      WRTMSG
      035540 012124      .WORD      SFMSG
5861 035542 005737 002216 24:  TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
5862 035546 001044      BNE      50:      ;BR IF SWITCH IS ON
5863
5864 035550 112737 000200 045061 MOVB     #200,T24BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
5865 035556 112737 000010 045060 MOVB     #10,T24BS0      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
5866 035564 012704 045030      MOV      #T24PK2,R4      ;WRITE SUBSYS MEM PACKET
5867 035570 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
5868 035574 004737 016426      JSR      PC,CHKTSSR      ;WAIT FOR SSR
5869 035600 103407      BCS      30:      ;BR, IF NO ERROR
5870 035602 010001      MOV      R0,R1      ;ERROR, SAVE TSSR
5871 035604 005237 002212      INC      FATFLG      ;BUMP COUNT
5875 035610      ERRHRD  ERRNO,T24SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
      035610 104456      TRAP      C$ERHRD
      035612 000623      .WORD      403
      035614 045617      .WORD      T24SSR
      035616 012136      .WORD      PKTSSR
5876 035620      30:  CKLOOP      ;LOOP IF SELECTED
      035620 104406      TRAP      C$CLP1
5877 035622 012737 000007 044740 MOV      #7,T24DSW      ;SET DRIVE NUMBER IN PACKET
5878 035630 012704 044720      MOV      #T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
5879
5880 ;*****
5881 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
5882 ;
5883 ;*****
5884
5885
5886 035634 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
5887 035640 103407      BCS      50:      ;BR, IF COMMAND ISSUED OK
5888 035642 005237 002212      INC      FATFLG      ;BUMP COUNT
5892 035646 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
5893 035650      ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
      035650 104456      TRAP      C$ERHRD
      035652 000624      .WORD      404
      035654 005054      .WORD      WRTMSG
      035656 012124      .WORD      SFMSG
5894 035660      50:  CKLOOP      ;SCOPE LOOP
      035660 104406      TRAP      C$CLP1
5895 035662 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
5896 035666 032701 000100      BIT      #0FL,R1      ;CHECK FOR THE OFFLINE BIT SET
5897 035672 001006      BNE      60:      ;BR, IF OFFLINE (GOOD)
5898 035674 005237 002212      INC      FATFLG      ;BUMP COUNT
5902 035700      ERDF  ERRNO,T240FL,SFMSG ;OFF LINE SHOULD HAVE BEEN SET (BAD)
      035700 104455      TRAP      C$ERDF
      035702 000625      .WORD      405
      035704 046375      .WORD      T240FL
      035706 012124      .WORD      SFMSG
5903 035710      60:  CKLOOP      ;LOOP IF SELECTED
      035710 104406      TRAP      C$CLP1

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

5955 036022 004737 047544      JSR      PC,T24RT3      ;SET UP OTHER COMMAND PACKET
5956 036026 004737 047410      JSR      PC,T24REST     ;SET COMMAND PACKET
5957 036032 004737 047502      JSR      PC,T24RT2     ;SET UP OTHER COMMAND PACKET
5958
5959      ;*****
5960      ;
5961      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
5962      ;
5963      ;*****
5964
5965 036036 004737 016064      JSR      PC,SOFINIT     ;DO INITIALIZE ON CONTROLLER
5966 036042 103407             BCS      20$      ;BR IF INIT WAS OK
5967 036044 005237 002212      INC      FATFLG      ;BUMP COUNT
5971 036050 010001             MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
5972 036052             ERRDF      ERRNO,SFIERR,SFMSG ;FATAL ERROR TSSR WAS NOT OK
                    TRAP      C$ERDF
                    .WORD      407
                    .WORD      SFIERR
                    .WORD      SFMSG
5973 036062             20$:
5974 036062 013737 002172 044740 MOV      UNITN,T24DSW      ;SET DRIVE NUMBER IN PACKET
5975 036070 012704 044720      MOV      @T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
5976
5977      ;*****
5978      ;
5979      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
5980      ;
5981      ;*****
5982
5983 036074 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
5984 036100 103407             BCS      24$      ;BR, IF COMMAND ISSUED OK
5985 036102 005237 002212      INC      FATFLG      ;BUMP COUNT
5989 036106 010001             MOV      R0,R1      ;SAVE CONTENTS OF TSSR
5990 036110      ERRHRD      ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                    TRAP      C$ERHRD
                    .WORD      408
                    .WORD      WRTMSG
                    .WORD      SFMSG
5991 036120      24$:      CKLOOP      ;LOOP IF SELECTED
                    TRAP      C$CLP1
5992 036120 104406
5993
5994      ;*****
5995      ;
5996      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5997      ;
5998      ;*****
5999 036122 004737 011104      JSR      PC,REWIND     ;CALL TAPE REWIND COMMAND
6000 036126 103407             BCS      30$      ;BR, IF NO PROBLEM
6001 036130 010001             MOV      R0,R1      ;SAVE TSSR
6002 036132 005237 002212      INC      FATFLG      ;BUMP COUNT
6006 036136      ERRHRD      ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
                    TRAP      C$ERHRD
                    .WORD      409
                    .WORD      T24RWN
                    .WORD      PKTSSR
6007 036146      30$:      CKLOOP      ;LOOP IF SELECTED

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

036146 104406                                TRAP      C#CLP1
6008
6009 ;*****
6010 ;
6011 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
6012 ;
6013 ;*****
6014
6015 036150 013701 044750          MOV      T24BFR+6,R1          ;PICK UP XST0
6016 036154 010102          MOV      R1,R2          ;SET UP EXPECTED
6017 036156 052702 000002      BIS      #BIT1,R2          ;SET BOT BIT IN EXPECTED
6018 036162 020102          CMP      R1,R2          ;DOES EXP = REC'D
6019 036164 001406          BEQ      40$          ;BR, IF EQUAL (OK)
6020 036166 005237 002212      INC      FATFLG          ;BUMP COUNT
6024 036172          ERRHRD  ERRNO,T24BOT,EXPREC          ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C#ERHRD
                                .WORD     410
                                .WORD     T24BOT
                                .WORD     EXPREC
                                TRAP      C#CLP1
6025 036202          40$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C#CLP1
6026 036204 012703 000400      MOV      #256.,R3          ;RECORD SIZE
6027 036210 013737 003114 045052      MOV      FREE,T24RB          ;STARTING WRITE BUFFER ADDRESS
6028
6029 ;*****
6030 ;
6031 ;WRITE DATA,CVC=1,ACK COMMAND
6032 ;
6033 ;*****
6034
6035 036216 012737 140005 045050      MOV      #140005,T24PK3          ;WRITE DATA,CVC=1,ACK COMMAND
6036 036224 012704 045050      MOV      #T24PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
6037 036230          65$:
6038 036230 010300          MOV      R3,R0          ;SET PATTERN IN CORRECT REGISTER
6039 036232 004737 017512      JSR      PC,FILLMEM          ;FILL MEMORY WITH RECORD SIZE
6040 036236 010337 045056      MOV      R3,T24SZ          ;SET UP RECORD SIZE IN PACKET
6041 036242 010465 000000      MOV      R4,TSDB(R5)          ;ISSUE COMMAND
6042 036246 004737 016340      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
6043 036252 016501 000002      MOV      TSSR(R5),R1          ;GET TSSR CONTENTS
6044 036256 012702 000200      MOV      #SSR,R2          ;SET UP EXPECTED
6045 036262 020102          CMP      R1,R2          ;ARE THEY EQUAL
6046 036264 001406          BEQ      75$          ;BR, IF OK
6047 036266 005237 002212      INC      FATFLG          ;BUMP COUNT
6051 036272          ERRHRD  ERRNO,WRERR,PKTSSR          ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C#ERHRD
                                .WORD     411
                                .WORD     WRERR
                                .WORD     PKTSSR
                                TRAP      C#CLP1
6052 036302          75$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C#CLP1
6053 036304 005723          TST      (R3)+          ;BUMP RECORD SIZE
6054 036306 022703 000414      CMP      #268.,R3          ;END OF RECORD YET
6055 036312 001346          BNE      65$          ;BR, IF MORE RECORDS TO WRITE
6056 036314          80$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C#CLP1
6057 036316          120$:
6058

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
6059 ;*****
6060 ;
6061 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6062 ;
6063 ;*****
6064
6065 036316 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
6066 036322 004737 016426 JSR PC,CHKTSSR ;SEE HOW TSSR IS
6067 036326 103407 BCS 1304 ;BR, IF NO PROBLEM
6068 036330 010001 MOV R0,R1 ;SAVE TSSR
6069 036332 005237 002212 INC FATFLG ;BUMP COUNT
6073 036336 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
        036336 104456 TRAP C#ERHRD
        036340 000634 .WORD 412
        036342 046206 .WORD T24RWN
        036344 012136 .WORD PKTSSR
6074 036346 1304: CKLOOP ;LOOP IF SELECTED
        036346 104406 TRAP C#CLP1
6075 ;*****
6076 ;
6077 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6078 ;
6079 ;*****
6080
6081
6082 036350 013701 044750 MOV T24BFR+6,R1 ;PICK UP XSTO
6083 036354 010102 MOV R1,R2 ;SET UP EXPECTED
6084 036356 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
6085 036362 020102 CMP R1,R2 ;DOES EXP = REC'D
6086 036364 001406 BEQ 1404 ;BR, IF EQUAL (OK)
6087 036366 005237 002212 INC FATFLG ;BUMP COUNT
6091 036372 ERRHRD ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
        036372 104456 TRAP C#ERHRD
        036374 000635 .WORD 413
        036376 045723 .WORD T24BOT
        036400 015564 .WORD EXPREC
6092 036402 1404: CKLOOP ;LOOP IF SELECTED
        036402 104406 TRAP C#CLP1
6093 036404 012703 000400 MOV #256,R3 ;RECORD SIZE
6094 036410 013737 003114 045052 MOV FREE,T24RB ;STARTING READ BUFFER ADDRESS
6095 ;*****
6096 ;
6097 ;READ DATA,CVC=1,ACK COMMAND
6098 ;
6099 ;*****
6100
6101
6102 036416 012737 140001 045050 MOV #140001,T24PK3 ;READ DATA,CVC=1,ACK COMMAND
6103 036424 012704 045050 1654: MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
6104 036430 010337 045056 MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
6105 036434 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
6106 036440 004737 016340 JSR PC,WAITF ;WAIT FOR SSR TO SET
6107 036444 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
6108 036450 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
6109 036454 020102 CMP R1,R2 ;ARE THEY EQUAL
6110 036456 001406 BEQ 1704 ;BR, IF OK
6111 036460 005237 002212 INC FATFLG ;BUMP COUNT
```


SEQ 0142

6115	036464			ERRHRD	ERRNO,RDERR,PktSSR	;TSSR INCORRECT AFTER READ DATA			
	036464	104456					TRAP	C#ERHRD	
	036466	000636					.WORD	414	
	036470	005204					.WORD	RDERR	
	036472	012136					.WORD	PktSSR	
6116	036474		170:	CKLOOP		;LOOP IF SELECTED			
	036474	104406					TRAP	C#CLP1	
6117	036476	013702	003114	MOV	FEE,R2	;GET BUFFER ADDRESS			
6118	036502	010304		MOV	R3,R4	;CURRENT RECORD SIZE			
6119	036504	162704	000400	SUB	#256.,R4	;FIRST LOCATION IN BUFFER			
6120	036510	060204		ADD	R2,R4	;GET LOCATION IN BUFFER (ADDRESS)			
6121	036512	021403		CMP	(R4),R3	;CHECK DATA READ (R3=DATA ALSO)			
6122	036514	001410		BEQ	180:	;BR, IF ALL IS WELL			
6123	036516	011401		MOV	(R4),R1	;RECD DATA			
6124	036520	010302		MOV	R3,R2	;EXPECTED DATA			
6125	036522	005237	002212	INC	FATFLG	;BUMP COUNT			
6129	036526			ERRHRD	ERRNO,T24DTA,F.XPREC	;DATA READ NOT - WRITTEN			
	036526	104456					TRAP	C#ERHRD	
	036530	000637					.WORD	415	
	036532	045770					.WORD	T24DTA	
	036534	015564					.WORD	EXPREC	
6130	036536		180:	CKLOOP		;LOOP IF SELECTED			
	036536	104406					TRAP	C#CLP1	
6131	036540	005724		TST	(R4)+	;BUMP TO NEXT LOCATION			
6132	036542	160204		SUB	R2,R4	;GET BACK TO CORRECT SIZE			
6133	036544	020403		CMP	R4,R3	;END OF RECORD YET			
6134	036546	001360		BNE	173:	;BR, IF NOT AT END OF RECORD			
6135	036550	005723		TST	(R3)+	;BUMP RECORD SIZE			
6136	036552	022703	000412	CMP	#266.,R3	;END OF RECORD YET			
6137	036556	001322		BNE	165:	;BR, IF MORE RECORDS TO WRITE			
6138	036560		190:	CKLOOP		;LOOP IF SELECTED			
	036560	104406					TRAP	C#CLP1	
6139	036562			ENDSUB		;***** END SUBTEST *****			
	036562					L10054:			
	036562	104403					TRAP	C#ESUB	
6140	036564	023727	002212	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25			
6141	036572	103402		BLO	999:	;BR, IF LESS THAN 25			
6142	036574	004737	017272	JSR	PC,CkDROP	;TRY TO DROP THE UNIT			
6143	036600		999:						
6144				*					
6145				:					
6146				: TEST 4, SUBTEST 3					
6147				:					
6148				: VERIFIES THAT READ DATA COMMANDS WITH CVC-1 AND THE					
6149				: SWAP BYTES (SWB) BIT SET OPERATES PROPERLY. THE TEST					
6150				: SEQUENCE IS IDENTICAL TO THAT USED IN SUBTEST 2.					
6151				: THE RESULTS, EXCEPT FOR RAM CONTENTS, SHOULD BE THE SAME.					
6152				:					
6153				:					
6154				:					
6155				:					
6156				-					
6157	036600			BGNSUB		;***** BEGIN SUBTEST *****			
	036600					T4.3:			
	036600	104402					TRAP	C#BSUB	
6158	036602	004737	047544	JSR	PC,T24RT3	;SET UP OTHER COMMAND PACKET			
6159	036606	004737	047410	JSR	PC,T24REST	;SET COMMAND PACKET			

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
6160 036612 004737 047502          JSR      PC,T24RT2          ;SET UP OTHER COMMAND PACKET
6161
6162          ;*****
6163          ;
6164          ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
6165          ;
6166          ;*****
6167
6168 036616 004737 016064          JSR      PC,SOFINIT          ;DO INITIALIZE ON CONTROLLER
6169 036622 103407          BCS      20:          ;BR IF INIT WAS OK
6170 036624 005237 002212          INC      FATFLG          ;BUMP COUNT
6174 036630 010001          MOV      R0,R1          ;CONTENTS OF TSSR REGISTER
6175 036632          ERRDF      ERRNO,SFIERR,SFMSG          ;FATAL ERROR TSSR WAS NOT OK
6176 036632 104455          TRAP      CIERDF
6177 036634 000640          .WORD      416
6178 036636 003650          .WORD      SFIERR
6179 036640 012124          .WORD      SFMSG
6180
6181 036642 013737 002172 044740 20:  MOV      UNITN,T24DSH          ;SET DRIVE NUMBER IN PACKET
6182 036650 012704 044720          MOV      @T24PACKET,R4          ;SUBROUTINE NEEDS PACKET ADDRESS
6183
6184          ;*****
6185          ;
6186          ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
6187          ;
6188          ;*****
6189
6190 036654 004737 010752          JSR      PC,WRTCHR          ;ISSUE WRITE CHARACTERISTICS
6191 036660 103407          BCS      24:          ;BR, IF COMMAND ISSUED OK
6192 036662 005237 002212          INC      FATFLG          ;BUMP COUNT
6193 036666 010001          MOV      R0,R1          ;SAVE CONTENTS OF TSSR
6194 036670          ERRHRD      ERRNO,WRTMSG,SFMSG          ;WRITE CHARACTERISTICS FAILED
6195 036670 104456          TRAP      CIERHRD
6196 036672 000641          .WORD      417
6197 036674 005054          .WORD      WRTMSG
6198 036676 012124          .WORD      SFMSG
6199
6200 036700          24:  CKLOOP          ;LOOP IF SELECTED
6201 036700 104406          TRAP      CICLP1
6202
6203          ;*****
6204          ;
6205          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6206          ;
6207          ;*****
6208
6209 036702 004737 011104          JSR      PC,REWIND          ;CALL TAPE REWIND COMMAND
6210 036706 103407          BCS      30:          ;BR, IF NO PROBLEM
6211 036710 010001          MOV      R0,R1          ;SAVE TSSR
6212 036712 005237 002212          INC      FATFLG          ;BUMP COUNT
6213 036716          ERRHRD      ERRNO,T24RMN,PKTSSR          ;REWIND NOT ACCEPTED
6214 036716 104456          TRAP      CIERHRD
6215 036720 000642          .WORD      418
6216 036722 046206          .WORD      T24RMN
6217 036724 012136          .WORD      PKTSSR
6218
6219 036726          30:  CKLOOP          ;LOOP IF SELECTED
6220 036726 104406          TRAP      CICLP1
6221
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
6212 ;*****
6213 ;
6214 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6215 ;
6216 ;*****
6217
6218 036730 013701 044750      MOV      T24BFR+6,R1      ;PICK UP XSTO
6219 036734 010102          MOV      R1,R2      ;SET UP EXPECTED
6220 036736 052702 000002    BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
6221 036742 020102          CMP      R1,R2      ;DOES EXP = REC'D
6222 036744 001406          BEQ      40$      ;BR, IF EQUAL (OK)
6223 036746 005237 002212    INC      FATFLG      ;BUMP COUNT
6227 036752          ERRHRD  ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
        036752 104456          TRAP      C$ERHRD
        036754 000643          .WORD    419
        036756 045723          .WORD    T24BOT
        036760 015564          .WORD    EXPREC
6228 036762          40$:    CKLOOP      ;LOOP IF SELECTED          TRAP      C$CLP1
        036762 104406          MOV      #256.,R3      ;RECORD SIZE
6229 036764 012703 000400    MOV      FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
6230 036770 013737 003114 045052
6231 ;*****
6232 ;
6233 ;WRITE DATA,ACK,SWB,CVC=1 COMMAND
6234 ;
6235 ;*****
6236
6237
6238 036776 012737 150005 045050    MOV      #150005,T24PK3      ;WRITE DATA,ACK,SWB,CVC=1 COMMAND
6239 037004 012704 045050          MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6240 037010
6241 037010 010300          65$:    MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
6242 037012 004737 017512          JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
6243 037016 010337 045056          MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
6244 037022 010465 000000          MOV      R4,TSD8(R5)      ;ISSUE COMMAND
6245 037026 004737 016340          JSR      PC,WAITF      ;WAIT FOR SSR TO SET
6246 037032 016501 000002          MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
6247 037036 012702 000200          MOV      #SSR,R2      ;SET UP EXPECTED
6248 037042 020102          CMP      R1,R2      ;ARE THEY EQUAL
6249 037044 001406          BEQ      75$      ;BR, IF OK
6250 037046 005237 002212    INC      FATFLG      ;BUMP COUNT
6254 037052          ERRHRD  ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
        037052 104456          TRAP      C$ERHRD
        037054 000644          .WORD    420
        037056 005111          .WORD    WRERR
        037060 012136          .WORD    PKTSSR
6255 037062          75$:    CKLOOP      ;LOOP IF SELECTED          TRAP      C$CLP1
        037062 104406          TST      (R3),      ;BUMP RECORD SIZE
6256 037064 005723          CMP      #268.,R3      ;END OF RECORD YET
6257 037066 022703 000414    BNE      65$      ;BR, IF MORE RECORDS TO WRITE
6258 037072 001316          80$:    CKLOOP      ;LOOP IF SELECTED          TRAP      C$CLP1
6259 037074          120$:
        037074 104406
6260 037076
6261 ;*****
6262 ;
6263 ;
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

6264 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6265 ;
6266 ;*****
6267 ;
6268 037076 004737 011104 JSR PC.REWIND ;CALL TAPE REWIND COMMAND
6269 037102 103407 BCS 1301 ;BR, IF NO PROBLEM
6270 037104 010001 MOV R0,R1 ;SAVE TSSR
6271 037106 005237 002212 INC FATFLG ;BUMP COUNT
6275 037112 ERRMRD ERRNO,T24RWN,EXPREC ;REWIND NOT ACCEPTED
        037112 104456 TRAP C1ERMRD
        037114 000645 .WORD 421
        037116 046206 .WORD T24RWN
        037120 015564 .WORD EXPREC
6276 037122 1301: CKLOOP ;LOOP IF SELECTED TRAP C1CLP1
        037122 104406
6277 ;*****
6278 ;
6279 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6280 ;
6281 ;*****
6282 ;
6283 ;
6284 037124 013701 044750 MOV T24BFR+6,R1 ;PICK UP XSTO
6285 037130 010102 MOV R1,R2 ;SET UP EXPECTED
6286 037132 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
6287 037136 020102 CMP R1,R2 ;DOES EXP = REC'D
6288 037140 001406 BEQ 1401 ;BR, IF EQUAL (OK)
6289 037142 005237 002212 INC FATFLG ;BUMP COUNT
6293 037146 ERRMRD ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
        037146 104456 TRAP C1ERMRD
        037150 000646 .WORD 422
        037152 045723 .WORD T24BOT
        037154 015564 .WORD EXPREC
6294 037156 1401: CKLOOP ;LOOP IF SELECTED TRAP C1CLP1
        037156 104406
6295 037160 012703 000400 MOV #256,R3 ;RECORD SIZE
6296 037164 013737 003114 045052 MOV FREE,T24RB ;STARTING READ BUFFER ADDRESS
6297 ;*****
6298 ;
6299 ;READ DATA,IE,ACK,SWB COMMAND
6300 ;
6301 ;*****
6302 ;
6303 ;
6304 037172 012737 110001 045050 MOV #110001,T24PK3 ;READ DATA,IE,ACK,SWB COMMAND
6305 037200 012704 045050 1651: MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
6306 037204 010337 045056 MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
6307 037210 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
6308 037214 004737 016340 JSR PC.WAITF ;WAIT FOR SSR TO SET
6309 037220 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
6310 037224 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
6311 037230 020102 CMP R1,R2 ;ARE THEY EQUAL
6312 037232 001406 BEQ 1701 ;BR, IF OK
6313 037234 005237 002212 INC FATFLG ;BUMP COUNT
6317 037240 ERRMRD ERRNO,RDERR,PKTSSR ;TSSR INCORRECT AFTER READ DATA
        037240 104456 TRAP C1ERMRD
        037242 000647 .WORD 423

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

	037244	005204					.WORD	RDERR
	037246	012136					.WORD	PKTSSR
6318	037250	104406		1701:	CKLOOP	; LOOP IF SELECTED		TRAP C1CLP1
6319	037252	013702	003114		MOV FREE,R2	; GET BUFFER ADDRESS		
6320	037256	010304			MOV R3,R4	; CURRENT RECORD SIZE		
6321	037260	162704	000400		SUB #256.,R4	; FIRST LOCATION IN BUFFER		
6322	037264	060204		1731:	ADD R2,R4	; GET LOCATION IN BUFFER (ADDRESS)		
6323	037266	021403			CMP (R4),R3	; CHECK DATA READ (R3-DATA ALSO)		
6324	037270	001410			BEQ 1801	; BR, IF ALL IS WELL		
6325	037272	011401			MOV (R4),R1	; RECD DATA		
6326	037274	010302			MOV R3,R2	; EXPECTED DATA		
6327	037276	005237	002212		INC FATFLG	; BUMP COUNT		
6331	037302				ERRHRD	ERRNO,T24DTA,EXPREC		
	037302	104456						TRAP C1ERHRD
	037304	000650					.WORD	424
	037306	045770					.WORD	T24DTA
	037310	015564					.WORD	EXPREC
6332	037312			1801:	CKLOOP	; LOOP IF SELECTED		TRAP C1CLP1
	037312	104406						
6333	037314	005724			TST (R4).	; BUMP TO NEXT LOCATION		
6334	037316	160204			SUB R2,R4	; SET SIZE TO CORRECT VALUE		
6335	037320	020403			CMP R4,R3	; END OF RECORD YET		
6336	037322	001360			BNE 1731	; BR, IF NOT AT END OF RECORD		
6337	037324	005723			TST (R3).	; BUMP RECORD SIZE		
6338	037326	022703	000412		CMP #266.,R3	; END OF RECORD YET		
6339	037332	001322			BNE 1651	; BR, IF MORE RECORDS TO WRITE		
6340	037334			1901:	CKLOOP	; LOOP IF SELECTED		TRAP C1CLP1
	037334	104406						
6341	037336				ENDSUB	; >>>>>>>>> END SUBTEST >>>>>>>>>		
	037336					L10055:		
6342	037340	104403						TRAP C1ESUB
6343	037346	023727	002212	000017	CMP FATFLG,#15.	; IS ERROR COUNT AT 25		
6344	037346	103402			BLO 9991	; BR, IF LESS THAN 25		
6345	037350	004737	017272		JSR PC,CKDROP	; TRY TO DROP THE UNIT		
6346	037354			9991:				
6347					*			
6348					:			
6349					: TEST 4. SUBTEST 4			
6350					:			
6351					: VERIFIES THAT A READ FORWARD COMMAND READING A RECORD			
6352					: LONGER THAN THE SPECIFIED BYTE COUNT CAUSES TAPE			
6353					: STATUS ALERT TERMINATION WITH THE RECORD LENGTH LONG			
6354					: (RLL) BIT SET.			
6355					:			
6356					:			
6357					: -			
6358								
6359	037354				BGNSUB	; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	037354					T4.4:		
	037354	104402						TRAP C1BSUB
6360	037356	004737	047544		JSR PC,T24RT3	; SET UP OTHER COMMAND PACKET		
6361	037362	004737	047410		JSR PC,T24REST	; SET COMMAND PACKET		
6362	037366	004737	047502		JSR PC,T24RT2	; SET UP OTHER COMMAND PACKET		
6363								
6364								

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

6365                                     ;
6366                                     ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
6367                                     ;
6368                                     ;*****
6369                                     ;
6370 037372 004737 016064                JSR    PC,SOFINIT                ;DO INITIALIZE ON CONTROLLER
6371 037376 103407                      BCS    20$                      ;BR IF INIT WAS OK
6372 037400 005237 002212                INC    FATFLG                  ;BUMP COUNT
6376 037404 010001                      MOV    R0,R1                    ;CONTENTS OF TSSR REGISTER
6377 037406                      ERRDF   ERRNO,SFIERR,SFMSG              ;FATAL ERROR TSSR WAS NOT OK
                                           TRAP    C$ERDF                ;
                                           .WORD   425                    ;
                                           .WORD   SFIERR                ;
                                           .WORD   SFMSG                ;
6378 037416                      20$:  MOV    UNITN,T24DSW              ;SET DRIVE NUMBER IN PACKET
6379 037416 013737 002172 044740        MOV    #T24PACKET,R4          ;SUBROUTINE NEEDS PACKET ADDRESS
6380 037424 012704 044720
6381                                     ;*****
6382                                     ;
6383                                     ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
6384                                     ;
6385                                     ;*****
6386                                     ;
6387                                     ;
6388 037430 004737 010752                JSR    PC,WRTHCR                ;ISSUE WRITE CHARACTERISTICS
6389 037434 103407                      BCS    24$                      ;BR, IF COMMAND ISSUED OK
6390 037436 005237 002212                INC    FATFLG                  ;BUMP COUNT
6394 037442 010001                      MOV    R0,R1                    ;SAVE CONTENTS OF TSSR
6395 037444                      ERRHRD  ERRNO,WRTHMSG,SFMSG            ;WRITE CHARACTERISTICS FAILED
                                           TRAP    C$ERHRD                ;
                                           .WORD   426                    ;
                                           .WORD   WRTHMSG               ;
                                           .WORD   SFMSG                ;
6396 037454 104406                      24$: CKLOOP                    ;LOOP IF SELECTED
                                           TRAP    C$CLP1                ;
6397                                     ;*****
6398                                     ;
6399                                     ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6400                                     ;
6401                                     ;*****
6402                                     ;
6403                                     ;
6404 037456 004737 011104                JSR    PC,REWIND                ;CALL TAPE REWIND COMMAND
6405 037462 103407                      BCS    30$                      ;BR, IF NO PROBLEM
6406 037464 010001                      MOV    R0,R1                    ;SAVE TSSR
6407 037466 005237 002212                INC    FATFLG                  ;BUMP COUNT
6411 037472                      ERRHRD  ERRNO,T24RWN,PKTSSR          ;REWIND NOT ACCEPTED
                                           TRAP    C$ERHRD                ;
                                           .WORD   427                    ;
                                           .WORD   T24RWN               ;
                                           .WORD   PKTSSR               ;
6412 037502                      30$:  CKLOOP                    ;LOOP IF SELECTED
6413 037502 104406                      TRAP    C$CLP1                ;
6414                                     ;*****
6415                                     ;
6416                                     ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

Address	Offset	Label	Operation	Comments	Trap	Trap Offset
6417						
6418						
6419						
6420	037504	013701	044750	MOV T24BFR+6,R1		
6421	037510	010102		MOV R1,R2		
6422	037512	052702	000002	BIS #BIT1,R2		
6423	037516	020102		CMP R1,R2		
6424	037520	001406		BEQ 40\$		
6425	037522	005237	002212	INC FATFLG		
6429	037526			ERRHRD ERRNO,T24BOT,EXPREC		
	037526	104456				
	037530	000654				
	037532	045723				
	037534	015564				
6430	037536			40\$: CKLOOP		
	037536	104406				
6431	037540	012703	001000	MOV #512,R3		
6432	037544	013737	003114	MOV FREE,T24RB		
6433						
6434						
6435						
6436						
6437						
6438						
6439						
6440	037552	012737	140005	MOV #140005,T24PK3		
6441	037560	012704	045050	MOV #T24PK3,R4		
6442	037564					
6443	037564	010337	045056	MOV R3,T24SZ		
6444	037570	010465	000000	MOV R4,TSDB(R5)		
6445	037574	004737	016340	JSR PC,WAITF		
6446	037600	016501	000002	MOV TSSR(R5),R1		
6447	037604	012702	000200	MOV #SSR,R2		
6448	037610	020102		CMP R1,R2		
6449	037612	001406		BEQ 75\$		
6450	037614	005237	002212	INC FATFLG		
6454	037620			ERRHRD ERRNO,WRterr,PKTSSR		
	037620	104456				
	037622	000655				
	037624	005111				
	037626	012136				
6455	037630			75\$: CKLOOP		
	037630	104406				
6456	037632					
6457						
6458						
6459						
6460						
6461						
6462						
6463						
6464	037632	004737	011104	JSR PC,REWIND		
6465	037636	103407		BCS 130\$		
6466	037640	010001		MOV R0,R1		
6467	037642	005237	002212	INC FATFLG		
6471	037646			ERRHRD ERRNO,T24RWN,PKTSSR		
	037646	104456				

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
037650 000656 .WORD 430
037652 046206 .WORD T24RWN
037654 012136 .WORD PKTSSR
6472 037656 104406 130$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
037656 104406
6473
6474 ;*****
6475 ;
6476 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6477 ;
6478 ;*****
6479
6480 037660 013701 044750 MOV T24BFR+6,R1 ;PICK UP XSTO
6481 037664 010102 MOV R1,R2 ;SET UP EXPECTED
6482 037666 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
6483 037672 020102 CMP R1,R2 ;DOES EXP = REC'D
6484 037674 001406 BEQ 140$ ;BR, IF EQUAL (OK)
6485 037676 005237 002212 INC FATFLG ;BUMP COUNT
6489 037702 ERRHRD ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
037702 104456 TRAP C$ERHRD
037704 000657 .WORD 431
037706 045723 .WORD T24BOT
037710 015564 .WORD EXPREC
6490 037712 104406 140$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
037712 104406
6491 037714 012703 000400 MOV #256,R3 ;RECORD SIZE
6492 037720 013737 003114 045052 MOV FREE,T24RB ;STARTING READ BUFFER ADDRESS
6493
6494 ;*****
6495 ;
6496 ;READ DATA,ACK,CVC=1 COMMAND
6497 ;
6498 ;*****
6499
6500 037726 012737 140001 045050 MOV #140001,T24PK3 ;READ DATA,ACK,CVC=1 COMMAND
6501 037734 012704 045050 165$: MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
6502 037740 010337 045056 MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
6503 037744 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
6504 037750 004737 016340 JSR PC,WAITF ;WAIT FOR SSR TO SET
6505 037754 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
6506 037760 012702 100204 MOV #SSR!SC!BIT2,R2 ;SET UP EXPECTED
6507 037764 020102 CMP R1,R2 ;ARE THEY EQUAL
6508 037766 001406 BEQ 170$ ;BR, IF OK
6509 037770 005237 002212 INC FATFLG ;BUMP COUNT
6513 037774 ERRHRD ERRNO,T24TRL,PKTSSR ;TSSR INCORRECT AFTER READ DATA
037774 104456 TRAP C$ERHRD
037776 000660 .WORD 432
040000 047254 .WORD T24TRL
040002 012136 .WORD PKTSSR
6514 040004 104406 170$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
040004 104406
6515
6516 ;*****
6517 ;
6518 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6519 ;
6520 ;*****
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

[illegible]

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

040112 000662 .WORD 434
040114 003650 .WORD SFIERR
040116 012124 .WORD SFIMSG
6575 040120 20$:
6576 040120 013737 002172 044740 MOV UNITN,T24DSW ;SET DRIVE NUMBER IN PACKET
6577 040126 012704 044720 MOV #T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
6578
6579 ;*****
6580 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
6581 ;
6582 ;*****
6583
6584 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
6585 040132 004737 010752 BCS 24$ ;BR, IF COMMAND ISSUED OK
6586 040136 103407 INC FATFLG ;BUMP COUNT
6587 040140 005237 002212 MOV R0,R1 ;SAVE CONTENTS OF TSSR
6591 040144 010001 ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
6592 040146 104456 TRAP C$ERHRD
040146 000663 .WORD 435
040150 005054 .WORD WRTMSG
040152 012124 .WORD SFIMSG
6593 040156 24$: CKLOOP ;LOOP IF SELECTED
040156 104406 TRAP C$CLP1
6594
6595 ;*****
6596 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6597 ;
6598 ;*****
6599
6600 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
6601 040160 004737 011104 BCS 30$ ;BR, IF NO PROBLEM
6602 040164 103407 MOV R0,R1 ;SAVE TSSR
6603 040166 010001 INC FATFLG ;BUMP COUNT
6604 040170 005237 002212 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
6608 040174 104456 TRAP C$ERHRD
040176 000664 .WORD 436
040200 046206 .WORD T24RWN
040202 012136 .WORD PKTSSR
6609 040204 30$: CKLOOP ;LOOP IF SELECTED
040204 104406 TRAP C$CLP1
6610 040206 012703 000400 MOV #256.,R3 ;RECORD SIZE
6611 040212 013737 003114 045052 MOV FREE,T24RB ;STARTING WRITE BUFFER ADDRESS
6612
6613 ;*****
6614 ;WRITE DATA,ACK,CVC=1 COMMAND
6615 ;
6616 ;*****
6617
6618 MOV #140005,T24PK3 ;WRITE DATA,ACK,CVC=1 COMMAND
6619 040220 012737 140005 045050 MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
6620 040226 012704 045050
6621 040232 65$: MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
6622 040232 010337 045056 MOV R4,TSDB(R5) ;ISSUE COMMAND
6623 040236 010465 000000 JSR PC,WAITF ;WAIT FOR SSR TO SET
6624 040242 004737 016340

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
6625 040246 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
6626 040252 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
6627 040256 020102              CMP      R1,R2      ;ARE THEY EQUAL
6628 040260 001406              BEQ      75$      ;BR, IF OK
6629 040262 005237 002212      INC      FATFLG      ;BUMP COUNT
6633 040266              ERRHRD  ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C$ERHRD
                                .WORD    437
                                .WORD    WRTErr
                                .WORD    PKTSSR
                                75$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
6634 040276 104406              120$:
6635 040300              ;*****
6636              ;
6637              ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6638              ;
6639              ;*****
6640              JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
6641              BCS      130$      ;BR, IF NO PROBLEM
6642              MOV      R0,R1      ;SAVE TSSR
6643 040300 004737 011104      INC      FATFLG      ;BUMP COUNT
6644 040304 103407              ERRHRD  ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
6645 040306 010001              TRAP      C$ERHRD
6646 040310 005237 002212      .WORD    438
6650 040314              .WORD    T24RWN
                                .WORD    PKTSSR
                                130$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
6651 040324 104406              MOV      #512,R3      ;RECORD SIZE
6652 040326 012703 001000      MOV      FREE,T24RB      ;STARTING READ BUFFER ADDRESS
6653 040332 013737 003114 045052 ;*****
6654              ;
6655              ;READ DATA,ACK,CVC=1 COMMAND
6656              ;
6657              ;*****
6658              MOV      #140001,T24PK3 ;READ DATA,ACK,CVC=1 COMMAND
6659              MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6660              MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
6661 040340 012737 140001 045050      MOV      R4,TSD8(R5) ;ISSUE COMMAND
6662 040346 012704 045050      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
6663 040352 010337 045056      MOV      TSSR(R5),R1 ;GET TSSR CONTENTS
6664 040356 010465 000000      MOV      #SSR!SC!BIT2,R2 ;SET UP EXPECTED
6665 040362 004737 016340      CMP      R1,R2      ;ARE THEY EQUAL
6666 040366 016501 000002      BEQ      170$      ;BR, IF OK
6667 040372 012702 100204      INC      FATFLG      ;BUMP COUNT
6668 040376 020102              ERRHRD  ERRNO,T24TRL,EXPREC ;TSSR INCORRECT AFTER READ DATA
6669 040400 001406              TRAP      C$ERHRD
6670 040402 005237 002212      .WORD    439
6674 040406              .WORD    T24TRL
                                .WORD    EXPREC
                                170$: CKLOOP      ;LOOP IF SELECTED
6675 040416 104406              TRAP      C$CLP1
6676 040416 104406
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

6676 ;*****
6677 ;
6678 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6679 ;
6680 ;*****
6681
6682
6683 040420 013701 044750      MOV     T24BFR+6,R1          ;GET MESSAGE BUFFER
6684 040424 010102           MOV     R1,R2              ;SET UP EXPECTED
6685 040426 052702 040000     BIS     #BIT14,R2         ;SET THE RLS BIT IN EXPECTED
6686 040432 020102           CMP     R1,R2              ;ARE THEY EQUAL
6687 040434 001406           BEQ     180$               ;BR, IF EQUAL (ALL IS WELL)
6688 040436 005237 002212     INC     FATFLG            ;BUMP COUNT
6692 040442           ERRHRD   ERRNO,T24LOP,EXPREC      ;THE RLL BIT WAS NOT SET IN XSTO
        040442 104456                                TRAP     C#ERRRD
        040444 000670                                .WORD    440
        040446 047104                                .WORD    T24LOP
        040450 015564                                .WORD    EXPREC
6693 040452           180$:
6694 040452 013701 044746     MOV     T24BFR+4,R1       ;PICK UP RESIDUAL BYTE COUNTER
6695 040456 012702 000400     MOV     #256.,R2          ;THIS SHOULD BE THE DIFFERENCE
6696 040462 020102           CMP     R1,R2              ;IS THE DIFFERENCE CORRECT
6697 040464 001406           BEQ     190$               ;BR, IF CORRECT
6698 040466 005237 002212     INC     FATFLG            ;BUMP COUNT
6702 040472           ERRHRD   ERRNO,T24PBP,EXPREC      ;RBPCR NOT CORRECT
        040472 104456                                TRAP     C#ERRRD
        040474 000671                                .WORD    441
        040476 047166                                .WORD    T24PBP
        040500 015564                                .WORD    EXPREC
6703 040502           190$: CKLOOP                      ;LOOP IF SELECTED
        040502 104406                                TRAP     C#CLP1
6704 040504           ENDSUB                            ;>>>>>>>>> END SUBTEST >>>>>>>>>
        040504                                           L10057:
        040504 104403                                TRAP     C#ESUB
6705 040506 023727 002212 000017     CMP     FATFLG,#15.      ;IS ERROR COUNT AT 25
6706 040514 103402           BLO     999$               ;BR, IF LESS THAN 25
6707 040516 004737 017272           JSR     PC,CKDROP      ;TRY TO DROP THE UNIT
6708 040522           999$:
6709
6710 ;*
6711 ;
6712 ;TEST 4, SUBTEST 6
6713 ;
6714 ;VERIFIES THAT READ REVERSE COMMANDS WITH SWB=0
6715 ;OPERATES PROPERLY. THE TAPE IS FIRST REWOUND AND THEN
6716 ;WRITTEN WITH A SERIES OF TEST RECORDS VARYING IN
6717 ;LENGTH AND DATA CONTENT. THE TAPE IS THEN READ IN REVERSE
6718 ;SEQUENTIALLY AND THE RESULTS
6719 ;(STATUS, DATA, ETC.) VERIFIED. THE BYTE COUNT ON
6720 ;EACH READ REVERSE COMMAND IS SET TO THE LENGTH OF THE
6721 ;EXPECTED RECORD, SO NO EXCEPTIONAL CONDITIONS SHOULD
6722 ;OCCUR.
6723 ;
6724 ;
6725 ;
6726 ;-
6727 040522      BGNSUB                                ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

040522
040522 104402
6728 040524 004737 047544
6729 040530 004737 047410
6730 040534 004737 047502
6731
6732
6733
6734
6735
6736
6737
6738 040540 004737 016064
6739 040544 103407
6740 040546 005237 002212
6744 040552 010001
6745 040554
040554 104455
040556 000672
040560 003650
040562 012124
6746 040564
6747 040564 013737 002172 044740
6748 040572 012704 044720
6749
6750
6751
6752
6753
6754
6755
6756 040576 004737 010752
6757 040602 103407
6758 040604 005237 002212
6762 040610 010001
6763 040612
040612 104456
040614 000673
040616 005054
040620 012124
6764 040622
040622 104406
6765
6766
6767
6768
6769
6770
6771
6772 040624 004737 011104
6773 040630 103407
6774 040632 010001
6775 040634 005237 002212
6779 040640
040640 104456
040642 000674
040644 046206

T4.6:
TRAP C:CSUB
JSR PC,T24RT3 ;SET UP OTHER COMMAND PACKET
JSR PC,T24REST ;SET COMMAND PACKET
JSR PC,T24RT2 ;SET UP OTHER COMMAND PACKET

;*****
;
;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
;
;*****

JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
BCS 20$ ;BR IF INIT WAS OK
INC FATFLG ;BUMP COUNT
MOV R0,R1 ;CONTENTS OF TSSR REGISTER
ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
TRAP C:ERDF
WORD 442
WORD SFIERR
WORD SFIMSG

20$:
MOV UNITN,T24DSW ;SET DRIVE NUMBER IN PACKET
MOV #T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS

;*****
;
;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
;
;*****

JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
BCS 24$ ;BR IF COMMAND ISSUED OK
INC FATFLG ;BUMP COUNT
MOV R0,R1 ;SAVE CONTENTS OF TSSR
ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
TRAP C:ERHRD
WORD 443
WORD WRTMSG
WORD SFIMSG

24$: CKLOOP ;LOOP IF SELECTED
TRAP C:CLP1

;*****
;
;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
;
;*****

JSR PC,REWIND ;CALL TAPE REWIND COMMAND
BCS 30$ ;BR IF NO PROBLEM
MOV R0,R1 ;SAVE TSSR
INC FATFLG ;BUMP COUNT
ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
TRAP C:ERHRD
WORD 444
WORD T24RWN

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

6780	040646	012136			304:	CKLOOP		;LOOP IF SELECTED	.WORD	PKTSSR
	040650								TRAP	C0CLP1
6781	040652	012703	000400			MOV	#256.,R3	;RECORD SIZE		
6782	040656	013737	003114	045052		MOV	FREE,T24RB	;STARTING WRITE BUFFER ADDRESS		
6783										
6784										
6785										
6786										
6787										
6788										
6789										
6790	040664	012737	140005	045050		MOV	#140005,T24PK3	;WRITE DATA,ACK,CVC-1 COMMAND		
6791	040672	012704	045050			MOV	#T24PK3,R4	;SET UP R4 WITH PACKET ADDRESS		
6792	040676				654:					
6793	040676	010300				MOV	R3,R0	;SET PATTERN IN CORRECT REGISTER		
6794	040700	004737	017512			JSR	PC,FILLMEM	;FILL MEMORY WITH RECORD SIZE		
6795	040704	010337	045056			MOV	R3,T24SZ	;SET UP RECORD SIZE IN PACKET		
6796	040710	C10465	000000			MOV	R4,TSD8(R5)	;ISSUE COMMAND		
6797	040714	004737	016340			JSR	PC,WAITF	;WAIT FOR SSR TO SET		
6798	040720	016501	000002			MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
6799	040724	012702	000200			MOV	#SSR,R2	;SET UP EXPECTED		
6800	040730	020102				CMP	R1,R2	;ARE THEY EQUAL		
6801	040732	001406				BEQ	754	;BR, IF OK		
6802	040734	005237	002212			INC	FATFLG	;BUMP COUNT		
6806	040740					ERRHRD	ERRNO,WRTErr,PKTSSR	;TSSR INCORRECT AFTER WRITE DATA		
	040740	104456							TRAP	C0ERRHRD
	040742	000675							.WORD	445
	040744	005111							.WORD	WRTErr
	040746	012136							.WORD	PKTSSR
6807	040750				754:	CKLOOP		;LOOP IF SELECTED		
	040750	104406							TRAP	C0CLP1
6808	040752	005723				TST	(R3)^	;BUMP RECORD SIZE		
6809	040754	022703	000414			CMP	#268.,R3	;END OF RECORD YET		
6810	040760	001346				BNE	654	;BR, IF MORE RECORDS TO WRITE		
6811	040762				804:	CKLOOP		;LOOP IF SELECTED		
	040762	104406							TRAP	C0CLP1
6812	040764	005743				TST	-(R3)	;SET BACK TO 512.		
6813	040766	013737	003114	045052		MOV	FREE,T24RB	;STARTING READ BUFFER ADDRESS		
6814										
6815										
6816										
6817										
6818										
6819										
6820										
6821	040774	012737	100401	045050		MOV	#100401,T24PK3	;READ REVERSE DATA,ACK COMMAND		
6822	041002	012704	045050		1654:	MOV	#T24PK3,R4	;SET UP R4 WITH PACKET ADDRESS		
6823	041006	010337	045056			MOV	R3,T24SZ	;SET UP RECORD SIZE IN PACKET		
6824	041012	010465	000000			MOV	R4,TSD8(R5)	;ISSUE COMMAND		
6825	041016	004737	016340			JSR	PC,WAITF	;WAIT FOR SSR TO SET		
6826	041022	016501	000002			MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
6827	041026	012702	000200			MOV	#SSR,R2	;SET UP EXPECTED		
6828	041032	020102				CMP	R1,R2	;ARE THEY EQUAL		
6829	041034	001406				BEQ	1704	;BR, IF OK		
6830	041036	005237	002212			INC	FATFLG	;BUMP COUNT		
6834	041042					ERRHRD	ERRNO,T24WDC,PKTSSR	;TSSR INCORRECT AFTER READ DATA		

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

	041042	104456							TRAP	C#ERRRD
	041044	000676							.WORD	446
	041046	046536							.WORD	T24WDC
	041050	012136							.WORD	PKTSSR
6835	041052		170:	CKLOOP				; LOOP IF SELECTED		
	041052	104406							TRAP	C#CLP1
6836	041054	013702	003114	MOV	FREE,R2			; GET BUFFER ADDRESS		
6837	041060	010304		MOV	R3,R4			; CURRENT RECORD SIZE		
6838	041062	162704	000400	SUB	#256.,R4			; FIRST LOCATION IN BUFFER		
6839	041066	060204		173:	ADD R2,R4			; SET POINTER TO FRAME (WORD)		
6840	041070	021403		CMP	(R4),R3			; CHECK DATA READ (R3=DATA ALSO)		
6841	041072	001410		BEQ	180:			; BR, IF ALL IS WELL		
6842	041074	011401		MOV	(R4),R1			; RECD DATA		
6843	041076	010302		MOV	R3,R2			; EXPECTED DATA		
6844	041100	005237	002212	INC	FATFLG			; BUMP COUNT		
6848	041104			ERRHRD	ERRNO,T24DTA,EXPREC			; DATA READ NOT = WRITTEN		
	041104	104456							TRAP	C#ERRRD
	041106	000677							.WORD	447
	041110	C45770							.WORD	T24DTA
	041112	015564							.WORD	EXPREC
6849	041114		180:	CKLOOP				; LOOP IF SELECTED		
	041114	104406							TRAP	C#CLP1
6850	041116	005724		TST	(R4),			; BUMP TO NEXT LOCATION		
6851	041120	160204		SUB	R2,R4			; GET RID OF BASE ADDRESS		
6852	041122	020403		CMP	R4,R3			; END OF RECORD YET		
6853	041124	001360		BNE	173:			; BR, IF NOT AT END OF RECORD		
6854	041126	005743		TST	-(R3)			; BUMP RECORD SIZE		
6855	041130	022703	000400	CMP	#256.,R3			; END OF RECORD YET		
6856	041134	001322		BNE	165:			; BR, IF MORE RECORDS TO WRITE		
6857	041136		190:	CKLOOP				; LOOP IF SELECTED		
	041136	104406							TRAP	C#CLP1
6858	041140			ENDSUB				; >>>>>>>>> END SUBTEST >>>>>>>>>		
	041140							L10060:		
	041140	104403							TRAP	C#ESUB
6859	041142	023727	002212	000017	CMP	FATFLG,#15.		; IS ERROR COUNT AT 25		
6860	041150	103402			BLO	999:		; BR, IF LESS THAN 25		
6861	041152	004737	017272		JSR	PC,CKDROP		; TRY TO DROP THE UNIT		
6862	041156			999:						
6863										
6864										
6865										
6866										
6867										
6868										
6869										
6870										
6871										
6872										
6873										
6874										
6875										
6876	041156									
	041156									
	041156	104402								
6877	041160	004737	047544		JSR	PC,T24RT3		; SET UP OTHER COMMAND PACKET		
6878	041164	004737	047410		JSR	PC,T24REST		; SET COMMAND PACKET		
6879	041170	004737	047502		JSR	PC,T24RT				

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

6880
6881 ;*****
6882 ;
6883 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
6884 ;
6885 ;*****
6886
6887 041174 004737 016064 JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
6888 041200 103407 BCS 20$ ;BR IF INIT WAS OK
6889 041202 005237 002212 INC FATFLG ;BUMP COUNT
6893 041206 010001 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
6894 041210 ERRDF ERRNO,SFIERR,SFMSG ;FATAL ERROR TSSR WAS NOT OK
        041210 104455 TRAP C$ERDF
        041212 000700 .WORD 448
        041214 003650 .WORD SFIERR
        041216 012124 .WORD SFMSG
6895 041220
6896 041220 013737 002172 044740 20$: MOV UNITN,T24DSW ;SET DRIVE NUMBER IN PACKET
6897 041226 C12704 044720 MOV $T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
6898
6899 ;*****
6900 ;
6901 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
6902 ;
6903 ;*****
6904
6905 041232 004737 010752 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
6906 041236 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
6907 041240 005237 002212 INC FATFLG ;BUMP COUNT
6911 041244 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
6912 041246 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
        041246 104456 TRAP C$ERHRD
        041250 000701 .WORD 449
        041252 005054 .WORD WRTMSG
        041254 012124 .WORD SFMSG
6913 041256
        041256 104406 24$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
6914
6915 ;*****
6916 ;
6917 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6918 ;
6919 ;*****
6920
6921 041260 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
6922 041264 103407 BCS 30$ ;BR, IF NO PROBLEM
6923 041266 010001 MOV R0,R1 ;SAVE TSSR
6924 041270 005237 002212 INC FATFLG ;BUMP COUNT
6928 041274 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
        041274 104456 TRAP C$ERHRD
        041276 000702 .WORD 450
        041300 046206 .WORD T24RWN
        041302 012136 .WORD PKTSSR
6929 041304
        041304 104406 30$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
6930 041306 012703 000400 MOV $256,R3 ;RECORD SIZE
6931 041312 013737 003114 045052 MOV FREE,T24R8 ;STARTING WRITE BUFFER ADDRESS

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

6932
6933 ;*****
6934 ;
6935 ;WRITE DATA,ACK,CVC=1,SWB COMMAND
6936 ;
6937 ;*****
6938
6939 041320 012737 150005 045050      MOV    #150005,T24PK3      ;WRITE DATA,ACK,CVC=1,SWB COMMAND
6940 041326 012704 045050      MOV    #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6941 041332 651:                MOV    R3,R0      ;SET PATTERN IN CORRECT REGISTER
6942 041332 010300      JSR    PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
6943 041334 004737 017512      MOV    R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
6944 041340 010337 045056      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
6945 041344 010465 000000      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
6946 041350 004737 016340      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
6947 041354 016501 000002      MOV    #SSR,R2      ;SET UP EXPECTED
6948 041360 012702 000200      CMP    R1,R2      ;ARE THEY EQUAL
6949 041364 020102      BEQ    751      ;BR, IF OK
6950 041366 C01406      INC    FATFLG      ;BUMP COUNT
6951 041370 005237 002212      ERRMRD  ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
6952 041374      TRAP    C1ERRMRD
6953 041374 104456      .WORD  451
6954 041376 000703      .WORD  WRERR
6955 041400 005111      .WORD  PKTSSR
6956 041402 012136
6957 041404 751:  CKLOOP      ;LOOP IF SELECTED
6958 041406      TRAP    C1CLP1
6959 041406 104406      TST    (R3).      ;BUMP RECORD SIZE
6960 041410 005723      CMP    #268,R3      ;END OF RECORD YET
6961 041414 022703 000414      BNE    651      ;BR, IF MORE RECORDS TO WRITE
6962 041416 001346 801:  CKLOOP      ;LOOP IF SELECTED
6963 041416 104406      TRAP    C1CLP1
6964 041420 005743      TST    -(R3)      ;SET RECORD SIZE BACK TO 512.
6965 041422 013737 003114 045052      MOV    FREE,T24RB      ;STARTING READ BUFFER ADDRESS
6966 ;*****
6967 ;
6968 ;READ REVERSE DATA,ACK,SWB COMMAND
6969 ;
6970 ;*****
6971 041430 012737 110401 045050      MOV    #110401,T24PK3      ;READ REVERSE DATA,ACK,SWB COMMAND
6972 041436 012704 045050      MOV    #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6973 041442 010337 045056      MOV    R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
6974 041446 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
6975 041452 004737 016340      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
6976 041456 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
6977 041462 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED
6978 041466 020102      CMP    R1,R2      ;ARE THEY EQUAL
6979 041470 001406      BEQ    1701      ;BR, IF OK
6980 041472 005237 002212      INC    FATFLG      ;BUMP COUNT
6981 041476      ERRMRD  ERRNO,T24WDC,EXPREC ;TSSR INCORRECT AFTER READ DATA
6982 041476      TRAP    C1ERRMRD
6983 041500 104456      .WORD  452
6984 041502 000704      .WORD  T24WDC
6985 041504 046536      .WORD  EXPREC
6986 041506 015564
6987 1701:  CKLOOP      ;LOOP IF SELECTED

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

[illegible]

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
7034
7035 041630 004737 016064      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
7036 041634 103407              BCS      20$      ;BR IF INIT WAS OK
7037 041636 005237 002212      INC      FATFLG      ;BUMP COUNT
7041 041642 010001              MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
7042 041644              ERRDF      ERRNO,SFIERR,SFMSG ;FATAL ERROR TSSR WAS NOT OK
                                TRAP      C$ERDF
                                .WORD     454
                                .WORD     SFIERR
                                .WORD     SFMSG
7043 041654              20$:
7044 041654 013737 002172 044740 MOV      UNITN,T24DSW      ;SET DRIVE NUMBER 'I' PACKET
7045 041662 012704 044720      MOV      #T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
7046
7047 ;*****
7048 ;
7049 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
7050 ;
7051 ;*****
7052
7053 041666 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
7054 041672 103407              BCS      24$      ;BR, IF COMMAND ISSUED OK
7055 041674 005237 002212      INC      FATFLG      ;BUMP COUNT
7059 041700 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
7060 041702              ERRHRD      ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     455
                                .WORD     WRTMSG
                                .WORD     SFMSG
7061 041712              24$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
7062 041712 104406
7063 ;*****
7064 ;
7065 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7066 ;
7067 ;*****
7068
7069 041714 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
7070 041720 004737 016426      JSR      PC,CHKTSSR      ;SEE HOW TSSR IS
7071 041724 103407              BCS      30$      ;BR, IF NO PROBLEM
7072 041726 010001              MOV      R0,R1      ;SAVE TSSR
7073 041730 005237 002212      INC      FATFLG      ;BUMP COUNT
7077 041734              ERRHRD      ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     456
                                .WORD     T24RWN
                                .WORD     PKTSSR
7078 041744              30$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
7079 041746 012703 001000      MOV      #512.,R3      ;RECORD SIZE
7080 041752 013737 003114 045052 MOV      FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
7081
7082 ;*****
7083 ;
7084 ;WRITE DATA,ACK,CVC=1 COMMAND
7085 ;
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
7086 ;*****
7087
7088 041760 012737 140005 045050      MOV    #140005,T24PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
7089 041766 012704 045050      MOV    #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7090 041772      65$:
7091 041772 010337 045056      MOV    R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
7092 041776 010465 000000      MOV    R4,TSDB(R5)      ;ISSUE COMMAND
7093 042002 004737 016340      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
7094 042006 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
7095 042012 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED
7096 042016 020102      CMP    R1,R2      ;ARE THEY EQUAL
7097 042020 001406      BEQ    75$      ;BR, IF OK
7098 042022 005237 002212      INC    FATFLG      ;BUMP COUNT
7102 042026      ERRHRD  ERRNO,WRterr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP    C$ERRHRD
                                .WORD   457
                                .WORD   WRterr
                                .WORD   PKTSSR
7103 042036      75$:  CKLOOP      ;LOOP IF SELECTED      TRAP    C$CLP1
                                .WORD   457
7104 042040 012703 000400      MOV    #256.,R3      ;SIZE OF RECORD
7105 042044 013737 003114 045052      MOV    FREE,T24RB      ;STARTING READ BUFFER ADDRESS
7106
7107 ;*****
7108 ;
7109 ;READ DATA,ACK COMMAND
7110 ;
7111 ;*****
7112
7113 042052 012737 100401 045050      MOV    #100401,T24PK3      ;READ DATA,ACK COMMAND
7114 042060 012704 045050      MOV    #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7115 042064 010337 045056      MOV    R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
7116 042070 010465 000000      MOV    R4,TSDB(R5)      ;ISSUE COMMAND
7117 042074 004737 016340      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
7118 042100 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
7119 042104 012702 100204      MOV    #SSR!SC!BIT2,R2      ;SET UP EXPECTED
7120 042110 020102      CMP    R1,R2      ;ARE THEY EQUAL
7121 042112 001406      BEQ    170$      ;BR, IF OK
7122 042114 005237 002212      INC    FATFLG      ;BUMP COUNT
7126 042120      ERRHRD  ERRNO,T24TRL,EXPREC      ;TSSR INCORRECT AFTER READ DATA
                                TRAP    C$ERRHRD
                                .WORD   458
                                .WORD   T24TRL
                                .WORD   EXPREC
7127 042130      170$:  CKLOOP      ;LOOP IF SELECTED      TRAP    C$CLP1
                                .WORD   458
7128 042130 104406
7129 ;*****
7130 ;
7131 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
7132 ;
7133 ;*****
7134
7135 042132 013701 044750      MOV    T24BFR+6,R1      ;GET MESSAGE BUFFER (XST0)
7136 042136 010102      MOV    R1,R2      ;SET UP EXPECTED
7137 042140 052702 010000      BIS    #BIT12,R2      ;SET THE RLL BIT IN EXPECTED
7138 042144 020102      CMP    R1,R2      ;ARE THEY EQUAL
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

7139	042146	001406			BEG	180:	;BR, IF EQUAL (ALL IS WELL)
7140	042150	005237	002212		INC	FATFLG	;BUMP COUNT
7144	042154				ERRHRD	ERRNO,T24LON,EXPREC	;THE RLL BIT WAS NOT SET IN XSTO
	042154	104456					TRAP C#ERHRD
	042156	000713					.WORD 459
	042160	047022					.WORD T24LON
	042162	015564					.WORD EXPREC
7145	042164			180:	CKLOOP		
	042164	104406					TRAP C#CLP1
7146	042166				ENDSUB		; >>>>>>>> END SUBTEST >>>>>>>>
	042166					L10062:	
	042166	104403					TRAP C#ESUB
7147	042170	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
7148	042176	103402			BLO	999:	;BR, IF LESS THAN 25
7149	042200	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT
7150	042204			999:			
7151							
7152							
7153							
7154							
7155							
7156							
7157							
7158							
7159							
7160							
7161	042204				BGNSUB		; >>>>>>>> BEGIN SUBTEST >>>>>>>>
	042204					T4.9:	
	042204	104402					TRAP C#BSUB
7162	042206	005737	003126		TST	NXMFLG	;DO WE HAVE IT?
7163	042212	001002			BNE	10:	;BR, IF ENOUGH
7164	042214	000137	042670		JMP	180:	;SKIP THIS TEST IF NOT
7165	042220	004737	047544	10:	JSR	PC,T24RT3	;SET UP OTHER COMMAND PACKET
7166	042224	004737	047410		JSR	PC,T24REST	;SET COMMAND PACKET
7167	042230	004737	047502		JSR	PC,T24RT2	;SET UP OTHER COMMAND PACKET
7168							
7169							
7170							
7171							
7172							
7173							
7174							
7175	042234	004737	016064		JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER
7176	042240	103407			BCS	20:	;BR IF INIT WAS OK
7177	042242	005237	002212		INC	FATFLG	;BUMP COUNT
7181	042246	010001			MOV	R0,R1	;CONTENTS OF TSSR REGISTER
7182	042250				ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK
	042250	104455					TRAP C#ERDF
	042252	000714					.WORD 460
	042254	003650					.WORD SFIERR
	042256	012124					.WORD SFIMSG
7183	042260			20:			
7184	042260	013737	002172	044740	MOV	UNITN,T24DSW	;SET DRIVE NUMBER IN PACKET
7185	042266	012704	044720		MOV	#T24PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS
7186							
7187							
7188							

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

7189 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
7190 ;
7191 ;*****
7192
7193 042272 004737 010752 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
7194 042276 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
7195 042300 005237 002212 INC FATFLG ;BUMP COUNT
7199 042304 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
7200 042306 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP C$ERHRD
                                .WORD 461
                                .WORD WRTMSG
                                .WORD SFMSG
7201 042316 24$: CKLOOP ;LOOP IF SELECTED
                                TRAP C$CLP1
7202
7203 ;*****
7204 ;
7205 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7206 ;
7207 ;*****
7208
7209
7210 042320 005737 002216 TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SWITCH
7211 042324 001024 BNE 27$ ;BR IF SWITCH IS ON
7212 042326 112737 000200 045061 MOVB #200,T24BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
7213 042334 112737 000010 045060 MOVB #10,T24BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
7214 042342 012704 045030 MOV #T24PK2,R4 ;WRITE SUBSYS MEM PACKET
7215 042346 010465 000000 MOV R4,TSDR(R5) ;ISSUE COMMAND
7216 042352 004737 016426 JSR PC,CHKTSSR ;WAIT FOR SSR
7217 042356 103407 BCS 28$ ;BR, IF NO ERROR
7218 042360 010001 MOV R0,R1 ;ERROR, SAVE TSSR
7219 042362 005237 002212 INC FATFLG ;BUMP COUNT
7223 042366 ERRHRD ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                TRAP C$ERHRD
                                .WORD 462
                                .WORD T22SSR
                                .WORD PKTSSR
7224 042376 27$:
7225 042376 28$: CKLOOP ;LOOP IF SELECTED
                                TRAP C$CLP1
7226
7227
7228
7229 042400 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
7230 042404 004737 016426 JSR PC,CHKTSSR ;SEE HOW TSSR IS
7231 042410 103407 BCS 30$ ;BR, IF NO PROBLEM
7232 042412 010001 MOV R0,R1 ;SAVE TSSR
7233 042414 005237 002212 INC FATFLG ;BUMP COUNT
7237 042420 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP C$ERHRD
                                .WORD 463
                                .WORD T24RWN
                                .WORD PKTSSR
7238 042430 30$: CKLOOP ;LOOP IF SELECTED
7239 042432 012703 000005 MOV #5.,R3 ;NUMBER OF RECORDS
                                TRAP C$CLP1

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```

7240 042436 013737 003114 045052      MOV      FREE,T24R8      ;STARTING WRITE BUFFER ADDRESS
7241      ;*****
7242      ;
7243      ;WRITE DATA,ACK,CVC=1 COMMAND
7244      ;
7245      ;*****
7246
7247 042444 012737 140005 045050      MOV      #140005,T24PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
7248 042452 012704 045050      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7249 042456      65$:
7250 042456 012737 000256 045056      MOV      #256,T24SZ      ;SET UP RECORD SIZE IN PACKET
7251 042464 010465 000000      MOV      R4,TSDB(R5)      ;ISSUE COMMAND
7252 042470 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
7253 042474 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7254 042500 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
7255 042504 020102      CMP      R1,R2      ;ARE THEY EQUAL
7256 042506 001406      BEQ      75$      ;BR, IF OK
7257 042510 005237 002212      INC      FATFLG      ;BUMP COUNT
7261 042514      ERRHRD      ERRNO,WRterr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
7262      042514 104456      TRAP      C$ERRHRD
7263      042516 000720      .WORD      464
7264      042520 005111      .WORD      WRterr
7265      042522 012136      .WORD      PKTSSR
7266      75$:      CKLOOP      ;LOOP IF SELECTED
7267      042524 104406      TRAP      C$CLP1
7268 042526 005303      DEC      R3      ;BUMP DOWN RECORD COUNTER
7269 042530 001352      BNE      65$      ;BR, IF NOT AT 5 RECORDS YET
7270 042532 012703 000400      MOV      #256.,R3      ;RECORD SIZE
7271 042536 012701 160000      MOV      #160000,R1      ;NXM LOW ADDRESS START
7272 042542 012702 177776      MOV      #177776,R2      ;LIMIT CHECK FOR NXM (HIGHEST)
7273 042546 004737 016466      JSR      PC,NXM      ;LOOK FOR NXM ADDRESS
7274 042552 103046      BCC      180$      ;BR, IF NON FOUND
7275 042554 010137 003130      MOV      R1,NXML0      ;SET ADDRESS UP FOR TEST
7276 042560 013737 003130 045052      MOV      NXML0,T24R8      ;STARTING READ BUFFER ADDRESS
7277 042566 005037 045054      CLR      T24R8+2      ;SET TO 16 BIT ADDRESSING
7278      ;*****
7279      ;
7280      ;READ DATA,ACK COMMAND
7281      ;
7282      ;*****
7283 042572 012737 100001 045050      MOV      #100001,T24PK3      ;READ DATA,ACK COMMAND
7284 042600 012704 045050      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7285 042604 012737 000400 045056      MOV      #256.,T24SZ      ;SET UP RECORD SIZE IN PACKET
7286 042612 010465 000000      MOV      R4,TSDB(R5)      ;ISSUE COMMAND
7287 042616 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
7288 042622 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7289 042626 012702 104210      MOV      #SSR!NXM!SC!BIT3,R2      ;SET UP EXPECTED
7290 042632 020102      CMP      R1,R2      ;ARE THEY EQUAL
7291 042634 001414      BEQ      170$      ;BR, IF OK
7292 042636 005237 045054      INC      T24R8+2      ;SET TO NEXT HIGHER ADDRESSING MODE
7293 042642 023727 045054 000004      CMP      T24R8+2.,#4      ;DID WE OVERFLOW INTO 19 BITS
7294 042650 001353      BNE      165$      ;BR, IF STILL IN 16-18 BITS RANGE
7295 042652 005237 002212      INC      FATFLG      ;BUMP COUNT
7296 042656      ERRHRD      ERRNO,T24NXM,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
7297      042656 104456      TRAP      C$ERRHRD

