

.REM.
IDENTIFICATION

PRODUCT ID: AC-T720A-MC
PRODUCT TITLE: CZTSCAO TSU05 DIAG PART 3
DEPARTMENT: COMPUTER SPECIAL SYSTEMS/PPG
DATE: JUNE 08, 1983

THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT CORPORATION. DIGITAL EQUIPMENT CORPORATION ASSUMES NO RESPONSIBILITY FOR ANY ERRORS THAT MAY APPEAR IN THIS DOCUMENT.

NO RESPONSIBILITY IS ASSUMED FOR THE USE OR RELIABILITY OF SOFTWARE ON EQUIPMENT THAT IS NOT SUPPLIED BY DIGITAL OR ITS AFFILIATED COMPANIES.

COPYRIGHT (C) 1983 BY DIGITAL EQUIPMENT CORPORATION

THE FOLLOWING ARE TRADEMARKS OF DIGITAL EQUIPMENT CORPORATION:

DIGITAL	PDP	UNIBUS	MASSBUS
DEC	DECUS	DECTAPE	

TABLE OF CONTENTS

1.0	GENERAL INFORMATION
1.1	PROGRAM ABSTRACT
1.2	SYSTEM REQUIREMENTS
1.3	RELATED DOCUMENTS AND STANDARDS
1.4	DIAGNOSTIC HIERARCHY PREREQUISITES
1.5	ASSUMPTIONS
2.0	OPERATING INSTRUCTIONS
2.1	COMMANDS
2.2	SWITCHES
2.3	FLAGS
2.4	HARDWARE QUESTIONS
2.5	SOFTWARE QUESTIONS
2.6	EXTENDED P-TABLE DIALOGUE
2.7	QUICK STARTUP PROCEDURE
3.0	ERROR INFORMATION
4.0	PERFORMANCE AND PROGRESS REPORTS
5.0	DEVICE INFORMATION TABLES
6.0	TEST SUMMARIES
7.0	MAINTENANCE HISTORY

1.0 GENERAL INFORMATION

1.1 PROGRAM ABSTRACT

THIS IS A PDP-11 RESIDENT DIAGNOSTIC WHICH CHECKS THE FUNCTIONALITY OF A TSU05 MAGTAPE SUBSYSTEM WHILE CONNECTED TO A PDP-11/23 SYSTEM (UNIBUS). 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

PDP-11 PROCESSOR AND MEMORY
CAUTION: DIAGNOSTIC REQUIRES 32K WORDS OF MEMORY
(28K USEABLE I.E. 4K FOR I/O PAGE)
TSU05 MAGTAPE SUBSYSTEM (DRIVE AND CONTROLLER)
CONSOLE TERMINAL
PDP-11 DIAGNOSTIC SUPERVISOR (HSAASYS 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. TSU05 TRANSPORT SUBSYSTEM USER'S GUIDE; DOCUMENT NUMBER EK-TSU05-UG-001
DATE: AUGUST 1982
3. TSU05 TRANSPORT SUBSYSTEM TECHNICAL MANUAL; DOCUMENT NUMBER EK-TSU05-TM-001
DATE: AUGUST 1982
4. TSU05 TRANSPORT SUBSYSTEM INSTALLATION MANUAL; DOCUMENT NUMBER EK-TSU05-IN-001
DATE: AUGUST 1982

1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

FUNCTIONAL PDP-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 SUCCESSFULLY 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 TSU05 DIAGNOSTIC IS A PDP-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
****TSU05 LOGIC DIAGNOSTIC****
UNIT IS TSU05
```


>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 CONTROLLER
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 TSU05 CONTROLLERS PER PDP-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) . ? 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 (D) ? 8<CR>

UNIT 1

CSR ADDRESS (D) ? 160000<CR>

SUB-DEVICE # (D) ? 0,1<CR>

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

UNIT 3

CSR ADDRESS (D) ? 160000<CR>

SUB-DEVICE # (D) ? 2,5<CR>

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

UNIT 7

CSR ADDRESS (D) ? 160000<CR>

SUB-DEVICE # (D) ? 6,7<CR>

Q-FACTOR (D) 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 (D) ? 8<CR>

UNIT 1

CSR ADDRESS (D) ? 160000<CR>

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

Q-FACTOR (D) 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 50HZ (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 TABLE)
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> ILDY<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 A 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 (PDP-11)

DR>STA/FLA:PNT:HOE

UNITS (0) ? 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 44 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 PDP-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 PDP-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 AVAILABLE), 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 PDP-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) CONTRL 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 PDP-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

D2

USER DOCUMENTATION

MACRO M1113 01-FEB-84 17:54

SEQ 016

FORMAT COMMANDS WITH ILLEGAL MODE CODES ARE REJECTED.

7.0 MAINTENANCE HISTORY

REVISION A - JUNE 1983