```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
7345
7346 042762 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
7347 042766 103407              BCS      24$              ;BR, IF COMMAND ISSUED OK
7348 042770 005237 002212      INC      FATFLG      ;BUMP COUNT
7352 042774 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
7353 042776              ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     467
                                .WORD     WRTMSG
                                .WORD     SFMSG
7354 043006 104456              24$:  CKLOOP              ;LOOP IF SELECTED
                                TRAP      C$CLP1
7355 043010 013737 003114 045052      MOV      FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
7356
7357 ;*****
7358 ;
7359 ;ILLEGAL MODE DATA,ACK COMMAND
7360 ;
7361 ;*****
7362
7363 043016 012737 104001 045050      MOV      #104001,T24PK3      ;ILLEGAL MODE DATA,ACK COMMAND
7364 043024 012704 045050              MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7365 043030 012737 000400 045056      MOV      #256.,T24SZ      ;SET UP RECORD SIZE IN PACKET
7366 043036 010465 000000              MOV      R4,TSD8(R5)      ;ISSUE COMMAND
7367 043042 004737 016340              JSR      PC,WAITF      ;WAIT FOR SSR:BIT1:BIT2 TO SET
7368 043046 016501 000002              MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7369 043052 012702 100206              MOV      #SSR!SC!BIT1!BIT2,R2 ;SET UP EXPECTED
7370 043056 020102              CMP      R1,R2      ;ARE THEY EQUAL
7371 043060 001406              BEQ      75$              ;BR, IF OK
7372 043062 005237 002212              INC      FATFLG      ;BUMP COUNT
7376 043066              ERRHRD  ERRNO,T24WDF,PKTSSR ;TSSR INCORRECT AFTER READ DATA
                                TRAP      C$ERHRD
                                .WORD     468
                                .WORD     T24WDF
                                .WORD     PKTSSR
7377 043076 104406              75$:  CKLOOP              ;LOOP IF SELECTED
                                TRAP      C$CLP1
7378
7379 ;*****
7380 ;
7381 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
7382 ;
7383 ;*****
7384
7385 043100 013701 044750              MOV      T24BFR+6,R1      ;GET MESSAGE BUFFER
7386 043104 010102              MOV      R1,R2      ;SET UP EXPECTED
7387 043106 052702 001000              BIS      #BIT9,R2$      ;SET THE ILC BIT IN EXPECTED
7388 043112 020102              CMP      R1,R2      ;ARE THEY EQUAL
7389 043114 001406              BEQ      180$              ;BR, IF EQUAL (ALL IS WELL)
7390 043116 005237 002212              INC      FATFLG      ;BUMP COUNT
7394 043122              ERRHRD  ERRNO,T24LOQ,EXPREC ;THE ILC BIT WAS NOT SET IN XST0
                                TRAP      C$ERHRD
                                .WORD     469
                                .WORD     T24LOQ
                                .WORD     EXPREC
7395 043132 104406              180$: CKLOOP
                                TRAP      C$CLP1
```



```

7396 043134      ENDSUB                                ;>>>>>>>>> END SUBTEST >>>>>>>>>
       043134                                           L10064:
       043134 104403                                     TRAP          C#ESUB
7397 043136 023727 002212 000017    CMP     FATFLG,#15.        :IS ERROR COUNT AT 25
7398 043144 103402                BLO     999$                 :BR, IF LESS THAN 25
7399 043146 004737 017272                JSR     PC,CKDROP         :TRY TO DROP THE UNIT
7400 043152                               999$:
7401
7402           ;+
7403           ;
7404           ;TEST 4. SUBTEST 11
7405           ;
7406           ;VERIFIES THAT ILLEGAL BUFFER ADDRESSES CAUSE A
7407           ;FUNCTION REJECT TERMINATION WITH ILLEGAL ADDRESS
7408           ;(ILA) ERROR BIT SET.
7409           ;
7410           ;
7411           ;
7412           ;-
7413
7414 043152      BGNSUB                                ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
       043152                                           T4.11:
       043152 104402                                     TRAP          C#BSUB
7415 043154 004737 047544                JSR     PC,T24RT3        :SET COMMAND PACKET UP CLEAR
7416 043160 004737 047410                JSR     PC,T24REST       :SET COMMAND PACKET
7417 043164 004737 047502                JSR     PC,T24RT2        :SET UP OTHER COMMAND PACKET
7418
7419           ;*****
7420           ;
7421           ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
7422           ;
7423           ;*****
7424
7425 043170 004737 016064                JSR     PC,SOFINIT        :DO INITIALIZE ON CONTROLLER
7426 043174 103407                BCS     20$                   :BR IF INIT WAS OK
7427 043176 005237 002212                INC     FATFLG            :BUMP COUNT
7431 043202 010001                MOV     R0,R1                    :CONTENTS OF TSSR REGISTER
7432 043204                ERRDF   ERNO,SFIERR,SFIMSG             :FATAL ERROR TSSR WAS NOT OK
       043204 104455                                               TRAP          C#ERDF
       043206 000726                                               .WORD        470
       043210 003650                                               .WORD        SFIERR
       043212 012124                                               .WORD        SFIMSG
7433 043214
7434 043214 013737 002172 044740 20$:    MOV     UNITN,T24DSW        :SET UP DRIVE NUMBER
7435 043222 012704 044720                MOV     @T24PACKET,R4    :SUBROUTINE NEEDS PACKET ADDRESS
7436
7437           ;*****
7438           ;
7439           ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
7440           ;
7441           ;*****
7442
7443 043226 004737 010752                JSR     PC,WRTCHR          :ISSUE WRITE CHARACTERISTICS
7444 043232 103407                BCS     24$                   :BR, IF COMMAND ISSUED OK
7445 043234 005237 002212                INC     FATFLG            :BUMP COUNT
7449 043240 010001                MOV     R0,R1                    :SAVE CONTENTS OF TSSR
7450 043242                ERHRD   ERNO,WRTMSG,SFIMSG             :WRITE CHARACTERISTIC FAILED

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	043242	104456							TRAP	C#ERRRD
	043244	000727							.WORD	471
	043246	005054							.WORD	WRTMSG
	043250	012124							.WORD	SFIMSG
7451	043252			24:	CKLOOP		;LOOP IF SELECTED			
	043252	104406						TRAP	C#CLP1	
7452	043254	013737	003114	045052	MOV	FREE,T24R8	;ILLEGAL STARTING READ BUFFER ADDRESS			
7453	043262	012737	177700	045054	MOV	#177700,T24R8+2	;CREATE ILLEGAL ADDRESS			
7454										
7455										
7456										
7457										
7458										
7459										
7460										
7461	043270	012737	140001	045050	MOV	#140001,T24PK3	;LEGAL MODE,ACK,CVC=1,READ COMMAND			
7462	043276	012704	045050		MOV	#T24PK3,R4	;SET UP R4 WITH PACKET ADDRESS			
7463	043302	012737	000400	045056	MOV	#256.,T24SZ	;SET UP RECORD SIZE IN PACKET			
7464	043310	C10465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND			
7465	043314	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR!BIT1!BIT2 TO SET			
7466	043320	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS			
7467	043324	012702	100206		MOV	#SSR!SC!BIT1!BIT2,R2	;SET UP EXPECTED			
7468	043330	020102			CMP	R1,R2	;ARE THEY EQUAL			
7469	043332	001406			BEQ	75:	;BR, IF OK			
7470	043334	005237	002212		INC	FATFLG	;BUMP COUNT			
7474	043340				ERRHRD	ERRNO,T24WDG,PktSSR	;TSSR INCORRECT AFTER READ DATA			
	043340	104456						TRAP	C#ERRRD	
	043342	000730						.WORD	472	
	043344	045222						.WORD	T24WDG	
	043346	012136						.WORD	PktSSR	
7475	043350			75:	CKLOOP		;LOOP IF SELECTED			
	043350	104406						TRAP	C#CLP1	
7476										
7477										
7478										
7479										
7480										
7481										
7482										
7483	043352	013701	044750		MOV	T24BFR+6,R1	;GET MESSAGE BUFFER			
7484	043356	010102			MOV	R1,R2	;SET UP EXPECTED			
7485	043360	052702	000400		BIS	#BIT8,R2	;SET THE ILA BIT IN EXPECTED			
7486	043364	020102			CMP	R1,R2	;ARE THEY EQUAL			
7487	043366	001406			BEQ	180:	;BR, IF EQUAL (ALL IS WELL)			
7488	043370	005237	002212		INC	FATFLG	;BUMP COUNT			
7492	043374				ERRHRD	ERRNO,T24ILA,EXPREC	;THE ILA BIT WAS NOT SET IN XSTO			
	043374	104456						TRAP	C#ERRRD	
	043376	000731						.WORD	473	
	043400	045452						.WORD	T24ILA	
	043402	015564						.WORD	EXPREC	
7493	043404			180:	CKLOOP					
	043404	104406						TRAP	C#CLP1	
7494	043406				ENDSUB		;>>>>>>>> END SUBTEST >>>>>>>>			
	043406									

7497 043420 004737 017272

7497	043420	004737	017272		JSR	PC,CKDROP		;TRY TO DROP THE UNIT	
7498	043424				9994:				
7499									
7500									
7501									
7502									
7503									
7504									
7505									
7506									
7507									
7508									
7509									
7510	043424				BGNSUB			>>>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>>>	
	043424							T4.12:	
	043424	104402						TRAP	C#BSUB
7511	043426	005737	003126		TST	NXMFLG		;DO WE HAVE IT?	
7512	043432	001002			BNE	104		;BR, IF ENOUGH	
7513	043434	000137	043672		JMP	804		;SKIP THIS TEST IF NOT	
7514	043440	004737	047544	104:	JSR	PC,T24RT3		;SET COMMAND PACKET UP CLEAR	
7515	043444	004737	047410		JSR	PC,T24REST		;SET COMMAND PACKET	
7516	043450	004737	047502		JSR	PC,T24RT2		;SET UP OTHER COMMAND PACKET	
7517									
7518									
7519									
7520									
7521									
7522									
7523									
7524	043454	004737	016064		JSR	PC,SOFINI		;DO INITIALIZE ON CONTROLLER	
7525	043460	103407			BCS	204		;BR IF INIT WAS OK	
7526	043462	005237	002212		INC	FATFLG		;BUMP COUNT	
7530	043466	010001			MOV	R0,R1		;CONTENTS OF TSSR REGISTER	
7531	043470				ERRDF	ERRNO,SFIERR,SFIMSG		;FATAL ERROR TSSR WAS NOT OK	
	043470	104455						TRAP	C#ERDF
	043472	000732						.WORD	474
	043474	003650						.WORD	SFIERR
	043476	012124						.WORD	SFIMSG
7532	043500								
7533	043500	013737	002172	044740	MOV	UNITN,T24DSW		;SET UP DRIVE NUMBER	
7534	043506	012704	044720		MOV	#T24PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS	
7535									
7536									
7537									
7538									
7539									
7540									
7541									
7542	043512	004737	010752		JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS	
7543	043516	103407			BCS	244		;BR, IF COMMAND ISSUED OK	
7544	043520	005237	002212		INC	FATFLG		;BUMP COUNT	
7548	043524	010001			MOV	R0,R1		;SAVE CONTENTS OF TSSR	
7549	043526				ERRHRO	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTICSC FAILED	
	043526	104456						TRAP	C#ERHRO
	043530	000733						.WORD	475
	043532	005054						.WORD	WRTMSG
	043534	012124						.WORD	SFIMSG

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

7602	043710			BGNSUB		; >>>>>>>> BEGIN SUBTEST >>>>>>>>
	043710					T4.13:
	043710	104402				TRAP C#BSUB
7603	043712	004737	047544	JSR	PC,T24RT3	;SET COMMAND PACKET UP CLEAR
7604	043716	004737	047410	JSR	PC,T24REST	;SET COMMAND PACKET
7605	043722	004737	047502	JSR	PC,T24RT2	;SET UP OTHER COMMAND PACKET
7606						
7607						
7608						
7609						
7610						
7611						
7612						
7613	043726	004737	016064	JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER
7614	043732	103407		BCS	20\$;BR IF INIT WAS OK
7615	043734	005237	002212	INC	FATFLG	;BUMP COUNT
7619	043740	010001		MOV	R0,R1	;CONTENTS OF TSSR REGISTER
7620	043742			ERRDF	ERRNO,SFIERR,SFMSG	;FATAL ERROR TSSR WAS NOT OK
	043742	104455				TRAP C#ERDF
	043744	000735				.WORD 477
	043746	003650				.WORD SFIERR
	043750	012124				.WORD SFMSG
7621	043752					
7622	043752	013737	002172	20\$: MOV	UNITN,T24DSW	;SET UP DRIVE NUMBER
7623	043760	012704	044720	MOV	#T24PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS
7624						
7625						
7626						
7627						
7628						
7629						
7630						
7631	043764	004737	010752	JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS
7632	043770	103407		BCS	24\$;BR, IF COMMAND ISSUED OK
7633	043772	005237	002212	INC	FATFLG	;BUMP COUNT
7637	043776	010001		MOV	R0,R1	;SAVE CONTENTS OF TSSR
7638	044000			ERRHRD	ERRNO,WRTMSG,SFMSG	;WRITE CHARACTERISTICSC FAILED
	044000	104456				TRAP C#ERHRD
	044002	000736				.WORD 478
	044004	005054				.WORD WRTMSG
	044006	012124				.WORD SFMSG
7639	044010			24\$: CKLOOP		;LOOP IF SELECTED
	044010	104406				TRAP C#CLP1
7640						
7641						
7642						
7643						
7644						
7645						
7646						
7647	044012	004737	011104	JSR	PC,REWIND	;CALL TAPE REWIND COMMAND
7648	044016	004737	016426	JSR	PC,CHKTTSSR	;SEE HOW TSSR IS
7649	044022	103407		BCS	30\$;BR, IF NO PROBLEM
7650	044024	010001		MOV	R0,R1	;SAVE TSSR
7651	044026	005237	002212	INC	FATFLG	;BUMP COUNT
7655	044032			ERRHRD	ERRNO,T24RW,N,PKTSSR	;REWIND NOT ACCEPTED
	044032	104456				TRAP C#ERHRD

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

Address	Offset	Label	Instruction	Comment	Register	Value	Trap	Subtest
044034	000737							
044036	046206							
044040	012136							
7656	044042	104406	304:	CKLOOP				
	044042	104406						
7657	044044	012703	000400	MOV	#256,R3			
7658	044050	013737	003114	MOV	FREE,T24RB			
7659								
7660								
7661								
7662								
7663								
7664								
7665								
7666	044056	012737	100401	MOV	#100401,T24PK3			
7667	044064	012704	045050	MOV	#T24PK3,R4			
7668	044070							
7669	044070	010337	045056	654:	MOV R3,T24SZ			
7670	044074	C10465	000000		MOV R4,T24DB(R5)			
7671	044100	004737	016340		JSR PC,WAITF			
7672	044104	016501	000002		MOV T24SR(R5),R1			
7673	044110	012702	100206		MOV #T24SR:SC:BIT1:BIT2,R2			
7674	044114	020102			CMP R1,R2			
7675	044116	001406			BEQ 754			
7676	044120	005237	002212		INC FATFLG			
7680	044124				ERRHRD ERRNO,T24WDE,PKTSSR			
	044124	104456						
	044126	000740						
	044130	045651						
	044132	012136						
7681	044134			754:	CKLOOP			
	044134	104406						
7682								
7683								
7684								
7685								
7686								
7687								
7688								
7689	044136	013701	044750		MOV T24BFR+6,R1			
7690	044142	010102			MOV R1,R2			
7691	044144	052702	002000		BIS #BIT10,R2			
7692	044150	020102			CMP R1,R2			
7693	044152	001406			BEQ 1804			
7694	044154	005237	002212		INC FATFLG			
7698	044160				ERRHRD ERRNO,T24NEF,EXPREC			
	044160	104456						
	044162	000741						
	044164	045100						
	044166	015564						
7699	044170			1804:	CKLOOP			
	044170	104406						
7700	044172				ENDSUB			
	044172							
	044172	104403						
7701	044174	023727	002212	000017	CMP FATFLG,#15.			
7702	044202	10340						

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

7703	044204	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT	
7704	044210			999\$:				
7705								
7706								
7707								
7708								
7709								
7710								
7711								
7712								
7713								
7714								
7715								
7716								
7717								
7718	044210				BGNSUB		; >>>>>>>>>> BEGIN SUBTEST >>>>>>>>>	
	044210						T4.14:	
	044210	104402						TRAP C#BSUB
7719	044212	004737	047544		JSR	PC,T24RT3	;SET COMMAND PACKET UP CLEAR	
7720	044216	004737	047410		JSR	PC,T24REST	;SET COMMAND PACKET	
7721	044222	004737	047502		JSR	PC,T24RT2	;SET UP OTHER COMMAND PACKET	
7722								
7723								
7724								
7725								
7726								
7727								
7728								
7729	044226	004737	016064		JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER	
7730	044232	103407			BCS	24\$;BR IF INIT WAS OK	
7731	044234	005237	002212		INC	FATFLG	;BUMP COUNT	
7735	044240	010001			MOV	R0,R1	;CONTENTS OF TSSR REGISTER	
7736	044242				ERRDF	ERRNO,SFIEPR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK	
	044242	104455						TRAP C#ERDF
	044244	000742					.WORD	482
	044246	003650					.WORD	SFIERR
	044250	012124					.WORD	SFIMSG
7737	044252			20\$:				
7738	044252	013737	002172	044740	MOV	UNITN,T24DSW	;SET UP DRIVE NUMBER	
7739	044260	012704	044720		MOV	#T24PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS	
7740								
7741								
7742								
7743								
7744								
7745								
7746								
7747	044264	004737	010752		JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS	
7748	044270	103407			BCS	24\$;BR, IF COMMAND ISSUED OK	
7749	044272	005237	002212		INC	FATFLG	;BUMP COUNT	
7753	044276	010001			MOV	R0,R1	;SAVE CONTENTS OF TSSR	
7754	044300				ERRHRD	ERRNO,WRTMSG,SFIMSG	;WRITE CHARACTERISTICSC FAILED	
	044300	104456						TRAP C#ERHRD
	044302	000743					.WORD	483
	044304	005054					.WORD	WRTMSG
	044306	012124					.WORD	SFIMSG
7755	044310			24\$:	CKLOOP		;LOOP IF SELECTED	

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

```
044310 104406                                TRAP      C$CLP1
7756
7757 ;*****
7758 ;
7759 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7760 ;
7761 ;*****
7762
7763 044312 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
7764 044316 004737 016426      JSR      PC,CHKTSSR     ;SEE HOW TSSR IS
7765 044322 103407             BCS      30$          ;BR, IF NO PROBLEM
7766 044324 010001             MOV      R0,R1         ;SAVE TSSR
7767 044326 005237 002212      INC      FATFLG        ;BUMP COUNT
7771 044332             ERRHRD  ERRNO,T24RWN,PKTSSR    ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     484
                                .WORD     T24RWN
                                .WORD     PKTSSR
044332 104456
044334 000744
044336 046206
044340 012136
7772 044342             30$:   CKLOOP                ;LOOP IF SELECTED
                                TRAP      C$CLP1
7773 044344 012703 000400      MOV      #256.,R3      ;RECORD SIZE
7774 044350 013737 003114 045052  MOV      FREE,T24RB    ;STARTING WRITE BUFFER ADDRESS
7775
7776 ;*****
7777 ;WRITE DATA,ACK,CVC=1 COMMAND
7778 ;
7779 ;*****
7780
7781
7782 044356 012737 140005 045050      MOV      #140005,T24PK3    ;WRITE DATA,ACK,CVC=1 COMMAND
7783 044364 012704 045050      MOV      #T24PK3,R4        ;SET UP R4 WITH PACKET ADDRESS
7784 044370
7785 044370 010337 045056      65$:   MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
7786 044374 010465 000000      MOV      R4,TSDB(R5)        ;ISSUE COMMAND
7787 044400 004737 016340      JSR      PC,WAITF        ;WAIT FOR SSR TO SET
7788 044404 016501 000002      MOV      TSSR(R5),R1       ;GET TSSR CONTENTS
7789 044410 012702 000200      MOV      #SSR,R2          ;SET UP EXPECTED
7790 044414 020102             CMP      R1,R2           ;ARE THEY EQUAL
7791 044416 001406             BEQ      75$            ;BR, IF OK
7792 044420 005237 002212      INC      FATFLG        ;BUMP COUNT
7796 044424             ERRHRD  ERRNO,WRERR,PKTSSR    ;TSSR INCORRECT AFTER READ DATA
                                TRAP      C$ERHRD
                                .WORD     485
                                .WORD     WRERR
                                .WORD     PKTSSR
044424 104456
044426 000745
044430 005111
044432 012136
7797 044434             75$:   CKLOOP                ;LOOP IF SELECTED
                                TRAP      C$CLP1
7798 044436 012703 000400      MOV      #256.,R3      ;RECORD SIZE
7799 044442 013737 003114 045052  MOV      FREE,T24RB    ;STARTING READ BUFFER ADDRESS
7800
7801 ;*****
7802 ;READ REVERSE DATA,ACK COMMAND
7803 ;
7804 ;*****
7805
7806
7807 044450 012737 100401 045050      MOV      #100401,T24PK3    ;READ REVERSE DATA,ACK COMMAND
```


TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

Address	Offset	Hex	Label	Operation	Comment	Trap	Value
7808	044456	012704	045050				
7809	044462	010337	045056	165\$: MOV	#T24PK3,R4		
7810	044466	010465	000000	MOV	R3,T24SZ		
7811	044472	004737	016340	MOV	R4,TSDB(R5)		
7812	044476	016501	000002	JSR	PC,WAITF		
7813	044502	012702	000200	MOV	TSSR(R5),R1		
7814	044506	020102		MOV	#SSR,R2		
7815	044510	001406		CMP	R1,R2		
7816	044512	005237	002212	BEQ	170\$		
7820	044516			INC	FATFLG		
	044516	104456		ERRHRD	ERRNO,T24TRL,PKTSSR		
	044520	000746				TRAP	C#ERHRD
	044522	047254				.WORD	486
	044524	012136				.WORD	T24TRL
7821	044526					.WORD	PKTSSR
	044526	104406		170\$: CKLOOP			
7822	044530	012703	000400			TRAP	C#CLP1
7823	044534	013737	003114	MOV	#256.,R3		
7824			045052	MOV	FREE,T24RB		
7825							
7826							
7827							
7828							
7829							
7830							
7831	044542	012737	100401	MOV	#100401,T24PK3		
7832	044550	012704	045050	195\$: MOV	#T24PK3,R4		
7833	044554	010337	045056	MOV	R3,T24SZ		
7834	044560	010465	000000	MOV	R4,TSDB(R5)		
7835	044564	004737	016340	JSR	PC,WAITF		
7836	044570	016501	000002	MOV	TSSR(R5),R1		
7837	044574	012702	100204	MOV	#SSR!SC!BIT2,R2		
7838	044600	020102		CMP	R1,R2		
7839	044602	001406		BEQ	200\$		
7840	044604	005237	002212	INC	FATFLG		
7844	044610			ERRHRD	ERRNO,T24TRL,PKTSSR		
	044610	104456				TRAP	C#ERHRD
	044612	000747				.WORD	487
	044614	047254				.WORD	T24TRL
	044616	012136				.WORD	PKTSSR
7845	044620			200\$: CKLOOP			
	044620	104406				TRAP	C#CLP1
7846	044622	013701	044756	MOV	T24BFR+14,R1		
7847	044626	010102		MOV	R1,R2		
7848	044630	052702	000001	BIS	#BIT0,R2		
7849	044634	020102		CMP	R1,R2		
7850	044636	001406		BEQ	210\$		
7851	044640	005237	002212	INC	FATFLG		
7855	044644			ERRHRD	ERRNO,T24LOR,EXPREC		
	044644	104456				TRAP	C#ERHRD
	044646	000750				.WORD	488
	044650	045152				.WORD	T24LOR
	044652	015564				.WORD	EXPREC
7856	044654			210\$: CKLOOP			
	044654	104406				TRAP	C#CLP1
7857	044656			ENDSUB			
	044656						

TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

Address	Offset	Value	Label	Operation	Comment
7858	044656	104403			
7859	044660	023727	002212	000017	
7860	044666	103402			
7861	044670	004737	017272		
7862	044674				
7863					
7864					
7865	044674	004737	016546		
7866	044700	103002			
7867	044702	000137	035376		
7868	044706				
7869	044706				
	044710	104432			
		002664			
7870					
7871					
7872					
7873					
7875	044712				
7877	044720				
7878	044720	100204			
7879	044722	044730			
7880	044724	000000			
7881	044726	000012			
7882	044730				
7883	044730	044742			
7884	044732	000000			
7885	044734	000024			
7886	044736	000000			
7887	044740	000000			
7888	044742				
7889					
7890					
7891					
7893	045024				
7895	045030				
7896	045030	100206			
7897	045032	045060			
7898	045034	000000			
7899	045036	000006			
7900					
7902	045040				
7904	045050				
7905	045050	100205			
7906	045052				
7907	045052	003114			
7908	045054	000000			
7909	045056	000000			
7910					
7911					
7912					
7913					
7914	045060				
7915	045060	010			
7916	045061	200			
7917	045062	000000			


```

7918 045064 000000 T24S3: .WORD 0 ;DATA AREA
7919 ;
7920 ;
7921 .EVEN
7922 ;TAPE MOTION PACKET COMMAND VALUES
7923
7924 045066 100005 T24RN: .WORD 100005 ;READ DATA (NEXT)
7925 045070 100405 T24WDR: .WORD 100405 ;READ DATA RETRY
7926 045072 102005 T24CON: .WORD 102005 ;WRITE CONTINUOUS
7927 045074 177777 .WORD 177777 ;END OF DATA
7928 045076 000000 T24DLY: .WORD 0 ;DELAY STORAGE AREA
7929
7930
7931 ;*
7932 ;LOCAL TEXT MESSAGES FOR TEST
7933 ;-
7934
7935 045100 116 105 106 T24NEF: .ASCIZ 'NEF Not Set After NON-EXECUTABLE FUNCTION'
7936 045152 122 111 102 T24LOR: .ASCIZ 'RIB Not Set After READ REVERSE Into BOT'
7937 045222 124 123 123 T24WDG: .ASCIZ 'TSSR Not Correct After Illegal Buffer Address Bits Set'
7938 045311 124 123 123 T24NXM: .ASCIZ 'TSSR Not Correct After NXM Memory Address In Packet'
7939 045375 124 123 123 T24WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
7940 045452 111 154 154 T24ILA: .ASCIZ 'Illegal Address Bits, Failed To Set ILA Bit In XSTO'
7941 045536 111 154 154 T24LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XSTO'
7942 045617 122 105 101 T24SSR: .ASCIZ 'READ COMMAND Not Accepted'
7943 045651 124 123 123 T24WDE: .ASCIZ 'TSSR Not Correct After WRITE DATA Command'
7944 045723 124 141 160 T24BOT: .ASCIZ 'Tape Not At BOT After REWIND Command'
7945 045770 104 141 164 T24DTA: .ASCIZ 'Data Written To Tape Not Equal To Data Read From Tape'
7946 046056 122 105 101 T24EOT: .ASCIZ 'READ DATA OVER EOT GAVE NO TAPE STATUS ALERT'
7947 046133 124 123 123 T24TH: .ASCIZ 'TSSR Not Correct After READ COMMAND Reject'
7948 046206 122 145 167 T24RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
7949 046255 122 101 115 T24RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
7950 046330 124 123 123 T24AM3: .ASCIZ 'TSSR Init. Failed After READ COMMAND'
7951 046375 104 162 151 T24OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
7952 046450 124 123 123 T24WDD: .ASCIZ 'TSSR Not Correct After READ DATA Command, SWB Bit Set'
7953 046536 124 123 123 T24WDC: .ASCIZ 'TSSR Not Correct After READ DATA Command'
7954 046607 103 126 103 T24VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
7955 046662 124 123 102 T24BA: .ASCIZ 'TSBA Not Correct After READ DATA Command'
7956 046733 127 122 111 T24WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
7957 047022 122 145 141 T24LON: .ASCIZ 'Reading Long Record Failed To Set RLL Bit In XSTO'
7958 047104 122 145 141 T24LOP: .ASCIZ 'Reading Long Record Failed To Set RLS Bit In XSTO'
7959 047166 122 145 163 T24PBP: .ASCIZ 'Residual Byte Count Incorrect After Short Record Read'
7960 047254 122 145 141 T24TRL: .ASCIZ 'Reading Long Record Failed To Give Tape Status Alert'
7961 047342 102 141 163 TST24ID: .ASCIZ 'Basic Read Data (Forward and Reverse)'
7962 .EVEN
7963 ;*
7964 ;
7965 ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
7966 ;WRITE SUBSYSTEM MEMORY COMMAND
7967 ;
7968 ;-
7969
7970 047410 T24REST:
7971 047410 SAVREG ;SAVE THE REGISTERS
7972 047414 012701 044720 MOV #T24PACKET,R1 ;START OF THE PACKET
7973 047420 012721 100004 MOV #100004,(R1)+ ;WRITE SUBSYSTEM MEM. WITH ACK.
7974 047424 012721 044730 MOV #T24DATA,(R1)+ ;ADDRESS OF CHARAISTICS DATA BLOCK

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TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

7975	047430	005021		CLR	(R1)+		;EXTENDED ADDRESS
7976	047432	012721	000012	MOV	#10.,(R1)+		;SIZE OF DATA BLOCK IN BYTES
7977	047436	012721	044742	MOV	#T24BFR,(R1)+		;ADDRESS OF MESSAGE BUFFER
7978	047442	005021		CLR	(R1)+		
7979	047444	012721	000024	MOV	#20.,(R1)+		;LENGTH OF MESSAGE BUFFER
7980	047450	005021		CLR	(R1)+		
7981	047452	012711	000000	MOV	#0,(R1)		;SELECT DRIVE ZERO
7982	047456	012702	000030	MOV	#24.,R2		;NUMBER OF LOCATIONS TO BE CLEARED
7983	047462	012762	177777 044742 644:	MOV	#177777,T24BFR(R2)		;ALL ONES TO MESSAGE BUFFER
7984	047470	005742		TST	-(R2)		;NEXT LOCATION
7985	047472	022702	000000	CHP	#0,R2		;CHECK FOR END OF LOOP
7986	047476	001371		BNE	644		;KEEP GOING UNTIL DONE
7987	047500	000207		RTS	PC		;RETURN
7988							
7989							
7990	047502			T24RT2:			
7991	047502			SAVREG			;SAVE THE REGISTERS
7992	047506	012701	045030	MOV	#T24PK2,R1		;START OF THE PACKET
7993	047512	012721	100206	MOV	#100206,(R1)+		;WRITE SUBSYSTEM MEM. WITH ACK. IE
7994	047516	012721	045060	MOV	#T24BF2,(R1)+		;ADDRESS OF DATA BLOCK
7995	047522	005021		CLR	(R1)+		;EXTENDED ADDRESS
7996	047524	012721	000006	MOV	#6.,(R1)+		;SIZE OF DATA BLOCK IN BYTES
7997	047530	005021		CLR	(R1)+		
7998	047532	012701	045060	MOV	#T24BF2,R1		;POINT TO DATA SEL AREA
7999	047536	005021		CLR	(R1)+		
8000	047540	005011		CLR	(R1)		
8001	047542	000207		RTS	PC		;RETURN
8002	047544			T24RT3:			
8003	047544			SAVREG			;SAVE THE REGISTERS
8004	047550	012701	045050	MOV	#T24PK3,R1		;START OF THE PACKET
8005	047554	012721	000000	MOV	#0,(R1)+		;CLEAR AREA OUT
8006	047560	012721	000000	MOV	#0,(R1)+		;ADDRESS OF DATA BLOCK
8007	047564	005021		CLR	(R1)+		;EXTENDED ADDRESS
8008	047566	012711	000000	MOV	#0,(R1)		;SIZE OF DATA BLOCK IN BYTES
8009	047572	000207		RTS	PC		;RETURN
8010	047574			ENDTST			
	047574						
	047574	104401					
						L10052:	TRAP C#ETST

8011 .SBTTL TEST 5: SPACE RECORDS

8012 ;*

8013 ;

8014 ; THIS TEST VERIFIES THAT THE SPACE RECORDS FORWARD AND SPACE

8015 ; RECORDS REVERSE POSITION COMMANDS OPERATE PROPERLY WHEN SPACING

8016 ; OVER NORMAL DATA RECORDS. OPERATION WHEN SPACING OVER TAPE MARKS

8017 ; IS VERIFIED IN A SUBSEQUENT TEST. THE BASIC WRITE DATA TEST

8018 ; SHOULD HAVE BEEN RUN SUCCESSFULLY FOR THIS TEST TO PRODUCE MEANINGFUL

8019 ; RESULTS. THIS TEST CONSISTS OF A SERIES OF SUBTESTS. IN EACH

8020 ; OF THE SUBTESTS, THE TAPE IS ENTIRELY WRITTEN WITH RECORDS

8021 ; OF VARYING SIZES AND DATA CONTENT; THE FIRST 4 BYTES OF EACH

8022 ; RECORD INDICATE THAT RECORD'S RELATIVE POSITION ON TAPE. AFTER

8023 ; EACH SPACING OPERATION, THE TAPE POSITION IS VERIFIED BY READING

8024 ; THE NEXT OR PREVIOUS RECORD AND COMPARING THE POSITION DATA WITH

8025 ; THE EXPECTED RESULT.

8026 ;

8027 ;

8028 ;

8029 ; THE TEST CONSISTS OF THE FOLLOWING 8 SUBTESTS

TEST 5: SPACE RECORDS

8030					:		
8031					:		
8032					:		
8033					: -		
8034	047576				BGNTST		
	047576					TS::	
8035	047576	012737	006446	002170	MOV	#EPRT2,EPRTSW	;SECONDARY ERROR MESSAGE
8040	047604	004737	017364		JSR	PC,KTOFF	;DON'T NEED LOTS OF MEMORY
8041	047610	012700	056320		MOV	#TST25ID,R0	;ASCII MESSAGE TO IDENTIFY TEST
8042	047614	004737	016600		JSR	PC,TSTSETUP	;DO INITIAL TEST SETUP
8043	047620	012737	000005	002206	MOV	#5,L0OPCNT	;PERFORM 5 ITERATIONS
8044					:*		
8045					:		
8046					;TEST 5, SUBTEST 1		
8047					:		
8048					:		
8049					;VERIFIES THAT A SPACE RECORDS FORWARD COMMAND WITH		
8050					;THE CLEAR VOLUME CHECK (CVC) BIT CLEAR IS REJECTED IF		
8051					;THE VOLUME CHECK (VCK) FLAG IS SET.		
8052					:		
8053					:		
8054					: -		
8055							
8056	047626				T25LOOP:		
8057	047626				BGNSUB		; >>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
	047626					TS.1:	
	047626	104402				TRAP	C#BSUB
8058	047630	004737	056336		JSR	PC,T25REST	;SET COMMAND PACKET
8059	047634	005037	055150		CLR	T25CNT	;CLEAR THE RECORD COUNTER AREA
8060	047640	004737	056430		JSR	PC,T25RT2	;SET UP OTHER COMMAND PACKET
8061	047644	004737	056472		JSR	PC,T25RT3	;SET UP OTHER COMMAND PACKET
8062	047650	012737	176750	055152	MOV	#65000.,T25CLY	;SET UP LOOP COUNTER
8063							
8064					;*****		
8065					:		
8066					;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR		
8067					:		
8068					;*****		
8069							
8070	047656	004737	016064		S#:	JSR PC,SOFINIT	;DO INITIALIZE ON CONTROLLER
8071	047662	103427				BCS 10#	;BR IF INIT WAS OK
8072	047664					DELAY 250	;DELAY IF REQUIRED
	047664	012727	000250				MOV #250,(PC)+
	047670	000000					.WORD 0
	047672	013727	002116				MOV L#DLY,(PC)+
	047676	000000					.WORD 0
	047700	005367	177772				DEC -6(PC)
	047704	001375					BNE .-4
	047706	005367	177756				DEC -22(PC)
	047712	001367					BNE .-20
8073	047714	005337	055152		DEC	T25DLY	;DEC DELAY COUNTER
8074	047720	001356			BNE	S#	;BR, IF LOOP IS REQUIRED
8075	047722	005237	002212		INC	FATFLG	;BUMP COUNT
8079	047726	016501	000002		MOV	TSSR(R5),R1	;CONTENTS OF TSSR REGISTER
8080	047732				ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK
	047732	104455					TRAP C#ERDF
	047734	000765					.WORD 501

TEST 5: SPACE RECORDS

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      047736 003650
      047740 012124
8081 047742
8082 047742 013737 002172 055010
8083 047750 012704 054770
8084
8085
8086
8087
8088
8089
8090
8091 047754 004737 010752
8092 047760 103407
8093 047762 005237 002212
8097 047766 010001
8098 047770
      047770 104456
      047772 000766
      047774 005054
      047776 012124
8099
8100
8101
8102
8103
8104
8105
8106 050000
      050000 104406
8107 050002 004737 011104
8108 050006 103407
8109 050010 010001
8110 050012 005237 002212
8114 050016
      050016 104456
      050020 000767
      050022 056125
      050024 012136
8115 050026
      050026 104406
8116
8117
8118
8119
8120
8121
8122
8123 050030 013701 055020
8124 050034 010102
8125 050036 052702 000002
8126 050042 020102
8127 050044 001406
8128 050046 005237 002212
8132 050052
      050052 104456
      050054 000770

104:  MOV    UNITN,T25DSW      ;SET UP DRIVE NUMBER
      MOV    #T25PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
      ;*****
      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
      ;*****
      JSR     PC,WRTCHR        ;ISSUE WRITE CHARACTERISTICS
      BCS     154              ;BR, IF COMMAND ISSUED OK
      INC     FATFLG           ;BUMP COUNT
      MOV     R0,R1            ;SAVE CONTENTS OF TSSR
      ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                      TRAP    C#ERHRD
                                      .WORD    502
                                      .WORD    WRTMSG
                                      .WORD    SFMSG
      ;*****
      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
      ;*****
154:   CKLOOP
      JSR     PC,REWIND        ;CALL TAPE REWIND COMMAND
      BCS     304              ;BR, IF NO PROBLEM
      MOV     R0,R1            ;SAVE TSSR
      INC     FATFLG           ;BUMP COUNT
      ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
                                      TRAP    C#ERHRD
                                      .WORD    503
                                      .WORD    T25RWN
                                      .WORD    PKTSSR
      ;*****
304:   CKLOOP                  ;LOOP IF SELECTED
                                      TRAP    C#CLP1
      ;*****
      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
      ;*****
      MOV     T258FR+6,R1      ;PICK UP XST0
      MOV     R1,R2            ;SET UP EXPECTED
      BIS     #BIT1,R2         ;SET BOT BIT IN EXPECTED
      CMP     R1,R2            ;DOES EXP = REC'D
      BEQ     404              ;BR, IF EQUAL (OK)
      INC     FATFLG           ;BUMP COUNT
      ERRHRD  ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                      TRAP    C#ERHRD
                                      .WORD    504

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TEST 5: SPACE RECORDS

PC	PC+1	PC+2	PC+3	PC+4	PC+5	PC+6	PC+7	PC+8	PC+9	PC+10	PC+11	PC+12	PC+13	PC+14	PC+15	PC+16	PC+17	PC+18	PC+19	PC+20	PC+21	PC+22	PC+23	PC+24	PC+25	PC+26	PC+27	PC+28	PC+29	PC+30	PC+31	PC+32	PC+33	PC+34	PC+35	PC+36	PC+37	PC+38	PC+39	PC+40	PC+41	PC+42	PC+43	PC+44	PC+45	PC+46	PC+47	PC+48	PC+49	PC+50	PC+51	PC+52	PC+53	PC+54	PC+55	PC+56	PC+57	PC+58	PC+59	PC+60	PC+61	PC+62	PC+63	PC+64	PC+65	PC+66	PC+67	PC+68	PC+69	PC+70	PC+71	PC+72	PC+73	PC+74	PC+75	PC+76	PC+77	PC+78	PC+79	PC+80	PC+81	PC+82	PC+83	PC+84	PC+85	PC+86	PC+87	PC+88	PC+89	PC+90	PC+91	PC+92	PC+93	PC+94	PC+95	PC+96	PC+97	PC+98	PC+99	PC+100	PC+101	PC+102	PC+103	PC+104	PC+105	PC+106	PC+107	PC+108	PC+109	PC+110	PC+111	PC+112	PC+113	PC+114	PC+115	PC+116	PC+117	PC+118	PC+119	PC+120	PC+121	PC+122	PC+123	PC+124	PC+125	PC+126	PC+127	PC+128	PC+129	PC+130	PC+131	PC+132	PC+133	PC+134	PC+135	PC+136	PC+137	PC+138	PC+139	PC+140	PC+141	PC+142	PC+143	PC+144	PC+145	PC+146	PC+147	PC+148	PC+149	PC+150	PC+151	PC+152	PC+153	PC+154	PC+155	PC+156	PC+157	PC+158	PC+159	PC+160	PC+161	PC+162	PC+163	PC+164	PC+165	PC+166	PC+167	PC+168	PC+169	PC+170	PC+171	PC+172	PC+173	PC+174	PC+175	PC+176	PC+177	PC+178	PC+179	PC+180	PC+181	PC+182	PC+183	PC+184	PC+185	PC+186	PC+187	PC+188	PC+189	PC+190	PC+191	PC+192	PC+193	PC+194	PC+195	PC+196	PC+197	PC+198	PC+199	PC+200	PC+201	PC+202	PC+203	PC+204	PC+205	PC+206	PC+207	PC+208	PC+209	PC+210	PC+211	PC+212	PC+213	PC+214	PC+215	PC+216	PC+217	PC+218	PC+219	PC+220	PC+221	PC+222	PC+223	PC+224	PC+225	PC+226	PC+227	PC+228	PC+229	PC+230	PC+231	PC+232	PC+233	PC+234	PC+235	PC+236	PC+237	PC+238	PC+239	PC+240	PC+241	PC+242	PC+243	PC+244	PC+245	PC+246	PC+247	PC+248	PC+249	PC+250	PC+251	PC+252	PC+253	PC+254	PC+255	PC+256	PC+257	PC+258	PC+259	PC+260	PC+261	PC+262	PC+263	PC+264	PC+265	PC+266	PC+267	PC+268	PC+269	PC+270	PC+271	PC+272	PC+273	PC+274	PC+275	PC+276	PC+277	PC+278	PC+279	PC+280	PC+281	PC+282	PC+283	PC+284	PC+285	PC+286	PC+287	PC+288	PC+289	PC+290	PC+291	PC+292	PC+293	PC+294	PC+295	PC+296	PC+297	PC+298	PC+299	PC+300	PC+301	PC+302	PC+303	PC+304	PC+305	PC+306	PC+307	PC+308	PC+309	PC+310	PC+311	PC+312	PC+313	PC+314	PC+315	PC+316	PC+317	PC+318	PC+319	PC+320	PC+321	PC+322	PC+323	PC+324	PC+325	PC+326	PC+327	PC+328	PC+329	PC+330	PC+331	PC+332	PC+333	PC+334	PC+335	PC+336	PC+337	PC+338	PC+339	PC+340	PC+341	PC+342	PC+343	PC+344	PC+345	PC+346	PC+347	PC+348	PC+349	PC+350	PC+351	PC+352	PC+353	PC+354	PC+355	PC+356	PC+357	PC+358	PC+359	PC+360	PC+361	PC+362	PC+363	PC+364	PC+365	PC+366	PC+367	PC+368	PC+369	PC+370	PC+371	PC+372	PC+373	PC+374	PC+375	PC+376	PC+377	PC+378	PC+379	PC+380	PC+3
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						.WORD	EXPREC
8185	050242	015564			1254:		
8186	050244						
8187					;*****		
8188					;		
8189					;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE		
8190					;		
8191					;*****		
8192							
8193	050244	004737	011104		JSR PC.REWIND		;CALL TAPE REWIND COMMAND
8194	050250	103407			BCS 1304		;BR, IF NO PROBLEM
8195	050252	010001			MOV R0,R1		;SAVE TSSR
8196	050254	005237	002212		INC FATFLG		;BUMP COUNT
8200	050260				ERRHRD ERRNO,T25RW,N,PktTSSr		;REWIND NOT ACCEPTED
	050260	104456				TRAP	C#ERHRD
	050262	000773				.WORD	507
	050264	056125				.WORD	T25RW,N
	050266	012136				.WORD	PktTSSr
8201	050270				1304: CKLOOP		;LOOP IF SELECTED
	050270	104406				TRAP	C#CLP1
8202	050272	012737	000007	055010	MOV #7,T25DSW		;SET UP DRIVE NUMBER
8203	050300	012704	054770		MOV #T25PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
8204							
8205					;*****		
8206					;		
8207					;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)		
8208					;		
8209					;*****		
8210							
8211	050304	004737	010752		JSR PC.WRTCHR		;ISSUE WRITE CHARACTERISTICS
8212	050310	103407			BCS 1404		;BR, IF COMMAND ISSUED OK
8213	050312	005237	002212		INC FATFLG		;BUMP COUNT
8217	050316	010001			MOV R0,R1		;SAVE CONTENTS OF TSSR
8218	050320				ERRHRD ERRNO,WrtMSG,SFMSG		;WRITE CHARACTERISTIC FAILED
	050320	104456				TRAP	C#ERHRD
	050322	000774				.WORD	508
	050324	005054				.WORD	WrtMSG
	050326	012124				.WORD	SFMSG
8219	050330				1404: CKLOOP		;SCOPE LOOP
	050330	104406				TRAP	C#CLP1
8220	050332	005737	002216		TST EXTFEA		;CHECK FOR EXTENDED FEATURES
8221	050336	001044			BNE 1604		;BR IF SWITCH IS ON
8222							
8223	050340	112737	000200	055131	MOVB #200,T25BS1		;WRITE MISCELLANEOUS CONT/READ STATUS
8224	050346	112737	000010	055130	MOVB #10,T25BS0		;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
8225	050354	012704	055100		MOV #T25PK2,R4		;WRITE SUBSYS MEM PACKET
8226	050360	010465	000000		MOV R4,TSD0(R5)		;ISSUE COMMAND
8227	050364	004737	016426		JSR PC.CKTTSSr		;WAIT FOR SSR
8228	050370	103407			BCS 1504		;BR, IF NO ERROR
8229	050372	010001			MOV R0,R1		;ERROR, SAVE TSSR
8230	050374	005237	002212		INC FATFLG		;BUMP COUNT
8234	050400				ERRHRD ERRNO,T25SSR,PktTSSr		;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
	050400	104456				TRAP	C#ERHRD
	050402	000775				.WORD	509
	050404	055154				.WORD	T25SSR
	050406	012136				.WORD	PktTSSr
8235	050410				1504: CKLOOP		;LOOP IF SELECTED

Address	Offset	PC	PC+1	PC+2	PC+3	PC+4	PC+5	PC+6	PC+7	PC+8	PC+9	PC+10	PC+11	PC+12	PC+13	PC+14	PC+15	PC+16	PC+17	PC+18	PC+19	PC+20	PC+21	PC+22	PC+23	PC+24	PC+25	PC+26	PC+27	PC+28	PC+29	PC+30	PC+31	PC+32	PC+33	PC+34	PC+35	PC+36	PC+37	PC+38	PC+39	PC+40	PC+41	PC+42	PC+43	PC+44	PC+45	PC+46	PC+47	PC+48	PC+49	PC+50	PC+51	PC+52	PC+53	PC+54	PC+55	PC+56	PC+57	PC+58	PC+59	PC+60	PC+61	PC+62	PC+63	PC+64	PC+65	PC+66	PC+67	PC+68	PC+69	PC+70	PC+71	PC+72	PC+73	PC+74	PC+75	PC+76	PC+77	PC+78	PC+79	PC+80	PC+81	PC+82	PC+83	PC+84	PC+85	PC+86	PC+87	PC+88	PC+89	PC+90	PC+91	PC+92	PC+93	PC+94	PC+95	PC+96	PC+97	PC+98	PC+99	PC+100	PC+101	PC+102	PC+103	PC+104	PC+105	PC+106	PC+107	PC+108	PC+109	PC+110	PC+111	PC+112	PC+113	PC+114	PC+115	PC+116	PC+117	PC+118	PC+119	PC+120	PC+121	PC+122	PC+123	PC+124	PC+125	PC+126	PC+127	PC+128	PC+129	PC+130	PC+131	PC+132	PC+133	PC+134	PC+135	PC+136	PC+137	PC+138	PC+139	PC+140	PC+141	PC+142	PC+143	PC+144	PC+145	PC+146	PC+147	PC+148	PC+149	PC+150	PC+151	PC+152	PC+153	PC+154	PC+155	PC+156	PC+157	PC+158	PC+159	PC+160	PC+161	PC+162	PC+163	PC+164	PC+165	PC+166	PC+167	PC+168	PC+169	PC+170	PC+171	PC+172	PC+173	PC+174	PC+175	PC+176	PC+177	PC+178	PC+179	PC+180	PC+181	PC+182	PC+183	PC+184	PC+185	PC+186	PC+187	PC+188	PC+189	PC+190	PC+191	PC+192	PC+193	PC+194	PC+195	PC+196	PC+197	PC+198	PC+199	PC+200	PC+201	PC+202	PC+203	PC+204	PC+205	PC+206	PC+207	PC+208	PC+209	PC+210	PC+211	PC+212	PC+213	PC+214	PC+215	PC+216	PC+217	PC+218	PC+219	PC+220	PC+221	PC+222	PC+223	PC+224	PC+225	PC+226	PC+227	PC+228	PC+229	PC+230	PC+231	PC+232	PC+233	PC+234	PC+235	PC+236	PC+237	PC+238	PC+239	PC+240	PC+241	PC+242	PC+243	PC+244	PC+245	PC+246	PC+247	PC+248	PC+249	PC+250	PC+251	PC+252	PC+253	PC+254	PC+255	PC+256	PC+257	PC+258	PC+259	PC+260	PC+261	PC+262	PC+263	PC+264	PC+265	PC+266	PC+267	PC+268	PC+269	PC+270	PC+271	PC+272	PC+273	PC+274	PC+275	PC+276	PC+277	PC+278	PC+279	PC+280	PC+281	PC+282	PC+283	PC+284	PC+285	PC+286	PC+287	PC+288	PC+289	PC+290	PC+291	PC+292	PC+293	PC+294	PC+295	PC+296	PC+297	PC+298	PC+299	PC+300	PC+301	PC+302	PC+303	PC+304	PC+305	PC+306	PC+307	PC+308	PC+309	PC+310	PC+311	PC+312	PC+313	PC+314	PC+315	PC+316	PC+317	PC+318	PC+319	PC+320	PC+321	PC+322	PC+323	PC+324	PC+325	PC+326	PC+327	PC+328	PC+329	PC+330	PC+331	PC+332	PC+333	PC+334	PC+335	PC+336	PC+337	PC+338	PC+339	PC+340	PC+341	PC+342	PC+343	PC+344	PC+345	PC+346	PC+347	PC+348	PC+349	PC+350	PC+351	PC+352	PC+353	PC+354	PC+355	PC+356	PC+357	PC+358	PC+359	PC+360	PC+361	PC+362	PC+363	PC+364	PC+365	PC+366	PC+367	PC+368	PC+369	PC+370	PC+371	PC+372	PC+373	PC+374	PC+375	PC+376	PC+377	PC+378	PC+379	
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TEST 5: SPACE RECORDS

Address	Offset	PC	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464
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TEST 5: SPACE RECORDS

```
050676 005054 .WORD WRTMSG
050700 012124 .WORD SFMSG

8339
8340 ;*****
8341 ;
8342 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8343 ;
8344 ;*****
8345
8346 050702 15: CKLOOP TRAP C:CLP1
050702 104406
8347 050704 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
8348 050710 103407 BCS 30: ;BR, IF NO PROBLEM
8349 050712 010001 MOV R0,R1 ;SAVE TSSR
8350 050714 005237 002212 INC FATFLG ;BUMP COUNT
8351 050720 ERRHRD ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
050720 104456 TRAP C:ERHRD
050722 001003 .WORD 515
050724 C56125 .WORD T25RWN
050726 012136 .WORD PKTSSR
8355 050730 30: CKLOOP ;LOOP IF SELECTED
050730 104406 TRAP C:CLP1
8356 050732 005737 002216 140: TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SWITCH
8357 050736 001044 BNE 160: ;BR IF SWITCH IS ON
8358
8359 050740 112737 000200 055131 MOVB #200,T25BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
8360 050746 112737 000010 055130 MOVB #10,T25BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
8361 050754 012704 055100 MOV #T25PK2,R4 ;WRITE SUBSYS MEM PACKET
8362 050760 010465 000000 MOV R4,T25DB(R5) ;ISSUE COMMAND
8363 050764 004737 016426 JSR PC,CHKTSSR ;WAIT FOR SSR
8364 050770 103407 BCS 150: ;BR, IF NO ERROR
8365 050772 010001 MOV R0,R1 ;ERROR, SAVE TSSR
8366 050774 005237 002212 INC FATFLG ;BUMP COUNT
8367 051000 ERRHRD ERRNO,T25SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
051000 104456 TRAP C:ERHRD
051002 001004 .WORD 516
051004 055154 .WORD T25SSR
051006 012136 .WORD PKTSSR
8371 051010 150: CKLOOP ;LOOP IF SELECTED
051010 104406 TRAP C:CLP1
8372 051012 012737 000007 055010 MOV #7,T25DSW ;SET UP DRIVE NUMBER
8373 051020 012704 054770 MOV #T25PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
8374
8375 ;*****
8376 ;
8377 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
8378 ;
8379 ;*****
8380
8381 051024 004737 010752 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
8382 051030 103407 BCS 160: ;BR, IF COMMAND ISSUED OK
8383 051032 005237 002212 INC FATFLG ;BUMP COUNT
8384 051036 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
8385 051040 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
051040 104456 TRAP C:ERHRD
051042 001005 .WORD 517
051044 005054 .WORD WRTMSG
```


TEST 5: SPACE RECORDS

Line	Address	Offset	Value	Label	Instruction	Comment	Register	Condition	Trap	Trap Code
8389	051046	012124		160:	CKLOOP					
	051050									
	051050	104406								
8390	051052	016501	000002		MOV	TSSR(R5),R1				
8391	051056	032701	000100		BIT	#OFL,R1				
8392	051062	001006			BNE	170:				
8393	051064	005237	002212		INC	FATFLG				
8397	051070				ERRDF	ERRNO,T25OFL,SFIMSG				
	051070	104455								
	051072	001006								
	051074	056174								
	051076	012124								
8398	051100			170:	CKLOOP					
	051100	104406								
8399										
8400										
8401										
8402										
8403										
8404										
8405										
8406	051102	012737	100410	055120	180:	MOV	#100410,T25PK3			
8407	051110	012737	000001	055122		MOV	#1,T25RB			
8408	051116	012704	055120			MOV	#T25PK3,R4			
8409	051122	010465	000000			MOV	R4,T25DB(R5)			
8410	051126	004737	016340			JSR	PC,WAITF			
8411	051132	016501	000002			MOV	TSSR(R5),R1			
8412	051136	012702	100306			MOV	#SSR!SC!OFL!BIT1!BIT2,R2			
8413	051142	020102				CMP	R1,R2			
8414	051144	001406				BEQ	190:			
8415	051146	005237	002212			INC	FATFLG			
8419	051152					ERRHRD	ERRNO,T25TH,PKTSSR			
	051152	104456								
	051154	001007								
	051156	055362								
	051160	012136								
8420	051162				190:	CKLOOP				
	051162	104406								
8421	051164					ENDSUB				
	051164									
	051164	104403								
8422	051166	023727	002212	000017		CMP	FATFLG,#15.			
8423	051174	103402				BLO	999:			
8424	051176	004737	017272			JSR	PC,CKDROP			
8425	051202				999:					
8426										
8427										
8428										
8429										
8430										
8431										
8432										
8433										
8434										
8435										
8436										
8437	051202					BGNSUB				

TEST 5: SPACE RECORDS

```

                                T5.3:
                                TRAP      C#BSUB
8438 051202 104402                JSR      PC,T25REST      ;SET COMMAND PACKET
8439 051204 004737 056336        JSR      PC,T25RT2      ;SET UP OTHER COMMAND PACKET
8440 051214 004737 056472        JSR      PC,T25RT3      ;SET UP OTHER COMMAND PACKET
8441
8442 ;*****
8443 ;
8444 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
8445 ;
8446 ;*****
8447
8448 051220 004737 016064        JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
8449 051224 103407                BCS      10#           ;BR IF INIT WAS OK
8450 051226 005237 002212        INC      FATFLG         ;BUMP COUNT
8451 051232 010001                MOV      R0,R1          ;CONTENTS OF TSSR REGISTER
8452 051234                ERRDF   ERRNO,SFIERR,SFIMSG     ;FATAL ERROR TSSR WAS NOT OK
8453 051234 104455                TRAP      C#ERDF        TRAP      C#ERDF
8454 051236 001010                .WORD    520           .WORD    520
8455 051240 003650                .WORD    SFIERR        .WORD    SFIERR
8456 051242 012124                .WORD    SFIMSG        .WORD    SFIMSG
8457 051244 013737 002172 055010 10#: MOV      UNITN,T25DSW      ;SET UP DRIVE NUMBER
8458 051252 012704 054770        MOV      #T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
8459
8460 ;*****
8461 ;
8462 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
8463 ;
8464 ;*****
8465
8466 051256 004737 010752        JSR      PC,WRTCHR        ;ISSUE WRITE CHARACTERISTICS
8467 051262 103407                BCS      15#           ;BR, IF COMMAND ISSUED OK
8468 051264 005237 002212        INC      FATFLG         ;BUMP COUNT
8469 051270 010001                MOV      R0,R1          ;SAVE CONTENTS OF TSSR
8470 051272                ERRHRD  ERRNO,WRTMSG,SFIMSG     ;WRITE CHARACTERISTICS FAILED
8471 051272 104456                TRAP      C#ERHRD       TRAP      C#ERHRD
8472 051274 001011                .WORD    521           .WORD    521
8473 051276 005054                .WORD    WRTMSG        .WORD    WRTMSG
8474 051300 012124                .WORD    SFIMSG        .WORD    SFIMSG
8475
8476 ;*****
8477 ;
8478 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8479 ;
8480 ;*****
8481 15#: CKLOOP
8482 051302 104406                JSR      PC,REWIND        ;CALL TAPE REWIND COMMAND
8483 051304 004737 011104        BCS      30#           ;BR, IF NO PROBLEM
8484 051310 103407                MOV      R0,R1          ;SAVE TSSR
8485 051312 010001                INC      FATFLG         ;BUMP COUNT
8486 051314 005237 002212        ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
8487 051320                TRAP      C#CLP1              TRAP      C#CLP1
8488 051320 104456                .WORD    522           .WORD    522
8489 051322 001012                .WORD    T25RWN        .WORD    T25RWN
8490 051324 056125
```


TEST 5: SPACE RECORDS