```

1          .TITLE  TSV2 - PROGRAM HEADER
2          .SBTTL  PROGRAM HEADER
3 000000    .PSECT  ABS
4
10         .MCALL  SVC
11 000000    SVC          ; INITIALIZE SUPERVISOR MACROS
12         .ENABLE LC
13         .NLIST  BEX,CND
19         .ENABL  AMA
20         .*=2000
21 002000    .*=+2000
22 002000    BGNMOD  TSV2
23         TSV2::
24
25         ;**
26         ; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
27         ; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
28         ;--
29
30 002000    POINTER BGNSW,BGNSFT,BGNAU,BGNDU,BGNRPT
31 002000    HEADER  CZTSC,A,0,655..0
002000      L$NAME::          ;DIAGNOSTIC NAME
002000      .ASCII  /C/
002001      .ASCII  /Z/
002002      .ASCII  /T/
002003      .ASCII  /S/
002004      .ASCII  /C/
002005      .BYTE   0
002006      .BYTE   0
002007      .BYTE   0
002010      L$REV::          ;REVISION LEVEL
002010      .ASCII  /A/
002011      L$DEPO::         ;0
002011      .ASCII  /0/
002012      L$UNIT::         ;NUMBER OF UNITS
002012      .WORD    0
002014      L$TIML::         ;LONGEST TEST TIME
002014      .WORD    655.
002016      L$MPCP::         ;POINTER TO H.W. QUES.
002016      .WORD    L$HARD
002020      L$SPCP::         ;POINTER TO S.W. QUES.
002020      .WORD    L$SOFT
002022      L$HPTF::         ;PTR. TO DEF. H.W. PTABLE
002022      .WORD    L$HW
002024      L$SPTP::         ;PTR. TO S.W. PTABLE
002024      .WORD    L$SW
002026      L$LADP::         ;DIAG. END ADDRESS
002026      .WORD    L$LAST
002030      L$STA::          ;RESERVED FOR APT STATS
002030      .WORD    0
002032      L$CO::          ;
002032      .WORD    0
002034      L$DTYP::         ;DIAGNOSTIC TYPE
002034      .WORD    0
002036      L$APT::         ;APT EXPANSION
002036      .WORD    0

```

TSV2 - PROGRAM HEADER MACRO M1113 01-FEB-84 17:54
PROGRAM HEADER

SEQ 018

002040		L\$DTP::		;PTR. TO DISPATCH TABLE
002040	002124'	.WORD	L\$DISPATCH	
002042		L\$PRIO::		;DIAGNOSTIC RUN PRIORITY
002042	000000	.WORD	0	
002044		L\$ENVI::		;FLAGS DESCRIBE HOW IT WAS SETUP
002044	000000	.WORD	0	
002046		L\$EXP1::		;EXPANSION WORD
002046	000000	.WORD	0	
002050		L\$MREV::		;SVC REV AND EDIT #
002050	003	.BYTE	C\$REVISION	
002051	003	.BYTE	C\$EDIT	
002052		L\$EF::		;DIAG. EVENT FLAGS
002052	000000	.WORD	0	
002054	000000	.WORD	0	
002056		L\$SPC::		
002056	000000	.WORD	0	
002060		L\$DEVP::		; POINTER TO DEVICE TYPE LIST
002060	003372'	.WORD	L\$DVTYP	
002062		L\$REPP::		;PTR. TO REPORT CODE
002062	022524'	.WORD	L\$RPT	
002064		L\$EXP4::		
002064	000000	.WORD	0	
002066		L\$EXP5::		
002066	000000	.WORD	0	
002070		L\$AUT::		;PTR. TO ADD UNIT CODE
002070	022212'	.WORD	L\$AU	
002072		L\$DUT::		;PTR. TO DROP UNIT CODE
002072	022310'	.WORD	L\$DU	
002074		L\$LUN::		;LUN FOR EXERCISERS TO FILL
002074	000000	.WORD	0	
002076		L\$DESP::		;POINTER TO DIAG. DESCRIPTION
002076	003400'	.WORD	L\$DESC	
002100		L\$LOAD::		;GENERATE SPECIAL AUTOLOAD EMT
002100	104035	EMT	E\$LOAD	
002102		L\$ETP::		;POINTER TO ERRIBL
002102	000000	.WORD	0	
002104		L\$ICP::		;PTR. TO INIT CODE
002104	021416'	.WORD	L\$INIT	
002106		L\$CCP::		;PTR. TO CLEAN-UP CODE
002106	022476'	.WORD	L\$CLEAN	
002110		L\$ACP::		;PTR. TO AUTO CODE
002110	022416'	.WORD	L\$AUTO	
002112		L\$PRT::		;PTR. TO PROTECT TABLE
002112	021406'	.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	
32				
33			.SBTTL	DISPATCH TABLE
34				
35				
36				
37				
38				

;**
 ; THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST,
 ; IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
 ;**

TSV2 - PROGRAM HEADER MACRO M1113 01-FEB-84 17:54
DISPATCH TABLE

SEQ 019

```

39
40 002122          DISPATCH 8
    002122 000010  .WORD 8
    002124          L$DISPATCH::
    002124 023306'  .WORD T1
    002126 024422'  .WORD T2
    002130 027102'  .WORD T3
    002132 034252'  .WORD T4
    002134 046506'  .WORD T5
    002136 055434'  .WORD T6
    002140 075006'  .WORD T7
    002142 105044'  .WORD T8

41
42
43          .SBTTL  DEFAULT HARDWARE P-TABLE
44
45          ;++
46          ; THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
47          ; THE TEST-DEVICE PARAMETERS.  THE STRUCTURE OF THIS TABLE
48          ; IS IDENTICAL TO THE STRUCTURE OF THE RUN-TIME P-TABLE.
49          ;--
50 002144          BGNHW  DFPTBL          ;DEFAULT HARD-P-TABLE
    002144 000003  .WORD  L10000-L$HW/2
    002146
    002146          L$HW::
                    DFPTBL::
51
52 002146 172520    .WORD 172520          ; 1ST (OF 2) REGISTERS.
53 002150 000224    .WORD 224            ; INTERRUPT VECTOR
54 002152 000200    .WORD PRI04          ; INTERRUPT PRIORITY.
55 002154          ENDSW
    002154          L10000:

56
57          .SBTTL  SOFTWARE P-TABLE
58
59          ;++
60          ; THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
61          ; PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
62          ;--
63 002154          BGNSW  SFPTBL
    002154 000004  .WORD  L10001-L$SW/2
    002156
    002156          L$SW::
                    SFPTBL::
64
65 002156 000000    TRANSTST:: .WORD 0          ; ENABLE TEST OF TRANSPORT(S) IF =1
66 002160 000000    NOITS::   .WORD 0          ; INHIBIT ITERATION OPTION.
67                                     ; ... 0 = ITERATE.
68                                     ; ...NZ = INHIBIT ITERATE.
69 002162 000017    LERRMAX::  .WORD 15.        ; LOCAL (PER TEST) ERROR LIMIT
70 002164 000310    GERRMAX::  .WORD 200.       ; GLOBAL (PER UNIT) ERROR LIMIT
71 002166          ENDSW
    002166          L10001:

72
73 002166          ENDMOD
74

```

H2

TSV3 - GLOBAL AREAS
SOFTWARE P-TABLE

MACRO M1113 01-FEB-84 17:54

SEQ 020

7
8
13
19
20 002166
002166
21
22
23
24
25
26
27
28
29
33 002166

.TITLE TSV3 - GLOBAL AREAS
.SBTTL GLOBAL EQUATES SECTION

BGNMOD TSV3
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 DEFINITIONS

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

;

TSV3 - GLOBAL AREAS
GLOBAL EQUATES SECTION

MACRO M1113 01-FEB-84 17:54

SEQ 021

```

; PRIORITY LEVEL DEFINITIONS
;
000340 PRI07== 340
000300 PRI06== 300
000240 PRI05== 240
000200 PRI04== 200
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 HOE== 100000

34
35 002166
;KT11
;S8TTL MEMORY MANAGEMENT DEFINITIONS
; *KT11 VECTOR ADDRESS
000250 MMVEC= 250
; *KT11 STATUS REGISTER ADDRESSES
177572 SR0= 177572
177574 SR1= 177574
177576 SR2= 177576
172516 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
; DEFINE MEMORY MANAGEMENT REGISTERS

```

```
.ENDC
; *USER "I" PAGE ADDRESS REGISTERS
UIPAR0= 177640
UIPAR1= 177642
UIPAR2= 177644
UIPAR3= 177646
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
```

K2

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
MEMORY MANAGEMENT DEFINITIONS

SEQ 023

```

172300 SDPAR3= 172266
172302 SDPAR4= 172270
172304 SDPAR5= 172272
172306 SDPAR6= 172274
172310 SDPAR7= 172276
172312 .ENDC
172314 .ENDC
172316 ;*KERNEL "I" PAGE DESCRIPTOR REGISTERS
KIPDR0= 172300
KIPDR1= 172302
KIPDR2= 172304
KIPDR3= 172306
KIPDR4= 172310
KIPDR5= 172312
KIPDR6= 172314
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
KIPAR0= 172340
KIPAR1= 172342
KIPAR2= 172344
KIPAR3= 172346
KIPAR4= 172350
KIPAR5= 172352
KIPAR6= 172354
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

39
40
41 .SBTTL TSU05 REGISTER AND PACKET DEFINITIONS
42
43 ;
44 ; SOME GENERAL EQUATES.
45 ;
46
47 Q00004 ERRVEC= 4 ; POINTER TO ERROR VECTOR FOR BUS TIME OUT.
```

L2

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
TSU05 REGISTER AND PACKET DEFINITIONS

SEQ 024