```
8490 051326 012136          30$: CKLOOP          ;LOOP IF SELECTED          .WORD  PKTSSR
      051330          ;*****
      051330 104406          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8491          ;*****
8492          ;
8493          ;
8494          ;
8495          ;
8496          ;
8497          ;
8498 051332 013701 055020      MOV      T258FR+6,R1          ;PICK UP XSTO
8499 051336 010102          MOV      R1,R2          ;SET UP EXPECTED
8500 051340 052702 000002      BIS      #BIT1,R2          ;SET BOT BIT IN EXPECTED
8501 051344 020102          CMP      R1,R2          ;DOES EXP = REC'D
8502 051346 001406          BEQ      40$          ;BR, IF EQUAL (OK)
8503 051350 005237 002212      INC      FATFLG          ;BUMP COUNT
8507 051354          ERRHRD  ERRNO,T25BOT,EXPREC          ;TAPE NOT AT BOT AFTER REWIND
      051354 104456          TRAP      C$ERHRD
      051356 001013          .WORD    523
      051360 055315          .WORD    T25BOT
      051362 015564          .WORD    EXPREC
8508 051364          40$: CKLOOP          ;LOOP IF SELECTED          TRAP  C$CLP1
      051364 104406          ;NUMBER OF RECORDS TO SPACE OVER
8509 051366 012737 000001 055122      MOV      #000001,T25RB
8510          ;*****
8511          ;
8512          ;
8513          ;SPACE FORWARD,ACK,CVC-1 COMMAND
8514          ;
8515          ;*****
8516          ;
8517 051374 012737 140010 055120      MOV      #140010,T25PK3          ;SPACE FORWARD,ACK,CVC-1 COMMAND
8518 051402 012704 055120      MOV      #T25PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
8519 051406          65$:
8520 051406 010465 000000      MOV      R4,T5DB(R5)          ;ISSUE COMMAND
8521 051412 004737 016340      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
8522 051416 016501 000002      MOV      TSSR(R5),R1          ;GET TSSR CONTENTS
8523 051422 012702 000200      MOV      #SSR,R2          ;SET UP EXPECTED
8524 051426 020102          CMP      R1,R2          ;ARE THEY EQUAL
8525 051430 001411          BEQ      75$          ;BR, IF OK
8526 051432 032701 000004      BIT      #BIT2,R1          ;CHECK FOR TAPE STATUS ALERT
8527 051436 001006          BNE      75$          ;BR, IF TSA IS SET (SUSPECT IS EOT)
8528 051440 005237 002212      INC      FATFLG          ;BUMP COUNT
8532 051444          ERRHRD  ERRNO,T25WDE,EXPREC          ;TSSR INCORRECT AFTER READ DATA
      051444 104456          TRAP      C$ERHRD
      051446 001014          .WORD    524
      051450 055235          .WORD    T25WDE
      051452 015564          .WORD    EXPREC
8533 051454          75$: CKLOOP          ;LOOP IF SELECTED          TRAP  C$CLP1
      051454 104406          ;
8534 051456          120$:
8535          ;*****
8536          ;
8537          ;
8538          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8539          ;
8540          ;*****
```


8541	051456	013701	055020		MOV	T25BFR+6,R1	;QUICK CHECK FOR BOT SET		
8543	051462	010102			MOV	R1,R2	;SET UP EXPECTED		
8544	051464	042702	000002		BIC	#BIT1,R2	;CLEAR THE BOT BIT (XSTO)		
8545	051470	020102			CMP	R1,R2	;IS THE EOT BIT SET IN XSTO		
8546	051472	001406			BEQ	125\$;BR, IF SET (GOOD)		
8547	051474	005237	002212		INC	FATFLG	;BUMP COUNT		
8551	051500				ERRHRD	ERRNO,T25BNC,EXPREC	;BOT NOT CLEARED AFTER SPACE FROM BOT		
	051500	104456						TRAP	C#ERHRD
	051502	001015						.WORD	525
	051504	055610						.WORD	T25BNC
	051506	015564						.WORD	EXPREC
8552	051510			125\$: CKLOOP					
	051510	104406						TRAP	C#CLP1
8553	051512	004737	056472		JSR	PC,T25RT3	;CLEAN UP PACKET		
8554	051516	012737	000401	055126	MOV	#257.,T25SZ	;SET THE CORRECT SIZE UP		
8555									
8556									
8557									
8558									
8559									
8560									
8561									
8562	051524	012737	140001	055120	MOV	#140001,T25PK3	;READ DATA COMMAND IN PLACE		
8563	051532	013737	003114	055122	MOV	FREE,T25RB	;READ BUFFER ADDRESS TO PACKET		
8564	051540	012704	055120		MOV	#T25PK3,R4	;R4 = POINTER TO PACKET		
8565	051544	010465	000000		MOV	R4,TSD(R5)	;ISSUE COMMAND		
8566	051550	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR TO SET		
8567	051554	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
8568	051560	012702	000200		MOV	#SSR,R2	;SET UP EXPECTED		
8569	051564	020102			CMP	R1,R2	;ARE THEY EQUAL		
8570	051566	001406			BEQ	190\$;BR, IF OK ESP. FUNCTION REJECT		
8571	051570	005237	002212		INC	FATFLG	;BUMP COUNT		
8575	051574				ERRHRD	ERRNO,RDERR,PKTSSR	;TSSR INCORRECT AFTER READ DATA	CMD	
	051574	104456						TRAP	C#ERHRD
	051576	001016						.WORD	526
	051600	005204						.WORD	RDERR
	051602	012136						.WORD	PKTSSR
8576	051604			190\$: CKLOOP			;LOOP IF SELECTED		
	051604	104406						TRAP	C#CLP1
8577	051606	017701	131302		MOV	#FREE,R1	;GET FIRST WORD FROM BUFFER		
8578	051612	012702	000001		MOV	#1,R2	;SET UP EXPECTED		
8579	051616	020102			CMP	R1,R2	;WAS RECORD NUMBERED 1		
8580	051620	001406			BEQ	200\$;BR, IF CORRECT RECORD		
8581	051622	005237	002212		INC	FATFLG	;BUMP COUNT		
8585	051626				ERRHRD	ERRNO,T25WNG,EXPREC	;SHOULD HAVE BEEN RECORD NUMBER 1		
	051626	104456						TRAP	C#ERHRD
	051630	001017						.WORD	527
	051632	055525						.WORD	T25WNG
	051634	015564						.WORD	EXPREC
8586	051636			200\$: CKLOOP					
	051636	104406						TRAP	C#CLP1
8587	051640			ENDSUB			,>>>>>>>>> END SUBTEST >>>>>>>>>		
	051640						L10074:		
	051640	104403						TRAP	C#ESUB
8588	051642	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		
8589	051650	103402			BLO	999\$;		

: TRY TO DROP THE UNIT

TRAP C&C P1

8641

TEST 5: SPACE RECORDS

```

8642 ;*****
8643 ;
8644 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8645 ;
8646 ;*****
8647
8648 051760 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
8649 051764 103407           BCS      30$      ;BR, IF NO PROBLEM
8650 051766 010001           MOV      R0,R1      ;SAVE TSSR
8651 051770 005237 002212     INC      FATFLG     ;BUMP COUNT
8655 051774           ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD    530
                                .WORD    T25RWN
                                .WORD    PKTSSR
                                051774 104456
                                051776 001022
                                052000 056125
                                052002 012136
8656 052004           30$:    CKLOOP           ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                052004 104406
8657 ;*****
8658 ;
8659 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
8660 ;
8661 ;*****
8662
8663
8664 052006 013701 055020      MOV      T25BFR+6,R1    ;PICK UP XST0
8665 052012 010102           MOV      R1,R2      ;SET UP EXPECTED
8666 052014 052702 000002     BIS      #BIT1,R2     ;SET BOT BIT IN EXPECTED
8667 052020 020102           CMP      R1,R2      ;DOES EXP = REC'D
8668 052022 001406           BEQ      40$      ;BR, IF EQUAL (OK)
8669 052024 005237 002212     INC      FATFLG     ;BUMP COUNT
8673 052030           ERRHRD  ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD    531
                                .WORD    T25BOT
                                .WORD    EXPREC
                                052030 104456
                                052032 001023
                                052034 055315
                                052036 015564
8674 052040           40$:    CKLOOP           ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                052040 104406
8675 ;*****
8676 ;
8677 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
8678 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
8679 ;
8680 ;*****
8681
8682
8683 052042 012703 000001      MOV      #000001,R3    ;NUMBER OF RECORDS TO SPACE FORWARD
8684 052046 004737 010556     JSR      PC,SPACE    ;CALL SPACE COMMAND
8685 052052 103410           BCS      50$      ;CHECK FOR ERROR
8686 052054 016501 000002     MOV      TSSR(R5),R1 ;GET TSSR CONTENTS
8687 052060 005237 002212     INC      FATFLG     ;BUMP COUNT
8691 052064           ERRHRD  ERRNO,T25WDE,SFFMSG ;SPACE FORWARD FAILED
                                TRAP      C$ERHRD
                                .WORD    532
                                .WORD    T25WDE
                                .WORD    SFFMSG
                                052064 104456
                                052066 001024
                                052070 055235
                                052072 012172
8692 052074           50$:    CKLOOP           ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                052074 104406

```


TEST 5: SPACE RECORDS

```

8693 052076 012737 000001 055122      MOV      #1,T25RB      ;NUMBER OF RECORDS TO SPACE OVER
8694
8695      ;*****
8696      ;
8697      ;SPACE REVERSE,ACK,CVC=1 COMMAND
8698      ;
8699      ;*****
8700
8701 052104 012737 140410 055120      MOV      #140410,T25PK3      ;SPACE REVERSE,ACK,CVC=1 COMMAND
8702 052112 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8703 052116      65$:      MOV      R4,T25DB(R5)      ;ISSUE COMMAND
8704 052116 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
8705 052122 004737 016340      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8706 052126 016501 000002      MOV      #SSR,R2      ;SET UP EXPECTED
8707 052132 012702 000200      CMP      R1,R2      ;ARE THEY EQUAL
8708 052136 020102      BEQ      75$      ;BR, IF OK
8709 052140 001406      INC      FATFLG      ;BUMP COUNT
8710 052142 005237 002212      ERRHRD  ERRNO,T25WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
8711 052146      TRAP      C#ERHRD
      052146 104456      .WORD  533
      052150 001025      .WORD  T25WDE
      052152 055235      .WORD  PKTSSR
      052154 012136
8715 052156      75$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      052156 104406
8716 052160      120$:      MOV      #256,R3      ;RECORD SIZE
8717 052160 012703 000400      MOV      FREE,T25RB      ;STARTING READ BUFFER ADDRESS
8718 052164 013737 003114 055122
8719
8720      ;*****
8721      ;
8722      ;READ DATA,ACK,CVC=1 COMMAND
8723      ;
8724      ;*****
8725
8726 052172 012737 140001 055120      MOV      #140001,T25PK3      ;READ DATA,ACK,CVC=1 COMMAND
8727 052200 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8728 052204 010337 055126      MOV      R3,T25SZ      ;SET UP RECORD SIZE IN PACKET
8729 052210 010465 000000      MOV      R4,T25DB(R5)      ;ISSUE COMMAND
8730 052214 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
8731 052220 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8732 052224 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
8733 052230 020102      CMP      R1,R2      ;ARE THEY EQUAL
8734 052232 001406      BEQ      170$      ;BR, IF OK
8735 052234 005237 002212      INC      FATFLG      ;BUMP COUNT
8739 052240      ERRHRD  ERRNO,RDERR,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      052240 104456      TRAP      C#ERHRD
      052242 001026      .WORD  534
      052244 005204      .WORD  RDERR
      052246 012136      .WORD  PKTSSR
8740 052250      170$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      052250 104406
8741 052252 017701 130636      MOV      #FREE,R1      ;GET FIRST WORD FROM BUFFER
8742 052256 012702 000000      MOV      #0,R2      ;SET UP EXPECTED
8743 052262 020102      CMP      R1,R2      ;WAS RECORD NUMBERED 1
8744 052264 001406      BEQ      200$      ;BR, IF CORRECT RECORD
8745 052266 005237 002212      INC      FATFLG      ;BUMP COUNT

```


[illegible]

TEST 5: SPACE RECORDS

```

8789 052426 016501 000002      MOV      TSSR(R5),R1      ;CONTENTS OF TSSR REGISTER
8790 052432 005237 002212      INC      FATFLG      ;BUMP COUNT
8794 052436      ERRDF      ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
      052436 104455      TRAP      C#ERDF
      052440 001030      .WORD      536
      052442 003650      .WORD      SFIERR
      052444 012124      .WORD      SFIMSG
8795 052446      20$:      MOV      UNITN,T25DSW      ;SET UP UNIT NUMBER
8796 052446 013737 002172 055010      MOV      #T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
8797 052454 012704 054770
8798
8799      ;*****
8800      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
8801      ;*****
8802
8803      JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
8804      BCS      25$      ;BR. IF COMMAND ISSUED OK
8805 052460 004737 010752      INC      FATFLG      ;BUMP COUNT
8806 052464 103407      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
8807 052466 005237 002212      ERRHRD      ERRNO,WRTHMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
8808 052472 010001      TRAP      C#ERHRD
8809 052474 104456      .WORD      537
8810 052476 001031      .WORD      WRTHMSG
8811 052472 010001      .WORD      SFIMSG
8812 052474 104456
8813 052504 012124      25$:      CKLOOP      ;LOOP IF SELECTED
8814 052504 104406      TRAP      C#CLP1
8815
8816      ;*****
8817      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8818      ;*****
8819
8820      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
8821 052506 004737 011104      BCS      30$      ;BR. IF NO PROBLEM
8822 052512 103407      MOV      R0,R1      ;SAVE TSSR
8823 052514 010001      INC      FATFLG      ;BUMP COUNT
8824 052516 005237 002212      ERRHRD      ERRNO,T25RWN,PKTSSR      ;REWIND NOT ACCEPTED
8825 052522 104456      TRAP      C#ERHRD
8826 052522 104456      .WORD      538
8827 052524 001032      .WORD      T25RWN
8828 052526 056125      .WORD      PKTSSR
8829 052530 012136
8830 052532      30$:      CKLOOP      ;LOOP IF SELECTED
8831 052532 104406      TRAP      C#CLP1
8832 052534 013701 055146      MOV      T25CN2,R1      ;NUMBER OF RECORDS ON TAPE
8833 052540 012702 177776      MOV      #65534..R2      ;MAX IT CAN SPACE OVER
8834 052544 020201      CMP      R2,R1      ;WHICH VALUE CAN WE USE
8835 052546 003002      BGT      46$      ;BR. IF # WRITTEN > 64K
8836 052550 010103      MOV      R1,R3      ;# WRITTEN CAN BE USED
8837 052552 000401      BR      47$      ;MOVE ON
8838 052554 010203      46$:      MOV      R2,R3      ;USE MAX NUMBER
8839 052556 162703 000001      47$:      SUB      #1,R3      ;DON'T GO ALL THE WAY YET
8840 052562 010337 055122      MOV      R3,T25R8      ;NUMBER OF RECORDS TO SPACE OVER
      ;*****

```


TEST 5: SPACE RECORDS

```

8841      ;
8842      ;SPACE FORWARD,ACK,CVC=1 COMMAND
8843      ;
8844      ;*****
8845
8846 052566 012737 140010 055120      MOV      #140010,T25PK3      ;SPACE FORWARD,ACK,CVC=1 COMMAND
8847 052574 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8848 052600
8849 052600 013737 055146 055152 654:  MOV      T25CN2,T25DLY      ;NUMBER OF RECORDS USED AS DELAY COUNTER
8850 052606 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
8851 052612 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
8852 052616 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8853 052622 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
8854 052626 020102      CMP      R1,R2      ;ARE THEY EQUAL
8855 052630 001425      BEQ      754      ;JR, IF OK
8856 052632      DELAY      250      ;DELAY .25 SECONDS
      MOV      #250,(PC)+
      .WORD      0
      MOV      L4DLY,(PC)+
      .WORD      0
      DEC      -6(PC)
      BNE      -4
      DEC      -22(PC)
      BNE      -20
8857 052662 005337 055152      DEC      T25DLY      ;BUMP DOWN COUNTER
8858 052666 001351      BNE      674      ;BR, IF NOT AT END OF DELAY
8859 052670 005237 002212      INC      FATFLG      ;BUMP COUNT
8863 052674      ERHRD      ERRNO,T25WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      TRAP      C4ERHRD
      .WORD      539
      .WORD      T25WDE
      .WORD      PKTSSR
      052674 104456
      052676 001033
      052700 055235
      052702 012136
8864 052704      754:  CKLOOP      ;LOOP IF SELECTED
      TRAP      C4CLP1
8865 052706 012703 010000      MOV      #4096,R3      ;RECORD SIZE
8866 052712 013737 003114 055122      MOV      FREE,T25RB      ;STARTING READ BUFFER ADDRESS
8867
8868      ;*****
8869      ;
8870      ;READ DATA,ACK COMMAND
8871      ;
8872      ;*****
8873
8874 052720 012737 100001 055120 1654:  MOV      #100001,T25PK3      ;READ DATA,ACK COMMAND
8875 052726 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8876 052732 010337 055126      MOV      R3,T25SZ      ;SET UP RECORD SIZE IN PACKET
8877 052736 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
8878 052742 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
8879 052746 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8880 052752 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
8881 052756 020102      CMP      R1,R2      ;ARE THEY EQUAL
8882 052760 001411      BEQ      1704      ;BR, IF OK
8883 052762 032701 000004      BNE      #T2,R1      ;CHECK FOR TAPE STATUS ALERT
8884 052766 001006      BNE      1704      ;IF SET ALL IS WELL
8885 052770 005237 002212      INC      FATFLG      ;BUMP COUNT
8889 052774      ERHRD      ERRNO,RDERR,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      TRAP      C4ERHRD
      052774 104456

```


TEST 5: SPACE RECORDS

```
053126 000000
053130 013727 002116
053134 000000
053136 005367 177772
053142 001375
053144 005367 177756
053150 001367
8936 053152 005337 055152
8937 053156 001356
8938 053160 016501 000002
8939 053164 005237 002212
8943 053170
053170 104455
053172 001036
053174 003650
053176 012124
8944 053200 013737 002172 055010 20+: MOV UNITN,T25DSW ;SET UP UNIT NUMBER
8945
8946 053206 C12704 054770 MOV @T25PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
8947
8948 ;*****
8949 ;
8950 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
8951 ;
8952 ;*****
8953
8954 053212 004737 010752 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
8955 053216 103407 BCS 25+ ;BR, IF COMMAND ISSUED OK
8956 053220 005237 002212 INC FATFLG ;BUMP COUNT
8960 053224 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
8961 053226 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
053226 104456 TRAP C#ERHRD
053230 001037 .WORD 543
053232 005054 .WORD WRTMSG
053234 012124 .WORD SFMSG
8962 053236 25+: CKLOOP ;LOOP IF SELECTED
053236 104406 TRAP C#CLP1
8963
8964 ;*****
8965 ;
8966 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8967 ;
8968 ;*****
8969
8970 053240 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
8971 053244 103407 BCS 30+ ;BR, IF NO PROBLEM
8972 053246 010001 MOV R0,R1 ;SAVE TSSR
8973 053250 005237 002212 INC FATFLG ;BUMP COUNT
8977 053254 ERRHRD ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
053254 104456 TRAP C#ERHRD
053256 001040 .WORD 544
053260 056125 .WORD T25RWN
053262 012136 .WORD PKTSSR
8978 053264 30+: CKLOOP ;LOOP IF SELECTED
053264 104406 TRAP C#CLP1
8979
8980 ;*****
```


TEST 5: SPACE RECORDS

```

8981
8982      ; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8983      ;
8984      ;*****
8985
8986 053266 013701 055020      MOV      T25BFR+6,R1      ; PICK UP XSTO
8987 053272 010102      MOV      R1,R2      ; SET UP EXPECTED
8988 053274 052702 000002      BIS      @BIT1,R2      ; SET BOT BIT IN EXPECTED
8989 053300 020102      CMP      R1,R2      ; DOES EXP = REC'D
8990 053302 001406      BEQ      40$      ; BR, IF EQUAL (OK)
8991 053304 005237 002212      INC      FATFLG      ; BUMP COUNT
8995 053310      ERRHRD  ERRNO,T25BOT,EXPREC      ; TAPE NOT AT BOT AFTER REWIND
      053310 104456      TRAP      C$ERHRD
      053312 001041      .WORD    545
      053314 055315      .WORD    T25BOT
      053316 015564      .WORD    EXPREC
8996 053320      40$:      CKLOOP      ; LOOP IF SELECTED
      053320 104406      TRAP      C$CLP1
8997 053322 C13701 055146      MOV      T25CN2,R1      ; NUMBER OF RECORDS ON TAPE
8998 053326 012702 177776      MOV      @65534.,R2      ; MAX IT CAN SPACE OVER
8999 053332 020201      CMP      R2,R1      ; WHICH VALUE CAN WE USE
9000 053334 003002      BGT      46$      ; BR, IF # WRITTEN > 64K
9001 053336 010103      MOV      R1,R3      ; # WRITTEN CAN BE USED
9002 053340 000401      BR      47$      ; MOVE ON
9003 053342 010203      46$:      MOV      R2,R3      ; USE MAX NUMBER
9004 053344      47$:
9005 053344 010337 055122      MOV      R3,T25RB      ; NUMBER OF RECORDS TO SPACE OVER
9006
9007      ;*****
9008      ;
9009      ; SPACE FORWARD,ACK,CVC=1 COMMAND
9010      ;
9011      ;*****
9012
9013 053350 012737 140010 055120      MOV      @140010,T25PK3      ; SPACE FORWARD,ACK,CVC=1 COMMAND
9014 053356 012704 055120      MOV      @T25PK3,R4      ; SET UP R4 WITH PACKET ADDRESS
9015 053362 010465 000000      MOV      R4,T5DB(R5)      ; ISSUE COMMAND
9016 053366 013737 055146 055152      MOV      T25CN2,T25DLY      ; SET UP DELAY COUNTER
9017 053374 004737 016340      48$:      JSR      PC,WAITF      ; WAIT FOR SSR TO SET
9018 053400 016501 000002      MOV      T5SR(R5),R1      ; GET T5SR CONTENTS
9019 053404 012702 000200      MOV      @5SR,R2      ; SET UP EXPECTED
9020 053410 020102      CMP      R1,R2      ; ARE THEY EQUAL
9021 053412 001425      BEQ      50$      ; BR, IF OK
9022 053414      DELAY      250      ; WAIT .25 SECONDS
      053414 012727 000250      MOV      @250,(PC)+
      053420 000000      .WORD    0
      053422 013727 002116      MOV      L$DLY,(PC)+
      053426 000000      .WORD    0
      053430 005367 177772      DEC      -6(PC)
      053434 001375      BNE      -4
      053436 005367 177756      DEC      -22(PC)
      053442 001367      BNE      -20
9023 053444 005337 055152      DEC      T25DLY      ; DEC THE DELAY COUNTER
9024 053450 001351      BNE      48$      ; BR, IF COUNTER HASN'T EXPIRED
9025 053452 005237 002212      INC      FATFLG      ; BUMP COUNT
9029 053456      ERRHRD  ERRNO,T25WDE,EXPREC      ; T5SR INCORRECT AFTER READ DATA
      053456 104456      TRAP      C$ERHRD

```


TEST 5: SPACE RECORDS

```
053460 001042 .WORD 546
053462 055235 .WORD T25WDE
053464 015564 .WORD EXPREC
9030 053466 104406 50$: CKLOOP TRAP C4CLP1
053466 104406
9031 053470 013701 055146 MOV T25CN2,R1 ;NUMBER OF RECORDS ON TAPE
9032 053474 012702 177776 MOV #65534.,R2 ;MAX IT CAN SPACE OVER
9033 053500 020201 CMP R2,R1 ;WHICH VALUE CAN WE USE
9034 053502 003002 BGT 55$ ;BR, IF # WRITTEN > 64K
9035 053504 010103 MOV R1,R3 ;# WRITTEN CAN BE USED
9036 053506 000401 BR 60$ ;MOVE ON
9037 053510 010203 55$: MOV R2,R3 ;USE MAX NUMBER
9038 053512 162703 000001 60$: SUB #1,R3 ;DON'T GO ALL THE WAY YET
9039 053516 010337 055122 MOV R3,T25RB ;NUMBER OF RECORDS TO SPACE OVER
9040
9041 ;*****
9042 ;
9043 ;SPACE REVERSE,ACK,CVC=1 COMMAND
9044 ;
9045 ;*****
9046
9047 053522 012737 140410 055120 MOV #140410,T25PK3 ;SPACE REVERSE,ACK,CVC=1 COMMAND
9048 053530 012704 055120 MOV #T25PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
9049 053534 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
9050 053540 013737 055146 055152 MOV T25CN2,T25DLY ;SET UP COUNTER
9051 053546 004737 016340 70$: JSR PC,WAITF ;WAIT FOR SSR TO SET
9052 053552 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
9053 053556 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
9054 053562 020102 CMP R1,R2 ;ARE THEY EQUAL
9055 053564 001425 BEQ 75$ ;BR, IF OK
9056 053566 DELAY 250 ;WAIT ABOUT .25 SECONDS
053566 012727 000250 MOV #250,(PC)+
053572 000000 .WORD 0
053574 013727 002116 MOV L#DLY,(PC)+
053600 000000 .WORD 0
053602 005367 177772 DEC -6(PC)
053606 001375 BNE -4
053610 005367 177756 DEC -22(PC)
053614 001367 BNE -20
9057 053616 005337 055152 DEC T25DLY ;BUMP COUNTER DOWN
9058 053622 001351 70$ BNE 70$ ;BR, IF COUNTER HASN'T EXPIRED
9059 053624 005237 002212 INC FATFLG ;BUMP COUNT
9063 053630 E:RHRD ERRNO,T25WDE,EXPREC ;TSSR INCORRECT AFTER READ DATA
053630 104456 TRAP C4ERHRD
053632 001043 .WORD 547
053634 055235 .WORD T25WDE
053636 015564 .WORD EXPREC
9064 053640 75$: CKLOOP ;LOOP IF SELECTED TRAP C4CLP1
053640 104406
9065 053642 012703 010000 MOV #4096.,R3 ;RECORD SIZE
9066 053646 013737 003114 055122 MOV FREE,T25RB ;STARTING READ BUFFER ADDRESS
9067
9068 ;*****
9069 ;
9070 ;READ DATA,ACK COMMAND
9071 ;
9072 ;*****
```


TEST 5: SPACE RECORDS

```

9122 054030 004737 056430      JSR      PC,T25RT2      ;SET UP OTHER COMMAND PACKET
9123 054034 004737 056472      JSR      PC,T25RT3      ;SET UP OTHER COMMAND PACKET
9124
9125      ;*****
9126      ;
9127      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
9128      ;
9129      ;*****
9130
9131 054040 004737 016064      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
9132 054044 103407           BCS      20$      ;BR IF INIT WAS OK
9133 054046 005237 002212      INC      FATFLG      ;BUMP COUNT
9137 054052 010001           MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
9138 054054           ERROF   ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
                                TRAP      C$ERDF
                                .WORD     550
                                .WORD     SFIERR
                                .WORD     SFIMSG
9139 054064 C13737 002172 055010 20$: MOV      UNITN,T25DSW      ;SET UP UNIT NUMBER
9140
9141 054072 012704 054770      MOV      @T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
9142
9143      ;*****
9144      ;
9145      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
9146      ;
9147      ;*****
9148
9149 054076 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
9150 054102 103407           BCS      25$      ;BR. IF COMMAND ISSUED OK
9151 054104 005237 002212      INC      FATFLG      ;BUMP COUNT
9155 054110 010001           MOV      R0,R1      ;SAVE CONTENTS OF TSSR
9156 054112           ERRHRD  ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     551
                                .WORD     WRTMSG
                                .WORD     SFIMSG
9157 054122 054122 104406      25$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
9158
9159      ;*****
9160      ;
9161      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9162      ;
9163      ;*****
9164
9165 054124 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
9166 054130 103407           BCS      30$      ;BR. IF NO PROBLEM
9167 054132 010001           MOV      R0,R1      ;SAVE TSSR
9168 054134 005237 002212      INC      FATFLG      ;BUMP COUNT
9172 054140           ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     552
                                .WORD     T25RWN
                                .WORD     PKTSSR
9173 054150 054150 104406      30$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1

```


TEST 5: SPACE RECORDS

```

9174
9175 ;*****
9176 ;
9177 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9178 ;
9179 ;*****
9180
9181 054152 013701 055020      MOV      T25BFR+6,R1      ;PICK UP XSTO
9182 054156 010102      MOV      R1,R2      ;SET UP EXPECTED
9183 054160 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
9184 054164 020102      CMP      R1,R2      ;DOES EXP = REC'D
9185 054166 001406      BEQ      40$      ;BR, IF EQUAL (OK)
9186 054170 005237 002212      INC      FATFLG      ;BUMP COUNT
9187 054174      ERRHRD      ERRNO,T25BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
9188      054174 104456      TRAP      C$ERHRD
9189      054176 001051      .WORD      553
9190      054200 055315      .WORD      T25BOT
9191      054202 015564      .WORD      EXPREC
9192 054204      40$:      CKLOOP      ;LOOP IF SELECTED
9193 054206 104406      TRAP      C$CLP1
9194 054206 012737 000001 055122      MOV      #1,T25RB      ;NUMBER OF RECORDS TO SPACE OVER
9195
9196 ;*****
9197 ;
9198 ;SPACE REVERSE,ACK COMMAND
9199 ;
9200 ;*****
9201 054214 012737 100410 055120      MOV      #100410,T25PK3      ;SPACE REVERSE,ACK COMMAND
9202 054222 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9203 054226      65$:      MOV      R4,T5DB(R5)      ;ISSUE COMMAND
9204 054232 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9205 054236 004737 016340      MOV      T5SR(R5),R1      ;GET T5SR CONTENTS
9206 054242 016501 000002      MOV      #SSR!SC!BIT1!BIT2,R2      ;SET UP EXPECTED
9207 054246 012702 100206      CMP      R1,R2      ;ARE THEY EQUAL
9208 054250 020102      BEQ      75$      ;BR, IF OK
9209 054252 001406      INC      FATFLG      ;BUMP COUNT
9210 054256 005237 002212      ERRHRD      ERRNO,T25WDE,PKTSSR      ;T5SR INCORRECT AFTER READ DATA
9211      054256 104456      TRAP      C$ERHRD
9212      054260 001052      .WORD      554
9213      054262 055235      .WORD      T25WDE
9214      054264 012136      .WORD      PKTSSR
9215 054266      75$:      CKLOOP      ;LOOP IF SELECTED
9216      054266 104406      TRAP      C$CLP1
9217
9218 ;*****
9219 ;
9220 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9221 ;
9222 ;*****
9223 054270 013701 055020      MOV      T25BFR+6,R1      ;GET XSTO STATUS WORD
9224 054274 010102      MOV      R1,R2      ;SET UP EXPECTED
9225 054276 052702 002000      BIS      #BIT10,R2      ;SET THE NEF BIT
9226 054302 020102      CMP      R1,R2      ;ARE THEY EQUAL
9227 054304 001406      BEQ      170$      ;BR, IF EQUAL (GOOD)

```


TEST 5: SPACE RECORDS

```

9277 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
9278 ;
9279 ;*****
9280
9281 054416 004737 010752 JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
9282 054422 103407 BCS 25$ ;BR, IF COMMAND ISSUED OK
9283 054424 005237 002212 INC FATFLG ;BUMP COUNT
9287 054430 010001 MOV RO,R1 ;SAVE CONTENTS OF TSSR
9288 054432 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
054432 104456 TRAP C$ERHRD
054434 001055 .WORD 557
054436 005054 .WORD WRTMSG
054440 012124 .WORD SFMSG
9289 054442 25$: CKLOOP ;LOOP IF SELECTED
054442 104406 TRAP C$CLP1
9290
9291 ;*****
9292 ;
9293 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9294 ;
9295 ;*****
9296
9297 054444 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
9298 054450 103407 BCS 30$ ;BR, IF NO PROBLEM
9299 054452 010001 MOV RO,R1 ;SAVE TSSR
9300 054454 005237 002212 INC FATFLG ;BUMP COUNT
9304 054460 ERRHRD ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
054460 104456 TRAP C$ERHRD
054462 001056 .WORD 558
054464 056125 .WORD T25RWN
054466 012136 .WORD PKTSSR
9305 054470 30$: CKLOOP ;LOOP IF SELECTED
054470 104406 TRAP C$CLP1
9306
9307 ;*****
9308 ;
9309 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9310 ;
9311 ;*****
9312
9313 054472 013701 055020 MOV T25BFR+6,R1 ;PICK UP XSTO
9314 054476 010102 MOV R1,R2 ;SET UP EXPECTED
9315 054500 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
9316 054504 020102 CMP R1,R2 ;DOES EXP = REC'D
9317 054506 001406 BEQ 40$ ;BR, IF EQUAL (OK)
9318 054510 005237 002212 INC FATFLG ;BUMP COUNT
9322 054514 ERRHRD ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
054514 104456 TRAP C$ERHRD
054516 001057 .WORD 559
054520 055315 .WORD T25BOT
054522 015564 .WORD EXPREC
9323 054524 40$: CKLOOP
054524 104406 TRAP C$CLP1
9324 054526 012737 000001 055122 MOV #1,T25RB ;NUMBER OF RECORDS TO SPACE OVER
9325
9326 ;*****
9327 ;

```


TEST 5: SPACE RECORDS

```

9328      ;SPACE FORWARD,IE,ACK,CVC=1 COMMAND
9329      ;
9330      ;*****
9331
9332 054534 012737 140210 055120      MOV      #140210,T25PK3      ;SPACE FORWARD,IE,ACK,CVC=1 COMMAND
9333 054542 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9334 054546 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
9335 054552 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9336 054556 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9337 054562 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
9338 054566 020102      CMP      R1,R2      ;ARE THEY EQUAL
9339 054570 001406      BEQ      75$      ;BR, IF OK
9340 054572 005237 002212      INC      FATFLG      ;BUMP COUNT
9344 054576      ERRHRD      ERRNO,T25WDE,EXPREC      ;TSSR INCORRECT AFTER READ DATA
          054576 104456      TRAP      C$ERHRD
          054600 001060      .WORD      560
          054602 055235      .WORD      T25WDE
          054604 015564      .WORD      EXPREC
9345 054606      75$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
          054606 104406
9346 054610 012737 000020 055122      MOV      #20,T25RB      ;NUMBER OF RECORDS TO SPACE OVER
9347
9348      ;*****
9349      ;SPACE REVERSE,IE,ACK COMMAND
9350      ;
9351      ;*****
9352
9353
9354 054616 012737 100610 055120      MOV      #100610,T25PK3      ;SPACE REVERSE,IE,ACK COMMAND
9355 054624 012704 055120      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9356 054630 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
9357 054634 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9358 054640 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9359 054644 012702 100204      MOV      #SSR!BIT2!SC,R2      ;SET UP EXPECTED
9360 054650 020102      CMP      R1,R2      ;ARE THEY EQUAL
9361 054652 001406      BEQ      175$      ;BR, IF OK
9362 054654 005237 002212      INC      FATFLG      ;BUMP COUNT
9366 054660      ERRHRD      ERRNO,T25WDE,EXPREC      ;TSSR INCORRECT AFTER READ DATA
          054660 104456      TRAP      C$ERHRD
          054662 001061      .WORD      561
          054664 055235      .WORD      T25WDE
          054666 015564      .WORD      EXPREC
9367 054670      175$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
          054670 104406
9368 054672 013701 055026      MOV      T25BFR+14,R1      ;GET XST3 STATUS WORD
9369 054676 010102      MOV      R1,R2      ;SET UP EXPECTED
9370 054700 052702 000001      BIS      #BIT0,R2      ;SET THE RIB BIT
9371 054704 020102      CMP      R1,R2      ;ARE THEY EQUAL
9372 054706 001406      BEQ      180$      ;BR, IF EQUAL (GOOD)
9373 054710 005237 002212      INC      FATFLG      ;BUMP COUNT
9377 054714      ERRHRD      ERRNO,T25NEF,EXPREC      ;NEF SHOULD BE SET
          054714 104456      TRAP      C$ERHRD
          054716 001062      .WORD      562
          054720 055763      .WORD      T25NEF
          054722 015564      .WORD      EXPREC
9378 054724      180$:      CKLOOP
          054724 104406      TRAP      C$CLP1

```


9379	054726			
	054726			
	054726	104403		
9380	054730	023727	002212	000017
9381	054736	103402		
9382	054740	004737	017272	
9383	054744			
9384				
9385				
9386				
9387	054744	004737	016546	
9388	054750	103002		
9389	054752	000137	047626	
9390	054756			
9391	054756			
	054756	104432		
	054760	001542		
9392				
9393				
9394				
9395				
9397	054762			
9399	054770			
9400	054770	100004		
9401	054772	055000		
9402	054774	000000		
9403	054776	000010		
9404	055000			
9405	055000	055012		
9406	055002	000000		
9407	055004	000012		
9408	055006	000000		
9409	055010	000000		
9410	055012			
9411				
9412				
9413				
9415	055074			
9417	055100			
9418	055100	100006		
9419	055102	055130		
9420	055104	000000		
9421	055106	000006		
9422				
9424	055110			
9426	055120			
9427	055120	100005		
9428	055122			
9429	055122	003114		
9430	055124	000000		
9431	055126	000000		
9432				
9433				
9434				
9435				
9436	055130			
9437	055130	010		

```

ENDSUB

          CMP      FATFLG,#15.
          BLO      999$
          JSR      PC,CKDROP
999$:
;
;
;
          JSR      PC,TSTLOOP
          BCC      193$
          JMP      T25LOOP
193$:
          EXIT      TST

;+
;LOCAL STORAGE FOR THIS TEST
;-
          .BLKB      10-<.-TSV2&7>
T25PACKET:
          .WORD      100004
          .WORD      T25DATA
          .WORD      0
          .WORD      8.
T25DATA:
          .WORD      T25BFR
          .WORD      0
          .WORD      10.
          .WORD      0
T25DSW:  .WORD      0
T25BFR:  .BLKW      25.
;
;WRITE SUBSYSTEM MEMORY COMMANDS
;
          .BLKB      10-<.-TSV2&7>
T25PK2:
          .WORD      100006
          .WORD      T25BF2
          .WORD      0
          .WORD      6.
          .BLKB      10-<.-TSV2&7>
T25PK3:
          .WORD      100005
T25RB:
T25WB:  .WORD      FREE
          .WORD      0
T25SZ:  .WORD      0
          .EVEN
;
;
;
T25BF2:
T25BS0: .BYTE      10

```

```
; >>>>>>>>> END SUBTEST >>>>>>>>>>
      L10101:                                TRAP          C$ESUB
        ;IS ERROR COUNT AT 25
        ;BR, IF LESS THAN 25
        ;TRY TO DROP THE UNIT

;DO WE NEED TO ITERATE TEST
;BR, IF NO LOOP REQUIRED
;EXECUTE AGAIN

;ALL DONE THIS TEST                               TRAP          C$EXIT
                                              .WORD       L10071-..

;COMMAND PACKET FOR TEST
;WRITE CHARACTERISTICS COMMAND, WITH ACK
;ADDRESS OF CHARACTERISTICS BLOCK

;STARTING VALUE OF BLOCK SIZE
;CHARACTERISTICS DATA BLOCK
;ADDRESS OF MESSAGE BUFFER

;LENGTH OF MESSAGE BUFFER

;SELECT DRIVE ZERO
;MESSAGE BUFFER

;WRITE SUB SYS MEM COMMAND, AND ACK
;ADDRESS OF SELECT BLOCK DATA

;SIZE OF DATA PACKET

;READ COMMAND, AND ACK

;ADDRESS OF WRITE BUFFER

;SIZE OF BUFFER (EXTENT)

;BSELO AREA
```


TEST 5: SPACE RECORDS

9438	055131	200				T25BS1: .BYTE	200		;BSEL1 AREA
9439	055132	000000				T25S2: .WORD	0		;SEL 2 AREA
9440	055134	000000				T25S3: .WORD	0		;DATA AREA
9441									
9442									
9443									
9444									
9445									
9446	055136	100005				T25RN: .WORD	100005		;READ DATA (NEXT)
9447	055140	100405				T25WDR: .WORD	100405		;READ DATA RETRY
9448	055142	102005				T25CON: .WORD	102005		;WRITE CONTINUOUS
9449	055144	177777					177777		;END OF DATA
9450									
9451	055146	000000				T25CN2: .WORD	0		;COUNTER FOR RECORDS
9452	055150	000000				T25CNT: .WORD	0		;COUNTER FOR RECORDS
9453	055152	000000				T25DLY: .WORD	0		;COUNTER FOR RECORDS
9454									
9455									
9456									
9457									
9458									
9459	055154	127	122	111		T25SSR: .ASCIZ			'WRITE SUBSYSTEM Miscellaneous Read Status Failed'
9460	055235	124	123	123		T25WDE: .ASCIZ			'TSSR Not Correct After POSITION (SPACE) Command'
9461	055315	124	141	160		T25BOT: .ASCIZ			'Tape Not At BOT After REWIND Command'
9462	055362	124	123	123		T25TM: .ASCIZ			'TSSR Not Correct After POSITION (Space Command) Reject'
9463	055451	127	162	151		T25NET: .ASCIZ			'Write Tape, Status Alert, But No EOT Sensed'
9464	055525	123	160	141		T25WNG: .ASCIZ			'Space Forward Failed To Position On Correct Record'
9465	055610	123	160	141		T25BNC: .ASCIZ			'Space Forward, From BOT, Failed To Clear BOT Indication'
9466	055700	123	160	141		T25WNH: .ASCIZ			'Space Reverse Failed To Position On Correct Record'
9467	055763	123	160	141		T25NEF: .ASCIZ			'Space Reverse, At BOT, Failed To Set NEF (XST0)'
9468	056043	123	160	141		T25RIB: .ASCIZ			'Space Reverse, Into BOT, Failed To Set RIB (XST3)'
9469	056125	122	145	167		T25RWN: .ASCIZ			'Rewind (POSITION) Command Not Accepted'
9470	056174	104	162	151		T25OFL: .ASCIZ			'Drive 7 Select Failed To Set "OFL" In TSSR'
9471	056247	124	123	123		T25WDC: .ASCIZ			'TSSR Not Correct After READ DATA Command'
9472	056320	123	160	141		T25ID: .ASCIZ			'Space Records'
9473									
9474									
9475									
9476									
9477									
9478									
9479									
9480									
9481	056336					T25REST:			
9482	056336					SAVREG			;SAVE THE REGISTERS
9483	056342	012701	054770			MOV	#T25PACKET,R1		;START OF THE PACKET
9484	056346	012721	100004			MOV	#100004,(R1)+		;WRITE SUBSYSTEM MEM. WITH ACK
9485	056352	012721	055000			MOV	#T25DATA,(R1)+		;ADDRESS OF CHARAISTICS DATA BLOCK
9486	056356	005021				CLR	(R1)+		;EXTENDED ADDRESS
9487	056360	012721	000012			MOV	#10,(R1)+		;SIZE OF DATA BLOCK IN BYTES
9488	056364	012721	055012			MOV	#T25BFR,(R1)+		;ADDRESS OF MESSAGE BUFFER
9489	056370	005021				CLR	(R1)+		
9490	056372	012721	000024			MOV	#20,(R1)+		;LENGTH OF MESSAGE BUFFER
9491	056376	005021				CLR	(R1)+		
9492	056400	012711	000000			MOV	#0,(R1)		;SELECT DRIVE ZERO
9493	056404	012702	000030			MOV	#24,R2		;NUMBER OF LOCATIONS TO BE CLEARED
9494	056410	012762	177777	055012	64:	MOV	#177777,T25BFR(R2)		;ALL ONES TO MESSAGE BUFFER

TEST 5: SPACE RECORDS

9495	056416	005742		TST	-(R2)	;NEXT LOCATION	
9496	056420	022702	000000	CMP	#0,R2	;IS R2 AT ZERO YET	
9497	056424	001371		BNE	64	;KEEP GOING UNTIL DONE	
9498	056426	000207		RTS	PC	;RETURN	
9499							
9500	056430			T25RT2:			
9501	056430			SAVREG		;SAVE THE REGISTERS	
9502	056434	012701	055100	MOV	#T25PK2,R1	;START OF THE PACKET	
9503	056440	012721	100006	MOV	#100006,(R1)+	;WRITE SUBSYSTEM MEM. WITH ACK.	
9504	056444	012721	055130	MOV	#T25BF2,(R1)+	;ADDRESS OF DATA BLOCK	
9505	056450	005021		CLR	(R1)+	;EXTENDED ADDRESS	
9506	056452	012721	000006	MOV	#6,(R1)+	;SIZE OF DATA BLOCK IN BYTES	
9507	056456	005021		CLR	(R1)+		
9508	056460	012701	055130	MOV	#T25BF2,R1	;POINT TO DATA SEL AREA	
9509	056464	005021		CLR	(R1)+		
9510	056466	005011		CLR	(R1)		
9511	056470	000207		RTS	PC	;RETURN	
9512	056472			T25RT3:			
9513	056472			SAVREG		;SAVE THE REGISTERS	
9514	056476	012701	055120	MOV	#T25PK3,R1	;START OF THE PACKET	
9515	056502	012721	000000	MOV	#0,(R1)+	;WRITE SUBSYSTEM MEM. WITH ACK.	
9516	056506	012721	000000	MOV	#0,(R1)+	;ADDRESS OF DATA BLOCK	
9517	056512	005021		CLR	(R1)+	;EXTENDED ADDRESS	
9518	056514	012721	000000	MOV	#0,(R1)+	;SIZE OF DATA BLOCK IN BYTES	
9519	056520	000207		RTS	PC	;RETURN	
9520	056522			ENDTST			
	056522						
	056522	104401					
9521							
9522							
9523							
9524							
9525							
9526							
9527							
9528							
9529							
9530							
9531							
9532							
9533							
9534							
9535							
9536							
9537							
9538							
9539							
9540	056524						
	056524						
9541	056524	012737	006446	002170	MOV	#EPRT2,EPRTSW	;SECONDARY ERROR MESSAGE
9542	056532	004737	017364		JSR	PC,KTOFF	;DON'T NEED KT11
9547	056536	012700	075707		MOV	#TST26ID,R0	;ASCII MESSAGE TO IDENTIFY TEST
9548	056542	004737	016600		JSR	PC,TSTS TUP	;DO INITIAL TEST SETUP
9549	056546	012737	000005	002206	MOV	#5,LOOPCNT	;PERFORM 5 ITERATIONS
9550	056554	004737	022206		JSR	PC,MEMCK	;CHECK FOR MEMORY
9551	056560	005037	003126		CLR	NXMFLG	;SET FLAG
9552	056564	005037	073156		CLR	T26CNT	;CLEAR TAPE RECORD COUNTER

L10071: TRAP C#ETST

.SBTTL TEST 6: REREADS

```

;+
;THIS TEST VERIFIES THAT THE REREAD PREVIOUS AND REREAD NEXT
;COMMANDS OPERATE PROPERLY. VARIOUS COMBINATIONS OF ODD AND EVEN
;DATA BUFFER BOUNDRIES, RECORD SIZES (UP TO 64K BYTES IF MEMORY
;SPACE IS AVAILIABLE), AND BYTE-SWAP (SWP) AND OPPOSITE (OPP)
;CONRTOL ARE USED. ALSO TESTED ARE PROPER TERMINATIONS ON
;EXCEPTIONAL OR ERROR CONDITIONS: RECORD LENGTH LONG, RECORD
;LENGTH SHORT, READ REVERSE AT BOT, ILLEGAL DATA BUFFER ADDRESSES,
;AND DATA BUFFERS IN NONEXISTENT MEMORY.
;
;THE TEST CONSISTS OF THE FOLLOWING 15 SUBTESTS
;
;-

```

BGNTST

T6::

TEST 6: REREADS

```

9553 ;+
9554 ;
9555 ;TEST 6. SUBTEST 1
9556 ;
9557 ;
9558 ;VERIFIES THAT THE REREAD PREVIOUS COMMAND WITH OPP=0
9559 ;AND SWB=0 OPERATES PROPERLY. THE TAPE IS FIRST
9560 ;REWOUND AND THEN WRITTEN WITH A SERIES OF TEST
9561 ;RECORDS VARYING IN LENGTH AND DATA CONTENT. THE TAPE
9562 ;IS THEN REWOUND AGAIN. FOR EACH TEST RECORD, THE
9563 ;TAPE IS SPACED FORWARD ONE RECORD AND A REREAD
9564 ;PREVIOUS COMMAND ISSUED. RESULTS (STATUS, DATA,
9565 ;ETC.) ARE VERIFIED. THE BYTE COUNT ON EACH REREAD
9566 ;PREVIOUS COMMAND IS SET TO THE LENGTH OF THE EXPECTED
9567 ;RECORD. SO NO EXCEPTIONAL CONDITIONS SHOULD OCCUR.
9568 ;
9569 ;
9570 ;-
9571
9572 056570 T26LOOP:
9573
9574 056570 BGNSUB ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
          056570 T6.1: TRAP C#BSUB
9575 056572 104402 JSR PC,T26REST ;SET COMMAND PACKET
9576 056576 004737 075720 JSR PC,T26RT2 ;SET UP OTHER COMMAND PACKET
9577 056602 004737 076012 JSR PC,T26RT3 ;SET UP OTHER COMMAND PACKET
9578 056606 012737 176750 073164 MOV #65000.,T26DLY ;SET UP DELAY COUNTER
9579
9580 ;*****
9581 ;
9582 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
9583 ;
9584 ;*****
9585
9586 056614 004737 016064 10$: JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
9587 056620 103426 BCS 20$ ;BR IF INIT WAS OK
9588 056622 012727 000250 DELAY 250 ;DELAY FOR A REWIND TO FINISH
          056626 000000 MOV #250.(PC)+
          056630 013727 002116 .WORD 0
          056634 000000 MOV L$DLY,(PC)+
          056636 005367 177772 .WORD 0
          056642 001375 DEC -6(PC)
          056644 005367 177756 BNE -.4
          056650 001367 DEC -22(PC)
          056652 005337 073164 BNE -.20
9589 056656 001356 DEC T26DLY ;DEC COUNTER
9590 056660 005237 002212 BNE 10$ ;BR, IF DELAY NOT READY
9591 056664 010001 INC FATFLG ;BUMP COUNT
9592 056666 104455 MOV RO,R1 ;CONTENTS OF TSSR REGISTER
          056670 001131 ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
          056672 003650 TRAP C#ERDF
          056674 012124 .WORD 601
          .WORD SFIERR
          .WORD SFIMSG
9597 056676 013737 002172 073020 20$: MOV UNITN,T26DSW ;SET UP UNIT NUMBER
9598 056676

```


TEST 6: REREADS

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9599 056704 012704 073000      MOV      #T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
9600
9601      ;*****
9602      ;
9603      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
9604      ;
9605      ;*****
9606
9607 056710 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
9608 056714 103407      BCS      26$      ;BR, IF COMMAND ISSUED OK
9609 056716 005237 002212      INC      FATFLG      ;BUMP COUNT
9613 056722 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
9614 056724      ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
          056724 104456      TRAP      C$ERHRD
          056726 001132      .WORD    602
          056730 005054      .WORD    WRTMSG
          056732 012124      .WORD    SFMSG
9615 056734      26$:      CKLOOP      ;LOOP IF SELECTED
          056734 104406      TRAP      C$CLP1
9616
9617      ;*****
9618      ;
9619      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9620      ;
9621      ;*****
9622
9623 056736 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
9624 056742 103413      BCS      30$      ;BR, IF NO PROBLEM
9625 056744 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
9626 056750 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
9627 056754 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
9628 056756 005237 002212      INC      FATFLG      ;BUMP COUNT
9632 056762      ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
          056762 104456      TRAP      C$ERHRD
          056764 001133      .WORD    603
          056766 074464      .WORD    T26RWN
          056770 012136      .WORD    PKTSSR
9633 056772      30$:      CKLOOP      ;LOOP IF SELECTED
          056772 104406      TRAP      C$CLP1
9634
9635      ;*****
9636      ;
9637      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9638      ;
9639      ;*****
9640
9641 056774 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XSTO
9642 057000 010102      MOV      R1,R2      ;SET UP EXPECTED
9643 057002 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
9644 057006 020102      CMP      R1,R2      ;DOES EXP = REC'D
9645 057010 001406      BEQ      40$      ;BR, IF EQUAL (OK)
9646 057012 005237 002212      INC      FATFLG      ;BUMP COUNT
9650 057016      ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          057016 104456      TRAP      C$ERHRD
          057020 001134      .WORD    604
          057022 074175      .WORD    T26BOT
          057024 015564      .WORD    EXPREC

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TEST 6: REREADS

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9651 057026      104406      000400      073132      40$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
      057026      012703      003114      MOV      #256.,R3      ;RECORD SIZE
9652 057030      012703      000400      MOV      FREE,T26R8      ;STARTING WRITE BUFFER ADDRESS
9653 057034      013737      003114      ;*****
9654      ;
9655      ;WRITE DATA,ACK,CVC=1 COMMAND
9656      ;
9657      ;*****
9658      ;
9659      ;
9660      ;
9661 057042      012737      140005      073130      MOV      #140005,T26PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
9662 057050      012704      073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9663 057054      010300      017512      65$:      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
9664 057056      004737      073136      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
9665 057062      010337      000000      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
9666 057066      004737      016340      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
9667 057072      016501      000002      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9668 057076      012702      000200      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9669 057102      020102      001406      MOV      #SSR,R2      ;SET UP EXPECTED
9670 057106      005237      002212      CMP      R1,R2      ;ARE THEY EQUAL
9671 057110      005237      002212      BEQ      75$      ;BR, IF OK
9672 057112      005237      002212      INC      FATFLG      ;BUMP COUNT
9673 057116      005237      002212      ERRHRD      ERRNO,WRterr,EXPREC      ;TSSR INCORRECT AFTER WRITE DATA
9674 057120      001135      TRAP      C$ERRHRD
9675 057122      005111      .WORD      605
9676 057124      015564      .WORD      WRterr
9677      .WORD      EXPREC
9678 057126      104406      000414      75$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
9679 057130      005723      TST      (R3)+      ;BUMP RECORD SIZE
9680 057132      022703      CMP      #268.,R3      ;END OF RECORD YET
9681 057136      001346      BNE      65$      ;BR, IF MORE RECORDS TO WRITE
9682 057140      104406      80$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
9683 057142      120$:      ;*****
9684      ;
9685      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9686      ;
9687      ;*****
9688      ;
9689      ;
9690      ;
9691 057142      004737      011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
9692 057146      103413      BCS      130$      ;BR, IF NO PROBLEM
9693 057150      016501      000002      MOV      TSSR(R5),R1      ;GET TSSR
9694 057154      012702      000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
9695 057160      010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
9696 057162      005237      002212      INC      FATFLG      ;BUMP COUNT
9697 057166      005237      002212      ERRHRD      ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
9698 057166      104456      TRAP      C$ERRHRD
9699 057170      001136      .WORD      606
9700 057172      074464      .WORD      T26RWN
9701 057174      012136      .WORD      PKTSSR
9702 057176      104406      130$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
```


TEST 6: REREADS

```

9702
9703 ;*****
9704 ;
9705 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9706 ;
9707 ;*****
9708
9709 057200 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XSTO
9710 057204 010102      MOV      R1,R2      ;SET UP EXPECTED
9711 057206 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
9712 057212 020102      CMP      R1,R2      ;DOES EXP = REC'D
9713 057214 001406      BEQ      140$      ;BR, IF EQUAL (OK)
9714 057216 005237 002212      INC      FATFLG      ;BUMP COUNT
9718 057222      ERRHRD  ERRNO,T26BOT,PKTSSR      ;TAPE NOT AT BOT AFTER REWIND
9719 057232      104456      TRAP      C$ERHRD
9720 057234 012737 000400 073162      MOV      #256.,T26RSZ      ;SET RECORD SIZE
9721      001137      .WORD      607
9722      074175      .WORD      T26BOT
9723      012136      .WORD      PKTSSR
9724      140$: CKLOOP      ;LOOP IF SELECTED
9725      TRAP      C$CLP1
9726      057232 104406
9727      057234 012737 000400 073162      MOV      #256.,T26RSZ      ;SET RECORD SIZE
9728 ;*****
9729 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
9730 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
9731 ;*****
9732 057242 012703 000001      145$: MOV      #1,R3      ;SPACE ONE RECORD PARAMETER
9733 057246 004737 010556      JSR      PC,SPACE      ;CALL SPACE ROUTINE
9734 057252 103412      BCS      150$      ;BR, IF NO PROBLEM WITH SPACE COMMAND
9735 057254 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
9736 057260 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
9737 057264 005237 002212      INC      FATFLG      ;BUMP COUNT
9738 057270      ERRHRD  ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
9739 057270 104456      TRAP      C$ERHRD
9740 057272 001140      .WORD      608
9741 057274 073577      .WORD      T26SC
9742 057276 015564      .WORD      EXPREC
9743      150$: CKLOOP      ;RECORD SIZE
9744      TRAP      C$CLP1
9745      057300 104406
9746      057302 013703 073162      MOV      T26RSZ,R3      ;RECORD SIZE
9747      057306 013737 003114 073132      MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
9748 ;*****
9749 ;REREREAD DATA,CVC=1,ACK COMMAND
9750 ;*****
9751 057314 012737 141001 073130      165$: MOV      #141001,T26PK3      ;REREREAD DATA,CVC=1,ACK COMMAND
9752 057322 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9753 057326 010337 073136      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
9754 057332 010465 000000      MOV      R4,TSDB(R5)      ;ISSUE COMMAND
9755 057336 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9756 057342 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS

```


9755	057346	012702	000200		MOV	#SSR,R2	;SET UP EXPECTED		
9756	057352	020102			CMP	R1,R2	;ARE THEY EQUAL		
9757	057354	001406			BEQ	170\$;BR, IF OK		
9758	057356	005237	002212		INC	FATFLG	;BUMP COUNT		
9762	057362				ERRHRD	ERRNO,T26WDC,PKTSSR	;TSSR INCORRECT AFTER REREAD DATA		
	057362	104456					TRAP	C#ERHRD	
	057364	001141					.WORD	609	
	057366	075020					.WORD	T26WDC	
	057370	012136					.WORD	PKTSSR	
9763	057372			170\$:	CKLOOP		;LOO IF SELECTED		
	057372	104406					TRAP	C#CLP1	
9764	057374	013702	003114		MOV	FREE,R2	;CURRENT BUFFER ADDRESS TO R2		
9765	057400	010304			MOV	R3,R4	;CURRENT RECORD SIZE		
9766	057402	162704	000400		SUB	#256.,R4	;FIRST LOCATION IN BUFFER		
9767	057406	060204		173\$:	ADD	R2,R4	;SET UP POINTER		
9768	057410	021403			CMP	(R4),R3	;CHECK DATA READ (R3=DATA ALSO)		
9769	057412	001410			BEQ	180\$;BR, IF ALL IS WELL		
9770	057414	011401			MOV	(R4),R1	;RECD DATA		
9771	057416	C10302			MOV	R3,R2	;EXPECTED DATA		
9772	057420	005237	002212		INC	FATFLG	;BUMP COUNT		
9776	057424				ERRHRD	ERRNO,T26DTA,EXPREC	;DATA READ NOT = WRITTEN		
	057424	104456					TRAP	C#ERHRD	
	057426	001142					.WORD	610	
	057430	074242					.WORD	T26DTA	
	057432	015564					.WORD	EXPREC	
9777	057434			180\$:	CKLOOP		;LOOP IF SELECTED		
	057434	104406					TRAP	C#CLP1	
9778	057436	005724			TST	(R4)+	;BUMP TO NEXT LOCATION		
9779	057440	160204			SUB	R2,R4	;CORRECT RECORDS SIZE VALUE		
9780	057442	020403			CMP	R4,R3	;END OF RECORD YET		
9781	057444	001360			BNE	173\$;BR, IF NOT AT END OF RECORD		
9782	057446	005723			TST	(R3)+	;BUMP RECORD SIZE		
9783	057450	010337	073162		MOV	R3,T26RSZ	;RESET RECORD SIZE		
9784	057454	022703	000412		CMP	#266.,R3	;END OF RECORD YET		
9785	057460	001270			BNE	145\$;BR, IF MORE RECORDS TO READ		
9786	057462			190\$:	CKLOOP		;LOOP IF SELECTED		
	057462	104406					TRAP	C#CLP1	
9787	057464				ENDSUB		; >>>>>>>>> END SUBTEST >>>>>>>>>		
	057464						L10103:		
	057464	104403					TRAP	C#ESUB	
9788	057466	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		
9789	057474	103402			BLO	999\$;BR, IF LESS THAN 25		
9790	057476	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT		
9791	057502			999\$:					
9792									
9793				\$*					
9794				:					
9795				;TEST 6. SUBTEST 2					
9796				:					
9797				;VERIFIES THAT THE REREAD PREVIOUS COMMAND WITH OPP=0					
9798				;AND SWB=1 OPERATES PROPERLY. THE TEST SEQUENCE IS					
9799				;THE SAME AS THAT USED IN SUBTEST 1, BUT IT IS					
9800				;VERIFIED THAT DATA STORED BY THE COMMAND CONTAINS					
9801				;SWAPPED BYTES.					
9802				:					
9803				:					
9804				:					

TEST 6: REREADS

9805				-	BGNSUB		; >>>>>>>> BEGIN SUBTEST >>>>>>>>	
9806	057502						T6.2:	
	057502	104402					TRAP	C#BSUB
9807	057504	004737	075720		JSR PC,T26REST		;SET COMMAND PACKET	
9808	057510	004737	076012		JSR PC,T26RT2		;SET UP OTHER COMMAND PACKET	
9809	057514	004737	076054		JSR PC,T26RT3		;SET UP OTHER COMMAND PACKET	
9810								
9811								
9812								
9813								
9814								
9815								
9816								
9817	057520	004737	016064		JSR PC,SOFINIT		;DO INITIALIZE ON CONTROLLER	
9818	057524	103407			BCS 20\$;BR IF INIT WAS OK	
9819	057526	005237	002212		INC FATFLG		;BUMP COUNT	
9823	057532	010001			MOV R0,R1		;CONTENTS OF TSSR REGISTER	
9824	057534				ERRDF ERRNO,SFIERR,SFMSG		;FATAL ERROR TSSR WAS NOT OK	
	057534	104455					TRAP	C#ERDF
	057536	001143					.WORD	611
	057540	003650					.WORD	SFIERR
	057542	012124					.WORD	SFMSG
9825	057544	013737	002172	073020	20\$: MOV UNITN,T26DSW		;SET UP UNIT NUMBER	
9826								
9827	057552	012704	073000		MOV #T26PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS	
9828								
9829								
9830								
9831								
9832								
9833								
9834								
9835	057556	004737	010752		JSR PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS	
9836	057562	103407			BCS 26\$;BR, IF COMMAND ISSUED OK	
9837	057564	005237	002212		INC FATFLG		;BUMP COUNT	
9841	057570	010001			MOV R0,R4		;SAVE CONTENTS OF TSSR	
9842	057572				ERRHRD ERRNO,WRTMSG,SFMSG		;WRITE CHARACTERISTISC FAILED	
	057572	104456					TRAP	C#ERHRD
	057574	001144					.WORD	612
	057576	005054					.WORD	WRTMSG
	057600	012124					.WORD	SFMSG
9843	057602				26\$: CKLOOP		;LOOP IF SELECTED	
	057602	104406					TRAP	C#CLP1
9844								
9845								
9846								
9847								
9848								
9849								
9850								
9851	057604	004737	011104		JSR PC,REWIND		;CALL TAPE REWIND COMMAND	
9852	057610	103413			BCS 30\$;BR, IF NO PROBLEM	
9853	057612	016501	000002		MOV TSSR(R5),R1		;GET TSSR	
9854	057616	012702	000200		MOV #SSR,R2		;SET UP EXPECTED TSSR	
9855	057622	010004			MOV R0,R4		;PACKET ADDRESS SET UP	
9856	057624	005237	002212		INC FATFLG		;BUMP COUNT	