```

48      000060      TTIVEC==      60      ; INTERRUPT VECTOR FOR CONSOLE INPUT
49      177560      TTICSR==      177560    ; BUS ADDRESS OF CONSOLE INPUT
50      177562      TTIBFR==      177562    ; CONSOLE INPUT DATA BUFFER
51      177520      BDVPCR==      177520    ; BDV11 PAGE CONTROL REGISTER
52
53      ;+
54      ;BIT DEFINITIONS FOR TSSR REGISTER
55      ;-
56
57      100000      SC=      BIT15      ; SPECIAL CONDITION
58      040000      BIE=      BIT14      ; BUS INTERFACE ERROR
59      020000      SCE=      BIT13      ; SANITY CHECK ERROR
60      010000      RMR=      BIT12      ; MODIFICATION REFUSED
61      004000      NXI=      BIT11      ; NONEXISTANT MEMORY ERROR
62      002000      NBA=      BIT10      ; NEED BUFFER ADDRESS
63      001400      HIADDR= BIT9:BIT8    ; EXTENDED ADDRESS BITS
64      000200      SSR=      BIT7      ; SUB SYSTEM READY
65      000100      OFL=      BIT6      ; OFF LINE BIT
66      000060      FATERR= BIT4:BIT5    ; FATAL TERMINATION ERROR CODES
67      000016      TERCLS= BIT3:BIT2:BIT1 ; TERMINATION CODES
68
69
70      ;+
71      ;
72      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 0
73      ;(XST0)
74      ;
75      ;-
76
77      100000      XSOTMK= BIT15      ; TAPE MARK DETECTED
78      040000      XSORLS= BIT14      ; RECORD LENGTH SHORT
79      020000      XSOLET= BIT13      ; LOGICAL END OF TAPE
80      010000      XSORLL= BIT12      ; RECORD LENGTH LONG
81      004000      XSOWLE= BIT11      ; WRITE LOCK ERROR
82      002000      XSONEF= BIT10      ; NON EXECUTABLE FUNCTION
83      001000      XSOILC= BIT9      ; ILLEGAL COMMAND
84      000400      XSOILA= BIT8      ; ILLEGAL ADDRESS
85      000200      XSOMOT= BIT7      ; TAPE IN MOTION
86      000100      XSOMNL= BIT6      ; TRANSPORT ON LINE
87      000040      XSOIE= BIT5      ; INTERRUPT ENABLE
88      000020      XSOVCK= BIT4      ; VOLUME CHECK BIT
89      000010      XSOPED= BIT3      ; PHASE ENCODED DRIVE
90      000004      XSOWLK= BIT2      ; WRITE LOCKED
91      000002      XS0BOT= BIT1      ; BEGINNING OF TAPE
92      000001      XS0EOT= BIT0      ; END OF TAPE
93
94
95      ;+
96      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 1
97      ;(XST1)
98      ;-
99      100000      X1.DLT = BIT15      ; DATA LATE
100     040000      X1.SPARE= BIT14      ; NOT USED
101     020000      X1.COR = BIT13      ; CORRECTABLE DATA ERROR
102     017375      X1.MBZ = BIT12:BIT11:BIT10:BIT9:BIT7:BIT6:BIT5:BIT4:BIT3:BIT2:BIT0 ; ALWAYS 0
103     000400      X1.RBP = BIT8      ; READ BUS PARITY ERROR
104     000002      X1.UNC = BIT1      ; UNCORRECTABLE DATA OR HARD ERROR

```

```

105
106
107      ;+
108      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 2
109      ;(XST2)
110      ;-
110      100000      X2.OPM  = BIT15      ;OPERATION IN PROGRESS (TAPE MOVING)
111      040000      X2.RCE  = BIT14      ;RAM CHECKSUM ERROR
112      035400      X2.SPARE= BIT13+BIT12+BIT11+BIT9+BIT8 ;NOT USED BY TSU05 (ALWAYS=0)
113      002000      X2.WCF  = BIT10      ;WRITE CLOCK FAILURE (FIFO NOT EMPTIED BY TRANSPORT)
114      000200      X2.EXTF = BIT7       ;IF WRITE CHAR CMD THEN = EXTENDED FEATURES ENABLED
115      000100      X2.BUFE = BIT6       ;IF WRITE CHAR CMD THEN = BUFFERING ENABLED
116      000077      X2.REV  = 000077    ;IF WRITE CHAR CMD THEN = MICROCODE REVISION LEVEL
117      000007      X2.UNIT = BIT2+BIT1+BIT0 ;IF GET STATUS THEN = CURRENTLY SELECTED UNIT NO.
118
119      ;+
120      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 3
121      ;(XST3)
122      ;-
123      177400      X3.MDE  = 177400    ;MICRO-DIAGNOSTIC ERROR CODE
124      000200      X3.SPARE= BIT7       ;NOT USED BY TSU05
125      000100      X3.OPI  = BIT6       ;OPERATION INCOMPLETE
126      000040      X3.REV  = BIT5       ;REVERSE
127      000020      X3.TRF  = BIT4       ;TRANSPORT RESPONSE FAILURE
128      000010      X3.DCK  = BIT3       ;DENSITY CHECK
129      000006      X3.MBZ  =BIT2+BIT1    ;NOT USED ALWAYS 0
130      000001      X3.RIB  = BIT0       ;REVERSE INTO BOT
131
132      ;+
133      ;BIT DEFINITIONS FOR EXTENDED STATUS REGISTER 4
134      ;(XST4)
135      ;-
136      100000      X4.HSP  = BIT15      ;HIGH SPEED
137      040000      X4.RCE  = BIT14      ;RETRY COUNT EXCEEDED
138      020000      X4.TSM  = BIT13      ;TRANSPORT SPECIAL MODE
139      017400      X4.MBZ  = BIT12+BIT11+BIT10+BIT9+BIT8 ;NOT USED ALWAYS 0
140      000377      X4.WRC  = 000377    ;WRITE RETRY COUNT FIELD
141
142
143      ;+
144      ;
145      ;TSSR TERMINATION CODES (BIT 0-2)
146      ;
147      ;-
148
149      000006      TSREJ= 3+2          ;COMMAND REJECTED
150      000006      UNREC= 6           ;UNRECOVERABLE ERROR
151
152      ;+
153      ;
154      ;DEVICE REGISTER OFFSETS
155      ;
156      ;-
157
158      000000      TSBA== 0
159      000000      TSDB== 0          ;TSDB/TSBA REGISTER
160      000001      TSBAH== 1
161      000001      TSDBH== 1        ;TSDB/TSBA REGISTER HIGH BYTE

```

N2

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
TSU05 REGISTER AND PACKET DEFINITIONS

SEQ 026