TEST 6: REREADS

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9860 057630          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
      057630 104456
      057632 001145
      057634 074464
      057636 012136
9861 057640          30$:  CKLOOP                      ;LOOP IF SELECTED
      057640 104406
9862
9863 ;*****
9864 ;
9865 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
9866 ;
9867 ;*****
9868
9869 057642 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XST0
9870 057646 010102          MOV      R1,R2              ;SET UP EXPECTED
9871 057650 052702 000002      BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
9872 057654 020102          CMP      R1,R2              ;DOES EXP = REC'D
9873 057656 001406          BEQ      40$                ;BR, IF EQUAL (OK)
9874 057660 005237 002212      INC      FATFLG          ;BUMP COUNT
9878 057664          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      057664 104456
      057666 001146
      057670 074175
      057672 015564
9879 057674          40$:  CKLOOP                      ;LOOP IF SELECTED
      057674 104406
9880 057676 012703 000400      MOV      #256.,R3        ;RECORD SIZE
9881 057702 013737 003114 073132  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
9882
9883 ;*****
9884 ;
9885 ;WRITE DATA,ACK,SWB COMMAND
9886 ;
9887 ;*****
9888
9889 057710 012737 110005 073130  MOV      #110005,T26PK3    ;WRITE DATA,ACK,SWB COMMAND
9890 057716 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9891 057722
9892 057722 010300          65$:  MOV      R3,R0          ;SET PATTERN IN CORRECT REGISTER
9893 057724 004737 017512      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
9894 057730 010337 073136      MOV      R3,T26SZ        ;SET UP RECORD SIZE IN PACKET
9895 057734 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
9896 057740 004737 016340      JSR      PC,WAITF        ;WAIT FOR SSR TO SET
9897 057744 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9898 057750 012702 000200      MOV      #SSR,R2          ;SET UP EXPECTED
9899 057754 020102          CMP      R1,R2              ;ARE THEY EQUAL
9900 057756 001406          BEQ      75$                ;BR, IF OK
9901 057760 005237 002212      INC      FATFLG          ;BUMP COUNT
9905 057764          ERRHRD  ERRNO,WRTErr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      057764 104456
      057766 001147
      057770 005111
      057772 012136
9906 057774          75$:  CKLOOP                      ;LOOP IF SELECTED
      057774 104406
9907 057776 005723          TST      (R3)+              ;BUMP RECORD SIZE

```

TRAP C\$ERHRD
 .WORD 613
 .WORD T26RWN
 .WORD PKTSSR
 TRAP C\$CLP1

TRAP C\$ERHRD
 .WORD 614
 .WORD T26BOT
 .WORD EXPREC
 TRAP C\$CLP1

TRAP C\$ERHRD
 .WORD 615
 .WORD WRTErr
 .WORD PKTSSR

TEST 6: REREADS

```

9908 060000 022703 000414      CMP      #268.,R3      ;END OF RECORD YET
9909 060004 001346      BNE      65#      ;BR, IF MORE RECORDS TO WRITE
9910 060006      104406      80# : CKLOOP      ;LOOP IF SELECTED
                                           TRAP      C#CLP1
9911 060010      120# :
9912
9913      ;*****
9914      ;
9915      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9916      ;
9917      ;*****
9918
9919 060010 004737 011104      JSR      PC.REWIND      ;CALL TAPE REWIND COMMAND
9920 060014 103413      BCS      130#      ;BR, IF NO PROBLEM
9921 060016 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
9922 060022 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
9923 060026 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
9924 060030 005237 002212      INC      FATFLG      ;BUMP COUNT
9928 060034      ERRHRD ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                           TRAP      C#ERHRD
                                           .WORD      616
                                           .WORD      T26RWN
                                           .WORD      PKTSSR
                                           TRAP      C#CLP1
9929 060044      130# : CKLOOP      ;LOOP IF SELECTED
9930 060044 104406
9931      ;*****
9932      ;
9933      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
9934      ;
9935      ;*****
9936
9937 060046 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XST0
9938 060052 010102      MOV      R1,R2      ;SET UP EXPECTED
9939 060054 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
9940 060060 020102      CMP      R1,R2      ;DOES EXP = REC'D
9941 060062 001406      BEQ      140#      ;BR, IF EQUAL (OK)
9942 060064 005237 002212      INC      FATFLG      ;BUMP COUNT
9946 060070      ERRHRD ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                           TRAP      C#ERHRD
                                           .WORD      617
                                           .WORD      T26BOT
                                           .WORD      EXPREC
                                           TRAP      C#CLP1
9947 060100      140# : CKLOOP      ;LOOP IF SELECTED
9948 060102 012737 000400 073162      MOV      #256.,T26RSZ      ;SET UP RECORD SIZE
9949
9950      ;*****
9951      ;
9952      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
9953      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
9954      ;
9955      ;*****
9956
9957 060110 012703 000001      145# : MOV      #1,R3      ;SPACE ONE RECORD PARAMETER
9958 060114 004737 010556      JSR      PC.SPACE      ;CALL SPACE ROUTINE
9959 060120 103412      BCS      150#      ;BR, IF NO PROBLEM WITH SPACE COMMAND

```


TEST 6: REREADS

```

9960 060122 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR
9961 060126 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED TSSR
9962 060132 005237 002212      INC     FATFLG      ;BUMP COUNT
9966 060136      ERRHRD  ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
                                TRAP      C#ERHRD
                                .WORD     618
                                .WORD     T26SC
                                .WORD     EXPREC
9967 060146      150$: CKLOOP
                                TRAP      C#CLP1
9968 060150 013703 073162      MOV    T26RSZ,R3      ;RECORD SIZE
9969 060154 013737 003114 073132  MOV    FREE,T26RB      ;STARTING READ BUFFER ADDRESS
9970
9971 ;*****
9972 ;
9973 ;REREAD DATA,CVC=1,ACK,SWB COMMAND
9974 ;
9975 ;*****
9976
9977 060162 012737 151001 073130      MOV    #151001,T26PK3      ;REREAD DATA,CVC=1,ACK,SWB COMMAND
9978 060170 012704 073130      165$: MOV    #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9979 060174 010337 073136      MOV    R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
9980 060200 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
9981 060204 004737 016340      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
9982 060210 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
9983 060214 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED
9984 060220 020102      CMP    R1,R2      ;ARE THEY EQUAL
9985 060222 001406      BEQ    170$      ;BR, IF OK
9986 060224 005237 002212      INC     FATFLG      ;BUMP COUNT
9990 060230      ERRHRD  ERRNO,T26WDC,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
                                TRAP      C#ERHRD
                                .WORD     619
                                .WORD     T26WDC
                                .WORD     PKTSSR
9991 060240      170$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C#CLP1
9992 060242 013702 003114      MOV    FREE,R2      ;CURRENT BUFFER ADDRESS TO R2
9993 060246 010304      MOV    R3,R4      ;CURRENT RECORD SIZE
9994 060250 162704 000400      SUB    #256.,R4      ;FIRST LOCATION IN BUFFER
9995 060254 060204      173$: ADD    R2,R4      ;SET UP POINTER
9996 060256 021403      CMP    (R4),R3      ;CHECK DATA READ (R3=DATA ALSO)
9997 060260 001410      BEQ    180$      ;BR, IF ALL IS WELL
9998 060262 011401      MOV    (R4),R1      ;RECD DATA
9999 060264 010302      MOV    R3,R2      ;EXPECTED DATA
10000 060266 005237 002212      INC     FATFLG      ;BUMP COUNT
10004 060272      ERRHRD  ERRNO,T26DTA,EXPREC      ;DATA READ NOT - WRITTEN
                                TRAP      C#ERHRD
                                .WORD     620
                                .WORD     T26DTA
                                .WORD     EXPREC
10005 060302      180$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C#CLP1
10006 060304 005724      TST     (R4)+      ;BUMP TO NEXT LOCATION
10007 060306 160204      SUB    R2,R4      ;CORRECT RECORDS SIZE VALUE
10008 060310 020403      CMP    R4,R3      ;END OF RECORD YET
10009 060312 001360      BNE    173$      ;BR, IF NOT AT END OF RECORD
10010 060314 005723      TST     (R3)+      ;BUMP RECORD SIZE

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Address	Op Code	Op 1	Op 2	Op 3	Op 4	Op 5	Op 6	Op 7	Op 8	Op 9	Op 10	Op 11	Op 12	Op 13	Op 14	Op 15	Op 16	Op 17	Op 18	Op 19	Op 20	Op 21	Op 22	Op 23	Op 24	Op 25	Op 26	Op 27	Op 28	Op 29	Op 30	Op 31	Op 32	Op 33	Op 34	Op 35	Op 36	Op 37	Op 38	Op 39	Op 40	Op 41	Op 42	Op 43	Op 44	Op 45	Op 46	Op 47	Op 48	Op 49	Op 50	Op 51	Op 52	Op 53	Op 54	Op 55	Op 56	Op 57	Op 58	Op 59	Op 60	Op 61	Op 62	Op 63	Op 64	Op 65	Op 66	Op 67	Op 68	Op 69	Op 70	Op 71	Op 72	Op 73	Op 74	Op 75	Op 76	Op 77	Op 78	Op 79	Op 80	Op 81	Op 82	Op 83	Op 84	Op 85	Op 86	Op 87	Op 88	Op 89	Op 90	Op 91	Op 92	Op 93	Op 94	Op 95	Op 96	Op 97	Op 98	Op 99	Op 100	Op 101	Op 102	Op 103	Op 104	Op 105	Op 106	Op 107	Op 108	Op 109	Op 110	Op 111	Op 112	Op 113	Op 114	Op 115	Op 116	Op 117	Op 118	Op 119	Op 120	Op 121	Op 122	Op 123	Op 124	Op 125	Op 126	Op 127	Op 128	Op 129	Op 130	Op 131	Op 132	Op 133	Op 134	Op 135	Op 136	Op 137	Op 138	Op 139	Op 140	Op 141	Op 142	Op 143	Op 144	Op 145	Op 146	Op 147	Op 148	Op 149	Op 150	Op 151	Op 152	Op 153	Op 154	Op 155	Op 156	Op 157	Op 158	Op 159	Op 160	Op 161	Op 162	Op 163	Op 164	Op 165	Op 166	Op 167	Op 168	Op 169	Op 170	Op 171	Op 172	Op 173	Op 174	Op 175	Op 176	Op 177	Op 178	Op 179	Op 180	Op 181	Op 182	Op 183	Op 184	Op 185	Op 186	Op 187	Op 188	Op 189	Op 190	Op 191	Op 192	Op 193	Op 194	Op 195	Op 196	Op 197	Op 198	Op 199	Op 200	Op 201	Op 202	Op 203	Op 204	Op 205	Op 206	Op 207	Op 208	Op 209	Op 210	Op 211	Op 212	Op 213	Op 214	Op 215	Op 216	Op 217	Op 218	Op 219	Op 220	Op 221	Op 222	Op 223	Op 224	Op 225	Op 226	Op 227	Op 228	Op 229	Op 230	Op 231	Op 232	Op 233	Op 234	Op 235	Op 236	Op 237	Op 238	Op 239	Op 240	Op 241	Op 242	Op 243	Op 244	Op 245	Op 246	Op 247	Op 248	Op 249	Op 250	Op 251	Op 252	Op 253	Op 254	Op 255	Op 256	Op 257	Op 258	Op 259	Op 260	Op 261	Op 262	Op 263	Op 264	Op 265	Op 266	Op 267	Op 268	Op 269	Op 270	Op 271	Op 272	Op 273	Op 274	Op 275	Op 276	Op 277	Op 278	Op 279	Op 280	Op 281	Op 282	Op 283	Op 284	Op 285	Op 286	Op 287	Op 288	Op 289	Op 290	Op 291	Op 292	Op 293	Op 294	Op 295	Op 296	Op 297	Op 298	Op 299	Op 300	Op 301	Op 302	Op 303	Op 304	Op 305	Op 306	Op 307	Op 308	Op 309	Op 310	Op 311	Op 312	Op 313	Op 314	Op 315	Op 316	Op 317	Op 318	Op 319	Op 320	Op 321	Op 322	Op 323	Op 324	Op 325	Op 326	Op 327	Op 328	Op 329	Op 330	Op 331	Op 332	Op 333	Op 334	Op 335	Op 336	Op 337	Op 338	Op 339	Op 340	Op 341	Op 342	Op 343	Op 344	Op 345	Op 346	Op 347	Op 348	Op 349	Op 350	Op 351	Op 352	Op 353	Op 354	Op 355	Op 356	Op 357	Op 358	Op 359	Op 360	Op 361	Op 362	Op 363	Op 364	Op 365	Op 366	Op 367	Op 368	Op 369	Op 370	Op 371	Op 372	Op 373	Op 374	Op 375	Op 376	Op 377	Op 378	Op 379	Op 380</
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TEST 6: REREADS

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10063      ;
10064      ;*****
10065      ;
10066 060372 004737 016064      JSR    PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
10067 060376 103407      BCS    20$      ;BR IF INIT WAS OK
10068 060400 005237 002212      INC    FATFLG      ;BUMP COUNT
10072 060404 010001      MOV    R0,R1      ;CONTENTS OF TSSR REGISTER
10073 060406      ERRDF    ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
10074 060406 104455      TRAP    C$ERDF      ;
10075 060410 001155      .WORD    621
10076 060412 003650      .WORD    SFIERR
10077 060414 012124      .WORD    SFIMSG
10078 060416 013737 002172 073020 20$:  MOV    UNITN,T26DSW      ;SET UP UNIT NUMBER
10079 060424 012704 073000      MOV    @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
10080      ;*****
10081      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
10082      ;*****
10083      ;
10084 060430 004737 010752      JSR    PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
10085 060434 103407      BCS    26$      ;BR, IF COMMAND ISSUED OK
10086 060436 005237 002212      INC    FATFLG      ;BUMP COUNT
10090 060442 010001      MOV    R0,R1      ;SAVE CONTENTS OF TSSR
10091 060444      ERRHRD    ERRNO,WRTMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
10092 060444 104456      TRAP    C$ERHRD      ;
10093 060446 001156      .WORD    622
10094 060450 005054      .WORD    WRTMSG
10095 060452 012124      .WORD    SFIMSG
10096 060454 104406      26$:  CKLOOP      ;LOOP IF SELECTED
10097 060454      TRAP    C$CLP1
10098      ;*****
10099      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10100      ;*****
10101 060456 004737 011104      JSR    PC,REWIND      ;CALL TAPE REWIND COMMAND
10102 060462 103413      BCS    30$      ;BR, IF NO PROBLEM
10103 060464 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR
10104 060470 012702 000200      MOV    @SSR,R2      ;SET UP EXPECTED TSSR
10105 060474 010004      MOV    R0,R4      ;PACKET ADDRESS SET UP
10106 060476 005237 002212      INC    FATFLG      ;BUMP COUNT
10107 060502      ERRHRD    ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
10108 060502 104456      TRAP    C$ERHRD      ;
10109 060504 001157      .WORD    623
10110 060506 074464      .WORD    T26RWN
10111 060510 012136      .WORD    PKTSSR
10112 060512 104406      30$:  CKLOOP      ;LOOP IF SELECTED
10113 060512      TRAP    C$CLP1
10114      ;*****
10115      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)

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TEST 6: REREADS

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10115
10116
10117
10118 060514 013701 073030
10119 060520 010102
10120 060522 052702 000002
10121 060526 020102
10122 060530 001406
10123 060532 005237 002212
10127 060536
      060536 104456
      060540 001160
      060542 074175
      060544 015564
10128 060546
      060546 104406
10129 060550 012703 000400
10130 060554 013737 003114 073132
10131
10132
10133
10134
10135
10136
10137
10138 060562 012737 140005 073130
10139 060570 012704 073130
10140 060574
10141 060574 010300
10142 060576 004737 017512
10143 060602 010337 073136
10144 060606 013777 073156 122300
10145 060614 062737 000001 073156
10146 060622 010465 000000
10147 060626 004737 016340
10148 060632 016501 000002
10149 060636 012702 000200
10150 060642 020102
10151 060644 001406
10152 060646 005237 002212
10156 060652
      060652 104456
      060654 001161
      060656 005111
      060660 012136
10157 060662
      060662 104406
10158 060664 005723
10159 060666 022703 000414
10160 060672 001401
10161 060674 000737
10162 060676
10163 060676 005037 073156
10164
10165
10166
10167

;*****
;
MOV      T26BFR+6,R1      ;PICK UP XSTO
MOV      R1,R2            ;SET UP EXPECTED
BIS      @BIT1,R2         ;SET BOT BIT IN EXPECTED
CMP      R1,R2            ;DOES EXP = REC'D
BEQ      404              ;BR, IF EQUAL (OK)
INC      FATFLG           ;BUMP COUNT
ERRHRD   ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C4ERHRD
                                .WORD     624
                                .WORD     T26BOT
                                .WORD     EXPREC
404:      CKLOOP          ;LOOP IF SELECTED
                                TRAP      C4CLP1
MOV      #256.,R3         ;RECORD SIZE
MOV      FREE,T26RB       ;STARTING WRITE BUFFER ADDRESS
;*****
;WRITE DATA,CVC=1,ACK COMMAND
;*****
MOV      #140005,T26PK3   ;WRITE DATA,CVC=1,ACK COMMAND
MOV      #T26PK3,R4       ;SET UP R4 WITH PACKET ADDRESS
654:      MOV      R3,R0    ;SET PATTERN IN CORRECT REGISTER
JSR      PC,FILLMEM        ;FILL MEMORY WITH RECORD SIZE
MOV      R3,T26SZ          ;SET UP RECORD SIZE IN PACKET
MOV      T26CNT,BFREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
ADD      #1,T26CNT         ;NUMBER READY FOR NEXT RECORD
MOV      R4,TSD8(R5)       ;ISSUE COMMAND
JSR      PC,WAITF          ;WAIT FOR SSR TO SET
MOV      TSSR(R5),R1       ;GET TSSR CONTENTS
MOV      #SSR,R2           ;SET UP EXPECTED
CMP      R1,R2             ;ARE THEY EQUAL
BEQ      754              ;BR, IF OK
INC      FATFLG           ;BUMP COUNT
ERRHRD   ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C4ERHRD
                                .WORD     625
                                .WORD     WRTErr
                                .WORD     PKTSSR
754:      CKLOOP          ;LOOP IF SELECTED
                                TRAP      C4CLP1
TST      (R3),             ;BUMP THE RECORD SIZE
CMP      #268.,R3         ;MAXIMUM SIZE YET
BEQ      1204             ;BR, IF AT END OF WRITE SEQUENCE
BR       654              ;WRITE MORE RECORDS
1204:      CLR      T26CNT  ;SET RECORD COUNTER BACK TO ZERO
;*****
;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE

```


TEST 6: REREADS

```
10168
10169
10170
10171 060702 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
10172 060706 103413              BCS      130$           ;BR, IF NO PROBLEM
10173 060710 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
10174 060714 012702 000200      MOV      #SSR,R2        ;SET UP EXPECTED TSSR
10175 060720 010004              MOV      R0,R4          ;PACKET ADDRESS SET UP
10176 060722 005237 002212      INC       FATFLG         ;BUMP COUNT
10180 060726              ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP      C#ERHRD
                                .WORD     626
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                104456
                                001162
                                074464
                                012136
10181 060736              130$:  CKLOOP                  ;LOOP IF SELECTED
                                TRAP      C#CLP1
                                060736 104406
10182
10183
10184
10185
10186
10187
10188
10189 060740 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XST0
10190 060744 010102              MOV      R1,R2          ;SET UP EXPECTED
10191 060746 052702 000002      BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
10192 060752 020102              CMP      R1,R2          ;DOES EXP = REC'D
10193 060754 001406              BEQ      140$           ;BR, IF EQUAL (OK)
10194 060756 005237 002212      INC       FATFLG         ;BUMP COUNT
10198 060762              ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C#ERHRD
                                .WORD     627
                                .WORD     T26BOT
                                .WORD     EXPREC
                                104456
                                001163
                                074175
                                015564
10199 060772              140$:  CKLOOP                  ;LOOP IF SELECTED
                                TRAP      C#CLP1
                                060772 104406
10200
10201
10202
10203
10204
10205
10206
10207
10208 060774 012703 000001      MOV      #1,R3          ;SPACE 1 RECORD FORWARD
10209 061000 004737 010556      JSR      PC,SPACE      ;SPACE CALL
10210 061004 012703 000400      MOV      #256.,R3      ;RECORD SIZE
10211 061010 013737 003114 073132 150$: MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
10212
10213
10214
10215
10216
10217
10218
10219 061016 012737 161001 073130 165$: MOV      #161001,T26PK3      ;REREAD DATA,CVC=1,ACK, OPP COMMAND
10220 061024 012704 073130      MOV      #T26PK3,R4        ;SET UP R4 WITH PACKET ADDRESS
```


TEST 6: REREADS

PC	Address	Instruction	Comments	PC	Address	Instruction	Comments	PC	Address	Instruction	Comments
10221	061030	010337	073136	MOV	R3,T26SZ		;SET UP RECORD SIZE IN PACKET				
10222	061034	010465	000000	MOV	R4,TSDB(R5)		;ISSUE COMMAND				
10223	061040	004737	016340	JSR	PC,WAITF		;WAIT FOR SSR TO SET				
10224	061044	016501	000002	MOV	TSSR(R5),R1		;GET TSSR CONTENTS				
10225	061050	012702	000200	MOV	#SSR,R2		;SET UP EXPECTED				
10226	061054	020102		CMP	R1,R2		;ARE THEY EQUAL				
10227	061056	001406		BEQ	170\$;BR, IF OK				
10228	061060	005237	002212	INC	FATFLG		;BUMP COUNT				
10232	061064			ERRHRD	ERRNO,T26RRG,PKTSSR		;TSSR INCORRECT AFTER REREAD DATA				
	061064	104456						TRAP		C#ERHRD	
	061066	001164						.WORD		628	
	061070	073502						.WORD		T26RRG	
	061072	012136						.WORD		PKTSSR	
10233	061074			170\$: CKLOOP			;LOOP IF SELECTED				
	061074	104406						TRAP		C#CLP1	
10234	061076	005723		TST	(R3)+		;BUMP RECORD SIZE				
10235	061100	062737	000001 073156	ADD	#1,T26CNT		;BUMP TAPE RECORD COUNTER				
10236											
10237											
10238											
10239											
10240											
10241											
10242											
10243	061106	012737	140001 073130	MOV	#140001,T26PK3		;READ DATA, CVC=1, ACK COMMAND				
10244	061114	010337	073136	MOV	R3,T26SZ		;SET SIZE INTO PACKET				
10245	061120	010465	000000	MOV	R4,TSDB(R5)		;ISSUE READ DATA COMMAND				
10246	061124	004737	016340	JSR	PC,WAITF		;WAIT FOR SSR				
10247	061130	016501	000002	MOV	TSSR(R5),R1		;PICK UP THE TSSR				
10248	061134	012702	000200	MOV	#SSR,R2		;SET UP EXPECTED				
10249	061140	020102		CMP	R1,R2		;IS THE TSSR OK				
10250	061142	001406		BEQ	195\$;BR, IF TSSR OK (GOOD)				
10251	061144	005237	002212	INC	FATFLG		;BUMP COUNT				
10255	061150			ERRHRD	ERRNO,RDERR,PKTSSR		;READ DATA COMMAND FAILED				
	061150	104456						TRAP		C#ERHRD	
	061152	001165						.WORD		629	
	061154	005204						.WORD		RDERR	
	061156	012136						.WORD		PKTSSR	
10256	061160			195\$: CKLOOP			;LOOP IF SELECTED				
	061160	104406						TRAP		C#CLP1	
10257	061162	017701	121726	MOV	#FREE,R1		;FIRST WORD FROM READ BUFFER				
10258	061166	013702	073156	MOV	T26CNT,R2		;SET UP EXPECTED				
10259	061172	020102		CMP	R1,R2		;IS TAPE POSITION CORRECT				
10260	061174	001406		BEQ	197\$;KEEP GOING POSITION OK				
10261	061176	005237	002212	INC	FATFLG		;BUMP COUNT				
10265	061202			ERRHRD	ERRNO,T26WNG,EXPREC		;TAPE POSITION INCORRECT				
	061202	104456						TRAP		C#ERHRD	
	061204	001166						.WORD		630	
	06120										

Address	Offset	Label	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464
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TEST 6: REREADS

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10324 061330 005237 002212      INC      FATFLG      ;BUMP COUNT
10328 061334 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
10329 061336      ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C:ERHRD
                                .WORD     632
                                .WORD     WRTMSG
                                .WORD     SFMSG
                                061336 104456
                                061340 001170
                                061342 005054
                                061344 012124
10330 061346      26:      CKLOOP      ;LOOP IF SELECTED
                                TRAP      C:CLP1
                                061346 104406
10331
10332      ;*****
10333      ;
10334      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10335      ;
10336      ;*****
10337
10338 061350 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
10339 061354 103413      BCS      30:      ;BR, IF NO PROBLEM
10340 061356 C16501 000002      MOV      TSSR(R5),R1      ;GET TSSR
10341 061362 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
10342 061366 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
10343 061370 005237 002212      INC      FATFLG      ;BUMP COUNT
10347 061374      ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C:ERHRD
                                .WORD     633
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                061374 104456
                                061376 001171
                                061400 074464
                                061402 012136
10348 061404      30:      CKLOOP      ;LOOP IF SELECTED
                                TRAP      C:CLP1
                                061404 104406
10349
10350      ;*****
10351      ;
10352      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
10353      ;
10354      ;*****
10355
10356 061406 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XSTO
10357 061412 010102      MOV      R1,R2      ;SET UP EXPECTED
10358 061414 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
10359 061420 020102      CMP      R1,R2      ;DOES EXP = REC'D
10360 061422 001406      BEQ      40:      ;BR, IF EQUAL (OK)
10361 061424 005237 002212      INC      FATFLG      ;BUMP COUNT
10365 061430      ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C:ERHRD
                                .WORD     634
                                .WORD     T26BOT
                                .WORD     EXPREC
                                061430 104456
                                061432 001172
                                061434 074175
                                061436 015564
10366 061440      40:      CKLOOP      ;LOOP IF SELECTED
                                TRAP      C:CLP1
                                061440 104406
10367 061442 012703 000400      MOV      #256,R3      ;RECORD SIZE
10368 061446 013737 003114 073132  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
10369
10370      ;*****
10371      ;
10372      ;WRITE DATA,CVC=1,ACK COMMAND
10373      ;
10374      ;*****
```


TEST 6: REREADS

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10375
10376 061454 012737 140005 073130      MOV      #140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
10377 061462 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
10378 061466
10379 061466 010300      65$:      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
10380 061470 004737 017512      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
10381 061474 010337 073136      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
10382 061500 013777 073156 121406      MOV      T26CNT,BFREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
10383 061506 062737 000001 073156      ADD      #1,T26CNT      ;NUMBER READY FOR NEXT RECORD
10384 061514 010465 000000      MOV      R4,T26DB(R5)      ;ISSUE COMMAND
10385 061520 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
10386 061524 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
10387 061530 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
10388 061534 020102      CMP      R1,R2      ;ARE THEY EQUAL
10389 061536 001406      BEQ      75$      ;BR, IF OK
10390 061540 005237 002212      INC      FATFLG      ;BUMP COUNT
10394 061544      ERRHRD      ERRNO,WRterr,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
10395 061544 104456      TRAP      C#ERRHRD
10396 061546 001173      .WORD      635
10397 061550 005111      .WORD      WRterr
10398 061552 012136      .WORD      PKTSSR
10399 061554      75$:      CKLOOP      ;LOOP IF SELECTED
10399 061554 104406      TRAP      C#CLP1
10396 061556 005723      TST      (R3)+      ;BUMP THE RECORD SIZE
10397 061560 022703 000412      CMP      #266.,R3      ;MAXIMUM SIZE YET
10398 061564 001401      BEQ      120$      ;BR, IF AT END OF WRITE SEQUENCE
10399 061566 000737      BR      65$      ;WRITE MORE RECORDS
10400 061570
10401 061570 005037 073156      120$:      CLR      T26CNT      ;SET RECORD COUNTER BACK TO ZERO
10402
10403      ;*****
10404      ;
10405      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10406      ;
10407      ;*****
10408
10409 061574 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
10410 061600 103413      BCS      130$      ;BR, IF NO PROBLEM
10411 061602 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
10412 061606 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
10413 061612 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
10414 061614 005237 002212      INC      FATFLG      ;BUMP COUNT
10418 061620      ERRHRD      ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
10418 061620 104456      TRAP      C#ERRHRD
10419 061622 001174      .WORD      636
10420 061624 074464      .WORD      T26RWN
10421 061626 012136      .WORD      PKTSSR
10419 061630      130$:      CKLOOP      ;LOOP IF SELECTED
10419 061630 104406      TRAP      C#CLP1
10420
10421      ;*****
10422      ;
10423      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
10424      ;
10425      ;*****
10426
10427 061632 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XSTO

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TEST 6: REREADS

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10428 061636 010102          MOV      R1,R2          ;SET UP EXPECTED
10429 061640 052702 000002    BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
10430 061644 020102          CMP      R1,R2          ;DOES EXP = REC'D
10431 061646 001406          BEQ      140$          ;BR, IF EQUAL (OK)
10432 061650 005237 002212    INC      FATFLG        ;BUMP COUNT
10436 061654          ERRHRD  ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD    637
                                .WORD    T26BOT
                                .WORD    EXPREC
                                TRAP      C$CLP1
10437 061664          140$: CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
10438 061664 104406
10439
10440 ;*****
10441 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
10442 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
10443 ;
10444 ;*****
10445
10446 061666 012703 000001      MOV      #1,R3          ;SET UP SPACE FORWARD 1
10447 061672 004737 010556    JSR      PC,SPACE      ;ISSUE SPACE COMMAND
10448 061676 012703 000400      MOV      #256.,R3       ;RECORD SIZE
10449 061702 013737 003114 073132 150$: MOV      FREE,T26RB    ;STARTING READ BUFFER ADDRESS
10450
10451 ;*****
10452 ;
10453 ;REREAD DATA,CVC=1,ACK, OPP COMMAND
10454 ;
10455 ;*****
10456
10457 061710 012737 171001 073130 165$: MOV      #171001,T26PK3    ;REREAD DATA,CVC=1,ACK, OPP COMMAND
10458 061716 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
10459 061722 010337 073136      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
10460 061726 010465 000000      MOV      R4,TSD8(R5)    ;ISSUE COMMAND
10461 061732 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
10462 061736 016501 000002      MOV      TSSR(R5),R1    ;GET TSSR CONTENTS
10463 061742 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
10464 061746 020102          CMP      R1,R2          ;ARE THEY EQUAL
10465 061750 001406          BEQ      170$          ;BR, IF OK
10466 061752 005237 002212    INC      FATFLG        ;BUMP COUNT
10470 061756          ERRHRD  ERRNO,T26RRF,PKTSSR    ;TSSR INCORRECT AFTER REREAD DATA
                                TRAP      C$ERHRD
                                .WORD    638
                                .WORD    T26RRF
                                .WORD    PKTSSR
                                TRAP      C$CLP1
10471 061766          170$: CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
10472 061766 104406
10473 061770 017701 121120      MOV      $FREE,R1      ;FIRST WORD FROM READ BUFFER
10474 061774 013702 073156      MOV      T26CNT,R2    ;SET UP EXPECTED
10475 062000 000302          SWAB      R2            ;SWAP BYTES IN EXPECTED
10476 062002 020102          CMP      R1,R2          ;IS TAPE POSITION CORRECT
10477 062004 001406          BEQ      190$          ;KEEP GOING POSITION OK
10478 062006 005237 002212    INC      FATFLG        ;BUMP COUNT
10481 062012          ERRHRD  ERRNO,T26WNG,EXPREC    ;TAPE POSITION INCORRECT
                                TRAP      C$ERHRD
                                .WORD    639
                                .WORD    639

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TEST 6: REREADS

	062016	073166					.WORD	T26WNG
	062020	015564					.WORD	EXPREC
10482	062022			190#:	CKLOOP			
	062022	104406					TRAP	C#CLP1
10483	062024	005723			TST (R3)+	;NEXT RECORD SIZE		
10484	062026	062737	000001	073156	ADD #1,T26CNT	;BUMP TAPE RECORD COUNTER		
10485								
10486								
10487								
10488								
10489								
10490								
10491								
10492	062034	012737	140001	073130	MOV #140001,T26PK3	;READ DATA, CVC=1, ACK COMMAND		
10493	062042	010337	073136		MOV R3,T26SZ	;SET SIZE INTO PACKET		
10494	062046	010465	000000		MOV R4,TSD8(R5)	;ISSUE READ DATA COMMAND		
10495	062052	004737	016340		JSR PC,WAITF	;WAIT FOR SSR		
10496	062056	016501	000002		MOV TSSR(R5),R1	;PICK UP THE TSSR		
10497	062062	C12702	000200		MOV #SSR,R2	;SET UP EXPECTED		
10498	062066	020102			CMP R1,R2	;IS THE TSSR OK		
10499	062070	001406			BEQ 215#	;BR, IF TSSR OK (GOOD)		
10500	062072	005237	002212		INC FATFLG	;BUMP COUNT		
10504	062076				ERRHRD ERRNO,T26RDF,PKTSSR	;READ DATA COMMAND FAILED		
	062076	104456					TRAP	C#ERHRD
	062100	001200					.WORD	640
	062102	073336					.WORD	T26RDF
	062104	012136					.WORD	PKTSSR
10505	062106			215#:	CKLOOP	;LOOP IF SELECTED		
	062106	104406					TRAP	C#CLP1
10506	062110	017701	121000		MOV #FREE,R1	;FIRST WORD FROM READ BUFFER		
10507	062114	013702	073156		MOV T26CNT,R2	;SET UP EXPECTED		
10508	062120	020102			CMP R1,R2	;IS TAPE POSITION CORRECT		
10509	062122	001406			BEQ 217#	;KEEP GOING POSITION OK		
10510	062124	005237	002212		INC FATFLG	;BUMP COUNT		
10514	062130				ERRHRD ERRNO,T26WNG,EXPREC	;TAPE POSITION INCORRECT		
	062130	104456					TRAP	C#ERHRD
	062132	001201					.WORD	641
	062134	073166					.WORD	T26WNG
	062136	015564					.WORD	EXPREC
10515	062140			217#:	CKLOOP			
	062140	104406					TRAP	C#CLP1
10516	062142	022703	000410		CMP #264.,R3	;AT MAX SIZE YET		
10517	062146	001401			BEQ 220#	;BR, IF AT END OF THE SUBTEST		
10518	062150	000654			BR 150#	;KEEP GOING MORE RECORDS		
10519	062152			220#:				
10520	062152				ENDSUB	;>>>>>>>>> END SUBTEST >>>>>>>>>		
	062152					L10106:		
	062152	104403					TRAP	C#ESUB
10521	062154	023727	002212	000017	CMP FATFLG,#15.	;IS ERROR COUNT AT 25		
10522	062162	103402			BLO 999#	;BR, IF LESS THAN 25		
10523	062164	004737	017272		JSR PC,CKDROP	;TRY TO DROP THE UNIT		
10524	062170			999#:				
10525								
10526								
10527								
10528								
10529								

TEST 6: REREADS

[illegible]

TEST 6: REREADS

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10582 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10583 ;
10584 ;*****
10585
10586 062272 004737 011104 JSR PC.REWIND ;CALL TAPE REWIND COMMAND
10587 062276 103413 BCS 30$ ;BR, IF NO PROBLEM
10588 062300 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
10589 062304 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED TSSR
10590 062310 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
10591 062312 005237 002212 INC FATFLG ;BUMP COUNT
10595 062316 ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP C#ERHRD
                                .WORD 644
                                .WORD T26RWN
                                .WORD PKTSSR
                                TRAP C#CLP1
10596 062326 104406 30$: CKLOOP ;LOOP IF SELECTED
                                TRAP C#CLP1
10597
10598 ;*****
10599 ;
10600 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
10601 ;
10602 ;*****
10603
10604 062330 013701 073030 MOV T26BFR+6,R1 ;PICK UP XST0
10605 062334 010102 MOV R1,R2 ;SET UP EXPECTED
10606 062336 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
10607 062342 020102 CMP R1,R2 ;DOES EXP = REC'D
10608 062344 001406 BEQ 40$ ;BR, IF EQUAL (OK)
10609 062346 005237 002212 INC FATFLG ;BUMP COUNT
10613 062352 ERRHRD ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP C#ERHRD
                                .WORD 645
                                .WORD T26BOT
                                .WORD EXPREC
                                TRAP C#CLP1
10614 062362 104406 40$: CKLOOP ;LOOP IF SELECTED
                                TRAP C#CLP1
10615 062364 012703 001000 MOV #512.,R3 ;RECORD SIZE
10616 062370 013737 003114 073132 MOV FREE,T26RB ;STARTING WRITE BUFFER ADDRESS
10617
10618 ;*****
10619 ;
10620 ;WRITE DATA,CVC=1,ACK COMMAND
10621 ;
10622 ;*****
10623
10624 062376 012737 140005 073130 MOV #140005,T26PK3 ;WRITE DATA,CVC=1,ACK COMMAND
10625 062404 012704 073130 MOV #T26PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
10626 062410
10627 062410 010337 073136 65$: MOV R3,T26SZ ;SET UP RECORD SIZE IN PACKET
10628 062414 010465 000000 MOV R4,TSDB(R5) ;ISSUE COMMAND
10629 062420 004737 016340 JSR PC.WAITF ;WAIT FOR SSR TO SET
10630 062424 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10631 062430 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
10632 062434 020102 CMP R1,R2 ;ARE THEY EQUAL
10633 062436 001406 BEQ 75$ ;BR, IF OK
10634 062440 005237 002212 INC FATFLG ;BUMP COUNT

```


TEST 6: REREADS

```
10638 062444          ERRHRD  ERRNO,WRterr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      062444 104456          TRAP  C#ERHRD
      062446 001206          .WORD 646
      062450 005111          .WORD WRterr
      062452 012136          .WORD PKTSSR
10639 062454          75#:  CKLOOP                      ;LOOP IF SELECTED
      062454 104406          TRAP  C#CLP1
10640 062456 005303          DEC  R3                      ;SET RECORD SIZE TO 511.
10641 062460 013737 003114 073132  MOV  FREE,T26RB      ;STARTING READ BUFFER ADDRESS
10642
10643 ;*****
10644 ;
10645 ;REREAD DATA,CVC=1,ACK,OPP=1 COMMAND
10646 ;
10647 ;*****
10648
10649 062466 012737 161001 073130 165#:  MOV  #16100,T26PK3      ;REREAD DATA,CVC=1,ACK,OPP=1 COMMAND
10650 062474 012704 073130      MOV  #T26PK3,4          ;SET UP R4 WITH PACKET ADDRESS
10651 062500 C10337 073136      MOV  R3,T26SZ          ;SET UP RECORD SIZE IN PACKET
10652 062504 010465 000000      MOV  R4,TSD8(R5)        ;ISSUE COMMAND
10653 062510 004737 016340      JSR  PC,WAITF          ;WAIT FOR SSR TO SET
10654 062514 016501 000002      MOV  TSSR(R5),R1        ;GET TSSR CONTENTS
10655 062520 012702 100204      MOV  #SSR!SC!BIT2,R2     ;SET UP EXPECTED
10656 062524 020102          CMP  R1,R2                ;ARE THEY EQUAL
10657 062526 001406          BEQ  170#                  ;BR, IF OK
10658 062530 005237 002212      INC  FATFLG              ;BUMP COUNT
10662 062534          ERRHRD  ERRNO,T26TRL,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
      062534 104456          TRAP  C#ERHRD
      062536 001207          .WORD 647
      062540 075542          .WORD T26TRL
      062542 012136          .WORD PKTSSR
10663 062544          170#:  CKLOOP                      ;LOOP IF SELECTED
      062544 104406          TRAP  C#CLP1
10664
10665 ;*****
10666 ;
10667 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
10668 ;
10669 ;*****
10670
10671 062546 013701 073030      MOV  T26BFR+6,R1          ;GET MESSAGE BUFFER
10672 062552 010102          MOV  R1,R2                ;SET UP EXPECTED
10673 062554 052702 010000      BIS  #BIT12,R2          ;SET THE RLL BIT IN EXPECTED
10674 062560 020102          CMP  R1,R2                ;ARE THEY EQUAL
10675 062562 001406          BEQ  180#                  ;BR, IF EQUAL (ALL IS WELL)
10676 062564 005237 002212      INC  FATFLG              ;BUMP COUNT
10680 062570          ERRHRD  ERRNO,T26LON,EXPREC      ;THE RLL BIT WAS NOT SET IN XST0
      062570 104456          TRAP  C#ERHRD
      062572 001210          .WORD 648
      062574 075310          .WORD T26LON
      062576 015564          .WORD EXPREC
10681 062600          180#:  CKLOOP                      ;LOOP IF SELECTED
      062600 104406          TRAP  C#CLP1
10682 062602 012703 000777      MOV  #511.,R3            ;SET RECORD SIZE
10683 062606 013737 003114 073132  MOV  FREE,T26RB      ;STARTING READ BUFFER ADDRESS
10684
10685 ;*****
```


[illegible]

TEST 6: REREADS

10737						;SHORT (RLS) BIT SET. IT IS VERIFIED THAT THE					
10738						;RESIDUAL BYTE COUNTER (RBPCR) IN THE MESSAGE BUFFER					
10739						;CONTAINS THE PROPER NONZERO VALUE (E.G., THE					
10740						;DIFFERENCE BETWEEN THE ORIGINAL BYTE COUNT AND THE					
10741						;ACTUAL RECORD LENGTH). RESULTS ARE VERIFIED FOR BOTH					
10742						;STATES OF OPP (0 AND 1).					
10743						:					
10744						:					
10745						:					
10746						;-					
10747	062746					BGNSUB			>>>>>>>>>>	BEGIN SUBTEST >>>>>>>>>>	
	062746								T6.6:		
	062746	104402							TRAP	C#SUBB	
10748	062750	004737	075720			JSR PC,T26REST			;SET COMMAND PACKET		
10749	062754	004737	076012			JSR PC,T26RT2			;SET UP OTHER COMMAND PACKET		
10750	062760	004737	076054			JSR PC,T26RT3			;SET UP OTHER COMMAND PACKET		
10751											
10752						;*****					
10753						:					
10754						;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR					
10755						:					
10756						;*****					
10757											
10758	062764	004737	016064			JSR PC,SOFINIT			;DO INITIALIZ ON CONTROLLER		
10759	062770	103407				BCS 20:			;BR IF INIT WAS OK		
10760	062772	005237	002212			INC FATFLG			;BUMP COUNT		
10764	062776	010001				MOV R0,R1			;CONTENTS OF TSSR REGISTER		
10765	063000					ERRDF ERRNO,SFIERR,SFIMSG			;FATAL ERROR TSSR WAS NOT OK		
	063000	104455							TRAP	C#ERDF	
	063002	001213							.WORD	651	
	063004	003650							.WORD	SFIERR	
	063006	012124							.WORD	SFIMSG	
10766	063010	013737	002172	073020	20:	MOV UNITN,T26DSW			;SET UP UNIT NUMBER		
10767											
10768	063016	012704	073000			MOV #T26PACKET,R4			;SUBROUTINE NEEDS PACKET ADDRESS		
10769											
10770						;*****					
10771						:					
10772						;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)					
10773						:					
10774						;*****					
10775											
10776	063022	004737	010752			JSR PC,WRTCHR			;ISSUE WRITE CHARACTERISTICS		
10777	063026	103407				BCS 26:			;BR, IF COMMAND ISSUED OK		
10778	063030	005237	002212			INC FATFLG			;BUMP COUNT		
10782	063034	010001				MOV R0,R1			;SAVE CONTENTS OF TSSR		
10783	063036					ERRHRD ERRNO,WRTMSG,SFIMSG			;WRITE CHARACTERISTISC FAILED		
	063036	104456							TRAP	C#ERRRD	
	063040	001214							.WORD	652	
	063042	005054							.WORD	WRTMSG	
	063044	012124							.WORD	SFIMSG	
10784	063046				26:	CKLOOP			;LOOP IF SELECTED		
	063046	104406							TRAP	C#CLP1	
10785						;*****					
10786						:					
10787											

TEST 6: REREADS

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10789
10790
10791
10792 063050 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
10793 063054 103413      BCS      304            ;BR, IF NO PROBLEM
10794 063056 016501 000002      MOV      TSSR(R5),R1    ;GET TSSR
10795 063062 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
10796 063066 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
10797 063070 005237 002212      INC      FATFLG      ;BUMP COUNT
10801 063074      ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
      063074 104456      TRAP      C0ERHRD
      063076 001215      .WORD    653
      063100 074464      .WORD    T26RWN
      063102 012136      .WORD    PKTSSR
10802 063104      304:      CKLOOP      ;LOOP IF SELECTED
      063104 104406      TRAP      C0CLP1
10803
10804
10805
10806
10807
10808
10809
10810 063106 013701 073030      MOV      T26FR+6,R1    ;PICK UP XSTO
10811 063112 010102      MOV      R1,R2      ;SET UP EXPECTED
10812 063114 052702 000002      BIS      #BIT1,R2    ;SET BOT BIT IN EXPECTED
10813 063120 020102      CMP      R1,R2      ;DOES EXP = REC'D
10814 063122 001406      BEQ      404            ;BR, IF EQUAL (OK)
10815 063124 005237 002212      INC      FATFLG      ;BUMP COUNT
10819 063130      ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      063130 104456      TRAP      C0ERHRD
      063132 001216      .WORD    654
      063134 074175      .WORD    T26BOT
      063136 015564      .WORD    EXPREC
10820 063140      404:      CKLOOP      ;LOOP IF SELECTED
      063140 104406      TRAP      C0CLP1
10821 063142 012703 000400      MOV      #256,R3      ;RECORD SIZE
10822 063146 013737 003114 073132 MOV      FREE,T26RB    ;STARTING WRITE BUFFER ADDRESS
10823
10824
10825
10826
10827
10828
10829
10830 063154 012737 140005 073130 MOV      #140005,T26PK3 ;WRITE DATA,CVC-1,ACK COMMAND
10831 063162 012704 073130      MOV      #T26PK3,R4    ;SET UP R4 WITH PACKET ADDRESS
10832 063166
10833 063166 010337 073136      MOV      R3,T26SZ    ;SET UP RECORD SIZE IN PACKET
10834 063172 010465 C00000      MOV      R4,TSD8(R5) ;ISSUE COMMAND
10835 063176 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
10836 063202 016501 000002      MOV      TSSR(R5),R1 ;GET TSSR CONTENTS
10837 063206 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
10838 063212 020102      CMP      R1,R2      ;ARE THEY EQUAL
10839 063214 001406      BEQ      754            ;BR, IF OK
10840 063216 005237 002212      INC      FATFLG      ;BUMP COUNT
10844 063222      ERRHRD  ERRNO,WRTEERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA

```


TEST 6: REREADS

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063222 104456                                TRAP    C#ERHRD
063224 001217                                .WORD    655
063226 005111                                .WORD    WRTERR
063230 012136                                .WORD    PKTSSR
10845 063232 104406                                TRAP    C#CLP1
063232 104406                                .WORD
10846 063234 012703 001000                                .WORD
10847 063240 013737 003114 073132                                .WORD
10848
10849
10850
10851
10852
10853
10854
10855 063246 012737 161001 073130
10856 063254 012704 073130
10857 063260 010337 073136
10858 063264 C10465 000000
10859 063270 004737 016340
10860 063274 016501 000002
10861 063300 012702 100204
10862 063304 020102
10863 063306 001406
10864 063310 005237 002212
10868 063314
063314 104456
063316 001220
063320 075542
063322 012136
10869 063324
063324 104406
10870
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10873
10874
10875
10876
10877 063326 013701 073030
10878 063332 010102
10879 063334 052702 040000
10880 063340 020102
10881 063342 001406
10882 063344 005237 002212
10886 063350
063350 104456
063352 001221
063354 075372
063356 015564
10887 063360
063360 104406
10888 063362 013701 073026
10889 063366 012702 000400
10890 063372 020102
10891 063374 001406
10892 063376 005237 002212

754:  CKLOOP                                ;LOOP IF SELECTED
MOV    #512.,R3                                ;RECORD SIZE
MOV    FREE,T26RB                            ;STARTING READ BUFFER ADDRESS

;*****
;REREAD PREVIOUS,ACK,CVC=1,OPP=1
;*****

1654:  MOV    #161001,T26PK3                ;REREAD PREVIOUS,ACK,CVC=1,OPP=1
MOV    #T26PK3,R4                            ;SET UP R4 WITH PACKET ADDRESS
MOV    R3,T26SZ                              ;SET UP RECORD SIZE IN PACKET
MOV    R4,TSD8(R5)                          ;ISSUE COMMAND
JSR    PC,WAITF                              ;WAIT FOR SSR TO SET
MOV    TSSR(R5),R1                          ;GET TSSR CONTENTS
MOV    #SSR!SC!BIT2,R2                      ;SET UP EXPECTED
CMP    R1,R2                                ;ARE THEY EQUAL
BEQ    1704                                ;BR, IF OK
INC    FATFLG                              ;BUMP COUNT
ERRHRD  ERRNO,T26TRL,PKTSSR                ;TSSR INCORRECT AFTER READ DATA

1704:  CKLOOP                                ;LOOP IF SELECTED
TRAP    C#CLP1                                TRAP    C#ERHRD
                                           .WORD    656
                                           .WORD    T26TRL
                                           .WORD    PKTSSR

;*****
;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
;*****

MOV    T26BFR+6,R1                          ;GET MESSAGE BUFFER
MOV    R1,R2                                ;SET UP EXPECTED
BIS    #8BIT14,R2                          ;SET THE RLS BIT IN EXPECTED
CMP    R1,R2                                ;ARE THEY EQUAL
BEQ    1804                                ;BR, IF EQUAL (ALL IS WELL)
INC    FATFLG                              ;BUMP COUNT
ERRHRD  ERRNO,T26LOP,EXPREC                ;THE RLL BIT WAS NOT SET IN XST0

1804:  CKLOOP                                TRAP    C#CLP1
MOV    T26BFR+4,R1                          ;PICK UP RESIDUAL BYTE COUNTER
MOV    #256.,R2                            ;THIS SHOULD BE THE DIFFERENCE
CMP    R1,R2                                ;IS THE DIFFERENCE CORRECT
BEQ    1904                                ;BR, IF CORRECT
INC    FATFLG                              ;BUMP COUNT

```


TEST 6: REREADS

```
10896 063402          ERRHRD  ERRNO,T26PBP,EXPREC      ;RBPGR NOT CORRECT      TRAP      C#ERHRD
      063402 104456          .WORD      658
      063404 001222          .WORD      T26PBP
      063406 075454          .WORD      EXPREC
      063410 015564
10897 063412          190$:  CKLOOP                      ;LOOP IF SELECTED      TRAP      C#CLP1
      063412 104406
10898 063414 001000      MOV      #512.,R3              ;RECORD SIZE
10899 063420 013737 003114 073132      MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
10900
10901      ;*****
10902      ;REREAD PREVIOUS,ACK,CVC=1,OPP=0
10903      ;
10904      ;*****
10905
10906
10907 063426 012737 141001 073130      MOV      #141001,T26PK3      ;REREAD PREVIOUS,ACK,CVC=1,OPP=0
10908 063434 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
10909 063440 010337 073136      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
10910 063444 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
10911 063450 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
10912 063454 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
10913 063460 012702 100204      MOV      #SSR!SC!BIT2,R2      ;SET UP EXPECTED
10914 063464 020102      CMP      R1,R2      ;ARE THEY EQUAL
10915 063466 001406      BEQ      270$      ;BR, IF OK
10916 063470 005237 002212      INC      FATFLG      ;BUMP COUNT
10920 063474          ERRHRD  ERRNO,T26TRL,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      063474 104456          TRAP      C#ERHRD
      063476 001223          .WORD      659
      063500 075542          .WORD      T26TRL
      063502 012136          .WORD      PKTSSR
10921 063504          270$:  CKLOOP                      ;LOOP IF SELECTED      TRAP      C#CLP1
      063504 104406
10922
10923      ;*****
10924      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
10925      ;
10926      ;*****
10927
10928
10929 063506 013701 073030      MOV      T26BFR+6,R1      ;GET MESSAGE BUFFER
10930 063512 010102      MOV      R1,R2      ;SET UP EXPECTED
10931 063514 052702 040000      BIS      #BIT14,R2      ;SET THE RLS BIT IN EXPECTED
10932 063520 020102      CMP      R1,R2      ;ARE THEY EQUAL
10933 063522 001406      BEQ      280$      ;BR, IF EQUAL (ALL IS WELL)
10934 063524 005237 002212      INC      FATFLG      ;BUMP COUNT
10938 063530          ERRHRD  ERRNO,T26LOP,EXPREC      ;THE RLL BIT WAS NOT SET IN XSTO
      063530 104456          TRAP      C#ERHRD
      063532 001224          .WORD      660
      063534 075372          .WORD      T26LOP
      063536 015564          .WORD      EXPREC
10939 063540          280$:  CKLOOP
      063540 104406          TRAP      C#CLP1
10940 063542 013701 073026      MOV      T26BFR+4,R1      ;PICK UP RESIDUAL BYTE COUNTER
10941 063546 012702 000400      MOV      #256.,R2      ;THIS SHOULD BE THE DIFFERENCE
10942 063552 020102      CMP      R1,R2      ;IS THE DIFFERENCE CORRECT
10943 063554 001405      BEQ      290$      ;BR, IF CORRECT
```


Line	Address	Label	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464
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TEST 6: REREADS

```
10994 063652 013737 002172 073020 204:  MOV    UNITN,T26DSW      ;SET UP UNIT NUMBER
10995                                     ;
10996 063660 012704 073000      MOV    #T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
10997                                     ;
10998                                     ;*****
10999                                     ;
11000                                     ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
11001                                     ;
11002                                     ;*****
11003                                     ;
11004 063664 004737 010752      JSR     PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
11005 063670 103407          BCS     264          ;BR, IF COMMAND ISSUED OK
11006 063672 005237 002212      INC     FATFLG      ;BUMP COUNT
11010 063676 010001          MOV     R0,R1      ;SAVE CONTENTS OF TSSR
11011 063700          ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
11011 063700 104456          TRAP     C#ERHRD
11011 063702 001226          .WORD   662
11011 063704 005054          .WORD   WRTMSG
11011 063706 C12124          .WORD   SFMSG
11012 063710          264:    CKLOOP      ;LOOP IF SELECTED
11012 063710 104406          TRAP     C#CLP1
11013                                     ;
11014                                     ;*****
11015                                     ;
11016                                     ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
11017                                     ;
11018                                     ;*****
11019                                     ;
11020 063712 004737 011104      JSR     PC,REWIND      ;CALL TAPE REWIND COMMAND
11021 063716 103413          BCS     304          ;BR, IF NO PROBLEM
11022 063720 016501 000002      MOV     TSSR(R5),R1      ;GET TSSR
11023 063724 012702 000200      MOV     #SSR,R2      ;SET UP EXPECTED TSSR
11024 063730 010004          MOV     R0,R4      ;PACKET ADDRESS SET UP
11025 063732 005237 002212      INC     FATFLG      ;BUMP COUNT
11029 063736          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
11029 063736 104456          TRAP     C#ERHRD
11029 063740 001227          .WORD   663
11029 063742 074464          .WORD   T26RWN
11029 063744 012136          .WORD   PKTSSR
11030 063746          304:    CKLOOP      ;LOOP IF SELECTED
11030 063746 104406          TRAP     C#CLP1
11031                                     ;
11032                                     ;*****
11033                                     ;
11034                                     ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
11035                                     ;
11036                                     ;*****
11037                                     ;
11038 063750 013701 073030      MOV     T26BFR+6,R1      ;PICK UP XSTO
11039 063754 010102          MOV     R1,R2      ;SET UP EXPECTED
11040 063756 052702 000002      BIS     #BIT1,R2      ;SET BOT BIT IN EXPECTED
11041 063762 020102          CMP     R1,R2      ;DOES EXP = REC'D
11042 063764 001406          BEQ     404          ;BR, IF EQUAL (OK)
11043 063766 005237 002212      INC     FATFLG      ;BUMP COUNT
11047 063772          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
11047 063772 104456          TRAP     C#ERHRD
11047 063774 001230          .WORD   664
```


TEST 6: REREADS

```
11098 064152 104406      130$: CKLOOP                      ;LOOP IF SELECTED          TRAP C#CLP1
11099 064152
11100
11101 ;*****
11102 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
11103 ;*****
11104
11105
11106 064154 013701 073030      MOV T26BFR+6,R1          ;PICK UP XSTO
11107 064160 010102          MOV R1,R2          ;SET UP EXPECTED
11108 064162 052702 000002      BIS #BIT1,R2          ;SET BOT BIT IN EXPECTED
11109 064166 020102          CMP R1,R2          ;DOES EXP = REC'D
11110 064170 001406          BEQ 140$          ;BR, IF EQUAL (OK)
11111 064172 005237 002212      INC FATFLG          ;BUMP COUNT
11115 064176          ERRHRD ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
11116 064176 104456          TRAP C#ERHRD
11117 064200 001233          .WORD 667
11118 064202 C74175          .WORD T26BOT
11119 064204 015564          .WORD EXPREC
11120
11121      140$: CKLOOP                      ;LOOP IF SELECTED          TRAP C#CLP1
11122 064206 104406          MOV #256.,T26RSZ          ;STORE START RECORD SIZE
11123 064210 012737 000400 073162      BR 150$          ;SKIP THE SPACE THIS TIME
11124 064216 000420
11125
11126 ;*****
11127 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
11128 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
11129 ;*****
11130
11131      145$: MOV #1,R3          ;SPACE ONE RECORD PARAMETER
11132 JSR PC,SPACE          ;CALL SPACE ROUTINE
11133 BCS 150$          ;BR, IF NO PROBLEM WITH SPACE COMMAND
11134 MOV TSSR(R5),R1          ;GET TSSR
11135 MOV #SSR,R2          ;SET UP EXPECTED TSSR
11136 MOV R0,R4          ;PACKET ADDRESS SET UP
11137 INC FATFLG          ;BUMP COUNT
11138 ERRHRD ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
11139 064250 104456          TRAP C#ERHRD
11140 064252 001234          .WORD 668
11141 064254 073577          .WORD T26SC
11142 064256 015564          .WORD EXPREC
11143
11144      150$: CKLOOP
11145 064260 104406          MOV T26RSZ,R3          ;RECORD SIZE
11146 064262 013703 073162      MOV FREE,T26RB          ;STARTING READ BUFFER ADDRESS
11147 064266 013737 003114 073132
11148
11149 ;*****
11150 ;REREREAD DATA,CVC=1,ACK COMMAND
11151 ;*****
11152
11153      165$: MOV #141401,T26PK3          ;REREREAD DATA,CVC=1,ACK COMMAND
11154 064274 012737 141401 073130      MOV #T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
11155 064302 012704 073130
```


TEST 6: REREADS

PC	OP	OP2	OP3	OP4	OP5	OP6	OP7	OP8	OP9	OP10	OP11	OP12	OP13	OP14	OP15	OP16	OP17	OP18	OP19	OP20	OP21	OP22	OP23	OP24	OP25	OP26	OP27	OP28	OP29	OP30	OP31	OP32	OP33	OP34	OP35	OP36	OP37	OP38	OP39	OP40	OP41	OP42	OP43	OP44	OP45	OP46	OP47	OP48	OP49	OP50	OP51	OP52	OP53	OP54	OP55	OP56	OP57	OP58	OP59	OP60	OP61	OP62	OP63	OP64	OP65	OP66	OP67	OP68	OP69	OP70	OP71	OP72	OP73	OP74	OP75	OP76	OP77	OP78	OP79	OP80	OP81	OP82	OP83	OP84	OP85	OP86	OP87	OP88	OP89	OP90	OP91	OP92	OP93	OP94	OP95	OP96	OP97	OP98	OP99	OP100	OP101	OP102	OP103	OP104	OP105	OP106	OP107	OP108	OP109	OP110	OP111	OP112	OP113	OP114	OP115	OP116	OP117	OP118	OP119	OP120	OP121	OP122	OP123	OP124	OP125	OP126	OP127	OP128	OP129	OP130	OP131	OP132	OP133	OP134	OP135	OP136	OP137	OP138	OP139	OP140	OP141	OP142	OP143	OP144	OP145	OP146	OP147	OP148	OP149	OP150	OP151	OP152	OP153	OP154	OP155	OP156	OP157	OP158	OP159	OP160	OP161	OP162	OP163	OP164	OP165	OP166	OP167	OP168	OP169	OP170	OP171	OP172	OP173	OP174	OP175	OP176	OP177	OP178	OP179	OP180	OP181	OP182	OP183	OP184	OP185	OP186	OP187	OP188	OP189	OP190	OP191	OP192	OP193	OP194	OP195	OP196	OP197	OP198	OP199	OP200	OP201	OP202	OP203	OP204	OP205	OP206	OP207	OP208	OP209	OP210	OP211	OP212	OP213	OP214	OP215	OP216	OP217	OP218	OP219	OP220	OP221	OP222	OP223	OP224	OP225	OP226	OP227	OP228	OP229	OP230	OP231	OP232	OP233	OP234	OP235	OP236	OP237	OP238	OP239	OP240	OP241	OP242	OP243	OP244	OP245	OP246	OP247	OP248	OP249	OP250	OP251	OP252	OP253	OP254	OP255	OP256	OP257	OP258	OP259	OP260	OP261	OP262	OP263	OP264	OP265	OP266	OP267	OP268	OP269	OP270	OP271	OP272	OP273	OP274	OP275	OP276	OP277	OP278	OP279	OP280	OP281	OP282	OP283	OP284	OP285	OP286	OP287	OP288	OP289	OP290	OP291	OP292	OP293	OP294	OP295	OP296	OP297	OP298	OP299	OP300	OP301	OP302	OP303	OP304	OP305	OP306	OP307	OP308	OP309	OP310	OP311	OP312	OP313	OP314	OP315	OP316	OP317	OP318	OP319	OP320	OP321	OP322	OP323	OP324	OP325	OP326	OP327	OP328	OP329	OP330	OP331	OP332	OP333	OP334	OP335	OP336	OP337	OP338	OP339	OP340	OP341	OP342	OP343	OP344	OP345	OP346	OP347	OP348	OP349	OP350	OP351	OP352	OP353	OP354	OP355	OP356	OP357	OP358	OP359	OP360	OP361	OP362	OP363	OP364	OP365	OP366	OP367	OP368	OP369	OP370	OP371	OP372	OP373	OP374	OP375	OP376	OP377	OP378	OP379	OP380	OP381	OP382	OP383	OP384	OP385	OP386	OP387	OP388	OP389	OP390	OP391	OP392	OP393	OP394	OP395	OP396	OP397	OP398	OP399	OP400	OP401	OP402	OP403	OP404	OP405	OP406	OP407	OP408	OP409	OP410	OP411	OP412	OP413	OP414	OP415	OP416	OP417	OP418	OP419
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TEST 6: REREADS

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11252 064572 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
11253 064576 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
11254 064602 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
11255 064604 005237 002212      INC      FATFLG      ;BUMP COUNT
11259 064610      ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
      064610 104456      TRAP      C#ERHRD
      064612 001241      .WORD    673
      064614 074464      .WORD    T26RWN
      064616 012136      .WORD    PKTSSR
11260 064620      30$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      064620 104406
11261
11262      ;*****
11263      ;
11264      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
11265      ;
11266      ;*****
11267
11268 064622 C13701 073030      MOV      T26BFR+6,R1      ;PICK UP XST0
11269 064626 010102      MOV      R1,R2      ;SET UP EXPECTED
11270 064630 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
11271 064634 020102      CMP      R1,R2      ;DOES EXP = REC'D
11272 064636 001406      BEQ      40$      ;BR, IF EQUAL (OK)
11273 064640 005237 002212      INC      FATFLG      ;BUMP COUNT
11277 064644      ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      064644 104456      TRAP      C#ERHRD
      064646 001242      .WORD    674
      064650 074175      .WORD    T26BOT
      064652 015564      .WORD    EXPREC
11278 064654      40$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      064654 104406
11279 064656 012703 000400      MOV      #256.,R3      ;RECORD SIZE
11280 064662 013737 003114 073132  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
11281
11282      ;*****
11283      ;
11284      ;WRITE DATA,CVC=1,ACK,SWB COMMAND
11285      ;
11286      ;*****
11287
11288 064670 012737 150005 073130      MOV      #150005,T26PK3 ;WRITE DATA,CVC=1,ACK,SWB COMMAND
11289 064676 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
11290 064702
11291 064702 010300      65$:      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
11292 064704 004737 017512      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
11293 064710 010337 073136      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
11294 064714 010465 000000      MOV      R4,TSD8(R5)    ;ISSUE COMMAND
11295 064720 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
11296 064724 016501 000002      MOV      TSSR(R5),R1    ;GET TSSR CONTENTS
11297 064730 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
11298 064734 020102      CMP      R1,R2      ;ARE THEY EQUAL
11299 064736 001406      BEQ      75$      ;BR, IF OK
11300 064740 005237 002212      INC      FATFLG      ;BUMP COUNT
11304 064744      ERRHRD  ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
      064744 104456      TRAP      C#ERHRD
      064746 001243      .WORD    675
      064750 005111      .WORD    WRERR