```

162      000002      TSSR== 2      ;TSSR REGISTER
163      000003      TSSRH== 3     ;TSSR REGISTER HIGH BYTE
164
165      ;+
166      ; TSD8 ADDRESS BIT DEFINITIONS
167      ; -
168      000003      A1716 = BIT1+BIT0 ;ADDRESS BITS 17:16 ARE IN 1:0
169
170      ;+
171      ; COMMAND DEFINITIONS
172      ; -
173      000017      P.GETSTAT = 17    ;GET STATUS
174      000013      P.INIT = 13      ;INITIALIZE
175      000012      P.CONTROL = 12    ;CONTROL COMMANDS
176      000011      P.FORMAT = 11    ;FORMAT
177      000010      P.POSITION = 10   ;POSITION
178      000006      P.WRTSUB = 6      ;SUBSYSTEM WRITE
179      000005      P.WRITE = 5       ;WRITE
180      000004      P.WRTCHAR = 4     ;WRITE CHARACTERISTICS
181      000001      P.READ = 1        ;READ
182
183      ;+
184      ; COMMAND PACKET HEADER WORD BIT DEFINITIONS
185      ; -
186      100000      P.ACK = BIT15     ;BUFFER AVAIL FOR CONTROLLER
187      040000      P.CVC = BIT14     ;CLEAR VOLUME CHECK
188      020000      P.OPP = BIT13     ;REVERSE SEQUENCE OF DATA BITS
189      010000      P.SWB = BIT12     ;SWAP BYTES IN MEMORY
190      007400      P.MODE = BIT11:BIT10:BIT9:BIT8 ;EXTENDED COMMAND MODE FIELD
191      000200      P.IE = BIT7       ;INTERRUPT ENABLE
192      000140      P.FMT = BIT6:BIT5 ;PACKET HEADER TYPE (ALWAYS=0)
193      000037      P.CMD = 37        ;MAJOR COMMAND FIELD
194
195      ;+
196      ; CONTROL COMMAND MODE CODES
197      ; -
198      000000      PC.RELEASE = 0*256. ;RELEASE BUFFER
199      000400      PC.REWIND = 1*256. ;REWIND
200      001000      PC.NOOP = 2*256.  ;NO-OP
201      002000      PC.IEREW = 4*256. ;REWIND IMMEDIATE INTERRUPT
202      002400      PC.ERASE = 5*256. ;SECURITY ERASE
203
204      ;+
205      ; CONTROLLER RAM DEFINITIONS
206      ; -
207      000167      RMCHBEG = 167      ;CHARACTERISTICS IO DATA BEGIN RAM ADDRESS
208      000200      RMCHEND = 200      ;CHARACTERISTICS IO DATA END RAM ADDRESS
209      000201      RMPKTBEG = 201      ;COMMAND PACKET BEGIN RAM ADDRESS
210      000210      RMPKTEND = 210      ;COMMAND PACKET END RAM ADDRESS
211      000215      RMSGGBEG = 215      ;MESSAGE BUFFER BEGIN RAM ADDRESS
212      000234      RMSGGEN = 234      ;MESSAGE BUFFER END RAM ADDRESS
213
214      ;+
215      ; REGISTER DEFINITIONS IN THE MESSAGE BUFFER
216      ; -
217
218      000006      XST0== 6           ;EXTENDED STATUS REGISTER 0 (WORD 4)

```



```

219      000010      XST1== 8.      ;EXTENDED STATUS REGISTER 1 (WORD 5)
220      000012      XST2== 10.     ;EXTENDED STATUS REGISTER 2 (WORD 6)
221      000014      XST3== 12.     ;EXTENDED STATUS REGISTER 3 (WORD 7)
222      000016      XST4== 14.     ;EXTENDED STATUS REGISTER 4 (WORD 8)
223
224
225      ;
226      ;
227      ;OFFSETS TO WORD LOCATIONS IN PACKET DEFINITIONS
228      ;
229      ;
230
231      000002      PKLOW   = 2      ;LOW ORDER CHARACTERISTIC DATA POINTER
232      000004      PKHI    = 4      ;HIGH ORDER CHARACTERISTIC DATA POINTER
233      000006      PKBCNT  = 6      ;NUMBER OF BYTES IN DATA PACKET
234
235      000010      EXBCNT=10      ;NUMBER OF BYTES IN EXTENDED DATA PACKET
236
237      ;
238      ;DATA PACKET OFFSETS FOR WRITE SUBSYSTEM COMMAND
239      ;
240      000000      BSELO   = 0      ;BYTE 0
241      000001      BSEL1  = 1      ;BYTE 1
242      000002      SEL2   = 2      ;WORD 2
243      000004      SELDATA = 4      ;WORD 3
244
245      ;
246      ;BSELO SELECT CODES FOR WRITE SUBSYSTEM COMMAND
247      ;
248      000000      PW.NOP   = 0      ;NO-OP
249      000001      PW.RDRAM = 1      ;READ RAM
250      000002      PW.WTRAM = 2      ;WRITE RAM
251      000003      PW.RFIFO = 3      ;READ FIFO
252      000004      PW.WFIFO = 4      ;WRITE FIFO
253      000005      PW.RDSTAT = 5      ;READ STATUS
254      000006      PW.WCTL  = 6      ;WRITE TAPE CONTROL
255      000007      PW.WFMT  = 7      ;WRITE TAPE FORMAT
256      000010      PW.WMISC = 10     ;WRITE MISCELLANEOUS
257      000011      PW.WNPR  = 11     ;WRITE NPR CONTROL
258      000020      PW.D22   = 20     ;DO MICROTEST 22
259      000021      PW.D11   = 21     ;DO MICROTEST 11
260      000022      PW.D13   = 22     ;DO MICROTEST 13
261      000023      PW.NO1311 = 23    ;DISABLE MICROTEST 11 AND 13
262      000024      PW.RDXT  = 24     ;READ EXT. TAPE STATUS (NOT SUPPORTED BY ALL TRANSPORTS)
263
264      ;
265      ;BSEL1 CODES FOR WRITE TAPE CONTROL
266      ;
267      000200      WC.IFAD  = BIT7    ;IFAD - FORMATTER ADDRESS
268      000100      WC.ICYAD = BIT6    ;ITADO - TRANSPORT ADDRESS BIT 0
269      000040      WC.ITAD  = BIT5    ;ITAD1 - TRANSPORT ADDRESS BIT 1
270      000020      WC.ISRESV = BIT4    ;IRESV5 - RESERVED #5
271      000010      WC.IREW  = BIT3    ;IREW - REWIND
272      000004      WC.IRWU  = BIT2    ;IRWU - REWIND AND UNLOAD
273      000002      WC.IFEN  = BIT1    ;IFEN - FORMATTER ENABLE
274      000001      WC.IGQ   = BIT0    ;IGQ
275

```