```


TEST 6: REREADS

11305	064752	012136		75:	CKLOOP	;LOOP IF SELECTED	.WORD	PKTSSR
	064754	104406					TRAP	C:CLP1
11306	064756	005723			TST (R3)+	;BUMP RECORD SIZE		
11307	064760	022703	000414		CMF #268.,R3	;END OF RECORD YET		
11308	064764	001346			BNE 65:	;BR, IF MORE RECORDS TO WRITE		
11309	064766	104406		80:	CKLOOP	;LOOP IF SELECTED	TRAP	C:CLP1
11310	064770			120:				
11311								
11312								
11313								
11314								
11315								
11316								
11317								
11318	064770	004737	011104		JSR PC,REWIND	;CALL TAPE REWIND COMMAND		
11319	064774	103413			BCS 130:	;BR, IF NO PROBLEM		
11320	064776	C16501	000002		MOV TSSR(R5),R1	;GET TSSR		
11321	065002	012702	000200		MOV #SSR,R2	;SET UP EXPECTED TSSR		
11322	065006	010004			MOV R0,R4	;PACKET ADDRESS SET UP		
11323	065010	005237	002212		INC FATFLG	;BUMP COUNT		
11327	065014				ERRHRD ERRNO,T26RWN,PKTSSR	;REWIND NOT ACCEPTED		
	065014	104456					TRAP	C:ERHRD
	065016	001244					.WORD	676
	065020	074464					.WORD	T26RWN
	065022	012136					.WORD	PKTSSR
11328	065024			130:	CKLOOP	;LOOP IF SELECTED	TRAP	C:CLP1
	065024	104406						
11329								
11330								
11331								
11332								
11333								
11334								
11335								
11336	065026	013701	073030		MOV T26BFR+6,R1	;PICK UP XST0		
11337	065032	010102			MOV R1,R2	;SET UP EXPECTED		
11338	065034	052702	000002		BIS #BIT1,R2	;SET BOT BIT IN EXPECTED		
11339	065040	020102			CMF R1,R2	;DOES EXP = REC'D		
11340	065042	001406			BEQ 140:	;BR, IF EQUAL (OK)		
11341	065044	005237	002212		INC FATFLG	;BUMP COUNT		
11345	065050				ERRHRD ERRNO,T26BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND		
	065050	104456					TRAP	C:ERHRD
	065052	001245					.WORD	677
	065054	074175					.WORD	T26BOT
	065056	015564					.WORD	EXPREC
11346	065060			140:	CKLOOP	;LOOP IF SELECTED	TRAP	C:CLP1
	065060	104406						
11347	065062	012737	000400	073162	MOV #256.,T26RSZ	;START RECORD SIZE		
11348	065070	000420			BR 150:	;SKIP SAPCE THIS TIME		
11349								
11350								
11351								
11352								
11353								
11354								

TEST 6: REREADS

```
11355 ;*****
11356
11357 065072 012703 000001 145: MOV #1,R3 ;SPACE ONE RECORD PARAMETER
11358 065076 004737 010556 JSR PC,SPACE ;CALL SPACE ROUTINE
11359 065102 103413 BCS 150: ;BR, IF NO PROBLEM WITH SPACE COMMAND
11360 065104 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
11361 065110 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED TSSR
11362 065114 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
11363 065116 005237 002212 INC FATFLG ;BUMP COUNT
11367 065122 ERRHRD ERRNO,T26SC,EXPREC ;POSITION (SPACE RECORDS) FAILED
                                TRAP C1ERHRD
                                .WORD 678
                                .WORD T26SC
                                .WORD EXPREC
                                TRAP C1CLP1
11368 065132 150: CKLOOP
                                TRAP C1CLP1
                                .WORD 679
                                .WORD T26WDC
                                .WORD PKTSSR
11369 065134 013703 073162 MOV T26RSZ,R3 ;RECORD SIZE
11370 065140 013737 003114 073132 MOV FREE,T26RB ;STARTING READ BUFFER ADDRESS
11371 ;*****
11372 ;
11373 ;REREAD DATA,ACK,CVC=1,SWB COMMAND
11374 ;
11375 ;*****
11376 ;*****
11377
11378 065146 012737 151401 073130 165: MOV #151401,T26PK3 ;REREAD DATA,ACK,CVC=1,SWB COMMAND
11379 065154 012704 073130 MOV #T26PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
11380 065160 010337 073136 MOV R3,T26SZ ;SET UP RECORD SIZE IN PACKET
11381 065164 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
11382 065170 004737 016340 JSR PC,WAITF ;WAIT FOR SSR TO SET
11383 065174 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
11384 065200 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
11385 065204 020102 CMP R1,R2 ;ARE THEY EQUAL
11386 065206 001406 BEQ 170: ;BR, IF OK
11387 065210 005237 002212 INC FATFLG ;BUMP COUNT
11391 065214 ERRHRD ERRNO,T26WDC,PKTSSR ;TSSR INCORRECT AFTER REREAD DATA
                                TRAP C1ERHRD
                                .WORD 679
                                .WORD T26WDC
                                .WORD PKTSSR
                                TRAP C1CLP1
11392 065224 170: CKLOOP ;LOOP IF SELECTED
                                TRAP C1CLP1
                                .WORD 680
                                .WORD T26DTA
                                .WORD EXPREC
11393 065226 013702 003114 MOV FREE,R2 ;CURRENT BUFFER ADDRESS TO R2
11394 065232 010304 MOV R3,R4 ;CURRENT RECORD SIZE
11395 065234 162704 000400 SUB #256.,R4 ;FIRST LOCATION IN BUFFER
11396 065240 060204 173: ADD R2,R4 ;SET UP POINTER
11397 065242 021403 CMP (R4),R3 ;CHECK DATA READ (R3=DATA ALSO)
11398 065244 001410 BEQ 180: ;BR, IF ALL IS WELL
11399 065246 011401 MOV (R4),R1 ;RECD DATA
11400 065250 010302 MOV R3,R2 ;EXPECTED DATA
11401 065252 005237 002212 INC FATFLG ;BUMP COUNT
11405 065256 ERRHRD ERRNO,T26DTA,EXPREC ;DATA READ NOT - WRITTEN
                                TRAP C1ERHRD
                                .WORD 680
                                .WORD T26DTA
                                .WORD EXPREC
11406 065266 180: CKLOOP ;LOOP IF SELECTED
```


Line	Address	Hex	Dec	Label	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416
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TEST 6: REREADS

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11458 065346 004737 076012      JSR    PC,T26RT2      ;SET UP OTHER COMMAND PACKET
11459 065352 004737 076054      JSR    PC,T26RT3      ;SET UP OTHER COMMAND PACKET
11460
11461      ;*****
11462      ;
11463      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
11464      ;
11465      ;*****
11466
11467 065356 004737 016064      JSR    PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
11468 065362 103407              BCS    204              ;BR IF INIT WAS OK
11469 065364 005237 002212      INC    FATFLG          ;BUMP COUNT
11473 065370 010001              MOV    R0,R1              ;CONTENTS OF TSSR REGISTER
11474 065372              ERDIF  ERNO,SFIERR,SFMSG          ;FATAL ERROR TSSR WAS NOT OK
                                TRAP    C1ERDIF          ;
                                .WORD    681              ;
                                .WORD    SFIERR            ;
                                .WORD    SFMSG             ;
                                065372 104455
                                065374 001251
                                065376 003650
                                065400 012124
11475 065402 C13737 002172 073020 204:  MOV    UNITN,T26DSW      ;SET UP UNIT NUMBER
11476
11477 065410 012704 073000      MOV    @T26PACKET,R4          ;SUBROUTINE NEEDS PACKET ADDRESS
11478
11479      ;*****
11480      ;
11481      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
11482      ;
11483      ;*****
11484
11485 065414 004737 010752      JSR    PC,WRTCHR          ;ISSUE WRITE CHARACTERISTICS
11486 065420 103407              BCS    264              ;BR, IF COMMAND ISSUED OK
11487 065422 005237 002212      INC    FATFLG          ;BUMP COUNT
11491 065426 010001              MOV    R0,R1              ;SAVE CONTENTS OF TSSR
11492 065430              ERDIF  ERNO,WRTMSG,SFMSG          ;WRITE CHARACTERISTICS FAILED
                                TRAP    C1ERDIF          ;
                                .WORD    682              ;
                                .WORD    WRTMSG            ;
                                .WORD    SFMSG             ;
                                065430 104456
                                065432 001252
                                065434 005054
                                065436 012124
11493 065440              264:  CKLOOP              ;LOOP IF SELECTED
                                TRAP    C1CLP1            ;
                                065440 104406
11494
11495      ;*****
11496      ;
11497      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
11498      ;
11499      ;*****
11500
11501 065442 004737 011104      JSR    PC,REWIND          ;CALL TAPE REWIND COMMAND
11502 065446 103413              BCS    304              ;BR, IF NO PROBLEM
11503 065450 016501 000002      MOV    TSSR(R5),R1          ;GET TSSR
11504 065454 012702 000200      MOV    @SSR,R2          ;SET UP EXPECTED TSSR
11505 065460 010004              MOV    R0,R4          ;PACKET ADDRESS SET UP
11506 065462 005237 002212      INC    FATFLG          ;BUMP COUNT
11510 065466              ERDIF  ERNO,T26RWN,PKTSSR          ;REWIND NOT ACCEPTED
                                TRAP    C1ERDIF          ;
                                .WORD    683              ;
                                .WORD    T26RWN            ;
                                .WORD    PKTSSR            ;
                                065466 104456
                                065470 001253
                                065472 074464
                                065474 012136

```


TEST 6: REREADS

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11511 065476      104406      304:  CKLOOP                      ;LOOP IF SELECTED
11512 065476      104406                      TRAP          C4CLP1
11513
11514 ;*****
11515 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
11516 ;
11517 ;*****
11518
11519 065500 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XSTO
11520 065504 010102      MOV      R1,R2      ;SET UP EXPECTED
11521 065506 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
11522 065512 020102      CMP      R1,R2      ;DOES EXP = REC'D
11523 065514 001406      BEQ      404      ;BR, IF EQUAL (OK)
11524 065516 005237 002212      INC      FATFLG      ;BUMP COUNT
11528 065522      ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
11529 065522 104456      TRAP          C4ERHRD
11530 065524 001254      .WORD      684
11531 065526 C74175      .WORD      T26BOT
11532 065530 015564      .WORD      EXPREC
11533
11534 404:  CKLOOP                      ;LOOP IF SELECTED
11535 065532 104406      TRAP          C4CLP1
11536 065532 104406
11537 065534 012703 000400      MOV      #256.,R3      ;RECORD SIZE
11538 065540 013737 003114 073132      MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
11539
11540 ;*****
11541 ;WRITE DATA,CVC=1,ACK COMMAND
11542 ;
11543 ;*****
11544
11545 065546 012737 140005 073130      MOV      #140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
11546 065554 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
11547
11548 654:  MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
11549 065560 010337 073136      MOV      T26CNT,#FREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
11550 065564 013777 073156 115322      ADD      #1,T26CNT      ;NUMBER READY FOR NEXT RECORD
11551 065572 062737 000001 073156      MOV      R4,TSSDB(R5)      ;ISSUE COMMAND
11552 065600 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
11553 065604 004737 016340      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
11554 065610 016501 000002      MOV      #SSR,R2      ;SET UP EXPECTED
11555 065614 012702 000200      CMP      R1,R2      ;ARE THEY EQUAL
11556 065620 020102      BEQ      754      ;BR, IF OK
11557 065622 001406      INC      FATFLG      ;BUMP COUNT
11558 065624 005237 002212      ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
11559
11560 065630 104456      TRAP          C4ERHRD
11561 065632 001255      .WORD      685
11562 065634 005111      .WORD      WRERR
11563 065636 012136      .WORD      PKTSSR
11564
11565 754:  CKLOOP                      ;LOOP IF SELECTED
11566 065640 104406      TRAP          C4CLP1
11567 065640 104406
11568 065642 005723      TST      (R3)+      ;BUMP THE RECORD SIZE
11569 065644 022703 000414      CMP      #268.,R3      ;MAXIMUM SIZE YET
11570 065650 001401      BEQ      1204      ;BR, IF AT END OF WRITE SEQUENCE
11571 065652 000742      BR      654      ;WRITE MORE RECORDS
11572
11573 1204:  CLR      T26CNT      ;SET RECORD COUNTER BACK TO ZERO
11574 065654 005037 073156

```


TEST 6: REREADS

```

11563
11564 ;*****
11565 ;
11566 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
11567 ;
11568 ;*****
11569
11570 065660 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
11571 065664 103411          BCS      1304      ;BR, IF NO PROBLEM
11572 065666 016501 000002    MOV      TSSR(R5),R1    ;GET TSSR
11573 065672 010004          MOV      R0,R4      ;PACKET ADDRESS SET UP
11574 065674 005237 002212    INC      FATFLG      ;BUMP COUNT
11578 065700          ERRHRD  ERRNO,T26RWN,PKTSSR    ;REWIND NOT ACCEPTED
                                TRAP      C1ERHRD
                                .WORD     686
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                065700 104456
                                065702 001256
                                065704 074464
                                065706 012136
11579 065710          1304:   CKLOOP          ;LOOP IF SELECTED
                                TRAP      C1CLP1
                                065710 104406
11580
11581 ;*****
11582 ;
11583 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
11584 ;
11585 ;*****
11586
11587 065712 013701 073030      MOV      T26FR+6,R1    ;PICK UP XST0
11588 065716 010102          MOV      R1,R2      ;SET UP EXPECTED
11589 065720 052702 000002    BIS      0BIT1,R2    ;SET BOT BIT IN EXPECTED
11590 065724 020102          CMP      R1,R2      ;DOES EXP = REC'D
11591 065726 001406          BEQ      1354      ;BR, IF EQUAL (OK)
11592 065730 005237 002212    INC      FATFLG      ;BUMP COUNT
11596 065734          ERRHRD  ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C1ERHRD
                                .WORD     687
                                .WORD     T26BOT
                                .WORD     EXPREC
                                065734 104456
                                065736 001257
                                065740 074175
                                065742 015564
11597 065744          1354:   CKLOOP          ;LOOP IF SELECTED
                                TRAP      C1CLP1
                                065744 104406
11598 065746 012737 000400 073162    MOV      0256.,T26RSZ    ;STARTING RECORD SIZE
11599 065754 000420          BR       1404      ;SKIP OVER THE SAPCE THIS TIME
11600
11601 ;*****
11602 ;
11603 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
11604 ;BIT 15 SETS DIRECTION - 0-FORWARD 1-REVERSE
11605 ;
11606 ;*****
11607
11608 065756 012703 000001    1324:   MOV      0000001,R3    ;SET UP SPACE COMMAND (1 FORWARD)
11609 065762 004737 010556    JSR      PC,SPACE      ;CALL SPACE ROUTINE
11610 065766 103413          BCS      1404      ;BR, IF NO TROUBLE
11611 065770 016501 000002    MOV      TSSR(R5),R1    ;GET TSSR
11612 065774 012702 000200    MOV      0SSR,R2      ;SET UP EXPECTED TSSR
11613 066000 010004          MOV      R0,R4      ;PACKET ADDRESS SET UP
11614 066002 005237 002212    INC      FATFLG      ;BUMP COUNT
11618 066006          ERRHRD  ERRNO,T26SC,PKTSSR    ;SPACE (FORWARD) FAILED

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Address	Op Code	Op 1	Op 2	Op 3	Op 4	Op 5	Op 6	Op 7	Op 8	Op 9	Op 10	Op 11	Op 12	Op 13	Op 14	Op 15	Op 16	Op 17	Op 18	Op 19	Op 20	Op 21	Op 22	Op 23	Op 24	Op 25	Op 26	Op 27	Op 28	Op 29	Op 30	Op 31	Op 32	Op 33	Op 34	Op 35	Op 36	Op 37	Op 38	Op 39	Op 40	Op 41	Op 42	Op 43	Op 44	Op 45	Op 46	Op 47	Op 48	Op 49	Op 50	Op 51	Op 52	Op 53	Op 54	Op 55	Op 56	Op 57	Op 58	Op 59	Op 60	Op 61	Op 62	Op 63	Op 64	Op 65	Op 66	Op 67	Op 68	Op 69	Op 70	Op 71	Op 72	Op 73	Op 74	Op 75	Op 76	Op 77	Op 78	Op 79	Op 80	Op 81	Op 82	Op 83	Op 84	Op 85	Op 86	Op 87	Op 88	Op 89	Op 90	Op 91	Op 92	Op 93	Op 94	Op 95	Op 96	Op 97	Op 98	Op 99	Op 100	Op 101	Op 102	Op 103	Op 104	Op 105	Op 106	Op 107	Op 108	Op 109	Op 110	Op 111	Op 112	Op 113	Op 114	Op 115	Op 116	Op 117	Op 118	Op 119	Op 120	Op 121	Op 122	Op 123	Op 124	Op 125	Op 126	Op 127	Op 128	Op 129	Op 130	Op 131	Op 132	Op 133	Op 134	Op 135	Op 136	Op 137	Op 138	Op 139	Op 140	Op 141	Op 142	Op 143	Op 144	Op 145	Op 146	Op 147	Op 148	Op 149	Op 150	Op 151	Op 152	Op 153	Op 154	Op 155	Op 156	Op 157	Op 158	Op 159	Op 160	Op 161	Op 162	Op 163	Op 164	Op 165	Op 166	Op 167	Op 168	Op 169	Op 170	Op 171	Op 172	Op 173	Op 174	Op 175	Op 176	Op 177	Op 178	Op 179	Op 180	Op 181	Op 182	Op 183	Op 184	Op 185	Op 186	Op 187	Op 188	Op 189	Op 190	Op 191	Op 192	Op 193	Op 194	Op 195	Op 196	Op 197	Op 198	Op 199	Op 200	Op 201	Op 202	Op 203	Op 204	Op 205	Op 206	Op 207	Op 208	Op 209	Op 210	Op 211	Op 212	Op 213	Op 214	Op 215	Op 216	Op 217	Op 218	Op 219	Op 220	Op 221	Op 222	Op 223	Op 224	Op 225	Op 226	Op 227	Op 228	Op 229	Op 230	Op 231	Op 232	Op 233	Op 234	Op 235	Op 236	Op 237	Op 238	Op 239	Op 240	Op 241	Op 242	Op 243	Op 244	Op 245	Op 246	Op 247	Op 248	Op 249	Op 250	Op 251	Op 252	Op 253	Op 254	Op 255	Op 256	Op 257	Op 258	Op 259	Op 260	Op 261	Op 262	Op 263	Op 264	Op 265	Op 266	Op 267	Op 268	Op 269	Op 270	Op 271	Op 272	Op 273	Op 274	Op 275	Op 276	Op 277	Op 278	Op 279	Op 280	Op 281	Op 282	Op 283	Op 284	Op 285	Op 286	Op 287	Op 288	Op 289	Op 290	Op 291	Op 292	Op 293	Op 294	Op 295	Op 296	Op 297	Op 298	Op 299	Op 300	Op 301	Op 302	Op 303	Op 304	Op 305	Op 306	Op 307	Op 308	Op 309	Op 310	Op 311	Op 312	Op 313	Op 314	Op 315	Op 316	Op 317	Op 318	Op 319	Op 320	Op 321	Op 322	Op 323	Op 324	Op 325	Op 326	Op 327	Op 328	Op 329	Op 330	Op 331	Op 332	Op 333	Op 334	Op 335	Op 336	Op 337	Op 338	Op 339	Op 340	Op 341	Op 342	Op 343	Op 344	Op 345	Op 346	Op 347	Op 348	Op 349	Op 350	Op 351	Op 352	Op 353	Op 354	Op 355	Op 356	Op 357	Op 358	Op 359	Op 360	Op 361	Op 362	Op 363	Op 364	Op 365	Op 366	Op 367	Op 368	Op 369	Op 370	Op 371	Op 372	Op 373	Op 374	Op 375	Op 376	Op 377	Op 378	Op 379	Op 380</
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11665	066210				999:	
11666					*	
11667						
11668						
11669					TEST 6, SUBTEST 10	
11670						
11671					VERIFIES THAT THE REREAD NEXT COMMAND WITH OPP=1	
11672					AND SWB=1 OPERATES PROPERLY. THE TEST SEQUENCE IS	
11673					THE SAME THAT IS USED IN SUBTEST 3, BUT IT IS	
11674					VERIFIED THAT DATA STORED BY THE COMMAND CONTAINS	
11675					SWAPPED BYTES.	
11676						
11677						
11678						
11679						
11680					-	
11681						
11682	066210			BGNSUB		>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
	066210					T6.10:
	066210	104402				TRAP C#BSUB
11683	066212	004737	075720	JSR PC,T26REST	;SET COMMAND PACKET	
11684	066216	005037	073156	CLR T26CNT	;CLEAR TAPE RECORD COUNTER	
11685	066222	004737	076012	JSR PC,T26RT2	;SET UP OTHER COMMAND PACKET	
11686	066226	004737	076054	JSR PC,T26RT3	;SET UP OTHER COMMAND PACKET	
11687						
11688					*****	
11689						
11690					ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR	
11691						
11692					*****	
11693						
11694	066232	004737	016064	JSR PC,SOFINIT	;DO INITIALIZE ON CONTROLLER	
11695	066236	103407		BCS 20:	;BR IF INIT WAS OK	
11696	066240	005237	002212	INC FATFLG	;BUMP COUNT	
11700	066244	010001		MOV RO,R1	;CONTENTS OF TSSR REGISTER	
11701	066246			ERRDF ERRNO,SFIERR,SFMSG	;FATAL ERROR TSSR WAS NOT OK	
	066246	104455				TRAP C#ERDF
	066250	001263				.WORD 691
	066252	003650				.WORD SFIERR
	066254	012124				.WORD SFMSG
11702	066256	013737	002172 073020	20: MOV UNITN,T26DSW	;SET UP UNIT NUMBER	
11703						
11704	066264	012704	073000	MOV #T26PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS	
11705						
11706					*****	
11707						
11708					WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)	
11709						
11710					*****	
11711						
11712	066270	004737	010752	JSR PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS	
11713	066274	103407		BCS 26:	;BR, IF COMMAND ISSUED OK	
11714	066276	005237	002212	INC FATFLG	;BUMP COUNT	
11718	066302	010001		MOV RO,R1	;SAVE CONTENTS OF TSSR	
11719	066304			ERRHRD ERRNO,WRTMSG,SFMSG	;WRITE CHARACTERISTICSC FAILED	
	066304	104456				TRAP C#ERHRD
	066306	001264				.WORD 692

TEST 6: REREADS

	066310	005054					.WORD	WRMSG
	066312	012124					.WORD	SFIMSG
11720	066314			26:	CKLOOP	;LOOP IF SELECTED		
	066314	104406					TRAP	C#CLP1
11721								
11722								
11723								
11724								
11725								
11726								
11727								
11728	066316	004737	011104		JSR PC,REWIND	;CALL TAPE REWIND COMMAND		
11729	066322	016501	000002		MOV TSSR(R5),R1	;GET TSSR		
11730	066326	012702	000200		MOV #SSR,R2	;SET UP EXPECTED TSSR		
11731	066332	103407			BCS 30;	;BR, IF NO PROBLEM		
11732	066334	010004			MOV R0,R4	;PACKET ADDRESS SET UP		
11733	066336	005237	002212		INC FATFLG	;BUMP COUNT		
11737	066342				ERRHRD ERRNO,T26RWN,PKTSSR	;REWIND NOT ACCEPTED		
	066342	104456					TRAP	C#ERHRD
	066344	001265					.WORD	693
	066346	074464					.WORD	T26RWN
	066350	012136					.WORD	PKTSSR
11738	066352			30:	CKLOOP	;LOOP IF SELECTED		
	066352	104406					TRAP	C#CLP1
11739								
11740								
11741								
11742								
11743								
11744								
11745								
11746	066354	013701	073030		MOV T26BFR+6,R1	;PICK UP XSTO		
11747	066360	010102			MOV R1,R2	;SET UP EXPECTED		
11748	066362	052702	000002		BIS #BIT1,R2	;SET BOT BIT IN EXPECTED		
11749	066366	020102			CMP R1,R2	;DOES EXP = REC'D		
11750	066370	001406			BEQ 40;	;BR, IF EQUAL (OK)		
11751	066372	005237	002212		INC FATFLG	;BUMP COUNT		
11755	066376				ERRHRD ERRNO,T26BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND		
	066376	104456					TRAP	C#ERHRD
	066400	001266					.WORD	694
	066402	074175					.WORD	T26BOT
	066404	015564					.WORD	EXPREC
11756	066406			40:	CKLOOP	;LOOP IF SELECTED		
	066406	104406					TRAP	C#CLP1
11757	066410	012703	000400		MOV #256.,R3	;RECORD SIZE		
11758	066414	013737	003114	073132	MOV FREE,T26RB	;STARTING WRITE BUFFER ADDRESS		
11759								
11760								
11761								
11762								
11763								
11764								
11765								
11766	066422	012737	140005	073130	MOV #140005,T26PK3	;WRITE DATA,CVC=1.ACK COMMAND		
11767	066430	012704	073130		MOV #T26PK3,R4	;SET UP R4 WITH PACKET ADDRESS		
11768	066434							
11769	066434	010337	073136		MOV R3,T26SZ	;SET UP RECORD SIZE IN PACKET		
				65:				

TEST 6: REREADS

```
11770 066440 013777 073156 114446      MOV      T26CNT,0FREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
11771 066446 062737 000001 073156      ADD      #1,T26CNT      ;NUMBER READY FOR NEXT RECORD
11772 066454 010465 000000              MOV      R4,TSDB(R5)      ;ISSUE COMMAND
11773 066460 004737 016340              JSR      PC,WAITF      ;WAIT FOR SSR TO SET
11774 066464 016501 000002              MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
11775 066470 012702 000200              MOV      #SSR,R2      ;SET UP EXPECTED
11776 066474 020102              CMP      R1,R2      ;ARE THEY EQUAL
11777 066476 001406              BEQ      75$      ;BR, IF OK
11778 066500 005237 002212              INC      FATFLG      ;BUMP COUNT
11782 066504              ERRHRD  ERRNO,WRterr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C$ERHRD
                                .WORD     695
                                .WORD     WRterr
                                .WORD     PKTSSR
11783 066514 104456      75$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
                                .WORD     695
                                .WORD     WRterr
                                .WORD     PKTSSR
11784 066516 005723              TST      (R3)+      ;BUMP THE RECORD SIZE
11785 066520 022703 000414              CMP      #268.,R3      ;MAXIMUM SIZE YET
11786 066524 001401              BEQ      120$      ;BR, IF AT END OF WRITE SEQUENCE
11787 066526 000742              BR      65$      ;WRITE MORE RECORDS
11788 066530              120$: CLR      T26CNT      ;SET RECORD COUNTER BACK TO ZERO
11789 066530 005037 073156
11790
11791      ;*****
11792      ;
11793      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
11794      ;
11795      ;*****
11796
11797 066534 004737 011104              JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
11798 066540 103411              BCS      130$      ;BR, IF NO PROBLEM
11799 066542 016501 000002              MOV      TSSR(R5),R1      ;GET TSSR
11800 066546 010004              MOV      R0,R4      ;PACKET ADDRESS SET UP
11801 066550 005237 002212              INC      FATFLG      ;BUMP COUNT
11805 066554              ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     696
                                .WORD     T26RWN
                                .WORD     PKTSSR
11806 066564 104406      130$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
                                .WORD     696
                                .WORD     T26RWN
                                .WORD     PKTSSR
11807
11808      ;*****
11809      ;
11810      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
11811      ;
11812      ;*****
11813
11814 066566 013701 073030              MOV      T26BFR+6,R1      ;PICK UP XSTO
11815 066572 010102              MOV      R1,R2      ;SET UP EXPECTED
11816 066574 052702 000002              BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
11817 066600 020102              CMP      R1,R2      ;DOES EXP = REC'D
11818 066602 001406              BEQ      135$      ;BR, IF EQUAL (OK)
11819 066604 005237 002212              INC      FATFLG      ;BUMP COUNT
11823 066610              ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     697
11824 066610 104456
11825 066612 001271
```


TEST 6: REREADS

	066614	074175						.WORD	T26BOT
	066616	015564						.WORD	EXPREC
11824	066620				135:	CKLOOP	; LOOP IF SELECTED		
	066620	104406						TRAP	C#CLP1
11825	066622	012737	000400	073162		MOV #256.,T26RSZ	; START RECORD SIZE		
11826	066630	000420				BR 140	; SKIP OVER SPACE		
11827									
11828									
11829									
11830									
11831									
11832									
11833									
11834									
11835	066632	012703	000001		136:	MOV #000001,R3	; SET UP SPACE COMMAND (1 FORWARD)		
11836	066636	004737	010556			JSR PC,SPACE	; CALL SPACE ROUTINE		
11837	066642	103413				BCS 140	; BR, IF NO TROUBLE		
11838	066644	016501	000002			MOV TSSR(R5),R1	; GET TSSR		
11839	066650	C12702	000200			MOV #SSR,R2	; SET UP EXPECTED TSSR		
11840	066654	010004				MOV R0,R4	; PACKET ADDRESS SET UP		
11841	066656	005237	002212			INC FATFLG	; BUMP COUNT		
11845	066662					ERRHRD ERRNO,T26SC,PKTSSR	; SPACE (FORWARD) FAILED		
	066662	104456						TRAP	C#ERHRD
	066664	001272						.WORD	698
	066666	073577						.WORD	T26SC
	066670	012136						.WORD	PKTSSR
11846	066672				140:	CKLOOP	; LOOP IF SELECTED		
	066672	104406						TRAP	C#CLP1
11847	066674	013703	073162			MOV T26RSZ,R3	; RECORD SIZE		
11848	066700	013737	003114	073132	150:	MOV FREE,T26RB	; STARTING READ BUFFER ADDRESS		
11849									
11850									
11851									
11852									
11853									
11854									
11855									
11856	066706	012737	161401	073130		MOV #161401,T26PK3	; REREAD DATA,CVC=1,ACK, OPP COMMAND		
11857	066714	012704	073130		165:	MOV #T26PK3,R4	; SET UP R4 WITH PACKET ADDRESS		
11858	066720	010337	073136			MOV R3,T26SZ	; SET UP RECORD SIZE IN PACKET		
11859	066724	010465	000000			MOV R4,TSDB(R5)	; ISSUE COMMAND		
11860	066730	004737	016340			JSR PC,WAITF	; WAIT FOR SSR TO SET		
11861	066734	016501	000002			MOV TSSR(R5),R1	; GET TSSR CONTENTS		
11862	066740	012702	000200			MOV #SSR,R2	; SET UP EXPECTED		
11863	066744	020102				CMP R1,R2	; ARE THEY EQUAL		
11864	066746	001406				BEQ 170	; BR, IF OK		
11865	066750	005237	002212			INC FATFLG	; BUMP COUNT		
11869	066754					ERRHRD ERRNO,T26RRF,PKTSSR	; TSSR INCORRECT AFTER REREAD DATA		
	066754	104456						TRAP	C#ERHRD
	066756	001273						.WORD	699
	066760	073405						.WORD	T26RRF
	066762	012136						.WORD	PKTSSR
11870	066764				170:	CKLOOP	; LOOP IF SELECTED		
	066764	104406						TRAP	C#CLP1
11871	066766	017701	114122			MOV #FREE,R1	; FIRST WORD FROM READ BUFFER		
11872	066772	013702	073156			MOV T26CNT,R2	; SET UP EXPECTED		
11873	066776	020102				CMP R1,R2	; IS TAPE POSITION CORRECT</		

TEST 6: REREADS

11874	067000	001406			BEQ	190#		;KEEP GOING POSITION OK		
11875	067002	005237	002212		INC	FATFLG		;BUMP COUNT		
11879	067006				ERRHRD	ERRNO,T26WNG,EXPREC		;TAPE POSITION INCORRECT		
	067006	104456							TRAP	C#ERHRD
	067010	001274							.WORD	700
	067012	073166							.WORD	T26WNG
	067014	015564							.WORD	EXPREC
11880	067016			190#:	CKLOOP					
	067016	104406							TRAP	C#CLP1
11881	067020	062737	000001	073156	ADD	#1,T26CNT		;BUMP TAPE RECORD COUNTER		
11882	067026	005723			TST	(R3)+		;NEXT RECORD SIZE		
11883	067030	010337	073162		MOV	R3,T26RSZ		;STORE RECORD SIZE		
11884	067034	022703	000412		CMP	#266.,R3		;AT MAX SIZE YET		
11885	067040	001402			BEQ	220#		;BR, IF AT END OF THE SUBTEST		
11886	067042	000137	066632		JMP	136#		;KEEP GOING MORE RECORDS		
11887	067046			220#:						
11888	067046				ENDSUB			; >>>>>>>>> END SUBTEST >>>>>>>>>		
	067046							L10114:		
	067046	104403							TRAP	C#ESUB
11889	067050	023727	002212	000017	CMP	FATFLG,#15.		;IS ERROR COUNT AT 25		
11890	067056	103402			BLO	999#		;BR, IF LESS THAN 25		
11891	067060	004737	017272		JSR	PC,CKDROP		;TRY TO DROP THE UNIT		
11892	067064			999#:						
11893										
11894										
11895										
11896										
11897										
11898										
11899										
11900										
11901										
11902										
11903										
11904										
11905										
11906										
11907										
11908										
11909	067064				BGNSSUB			; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	067064							T6.11:		
	067064	104402							TRAP	C#BSUB
11910	067066	004737	075720		JSR	PC,T26REST		;SET COMMAND PACKET		
11911	067072	004737	076012		JSR	PC,T26RT2		;SET UP OTHER COMMAND PACKET		
11912	067076	004737	076054		JSR	PC,T26RT3		;SET UP OTHER COMMAND PACKET		
11913										
11914										
11915										
11916										
11917										
11918										
11919										
11920	067102	004737	016064		JSR	PC,SOFINIT		;DO INITIALIZE ON CONTROLLER		
11921	067106	103407			BCS	20#		;BR IF INIT WAS OK		
11922	067110	005237	002212		INC	FATFLG		;BUMP COUNT		
11926	067114	010001			MOV	RO,R1		;CONTENTS OF TSSR REGISTER		
11927	067116				ERRDF	ERRNO,SFIERR,SFIMSG		;FATAL ERROR TSSR WAS NOT OK		

TEST 6: REREADS

	067116	104455						TRAP	C#ERDF
	067120	001275						.WORD	701
	067122	003650						.WORD	SFIERR
	067124	012124						.WORD	SFIMSG
11928	067126	013737	002172	073020	204:	MOV	UNITN,T26DSW		;SET UP UNIT NUMBER
11929									
11930	067134	012704	073000			MOV	#T26PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
11931									
11932									
11933									
11934									
11935									
11936									
11937									
11938	067140	004737	010752			JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS
11939	067144	103407				BCS	264		;BR, IF COMMAND ISSUED OK
11940	067146	005237	002212			INC	FATFLG		;BUMP COUNT
11944	067152	010001				MOV	R0,R1		;SAVE CONTENTS OF TSSR
11945	067154					ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTICS FAILED
	067154	104456						TRAP	C#ERHRD
	067156	001276						.WORD	702
	067160	005054						.WORD	WRTMSG
	067162	012124						.WORD	SFIMSG
11946	067164				264:	CKLOOP			;LOOP IF SELECTED
	067164	104406						TRAP	C#CLP1
11947									
11948									
11949									
11950									
11951									
11952									
11953									
11954	067166	004737	011104			JSR	PC,REWIND		;CALL TAPE REWIND COMMAND
11955	067172	016501	000002			MOV	TSSR(R5),R1		;GET TSSR
11956	067176	012702	000200			MOV	#SSR,R2		;SET UP EXPECTED TSSR
11957	067202	103407				BCS	304		;BR, IF NO PROBLEM
11958	067204	010004				MOV	R0,R4		;PACKET ADDRESS SET UP
11959	067206	005237	002212			INC	FATFLG		;BUMP COUNT
11963	067212					ERRHRD	ERRNO,T26RWN,PKTSSR		;REWIND NOT ACCEPTED
	067212	104456						TRAP	C#ERHRD
	067214	001277						.WORD	703
	067216	074464						.WORD	T26RWN
	067220	012136						.WORD	PKTSSR
11964	067222				304:	CKLOOP			;LOOP IF SELECTED
	067222	104406						TRAP	C#CLP1
11965									
11966									
11967									
11968									
11969									
11970									
11971									
11972	067224	013701	073030			MOV	T26BFR+6,R1		;PICK UP XST0
11973	067230	010102				MOV	R1,R2		;SET UP EXPECTED
11974	067232	052702	000002			BIS	#BIT1,R2		;SET BOT BIT IN EXPECTED
11975	067236	020102				CMP	R1,R2		;DOES EXP = REC'D
11976	067240	001406				BEQ	404		;BR, IF EQUAL (OK)

TEST 6: REREADS

```
11977 067242 005237 002212          INC    FATFLG          ;BUMP COUNT
11981 067246          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          067246 104456          TRAP    C#ERHRD
          067250 001300          .WORD   704
          067252 074175          .WORD   T26BOT
          067254 015564          .WORD   EXPREC
11982 067256          40$:    CKLOOP          ;LOOP IF SELECTED
          067256 104406          TRAP    C#CLP1
11983 067260 012703 001000          MOV     #512.,R3      ;RECORD SIZE
11984 067264 013737 003114 073132    MOV     FREE,T26RB   ;STARTING WRITE BUFFER ADDRESS
11985
11986 ;*****
11987 ;
11988 ;WRITE DATA,CVC=1,ACK COMMAND
11989 ;
11990 ;*****
11991
11992 067272 012737 140005 073130    MOV     #140005,T26PK3  ;WRITE DATA,CVC=1,ACK COMMAND
11993 067300 C12704 073130    MOV     #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
11994 067304
11995 067304 010337 073136    65$:    MOV     R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
11996 067310 010465 000000    MOV     R4,TSD8(R5)  ;ISSUE COMMAND
11997 067314 004737 016340    JSR     PC,WAITF     ;WAIT FOR SSR TO SET
11998 067320 016501 000002    MOV     TSSR(R5),R1  ;GET TSSR CONTENTS
11999 067324 012702 000200    MOV     #SSR,R2      ;SET UP EXPECTED
12000 067330 020102          CMP     R1,R2      ;ARE THEY EQUAL
12001 067332 001406          BEQ     75$      ;BR, IF OK
12002 067334 005237 002212    INC     FATFLG      ;BUMP COUNT
12006 067340          ERRHRD  ERRNO,WRterr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
          067340 104456          TRAP    C#ERHRD
          067342 001301          .WORD   705
          067344 005111          .WORD   WRterr
          067346 012136          .WORD   PKTSSR
12007 067350          75$:    CKLOOP          ;LOOP IF SELECTED
          067350 104406          TRAP    C#CLP1
12008
12009 ;*****
12010 ;
12011 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
12012 ;
12013 ;*****
12014
12015 067352 004737 011104          JSR     PC,REWIND     ;CALL TAPE REWIND COMMAND
12016 067356 016501 000002    MOV     TSSR(R5),R1  ;GET TSSR
12017 067362 012702 000200    MOV     #SSR,R2      ;SET UP EXPECTED TSSR
12018 067366 103407          BCS     130$      ;BR, IF NO PROBLEM
12019 067370 010004          MOV     R0,R4      ;PACKET ADDRESS SET UP
12020 067372 005237 002212    INC     FATFLG      ;BUMP COUNT
12024 067376          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
          067376 104456          TRAP    C#ERHRD
          067400 001302          .WORD   706
          067402 074464          .WORD   T26RWN
          067404 012136          .WORD   PKTSSR
12025 067406          130$:    CKLOOP          ;LOOP IF SELECTED
          067406 104406          TRAP    C#CLP1
12026
12027 ;*****
```


TEST 6: REREADS

```
12028
12029 ; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
12030 ;
12031 ; *****
12032
12033 067410 013701 073030      MOV      T26BFR+6,R1      ; PICK UP XST0
12034 067414 010102          MOV      R1,R2          ; SET UP EXPECTED
12035 067416 052702 000002    BIS      #BIT1,R2      ; SET BOT BIT IN EXPECTED
12036 067422 020102          CMP      R1,R2          ; DOES EXP = REC'D
12037 067424 001406          BEQ      1400          ; BR, IF EQUAL (OK)
12038 067426 005237 002212    INC      FATFLG        ; BUMP COUNT
12042 067432          ERRHRD  ERRNO,T26BOT,EXPREC    ; TAPE NOT AT BOT AFTER REWIND
12043 067432 104456          TRAP      C#ERHRD        ;
12044 067434 001303          .WORD    707            ;
12045 067436 074175          .WORD    T26BOT         ;
12046 067440 015564          .WORD    EXPREC         ;
12047
12048 1400:  CKLOOP          ; LOOP IF SELECTED          TRAP      C#CLP1
12049 067442 104406          ; SET RECORD SIZE TO 511.
12050 067444 C05303          ; STARTING READ BUFFER ADDRESS
12051 067446 013737 003114 073132    DEC      R3
12052          MOV      FREE,T26RB
12053
12054 ; *****
12055 ; REREAD DATA,CVC=1,ACK,OPP=1 COMMAND
12056 ;
12057 ; *****
12058
12059 067454 012737 161401 073130    1650:  MOV      #161401,T26PK3      ; REREAD DATA,CVC=1,ACK,OPP=1 COMMAND
12060 067462 012704 073130          MOV      #T26PK3,R4      ; SET UP R4 WITH PACKET ADDRESS
12061 067466 010337 073136          MOV      R3,T26SZ        ; SET UP RECORD SIZE IN PACKET
12062 067472 010465 000000          MOV      R4,TSD8(R5)      ; ISSUE COMMAND
12063 067476 004737 016340          JSR      PC,WAITF        ; WAIT FOR SSR TO SET
12064 067502 016501 000002          MOV      TSSR(R5),R1      ; GET TSSR CONTENTS
12065 067506 012702 100204          MOV      #SSR!SC!BIT2,R2   ; SET UP EXPECTED
12066 067512 020102          CMP      R1,R2          ; ARE THEY EQUAL
12067 067514 001406          BEQ      1700          ; BR, IF OK
12068 067516 005237 002212          INC      FATFLG        ; BUMP COUNT
12069 067522          ERRHRD  ERRNO,T26TRL,PKTSSR    ; TSSR INCORRECT AFTER REREAD DATA
12070 067522 104456          TRAP      C#ERHRD        ;
12071 067524 001304          .WORD    708            ;
12072 067526 075542          .WORD    T26TRL         ;
12073 067530 012136          .WORD    PKTSSR         ;
12074
12075 1700:  CKLOOP          ; LOOP IF SELECTED          TRAP      C#CLP1
12076 067532 104406          ;
12077
12078 ; *****
12079 ; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
12080 ;
12081 ; *****
12082
12083 067534 013701 073030      MOV      T26BFR+6,R1      ; GET MESSAGE BUFFER
12084 067540 010102          MOV      R1,R2          ; SET UP EXPECTED
12085 067542 052702 010000    BIS      #BIT12,R2      ; SET THE RLL BIT IN EXPECTED
12086 067546 020102          CMP      R1,R2          ; ARE THEY EQUAL
12087 067550 001406          BEQ      1800          ; BR, IF EQUAL (ALL IS WELL)
12088 067552 005237 002212          INC      FATFLG        ; BUMP COUNT
```


12084	067556				ERRHRD	ERRNO,T26LON,EXPREC	;THE RLL BIT WAS NOT SET IN XSTO		
	067556	104456						TRAP	C#ERHRD
	067560	001305						.WORD	709
	067562	075310						.WORD	T26LON
	067564	015564						.WORD	EXPREC
12085	067566				1804:	CKLOOP			
	067566	104406						TRAP	C#CLP1
12086	067570	012703	000777		MOV	#511.,R3	;SET UP SIZE OF RECORD		
12087	067574	013737	003114	073132	MOV	FREE,T26RB	;STARTING READ BUFFER ADDRESS		
12088									
12089									
12090									
12091									
12092									
12093									
12094									
12095	067602	012737	141401	073130	MOV	#141401,T26PK3	;REREAD DATA,CVC-1,ACK COMMAND		
12096	067610	012704	073130		3654:	MOV	#T26PK3,R4	;SET UP R4 WITH PACKET ADDRESS	
12097	067614	C10337	073136		MOV	R3,T26SZ	;SET UP RECORD SIZE IN PACKET		
12098	067620	010465	000000		MOV	R4,TSDB(R5)	;ISSUE COMMAND		
12099	067624	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR TO SET		
12100	067630	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
12101	067634	012702	100204		MOV	#SSR!SC!BIT2,R2	;SET UP EXPECTED		
12102	067640	020102			CMP	R1,R2	;ARE THEY EQUAL		
12103	067642	001406			BEQ	3704	;BR, IF OK		
12104	067644	005237	002212		INC	FATFLG	;BUMP COUNT		
12108	067650				ERRHRD	ERRNO,T26TRL,PKTSSR	;TSSR INCORRECT AFTER REREAD DATA		
	067650	104456						TRAP	C#ERHRD
	067652	001306						.WORD	710
	067654	075542						.WORD	T26TRL
	067656	012136						.WORD	PKTSSR
12109	067660				3704:	CKLOOP	;LOOP IF SELECTED		
	067660	104406						TRAP	C#CLP1
12110									
12111									
12112									
12113									
12114									
12115									
12116									
12117	067662	013701	073030		MOV	T268FR+6,R1	;GET MESSAGE BUFFER		
12118	067666	010102			MOV	R1,R2	;SET UP EXPECTED		
12119	067670	052702	010000		BIS	#BIT12,R2	;SET THE RLL BIT IN EXPECTED		
12120	067674	020102			CMP	R1,R2	;ARE THEY EQUAL		
12121	067676	001406			BEQ	3804	;BR, IF EQUAL (ALL IS WELL)		
12122	067700	005237	002212		INC	FATFLG	;BUMP COUNT		
12126	067704				ERRHRD	ERRNO,T26LON,EXPREC	;THE RLL BIT WAS NOT SET IN XSTO		
	067704	104456						TRAP	C#ERHRD
	067706	001307						.WORD	711
	067710	075310						.WORD	T26LON
	067712	015564						.WORD	EXPREC
12127	067714				3804:	CKLOOP			
	067714	104406						TRAP	C#CLP1
12128	067716				ENDSUB		;>>>>>>>>> END SUBTEST >>>>>>>>>		
	067716						L10115:		
	067716	104403						TRAP	C#ESUB
12129	067720	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		

Line	Address	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464	Op46
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TEST 6: REREADS

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12187 070024          ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTISC FAILED
      070024 104456                                     TRAP      C#ERHRD
      070026 001311                                     .WORD      713
      070030 005054                                     .WORD      WRTMSG
      070032 012124                                     .WORD      SFMSG
12188 070034          26+:   CKLOOP                      ;LOOP IF SELECTED
      070034 104406                                     TRAP      C#CLP1
12189
12190 ;*****
12191 ;
12192 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
12193 ;
12194 ;*****
12195
12196 070036 004737 011104      JSR      PC,REWIND          ;CALL TAPE REWIND COMMAND
12197 070042 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
12198 070046 012702 000200      MOV      #SSR,R2          ;SET UP EXPECTED TSSR
12199 070052 103407             BCS      30+              ;BR, IF NO PROBLEM
12200 070054 C10004             MOV      R0,R4            ;PACKET ADDRESS SET UP
12201 070056 005237 002212      INC      FATFLG          ;BUMP COUNT
12205 070062          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
      070062 104456                                     TRAP      C#ERHRD
      070064 001312                                     .WORD      714
      070066 074464                                     .WORD      T26RWN
      070070 012136                                     .WORD      PKTSSR
12206 070072          30+:   CKLOOP                      ;LOOP IF SELECTED
      070072 104406                                     TRAP      C#CLP1
12207
12208 ;*****
12209 ;
12210 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
12211 ;
12212 ;*****
12213
12214 070074 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XST0
12215 070100 010102             MOV      R1,R2            ;SET UP EXPECTED
12216 070102 052702 000002      BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
12217 070106 020102             CMP      R1,R2            ;DOES EXP ~ REC'D
12218 070110 001406             BEQ      40+              ;BR, IF EQUAL (OK)
12219 070112 005237 002212      INC      FATFLG          ;BUMP COUNT
12223 070116          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      070116 104456                                     TRAP      C#ERHRD
      070120 001313                                     .WORD      715
      070122 074175                                     .WORD      T26BOT
      070124 015564                                     .WORD      EXPREC
12224 070126          40+:   CKLOOP                      ;LOOP IF SELECTED
      070126 104406                                     TRAP      C#CLP1
12225 070130 012703 000400      MOV      #256.,R3        ;RECORD SIZE
12226 070134 013737 003114 073132  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
12227
12228 ;*****
12229 ;
12230 ;WRITE DATA,CVC=1,ACK COMMAND
12231 ;
12232 ;*****
12233
12234 070142 012737 140005 073130  MOV      #140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND

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TEST 6: REREADS

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12235 070150 012704 073130      65:  MOV    #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
12236 070154      MOV    R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
12237 070154 010337 073136      MOV    R4,TSD8(R5)    ;ISSUE COMMAND
12238 070160 010465 000000      JSR     PC,WAITF      ;WAIT FOR SSR TO SET
12239 070164 004737 016340      MOV    TSSR(R5),R1    ;GET TSSR CONTENTS
12240 070170 016501 000002      MOV    #SSR,R2      ;SET UP EXPECTED
12241 070174 012702 000200      CMP     R1,R2      ;ARE THEY EQUAL
12242 070200      BEQ     75:          ;BR, IF OK
12243 070202 001406      INC     FATFLG      ;BUMP COUNT
12244 070204 005237 002212      ERRHRD  ERRNO,WRTERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
12248 070210      TRAP    C#ERHRD
      070210 104456      .WORD  716
      070212 001314      .WORD  WRTERR
      070214 005111      .WORD  PKTSSR
      070216 012136
12249 070220      75:  CKLOOP      ;LOOP IF SELECTED      TRAP    C#CLP1
      070220 104406
12250 070222      120:
12251      ;*****
12252      ;
12253      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
12254      ;
12255      ;*****
12256
12257      JSR     PC,REWIND      ;CALL TAPE REWIND COMMAND
12258 070222 004737 011104      MOV    TSSR(R5),R1    ;GET TSSR
12259 070226 016501 000002      MOV    #SSR,R2      ;SET UP EXPECTED TSSR
12260 070232 012702 000200      BCS     130:          ;BR, IF NO PROBLEM
12261 070236 103407      MOV    R0,R4      ;PACKET ADDRESS SET UP
12262 070240 010004      INC     FATFLG      ;BUMP COUNT
12263 070242 005237 002212      ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
12267 070246      TRAP    C#ERHRD
      070246 104456      .WORD  717
      070250 001315      .WORD  T26RWN
      070252 074464      .WORD  PKTSSR
      070254 012136
12268 070256      130:  CKLOOP      ;LOOP IF SELECTED      TRAP    C#CLP1
      070256 104406
12269
12270      ;*****
12271      ;
12272      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
12273      ;
12274      ;*****
12275
12276 070260 013701 073030      MOV     T26BFR+6,R1    ;PICK UP XSTO
12277 070264 010102      MOV     R1,R2      ;SET UP EXPECTED
12278 070266 052702 000002      BIS     #BIT1,R2    ;SET BOT BIT IN EXPECTED
12279 070272 020102      CMP     R1,R2      ;DOES EXP = REC'D
12280 070274 001406      BEQ     135:          ;BR, IF EQUAL (OK)
12281 070276 005237 002212      INC     FATFLG      ;BUMP COUNT
12285 070302      ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      070302 104456      TRAP    C#ERHRD
      070304 001316      .WORD  718
      070306 074175      .WORD  T26BOT
      070310 015564      .WORD  EXPREC
12286 070312      135:  CKLOOP      ;LOOP IF SELECTED

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TEST 6: REREADS

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12287 070312 104406 001000 073132      MOV    #512.,R3      ;RECORD SIZE      TRAP    C:CLP1
12288 070320 013737 003114      MOV    FREE,T26RB    ;STARTING READ BUFFER ADDRESS
12289
12290      ;*****
12291      ;
12292      ;REREAD NEXT,ACK,CVC=1,OPP=1
12293      ;
12294      ;*****
12295
12296 070326 012737 161401 073130      MOV    #161401,T26PK3    ;REREAD NEXT,ACK,CVC=1,OPP=1
12297 070334 012704 073130      165$:  MOV    #T26PK3,R4    ;SET UP R4 WITH PACKET ADDRESS
12298 070340 010337 073136      MOV    R3,T26SZ        ;SET UP RECORD SIZE IN PACKET
12299 070344 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
12300 070350 004737 016340      JSR    PC,WAITF         ;WAIT FOR SSR TO SET
12301 070354 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
12302 070360 012702 100204      MOV    #SSR!SC!BIT2,R2  ;SET UP EXPECTED
12303 070364 020102      CMP    R1,R2           ;ARE THEY EQUAL
12304 070366 001406      BEQ    170$           ;BR, IF OK
12305 070370 005237 002212      INC    FATFLG          ;BUMP COUNT
12309 070374      ERRHRD    ERRNO,T26TRL,PKTSSR ;TSSR INCORRECT AFTER READ DATA
                                TRAP    C:ERHRD
                                .WORD   719
                                .WORD   T26TRL
                                .WORD   PKTSSR
                                TRAP    C:CLP1
12310 070404 104406      170$:  CKLOOP          ;LOOP IF SELECTED
12311
12312      ;*****
12313      ;
12314      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
12315      ;
12316      ;*****
12317
12318 070406 013701 073030      MOV    T26BFR+6,R1      ;GET MESSAGE BUFFER
12319 070412 010102      MOV    R1,R2           ;SET UP EXPECTED
12320 070414 052702 040000      BIS    #BIT14,R2       ;SET THE RLS BIT IN EXPECTED
12321 070420 020102      CMP    R1,R2           ;ARE THEY EQUAL
12322 070422 001406      BEQ    180$           ;BR, IF EQUAL (ALL IS WELL)
12323 070424 005237 002212      INC    FATFLG          ;BUMP COUNT
12327 070430      ERRHRD    ERRNO,T26LOP,EXPREC ;THE RLL BIT WAS NOT SET IN XSTO
                                TRAP    C:ERHRD
                                .WORD   720
                                .WORD   T26LOP
                                .WORD   EXPREC
                                TRAP    C:CLP1
12328 070440 104406      180$:  CKLOOP          ;PICK UP RESIDUAL BYTE COUNTER
12329 070442 013701 073026      MOV    T26BFR+4,R1      ;THIS SHOULD BE THE DIFFERENCE
12330 070446 012702 000400      MOV    #256.,R2        ;IS THE DIFFERENCE CORRECT
12331 070452 020102      CMP    R1,R2           ;BR, IF CORRECT
12332 070454 001405      BEQ    190$           ;RBPCT NOT CORRECT
12336 070460      ERRHRD    ERRNO,T26PBP,EXPREC
                                TRAP    C:ERHRD
                                .WORD   720
                                .WORD   T26PBP
                                .WORD   EXPREC
                                TRAP    C:CLP1
12337 070470      190$:  CKLOOP          ;LOOP IF SELECTED

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TEST 6: REREADS

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12338 070470 104406          TRAP C#CLP1
12339 070472 012703 001000  MOV    #512.,R3          ;RECORD SIZE
12340 070476 013737 003114 073132  MOV    FREE,T26RB      ;STARTING READ BUFFER ADDRESS
12341                                     ;*****
12342                                     ;
12343                                     ;REREAD NEXT,ACK,CVC=1,OPP=0
12344                                     ;
12345                                     ;*****
12346
12347 070504 012737 141401 073130  MOV    #141401,T26PK3      ;REREAD NEXT,ACK,CVC=1,OPP=0
12348 070512 012704 073130      MOV    #T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
12349 070516 010337 073136      MOV    R3,T26SZ           ;SET UP RECORD SIZE IN PACKET
12350 070522 010465 000000      MOV    R4,TSD8(R5)         ;ISSUE COMMAND
12351 070526 004737 016340      JSR    PC,WAITF          ;WAIT FOR SSR TO SET
12352 070532 016501 000002      MOV    TSSR(R5),R1         ;GET TSSR CONTENTS
12353 070536 012702 100204      MOV    #SSR!SC!BIT2,R2        ;SET UP EXPECTED
12354 070542 020102              CMP    R1,R2             ;ARE THEY EQUAL
12355 070544 C01406              BEQ    2704              ;BR, IF OK
12356 070546 005237 002212      INC    FATFLG             ;BUMP COUNT
12360 070552              ERRHRD  ERRNO,T26TRL,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
12361 070552 104456          TRAP C#ERHRD
12362 070554 001321          .WORD  721
12363 070556 075542          .WORD  T26TRL
12364 070560 012136          .WORD  PKTSSR
12365
12366 2704: CKLOOP              ;LOOP IF SELECTED
12367          TRAP C#CLP1
12368
12369 070564 013701 073030      ;*****
12370 070570 010102              ;
12371 070572 052702 040000      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
12372 070576 020102              ;
12373 070600 001406          ;*****
12374 070602 005237 002212      MOV    T26BFR+6,R1          ;GET MESSAGE BUFFER
12375 070606 104456          MOV    R1,R2              ;SET UP EXPECTED
12376 070610 001322          BIS    #BIT14,R2           ;SET THE RLS BIT IN EXPECTED
12377 070612 075372          CMP    R1,R2              ;ARE THEY EQUAL
12378 070614 015564          BEQ    2804              ;BR, IF EQUAL (ALL IS WELL)
12379 070616 104406          INC    FATFLG             ;BUMP COUNT
12380 070620 013701 073026      ERRHRD  ERRNO,T26LOP,EXPREC ;THE RLL BIT WAS NOT SET IN XST0
12381 070624 012702 000400          TRAP C#ERHRD
12382 070630 020102          .WORD  722
12383 070632 001405          .WORD  T26LOP
12384 070636 104456          .WORD  EXPREC
12385 070640 001322          TRAP C#CLP1
12386 070642 075454          ;PICK UP RESIDUAL BYTE COUNTER
12387 070644 015564          MOV    T26BFR+4,R1          ;THIS SHOULD BE THE DIFFERENCE
12388 070646          MOV    #256.,R2              ;IS THE DIFFERENCE CORRECT
12389          CMP    R1,R2
12390          BEQ    2904              ;BR, IF CORRECT
12391          ERRHRD  ERRNO,T26PBP,EXPREC      ;RBPB NOT CORRECT
12392          TRAP C#ERHRD
12393          .WORD  722
12394          .WORD  T26PBP
12395          .WORD  EXPREC
12396
12397 2904: CKLOOP              ;LOOP IF SELECTED
12398

```


TEST 6: REREADS

Address	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464	Op465	
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TEST 6: REREADS

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12440 070764 103407          BCS      26:          ;BR, IF COMMAND ISSUED OK
12441 070766 005237 002212  INC      FATFLG      ;BUMP COUNT
12445 070772 010001          MOV      R0,R1      ;SAVE CONTENTS OF TSSR
12446 070774          ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C:ERHRD
                                .WORD     724
                                .WORD     WRTMSG
                                .WORD     SFMSG
                                070774 104456
                                070776 001324
                                071000 005054
                                071002 012124
12447 071004          26:      CKLOOP          ;LOOP IF SELECTED
                                TRAP      C:CLP1
                                071004 104406
12448
12449 ;*****
12450 ;
12451 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
12452 ;
12453 ;*****
12454
12455 071006 004737 021252      JSR      PC,INVERT      ;INVERT THE EXTENDED FEATURES SWITCH
12456 071012 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
12457 071016 103411          BCS      30:          ;BR, IF NO PROBLEM
12458 071020 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
12459 071024 010004          MOV      R0,R4      ;PACKET ADDRESS SET UP
12460 071026 005237 002212      INC      FATFLG      ;BUMP COUNT
12464 071032          ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C:ERHRD
                                .WORD     725
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                071032 104456
                                071034 001325
                                071036 074464
                                071040 012136
12465 071042          30:      CKLOOP          ;LOOP IF SELECTED
                                TRAP      C:CLP1
                                071042 104406
12466
12467 ;*****
12468 ;
12469 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
12470 ;
12471 ;*****
12472
12473 071044 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XSTO
12474 071050 010102          MOV      R1,R2      ;SET UP EXPECTED
12475 071052 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
12476 071056 020102          CMP      R1,R2      ;DOES EXP = REC'D
12477 071060 001406          BEQ      40:          ;BR, IF EQUAL (OK)
12478 071062 005237 002212      INC      FATFLG      ;BUMP COUNT
12482 071066          ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C:ERHRD
                                .WORD     726
                                .WORD     T26BOT
                                .WORD     EXPREC
                                071066 104456
                                071070 001326
                                071072 074175
                                071074 015564
12483 071076          40:      CKLOOP          ;LOOP IF SELECTED
                                TRAP      C:CLP1
                                071076 104406
12484 071100 013737 003114 073132  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
12485
12486 ;*****
12487 ;
12488 ;WRITE DATA,CVC=1,ACK COMMAND
12489 ;
12490 ;*****

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TEST 6: REREADS

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12491
12492 071106 012737 140005 073130      MOV      #140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
12493 071114 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
12494 071120 012737 000400      MOV      #256.,T26SZ      ;SET UP RECORD SIZE IN PACKET
12495 071126 013777 073156 111760 65+:  MOV      T26CNT,0FREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
12496 071134 062737 000001 073156      ADD      #1,T26CNT      ;NUMBER READY FOR NEXT RECORD
12497 071142 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
12498 071146 004737 016340      JSR      PC,WAITE      ;WAIT FOR SSR TO SET
12499 071152 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
12500 071156 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
12501 071162 020102      CMP      R1,R2      ;ARE THEY EQUAL
12502 071164 001406      BEQ      75+      ;BR, IF OK
12503 071166 005237 002212      INC      FATFLG      ;BUMP COUNT
12507 071172      ERRHRD  ERRNO,WTERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C#ERHRD
                                .WORD     727
                                .WORD     WTERR
                                .WORD     PKTSSR
                                071172 104456
                                071174 001327
                                071176 005111
                                071200 012136
12508 071202      75+:  CKLOOP      ;LOOP IF SELECTED
                                TRAP      C#CLP1
12509 071204 022737 000013 073156      CMP      #11.,T26CNT      ;CHECK NUMBER OF RECORDS WRITTEN
12510 071212 001401      BEQ      120+      ;BR, IF AT END OF WRITE SEQUENCE
12511 071214 000741      BR      65+      ;WRITE MORE RECORDS
12512 071216      120+:  CLR      NXMHI      ;SET TO 16 BIT ADDRESS
12513 071216 005037 003132      125+:  CLR      T26CNT      ;SET RECORD COUNTER BACK TO ZERO
12514 071222
12515 071222 005037 073156
12516
12517 ;*****
12518 ;
12519 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
12520 ;
12521 ;*****
12522
12523 071226 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
12524 071232 103411      BCS      130+      ;BR, IF NO PROBLEM
12525 071234 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
12526 071240 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
12527 071242 005237 002212      INC      FATFLG      ;BUMP COUNT
12531 071246      ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C#ERHRD
                                .WORD     728
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                071246 104456
                                071250 001330
                                071252 074464
                                071254 012136
12532 071256      130+:  CKLOOP      ;LOOP IF SELECTED
                                TRAP      C#CLP1
12533 071256 104406
12534 ;*****
12535 ;
12536 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
12537 ;
12538 ;*****
12539
12540 071260 013701 073030      MOV      T26BFR+6,R1      ;PICK UP XST0
12541 071264 010102      MOV      R1,R2      ;SET UP EXPECTED
12542 071266 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
12543 071272 020102      CMP      R1,R2      ;DOES EXP = REC'D

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TEST 6: REREADS

```
12544 071274 001406      BEQ      1404      ;BR, IF EQUAL (OK)
12545 071276 005237 002212 INC      FATFLG      ;BUMP COUNT
12549 071302      ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C4ERHRD
                                .WORD     729
                                .WORD     T26BOT
                                .WORD     EXPREC
12550 071312      1404:   CKLOOP      ;LOOP IF SELECTED
                                TRAP      C4CLP1
12551 071314 012703 073146      MOV      #T26RN,R3      ;COMMAND BUFFER ADDRESS
12552 071320 013737 003130 073132 1504:   MOV      NXML0,T26RB      ;STARTING READ BUFFER ADDRESS
12553 071326 013737 003132 073134      MOV      NXMH1,T26RB+2 ;SET UP HIGH ORDER ADDRESS BITS
12554
12555 ;*****
12556 ;
12557 ;REREAD DATA,IE,ACK, OPP COMMAND
12558 ;
12559 ;*****
12560
12561 071334 011337 073130      MOV      (R3),T26PK3      ;REREAD DATA,IE,ACK, OPP COMMAND
12562 071340 012704 073130      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
12563 071344 012737 000400 073136      MOV      #256.,T26SZ      ;SET UP RECORD SIZE IN PACKET
12564 071352 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
12565 071356 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
12566 071362 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
12567 071366 012702 104210      MOV      #SSR!NXM!SC!BIT3,R2 ;SET UP EXPECTED
12568 071372 020102      CMP      R1,R2      ;ARE THEY EQUAL
12569 071374 001422      BEQ      1704      ;BR, IF OK
12570 071376 031327 001000      BIT      (R3),#BIT9      ;CHECK FOR A READ COMMAND
12571 071402 001403      BEQ      1684      ;BR, IF IT WAS A READ COMMAND
12572 071404 030127 000002      BIT      R1,#BIT1      ;WAS BIT1 SET
12573 071410 001014      BNE      1704      ;BR, IF REREAD AND BIT1 SET
12574 071412
12575 071412 005237 003132      1684:   INC      NXMH1      ;BUMP TO NEXT ADDRESS RANGE
12576 071416 023727 003132 000004      CMP      NXMH1,#4      ;CHECK FOR OVERFLOW
12577 071424 001276      BNE      1254      ;BR, IF MORE BITS TO GO
12578 071426 005237 002212      INC      FATFLG      ;BUMP COUNT
12582 071432      ERRHRD  ERRNO,T26RRF,PKTSSR ;TSSR INCORRECT AFTER REREAD DATA
                                TRAP      C4ERHRD
                                .WORD     730
                                .WORD     T26RRF
                                .WORD     PKTSSR
12583 071442      1704:   CKLOOP      ;LOOP IF SELECTED
                                TRAP      C4CLP1
12584 071442 104406
12585 ;*****
12586 ;
12587 ;READ DATA, ACK,CVC=1 COMMAND
12588 ;
12589 ;*****
12590
12591 071444 012737 140001 073130      MOV      #140001,T26PK3      ;READ DATA, ACK,CVC=1 COMMAND
12592 071452 012737 000400 073136      MOV      #256.,T26SZ      ;SET SIZE INTO PACKET
12593 071460 005037 073134      CLR      T26RB+2      ;CLEAR OUT HIGH ADDRESS BITS
12594 071464 013737 003114 073132      MOV      FREE,T26RB      ;GIVE READ A GOOD BUFFER
12595 071472 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE READ DATA COMMAND
12596 071476 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR
```


TEST 6: REREADS

12597	071502	016501	000002	MOV	TSSR(R5),R1	;PICK UP THE TSSR		
12598	071506	012702	000200	MOV	#SSR,R2	;SET UP EXPECTED		
12599	071512	020102		CMP	R1,R2	;IS THE TSSR OK		
12600	071514	001406		BEQ	180#	;BR, IF TSSR OK (GOOD)		
12601	071516	005237	002212	INC	FATFLG	;BUMP COUNT		
12605	071522			ERRHRD	ERRNO, RDERR, PKTSSR	;READ DATA COMMAND FAILED		
	071522	104456					TRAP	C#ERHRD
	071524	001333					.WORD	731
	071526	005204					.WORD	PDERR
	071530	012136					.WORD	PKTSSR
12606	071532			180#:	CKLOOP	;LOOP IF SELECTED		
	071532	104406					TRAP	C#CLP1
12607	071534	017701	111354	MOV	#FREE,R1	;FIRST WORD FROM READ BUFFER		
12608	071540	012702	000001	MOV	#1,R2	;SET UP EXPECTED		
12609	071544	020102		CMP	R1,R2	;IS TAPE POSITION CORRECT		
12610	071546	001406		BEQ	190#	;KEEP GOING POSITION OK		
12611	071550	005237	002212	INC	FATFLG	;BUMP COUNT		
12615	071554			ERRHRD	ERRNO, T26WNG, EXPREC	;TAPE POSITION INCORRECT		
	071554	104456					TRAP	C#ERHRD
	071556	001334					.WORD	732
	071560	073166					.WORD	T26WNG
	071562	015564					.WORD	EXPREC
12616	071564			190#:	CKLOOP			
	071564	104406					TRAP	C#CLP1
12617								
12618								
12619								
12620								
12621								
12622								
12623								
12624	071566	004737	011104	JSR	PC, REWIND	;CALL TAPE REWIND COMMAND		
12625	071572	103411		BCS	194#	;BR, IF NO PROBLEM		
12626	071574	016501	000002	MOV	TSSR(R5),R1	;GET TSSR		
12627	071600	010004		MOV	R0,R4	;PACKET ADDRESS SET UP		
12628	071602	005237	002212	INC	FATFLG	;BUMP COUNT		
12632	071606			ERRHRD	ERRNO, T26RWN, PKTSSR	;REWIND NOT ACCEPTED		
	071606	104456					TRAP	C#ERHRD
	071610	001335					.WORD	733
	071612	074464					.WORD	T26RWN
	071614	012136					.WORD	PKTSSR
12633	071616			194#:	CKLOOP	;LOOP IF SELECTED		
	071616	104406					TRAP	C#CLP1
12634								
12635								
12636								
12637								
12638								
12639								
12640								
12641	071620	013701	073030	MOV	T26BFR+6,R1	;PICK UP XSTO		
12642	071624	010102		MOV	R1,R2	;SET UP EXPECTED		
12643	071626	052702	000002	BIS	#BIT1,R2	;SET BOT BIT IN EXPECTED		
12644	071632	020102		CMP	R1,R2	;DOES EXP = REC'D		
12645	071634	001406		BEQ	196#	;BR, IF EQUAL (OK)		
12646	071636	005237	002212	INC	FATFLG	;BUMP COUNT		
12650	071642			ERRHRD	ERRNO, T26BOT, EXPREC	;TAPE NOT AT BOT AFTER REWIND		

TEST 6: REREADS

071642	104456					TRAP	C#ERHRD
071644	001336					.WORD	734
071646	074175					.WORD	T26BOT
071650	015564					.WORD	EXPREC
12651	071652	104406		1964:	CKLOOP		
	071652	010302					
12652	071654				MOV R3,R2		
12653							
12654							
12655							
12656							
12657							
12658							
12659							
12660							
12661	071656	012703	000001		MOV #1,R3		
12662	071662	004737	010556		JSR PC,SPACE		
12663	071666	010203			MOV R2,R3		
12664	071670	C05723			TST (R3)+		
12665	071672	021327	177777		CMP (R3),#177777		
12666	071676	001210			BNE 1504		
12667	071700			2004:	ENDSUB		
12668	071700						
	071700	104403					
12669	071702	023727	002212	000017	CMP FATFLG,#15.		
12670	071710	103402			BLO 9994		
12671	071712	004737	017272		JSR PC,CKDROP		
12672	071716			9994:			
12673							
12674							
12675							
12676							
12677							
12678							
12679							
12680							
12681							
12682							
12683							
12684							
12685							
12686							
12687	071716				BGNSUB		
	071716						
	071716	104402					
12688	071720	005003			CLR R3		
12689	071722	004737	015720		JSR PC,T26REST		
12690	071726	004737	076012		JSR PC,T26RT2		
12691	071732	004737	076054		JSR PC,T26RT3		
12692							
12693							
12694							
12695							
12696							
12697							
12698							

TEST 6: REREADS

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12699 071736 004737 016064      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
12700 071742 103407              BCS      20$      ;BR IF INIT WAS OK
12701 071744 005237 002212      INC      FATFLG      ;BUMP COUNT
12705 071750 010001              MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
12706 071752              ERRDF     ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
                                TRAP      C$ERDF      ;
                                .WORD     735          ;
                                .WORD     SFIERR       ;
                                .WORD     SFIMSG       ;
                                .WORD
12707 071762 013737 002172 073020 20$: MOV      UNITN,T26DSW      ;SET UP UNIT NUMBER
12708                                ;
12709 071770 012704 073000      MOV      @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
12710                                ;
12711      ;*****
12712      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
12713      ;
12714      ;*****
12715
12716      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
12717 071774 004737 010752      BCS      25$      ;BR, IF COMMAND ISSUED OK
12718 072000 103407              INC      FATFLG      ;BUMP COUNT
12719 072002 005237 002212      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
12723 072006 010001              ERRHRD   ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
12724 072010              TRAP      C$ERHRD      ;
                                .WORD     736          ;
                                .WORD     WRTMSG       ;
                                .WORD     SFIMSG       ;
                                .WORD
12725 072020 104406      25$:   CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                .WORD
12726      ;*****
12727      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
12728      ;
12729      ;*****
12730
12731      26$:   JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
12732      MOV      TSSR(R5),R1      ;GET TSSR
12733 072022 004737 011104      MOV      @SSR,R2      ;SET UP EXPECTED TSSR
12734 072026 016501 000002      BCS      30$      ;BR, IF NO PROBLEM
12735 072032 012702 000200      MOV      R0,R4      ;PACKET ADDRESS SET UP
12736 072036 103407              INC      FATFLG      ;BUMP COUNT
12737 072040 010004              ERRHRD   ERRNO,T26RWLN,PKTSSR ;REWIND NOT ACCEPTED
12738 072042 005237 002212      TRAP      C$ERHRD      ;
                                .WORD     737          ;
                                .WORD     T26RWLN      ;
                                .WORD     PKTSSR       ;
                                .WORD
12742 072046 104456              TRAP      C$CLP1
                                .WORD
12743 072050 001341              .WORD
12744 072052 074464              .WORD
12745 072054 012136              .WORD
12746      30$:   CKLOOP      ;LOOP IF SELECTED
12747                                TRAP      C$CLP1
12748                                .WORD
12749      ;*****
12750      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
                                ;
                                ;*****

```


TEST 6: REREADS

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12751 072060 013701 073030      MOV      T268FR+6,R1      ;PICK UP XST0
12752 072064 010102      MOV      R1,R2      ;SET UP EXPECTED
12753 072066 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
12754 072072 020102      CMP      R1,R2      ;DOES EXP = REC'D
12755 072074 001406      BEQ      404      ;BR, IF EQUAL (OK)
12756 072076 005237 002212      INC      FATFLG      ;BUMP COUNT
12760 072102      ERRHRD      ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C:ERHRD
                                .WORD      738
                                .WORD      T26BOT
                                .WORD      EXPREC
                                TRAP      C:CLP1
12761 072112      404:      CKLOOP      ;LOOP IF SELECTED
                                TRAP      C:CLP1
12762 072114 012737 000400 073136      MOV      #256.,T26SZ      ;SET UP RECORD SIZE IN PACKET
12763 072122 013737 003114 073132      MOV      FREE,T26RB      ;ADDRESS OF READ BUFFER
12764 072130 005703      TST      R3      ;CHECK NUMBER OF TIMES THROUGH HERE
12765 072132 001404      BEQ      504      ;BR, IF FIRST TIME THROUGH HERE
12766
12767      ;*****
12768      ;
12769      ;REREAD,CVC=1,ACK COMMAND
12770      ;
12771      ;*****
12772
12773 072134 012737 161001 073130      MOV      #161001,T26PK3      ;REREAD,CVC=1,ACK COMMAND
12774 072142 000403      BR      554      ;SKIP NEXT COMMAND
12775
12776      ;*****
12777      ;
12778      ;REREAD,ACK COMMAND
12779      ;
12780      ;*****
12781
12782 072144 012737 141001 073130 504:      MOV      #141001,T26PK3      ;REREAD,ACK COMMAND
12783 072152 012704 073130 554:      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
12784 072156 010465 000000 654:      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
12785 072156 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
12786 072162 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
12787 072166 012702 100206      MOV      #SSR!SC!BIT1!BIT2,R2      ;SET UP EXPECTED
12788 072172 020102      CMP      R1,R2      ;ARE THEY EQUAL
12789 072176 001406      BEQ      754      ;BR, IF OK
12790 072200 005237 002212      INC      FATFLG      ;BUMP COUNT
12791 072202 001406      ERRHRD      ERRNO,T26WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
12792 072206      TRAP      C:ERHRD
                                .WORD      739
                                .WORD      T26WDE
                                .WORD      PKTSSR
                                TRAP      C:CLP1
12793 072206 104456
12794 072210 001343
12795 072212 074123
12796 072214 012136
12797 072216      754:      CKLOOP      ;LOOP IF SELECTED
12798 072216 104406      TRAP      C:CLP1
12799
12800      ;*****
12801      ;
12802      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
12803      ;
12804      ;*****

```


TEST 6: REREADS

Address	Offset	Hex	Hex	Instruction	Comment	Trap	Label
12804	072220	013701	073030	MOV	T26BFR+6,R1		
12806	072224	010102		MOV	R1,R2		
12807	072226	052702	002000	BIS	#BIT10,R2		
12808	072232	020102		CMP	R1,R2		
12809	072234	001406		BEQ	1704		
12810	072236	005237	002212	INC	FATFLG		
12814	072242			ERRHRD	ERRNO,T26NEF,EXPREC		
	072242	104456				TRAP	C#ERRHRD
	072244	001344				.WORD	740
	072246	073254				.WORD	T26NEF
	072250	015564				.WORD	EXPREC
12815	072252			1704:	CKLOOP		
	072252	104406				TRAP	C#CLP1
12816	072254	005103		COM	R3		
12817	072256	001261		BNE	264		
12818	072260			ENDSUB			
	072260	104403				L10120:	
12819	072262	023727	002212 000017	CMP	FATFLG,#15.	TRAP	C#ESUB
12820	072270	103402		BLO	9994		
12821	072272	004737	017272	JSR	PC,CKDROP		
12822	072276			9994:			
12823							
12824							
12825							
12826							
12827							
12828							
12829							
12830							
12831							
12832							
12833							
12834							
12835							
12836							
12837							
12838	072276						
	072276			BGNSUB			
	072276	104402					
12839	072300	005037	073160	CLR	T26CNU		
12840	072304	004737	075720	JSR	PC,T26REST		
12841	072310	004737	076012	JSR	PC,T26RT2		
12842	072314	004737	076054	JSR	PC,T26RT3		
12843							
12844							
12845							
12846							
12847							
12848							
12849							
12850	072320	004737	016064	JSR	PC,SOFINIT		
12851	072324	103407		BCS	204		
12852	072326	005237	002212	INC	FATFLG		
12853	072332	010001		MOV	RO,R1		
12857	072334			ERRDF	ERRNO,SFIERR,SFMSG		

TEST 6: REREADS

	072334	104455					TRAP	C#ERDF
	072336	001345					.WORD	741
	072340	003650					.WORD	SFIERR
	072342	012124					.WORD	SFIMSG
12858	072344	013737	002172	073020	204:	MOV UNITN,T26DSW		;SET UP UNIT NUMBER
12859								
12860	072352	012704	073000			MOV #T26PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
12861								
12862								
12863								
12864								
12865								
12866								
12867								
12868	072356	004737	010752			JSR PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS
12869	072362	103407				BCS 254		;BR, IF COMMAND ISSUED OK
12870	072364	005237	002212			INC FATFLG		;BUMP COUNT
12874	072370	010001				MOV R0,R1		;SAVE CONTENTS OF TSSR
12875	072372					ERRHRD ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTICS FAILED
	072372	104456					TRAP	C#ERHRD
	072374	001346					.WORD	742
	072376	005054					.WORD	WRTMSG
	072400	012124					.WORD	SFIMSG
12876	072402				254:	CKLOOP		;LOOP IF SELECTED
	072402	104406					TRAP	C#CLP1
12877								
12878								
12879								
12880								
12881								
12882								
12883								
12884	072404	004737	011104		264:	JSR PC,REWIND		;CALL TAPE REWIND COMMAND
12885	072410	016501	000002			MOV TSSR(R5),R1		;GET TSSR
12886	072414	012702	000200			MOV #SSR,R2		;SET UP EXPECTED TSSR
12887	072420	103407				BCS 304		;BR, IF NO PROBLEM
12888	072422	010004				MOV R0,R4		;PACKET ADDRESS SET UP
12889	072424	005237	002212			INC FATFLG		;BUMP COUNT
12893	072430					ERRHRD ERRNO,T26RWN,PKTSSR		;REWIND NOT ACCEPTED
	072430	104456					TRAP	C#ERHRD
	072432	001347					.WORD	743
	072434	074464					.WORD	T26RWN
	072436	012136					.WORD	PKTSSR
12894	072440				304:	CKLOOP		;LOOP IF SELECTED
	072440	104406					TRAP	C#CLP1
12895								
12896								
12897								
12898								
12899								
12900								
12901								
12902	072442	013701	073030			MOV T26BFR+6,R1		;PICK UP XSTO
12903	072446	010102				MOV R1,R2		;SET UP EXPECTED
12904	072450	052702	000002			BIS #BIT1,R2		;SET BOT BIT IN EXPECTED
12905	072454	020102				CMP R1,R2		;DOES EXP = REC'D
12906	072456	001406				BEQ 404		;BR, IF EQUAL (OK)

TEST 6: REREADS

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12907 072460 005237 002212          INC    FATFLG          ;BUMP COUNT
12911 072464          ERRHRD   ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          072464 104456          TRAP    C#ERHRD
          072466 001350          .WORD   744
          072470 074175          .WORD   T26BOT
          072472 015564          .WORD   EXPREC
12912 072474          40$:    CKLOOP          TRAP    C#CLP1
          072474 104406
12913
12914          ;*****
12915          ;
12916          ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
12917          ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
12918          ;
12919          ;*****
12920
12921 072476 012703 000001          MOV     #000001,R3          ;SET UP SPACE FORWARD 1 RECORD
12922 072502 004737 010556          JSR     PC,SPACE          ;ISSUE SPACE COMMAND
12923 072506 103411          BCS     75$          ;BR, IF OK
12924 072510 016501 000002          MOV     TSSR(R5),R1          ;GET STATUS DATA
12925 072514 010004          MOV     R0,R4          ;GET PACKET ADDRESS
12926 072516 005237 002212          INC     FATFLG          ;BUMP COUNT
12930 072522          ERRHRD   ERRNO,T26WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
          072522 104456          TRAP    C#ERHRD
          072524 001351          .WORD   745
          072526 074123          .WORD   T26WDE
          072530 012136          .WORD   PKTSSR
12931 072532          75$:    CKLOOP          ;LOOP IF SELECTED
          072532 104406          TRAP    C#CLP1
12932
12933          ;*****
12934          ;
12935          ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
12936          ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
12937          ;
12938          ;*****
12939
12940 072534 012703 100001          MOV     #100001,R3          ;SET SPACE REVERSE 1 RECORD
12941 072540 004737 010556          JSR     PC,SPACE          ;ISSUE COMMAND
12942 072544 103411          BCS     175$          ;GO ON IF ALL IS WELL
12943 072546 016501 000002          MOV     TSSR(R5),R1          ;GET TSSR CONTENTS
12944 072552 010004          MOV     R0,R4          ;SET UP EXPECTED (PACKET CONTENTS)
12945 072554 005237 002212          INC     FATFLG          ;BUMP COUNT
12949 072560          ERRHRD   ERRNO,T26WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
          072560 104456          TRAP    C#ERHRD
          072562 001352          .WORD   746
          072564 074123          .WORD   T26WDE
          072566 012136          .WORD   PKTSSR
12950 072570          175$:  CKLOOP          ;LOOP IF SELECTED
          072570 104406          TRAP    C#CLP1
12951 072572 013737 003114 073132          MOV     FREE,T26RB          ;ADDRESS OF BUFFER
12952 072600 005737 073160          TST     T26CNU          ;CHECK FOR TIMES THROUGH HERE
12953 072604 001404          BEQ     176$          ;BR, IF FIRST TIME THROUGH
12954
12955          ;*****
12956          ;
12957          ;REREAD (PREVIOUS),IE,ACK,OPP=1 CMD.

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TEST 6: REREADS

12958					:	*****		
12959					:	*****		
12960								
12961	072606	012737	161001	073130	MOV	#161001,T26PK3	;REREAD (PREVIOUS),IE,ACK,OPP=1 CMD.	
12962	072614	000403			BR	178:	;SKIP NEXT COMMAND	
12963								
12964					:	*****		
12965					:			
12966					;REREAD ,ACK,OPP=1 COMMAND			
12967					:			
12968					:	*****		
12969								
12970	072616	012737	141001	073130	176:	MOV #141001,T26PK3	;REREAD ,ACK,OPP=1 COMMAND	
12971	072624				178:			
12972	072624	012704	073130		MOV	#T26PK3,R4	;SET UP R4 WITH PACKET ADDRESS	
12973	072630	010465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND	
12974	072634	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR TO SET	
12975	072640	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS	
12976	072644	C12702	100204		MOV	#SSR!SC!BIT2,R2	;SET UP EXPECTED	
12977	072650	020102			CMP	R1,R2	;ARE THEY EQUAL	
12978	072652	001406			BEQ	180:	;BR, IF OK	
12979	072654	005237	002212		INC	FATFLG	;BUMP COUNT	
12983	072660				ERRHRD	ERRNO,T26WDE,PKTSSR	;TSSR INCORRECT AFTER READ DATA	
	072660	104456					TRAP	C#ERHRD
	072662	001353					.WORD	747
	072664	074123					.WORD	T26WDE
	072666	012136					.WORD	PKTSSR
12984	072670				180:	CKLOOP	;LOOP IF SELECTED	
	072670	104406					TRAP	C#CLP1
12985	072672	013701	073036		MOV	T26BFR+14,R1	;GET XST3 STATUS WORD	
12986	072676	010102			MOV	R1,R2	;SET UP EXPECTED	
12987	072700	052702	000001		BIS	#BIT0,R2	;SET THE NEF BIT	
12988	072704	020102			CMP	R1,R2	;ARE THEY EQUAL	
12989	072706	001406			BEQ	190:	;BR, IF EQUAL (GOOD)	
12990	072710	005237	002212		INC	FATFLG	;BUMP COUNT	
12994	072714				ERRHRD	ERRNO,T26NEF,EXPREC	;NEF SHOULD BE SET	
	072714	104456					TRAP	C#ERHRD
	072716	001354					.WORD	748
	072720	073254					.WORD	T26NEF
	072722	015564					.WORD	EXPREC
12995	072724				190:	CKLOOP		
	072724	104406					TRAP	C#CLP1
12996	072726	005137	073160		COM	T26CNU	;SET SWITCH THE OTHER WAY	
12997	072732	001224			BNE	26:	;BR, IF FIRST TIME THROUGH	
12998	072734				ENDSUB		;>>>>>>>>> END SUBTEST >>>>>>>>>	
	072734						L10121:	
	072734	104403					TRAP	C#ESUB
12999	072736	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25	
13000	072744	103402			BLO	999:	;BR, IF LESS THAN 25	
13001	072746	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT	
13002	072752				999:			
13003					:			
13004					:			
13005					:			
13006	072752	004737	01654F		JSR	PC,TSTLOOP	;DO WE NEED TO ITERATE TEST	
13007	072756	103002			BCC	163:	;BR, IF NO LOOP REQUIRED	
13008	072760	000137	056F		JMP	T26LOOP	;EXECUTE AGAIN	

TEST 6: REREADS

13009 072764	1631:	EXIT	TST	; ALL DONE THIS TEST	TRAP	C#EXIT
13010 072764					.WORD	L10102-
072764 104432						
072766 003116						
13011						
13012						
13013						
13014						
13016 072770						
13018 073000						
13019 073000 014004						
13020 073002 073010						
13021 073004 000000						
13022 073006 000012						
13023 073010						
13024 073010 073022						
13025 073012 000000						
13026 073014 000024						
13027 073016 C00000						
13028 073020 000000						
13029 073022						
13030						
13031						
13032						
13034 073104						
13036 073110						
13037 073110 100006						
13038 073112 073140						
13039 073114 000000						
13040 073116 000006						
13041						
13043 073120						
13045 073130						
13046 073130 140005						
13047 073132						
13048 073132 003114						
13049 073134 000000						
13050 073136 000000						
13051						
13052						
13053						
13054						
13055 073140						
13056 073140 010						
13057 073141 200						
13058 073142 000000						
13059 073144 000000						
13060						
13061						
13062						
13063						
13064						
13065 073146 140001						
13066 073150 141401						
13067 073152 161401						
13068 073154 177777						
13069						

TEST 6: REREADS

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13070
13071 073156 000000      T26CNT: .WORD 0      ;TAPE RECORD COUNTER STORAGE AREA
13072 073160 000000      T26CNU: .WORD 0      ;TAPE RECORD COUNTER STORAGE AREA
13073
13074 073162 000000      T26RSZ: .WORD 0      ;RECORD STORAGE SIZE AREA
13075
13076 073164 000000      T26DLY: .WORD 0      ;DELAY COUNTER AREA
13077
13078
13079      ;*
13080      ;LOCAL TEXT MESSAGES FOR TEST
13081      ;-
13082
13083
13084 073166      124      141      160 T26WNG: .ASCIZ 'Tape Position Incorrect After REREAD Previous (OPP=1)'
13085 073254      122      105      122 T26NEF: .ASCIZ 'REREAD PREVIOUS, At BOT, failed To Set NEF (XST0)'
13086 073336      124      123      123 T26RDF: .ASCIZ 'TSSR Incorrect After READ DATA Command'
13087 073405      122      105      122 T26RRF: .ASCIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
13088 073502      122      105      122 T26RRG: .ASCIZ 'REREAD Previous (Read Reverse, Space Forward) Command Failed'
13089 073577      120      117      123 T26SC: .ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
13090 073661      122      111      102 T26LOR: .ASCIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
13091 073731      124      123      123 T26WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
13092 074006      111      154      154 T26LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
13093 074067      122      105      122 T26SSR: .ASCIZ 'REREAD COMMAND Not Accepted'
13094 074123      124      123      123 T26WDE: .ASCIZ 'TSSR Not Correct After WRITE DATA Command'
13095 074175      124      141      160 T26BOT: .ASCIZ 'Tape Not At BOT After REWIND Command'
13096 074242      104      141      164 T26DTA: .ASCIZ 'Data Written To Tape Not Equal To Data Read From Tape'
13097 074330      122      105      122 T26EOT: .ASCIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
13098 074407      124      123      123 T26TM: .ASCIZ 'TSSR Not Correct After REREAD COMMAND Reject'
13099 074464      122      145      167 T26RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
13100 074533      122      101      115 T26RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
13101 074606      124      123      123 T26AM3: .ASCIZ 'TSSR Init. Failed After REREAD COMMAND'
13102 074655      104      162      151 T26OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
13103 074730      124      123      123 T26WDD: .ASCIZ 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'
13104 075020      124      123      123 T26WDC: .ASCIZ 'TSSR Not Correct After REREAD DATA Command'
13105 075073      103      126      103 T26VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
13106 075146      124      123      102 T26BA: .ASCIZ 'TSBA Not Correct After REREAD DATA Command'
13107 075221      127      122      111 T26WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
13108 075310      122      145      141 T26LON: .ASCIZ 'Reading Long Record Failed To Set RLL Bit In XST0'
13109 075372      122      145      141 T26LOP: .ASCIZ 'Reading Long Record Failed To Set RLS Bit In XST0'
13110 075454      122      145      163 T26PBP: .ASCIZ 'Residual Byte Count Incorrect After Short Record Read'
13111 075542      122      145      141 T26TRL: .ASCIZ 'Reading Long Record Failed To Give Tape Status Alert'
13112 075630      104      141      164 T26NEQ: .ASCIZ 'Data REREAD From Tape Not Correct, After SWB=1'
13113 075707      122      145      162 T26ID: .ASCIZ 'Rereads'
13114
13115      ;*
13116      ;
13117      ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
13118      ;WRITE SUBSYSTEM MEMORY COMMAND
13119      ;
13120      ;-
13121
13122 075720      T26REST:      SAVREG      ;SAVE THE REGISTERS
13123 075720      MOV      #T26PACKET,R1      ;START OF THE PACKET
13124 075724      012701      073000      MOV      #140004,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK, CVC=1
13125 075730      012721      140004      MOV      #T26DATA,(R1)+      ;ADDRESS OF CHARAISTICS DATA BLOCK
13126 075734      012721      073010

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TEST 6: REREADS

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13127 075740 005021          CLR      (R1)+          ;EXTENDED ADDRESS
13128 075742 012721 000012    MOV      #10.,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
13129 075746 012721 073022    MOV      #T26BFR,(R1)+    ;ADDRESS OF MESSAGE BUFFER
13130 075752 005021          CLR      (R1)+
13131 075754 012721 000024    MOV      #20.,(R1)+      ;LENGTH OF MESSAGE BUFFER
13132 075760 005021          CLR      (R1)+
13133 075762 012711 000000    MOV      #0,(R1)          ;SELECT DRIVE ZERO (0)
13134 075766 012702 000030    MOV      #24.,R2         ;NUMBER OF LOCATIONS TO BE CLEARED
13135 075772 012762 177777 073022 64+: MOV      #177777,T26BFR(R2) ;ALL ONES TO MESSAGE BUFFER
13136 076000 005742          TST      -(R2)            ;NEXT LOCATION
13137 076002 020227 000000    CMP      R2,#0           ;CHECK FOR END OF LOOP
13138 076006 001371          BNE      64+              ;KEEP GOING UNTIL DONE
13139 076010 000207          RTS      PC               ;RETURN
13140
13141
13142 076012          T26RT2:
13143 076012          SAVREG
13144 076016 012701 073110    MOV      #T26PK2,R1        ;SAVE THE REGISTERS
13145 076022 012721 140006    MOV      #140006,(R1)+      ;START OF THE PACKET
13146 076026 012721 073140    MOV      #T26BF2,(R1)+    ;WRITE SUBSYSTEM MEM. WITH ACK,CVC=1.
13147 076032 005021          CLR      (R1)+            ;ADDRESS OF DATA BLOCK
13148 076034 012721 000006    MOV      #6.,(R1)+        ;EXTENDED ADDRESS
13149 076040 005021          CLR      (R1)+            ;SIZE OF DATA BLOCK IN BYTES
13150 076042 012701 073140    MOV      #T26BF2,R1        ;POINT TO DATA SEL AREA
13151 076046 005021          CLR      (R1)+
13152 076050 005011          CLR      (R1)
13153 076052 000207          RTS      PC               ;RETURN
13154 076054          T26RT3:
13155 076054          SAVREG
13156 076060 012701 073130    MOV      #T26PK3,R1        ;SAVE THE REGISTERS
13157 076064 012721 000000    MOV      #0,(R1)+          ;START OF THE PACKET
13158 076070 012721 000000    MOV      #0,(R1)+          ;WRITE SUBSYSTEM MEM. WITH ACK.
13159 076074 005021          CLR      (R1)+            ;ADDRESS OF DATA BLOCK
13160 076076 012711 000000    MOV      #0,(R1)+          ;EXTENDED ADDRESS
13161 076102 000207          RTS      PC               ;SIZE OF DATA BLOCK IN BYTES
13162 076104          ENDTST
13163          L10102: TRAP      C#ETST
13164          076104 104401
13165          .SBTTL TEST 7: WRITE DATA RETRY
13166          ;+
13167          ;THIS TEST VERIFIES PROPER OPERATION OF THE WRITE DATA RETRY
13168          ;COMMAND (SPACE REVERSE, ERASE, WRITE DATA)
13169          ;
13170          ;THE TEST CONSISTS OF THE FOLLOWING 5 SUBTESTS
13171          ;
13172          ;
13173          ;
13174          ;
13175          ;-
13176 076106          BGNTST
13177 076106 012737 006446 002170    MOV      #EPRT2,EPRTSW      ;SECONDARY ERROR MESSAGE
13178 076114 005037 003124          CLR      KTENABLE      ;TURN OFF KT11
13179 076120 004737 017364          JSR      PC,KTOFF        ;TURN KT11 BACK OFF IF THERE
13184 076124 012700 105743          MOV      #TST27ID,R0      ;ASCII MESSAGE TO IDENTIFY TEST

```


TEST 7: WRITE DATA RETRY

```
13231 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
13232 ;
13233 ;*****
13234
13235 076272 004737 010752 JSR PC,WRTHCR ;ISSUE WRITE CHARACTERISTICS
13236 076276 103407 BCS 254 ;BR, IF COMMAND ISSUED OK
13237 076300 005237 002212 INC FATFLG ;BUMP COUNT
13241 076304 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
13242 076306 ERRHRD ERRNO,WRTHMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP C$ERHRD
                                .WORD 702
                                .WORD WRTHMSG
                                .WORD SFMSG
                                076306 104456
                                076310 001276
                                076312 005054
                                076314 012124
13243 076316 104406 254: CKLOOP ;LOOP IF SELECTED
                                TRAP C$CLP1
                                076316 104406
13244 ;*****
13245 ;
13246 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
13247 ;
13248 ;*****
13249
13250
13251 076320 004737 011104 JSR PC,REWIND ;CALL TAPE REWIND COMMAND
13252 076324 103407 BCS 304 ;BR, IF NO PROBLEM
13253 076326 010004 MOV R0,R4 ;SET UP REWIND PACKET ADDRESS
13254 076330 005237 002212 INC FATFLG ;BUMP COUNT
13258 076334 ERRHRD ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP C$ERHRD
                                .WORD 703
                                .WORD T27RWN
                                .WORD PKTSSR
                                076334 104456
                                076336 001277
                                076340 104165
                                076342 012136
13259 076344 104406 304: CKLOOP ;LOOP IF SELECTED
                                TRAP C$CLP1
                                076344 104406
13260 ;*****
13261 ;
13262 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
13263 ;
13264 ;*****
13265
13266
13267 076346 013701 102660 MOV T27BFR+6,R1 ;PICK UP XSTO
13268 076352 010102 MOV R1,R2 ;SET UP EXPECTED
13269 076354 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
13270 076360 020102 CMP R1,R2 ;DOES EXP = REC'D
13271 076362 001406 BEQ 404 ;BR, IF EQUAL (OK)
13272 076364 005237 002212 INC FATFLG ;BUMP COUNT
13276 076370 ERRHRD ERRNO,T27BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP C$ERHRD
                                .WORD 704
                                .WORD T27BOT
                                .WORD EXPREC
                                076370 104456
                                076372 001300
                                076374 103661
                                076376 015564
13277 076400 104406 404: CKLOOP ;LOOP IF SELECTED
                                TRAP C$CLP1
                                076400 104406
13278 076402 012737 000400 102766 MOV #256.,T27SZ ;SET UP RECORD SIZE
13279 076410 013737 003114 102762 MOV FREE,T27WB ;ADDRESS OF WRITE BUFFER
13280 ;*****
13281 ;
```


TEST 7: WRITE DATA RETRY

```

13282
13283 ;WRITE DATA RETRY,ACK,CVC=1 COMMAND
13284 ;
13285 ;*****
13286
13287 076416 012737 141005 102760      MOV      #141005,T27PK3      ;WRITE DATA RETRY,ACK,CVC=1 COMMAND
13288 076424 012704 102760      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
13289 076430 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
13290 076434 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
13291 076440 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13292 076444 012702 100206      MOV      #SSR!SC!BIT1!BIT2,R2      ;SET UP EXPECTED
13293 076450 020102      CMP      R1,R2      ;ARE THEY EQUAL
13294 076452 001406      BEQ      75$      ;BR, IF OK
13295 076454 005237 002212      INC      FATFLG      ;BUMP COUNT
13299 076460      ERRHRD      ERRNO,T27WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
13299 076460      104456      TRAP      C$ERHRD
13299 076462      001301      .WORD      705
13299 076464      103572      .WORD      T27WDE
13299 076466      C12136      .WORD      PKTSSR
13300 076470      104406      75$:      CKLOOP      ;LOOP IF SELECTED
13300 076470      104406      TRAP      C$CLP1
13301
13302 ;*****
13303 ;
13304 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
13305 ;
13306 ;*****
13307
13308 076472 013701 102660      MOV      T27BFR+6,R1      ;GET XST0 STATUS WORD
13309 076476 010102      MOV      R1,R2      ;SET UP EXPECTED
13310 076500 052702 002000      BIS      #BIT10,R2      ;SET THE NEF BIT
13311 076504 020102      CMP      R1,R2      ;ARE THEY EQUAL
13312 076506 001406      BEQ      170$      ;BR, IF EQUAL (GOOD)
13313 076510 005237 002212      INC      FATFLG      ;BUMP COUNT
13317 076514      ERRHRD      ERRNO,T27NEF,EXPREC      ;NEF SHOULD BE SET
13317 076514      104456      TRAP      C$ERHRD
13317 076516      001302      .WORD      706
13317 076520      105331      .WORD      T27NEF
13317 076522      015564      .WORD      EXPREC
13318 076524      104406      170$:      CKLOOP      TRAP      C$CLP1
13319 076526      104403      ENDSUB
13319 076526      104403      L10123:      TRAP      C$ESUB
13320 076530 023727 002212 000017      CMP      FATFLG,#15.      ;IS ERROR COUNT AT 25
13321 076536 103402      BLO      999$      ;BR, IF LESS THAN 25
13322 076540 004737 017272      JSR      PC,CKDROP      ;TRY TO DROP THE UNIT
13323 076544      999$:
13324
13325 ;*
13326 ;
13327 ;TEST 7. SUBTEST 2
13328 ;
13329 ;VERIFIES THAT WRITE DATA RETRY COMMAND ISSUED WHILE
13330 ;THE TAPE IS POSITIONED BEFORE THE FIRST RECORD ON
13331 ;TAPE (BUT NOT AT BOT) RESULTS IN TAPE STATUS ALERT
13332 ;TERMINATION, WITH THE REVERSE INTO BOT (RIB) STATUS

```


TEST 7: WRITE DATA RETRY

Address	Offset	PC	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464
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TEST 7: WRITE DATA RETRY

```
13385 076656 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13386 076662 005237 002212      INC      FATFLG      ;BUMP COUNT
13390 076666      ERRHRD  ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
      076666 104456      TRAP      C#ERHRD
      076670 001305      .WORD    709
      076672 104165      .WORD    T27RWN
      076674 012136      .WORD    PKTSSR
13391 076676      26#: CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      076676 104406      ;STARTING RECORD SIZE
13392 076700 012703 000400      MOV      #256.,R3      ;STARTING WRITE BUFFER ADDRESS
13393 076704 013737 003114 102762      MOV      FREE,T27WB
13394
13395 ;*****
13396 ;
13397 ;WRITE DATA,CVC=1,ACK COMMAND
13398 ;
13399 ;*****
13400
13401 076712 C12737 140005 102760      MOV      #140005,T27PK3      ;WRITE DATA,CVC=1,ACK COMMAND
13402 076720 012704 102760      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
13403 076724 010337 102766      MOV      R3,T27SZ      ;SET UP RECORD SIZE IN PACKET
13404 076730 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
13405 076734 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
13406 076740 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13407 076744 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
13408 076750 020102      CMP      R1,R2      ;ARE THEY EQUAL
13409 076752 001406      BEQ      28#      ;BR, IF OK
13410 076754 005237 002212      INC      FATFLG      ;BUMP COUNT
13414 076760      ERRHRD  ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
      076760 104456      TRAP      C#ERHRD
      076762 001306      .WORD    710
      076764 005111      .WORD    WRERR
      076766 012136      .WORD    PKTSSR
13415 076770      28#: CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      076770 104406
13416
13417 ;*****
13418 ;
13419 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
13420 ;
13421 ;*****
13422
13423 076772 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
13424 076776 103411      BCS      30#      ;BR, IF NO PROBLEM
13425 077000 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13426 077004 010004      MOV      R0,R4      ;SET UP REWIND PACKET ADDRESS
13427 077006 005237 002212      INC      FATFLG      ;BUMP COUNT
13431 077012      ERRHRD  ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
      077012 104456      TRAP      C#ERHRD
      077014 001307      .WORD    711
      077016 104165      .WORD    T27RWN
      077020 012136      .WORD    PKTSSR
13432 077022      30#: CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      077022 104406
13433
13434 ;*****
13435 ;
```


TEST 7: WRITE DATA RETRY

```

13436      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
13437      ;
13438      ;*****
13439
13440 077024 013701 102660      MOV      T27BFR+6,R1      ;PICK UP XST0
13441 077030 010102      MOV      R1,R2      ;SET UP EXPECTED
13442 077032 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
13443 077036 020102      CMP      R1,R2      ;DOES EXP = REC'D
13444 077040 001406      BEQ      404      ;BR, IF EQUAL (OK)
13445 077042 005237 002212      INC      FATFLG      ;BUMP COUNT
13449 077046      ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
13449 077046 104456      TRAP      C#ERHRD
13449 077050 001310      .WORD    712
13449 077052 103661      .WORD    T27BOT
13449 077054 015564      .WORD    EXPREC
13450 077056      404:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
13450 077056 104406
13451
13452      ;*****
13453      ;
13454      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
13455      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
13456      ;
13457      ;*****
13458
13459 077060 012703 000001      MOV      #1,R3      ;PARAMETER SPACE FORWARD 1 RECORD
13460 077064 004737 010556      JSR      PC,SPACE      ;CALL SPACE RECORDS ROUTINE
13461 077070 103413      BCS      504      ;BR, IF NO ERRORS
13462 077072 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13463 077076 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
13464 077102 010004      MOV      R0,R4      ;SET UP REWIND PACKET ADDRESS
13465 077104 005237 002212      INC      FATFLG      ;BUMP COUNT
13469 077110      ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE RECORDS COMMAND FAILED
13469 077110 104456      TRAP      C#ERHRD
13469 077112 001311      .WORD    713
13469 077114 105427      .WORD    T27SCF
13469 077116 012136      .WORD    PKTSSR
13470 077120      504:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
13470 077120 104406
13471
13472      ;*****
13473      ;
13474      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
13475      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
13476      ;
13477      ;*****
13478
13479 077122 012703 100001      MOV      #100001,R3      ;PARAMETER SPACE REVERSE 1 RECORD
13480 077126 004737 010556      JSR      PC,SPACE      ;CALL SPACE RECORDS ROUTINE
13481 077132 103413      BCS      604      ;BR, IF NO ERRORS
13482 077134 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13483 077140 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
13484 077144 010004      MOV      R0,R4      ;SET UP REWIND PACKET ADDRESS
13485 077146 005237 002212      INC      FATFLG      ;BUMP COUNT
13489 077152      ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE RECORDS COMMAND FAILED
13489 077152 104456      TRAP      C#ERHRD
13489 077154 001312      .WORD    714

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	077156	105427					.WORD	T27SCF
	077160	012136					.WORD	PKTSSR
13490	077162				601:	CKLOOP	;LOOP IF SELECTED	
	077162	104406						
13491	077164	013737	003114	102762		MOV	FREE,T27RB	TRAP C1CLP1
13492							;ADDRESS OF BUFFER	
13493								
13494								
13495								
13496								
13497								
13498								
13499	077172	012737	141005	102760		MOV	#141005,T27PK3	;WRITE DATA RETRY,ACK,CVC=1 COMMAND
13500	077200	012737	000400	102766		MOV	#256.,T27SZ	;SET UP THE SIZE OF RECORD
13501	077206	012704				MOV	#T27PK3,R4	;SET UP R4 WITH PACKET ADDRESS
13502	077212	010465	000000			MOV	R4,TSD0(R5)	;ISSUE COMMAND
13503	077216	004737	016340			JSR	PC,WAITF	;WAIT FOR SSR TO SET
13504	077222	016501	000002			MOV	TSSR(R5),R1	;GET TSSR CONTENTS
13505	077226	C12702	100204			MOV	#SSR!SC!BIT2,R2	;SET UP EXPECTED TAPE STATUS ALERT
13506	077232	020102				CMP	R1,R2	;ARE THEY EQUAL
13507	077234	001406				BEQ	1801	;BR, IF OK
13508	077236	005237	002212			INC	FATFLG	;BUMP COUNT
13512	077242					ERRHRD	ERRNO,T27TSA,PKTSSR	;TSSR INCORRECT AFTER READ DATA
	077242	104456						TRAP C1ERHRD
	077244	001313						.WORD 715
	077246	105504						.WORD T27TSA
	077250	012136						.WORD PKTSSR
13513	077252				1801:	CKLOOP	;LOOP IF SELECTED	
	077252	104406						TRAP C1CLP1
13514	077254	013701	102666			MOV	T27BFR+14,R1	;GET XST3 STATUS WORD
13515	077260	010102				MOV	R1,R2	;SET UP EXPECTED
13516	077262	052702	000001			BIS	#BIT0,R2	;SET THE RIB BIT
13517	077266	020102				CMP	R1,R2	;ARE THEY EQUAL
13518	077270	001406				BEQ	1901	;BR, IF EQUAL (GOOD)
13519	077272	005237	002212			INC	FATFLG	;BUMP COUNT
13523	077276					ERRHRD	ERRNO,T27NEF,EXPREC	;NEF SHOULD BE SET
	077276	104456						TRAP C1ERHRD
	077300	001314						.WORD 716
	077302	105331						.WORD T27NEF
	077304	015564						.WORD EXPREC
13524	077306				1901:	CKLOOP		
	077306	104406						TRAP C1CLP1
13525	077310					ENDSUB		
	077310						;>>>>>>>>> END SUBTEST >>>>>>>>>	
	077310	104403					L10124:	TRAP C1ESUB
13526	077312	023727	002212	000017		CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
13527	077320	103402				BLO	9991	;BR, IF LESS THAN 25
13528	077322	004737	017272			JSR	PC,CKDROP	;TRY TO DROP THE UNIT
13529	077326				9991:			
13530								
13531								
13532								
13533								
13534								
13535								
13536								
13537								

TEST 7: WRITE DATA RETRY

13538							;BYTE COUNTS AND DATA PATTERNS ARE USED.	
13539							:	
13540							:	
13541							:	
13542							:	
13543	077326				BGNSUB		,>>>>>>>>> BEGIN SUBTEST >>>>>>>>>	
	077326						T7.3:	
	077326	104402					TRAP	C#BSUB
13544	077330	004737	105764		JSR	PC,T27REST	;SET COMMAND PACKET	
13545	077334	004737	106056		JSR	PC,T27RT2	;SET UP OTHER COMMAND PACKET	
13546	077340	004737	106120		JSR	PC,T27RT3	;SET UP OTHER COMMAND PACKET	
13547								
13548								
13549								
13550								
13551								
13552								
13553								
13554	077344	C04737	016064		JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER	
13555	077350	103407			BCS	20:	;BR IF INIT WAS OK	
13556	077352	005237	002212		INC	FATFLG	;BUMP COUNT	
13560	077356	010001			MOV	R0,R1	;CONTENTS OF TSSR REGISTER	
13561	077360				ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK	
	077360	104455					TRAP	C#ERDF
	077362	001315					.WORD	717
	077364	003650					.WORD	SFIERR
	077366	012124					.WORD	SFIMSG
13562	077370	013737	002172	102650	20:	MOV	UNITN,T27DSW	;SET UP UNIT NUMBER IN PACKET
13563	077376	012704	102630		MOV	#T27PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS	
13564								
13565								
13566								
13567								
13568								
13569								
13570								
13571	077402	004737	010752		JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS	
13572	077406	103407			BCS	23:	;BR, IF COMMAND ISSUED OK	
13573	077410	005237	002212		INC	FATFLG	;BUMP COUNT	
13577	077414	010001			MOV	R0,R1	;SAVE CONTENTS OF TSSR	
13578	077416				ERRHRD	ERRNO,WRTMSG,SFIMSG	;WRITE CHARACTERISTICSC FAILED	
	077416	104456					TRAP	C#ERHRD
	077420	001316					.WORD	718
	077422	005054					.WORD	WRTMSG
	077424	012124					.WORD	SFIMSG
13579	077426				23:	CKLOOP	;LOOP IF SELECTED	
	077426	104406					TRAP	C#CLP1
13580								
13581								
13582								
13583								
13584								
13585								
13586								
13587	077430	004737	011104		JSR	PC,REWIND	;CALL TAPE REWIND COMMAND	
13588	077434	103407			BCS	30:	;BR, IF NO PROBLEM	
13589	077436	010004			MOV	R0,R4	;SET UP REWIND PACKET ADDRESS	

TEST 7: WRITE DATA RETRY

```
13590 077440 005237 002212          INC    FATFLG          ;BUMP COUNT
13594 077444          ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
      077444 104456          TRAP    C#ERHRD
      077446 001317          .WORD  719
      077450 104165          .WORD  T27RWN
      077452 012136          .WORD  PKTSSR
13595 077454          300:    CKLOOP                  ;LOOP IF SELECTED
      077454 104406          TRAP    C#CLP1

13596
13597          ;*****
13598          ;
13599          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
13600          ;
13601          ;*****
13602
13603 077456 013701 102660          MOV    T27BFR+6,R1      ;PICK UP XSTO
13604 077462 010102          MOV    R1,R2                ;SET UP EXPECTED
13605 077464 052702 000002          BIS    #BIT1,R2        ;SET BOT BIT IN EXPECTED
13606 077470 C20102          CMP    R1,R2                ;DOES EXP = REC'D
13607 077472 001406          BEQ    400                  ;BR, IF EQUAL (OK)
13608 077474 005237 002212          INC    FATFLG          ;BUMP COUNT
13612 077500          ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      077500 104456          TRAP    C#ERHRD
      077502 001320          .WORD  720
      077504 103661          .WORD  T27BOT
      077506 015564          .WORD  EXPREC
13613 077510          400:    CKLOOP                  ;LOOP IF SELECTED
      077510 104406          TRAP    C#CLP1
13614 077512 012703 000024          MOV    #20.,R3        ;STARTING RECORD SIZE
13615 077516 013737 003114 102762  MOV    FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
13616
13617          ;*****
13618          ;
13619          ;WRITE DATA,CVC=1,ACK COMMAND
13620          ;
13621          ;*****
13622
13623 077524 012737 140005 102760 650:  MOV    #140005,T27PK3      ;WRITE DATA,CVC=1,ACK COMMAND
13624 077532 012704 102760          MOV    #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
13625 077536 010300          MOV    R3,R0                ;SET PATTERN IN CORRECT REGISTER
13626 077540 004737 017512          JSR    PC,FILLMEM        ;FILL MEMORY WITH RECORD SIZE
13627 077544 010337 102766          MOV    R3,T27SZ        ;SET UP RECORD SIZE IN PACKET
13628 077550 010465 000000          MOV    R4,TSD8(R5)      ;ISSUE COMMAND
13629 077554 004737 016340          JSR    PC,WAITF        ;WAIT FOR SSR TO SET
13630 077560 016501 000002          MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
13631 077564 012702 000200          MOV    #SSR,R2        ;SET UP EXPECTED
13632 077570 000102          CMP    R1,R2                ;ARE THEY EQUAL
13633 077572 001406          BEQ    800                  ;BR, IF OK
13634 077574 005237 002212          INC    FATFLG          ;BUMP COUNT
13638 077600          ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      077600 104456          TRAP    C#ERHRD
      077602 001321          .WORD  721
      077604 005111          .WORD  WRERR
      077606 012136          .WORD  PKTSSR
13639 077610          800:    CKLOOP                  ;LOOP IF SELECTED
      077610 104406          TRAP    C#CLP1
13640
```


TEST 7: WRITE DATA RETRY

```
13641 ;*****
13642 ;
13643 ;WRITE DATA RETRY,CVC-1,ACK COMMAND
13644 ;
13645 ;*****
13646
13647 077612 012737 141005 102760      MOV      #141005,T27PK3      ;WRITE DATA RETRY,CVC-1,ACK COMMAND
13648 077620 010465 000000              MOV      R4,TSDB(R5)      ;ISSUE COMMAND
13649 077624 004737 016340              JSR      PC,WAITF      ;WAIT FOR SSR TO SET
13650 077630 016501 000002              MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13651 077634 012702 000200              MOV      #SSR,R2      ;SET UP EXPECTED
13652 077640 020102                      CMP      R1,R2      ;ARE THEY EQUAL
13653 077642 001406                      BEQ      90$      ;BR, IF OK
13654 077644 005237 002212              INC      FATFLG      ;BUMP COUNT
13658 077650                      ERRMRD  ERRNO,T27WRF,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA RETRY
13659 077650 104456                      TRAP      C$ERRMRD
13660 077652 001322                      .WORD    722
13661 077654 105566                      .WORD    T27WRF
13662 077656 C12136                      .WORD    PKTSSR
13659 077660                      90$:  CKLOOP      ;LOOP IF SELECTED
13660 077660 104406                      TRAP      C$CLP1
13661 077662 005723                      TST      (R3)+      ;BUMP RECORD SIZE COUNTER
13662 077664 020327 000050              CMP      R3,#40.      ;AT 40 SIZE YET
13663 0776 0 001315                      BNE      65$      ;BR, IF MORE RECORDS TO WRITE
13664 ;*****
13665 ;
13666 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
13667 ;
13668 ;*****
13669
13670 077672 004737 011104              JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
13671 077676 103407                      BCS      230$      ;BR, IF NO PROBLEM
13672 077700 010001                      MOV      R0,R1      ;SAVE TSSR
13673 077702 005237 002212              INC      FATFLG      ;BUMP COUNT
13677 077706                      ERRMRD  ERRNO,T27RWN,EXPREC      ;REWIND NOT ACCEPTED
13678 077706 104456                      TRAP      C$ERRMRD
13679 077710 001323                      .WORD    723
13680 077712 104165                      .WORD    T27RWN
13681 077714 015564                      .WORD    EXPREC
13678 077716                      230$:  CKLOOP      ;LOOP IF SELECTED
13679 077716 104406                      TRAP      C$CLP1
13680 ;*****
13681 ;
13682 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
13683 ;
13684 ;*****
13685
13686 077720 013701 102660              MOV      T27BFR+6,R1      ;PICK UP XST0
13687 077724 010102                      MOV      R1,R2      ;SET UP EXPECTED
13688 077726 052702 000002              BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
13689 077732 020102                      CMP      R1,R2      ;DOES EXP = REC'D
13690 077734 001406                      BEQ      240$      ;BR, IF EQUAL (OK)
13691 077736 005237 002212              INC      FATFLG      ;BUMP COUNT
13695 077742                      ERRMRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
13696 077742 104456                      TRAP      C$ERRMRD
```


TEST 7: WRITE DATA RETRY

Address	Instruction	Comments	Register/Value	Label	Trap	Value
077744	001324					724
077746	103661					T27BOT
077750	015564					EXPREC
13696	077752	240:	CKLOOP	;LOOP IF SELECTED		
077752	104406				TRAP	C#CLP1
13697	077754	000024	MOV	#20.,R3		
13698	077760	003114 102762	MOV	FREE,T27RB		
13699				;STARTING RECORD SIZE		
13700				;STARTING READ BUFFER ADDRESS		
13701				*****		
13702				;READ DATA,ACK COMMAND		
13703				*****		
13704						
13705						
13706	077766	012737 100001 102760	265:	MOV #100001,T27PK3		
13707	077774	012704 102760		MOV #T27PK3,R4		
13708	100000	010337 102766		MOV R3,T27SZ		
13709	100004	010465 000000		MOV R4,TSD8(R5)		
13710	100010	C04737 016340		JSR PC,WAITF		
13711	100014	016501 000002		MOV TSSR(R5),R1		
13712	100020	012702 000200		MOV #SSR,R2		
13713	100024	020102		CMP R1,R2		
13714	100026	001406		BEQ 280:		
13715	100030	005237 002212		INC FATFLG		
13719	100034			ERRHRD ERRNO,RDERR,PKTSSR		
	100034	104456			TRAP	C#ERHRD
	100036	001325			.WORD	725
	100040	005204			.WORD	RDERR
	100042	012136			.WORD	PKTSSR
13720	100044		280:	CKLOOP	;LOOP IF SELECTED	
	100044	104406			TRAP	C#CLP1
13721	100046	013702 003114		MOV FREE,R2		
13722	100052	010304		MOV R3,R4		
13723	100054	162704 000024		SUB #20.,R4		
13724	100060	060204	285:	ADD R2,R4		
13725	100062	021403		CMP (R4),R3		
13726	100064	001410		BEQ 290:		
13727	100066	011401		MOV (R4),R1		
13728	100070	010302		MOV R3,R2		
13729	100072	005237 002212		INC FATFLG		
13733	100076			ERRHRD ERRNO,T27DTA,EXPREC		
	100076	104456			TRAP	C#ERHRD
	100100	001326			.WORD	726
	100102	105646			.WORD	T27DTA
	100104	015564			.WORD	EXPREC
13734	100106		290:	CKLOOP	;LOOP IF SELECTED	
	100106	104406			TRAP	C#CLP1
13735	100110	005724		TST (R4)+		
13736	100112	160204		SUB R2,R4		
13737	100114	020403		CMP R4,R3		
13738	100116	001360		BNE 285:		
13739	100120	005723		TST (R3)+		
13740	100122	020327 000050		CMP R3,#40.		
13741	100126	001317		BNE 265:		
13742	100130		300:	CKLOOP	;LOOP IF SELECTED	
	100130	104406			TRAP	C#CLP1
13743	100132		330:			

TEST 7: WRITE DATA RETRY

Address	Offset	Label	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464
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TEST 7: WRITE DATA RETRY

```
13788 ;*****
13789 ;
13790 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
13791 ;
13792 ;*****
13793
13794 100270 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
13795 100274 103407          BCS      23$      ;BR, IF COMMAND ISSUED OK
13796 100276 005237 002212      INC      FATFLG      ;BUMP COUNT
13800 100302 010001          MOV      R0,R1      ;SAVE CONTENTS OF TSSR
13801 100304          ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
13802 100304 104456          TRAP      C$ERHRD
13803 100306 001330          .WORD      728
13804 100310 005054          .WORD      WRTMSG
13805 100312 012124          .WORD      SFMSG
13806
13807 23$:      CKLOOP          ;LOOP IF SELECTED
13808
13809          TRAP      C$CLP1
13810 ;*****
13811 ;
13812 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
13813 ;
13814 ;*****
13815
13816 100316 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
13817 100322 103411          BCS      30$      ;BR, IF NO PROBLEM
13818 100324 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13819 100330 010004          MOV      R0,R4      ;GET PACKET ADDRESS
13820 100332 005237 002212      INC      FATFLG      ;BUMP COUNT
13821 100336          ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
13822
13823 100336 104456          TRAP      C$ERHRD
13824 100340 001331          .WORD      729
13825 100342 104165          .WORD      T27RWN
13826 100344 012136          .WORD      PKTSSR
13827
13828 30$:      CKLOOP          ;LOOP IF SELECTED
13829
13830          TRAP      C$CLP1
13831 ;*****
13832 ;
13833 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
13834 ;
13835 ;*****
13836
13837 100350 013701 102660      MOV      T27BFR+6,R1      ;PICK UP XST0
13838 100354 010102          MOV      R1,R2      ;SET UP EXPECTED
13839 100356 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
13840 100362 020102          CMP      R1,R2      ;DOES EXP = REC'D
13841 100364 001406          BEQ      40$      ;BR, IF EQUAL (OK)
13842 100366 005237 002212      INC      FATFLG      ;BUMP COUNT
13843 100372          ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
13844 100372 104456          TRAP      C$ERHRD
13845 100374 001332          .WORD      730
13846 100376 103661          .WORD      T27BOT
13847 100400 015564          .WORD      EXPREC
13848
13849 40$:      CKLOOP          ;LOOP IF SELECTED
13850
13851          TRAP      C$CLP1
13852
13853 100402 104406          MOV      #20.,R3      ;STARTING RECORD SIZE
13854 100404 012703 000024
```


TEST 7: WRITE DATA RETRY

```

13839 100410 013737 003114 102762      MOV      FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
13840
13841      ;*****
13842      ;
13843      ;WRITE DATA,CVC=1,ACK COMMAND
13844      ;
13845      ;*****
13846
13847 100416 012737 140005 102760 65+:    MOV      #140005,T27PK3      ;WRITE DATA,CVC=1,ACK COMMAND
13848 100424 012704 102760      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
13849 100430 010300      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
13850 100432 004737 017512      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
13851 100436 010337 102766      MOV      R3,T27SZ      ;SET UP RECORD SIZE IN PACKET
13852 100442 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
13853 100446 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
13854 100452 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13855 100456 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
13856 100462 020102      CMP      R1,R2      ;ARE THEY EQUAL
13857 100464 C01406      BEQ      80$      ;BR, IF OK
13858 100466 005237 002212      INC      FATFLG      ;BUMP COUNT
13862 100472      ERRHRD      ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      100472 104456      TRAP      C#ERHRD
      100474 001333      .WORD      731
      100476 005111      .WORD      WRERR
      100500 012136      .WORD      PKTSSR
13863 100502      80$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      100502 104406
13864
13865      ;*****
13866      ;
13867      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
13868      ;
13869      ;*****
13870
13871 100504 012737 111005 102760      MOV      #111005,T27PK3      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
13872 100512 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
13873 100516 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
13874 100522 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13875 100526 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
13876 100532 020102      CMP      R1,R2      ;ARE THEY EQUAL
13877 100534 001406      BEQ      90$      ;BR, IF OK
13878 100536 005237 002212      INC      FATFLG      ;BUMP COUNT
13882 100542      ERRHRD      ERRNO,T27WRF,EXPREC      ;TSSR INCORRECT AFTER WRITE DATA RETRY
      100542 104456      TRAP      C#ERHRD
      100544 001334      .WORD      732
      100546 105566      .WORD      T27WRF
      100550 015564      .WORD      EXPREC
13883 100552      90$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C#CLP1
      100552 104406
13884 100554 005723      TST      (R3)+      ;BUMP RECORD SIZE COUNTER
13885 100556 020327 000050      CMP      R3,#40.      ;AT 40 SIZE YET
13886 100562 001315      BNE      65$      ;BR, IF MORE RECORDS TO WRITE
13887
13888      ;*****
13889      ;
13890      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
13891      ;

```


TEST 7: WRITE DATA RETRY

```

13892 ;*****
13893
13894 100564 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
13895 100570 103411      BCS      230$      ;BR, IF NO PROBLEM
13896 100572 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13897 100576 010004      MOV      R0,R4      ;GET PACKET ADDRESS
13898 100600 005237 002212      INC      FATFLG      ;BUMP COUNT
13902 100604      ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
100604 104456      TRAP      C$ERHRD
100606 001335      .WORD    733
100610 104165      .WORD    T27RWN
100612 012136      .WORD    PKTSSR
13903 100614      230$:  CKLOOP      ;LOOP IF SELECTED
100614 104406      TRAP      C$CLP1
13904 ;*****
13905 ;
13906 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
13907 ;
13908 ;*****
13909
13910
13911 100616 013701 102660      MOV      T27BFR+6,R1      ;PICK UP XST0
13912 100622 010102      MOV      R1,R2      ;SET UP EXPECTED
13913 100624 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
13914 100630 020102      CMP      R1,R2      ;DOES EXP = REC'D
13915 100632 001406      BEQ      240$      ;BR, IF EQUAL (OK)
13916 100634 005237 002212      INC      FATFLG      ;BUMP COUNT
13920 100640      ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
100640 104456      TRAP      C$ERHRD
100642 001336      .WORD    734
100644 103661      .WORD    T27BOT
100646 015564      .WORD    EXPREC
13921 100650      240$:  CKLOOP      ;LOOP IF SELECTED
100650 104406      TRAP      C$CLP1
13922 100652 012703 000024      MOV      #20.,R3      ;STARTING RECORD SIZE
13923 100656 013737 003114 102762      MOV      FREE,T27RB      ;STARTING READ BUFFER ADDRESS
13924 ;*****
13925 ;
13926 ;READ DATA,ACK COMMAND
13927 ;
13928 ;*****
13929
13930
13931 100664 012737 100001 102760 265$:  MOV      #100001,T27PK3      ;READ DATA,ACK COMMAND
13932 100672 012704 102760      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
13933 100676 010337 102766      MOV      R3,T27SZ      ;SET UP RECORD SIZE IN PACKET
13934 100702 010465 000000      MOV      R4,TSDB(R5)      ;ISSUE COMMAND
13935 100706 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
13936 100712 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
13937 100716 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
13938 100722 020102      CMP      R1,R2      ;ARE THEY EQUAL
13939 100724 001406      BEQ      280$      ;BR, IF OK
13940 100726 005237 002212      INC      FATFLG      ;BUMP COUNT
13944 100732      ERRHRD  ERRNO,RDERR,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
100732 104456      TRAP      C$ERHRD
100734 001337      .WORD    735
100736 005204      .WORD    RDERR