```

276
277      ;+
278      ;BSEL1 CODES FOR WRITE FORMAT
279      ;-
280      WF.IHISP      = BIT7      ;IHISP - HIGH SPEED
281      WF.IWRT      = BIT6      ;IWRT  - WRITE
282      WF.IREV      = BIT5      ;IREV  - REVERSE
283      WF.IWFM      = BIT4      ;IWFM  - WRITE FILE MARK
284      WF.IEDIT     = BIT3      ;IEDIT - EDIT
285      WF.IERASE     = BIT2      ;IERASE - ERASE
286      WF.I3RESV     = BIT1      ;IRESV3 - RESERVED #3
287      WF.I4RESV     = BIT0      ;IRESV4 - RESERVED #4
288
289      ;+
290      ;BSEL1 CODES FOR WRITE MISCELLANEOUS SUBCOMMAND
291      ;-
292      MS.EXT        = BIT7      ;INVERT SENSE OF EXTENDED FEATURES SWITCH
293      MS.RSFIFO     = BIT4      ;RESET FIFO AND INPUT PARITY ERRORR
294      MS.RSTAPE     = BIT3      ;RESET TAPE STATUS IN 2 FLIP-FLOPS
295      MS.ATTN       = BIT2:BIT1 ;ATTENTION TRIGGER FIELD
296      MS.RSD        = BIT0      ;RESET TIMER A,B THEN DELAY TIMES IN SEL2
297
298      ;+
299      ; MS.ATTN SUBCODES
300      ;-
301      MSA.NOP = 0*2      ;NO-OP (NOTHING TRIGGERED)
302      MSA.VOL = 1*2      ;SIMULATE ON-LINE/OFF-LINE TRANSITION
303      MSA.NRAM = 2*2     ;FORCE NON-FATAL RAM ERROR (FORCES ERRCODE 54)
304      MSA.FRAME = 3*2    ;FORCE FATAL RAM ERROR (CAUSES SCE TO SET)
305
306      ;+
307      ; WRITE SUBSYSTEM WRITE NPR BSEL1 BIT DEFINITIONS
308      ;-
309      NP.IR         = BIT7      ;INTERRUPT REQUEST (0-1 TRANSITION)
310      NP.OUT        = BIT6      ;TAPE DATA DIRECTION OUT (0= IN)
311      NP.LOOP       = BIT5      ;ENABLE TRANSPORT LOOPBACK
312      NP.WRP        = BIT4      ;WRITE CORRECT PARITY (SET=0 TO WRITE WRONG)
313
314      ;+
315      ; READ STATUS MESSAGE BUFFER BIT DEFINITIONS
316      ;-
317      S2.DIM        = BIT7      ;WORD #9 BYTE 2 DATA IN MISS
318      S2.ILW        = BIT6      ;ILW H
319      S2.OUTRDY     = BIT5      ;OUT RDY H
320      S2.INRDY      = BIT4      ;IN RDY H
321      S2.ATIMR      = BIT3      ;TIMER A FLAG H
322      S2.BTIMR      = BIT2      ;TIMER B FLAG H
323      S2.UNDEF      = BIT1:BIT0 ; (UNDEFINED)
324      S1.PARIN      = BIT15     ;WORD #8 BYTE 1 PARIN H
325      S1.I2RESV     = BIT14     ;IRESV2
326      S1.I1RESV     = BIT13     ;IRESV1
327      S1.IEOT       = BIT12     ;IEOT L
328      S1.IIDENT     = BIT11     ;IIDENT H
329      S1.ICER       = BIT10     ;ICER H
330      S1.IFMK       = BIT9      ;IFMK H
331      S1.IHER       = BIT8      ;IHER H
332      S0.ISPEED     = BIT7      ;WORD #8 BYTE 0 ISPEED H
333      S0.IRDY       = BIT6      ;IRDY L
334      S0.IONL       = BIT5      ;IONL L

```