```


TEST 7: WRITE DATA RETRY

Line	Address	Hex	Label	Operation	Comments	Word	PKTSSR
13945	100740	012136	280:	CKLOOP	;LOOP IF SELECTED	.WORD	PKTSSR
13946	100742	104406				TRAP	C#CLP1
13947	100744	013702	003114	MOV	FREE,R2		
13948	100750	010304		MOV	R3,R4		
13949	100752	162704	000024	SUB	#20.,R4		
13950	100756	060204		ADD	R2,R4		
13951	100760	000303		SWAB	R3		
13952	100762	021403		CMP	(R4),R3		
13953	100764	001410		BEQ	290:		
13954	100766	011401		MOV	(R4),R1		
13955	100770	010302		MOV	R3,R2		
13956	100772	005237	002212	INC	FATFLG		
13957	100776	104456		ERRHRD	ERRNO,T27DTA,EXPREC		
13958	100776	104456					
13959	101000	001340					
13960	101002	105646					
13961	101004	015564					
13962	101006	104406	290:	CKLOOP	;LOOP IF SELECTED		
13963	101006	104406				TRAP	C#CLP1
13964	101010	005724		TST	(R4)+		
13965	101012	160204		SUB	R2,R4		
13966	101014	000303		SWAB	R3		
13967	101016	020403		CMP	R4,R3		
13968	101020	001356		BNE	285:		
13969	101022	005723		TST	(R3)+		
13970	101024	020327	000046	CMP	R3,#38.		
13971	101030	001315		BNE	265:		
13972	101032	104406	300:	CKLOOP	;LOOP IF SELECTED		
13973	101032	104406				TRAP	C#CLP1
13974	101034	104403		ENDSUB			
13975	101034	023727	002212 000017	CMP	FATFLG,#15.		
13976	101044	103402		BLO	999:		
13977	101046	004737	017272	JSR	PC,CKDROP		
13978	101052		999:				
13979							
13980							
13981							
13982							
13983							
13984							
13985							
13986							
13987							
13988							
13989							
13990							
13991							
13992							
13993							
13994							

TEST 7: WRITE DATA RETRY

13995						;3.	THE TAPE IS AGAIN REWOUND AND THE SAME SERIES OF
13996							RECORDS WRITTEN AGAIN, THIS TIME USING THE WRITE
13997							DATA RETRY COMMAND. THIS SHOULD RESULT IN
13998							RECORDS SEPARATED BY A LONG INTERRECORD GAP.
13999							
14000						;4.	THE TAPE IS AGAIN REWOUND, THE SPACING COMMAND
14001							ISSUED, AND THE NUMBER OF TIMING LOOP CYCLES
14002							COUNTED TO COMPLETE THE OPERATION.
14003							
14004						;5.	THE TWO LOOP COUNTS ARE COMPARED, CHECKING TO SEE
14005							THAT THEY DIFFER BY A SIGNIFICANT AMOUNT.
14006							
14007							
14008							
14009							
14010							
14011							
14012	101052					-	
	101052						BGNSUB ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
	101052	104402					T7.5: TRAP C#BSUB
14013	101054	005037	002214			CLR	INTRECV ;INTERRUPT INDICATOR
14014	101060	005037	103006			CLR	T27CNT ;TIMER FOR WRITE DATA SPACING
14015	101064	005037	103010			CLR	T27CNU ;TIMER FOR WRITE DATA RETRY SPACING
14016	101070	004737	105764			JSR	PC,T27REST ;SET COMMAND PACKET
14017	101074	004737	106056			JSR	PC,T27RT2 ;SET UP OTHER COMMAND PACKET
14018	101100	004737	106120			JSR	PC,T27RT3 ;SET UP OTHER COMMAND PACKET
14019	101104	012737	176750	103012		MOV	#65000.,T27DLY ;SET UP DELAY COUNTER
14020							
14021							*****
14022							;
14023							ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
14024							;
14025							*****
14026							
14027	101112	004737	016064		10#:	JSR	PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
14028	101116	103426				BSC	20# ;BR IF INIT WAS OK
14029	101120					DELAY	250 ;DELAY ABOUT .25 SEC
	101120	012727	000250				MOV #250.(PC)+
	101124	000000					.WORD 0
	101126	013727	002116				MOV L#DLY,(PC)+
	101132	000000					.WORD 0
	101134	005367	177772				DEC -6(PC)
	101140	001375					BNE -.4
	101142	005367	177756				DEC -22(PC)
	101146	001367					BNE -.20
14030	101150	005337	103012			DEC	T27DLY ;BUMP COUNTER
14031	101154	001356				BNE	10# ;BR, IF COUNTER NOT DONE
14032	101156	005237	002212			INC	FATFLG ;BUMP COUNT
14036	101162	010001				MOV	R0,R1 ;CONTENTS OF TSSR REGISTER
14037	101164					ERRDF	ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
	101164	104455					TRAP C#ERDF
	101166	001341					.WORD 737
	101170	003650					.WORD SFIERR
	101172	012124					.WORD SFIMSG
14038	101174	013737	002172	102650	20#:	MOV	UNITN,T27DSW ;SET UP UNIT NUMBER
14039							
14040	101202	012704	102630			MOV	#T27PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS

TEST 7: WRITE DATA RETRY

```

14041
14042 ;*****
14043 ;
14044 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
14045 ;
14046 ;*****
14047
14048 101206 004737 010752      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
14049 101212 103407          BCS      23$      ;BR, IF COMMAND ISSUED OK
14050 101214 005237 002212    INC      FATFLG      ;BUMP COUNT
14051 101220 010001          MOV      R0,R1      ;SAVE CONTENTS OF TSSR
14052 101222          ERRHRD  ERRNO,WRTMSG,SFMSG    ;WRITE CHARACTERISTICS FAILED
14053          101222 104456          TRAP      C$ERHRD
14054          101224 001342          .WORD    738
14055          101226 005054          .WORD    WRTMSG
14056          101230 012124          .WORD    SFMSG
14057
14058 14056 101232 104406    23$:  CKLOOP          ;LOOP IF SELECTED
14059          TRAP      C$CLP1
14060
14061 ;*****
14062 ;
14063 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
14064 ;
14065 ;*****
14066
14067 101234 004737 011104      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
14068 101240 103411          BCS      30$      ;BR, IF NO PROBLEM
14069 101242 016501 000002    MOV      TSSR(R5),R1    ;GET TSSR CONTENTS
14070 101246 010004          MOV      R0,R4      ;GET PACKET ADDRESS
14071 101250 005237 002212    INC      FATFLG      ;BUMP COUNT
14072 101254          ERRHRD  ERRNO,T27RWN,PKTSSR    ;REWIND NOT ACCEPTED
14073          101254 104456          TRAP      C$ERHRD
14074          101256 001343          .WORD    739
14075          101260 104165          .WORD    T27RWN
14076          101262 012136          .WORD    PKTSSR
14077
14078 14073 101264 104406    30$:  CKLOOP          ;LOOP IF SELECTED
14079          TRAP      C$CLP1
14080
14081 ;*****
14082 ;
14083 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
14084 ;
14085 ;*****
14086
14087 101266 013701 102660      MOV      T27BFR+6,R1    ;PICK UP XST0
14088 101272 010102          MOV      R1,R2      ;SET UP EXPECTED
14089 101274 052702 000002    BIS      #BIT1,R2    ;SET BOT BIT IN EXPECTED
14090 101300 020102          CMP      R1,R2      ;DOES EXP = REC'D
14091 101302 001406          BEQ      40$      ;BR, IF EQUAL (OK)
14092 101304 005237 002212    INC      FATFLG      ;BUMP COUNT
14093 101310          ERRHRD  ERRNO,T27BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
14094          101310 104456          TRAP      C$ERHRD
14095          101312 001344          .WORD    740
14096          101314 103661          .WORD    T27BOT
14097          101316 015564          .WORD    EXPREC
14098
14099 14091 101320 104406    40$:  CKLOOP          ;LOOP IF SELECTED
14100          TRAP      C$CLP1

```


TEST 7: WRITE DATA RETRY

```
14092 101322 012703 000144      MOV    #100.,R3      ;NUMBER OF RECORDS TO BE WRITTEN
14093 101326 013737 003114 102762  MOV    FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
14094
14095 ;*****
14096 ;
14097 ;WRITE DATA,ACK,CVC-1 COMMAND
14098 ;
14099 ;*****
14100
14101 101334 012737 140005 102760 654:  MOV    #140005,T27PK3      ;WRITE DATA,ACK,CVC-1 COMMAND
14102 101342 012704 102760      MOV    #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
14103 101346 012737 000024 102766      MOV    #20.,T27SZ      ;SET UP RECORD SIZE IN PACKET
14104 101354 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
14105 101360 004737 016340      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
14106 101364 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
14107 101370 012702 000200      MOV    #SSR,R2      ;SET UP EXPECTED
14108 101374 020102      CMP    R1,R2      ;ARE THEY EQUAL
14109 101376 001406      BEQ    704      ;BR, IF OK
14110 101400 C05237 002212      INC    FATFLG      ;BUMP COUNT
14111 101404      ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
14112      101404 104456      TRAP    C:ERHRD
14113      101406 001345      .WORD  741
14114      101410 005111      .WORD  WRERR
14115      101412 012136      .WORD  PKTSSR
14116 101414      704:  CKLOOP      ;LOOP IF SELECTED
14117 101416 104406      TRAP    C:CLP1
14118 101416 005303      DEC    R3      ;DEC RECORD COUNTER
14119 101420 001345      BNE    654      ;BR, IF MORE RECORDS TO WRITE
14120
14121 ;*****
14122 ;
14123 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
14124 ;
14125 ;*****
14125 101422 004737 011104      JSR    PC,REWIND      ;CALL TAPE REWIND COMMAND
14126 101426 103411      BCS    1304      ;BR, IF NO PROBLEM
14127 101430 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
14128 101434 010004      MOV    R0,R4      ;GET PACKET ADDRESS
14129 101436 005237 002212      INC    FATFLG      ;BUMP COUNT
14130 101442      ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
14131      101442 104456      TRAP    C:ERHRD
14132      101444 001346      .WORD  742
14133      101446 104165      .WORD  T27RWN
14134      101450 012136      .WORD  PKTSSR
14135 101452      1304:  CKLOOP      ;LOOP IF SELECTED
14136 101452 104406      TRAP    C:CLP1
14137
14138 ;*****
14139 ;
14140 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
14141 ;
14142 ;*****
14142 101454 013701 102660      MOV    T27BFR+6,R1      ;PICK UP XST0
14143 101460 010102      MOV    R1,R2      ;SET UP EXPECTED
14144 101462 052702 000002      BIS    #BIT1,R2      ;SET BOT BIT IN EXPECTED
```


TEST 7: WRITE DATA RETRY

```
14145 101466 020102          CMP      R1,R2          ;DOES EXP = REC'D
14146 101470 001406          BEQ      1401          ;BR, IF EQUAL (OK)
14147 101472 005237 002212  INC      FATFLG        ;BUMP COUNT
14151 101476          ERRMRD  ERRNO,T27BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
14152 101476 104456          TRAP      C1ERMRD
14153 101500 001347          .WORD    743
14154 101502 103661          .WORD    T27BOT
14155 101504 015564          .WORD    EXPREC
14156 101506          1401:  CKLOOP          ;LOOP IF SELECTED
14157 101506 104406          TRAP      C1CLP1
14158 101510 012704 102760  MOV      #T27PK3,R4      ;SET UP PACKET ADDRESS
14159 101514 012737 000010 102762  MOV      #10,T27R8    ;SET UP RECORDS TO SPACE OVER
14160          ;*****
14161          ;
14162          ;ACK,CVC=1,SPACE FORWARD COMMAND
14163          ;*****
14164 101522 012737 140010 102760  MOV      #140010,T27PK3 ;ACK,CVC=1,SPACE FORWARD COMMAND
14165 101530 010465 000000 1501:  MOV      R4,TSD8(R5)    ;ISSUE COMMAND
14166 101534 005237 103006 1521:  INC      T27CNT        ;BUMP TIMER
14167 101540          DELAY      1          ;DELAY ABOUT 100US
14168 101540 012727 000001          MOV      #1,(PC)+
14169 101544 000000          .WORD    0
14170 101546 013727 002116          MOV      L1DLY,(PC)+
14171 101552 000000          .WORD    0
14172 101554 005367 177772          DEC      -6(PC)
14173 101560 001375          BNE      -.4
14174 101562 005367 177756          DEC      -22(PC)
14175 101566 001367          BNE      -.20
14176 101570 016501 000002          MOV      TSSR(R5),R1    ;GET TSSR
14177 101574 032701 000200          BIT      #BIT7,R1    ;CHECK FOR TSSR'S SSR SET
14178 101600 001755          BEQ      1521          ;KEEP COUNTING UNTIL SET
14179 101602 016501 000002          MOV      TSSR(R5),R1    ;GET STATUS FROM TSSR
14180 101606 012702 000200          MOV      #SSR,R2      ;SET UP EXPECTED
14181 101612 020201          CMP      R2,R1          ;WAS EVERYTHING OK
14182 101614 001406          BEQ      1601          ;BR, IF ALL IS WELL
14183 101616 005237 002212          INC      FATFLG        ;BUMP COUNT
14184 101622          ERRMRD  ERRNO,T27SCF,PKTSSR ;SPACE FORWARD DIDN'T WORK OUT
14185 101622 104456          TRAP      C1ERMRD
14186 101624 001350          .WORD    744
14187 101626 105427          .WORD    T27SCF
14188 101630 012136          .WORD    PKTSSR
14189 101632          1601:  CKLOOP          ;LOOP IF SELECTED
14190 101632 104406          TRAP      L1CLP1
14191          ;*****
14192          ;
14193          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
14194          ;*****
14195 101634 004737 011104          JSR      PC.REWIND    ;CALL TAPE REWIND COMMAND
14196 101640 004737 016426          JSR      PC.CMTSSR    ;SEE HOW TSSR IS
14197 101644 103407          BCS      1701          ;BR, IF NO PROBLEM
14198 101646 010001          MOV      R0,R1          ;SAVE TSSR
```


TEST 7: WRITE DATA RETRY

```

14190 101650 005237 002212          INC  FATFLG          ;BUMP COUNT
14194 101654          ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
      101654 104456          TRAP  C$ERHRD
      101656 001351          .WORD 745
      101660 104165          .WORD T27RWN
      101662 012136          .WORD PKTSSR
14195 101664          170$: CKLOOP          ;LOOP IF SELECTED
      101664 104406          TRAP  C$CLP1
14196
14197
14198
14199
14200
14201
14202
      ;*****
      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
      ;*****
14203 101666 013701 102660          MOV  T27BFR+6,R1      ;PICK UP XSTO
14204 101672 010102          MOV  R1,R2          ;SET UP EXPECTED
14205 101674 052702 000002          BIS  #BIT1,R2      ;SET BOT BIT IN EXPECTED
14206 101700 C20102          CMP  R1,R2          ;DOES EXP = REC'D
14207 101702 001406          BEQ  175$          ;BR, IF EQUAL (OK)
14208 101704 005237 002212          INC  FATFLG          ;BUMP COUNT
14212 101710          ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      101710 104456          TRAP  C$ERHRD
      101712 001352          .WORD 746
      101714 103661          .WORD T27BOT
      101716 015564          .WORD EXPREC
14213 101720          175$: CKLOOP          ;LOOP IF SELECTED
      101720 104406          TRAP  C$CLP1
14214 101722 012703 000144          MOV  #100.,R3      ;STARTING RECORD SIZE
14215 101726 013737 003114 102762 177$: MOV  FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
14216
14217
14218
14219
14220
14221
14222
      ;*****
      ;WRITE DATA,CVC=1,ACK COMMAND
      ;*****
14223 101734 012737 140005 102760          MOV  #140005,T27PK3      ;WRITE DATA,CVC=1,ACK COMMAND
14224 101742 012704 102760          MOV  #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
14225 101746 012737 000024 102766          MOV  #20.,T27SZ      ;SET UP RECORD SIZE IN PACKET
14226 101754 010465 000000          MOV  R4,TSD8(R5)      ;ISSUE COMMAND
14227 101760 004737 016340          JSR  PC,WAITF      ;WAIT FOR SSR TO SET
14228 101764 016501 000002          MOV  TSSR(R5),R1      ;GET TSSR CONTENTS
14229 101770 012702 000200          MOV  #SSR,R2          ;SET UP EXPECTED
14230 101774 020102          CMP  R1,R2          ;ARE THEY EQUAL
14231 101776 001406          BEQ  180$          ;BR, IF OK
14232 102000 005237 002212          INC  FATFLG          ;BUMP COUNT
14236 102004          ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      102004 104456          TRAP  C$ERHRD
      102006 001353          .WORD 747
      102010 005111          .WORD WRERR
      102012 012136          .WORD PKTSSR
14237 102014          180$: CKLOOP          ;LOOP IF SELECTED
      102014 104406          TRAP  C$CLP1
14238 102016 005303          DEC  R3          ;COUNT NUMBER OF RECORDS
14239 102020 001342          BNE  177$          ;BR, IF MORE RECORDS TO WRITE
14240

```


TEST 7: WRITE DATA RETRY

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14241 ;*****
14242 ;
14243 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
14244 ;
14245 ;*****
14246
14247 102022 004737 011104      JSR      PC,REWIND      ;ISSUE REWIND
14248 102026 103411          BCS      182$      ;BR, IF ALL IS WELL
14249 102030 010004          MOV      R0,R4      ;GET PACKET ADDRESS
14250 102032 016501 000002    MOV      TSSR(R5),R1  ;GET TSSR CONTENTS
14251 102036 005237 002212    INC      FATFLG      ;BUMP COUNT
14255 102042          ERRHRD  ERRNO,T27RWN,PKTSSR ;REWIND FAILED
14256 102042 104456          TRAP      C$ERHRD
14257 102044 001354          .WORD     748
14258 102046 104165          .WORD     T27RWN
14259 102050 012136          .WORD     PKTSSR
14256 102052          182$: CKLOOP      ;SELECT LOOP MAYBE
14257 102052 104406          TRAP      C$CLP1
14258
14259 ;*****
14260 ;
14261 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
14262 ;BIT 15 SETS DIRECTION - 0-FORWARD 1-REVERSE
14263 ;
14264 ;*****
14265 102054 012703 000001    MOV      #1.,R3      ;SPACE 1 RECORD FORWARD
14266 102060 004737 010556    JSR      PC,SPACE      ;ISSUE SPACE COMMAND
14267 102064 103411          BCS      185$      ;BR, IF COMMAND OK
14268 102066 010004          MOV      R0,R4      ;GET PACKET ADDRESS
14269 102070 016501 000002    MOV      TSSR(R5),R1  ;GET TSSR STATUS
14270 102074 005237 002212    INC      FATFLG      ;BUMP COUNT
14274 102100          ERRHRD  ERRNO,T27SCF,PKTSSR ;SPACE FORWARD COMMAND FAILED
14275 102100 104456          TRAP      C$ERHRD
14276 102102 001355          .WORD     749
14277 102104 105427          .WORD     T27SCF
14278 102106 012136          .WORD     PKTSSR
14275 102110          185$: CKLOOP      ;LOOP IF SELECTED
14276 102110 104406          TRAP      C$CLP1
14276 102112 012703 000144    MOV      #100.,R3     ;NUMBER OF RECORDS TO BE WRITTEN
14277 102116 013737 003114 102762 MOV      FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
14278
14279 ;*****
14280 ;
14281 ;WRITE DATA RETRY,ACK COMMAND
14282 ;
14283 ;*****
14284
14285 102124 012737 101005 102760 190$: MOV      #101005,T27PK3 ;WRITE DATA RETRY,ACK COMMAND
14286 102132 012704 102760      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
14287 102136 012737 000024 102766 MOV      #20.,T27SZ      ;SET UP RECORD SIZE IN PACKET
14288 102144 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
14289 102150 004737 016340      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
14290 102154 016501 000002    MOV      TSSR(R5),R1  ;GET TSSR CONTENTS
14291 102160 012702 000200    MOV      #SSR,R2      ;SET UP EXPECTED
14292 102164 020102          CMP      R1,R2      ;ARE THEY EQUAL
14293 102166 001406          BEQ      200$      ;BR, IF OK

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TEST 7: WRITE DATA RETRY

```
14294 102170 005237 002212          INC  FATFLG          ;BUMP COUNT
14298 102174          ERRHRD  ERRNO,T27WDC,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
          102174 104456          TRAP  C$ERRHRD
          102176 001356          .WORD 750
          102200 104521          .WORD T27WDC
          102202 012136          .WORD PKTSSR
14299 102204          200$: CKLOOP          ;LOOP IF SELECTED
          102204 104406          TRAP  C$CLP1
14300 102206 013737 0J3114 102762      MOV  FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
14301
14302          ;*****
14303          ;WRITE DATA,CVC=1,ACK COMMAND
14304          ;
14305          ;*****
14306
14307
14308 102214 012737 140005 102760      MOV  #140005,T27PK3      ;WRITE DATA,CVC=1,ACK COMMAND
14309 102222 012704 102760      MOV  #T27PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
14310 102226 C12737 000024 102766      MOV  #20,T27SZ          ;SET UP RECORD SIZE IN PACKET
14311 102234 010465 000000          MOV  R4,TSD8(R5)        ;ISSUE COMMAND
14312 102240 004737 016340          JSR  PC,WAITF          ;WAIT FOR SSR TO SET
14313 102244 016501 000002          MOV  TSSR(R5),R1        ;GET TSSR CONTENTS
14314 102250 012702 000200          MOV  #SSR,R2          ;SET UP EXPECTED
14315 102254 020102          CMP  R1,R2          ;ARE THEY EQUAL
14316 102256 001406          BEQ  210$          ;BR, IF OK
14317 102260 005237 002212          INC  FATFLG          ;BUMP COUNT
14321 102264          ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
          102264 104456          TRAP  C$ERRHRD
          102266 001357          .WORD 751
          102270 005111          .WORD WRERR
          102272 012136          .WORD PKTSSR
14322 102274          210$: CKLOOP          ;LOOP IF SELECTED
          102274 104406          TRAP  C$CLP1
14323 102276 005303          DEC  R3          ;BUMP DOWN RECORD COUNTER
14324 102300 001311          BNE  190$          ;BR, IF MORE RECORDS TO WRITE RETRY
14325
14326          ;*****
14327          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
14328          ;
14329          ;*****
14330
14331
14332 102302 004737 011104          JSR  PC,REWIND          ;CALL TAPE REWIND COMMAND
14333 102306 103411          BCS  230$          ;BR, IF NO PROBLEM
14334 102310 016501 000002          MOV  TSSR(R5),R1        ;GET TSSR CONTENTS
14335 102314 010004          MOV  R0,R4          ;GET PACKET ADDRESS
14336 102316 005237 002212          INC  FATFLG          ;BUMP COUNT
14340 102322          ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
          102322 104456          TRAP  C$ERRHRD
          102324 001360          .WORD 752
          102326 104165          .WORD T27RWN
          102330 012136          .WORD PKTSSR
14341 102332          230$: CKLOOP          ;LOOP IF SELECTED
          102332 104406          TRAP  C$CLP1
14342
14343          ;*****
14344          ;
```


TEST 7: WRITE DATA RETRY

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14345      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
14346      ;
14347      ;*****
14348
14349 102334 013701 102660      MOV      T27BFR+6,R1      ;PICK UP XSTO
14350 102340 010102      MOV      R1,R2      ;SET UP EXPECTED
14351 102342 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
14352 102346 020102      CMP      R1,R2      ;DOES EXP = REC'D
14353 102350 001406      BEQ      240$      ;BR, IF EQUAL (OK)
14354 102352 005237 002212      INC      FATFLG      ;BUMP COUNT
14358 102356      ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
14359      102356 104456      TRAP      C$ERHRD
14360      102360 001361      .WORD    753
14361      102362 103661      .WORD    T27BOT
14362      102364 015564      .WORD    EXPREC
14359 102366      240$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
14360 102366 104406      MOV      #T27PK3,R4      ;SET UP PACKET ADDRESS
14361 102370 012704 102760      MOV      #10,T27R8      ;SET UP RECORDS TO SPACE OVER
14362 102374 C12737 000010 102762
14363      ;*****
14364      ;ACK,CVC=1,SPACE FORWARD COMMAND
14365      ;
14366      ;*****
14367
14368 102402 012737 140010 102760      MOV      #140010,T27PK3      ;ACK,CVC=1,SPACE FORWARD COMMAND
14369 102410 010465 000000      250$: MOV      R4,TSD8(R5)      ;ISSUE COMMAND
14370 102414 005237 103010      252$: INC      T27CNU      ;BUMP TIMER
14372 102420      DELAY      1      ;DELAY ABOUT 100US
14373      102420 012727 000001      MOV      #1,(PC)+
14374      102424 000000      .WORD    0
14375      102426 013727 002116      MOV      L$DLY,(PC)+
14376      102432 000000      .WORD    0
14377      102434 005367 177772      DEC      -6(PC)
14378      102440 001375      BNE      -4
14379      102442 005367 177756      DEC      -22(PC)
14380      102446 001367      BNE      -20
14373 102450 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
14374 102454 032701 000200      BIT      @BIT7,R1      ;CHECK FOR TSSR'S SSR SET
14375 102460 001755      BEQ      252$      ;KEEP COUNTING UNTIL SET
14376 102462 016501 000002      MOV      TSSR(R5),R1      ;GET STATUS FROM TSSR
14377 102466 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
14378 102472 020201      CMP      R2,R1      ;WAS EVERYTHING OK
14379 102474 001406      BEQ      260$      ;BR, IF ALL IS WELL
14380 102476 005237 002212      INC      FATFLG      ;BUMP COUNT
14384 102502      ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE FORWARD DIDN'T WORK OUT
14385      102502 104456      TRAP      C$ERHRD
14386      102504 001362      .WORD    754
14387      102506 105427      .WORD    T27SCF
14388      102510 012136      .WORD    PKTSSR
14385 102512      260$: CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
14386 102512 104406      MOV      T27CNT,R1      ;TIME FOR WRITE SPACING
14387 102514 013701 103006      MOV      T27CNU,R2      ;TIME FOR WRITE RETRY SPACING
14388 102520 013702 103010      SUB      R1,R2      ;GET'EM PRETTY CLOSE
14389 102524 160102      SUB      R1,R2      ;GET'EM PRETTY CLOSE

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14390	102530	160102		SUB	R1,R2	;GET'EM PRETTY CLOSE		
14391	102532	042702	000077	BIC	#77,R2	;CLEAR LOW 6 BITS		
14392	102536	042701	000777	BIC	#000777,R1	;SETTING UP CONSTANTS		
14393	102542	020102		CMP	R1,R2	;CHECK FOR DIFFERENCE		
14394	102544	002006		BGE	300#	;BR, IF GOOD ##### CHECK #####		
14395	102546	005237	002212	INC	FATFLG	;BUMP COUNT		
14399	102552			ERRHRD	ERRNO,T27TIM,EXPREC	;TIME WAS NOT DIFFERENT ENOUGH		
	102552	104456				TRAP	C#ERHRD	
	102554	001363				.WORD	755	
	102556	103754				.WORD	T27TIM	
	102560	015564				.WORD	EXPREC	
14400	102562		300#:	CKLOOP		;LOOP IF SELECTED		
	102562	104406				TRAP	C#CLP1	
14401	102564			ENDSUB		;<<<<<<<<<<<<<<<< END SUBTEST >>>>>>>>>		
	102564					L10127:		
	102564	104403				TRAP	C#ESUB	
14402	102566	023727	002212	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		
14403	102574	103402		BLO	999#	;BR, IF LESS THAN 25		
14404	102576	C04737	017272	JSR	PC,CKDROP	;TRY TO DROP THE UNIT		
14405	102602			999#:				
14406				:				
14407				:				
14408				:				
14409	102602	004737	016546	JSR	PC,TSTLOOP	;DO WE NEED TO ITERATE TEST		
14410	102606	103002		BCC	163#	;BR, IF NO LOOP REQUIRED		
14411	102610	000137	076146	JMP	T27LOOP	;EXECUTE AGAIN		
14412	102614			163#:				
14413	102614			EXIT	TST	;ALL DONE THIS TEST		
	102614	104432				TRAP	C#EXIT	
	102616	003324				.WORD	L10122-	
14414				*				
14415				;LOCAL STORAGE FOR THIS TEST				
14416				-				
14419	102620			.BLKB	10-<.-TSV2&7>			
14421	102630			T27PACKET:		;COMMAND PACKET FOR TEST		
14422	102630	100004		.WORD	100004	;WRITE CHARACTERISTICS COMMAND, WITH . ACK		
14423	102632	102640		.WORD	T27DATA	;ADDRESS OF CHARACTERISTICS BLOCK		
14424	102634	000000		.WORD	0			
14425	102636	000012		.WORD	10.	;STARTING VALUE OF BLOCK SIZE		
14426	102640			T27DATA:		;CHARACTERISTICS DATA BLOCK		
14427	102640	102652		.WORD	T27BFR	;ADDRESS OF MESSAGE BUFFER		
14428	102642	000000		.WORD	0			
14429	102644	000024		.WORD	20.	;LENGTH OF MESSAGE BUFFER		
14430	102646	000000		.WORD	0			
14431	102650	000000		T27DSW:	.WORD 0	;SELECT DRIVE 0		
14432	102652			T27BFR:	.BLKW 25.	;MESSAGE BUFFER		
14433				:				
14434				;WRITE SUBSYSTEM MEMORY COMMAND PACKET				
14435				:				
14437	102734			.BLKB	10-<.-TSV2&7>			
14439	102740			T27PK2:				
14440	102740	100006		.WORD	100006	;WRITE SUB SYS MEM COMMAND, AND ACK		
14441	102742	102770		.WORD	T27BF2	;ADDRESS OF SELECT BLOCK DATA		
14442	102744	000000		.WORD	0			
14443	102746	000006		.WORD	6.	;SIZE OF DATA PACKET		
14444								

Line	Address	Value	Field	Unit	Value	Description
14446	102750					
14448	102760		T27PK3:	.BLKB	10-<.-TSV2&7>	
14449	102760	100005		.WORD	100005	;REREAD COMMAND, AND ACK
14450	102762		T27RB:			
14451	102762	003114	T27WB:	.WORD	FREE	;ADDRESS OF WRITE BUFFER
14452	102764	000000		.WORD	0	
14453	102766	000000	T27SZ:	.WORD	0	;SIZE OF BUFFER (EXTENT)
14454				.EVEN		
14455						
14456						
14457						
14458	102770		T27BF2:			
14459	102770	010	T27BS0:	.BYTE	10	;BSELO AREA
14460	102771	200	T27BS1:	.BYTE	200	;BSEL1 AREA
14461	102772	000000	T27S2:	.WORD	0	;SEL 2 AREA
14462	102774	000000	T27S3:	.WORD	0	;DATA AREA
14463						
14464						
14465				.EVEN		
14466						
14467						;TAPE MOTION PACKET COMMAND VALUES
14468	102776	100205	T27RN:	.WORD	100205	;REREAD DATA (NEXT)
14469	103000	100605	T27WDR:	.WORD	100605	;REREAD DATA RETRY
14470	103002	102205	T27CON:	.WORD	102205	;WRITE CONTINUOUS
14471	103004	177777		.WORD	177777	;END OF DATA
14472						
14473						
14474	103006	000000	T27CNT:	.WORD	0	;TAPE TIMER COUNTER STORAGE AREA
14475	103010	000000	T27CNU:	.WORD	0	;TAPE TIMER COUNTER STORAGE AREA
14476	103012	000000	T27DLY:	.WORD	0	;DELAY COUNTER
14477						
14478						
14479						
14480						
14481						
14482						
14483						
14484	103014	124	141	160	T27WNG:	.ASCIZ 'Tape Position Incorrect After REREAD Previous (OPP=1)'
14485	103102	124	123	123	T27RDF:	.ASCIZ 'TSSR Incorrect After READ DATA Command'
14486	103151	122	105	122	T27RRF:	.ASCIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
14487	103246	120	117	123	T27SC:	.ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
14488	103330	122	111	102	T27LOR:	.ASCIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
14489	103400	124	123	123	T27WDF:	.ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
14490	103455	111	154	154	T27LOQ:	.ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
14491	103536	122	105	122	T27SSR:	.ASCIZ 'REREAD COMMAND Not Accepted'
14492	103572	124	123	123	T27WDE:	.ASCIZ 'TSSR Not Correct After WRITE DATA RETRY Command, At BOT'
14493	103661	124	141	160	T27BOT:	.ASCIZ 'Tape Not At BOT After REWIND Command (BOT Not Set In XST0)'
14494	103754	127	122	111	T27TIM:	.ASCIZ 'WRITE DATA RETRY'S Erase Tape Not Long Enough'
14495	104031	122	105	122	T27EOT:	.ASCIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
14496	104110	124	123	123	T27TM:	.ASCIZ 'TSSR Not Correct After REREAD COMMAND Reject'
14497	104165	122	145	167	T27RWN:	.ASCIZ 'Rewind (POSITION) Command Not Accepted'
14498	104234	122	101	115	T27RNC:	.ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
14499	104307	124	123	123	T27AM3:	.ASCIZ 'TSSR Init. Failed After REREAD COMMAND'
14500	104356	104	162	151	T27OFL:	.ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
14501	104431	124	123	123	T27WDD:	.ASCIZ 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'
14502	104521	124	123	123	T27WDC:	.ASCIZ 'TSSR Not Correct After REREAD DATA Command'
14503	104574	103	126	103	T27VCK:	.ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'

TEST 7: WRITE DATA RETRY

14504	104647	124	123	102	T27BA:	.ASCIZ	'TSBA Not Correct After REREAD DATA Command'
14505	104722	127	122	111	T27WSS:	.ASCIZ	'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
14506	105011	122	145	141	T27LON:	.ASCIZ	'Reading Long Record Failed To Set RLL Bit In XST0'
14507	105073	122	145	141	T27LOP:	.ASCIZ	'Reading Long Record Failed To Set RLS Bit In XST0'
14508	105155	122	145	163	T27PBP:	.ASCIZ	'Residual Byte Count Incorrect After Short Record Read'
14509	105243	122	145	141	T27TRL:	.ASCIZ	'Reading Long Record Failed To Give Tape Status Alert'
14510	105331	127	122	111	T27NEF:	.ASCIZ	'WRITE DATA RETRY, At First Record, Failed To Set RIB Bit XST3'
14511	105427	124	123	123	T27SCF:	.ASCIZ	'TSSR Not Correct After SPACE RECORDS Command'
14512	105504	124	123	123	T27TSA:	.ASCIZ	'TSSR Not Correct After WRITE DATA RETRY, Into BOT'
14513	105566	124	123	123	T27WRF:	.ASCIZ	'TSSR Not Correct After WRITE DATA RETRY Command'
14514	105646	104	141	164	T27DTA:	.ASCIZ	'Data Compare Error, Data Read From Tape Not Equal To Written'
14515	105743	127	162	151	TST27ID:	.ASCIZ	'Write Data Retry'
14516						.EVEN	
14517							
14518							
14519							
14520							
14521							
14522							
14523							
14524	105764				T27REST:		
14525	105764				SAVREG		;SAVE THE REGISTERS
14526	105770	012701	102630		MOV	#T27PACKET,R1	;START OF THE PACKET
14527	105774	012721	100004		MOV	#100004,(R1)+	;WRITE SUBSYSTEM MEM. WITH ACK.
14528	106000	012721	102640		MOV	#T27DATA,(R1)+	;ADDRESS OF CHARAISTICS DATA BLOCK
14529	106004	005021			CLR	(R1)+	;EXTENDED ADDRESS
14530	106006	012721	000012		MOV	#10..(R1)+	;SIZE OF DATA BLOCK IN BYTES
14531	106012	012721	102652		MOV	#T27BFR,(R1)+	;ADDRESS OF MESSAGE BUFFER
14532	106016	005021			CLR	(R1)+	
14533	106020	012721	000024		MOV	#20..(R1)+	;LENGTH OF MESSAGE BUFFER
14534	106024	005021			CLR	(R1)+	
14535	106026	012711	000000		MOV	#0,(R1)	;SELECT DRIVE ZERO
14536	106032	012702	000030		MOV	#24..R2	;NUMBER OF LOCATIONS TO BE CLEARED
14537	106036	012762	177777	102652 64#:	MOV	#177777,T27BFR(R2)	;ALL ONES TO MESSAGE BUFFER
14538	106044	005742			TST	-(R2)	;NEXT LOCATION
14539	106046	022702	000000		CMP	#0,R2	;AT END OF LOOP YET
14540	106052	001371			BNE	64#	;KEEP GOING UNTIL DONE
14541	106054	000207			RTS	PC	;RETURN
14542							
14543							
14544	106056				T27RT2:		
14545	106056				SAVREG		;SAVE THE REGISTERS
14546	106062	012701	102740		MOV	#T27PK2,R1	;START OF THE PACKET
14547	106066	012721	100006		MOV	#100006,(R1)+	;WRITE SUBSYSTEM MEM. WITH ACK.
14548	106072	012721	102770		MOV	#T27BF2,(R1)+	;ADDRESS OF DATA BLOCK
14549	106076	005021			CLR	(R1)+	;EXTENDED ADDRESS
14550	106100	012721	000006		MOV	#6..(R1)+	;SIZE OF DATA BLOCK IN BYTES
14551	106104	005021			CLR	(R1)+	
14552	106106	012701	102770		MOV	#T27BF2,R1	;POINT TO DATA SEL AREA
14553	106112	005021			CLR	(R1)+	
14554	106114	005011			CLR	(R1)	
14555	106116	000207			RTS	PC	;RETURN
14556	106120						
14557	106120				T27RT3:		
14558	106124	012701	102760		SAVREG		;SAVE REGISTERS
14559	106130	005021			MOV	#T27PK3,R1	;SET UP POINTER ADDRESS
14560	106132	005021			CLR	(R1)+	;COMMAND SPACE
					CLR	(R1)+	;ADDRESS OF DATA BLOCK

TEST 7: WRITE DATA RETRY

PC	Address	Op	Op1	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464</
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TEST 8: WRITE/READ TAPE MARK

	106232	104455						TRAP	C#ERDF
	106234	001441						.WORD	801
	106236	003650						.WORD	SFIERR
	106240	012124						.WORD	SFIMSG
14620	106242	012737	000007	111360	20#:	MOV	#7,T28DSW		;SET UP DRIVE NUMBER
14621	106250	012704	111340			MOV	#T28PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
14622	106254	004737	010752			JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS
14623	106260	103407				BCS	24#		;BR, IF COMMAND ISSUED OK
14624	106262	005237	002212			INC	FATFLG		;BUMP COUNT
14628	106266	010001				MOV	R0,R1		;SAVE CONTENTS OF TSSR
14629	106270					ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTISC FAILED
	106270	104456						TRAP	C#ERHRD
	106272	001442						.WORD	802
	106274	005054						.WORD	WRTMSG
	106276	012124						.WORD	SFIMSG
14630	106300				24#:	CKLOOP			
	106300	104406						TRAP	C#CLP1
14631	106302	005737	002216			TST	EXTFEA		;CHECK FOR EXTENDED FEATURES SW SWITCH
14632	106306	001044				BNE	50#		;BR IF SWITCH IS ON
14633									
14634	106310	112737	000200	111501		MOV8	#200,T28BS1		;WRITE MISCELLANEOUS CONT/READ STATUS
14635	106316	112737	000010	111500		MOV8	#10,T28BS0		;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
14636	106324	012704	111450			MOV	#T28PK2,R4		;WRITE SUBSYS MEM PACKET
14637	106330	010465	000000			MOV	R4,TSD8(R5)		;ISSUE COMMAND
14638	106334	004737	016426			JSR	PC,CHKTSSR		;WAIT FOR SSR
14639	106340	103407				BCS	30#		;BR, IF NO ERROR
14640	106342	010001				MOV	R0,R1		;ERROR, SAVE TSSR
14641	106344	005237	002212			INC	FATFLG		;BUMP COUNT
14645	106350					ERRHRD	ERRNO,T28SSR,PKTSSR		;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
	106350	104456						TRAP	C#ERHRD
	106352	001443						.WORD	803
	106354	112175						.WORD	T28SSR
	106356	012136						.WORD	PKTSSR
14646	106360				30#:	CKLOOP			;LOOP IF SELECTED
	106360	104406						TRAP	C#CLP1
14647	106362	012704	111340			MOV	#T28PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
14648	106366	012737	000007	111360		MOV	#7,T28DSW		;SELECT DRIVE 7
14649	106374	004737	010752			JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS
14650	106400	103407				BCS	50#		;BR, IF COMMAND ISSUED OK
14651	106402	005237	002212			INC	FATFLG		;BUMP COUNT
14655	106406	010001				MOV	R0,R1		;SAVE CONTENTS OF TSSR
14656	106410					ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTISC FAILED
	106410	104456						TRAP	C#ERHRD
	106412	001444						.WORD	804
	106414	005054						.WORD	WRTMSG
	106416	012124						.WORD	SFIMSG
14657	106420				50#:	CKLOOP			;SCOPE LOOP
	106420	104406						TRAP	C#CLP1
14658	106422	016501	000002			MOV	TSSR(R5),R1		;GET TSSR CONTENTS
14659	106426	032701	000100			BIT	#0FL,R1		;CHECK FOR THE OFFLINE BIT SET
14660	106432	001006				BNE	60#		;BR, IF OFFLINE (GOOD)
14661	106434	005237	002212			INC	FATFLG		;BUMP COUNT
14665	106440					ERRDF	ERRNO,T280FL,SFIMSG		;OFF LINE SHOULD HAVE BEEN SET (BAD)
	106440	104455						TRAP	C#ERDF
	106442	001445						.WORD	805
	106444	112530						.WORD	T280FL
	106446	012124						.WORD	SFIMSG

TEST 8: WRITE/READ TAPE MARK

14666	106450			60#:	CKLOOP		;LOOP IF SELECTED		TRAP	C#CLP1
	106450	104406								
14667	106452	012703	111516		MOV	#T28RN,R3	;POINTER FOR COMMANDS			
14668	106456	011337	111470	65#:	MOV	(R3),T28PK3	;TAPE READ COMMAND IN PLACE			
14669	106462	012704	111470		MOV	#T28PK3,R4	;R4 = POINTER TO PACKET			
14670	106466	010465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND			
14671	106472	004737	016340		JSR	PC,WAITF	;WAIT FOR SSR TO SET			
14672	106476	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS			
14673	106502	012702	100306		MOV	#SSR!SC!OFL!BIT1!BIT2,R2	;SET UP EXPECTED			
14674	106506	020102			CMP	R1,R2	;ARE THEY EQUAL			
14675	106510	001406			BEQ	80#	;BR, IF OK ESP. FUNCTION REJECT			
14676	106512	005237	002212		INC	FATFLG	;BUMP COUNT			
14680	106516				ERRHRD	ERRNO,T28TM,PKTSSR	;TSSR INCORRECT AFTER FORMAT CMD			
	106516	104456							TRAP	C#ERHRD
	106520	001446							.WORD	806
	106522	112404							.WORD	T28TM
	106524	012136							.WORD	PKTSSR
14681	106526			80#:	CKLOOP		;LOOP IF SELECTED		TRAP	C#CLP1
	106526	104406								
14682	106530	005723			TST	(R3)+	;POINT TO NEXT COMMAND			
14683	106532	022713	177777		CMP	#177777,(R3)	;END OF THE COMMANDS YET			
14684	106536	001401			BEQ	90#	;BR, IF DONE			
14685	106540	000746			BR	65#	;MORE COMMAND(S) TO GO			
14686	106542			90#:						
14687	106542				ENDSUB		;>>>>>>>>> END SUBTEST >>>>>>>>>			
	106542						L10131:			
	106542	104403							TRAP	C#ESUB
14688	106544	023727	002212	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25			
14689	106552	103402			BLO	999#	;BR, IF LESS THAN 25			
14690	106554	004737	017272		JSR	PC,CKDROP	;TRY TO DROP THE UNIT			
14691	106560			999#:						
14692										
14693					*					
14694					:					
14695					;TEST 8, SUBTEST 2					
14696					:					
14697					;VERIFIES THAT A FORMAT COMMAND WITH AN ILLEGAL MODE					
14698					;CODE CAUSES FUNCTIUN REJECT TERMINATION WITH THE					
14699					;ILLEGAL COMMAND (ILC) ERROR BIT SET. ALL ILLEGAL					
14700					;MODE CODES ARE CHECKED.					
14701					:					
14702					:					
14703					:					
14704					-					
14705	106560				BGNFSUB		;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>			
	106560						T8.2:			
	106560	104402							TRAP	C#BSUB
14706	106562	004737	113426		JSR	PC,T28REST	;SET COMMAND PACKET			
14707	106566	004737	113520		JSR	PC,T28RT2	;SET UP OTHER COMMAND PACKET			
14708	106572	004737	113562		JSR	PC,T28RT3	;SET UP OTHER COMMAND PACKET			
14709	106576	004737	016064		JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER			
14710	106602	103407			BCS	20#	;BR IF INIT WAS OK			
14711	106604	005237	002212		INC	FATFLG	;BUMP COUNT			
14715	106610	010001	</							

TEST 8: WRITE/READ TAPE MARK

PC	Address	Instruction	Comments	Register	Value	Label	Operation	Trap	Message
14717	106616	003650							WORD
14718	106620	012124							WORD
14719	106622	013737	002172	111360	204:	MOV	UNITN,T28DSW		SFIERR
14720	106630	012704	111340			MOV	#T28PACKET,R4		SFIMSG
14721	106634	004737	010752			JSR	PC,WRTCHR		
14722	106640	103407				BCS	244		
14723	106642	005237	002212			INC	FATFLG		
14724	106646	010001				MOV	R0,R1		
14725	106650					ERRHRD	ERRNO,WRTMSG,SFIMSG		
14726	106650	104456						TRAP	C#ERHRD
14727	106652	001450						WORD	808
14728	106654	005054						WORD	WRTMSG
14729	106656	012124						WORD	SFIMSG
14730	106660				244:	CKLOOP			
14731	106660	104406						TRAP	C#CLP1
14732	106662	012703	111506			MOV	#T28IMV,R3		
14733	106666	011337	111470		304:	MOV	(R3),T28PK3		
14734	106672	013737	003114	111472		MOV	FREE,T28R8		
14735	106700	C12704	111470			MOV	#T28PK3,R4		
14736	106704	012737	000400	111476		MOV	#256.,T28SZ		
14737	106712	010465	000000			MOV	R4,TSD8(R5)		
14738	106716	004737	016340			JSR	PC,WAITF		
14739	106722	016501	000002			MOV	TSSR(R5),R1		
14740	106726	012702	100206			MOV	#SSR!SC!BIT1!BIT2,R2		
14741	106732	020102				CMP	R1,R2		
14742	106734	001406				BEQ	754		
14743	106736	005237	002212			INC	FATFLG		
14744	106742					ERRHRD	ERRNO,T28WDF,PKTSSR		
14745	106742	104456						TRAP	C#ERHRD
14746	106744	001451						WORD	809
14747	106746	112037						WORD	T28WDF
14748	106750	012136						WORD	PKTSSR
14749	106752				754:	CKLOOP			
14750	106752	104406						TRAP	C#CLP1
14751	106754	013701	111370			MOV	T288FR+6,R1		
14752	106760	010102				MOV	R1,R2		
14753	106762	052702	001000			BIS	#BIT9,R2		
14754	106766	020102				CMP	R1,R2		
14755	106770	001406				BEQ	1804		
14756	106772	005237	002212			INC	FATFLG		
14757	106776					ERRHRD	ERRNO,T28LOQ,EXPREC		
14758	106776	104456						TRAP	C#ERHRD
14759	107000	001452						WORD	810
14760	107002	112114						WORD	T28LOQ
14761	107004	015564						WORD	EXPREC
14762	107006				1804:	CKLOOP</			

TEST 8: WRITE/READ TAPE MARK

14763 107034 004737 017272
14764 107040

9991: JSR PC,CKDROP ;TRY TO DROP THE UNIT

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;
;TEST 8. SUBTEST 3
;
;VERIFIES THAT WRITE TAPE MARK COMMANDS OPERATE
;PROPERLY, AND THAT READ COMMANDS SUBSEQUENTLY ISSUED
;TO DETECT THE WRITTEN TAPE MARKS TERMINATE WITH TAPE
;STATUS ALERT WITH THE TAPE MARK DETECTED (TMK) STATUS
;BIT SET. THE FOLLOWING SEQUENCE IS EXECUTED.
;
;1. THE CONTROLLER IS INITIALIZED AND TAPE REWOUND.
;THIS SETS THE VOLUME CHECK (VCK) STATUS BIT.
;
;2. A WRITE TAPE MARK COMMAND WITH CVC=1 IS ISSUED
;AND PROPER TERMINATION AND STATUS IS VERIFIED
;(I.E. VCK=0 AND TMK=1).
;
;3. SEVERAL MORE WRITE TAPE MARK COMMANDS, THESE WITH
;CVC=0 ARE ISSUED AND PROPER TERMINATION (NORMAL)
;AND STATUS (TMK) VERIFIED.
;
;4. A READ REVERSE COMMAND IS ISSUED AND PROPER
;TERMINATION (TAPE STATUS ALERT) AND STATUS (TMK)
;VERIFIED. IT IS ALSO VERIFIED THAT NO DATA IS
;TRANSFERRED INTO MEMORY.
;
;5. A SPACE RECORDS REVERSE COMMAND IS ISSUED AND
;PROPER TERMINATION (TAPE STATUS ALERT) AND STATUS
;(TMK) VERIFIED.
;
;6. THE TAPE IS REWOUND AND A READ FORWARD COMMAND IS
;ISSUED AND PROPER TERMINATION (TAPE STATUS ALERT)
;AND STATUS (TMK) VERIFIED. IT IS ALSO VERIFIED
;THAT NO DATA IS TRANSFERRED INTO MEMORY.
;
;7. A SPACE RECORDS REVERSE COMMAND THAT CONTAINS A
;RECORD COUNT GREATER THAN 1 IS ISSUED AND IT IS
;VERIFIED THAT TAPE STATUS ALERT TERMINATION
;OCCURED, TMK=1 AND THAT RBPCR (RESIDUAL
;BYTE/RECORD COUNTER) CONTAINS THE PROPER NONZERO
;VALUE. THIS OPERATION VERIFIES THAT DETECTION OF
;THE TAPE MARK CAUSES THE SPACE RECORDS OPERATION
;TO BE PREMATURELY TERMINATED. THIS SHOULD LEAVE
;THE POSITION JUST BEFORE THE FIRST RECORD ON
;TAPE.
;
;8. TAPE POSITION IS VERIFIED BY ISSUING ANOTHER
;SPACE RECORDS REVERSE COMMAND AND VERIFYING THAT
;TAPE STATUS ALERT TERMINATION OCCURS, WITH THE
;REVERSE INTO BOT (RIB) STATUS ERROR BIT SET.
;
;9. A SPACE RECORDS FORWARD COMMAND THAT CONTAINS A
;RECORD COUNT GREATER THAN 1 IS ISSUED AND IT IS
;VERIFIED THAT TAPE STATUS ALERT TERMINATION

14820		:	OCCURED, TMK=1, AND THAT RBPGR (RESIDUAL	
14821		:	BYTE/RECORD COUNTER) CONTAINS THE PROPER NONZERO	
14822		:	VALUE. THIS OPERATION VERIFIES THAT DETECTION OF	
14823		:	THE TAPE MARK CAUSES THE SPACE RECORDS OPERATION	
14824		:	TO BE PREMATURELY TERMINATED.	
14825		:		
14826		:		
14827		:		
14828		:		
14829		:		
14830		:		
14831		:		
14832	107040	-	BGNSUB	; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>
	107040			T8.3:
	107040	104402		TRAP C#BSUB
14833	107042	004737	113426	JSR PC,T28REST ;SET COMMAND PACKET
14834	107046	004737	113520	JSR PC,T28RT2 ;SET UP OTHER COMMAND PACKET
14835	107052	004737	113562	JSR PC,T28RT3 ;SET UP OTHER COMMAND PACKET
14836	107056	C12737	023420	MOV #10000.,T28DLY ;SET UP DELAY ROUTINE
14837	107064	004737	016064	JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
14838	107070	103426		BCS 20# ;BR IF INIT WAS OK
14839	107072			DELAY 250 ;DELAY ABOUT .25 SECONDS
	107072	012727	000250	MOV #250.(PC)+
	107076	000000		.WORD 0
	107100	013727	002116	MOV L#DLY.(PC)+
	107104	000000		.WORD 0
	107106	005367	177772	DEC -6(PC)
	107112	001375		BNE -.4
	107114	005367	177756	DEC -.22(PC)
	107120	001367		BNE -.20
14840	107122	005337	111532	DEC T28DLY ;BUMP DELAY ROUTINE DOWN
14841	107126	001356		BNE 10# ;BR, IF MORE DELAY TIME LEFT
14842	107130	005237	002212	INC FATFLG ;BUMP COUNT
14846	107134	010001		MOV R0,R1 ;CONTENTS OF TSSR REGISTER
14847	107136			ERRDF ERRNO,SFIERR,SFMSG ;FATAL ERROR TSSR WAS NOT OK
	107136	104455		TRAP C#ERRDF
	107140	001453		.WORD 811
	107142	003650		.WORD SFIERR
	107144	012124		.WORD SFMSG
14848	107146	013737	002172	MOV UNITN,T28DSW ;SET UP DRIVE NUMBER
14849	107154	012704	111340	MOV #T28PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
14850	107160	004737	010752	JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
14851	107164	103407		BCS 23# ;BR, IF COMMAND ISSUED OK
14852	107166	005237	002212	INC FATFLG ;BUMP COUNT
14856	107172	010001		MOV R0,R1 ;SAVE CONTENTS OF TSSR
14857	107174			ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICC FAILED
	107174	104456		TRAP C#ERRHRD
	107176	001454		.WORD 812
	107200	005054		.WORD WRTMSG
	107202	012124		.WORD SFMSG
14858	107204			23#: CKLOOP ;LOOP IF SELECTED
	107204	104406		TRAP C#CLP1
14859	107206	004737	011104	JSR PC,REWIND ;CALL TAPE REWIND COMMAND
14860	107212	103411		BCS 30# ;BR, IF NO PROBLEM
14861	107214	016501	000002	MOV TSSR(R5),R1 ;GET TSSR
14862	107220	010004		MOV R0,R4 ;SAVE PACKET ADDRESS
14863	107222	005237	002212	INC FATFLG ;BUMP COUNT

TEST 8: WRITE/READ TAPE MARK

14867	107226			ERRHRD	ERRNO,T28RWN,PKTSSR	;REWIND NOT ACCEPTED		
	107226	104456					TRAP	C#ERHRD
	107230	001455					.WORD	813
	107232	112461					.WORD	T28RWN
	107234	012136					.WORD	PKTSSR
14868	107236			30#:	CKLOOP	;LOOP IF SELECTED		
	107236	104406					TRAP	C#CLP1
14869	107240	013701	111370		MOV T28BFR+6,R1	;PICK UP XSTO		
14870	107244	010102			MOV R1,R2	;SET UP EXPECTED		
14871	107246	052702	000002		BIS #BIT1,R2	;SET BOT BIT IN EXPECTED		
14872	107252	020102			CMP R1,R2	;DOES EXP = REC'D		
14873	107254	001406			BEQ 40#	;BR, IF EQUAL (OK)		
14874	107256	005237	002212		INC FATFLG	;BUMP COUNT		
14878	107262				ERRHRD	ERRNO,T28BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND	
	107262	104456					TRAP	C#ERHRD
	107264	001456					.WORD	814
	107266	112337					.WORD	T28BOT
	107270	015564					.WORD	EXPREC
14879	107272			40#:	CKLOOP	;LOOP IF SELECTED		
	107272	104406					TRAP	C#CLP1
14880	107274	005737	002216	42#:	TST EXTFEA	;CHECK FOR EXTENDED FEATURES SW SWITCH		
14881	107300	001024			BNE 50#	;BR IF SWITCH IS ON		
14882	107302	112737	000200	111501	MOVB #200,T28BS1	;WRITE MISCELLANEOUS CONT/READ STATUS		
14883	107310	112737	000010	111500	MOVB #10,T28BS0	;FUNC. SEL. BIT (TURN ON EXTFEA SWITCH)		
14884	107316	012704	111450		MOV #T28PK2,R4	;WRITE SUBSYS MEM PACKET		
14885	107322	010465	000000		MOV R4,T28DB(R5)	;ISSUE COMMAND		
14886	107326	004737	016426		JSR PC,CHKTSSR	;WAIT FOR SSR		
14887	107332	103407			BCS 50#	;BR, IF NO ERROR		
14888	107334	010001			MOV R0,R1	;ERROR, SAVE TSSR		
14889	107336	005237	002212		INC FATFLG	;BUMP COUNT		
14893	107342				ERRHRD	ERRNO,T28SSR,PKTSSR	;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS	
	107342	104456					TRAP	C#ERHRD
	107344	001457					.WORD	815
	107346	112175					.WORD	T28SSR
	107350	012136					.WORD	PKTSSR
14894	107352			50#:	CKLOOP	;LOOP IF SELECTED		
	107352	104406					TRAP	C#CLP1
14895	107354	012737	000007	111360	MOV #7,T28DSW	;SET UP DRIVE NUMBER		
14896	107362	012704	111340		MOV #T28PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS		
14897	107366	004737	010752		JSR PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS		
14898	107372	103407			BCS 60#	;BR, IF COMMAND ISSUED OK		
14899	107374	005237	002212		INC FATFLG	;BUMP COUNT		
14903	107400	010001			MOV R0,R1	;SAVE CONTENTS OF TSSR		
14904	107402				ERRHRD	ERRNO,WRTMSG,SFIMSG	;WRITE CHARACTERISTICS FAILED	
	107402	104456					TRAP	C#ERHRD
	107404	001460					.WORD	816
	107406	005054					.WORD	WRTMSG
	107410	012124					.WORD	SFIMSG
14905	107412			60#:	CKLOOP	;SCOPE LOOP		
	107412	104406					TRAP	C#CLP1
14906	107414	016501	000002		MOV TSSR(R5),R1	;GET TSSR CONTENTS		
14907	107420	032701	000100		BIT #OFL,R1	;CHECK FOR THE OFFLINE BIT SET		
14908	107424	001006			BNE 65#	;BR, IF OFFLINE (GOOD)		
14909	107426	005237	002212		INC FATFLG	;BUMP COUNT		
14913	107432				ERRDF	ERRNO,T28OFL,SFIMSG	;OFF LINE SHOULD HAVE BEEN SET (BAD)	
	107432	104455					TRAP	C#ERDF
	107434	001461					.WORD	817

TEST 8: WRITE/READ TAPE MARK

	107436	112530						.WORD	T28OFL
	107440	012124						.WORD	SFIMSG
14914	107442		65:	CKLOOP			:LOOP IF SELECTED		
	107442	104406						TRAP	C:CLP1
14915	107444	013737	002172	111360	MOV	UNITN,T28DSW	:	SET UP DRIVE NUMBER	
14916	107452	012704	111340		MOV	#T28PACKET,R4	:	SUBROUTINE NEEDS PACKET ADDRESS	
14917	107456	004737	010752		JSR	PC,WRTCHR	:	ISSUE WRITE CHARACTERISTICS	
14918	107462	103407			BCS	68:	:	BR, IF COMMAND ISSUED OK	
14919	107464	005237	002212		INC	FATFLG	:	BUMP COUNT	
14923	107470	010001			MOV	R0,R1	:	SAVE CONTENTS OF TSSR	
14924	107472				ERRHRD	ERRNO,WRTMSG,SFIMSG	:	WRITE CHARACTERISTISC FAILED	
	107472	104456						TRAP	C:ERHRD
	107474	001462						.WORD	818
	107476	005054						.WORD	WRTMSG
	107500	012124						.WORD	SFIMSG
14925	107502		66:	CKLOOP			:LOOP IF SELECTED		
	107502	104406						TRAP	C:CLP1
14926	107504	012737	140011	111470	MOV	#140011,T28PK3	:	WRITE TAPE MARK,ACK,CVC=1 COMMAND	
14927	107512	C12704	111470		MOV	#T28PK3,R4	:	SET UP R4 WITH PACKET ADDRESS	
14928	107516	010465	000000		MOV	R4,TSD8(R5)	:	ISSUE COMMAND	
14929	107522	004737	016340		JSR	PC,WAITF	:	WAIT FOR SSR TO SET	
14930	107526	016501	000002		MOV	TSSR(R5),R1	:	GET TSSR CONTENTS	
14931	107532	012702	000200		MOV	#SSR,R2	:	SET UP EXPECTED	
14932	107536	020102			CMP	R1,R2	:	ARE THEY EQUAL	
14933	107540	001406			BEQ	70:	:	BR, IF OK	
14934	107542	005237	002212		INC	FATFLG	:	BUMP COUNT	
14938	107546				ERRHRD	ERRNO,T28WDC,PKTSSR	:	TSSR INCORRECT AFTER WRITE TAPE MARK	
	107546	104456						TRAP	C:ERHRD
	107550	001463						.WORD	819
	107552	112603						.WORD	T28WDC
	107554	012136						.WORD	PKTSSR
14939	107556		70:	CKLOOP			:LOOP IF SELECTED		
	107556	104406						TRAP	C:CLP1
14940	107560	013701	111370		MOV	T28BFR+6,R1	:	PICK UP XSTO (VCK CHECK)	
14941	107564	010102			MOV	R1,R2	:	SET UP EXPECTED	
14942	107566	042702	000020		BIC	#BIT4,R2	:	VCK SHOULD BE 0	
14943	107572	020102			CMP	R1,R2	:	IS VCK SET CORRECTLY	
14944	107574	001406			BEQ	80:	:	BR, IF VCK IS CLEAR	
14945	107576	005237	002212		INC	FATFLG	:	BUMP COUNT	
14949	107602				ERRHRD	EPRNO,T28VCK,EXPREC	:	VCK WAS NOT CLEAR AFTER CVC=1	
	107602	104456						TRAP	C:ERHRD
	107604	001464						.WORD	820
	107606	112662						.WORD	T28VCK
	107610	015564						.WORD	EXPREC
14950	107612		80:	CKLOOP			:LOOP IF SELECTED		
	107612	104406						TRAP	C:CLP1
14951	107614	013701	111370		MOV	T28BFR+6,R1	:	PICK UP XSTO (CHECK TMK)	
14952	107620	010102			MOV	R1,R2	:	SET UP EXPECTED	
14953	107622	052702	100000		BIS	#BIT15,R2	:	TMK SHOULD BE SET	
14954	107626	020102			CMP	R1,R2	:	WAS TMK SET	
14955	107630	001406			BEQ	90:	:	BR, IF TMK WAS SET	
14956	107632	005237	002212</						

TEST 8: WRITE/READ TAPE MARK

14961	107646		901:	CKLOOP		:LOOP IF SELECTED		
	107646	104406					TRAP	C1CLP1
14962	107650	004737	011104	JSR	PC,REWIND	:CALL TAPE REWIND COMMAND		
14963	107654	103411		BCS	1301	:BR, IF NO PROBLEM		
14964	107656	010004		MOV	R0,R4	:SAVE PACKET ADDRESS		
14965	107660	016501	000002	MOV	TSSR(R5),R1	:GET TSSR STATUS		
14966	107664	005237	002212	INC	FATFLG	:BUMP COUNT		
14970	107670			ERRHRD	ERRNO,T28RWN,PKTSSR	:REWIND NOT ACCEPTED		
	107670	104456					TRAP	C1ERHRD
	107672	001466					.WORD	822
	107674	112461					.WORD	T28RWN
	107676	012136					.WORD	PKTSSR
14971	107700		1301:	CKLOOP		:LOOP IF SELECTED		
	107700	104406					TRAP	C1CLP1
14972	107702	013701	111370	MOV	T28BFR+6,R1	:PICK UP XSTO		
14973	107706	010102		MOV	R1,R2	:SET UP EXPECTED		
14974	107710	052702	000002	BIS	#BIT1,R2	:SET BOT BIT IN EXPECTED		
14975	107714	020102		CMP	R1,R2	:DOES EXP = REC'D		
14976	107716	001406		BEQ	1401	:BR, IF EQUAL (OK)		
14977	107720	005237	002212	INC	FATFLG	:BUMP COUNT		
14981	107724			ERRHRD	ERRNO,T28BOT,EXPREC	:TAPE NOT AT BOT AFTER REWIND		
	107724	104456					TRAP	C1ERHRD
	107726	001467					.WORD	823
	107730	112337					.WORD	T28BOT
	107732	015564					.WORD	EXPREC
14982	107734		1401:	CKLOOP		:LOOP IF SELECTED		
	107734	104406					TRAP	C1CLP1
14983	107736	012703	000012	MOV	#10,R3	:NUMBER OF RECORDS TO WRITE TM		
14984	107742	012737	140011	MOV	#140011,T28PK3	:WRITE TAPE MARK,ACK,CVC-1 COMMAND		
14985	107750	012704	111470	MOV	#T28PK3,R4	:SET UP R4 WITH PACKET ADDRESS		
14986	107754	010465	000000	MOV	R4,TSD8(R5)	:ISSUE COMMAND		
14987	107760	004737	016340	JSR	PC,WAITF	:WAIT FOR SSR TO SET		
14988	107764	016501	000002	MOV	TSSR(R5),R1	:PICK UP TSSR		
14989	107770	012702	000200	MOV	#SSR,R2	:SET UP EXPECTED (SSR ONLY)		
14990	107774	020102		CMP	R1,R2	:WAS STATUS GOOD		
14991	107776	001406		BEQ	1651	:BR, IF TERMINATION WAS GOOD		
14992	110000	005237	002212	INC	FATFLG	:BUMP COUNT		
14996	110004			ERRHRD	ERRNO,T28WDC,PKTSSR	:TSSR NOT CORRECT AFTER WRT TAPE M.		
	110004	104456					TRAP	C1ERHRD
	110006	001470					.WORD	824
	110010	112603					.WORD	T28WDC
	110012	012136					.WORD	PKTSSR
14997	110014		1651:	CKLOOP		:LOOP IF SELECTED		
	110014	104406					TRAP	C1CLP1
14998	110016	013701	111370	MOV	T28BFR+6,R1	:PICK UP XSTO		
14999	110022	010102		MOV	R1,R2	:SET UP EXPECTED		
15000	110024	052702	100000	BIS	#BIT15,R2	:SET TMK BIT IN EXPECTED		
15001	110030	020102		CMP	R1,R2	:DOES EXP = REC'D		
15002	110032	001406		BEQ	1801	:BR, IF EQUAL (OK)		
15003	110034	005237	002212	INC	FATFLG	:BUMP COUNT		
15007	110040			ERRHRD	ERRNO,T28TMK,EXPREC	:TMK NOT SET AFTER WRT TAPE MARK		
	110040	104456					TRAP	C1ERHRD
	110042	001471					.WORD	825
	110044	112735					.WORD	T28TMK
	110046	015564					.WORD	EXPREC
15008	110050		1801:	CKLOOP		:LOOP IF SELECTED		
	110050	104406					TRAP	C1CLP1

TEST 8: WRITE/READ TAPE MARK

15009	110052	005303		DEC	R3		;BUMP COUNTER DOWN
15010	110054	001337		BNE	1554		;BR, IF LESS THAN 10 TAPE MARKS
15011	110056	012700	177777	MOV	#177777,R0		;VALUE TO WRITTEN TO MEMORY
15012	110062	004737	017512	JSR	PC,FILLMEM		;FILL MEM WITH ALL ONES
15013	110066	013737	003114	MOV	FREE,T28WB	111472	;STARTING READ BUFFER ADDRESS
15014	110074	012737	140401	MOV	#140401,T28PK3	111470	;READ REVERSE,ACK, COMMAND
15015	110102	012704	111470	MOV	#T28PK3,R4		;SET UP R4 WITH PACKET ADDRESS
15016	110106	013737	000024	MOV	20,T28SZ	111476	;SET UP RECORD SIZE IN PACKET
15017	110114	010465	000000	MOV	R4,TSDB(R5)		;ISSUE COMMAND
15018	110120	004737	016340	JSR	PC,WAITF		;WAIT FOR SSR TO SET
15019	110124	016501	000002	MOV	TSSR(R5),R1		;GET TSSR CONTENTS
15020	110130	012702	100204	MOV	#SSR!SC!BIT2,R2		;SET UP EXPECTED
15021	110134	020102		CMP	R1,R2		;ARE THEY EQUAL
15022	110136	001406		BEQ	2004		;BR, IF OK
15023	110140	005237	002212	INC	FATFLG		;BUMP COUNT
15027	110144			ERRHRD	ERRNO,T28RDF,PKTSSR		;TSSR INCORRECT AFTER WRITE DATA
	110144	104456					TRAP C#ERHRD
	110146	001472					.WORD 826
	110150	111674					.WORD T28RDF
	110152	012136					.WORD PKTSSR
15028	110154			2004:	CKLOOP		;LOOP IF SELECTED
	110154	104406					TRAP C#CLP1
15029	110156	013701	111370	MOV	T28BFR+6,R1		;PICK UP XSTO
15030	110162	010102		MOV	R1,R2		;SET UP EXPECTED
15031	110164	052702	100000	BIS	#BIT15,R2		;TMK SHOULD BE SET
15032	110170	020102		CMP	R1,R2		;IS TMK SET
15033	110172	001406		BEQ	2104		;BR, IF TMK WAS SET (GOOD)
15034	110174	005237	002212	INC	FATFLG		;BUMP COUNT
15038	110200			ERRHRD	ERRNO,T28RRM,EXPREC		;TMK NOT SET AFTER READ REV
	110200	104456					TRAP C#ERHRD
	110202	001473					.WORD 827
	110204	113007					.WORD T28RRM
	110206	015564					.WORD EXPREC
15039	110210			2104:	CKLOOP		;LOOP IF SELECTED
	110210	104406					TRAP C#CLP1
15040	110212	017701	072676	MOV	#FREE,R1		;FIRST LOC IN READ BUFFER
15041	110216	012702	177777	MOV	#177777,R2		;EXPECTED IF NO DATA TRANS.
15042	110222	020102		CMP	R1,R2		;DID ANY DATA GET TRANSFERRED
15043	110224	001406		BEQ	2204		;BR, IF NO DATA TRANS (GOOD)
15044	110226	005237	002212	INC	FATFLG		;BUMP COUNT
15048	110232			ERRHRD	ERRNO,T28DTR,EXPREC		;DATA TRANSFERRED ON READ TAPE MARK
	110232	104456					TRAP C#ERHRD
	110234	001474					.WORD 828
	110236	113222					.WORD T28DTR
	110240	015564					.WORD EXPREC
15049	110242			2204:	CKLOOP		;LOOP IF SELECTED
	110242	104406					TRAP C#CLP1
15050	110244	012737	100410	MOV	#100410,T28PK3	111470	;SPACE REVERSE,ACK, COMMAND
15051	110252	012737	000001	MOV	#1,T28RB	111472	;NUMBER OF RECORDS TO SPACE BACK
15052	110260	012704	111470	MOV	#T28PK3,R4		;SET UP R4 WITH PACKET ADDRESS
15053	110264	010465	000000	MOV	R4,TSDB(R5)		;ISSUE COMMAND
15054	110270	004737	016340	JSR	PC,WAITF		;WAIT FOR SSR TO SET
15055	110274	016501	000002	MOV	TSSR(R5),R1		;GET TSSR CONTENTS
15056	110300	012702	100204	MOV	#SSR!SC!BIT2,R2		;SET UP EXPECTED
15057	110304	020102		CMP	R1,R2		;ARE THEY EQUAL
15058	110306	001406		BEQ	2224		;BR, IF OK
15059	110310	005237	002212	INC	FATFLG		;BUMP COUNT

TEST 8: WRITE/READ TAPE MARK

15063	110314			ERRHRD	ERRNO,T28RDG,PKTSSR	;TSSR INCORRECT AFTER SPACE CMD.	
	110314	104456				TRAP	C#ERHRD
	110316	001475				.WORD	829
	110320	111755				.WORD	T28RDG
	110322	012136				.WORD	PKTSSR
15064	110324			222#:	CKLOOP	;LOOP IF SELECTED	
	110324	104406				TRAP	C#CLP1
15065	110326	013701	111370		MOV T28BFR+6,R1	;PICK UP XSTO	
15066	110332	010102			MOV R1,R2	;SET UP EXPECTED	
15067	110334	052702	100000		BIS #BIT15,R2	;TMK SHOULD BE SET	
15068	110340	020102			CMP R1,R2	;IS TMK SET	
15069	110342	001406			BEQ 226#	;BR, IF TMK WAS SET (GOOD)	
15070	110344	005237	002212		INC FATFLG	;BUMP COUNT	
15074	110350				ERRHRD ERRNO,T28RRN,EXPREC	;TMK NOT SET AFTER SPACE REV	
	110350	104456				TRAP	C#ERHRD
	110352	001476				.WORD	830
	110354	113065				.WORD	T28RRN
	110356	015564				.WORD	EXPREC
15075	110360			226#:	CKLOOP	;LOOP IF SELECTED	
	110360	104406				TRAP	C#CLP1
15076	110362	004737	011104		JSR PC,REWIND	;CALL TAPE REWIND COMMAND	
15077	110366	103411			BCS 230#	;BR, IF NO PROBLEM	
15078	110370	010004			MOV R0,R4	;SAVE PACKET ADDRESS	
15079	110372	016501	000002		MOV TSSR(R5),R1	;GET TSSR	
15080	110376	005237	002212		INC FATFLG	;BUMP COUNT	
15084	110402				ERRHRD ERRNO,T28RWN,PKTSSR	;REWIND NOT ACCEPTED	
	110402	104456				TRAP	C#ERHRD
	110404	001477				.WORD	831
	110406	112461				.WORD	T28RWN
	110410	012136				.WORD	PKTSSR
15085	110412			230#:	CKLOOP	;LOOP IF SELECTED	
	110412	104406				TRAP	C#CLP1
15086	110414	013701	111370		MOV T28BFR+6,R1	;PICK UP XSTO	
15087	110420	010102			MOV R1,R2	;SET UP EXPECTED	
15088	110422	052702	000002		BIS #BIT1,R2	;SET BOT BIT IN EXPECTED	
15089	110426	020102			CMP R1,R2	;DOES EXP = REC'D	
15090	110430	001406			BEQ 240#	;BR, IF EQUAL (OK)	
15091	110432	005237	002212		INC FATFLG	;BUMP COUNT	
15095	110436				ERRHRD ERRNO,T28BOT,EXPREC	;TAPE NOT AT BOT AFTER REWIND	
	110436	104456				TRAP	C#ERHRD
	110440	001500				.WORD	832
	110442	112337				.WORD	T28BOT
	110444	015564				.WORD	EXPREC
15096	110446			240#:	CKLOOP	;LOOP IF SELECTED	
	110446	104406				TRAP	C#CLP1
15097	110450	012700	177777		MOV #177777,R0	;VALUE TO WRITTEN TO MEMORY	
15098	110454	004737	017512		JSR PC,FILLMEM	;FILL MEM WITH ALL ONES	
15099	110460	013737	003114	111472	MOV FREE,T28RB	;STARTING READ BUFFER ADDRESS	
15100	110466	012737	100001	111470	MOV #100001,T28PK3	;READ FORWARD,ACK, COMMAND	
15101	110474	012704	111470		MOV #T28PK3,R4	;SET UP R4 WITH PACKET ADDRESS	
15102	110500	013737	000024	111476	MOV 20.,T28SZ	;SET UP RECORD SIZE IN PACKET	
15103	110506	010465	000000		MOV R4,TSD8(R5)	;ISSUE COMMAND	
15104	110512	004737	016340		JSR PC,WAITF	;WAIT FOR SSR TO SET	
15105	110516	016501	000002		MOV TSSR(R5),R1	;GET TSSR CONTENTS	
15106	110522	012702	100204		MOV #SSR!SC!BIT2,R2	;SET UP EXPECTED	
15107	110526	020102			CMP R1,R2	;ARE THEY EQUAL	
15108	110530	001406			BEQ 245#	;BR, IF OK	

TEST 8: WRITE/READ TAPE MARK

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15109 110532 005237 002212          INC  FATFLG          ;BUMP COUNT
15113 110536          ERRHRD  ERRNO,T28WDE,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
          110536 104456          TRAP  C#ERHRD
          110540 001501          .WORD 833
          110542 112246          .WORD T28WDE
          110544 012136          .WORD PKTSSR
15114 110546          245$: CKLOOP          ;LOOP IF SELECTED
          110546 104406          TRAP  C#CLP1
15115 110550 013701 111370          MOV  T28BFR+6,R1      ;PICK UP XSTO
15116 110554 010102          MOV  R1,R2          ;SET UP EXPECTED
15117 110556 052702 100000          BIS  @BIT15,R2      ;TMK SHOULD BE SET
15118 110562 020102          CMP  R1,R2          ;IS TMK SET
15119 110564 001406          BEQ  247$          ;BR, IF TMK WAS SET (GOOD)
15120 110566 005237 002212          INC  FATFLG          ;BUMP COUNT
15124 110572          ERRHRD  ERRNO,T28RRP,EXPREC      ;TMK NOT SET AFTER READ REV
          110572 104456          TRAP  C#ERHRD
          110574 001502          .WORD 834
          110576 113144          .WORD T28RRP
          110600 C15564          .WORD EXPREC
15125 110602          247$: CKLOOP          ;LOOP IF SELECTED
          110602 104406          TRAP  C#CLP1
15126 110604 017701 072304          MOV  @FREE,R1      ;FIRST LOC IN READ BUFFER
15127 110610 012702 177777          MOV  @177777,R2      ;EXPECTED IF NO DATA TRANS.
15128 110614 020102          CMP  R1,R2          ;DID ANY DATA GET TRANSFERRED
15129 110616 001406          BEQ  250$          ;BR, IF NO DATA TRANS (GOOD)
15130 110620 005237 002212          INC  FATFLG          ;BUMP COUNT
15134 110624          ERRHRD  ERRNO,T28DTR,EXPREC      ;DATA TRANSFERRED ON READ TAPE MARK
          110624 104456          TRAP  C#ERHRD
          110626 001503          .WORD 835
          110630 113222          .WORD T28DTR
          110632 015564          .WORD EXPREC
15135 110634          250$: CKLOOP          ;LOOP IF SELECTED
          110634 104406          TRAP  C#CLP1
15136 110636 012737 100410 111470          MOV  @100410,T28PK3      ;SPACE REVERSE,ACK, COMMAND
15137 110644 012737 000005 111472          MOV  @5,T28RB      ;NUMBER OF RECORDS TO SPACE BACK
15138 110652 012704 111470          MOV  @T28PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
15139 110656 010465 000000          MOV  R4,TSD8(R5)      ;ISSUE COMMAND
15140 110662 004737 016340          JSR  PC,WAITF      ;WAIT FOR SSR TO SET
15141 110666 016501 000002          MOV  T$SR(R5),R1      ;GET TSSR CONTENTS
15142 110672 012702 100204          MOV  @SR$SC!BIT2,R2      ;SET UP EXPECTED
15143 110676 020102          CMP  R1,R2          ;ARE THEY EQUAL
15144 110700 001406          BEQ  260$          ;BR, IF OK
15145 110702 005237 002212          INC  FATFLG          ;BUMP COUNT
15149 110706          ERRHRD  ERRNO,T28RDG,PKTSSR      ;TSSR INCORRECT AFTER SPACE REV CMD.
          110706 104456          TRAP  C#ERHRD
          110710 001504          .WORD 836
          110712 111755          .WORD T28RDG
          110714 012136          .WORD PKTSSR
15150 110716          260$: CKLOOP          ;LOOP IF SELECTED
          110716 104406          TRAP  C#CLP1
15151 110720 013701 111370          MOV  T28BFR+6,R1      ;PICK UP XSTO
15152 110724 010102          MOV  R1,R2          ;SET UP EXPECTED
15153 110726 052702 100000          BIS  @BIT15,R2      ;TMK SHOULD BE SET
15154 110732 020102          CMP  R1,R2          ;IS TMK SET
15155 110734 001406          BEQ  270$          ;BR, IF TMK WAS SET (GOOD)
15156 110736 005237 002212          INC  FATFLG          ;BUMP COUNT
15160 110742          ERRHRD  ERRNO,T28RRN,EXPREC      ;TMK NOT SET AFTER READ REV
```


TEST 8: WRITE/READ TAPE MARK

	110742	104456							TRAP	C#ERHRD
	110744	001505							.WORD	837
	110746	113065							.WORD	T28RRN
	110750	015564							.WORD	EXPREC
15161	110752			270#:	CKLOOP			;LOOP IF SELECTED		
	110752	104406							TRAP	C#CLP1
15162	110754	013701	111366		MOV	T28BFR+4,R1		;PICK UP RESIDUAL BYTE COUNTER		
15163	110760	012702	000004		MOV	#4,R2		;SHOULD BE THE DIFFERENCE		
15164	110764	020102			CMP	R1,R2		;IS COUNTER CORRECT		
15165	110766	001406			BEQ	280#		;BR, IF COUNTER CORRECT		
15166	110770	005237	002212		INC	FATFLG		;BUMP COUNT		
15170	110774				ERRHRD	ERRNO,T28PBP,EXPREC		;RESIDUAL BYTE COUNTER NOT CORRECT		
	110774	104456							TRAP	C#ERHRD
	110776	001506							.WORD	838
	111000	111611							.WORD	T28PBP
	111002	015564							.WORD	EXPREC
15171	111004				280#:	CKLOOP		;LOOP IF SELECTED		
	111004	104406							TRAP	C#CLP1
15172	111006	C12737	100410	111470	MOV	#100410,T28PK3		;SPACE REVERSE,ACK, COMMAND		
15173	111014	012737	000001	111472	MOV	#1,T28RB		;NUMBER OF RECORDS TO SPACE BACK		
15174	111022	012704	111470		MOV	#T28PK3,R4		;SET UP R4 WITH PACKET ADDRESS		
15175	111026	010465	000000		MOV	R4,TSDB(R5)		;ISSUE COMMAND		
15176	111032	004737	016340		JSR	PC,WAITF		;WAIT FOR SSR TO SET		
15177	111036	016501	000002		MOV	TSSR(R5),R1		;GET TSSR CONTENTS		
15178	111042	012702	100204		MOV	#SSR!SC!BIT2,R2		;SET UP EXPECTED		
15179	111046	020102			CMP	R1,R2		;ARE THEY EQUAL		
15180	111050	001406			BEQ	290#		;BR, IF OK		
15181	111052	005237	002212		INC	FATFLG		;BUMP COUNT		
15185	111056				ERRHRD	ERRNO,T28RDG,PKTSSR		;TSSR INCORRECT AFTER SPACE CMD.		
	111056	104456							TRAP	C#ERHRD
	111060	001507							.WORD	839
	111062	111755							.WORD	T28RDG
	111064	012136							.WORD	PKTSSR
15186	111066				290#:	CKLOOP		;LOOP IF SELECTED		
	111066	104406							TRAP	C#CLP1
15187	111070	013701	111376		MOV	T28BFR+14,R1		;PICK UP XST3		
15188	111074	010102			MOV	R1,R2		;SET UP EXPECTED		
15189	111076	052702	000001		BIS	#BIT0,R2		;RIB SHOULD BE SET		
15190	111102	020102			CMP	R1,R2		;IS RIB SET		
15191	111104	001406			BEQ	300#		;BR, IF RIB WAS SET (GOOD)		
15192	111106	005237	002212		INC	FATFLG		;BUMP COUNT		
15196	111112				ERRHRD	ERRNO,T28RIB,EXPREC		;RIB NOT SET AFTER READ REV		
	111112	104456							TRAP	C#ERHRD
	111114	001510							.WORD	840
	111116	111534							.WORD	T28RIB
	111120	015564							.WORD	EXPREC
15197	111122				300#:	CKLOOP		;LOOP IF SELECTED		
	111122	104406							TRAP	C#CLP1
15198	111124	012737	100010	111470	MOV	#100010,T28PK3		;SPACE FORWARD,ACK, COMMAND		
15199	111132	012737	000005	111472	MOV	#5,T28RB		;NUMBER OF RECORDS TO SPACE FORM.		
15200	111140	012704	111470		MOV	#T28PK3,R4		;SET UP R4 WITH PACKET ADDRESS		
15201	111144	010465	000000		MOV	R4,TSDB(R5)		;ISSUE COMMAND		
15202	111150	004737	016340		JSR	PC,WAITF		;WAIT FOR SSR TO SET		
15203	111154	016501	000002		MOV	TSSR(R5),R1		;GET TSSR CONTENTS		
15204	111160	012702	100204		MOV	#SSR!SC!BIT2,R2		;SET UP EXPECTED		
15205	111164	020102			CMP	R1,R2		;ARE THEY EQUAL		
15206	111166	001406			BEQ	310#		;BR, IF OK		

Address	Offset	Hex	Label	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	
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TEST 8: WRITE/READ TAPE MARK

15256	111342	111350	.WORD	T28DATA	;ADDRESS OF CHARACTERISTICS BLOCK
15257	111344	000000	.WORD	0	
15258	111346	000012	.WORD	10.	;STARTING VALUE OF BLOCK SIZE
15259	111350				;CHARACTERISTICS DATA BLOCK
15260	111350	111362	T28DATA: .WORD	T28BFR	;ADDRESS OF MESSAGE BUFFER
15261	111352	000000	.WORD	0	
15262	111354	000024	.WORD	20.	;LENGTH OF MESSAGE BUFFER
15263	111356	000000	.WORD	0	
15264	111360	000000	T28DSW: .WORD	0	;SELECT DRIVE 0
15265	111362		T28BFR: .BLKW	25.	;MESSAGE BUFFER
15266					
15267					
15268					
15270	111444				
15272	111450		.BLKB	10-<.-TSV2&7>	
15273	111450	100006	T28PK2: .WORD	100006	;WRITE SUB SYS MEM COMMAND, IE AND ACK
15274	111452	111500	.WORD	T28BF2	;ADDRESS OF SELECT BLOCK DATA
15275	111454	000000	.WORD	0	
15276	111456	000006	.WORD	6.	;SIZE OF DATA PACKET
15277					
15279	111460		.BLKB	10-<.-TSV2&7>	
15281	111470				
15282	111470	100005	T28PK3: .WORD	100005	;REREAD COMMAND, AND ACK
15283	111472		T28RB: .WORD	FREE	;ADDRESS OF WRITE BUFFER
15284	111472	003114	T28WB: .WORD	0	
15285	111474	000000	.WORD	0	
15286	111476	000000	T28SZ: .WORD	0	;SIZE OF BUFFER (EXTENT)
15287			.EVEN		
15288					
15289					
15290					
15291	111500		T28BF2: .WORD	10	;BSELO AREA
15292	111500	010	T28BS0: .BYTE	200	;BSEL1 AREA
15293	111501	200	T28BS1: .BYTE	0	;SEL 2 AREA
15294	111502	000000	T28S2: .WORD	0	;DATA AREA
15295	111504	000000	T28S3: .WORD	0	
15296					
15297					
15298			.EVEN		
15299					
15300					
15301	111506				
15302	111506	101411	T28IMV: .WORD	101411	;ILLEGAL MODE BITS TEST DATA
15303	111510	102011	.WORD	102011	
15304	111512	103411	.WORD	103411	
15305	111514	177777	.WORD	177777	
15306	111516	100011	T28RN: .WORD	100011	;WRITE TAPE MARK COMMAND
15307	111520	100411	T28WDR: .WORD	100411	;ERASE COMMAND
15308	111522	101011	T28CON: .WORD	101011	;WRITE TAPE MARK RETRY
15309	111524	177777	.WORD	177777	;END OF DATA
15310					
15311					
15312	111526	000000	T28CNT: .WORD	0	;TAPE TIMER COUNTER STORAGE AREA
15313	111530	000000	T28CNU: .WORD	0	;TAPE TIMER COUNTER STORAGE AREA
15314	111532	000000	T28DLY: .WORD	0	;DELAY COUNTER
15315			.EVEN		
15316					

TEST 8: WRITE/READ TAPE MARK

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15317
15318
15319
15320
15321
15322 111534 124 141 160 T28RIB: .ASCIZ 'Tape Position Not Correct, RIB Should Be Set'
15323 111611 122 145 163 T28PBP: .ASCIZ 'Residual Byte Counter Register (RBPCR) Not Correct'
15324 111674 124 123 123 T28RDF: .ASCIZ 'TSSR Incorrect After READ REVERSE Into TAPE MARK'
15325 111755 124 123 123 T28RDG: .ASCIZ 'TSSR Incorrect After SPACE Command Into TAPE MARK'
15326 112037 124 123 123 T28WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
15327 112114 111 154 154 T28LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XSTO'
15328 112175 127 122 111 T28SSR: .ASCIZ 'WRITE MISCELLANEOUS Command Not Accepted'
15329 112246 124 123 123 T28WDE: .ASCIZ 'TSSR Not Correct After READ DATA Command, Into TAPE MARK'
15330 112337 124 141 160 T28BOT: .ASCIZ 'Tape Not At BOT After REWIND Command'
15331 112404 124 123 123 T28TH: .ASCIZ 'TSSR Not Correct After FORMAT Command Reject'
15332 112461 122 145 167 T28RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
15333 112530 104 162 151 T28OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
15334 112603 124 123 123 T28WDC: .ASCIZ 'TSSR Not Correct After WRITE TAPE MARK Command'
15335 112662 103 126 103 T28VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
15336 112735 124 115 113 T28TMK: .ASCIZ 'TMK Not Set After WRITE TAPE MARK Command'
15337 113007 124 115 113 T28RRM: .ASCIZ 'TMK Not Set After READ REVERSE Into TAPE MARK'
15338 113065 124 115 113 T28RRN: .ASCIZ 'TMK Not Set After SPACE REVERSE Into TAPE MARK'
15339 113144 124 115 113 T28RRP: .ASCIZ 'TMK Not Set After READ FORWARD Into TAPE MARK'
15340 113222 104 141 164 T28DTR: .ASCIZ 'Data Transferred On READ REVERSE Into A TAPE MARK'
15341 113304 104 141 164 T28DTA: .ASCIZ 'Data Compare Error, Data Read From Tape Not Equal To Written'
15342 113401 127 162 151 T28ID: .ASCIZ 'Write/Read Tape Mark'
15343
15344
15345
15346
15347
15348
15349
15350
15351 113426
15352 113426
15353 113432 012701 111340
15354 113436 012721 100004
15355 113442 012721 111350
15356 113446 005021
15357 113450 012721 000012
15358 113454 012721 111362
15359 113460 005021
15360 113462 012721 000024
15361 113466 005021
15362 113470 012711 000000
15363 113474 012702 000030
15364 113500 012762 177777 111362 644:
15365 113506 005742
15366 113510 020227 000000
15367 113514 001371
15368 113516 000207
15369
15370
15371 113520
15372 113520
15373 113524 012701 111450

;*
;LOCAL TEXT MESSAGES FOR TEST
;-

;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
;WRITE SUBSYSTEM MEMORY COMMAND
;-

T28REST:
    SAVREG
    MOV     #T28PACKET,R1      ;SAVE THE REGISTERS
    MOV     #100004,(R1)+      ;START OF THE PACKET
    MOV     #T28DATA,(R1)+     ;WRITE SUBSYSTEM MEM. WITH ACK,
    CLR     (R1)+              ;ADDRESS OF CHARAISTICS DATA BLOCK
    MOV     #10.,(R1)+         ;EXTENDED ADDRESS
    MOV     #T28BFR,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
    CLR     (R1)+              ;ADDRESS OF MESSAGE BUFFER
    MOV     #20.,(R1)+         ;LENGTH OF MESSAGE BUFFER
    CLR     (R1)+
    MOV     #0,(R1)            ;SELECT DRIVE ZERO
    MOV     #24.,R2            ;NUMBER OF LOCATIONS TO BE CLEARED
    MOV     #177777,T28BFR(R2) ;ALL ONES TO MESSAGE BUFFER
    TST     -(R2)              ;NEXT LOCATION
    CMP     R2,#0              ;CHECK FOR END
    BNE     644                ;KEEP GOING UNTIL DONE
    RTS     PC                 ;RETURN

T28RT2:
    SAVREG
    MOV     #T28PK2,R1         ;SAVE THE REGISTERS
    MOV     #T28PK2,R1         ;START OF THE PACKET

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TEST 8: WRITE/READ TAPE MARK

Address	Offset	Value	Label	Operation	Comment
15374	113530	012721	100006	MOV	#100006,(R1);
15375	113534	012721	111500	MOV	#T28BF2,(R1);
15376	113540	005021		CLR	(R1);
15377	113542	012721	000006	MOV	#6,(R1);
15378	113546	005021		CLR	(R1);
15379	113550	012701	111500	MOV	#T28BF2,R1
15380	113554	005021		CLR	(R1);
15381	113556	005011		CLR	(R1)
15382	113560	000207		RTS	PC
15383	113562				;RETURN
15384	113562				
15385	113566	012701	111470	SAVREG	
15386	113572	005021		MOV	#T28PK3,R1
15387	113574	005021		CLR	(R1);
15388	113576	005021		CLR	(R1);
15389	113600	005011		CLR	(R1);
15390	113602	000207		RTS	PC
15391	113604			ENDTST	
15392	113604				
15393	113604	104401			
15394	113606				
15395	113606			ENMOD	
15396	113606			.TITLE	TSV6 - PARAMETER CODING
15397	113606				
15398	113606				
15399	113606				
15400	113606				
15401	113606				
15402	113606				
15403	113606				
15404	113606				
15405	113606				
15406	113606				
15407	113606				
15408	113606				
15409	113606				
15410	113606				
15411	113606				
15412	113606				
15413	113606				
15414	113606				
15415	113606				
15416	113606				
15417	113606				
15418	113606				
15419	113606				
15420	113606				
15421	113606				
15422	113606				
15423	113606				
15424	113606				
15425	113606				
15426	113606				
15427	113606				
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1					

HARDWARE PARAMETER CODING SECTION

15430	113664	111	116	124	HPM2:	.ASCIZ	'INTERRUPT VECTOR	'
15431	113710	111	116	124	HPM3:	.ASCIZ	'INTERRUPT PRIORITY	'
15432						.EVEN		

SOFTWARE PARAMETER CODING SECTION

.SBTTL SOFTWARE PARAMETER CODING SECTION

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15434                                     ;**
15435                                     ; THE SOFTWARE PARAMETER CODING SECTION CONTAINS MACROS
15436                                     ; THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE
15437                                     ; MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
15438                                     ; INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES. THE
15439                                     ; MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
15440                                     ; WITH THE OPERATOR.
15441                                     ;--
15442                                     .BGNST
15443                                     .WORD L10135-L1SOFT/2
15444 113740                                L1SOFT::
15445 113740 000003                          GPRM1  SPM1.0,-1.YES          ; GET TRANSPORT TEST FLAG.
15446 113742                                GPRM1  SPM4.2,-1.YES          ; GET ITERATION CONTROL.
15447 113742 001130                          .WORD  T1CODE
15448 113744 114000                          .WORD  SPM4
15449 113746 177777                          .WORD  -1
15450                                     ; GPRM1  SPM6.4,D.7777.0,7777.YES      ; GET LOCAL ERROR LIMIT
15451                                     ; GPRM1  SPM7.6,D.7777.0,7777.YES      ; GET GLOBAL ERROR LIMIT
15452                                     .ENDST
15453                                     .EVEN
15454                                     L10135:
15455 113750
15456 113750 105      116      101  SPM1:  .ASCIZ 'ENABLE TRANSPORT TESTS '
15457 114000 111      116      110  SPM4:  .ASCIZ 'INHIBIT ITERATIONS '
15458 114030 120      105      122  SPM6:  .ASCIZ 'PER TEST ERROR LIMIT '
15459 114060 120      105      122  SPM7:  .ASCIZ 'PER UNIT ERROR LIMIT '
15460                                     .SBTTL PATCH AREA
15461                                     ;
15462                                     ; FINALLY A GENEROUS PATCH AREA.
15463                                     ;
15464                                     ; AND AN ADJUSTMENT TO ACCOUNT FOR THE "LASTAD BIT7" HACK
15465                                     ; DESCRIBED IN "SUPPRG.MEM" (FOR REV C).
15466                                     ;
15467                                     PATCH::
15468                                     .BLKW 32.
15469                                     .B.1377.1
15470                                     LASTAD          ;SET LAST USED ADDRESS.
15471 114400 114400 000000                      .EVEN
15472 114402 000000                      .WORD 0
15473 114404 000001                      .WORD 0
15474                                     L1LAST::
15475                                     .ENDMOD
15476                                     .END

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Symbol table

ADDSSR	012216	G	C#AU	=	000052	DEVDR0	024306	FREE	003114	G	INCERK	017134						
ADR	=	000020	G	C#AUTO	=	000061	DEVNRD	024225	FREEHI	003120	INTCPC	016240						
AMBTSS	006725		C#BRK	=	000022	DEVNXR	024143	FRESIZ	003116	G	INTFLA	016235						
ASSEMB	=	000010	C#BSEG	=	000004	DEVONL	024073	FUSI	004115		INTMAS	016234						
A1716	=	000003	C#BSUB	=	000002	DEVSUM	024036	F#AU	=	000015	INTR	016306						
BADDAT	003146	G	C#CEFG	=	000045	DFPTBL	002146	G	F#AUTO	=	000020	INTREC	002214					
BADSSR	015770	G	C#CLCK	=	000062	DIAGMC	=	000000	F#BGN	=	000040	INTVEC	016236					
BDVPCR	=	177520	G	C#CLEA	=	000012	DICEC	=	000001	F#CLEA	=	000007	INTX	004276				
BENBSW	002220	G	C#CLOS	=	000035	DSBINT	016274	F#DU	=	000016	INVERT	021252	G					
BIE	=	040000	C#CLP1	=	000006	DUAD12	004641	F#END	=	000041	IOKCKI	=	000200					
BIT0	=	000001	G	C#CVEC	=	000036	DUFLG	003102	G	F#HARD	=	000004	IOKSTP	=	000001			
BIT00	=	000001	G	C#DCLN	=	000044	DUMMY	003052	F#HW	=	000013	IPRI	=	002202	G			
BIT01	=	000002	G	C#DODU	=	000051	EF.CON	=	000036	G	F#INIT	=	000006	ISR	=	000100	G	
BIT02	=	000004	G	C#DRPT	=	000024	EF.NEW	=	000035	G	F#JMP	=	000050	IVEC	=	002200	G	
BIT03	=	000010	G	C#DU	=	000053	EF.PWR	=	000034	G	F#MOD	=	000000	IXE	=	004000	G	
BIT04	=	000020	G	C#EDIT	=	000003	EF.RES	=	000037	G	F#MSG	=	000011	I#AU	=	000041		
BIT05	=	000040	G	C#ERDF	=	000055	EF.STA	=	000040	G	F#PROT	=	000021	I#AUTO	=	000041		
BIT06	=	000100	G	C#ERHR	=	000056	EMAXDU	017067	F#PWR	=	000017	I#CLN	=	000041				
BIT07	=	000200	G	C#ERR0	=	000060	EN	=	000000	F#RPT	=	000012	I#DU	=	000041			
BIT08	=	000400	G	C#ERSF	=	000054	ENAINI	016242	F#SEG	=	000003	I#HRD	=	000041				
BIT09	=	001000	G	C#ERSO	=	000057	ENVIRN	020720	F#SOFT	=	000005	I#INIT	=	000041				
BIT1	=	000002	G	C#ESCA	=	000010	EPRTSW	002170	G	F#SRV	=	000010	I#MOD	=	000041			
BIT10	=	002000	G	C#ESEG	=	000005	EPRT1	006356	F#SUB	=	000002	I#MSG	=	000041				
BIT11	=	004000	G	C#ESUB	=	000003	EPRT2	006446	F#SW	=	000014	I#PROT	=	000040				
BIT12	=	010000	G	C#ETST	=	000001	ERCM	012023	F#TEST	=	000001	I#PTAB	=	000041				
BIT13	=	020000	G	C#EXIT	=	000032	ERRHI	002226	G	GDDAT	003150	I#PWR	=	000041				
BIT14	=	040000	G	C#GETB	=	000026	ERRK	017046	GERRMA	002164	G	I#RPT	=	000041				
BIT15	=	100000	G	C#GETW	=	000027	ERRLO	002230	G	GETPAT	020264	G	I#SEG	=	000041			
BIT2	=	000004	G	C#GMAN	=	000043	ERRNO	=	001513	GETSEL	020346	G	I#SETU	=	000041			
BIT3	=	000010	G	C#GPHR	=	000042	ERRVEC	=	000004	G	G#CNT0	=	000200	I#SFT	=	000041		
BIT4	=	000020	G	C#GPL0	=	000030	ERTABE	003366	G#DELM	=	000372	I#SRV	=	000041				
BIT5	=	000040	G	C#GPRI	=	000040	ERTABL	003166	G#DISP	=	000003	I#SUB	=	000041				
BIT6	=	000100	G	C#INIT	=	000011	ESUM	017050	G#EXCP	=	000400	I#TST	=	000041				
BIT7	=	000200	G	C#INLP	=	000020	EVL	=	000004	G	G#HILI	=	000002	J#JMP	=	000167		
BIT8	=	000400	G	C#MANI	=	000050	EXBCNT	=	000010	G#LOLI	=	000001	KIPAR0	=	172340			
BIT9	=	001000	G	C#MEM	=	000031	EXIT	035204	G#NO	=	000000	KIPAR1	=	172342				
BOE	=	000400	G	C#MSG	=	000023	EXPBRE	015572	G#OFFS	=	000400	KIPAR2	=	172344				
BRINIT	004455		C#OPEN	=	000034	EXPD	002222	G	G#OF SI	=	000376	KIPAR3	=	172346				
BSELO	=	000000	C#PNTB	=	000014	EXPGOT	004531	G#PRMA	=	000001	KIPAR4	=	172350					
BSEL1	=	000001	C#PNTF	=	000017	EXPGT2	004565	G#PRMD	=	000002	KIPAR5	=	172352					
CHKAMB	016134		C#PNTS	=	000016	EXPHSG	002312	G	G#PRML	=	000000	KIPAR6	=	172354				
CHKMAN	020570	G	C#PNTX	=	000015	EXPREC	015564	G	G#RADA	=	000140	KIPAR7	=	172356				
CHKTSS	016426		C#QIO	=	000377	EXTA	005770	G#RAD8	=	000000	KIPDR0	=	172300					
CKDROP	017272		C#RDBU	=	000007	EXTEND	005766	G#RADD	=	000040	KIPDR1	=	172302					
CKEMAX	017172		C#REFG	=	000047	EXTFEA	002216	G	G#RADL	=	000120	KIPDR2	=	172304				
CKMSG	011450	G	C#RESE	=	000033	E#END	=	002100	G#RAD0	=	000020	KIPDR3	=	172306				
CKMSG2	011570	G	C#REVI	=	000003	E#LOAD	=	000035	G#XFER	=	000004	KIPDR4	=	172310				
CKRAM	011204	G	C#RFLA	=	000021	FATAL	035304	G#YES	=	000010	KIPDR5	=	172312					
CKRAM2	011314	G	C#RPT	=	000025	FATERR	=	000060	HIADDR	=	001400	KIPDR6	=	172314				
CMOPKT	022170	G	C#SEFG	=	000046	FATFLG	002212	G	HOE	=	100000	G	KIPDR7	=	172316			
CMPMEM	017750		C#SPRI	=	000041	FERCM	012012	HPM1	=	113630	KTENAB	=	003124	G				
CONFIG	017340		C#SVEC	=	000037	FIFEXP	012260	G	HPM2	=	113664	KTFLG	=	003122	G			
COUNT	002300	G	C#TPRI	=	000013	FIF1MS	012332	HPM3	=	113710	KTINIT	=	021100					
CSRADD	002176	G	DATA	=	002302	G	FIF2MS	012401	IBE	=	010000	G	KTOFF	=	017364			
CTAB	003154	G	DATASC	=	020322	FILLME	017512	IDU	=	000040	G	KTON	=	017346				
CTABE	003166	G	DEBUGM	=	011722	FNOINT	004213	IER	=	020000	G	LERRMA	=	002162	G			
CTABM	003154	G	DEVCNT	=	002210	G	FORCER	002166	IFALT	=	004254	LISTAL	=	000001				

Symbol table

LOE	=	040000	G	L#UNIT	002012	G	L10071	056522	M8189	005643	PRBEXP	015560				
LOOPCN		002206	G	L10000	002154		L10072	050564	NBA	=	002000	PRBMSG	015426			
LOOPCO		013216		L10001	002166		L10073	051164	NEWPAS		022720	PRBREC	015562			
LOOPFL		003152	G	L10002	005764		L10074	051640	NODEV		003104	PRBTOT	015513			
LOT	=	000010	G	L10003	012134		L10075	052304	NOINIT		004333	PRBYTE	015212	G		
L#ACP		002110	G	L10004	012152		L10076	053044	NOINTR		004217	PRI	=	002000	G	
L#APT		002036	G	L10005	012170		L10077	054004	NOITS		002160	PRIADD		010250		
L#AU		023262	G	L10006	012176		L10100	054324	NOMAN		020624	PRIAO		010320		
L#AUT		002070	G	L10007	012214		L10101	054726	NOMEM		005456	PRIBXO		007702	G	
L#AUTO		023466	G	L10010	012232		L10102	076104	NP.IR	=	000200	PRIEQU		010150		
L#CCP		002106	G	L10011	012256		L10103	057464	NP.LOO	=	000040	PRIPKT		007460	G	
L#CLEA		023546	G	L10012	012330		L10104	060332	NP.OUT	=	000100	PRIRAM		010156		
L#CO		002032	G	L10013	012500		L10105	061224	NP.WRP	=	000020	PRITAD		010364		
L#DEPO		002011	G	L10014	013214		L10106	062152	NSI		004150	PRITSS		006022		
L#DESC		003400	G	L10015	014042		L10107	062730	NSINIT		004405	PRITO		010446		
L#DESP		002076	G	L10016	014064		L10110	063572	NUL		004525	PRITI		010511		
L#DEVP		002060	G	L10017	015570		L10111	064444	NULCR		004526	PRIXOR		010032	G	
L#DISP		002124	G	L10020	015576		L10112	065316	NXM	=	004000	PRI00	=	000000	G	
L#DLY		002116	G	L10021	015604		L10113	066172	NXMFLG		003126	PRI01	=	000040	G	
L#DTP		002040	G	L10022	015616		L10114	067046	NXMHI		003132	PRI02	=	000100	G	
L#DTP		002034	G	L10023	015640		L10115	067716	NXMLO		003130	PRI03	=	000140	G	
L#DU		023360	G	L10024	015666		L10116	070650	NXMTST		022362	PRI04	=	000200	G	
L#DUT		002072	G	L10025	016026		L10117	071700	NXR		003736	PRI05	=	000240	G	
L#DVTY		003372	G	L10026	016336		L10120	072260	NXRERR		005734	PRI06	=	000300	G	
L#EF		002052	G	L10030	023212		L10121	072734	NXR		003775	PRI07	=	000340	G	
L#ENVI		002044	G	L10031	023356		L10122	106142	NXTU		022732	PRMESS		014332		
L#ETP		002102	G	L10032	023464		L10123	076526	OFL	=	000100	PRMNO		002310	G	
L#EXP1		002046	G	L10033	023544		L10124	077310	ONEFIL	=	000000	PRMSG		014642	G	
L#EXP4		002064	G	L10034	023572		L10125	100132	O#APTS	=	000000	PRMSG0		015022		
L#EXP5		002066	G	L10035	024034		L10126	101034	O#AU	=	000001	PRMSG1		015067		
L#HARD		113610	G	L10036	025470		L10127	102564	O#BGNR	=	000001	PRMSG2		015125		
L#HIME		002120	G	L10037	030150		L10130	113604	O#BGNS	=	000001	PROASC		014510		
L#HPCP		002016	G	L10040	026076		L10131	106542	O#DU	=	000001	PRIASC		014555		
L#HPTP		002022	G	L10041	026420		L10132	107022	O#ERRT	=	000000	PST32W		003142	G	
L#HW		002146	G	L10042	027000		L10133	111274	O#GNSW	=	000001	PUNIT		023214		
L#ICP		002104	G	L10043	035330		L10134	113630	O#POIN	=	000001	PW.D11	=	000021		
L#INIT		022466	G	L10044	030556		L10135	113750	O#SETU	=	000000	PW.D13	=	000022		
L#LADP		002026	G	L10045	031426		MEMADD	014044	PASRPT		022764	PW.D22	=	000020		
L#LAST		114404	G	L10046	032246		MEMCK	022206	PATCH		114110	PW.NOP	=	000000		
L#LOAD		002100	G	L10047	032462		MENASC	020537	PATDAT		020320	PW.NOI	=	000023		
L#LUN		002074	G	L10050	033030		MENERR	020464	PC.ERA	=	002400	PW.RDE	=	000024		
L#MREV		002050	G	L10051	033374		MENRES	020566	PC.IER	=	002000	PW.RDR	=	000001		
L#NAME		002000	G	L10052	047574		MMVEC	=	000250	PC.NOO	=	001000	PW.RDS	=	000005	
L#PRIO		002042	G	L10053	036002		MSA.FR	=	000006	PC.REL	=	000000	PW.RFI	=	000003	
L#PROT		022456	G	L10054	036562		MSA.NO	=	000000	PC.REW	=	000400	PW.WCT	=	000006	
L#PRT		002112	G	L10055	037336		MSA.NR	=	000004	PKBCNT	=	000006	PW.WFI	=	000004	
L#REPP		002062	G	L10056	040040		MSA.VO	=	000002	PKHI	=	000004	PW.WFM	=	000007	
L#REV		002010	G	L10057	040504		MSGEXP	012234	PKLOW	=	000002	PW.WMI	=	000010		
L#RPT		023574	G	L10060	041140		MSGLOO	013154	PKTADD		007644	PW.WNP	=	000011		
L#SOFT		113742	G	L10061	041574		MSGSTA	012440	PKTFRM		007606	PW.WTR	=	000002		
L#SPC		002056	G	L10062	042166		MSGSUB	014032	PKTGET		012154	P.ACK	=	100000		
L#SPCP		002020	G	L10063	042670		MS.ATT	=	000006	PKTHES		012200	P.CMD	=	000037	
L#SPTP		002024	G	L10064	043134		MS.EXT	=	000200	PKTRAM		004743	P.CONT	=	000012	
L#STA		002030	G	L10065	043406		MS.RSD	=	000001	PKTSSR		012136	P.CVC	=	040000	
L#SW		002156	G	L10066	043672		MS.RSF	=	000020	PNT	=	001000	P.FMT	=	000140	
L#TEST		002114	G	L10067	044172		MS.RST	=	000010	PRAMPK		014066	P.FORM	=	000011	
L#TIML		002014	G	L10070	044656		M8186	005552	PRASC		014613	P.GETS	=	000017		

Symbol table

P.IE	=	000200	SPM6	=	114030	TSREJ	=	000006	T##CLE	=	010034	T22WRT	=	027170
P.INIT	=	000013	SPM7	=	114060	TSSDEF	=	006676	T##DU	=	010032	T23A	=	003134 G
P.MODE	=	007400	SRO	=	177572	TSSR	=	000002 G	T##HAR	=	010134	T23AM3	=	034220
P.OPP	=	020000	SR1	=	177574	TSSRBI	=	003500 G	T##HW	=	010000	T23B	=	003136 G
P.POSI	=	000310	SR2	=	177576	TSSRFO	=	006505	T##INI	=	010030	T23BA	=	034605
P.READ	=	000001	SR3	=	172516	TSSRH	=	000003 G	T##MSG	=	010025	T23BFR	=	033462
P.SWB	=	010000	SSR	=	000200	TSSX	=	004016	T##PRO	=	010027	T23BF2	=	033602
P.WRIT	=	000005	STATCO	=	012502	TSTBLK	=	002742 G	T##RPT	=	010035	T23BS0	=	033602
P.WRTC	=	000004	SVCGBL	=	000000	TSTCNT	=	002204 G	T##SOF	=	010135	T23BS1	=	033603
P.WRTS	=	000006	SVCINS	=	000000	TSTEND	=	017010	T##SRV	=	010026	T23CHK	=	035142
QVP	=	002174 G	SVCSUB	=	000001	TSTFLA	=	002304 G	T##SUB	=	010133	T23CON	=	033620
RAMASC	=	014246	SVCTAG	=	000000	TSTL00	=	016546 G	T##SW	=	010001	T23DAT	=	033450
RANDAT	=	002232 G	SVCTST	=	000001	TSTPTR	=	002306 G	T##TES	=	010130	T23DSW	=	033460
RAMERR	=	015600 G	S#LSYM	=	010000	TSTSET	=	016600 G	T1	=	024356 G	T23EOT	=	033744
RAMEXP	=	015620 G	SO.IDB	=	000010	TST21I	=	025314	T2	=	025472 G	T23ET	=	033657
RAMFOR	=	010206	SO.IFB	=	000002	TST22I	=	027757	T2.1	=	025522	T23L00	=	030222
RAMSIZ	=	002272 G	SO.IFP	=	000001	TST23I	=	034746	T2.2	=	026114	T23OFL	=	034266
RAMTAD	=	015606 G	SO.ILD	=	000020	TST24I	=	047342	T2.3	=	026436	T23PAC	=	033440
RCVHIA	=	002274 G	SO.ION	=	000040	TST25I	=	056320	T21AM3	=	025173	T23PK2	=	033550
RCVLOA	=	002276 G	SO.IRD	=	000100	TST26I	=	075707	T21BFR	=	024774	T23PK3	=	033570
RDERR	=	005204	SO.IRW	=	000004	TST27I	=	105743	T21BF2	=	025070	T23RES	=	034762
RECMG	=	002456 G	SO.ISP	=	000200	TST28I	=	113401	T21BS0	=	025070	T23RNC	=	034145
RECV	=	002224 G	S1.ICE	=	002000	TSV2	=	002000 G	T21BS1	=	025071	T23RSZ	=	033600
REGSAV	=	002030	S1.IEO	=	010000	TSV3	=	002166 G	T21DAT	=	024760	T23RT2	=	035054
RETErr	=	005370	S1.IFM	=	001000	TSV4	=	022456 G	T21DLY	=	024772	T23RT3	=	035116
RETRY	=	035206	S1.IHE	=	000400	TSV6	=	113606 G	T21DSW	=	024770	T23RWN	=	034076
REWIND	=	011104 G	S1.IID	=	004000	TSV7	=	024356 G	T21L00	=	024406	T23SSR	=	033624
RMCHBE	=	000167	S1.IIR	=	020000	TTIBFR	=	177562 G	T21OFL	=	025273	T23SZ	=	033576
RMCHEN	=	000200	S1.I2R	=	040000	TTICSR	=	177560 G	T21PAC	=	024750	T23S2	=	033604
RMMSGB	=	000215	S1.PAR	=	100000	TTIVEC	=	000060 G	T21PK2	=	025060	T23S3	=	033606
RMMSGC	=	000234	S2.ATI	=	000010	T#ARGC	=	000003	T21RES	=	025336	T23TH	=	034022
RMPKTB	=	000201	S2.BTI	=	000004	T#CODE	=	001130	T21RT2	=	025426	T23TMP	=	033610
RMPKTE	=	000210	S2.DIM	=	000200	T#ERRN	=	001513	T21SSR	=	025076	T23VCK	=	034532
RMR	=	010000	S2.ILW	=	000100	T#EXCP	=	000000	T21S2	=	025072	T23WB	=	033572
RMPACK	=	011200	S2.INR	=	000020	T#FLAG	=	000040	T21S3	=	025074	T23WD	=	033614
SC	=	100000	S2.OUT	=	000040	T#GMAN	=	000000	T22AM3	=	027275	T23WDC	=	034430
SCE	=	020000	S2.UND	=	000003	T#HILI	=	000776	T22BFR	=	027062	T23WDD	=	034341
SCHERR	=	005276	TBLEND	=	003052 G	T#LAST	=	000001	T22BF2	=	027160	T23WDR	=	033616
SCME	=	005011	TCOASC	=	006566	T#LOLI	=	000000	T22BS0	=	027160	T23WRT	=	033612
SDELAY	=	010750	TCOCOD	=	006766	T#LSYM	=	010000	T22BS1	=	027161	T23WSS	=	034657
SELASC	=	020532	TEMP1	=	003106 G	T#LTNO	=	000010	T22DAT	=	027050	T24AM3	=	046330
SELDAT	=	000004	TEMP2	=	003110 G	T#NEST	=	177777	T22FOR	=	027174	T24BA	=	046662
SEL2	=	000002	TERCLS	=	000016	T#NS0	=	000000	T22L00	=	025522	T24BFR	=	044742
SETHAP	=	017406	TESTNO	=	000010	T#NS1	=	000005	T22OFL	=	027375	T24BF2	=	045060
SETU	=	023016	TEXASC	=	006525	T#NS2	=	000002	T22PAC	=	027040	T24BOT	=	045723
SFFMSG	=	012172 G	TFCASC	=	006627	T#PTNU	=	000000	T22PK2	=	027150	T24BS0	=	045060
SFHERR	=	003703	TIMEXP	=	015642 G	T#SAVL	=	177777	T22POS	=	027172	T24BS1	=	045061
SFIERR	=	003650	T#MSGO	=	015670	T#SEGL	=	177777	T22RD	=	027166	T24CON	=	045072
SFIMSG	=	012124 G	TINERR	=	012111	T#SUBN	=	000003	T22RES	=	030012	T24DAT	=	044730
SFPTBL	=	002156 G	TMPBFR	=	002622 G	T#TAGL	=	177777	T22RT2	=	030104	T24DLY	=	045076
SIFLAG	=	003144 G	TNAM	=	016774	T#TAGN	=	010136	T22RWJ	=	027544	T24DSW	=	044740
SIMSG	=	012056	TRANST	=	002156 G	T#TEMP	=	000000	T22SSR	=	027200	T24DTA	=	045770
SKIPT	=	003370	TSBA	=	000000 G	T#TEST	=	000010	T22S2	=	027162	T24EOT	=	046056
SOFINI	=	016064 G	TSBAH	=	000001 G	T#TSTM	=	177777	T22S3	=	027164	T24ILA	=	045452
SPACE	=	010556 G	TSDB	=	000000 G	T#TSTS	=	000001	T22TH	=	027450	T24LON	=	047022
SPM1	=	113750	TSDBH	=	000001 G	T#AU	=	010031	T22VCK	=	027617	T24L00	=	035376
SPM4	=	114000	TSFCOD	=	007326	T#AUT	=	010033	T22WLK	=	027672	T24LOP	=	047104

Symbol table

T24LOQ	045536	T25SSR	055154	T26WDC	075020	T27WDR	103000	T398FR	021436
T24LOR	045152	T25SZ	055126	T26WDD	074730	T27WNG	103014	T398SO	021430
T24NEF	045100	T25S2	055132	T26WDE	074123	T27WRF	105566	T398S1	021431
T24NXM	045311	T25S3	055134	T26WDF	073731	T27WSS	104722	T398S2	021432
T24OFL	046375	T25TM	055362	T26WNG	073166	T28BFR	111362	T39DLY	021414
T24PAC	044720	T25WB	055122	T26WSS	075221	T28BF2	111500	T39DSW	022140
T24PBP	047166	T25WDC	056247	T27AM3	104307	T28BOT	112337	T39DTA	022130
T24PK2	045030	T25WDE	055235	T27BA	104647	T28BS0	111500	T39EAI	022136
T24PK3	045050	T25WDR	055140	T27BFR	102652	T28BS1	111501	T39PAC	021420
T24RB	045052	T25WNG	055525	T27BF2	102770	T28CNT	111526	T39PK2	022120
T24RES	047410	T25WNH	055700	T27BOT	103661	T28CNU	111530	T39PK3	022150
T24RN	045066	T26AM3	074606	T27BS0	102770	T28CON	111522	T39PK4	022160
T24RNC	046255	T26BA	075146	T27BS1	102771	T28DAT	111350	T39SI2	022166
T24RT2	047502	T26BFR	073022	T27CNT	103006	T28DLY	111532	T39TAD	021430
T24RT3	047544	T26BF2	073140	T27CNU	103010	T28DSW	111360	T39WR	022162
T24RWN	046206	T26BOT	074175	T27CON	103002	T28DTA	113304	T4	035332 G
T24SSR	045617	T26BS0	073140	T27DAT	102640	T28DTR	113222	T4.1	035376
T24SZ	045056	T26BS1	073141	T27DLY	103012	T28IMV	111506	T4.10	042706
T24S2	045062	T26CNT	073156	T27DSW	102650	T28LOO	106200	T4.11	043152
T24S3	045064	T26CNU	073160	T27DTA	105646	T28LOQ	112114	T4.12	043424
T24TM	046133	T26DAT	073010	T27EOT	104031	T28OFL	112530	T4.13	043710
T24TRL	047254	T26DLY	073164	T27LON	105011	T28PAC	111340	T4.14	044210
T24VCK	046607	T26DSW	073020	T27LOO	076146	T28PBP	111611	T4.2	036020
T24WB	045052	T26DTA	074242	T27LOP	105073	T28PK2	111450	T4.3	036600
T24WDC	046536	T26EOT	074330	T27LOQ	103455	T28PK3	111470	T4.4	037354
T24WDD	046450	T26LON	075310	T27LOR	103330	T28RB	111472	T4.5	040056
T24WDE	045651	T26LOO	056570	T27NEF	105331	T28RDF	111674	T4.6	040522
T24WDF	045375	T26LOP	075372	T27OFL	104356	T28RDG	111755	T4.7	041156
T24WDG	045222	T26LOQ	074006	T27PAC	102630	T28RES	113426	T4.8	041612
T24WDR	045070	T26LOR	073661	T27PBP	105155	T28RIB	111534	T4.9	042204
T24WSS	046733	T26NEF	073254	T27PK2	102740	T28RN	111516	T5	047576 G
T25BFR	055012	T26NEQ	075630	T27PK3	102760	T28RRM	113007	T5.1	047626
T25BF2	055130	T26OFL	074655	T27RB	102762	T28RRN	113065	T5.2	050602
T25BNC	055610	T26PAC	073000	T27RDF	103102	T28RRP	113144	T5.3	051202
T25BOT	055315	T26PBP	075454	T27RES	105764	T28RT2	113520	T5.4	051656
T25BS0	055130	T26PK2	073110	T27RN	102776	T28RT3	113562	T5.5	052322
T25BS1	055131	T26PK3	073130	T27RNC	104234	T28RWN	112461	T5.6	053062
T25CNT	055150	T26RB	073132	T27RRF	103151	T28SSR	112175	T5.7	054022
T25CN2	055146	T26RDF	073336	T27RT2	106056	T28SZ	111476	T5.8	054342
T25CON	055142	T26RES	075720	T27RT3	106120	T28S2	111502	T6	056524 G
T25DAT	055000	T26RN	073146	T27RWN	104165	T28S3	111504	T6.1	056570
T25DLY	055152	T26RNC	074533	T27SC	103246	T28TM	112404	T6.10	066210
T25DSW	055010	T26RRF	073405	T27SCF	105427	T28THK	112735	T6.11	067064
T25LOO	047626	T26RRG	073502	T27SSR	103536	T28VCK	112662	T6.12	067734
T25NEF	055763	T26RSZ	073162	T27SZ	102766	T28WB	111472	T6.13	070666
T25NET	055451	T26RT2	076012	T27S2	102772	T28WDC	112603	T6.14	071716
T25OFL	056174	T26RT3	076054	T27S3	102774	T28WDE	112246	T6.15	072276
T25PAC	054770	T26RWN	074464	T27TIM	103754	T28WDF	112037	T6.2	057502
T25PK2	055100	T26SC	073577	T27TH	104110	T28WDR	111520	T6.3	060350
T25PK3	055120	T26SSR	074067	T27TRL	105243	T3	030152 G	T6.4	061242
T25RB	055122	T26SZ	073136	T27TSA	105504	T3BFLG	003140 G	T6.5	062170
T25RES	056336	T26S2	073142	T27VCK	104574	T3.1	030222	T6.6	062746
T25RIB	056043	T26S3	073144	T27WB	102762	T3.2	030574	T6.7	063610
T25RN	055136	T26TM	074407	T27WDC	104521	T3.3	031444	T6.8	064462
T25RT2	056430	T26TRL	075542	T27WDD	104431	T3.4	032264	T6.9	065334
T25RT3	056472	T26VCK	075073	T27WDE	103572	T3.5	032500	T7	076106 G
T25RWN	056125	T26WB	073132	T27WDF	103400	T3.6	033046	T7.1	076146

Symbol table

T7.2	076544	WC.IOT=	000100	XORFOR	010102	XSOTMK=	100000	X2.RCE=	040000
T7.3	077326	WC.IIT=	000040	XST0	= 000006 G	XSQVCK=	000020	X2.REV=	000077
T7.4	100150	WC.ISR=	000020	XST1	= 000010 G	XSOWLE=	004000	X2.SPA=	035400
T7.5	101052	WF.IED=	000010	XST2	= 000012 G	XSOWLK=	000004	X2.UNI=	000007
T8	106144 G	WF.IER=	000004	XST3	= 000014 G	XXCOMM	003112 G	X2.WCF=	002000
T8.1	106200	WF.IHI=	000200	XST4	= 000016 G	X#ALWA=	000000	X3.DCK=	000010
T8.2	106560	WF.IRE=	000040	XS0BOT=	000002	X#FALS=	000040	X3.MBZ=	000006
T8.3	107040	WF.IWF=	000020	XS0EOT=	000001	X#OFFS=	000400	X3.MDE=	177400
UAM	= 000200 G	WF.IWR=	000100	XS0IE =	000040	X#TRUE=	000020	X3.OPI=	000100
UNITN	002172 G	WF.I3R=	000002	XS0ILA=	000400	X1.COR=	020000	X3.REV=	000040
UNREC	= 000006	WF.I4R=	000001	XS0ILC=	001000	X1.DLT=	100000	X3.RIB=	000001
USI	004121	WRTCHR	010752 G	XS0LET=	020000	X1.MBZ=	017375	X3.SPA=	000200
WAITF	016340 G	WRTERR	005111	XS0MOT=	000200	X1.RBP=	000400	X3.TRF=	000020
WC.IFA=	000200	WRTMSG	005054	XSONEF=	002000	X1.SPA=	040000	X4.HSP=	100000
WC.IFE=	000002	WSMBK	022200 G	XS0ONL=	000100	X1.UNC=	000002	X4.MBZ=	017400
WC.IG0=	000001	XFERAS	016030	XS0PED=	000010	X2.BUF=	000100	X4.RCE=	040000
WC.IRE=	000010	XNXM	016466	XS0RLL=	010000	X2.EXT=	000200	X4.TSM=	020000
WC.IRW=	000004	XORBFO	007764	XS0RLS=	040000	X2.OPM=	100000	X4.WRC=	000377

. ABS. 114404 000 (RW,I,GBL,ABS,OVR)
 000000 001 (RW,I,LCL,REL,CON)
 ABS 000000 002 (RW,I,LCL,REL,CON)
 Errors detected: 0

*** Assembler statistics

Work file reads: 322
 Work file writes: 308
 Size of work file: 28912 Words (113 Pages)
 Size of core pool: 19714 Words (75 Pages)
 Operating system: RSX-11M/PLUS (Under VAX/VMS)

Elapsed time: 00:14:25.40
 CVTSCC,CVTSCC,-SVC/ML,CVTSCC