```

333      000020      SO.ILDP      = BIT4      ;      ILDP L
334      000010      SO.IDBY      = BIT3      ;      IDBY L
335      000004      SO.IRWD      = BIT2      ;      IRWD L
336      000002      SO.IFBY      = BIT1      ;      IFBY L
337      000001      SO.IFFT      = BIT0      ;      IFPT L
338
339      ;*
340      ;UNIBUS MAP DEFINATIONS
341      170200      MMRO= 170200
342
343
344      .SBTTL  SPECIAL MACROS AND OPDEFS.
345
346
347      ;*
348      ;SAVE GENERAL REGS 1 TO 5
349      ;-
350
351      .MACRO  SAVREG
352      JSR     R5,REGSAV
353      .ENDM
354
355      ;*
356      ; MACRO TO FORCE AN ERROR
357      ;-
358      .MACRO  FORCERROR      TAG,NOTSSR
359      .NLIST
360      .IIF NDF LISTALL, .NLIST
361      .LIST
362      .IF B NOTSSR
363      MOV     TSSR(R5),R1      ;READ TSSR
364      .ENDC
365      MOV     FORCER,FORCER    ;IS FORCER SET? (LEAVE C BIT ALONE)
366      BNE     TAG              ;BR IF YES
367      .NLIST
368      .IIF NDF LISTALL, .LIST
369      .LIST
370      .ENDM
371
372      ;*
373      ; MACRO TO FORCE AN EXIT TO AVOID SECTION ITERATIONS
374      ; WILL EXIT TO A LABEL IF FORCER IS NEGATIVE
375      ; SO TO FORCE ERRORS AND EXIT ON 1 ERROR SET
376      ; FORCER TO 17777
377      ; TO FORCE ERRORS AND ITERATIONS SET FORCER TO 1.
378      ;-
379      .MACRO  FORCEEXIT      TAG
380      .NLIST
381      .IIF NDF LISTALL, .NLIST
382      .LIST
383      MOV     FORCER,FORCER    ;IS FORCER NEGATIVE?
384      BMI     TAG              ;BR IF YES
385      .NLIST
386      .IIF NDF LISTALL, .LIST
387      .LIST
388      .ENDM
389      ;*

```

```

390      ; MACRO TO INCREMENT ERROR COUNTS
391      ;-
392      .MACRO NEXT.ERRNO
393      .NLIST
394      ;;;.IF NDF LISTALL, .NLIST
395      ERRNO=ERRNO+1
396      ;;;.IF NDF LISTALL, .LIST
397      .LIST
398      .ENDM
399
400      ;+
401      ;MACRO TO PERFORM XOR
402      ;-
403
404      .MACRO XOR      A,B
405      MOV      A, -(SP)
406      BIC      B, (SP)
407      BIC      A,B
408      BIS      (SP)+,B
409      .ENDM
410
411      000000      EN=0      ; INITIALIZE ERROR NUMBER
412                   .SBTTL FORCER - FORCE ERROR FLAG
413
414      ;
415      ; THE FOLLOWING LOCATIONS MAY BE PATCHED BY THE USER
416      ; TO OBTAIN THE RESULTS DESCRIBED FOR EACH.
417      ;
418
419      002166    000000    FORCER::      0      ; FORCE TYPE ALL HARD ERRORS (THE ONES CALLED -
420                                     ; - BY THE MACRO "IFERROR"). AN ERROR NEED NOT -
421                                     ; - EXIST, JUST ASSUME AND TYPE THE MESSAGE.
422
423
424
425                   .SBTTL GLOBAL DATA SECTION
426
427      ;++
428      ;THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
429      ;IN MORE THAN ONE TEST.
430      ;--
431
432      ;
433      ;THE FOLLOWING DATA ARE SET FOR EACH UNIT AT INIT TIME.
434      ;SINGLE UNIT DEFAULTS (LISTED) ARE IN THE DEFAULT P-TABLE.
435      ;
436      002170    000000    EPRTSW::      .WORD    0      ;PRINT SWITCH
437      002172    000000    UNITN::      .WORD    0      ;UNIT # UNDER TEST.
438      002174    000000    QVP::      .WORD    0      ;QUICK VERIFY FLAG.
439      002176    000000    CSRADDR::    .WORD    0      ;ADDRESS OF CSR FOR CURRENT DEVICE
440      002200    000224    IVEC::      .WORD    224    ;INTERRUPT VECTOR
441      002202    000200    IPRI::      .WORD    PRI04    ;INTERRUPT PRIORITY.
442      002204    000000    TSTCNT::    .WORD    0      ;NUMBER OF TESTS RUN IN THIS PASS
443      002206    000000    LOOPCNT::    .WORD    0      ;REMAINING ITERATION COUNT FOR TEST
444      002210    000000    DEVCNT::    .WORD    0      ;NUMBER OF DEVICE UNDER TEST
445      002212    000000    FATFLG::    .WORD    0      ;SET IF FATAL ERROR IS DETECTED IN TEST
446      002214    000000    INTRECV::    .WORD    0      ;SET IF TAPE INTERRUPT WAS RECEIVED

```

TSV3 - GLOBAL AREAS
GLOBAL DATA SECTION

MACRO M1113 01-FEB-84 17:54

SEQ 031

447	002216	000000	EXTFEA::	.WORD	0	;EXTENDED FEATURES SOFTWARE SW 0=OFF;1=ON
448	002220	000000	BENBSW::	.WORD	0	;BUFFER ENABLE SWITCH SW 0=OFF;1=ON
449	002222	000000	EXPD::	.WORD	0	;EXPECTED RAM DATA FOR PRAMPKT ROUTINE
450	002224	000000	RECV::	.WORD	0	;RECEIVED RAM DATA FOR PRAMPKT ROUTINE
451	002226	000000	ERRHI::	.WORD	0	;HIGH ADDRESS MEMORY ERROR
452	002230	000000	ERRLO::	.WORD	0	;LOW ADDRESS MEMORY ERROR
453	002232		RAMDATA::	.BLKW	16.	;DATA READ FROM RAM PACKET OR MESSAGE BUF AREA
454	002272	000000	RAMSIZ::	.WORD	0	;RAM DATA SIZE FOR PRAMPKT ROUTINE
455	002274	000000	RCVHIADD::	.WORD	0	;RECEIVED BUFFER HIGH ADDRESS
456	002276	000000	RCVLOADD::	.WORD	0	;RECEIVED BUFFER LOW ADDRESS
457	002300	000000	COUNT::	.WORD	0	;TEST COUNT PATTERN
458	002302	000000	DATA::	.WORD	0	;TEST DATA
459	002304	000000	TSTFLAG::	.WORD	0	;TEST FLAG WORD
460	002306	000000	TSTPTR::	.WORD	0	;TSTBLK POINTER
461	002310	000000	PRMNO::	.WORD	0	;PRINT ROUTINE TEMP
462	002312		EXPMMSG::	.BLKB	100.	;EXPECTED MESSAGE BUFFER DATA
463	002456		RECMSG::	.BLKB	100.	;RECEIVED MESSAGE BUFFER DATA
464	002622		TMPBFR::	.BLKB	80.	;TEMPORARY STORAGE FOR PRINT

465

466

467

.SBTTL TSTBLK - TEST DATA TABLE

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483 002742

484 002742 000000

485 002744 177777

486 002746 000001

487 002750 000002

488 002752 000004

489 002754 000010

490 002756 000020

491 002760 000040

492 002762 000100

493 002764 000200

494 002766 000400

495 002770 001000

496 002772 002000

497 002774 004000

498 002776 010000

499 003000 020000

500 003002 040000

501 003004 100000

502 003006 177776

503 003010 177775

;*

;

;THIS TABLE CONTAINS TEST DATA USED IN SEVERAL TESTS

;

;IN SEQUENCE THE DATA IS:

;

;

;

;

;

;

;

;

;-

;

TSTBLK::

.WORD	0	;ALL ZEROS
.WORD	177777	;ALL ONES
.WORD	BIT0	;DATA FOR WALKING ONES
.WORD	BIT1	
.WORD	BIT2	
.WORD	BIT3	
.WORD	BIT4	
.WORD	BIT5	
.WORD	BIT6	
.WORD	BIT7	
.WORD	BIT8	
.WORD	BIT9	
.WORD	BIT10	
.WORD	BIT11	
.WORD	BIT12	
.WORD	BIT13	
.WORD	BIT14	
.WORD	BIT15	
.WORD	+CBIT0	;DATA FOR WALKING ZEROS
.WORD	+CBIT1	

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
TSTBLK - TEST DATA TABLE

SEQ 032

```

504 003012 177773 .WORD +CBIT2
505 003014 177767 .WORD +CBIT3
506 003016 177757 .WORD +CBIT4
507 003020 177737 .WORD +CBIT5
508 003022 177677 .WORD +CBIT6
509 003024 177577 .WORD +CBIT7
510 003026 177377 .WORD +CBIT8
511 003030 176777 .WORD +CBIT9
512 003032 175777 .WORD +CBIT10
513 003034 173777 .WORD +CBIT11
514 003036 167777 .WORD +CBIT12
515 003040 157777 .WORD +CBIT13
516 003042 137777 .WORD +CBIT14
517 003044 077777 .WORD +CBIT15
518 003046 125252 .WORD 125252 ;ALTERNATING ONES, ZEROS
519 003050 052525 .WORD 052525 ;ALTERNATING ONES, ZERO OPPOSITE FROM ABOVE
520                                TBLEND==.
521
522
523                                .SBTTL GLOBAL ENVIRONMENT STORAGE
524                                ;
525                                ;STORAGE FOR DEVICE REGISTERS
526                                ;
527 003052 000000 100000 000000 DUMMY: 0,100000,0,0 ;DUMMY DEVICE REGISTERS...
528 003062 000000 000000 000000 0,0,0,0,0,0,0,0,0 ;...FOR MULTI-UNIT CHECKOUT.
529
530
531
532 003102 000000 DUFLG:: .WORD 0 ;"DROPPED UNIT" FLAG.
533                                ;INHIBITS CODE IN "CLEAN-UP".
534 003104 000000 NODEV:: .WORD 0 ;FLAG TO SAY NO DEVICE.
535
536 003106 000000 TEMP1:: .WORD 0 ;SOME TEMP LOCATIONS.
537 003110 000000 TEMP2:: .WORD 0
538 003112 000000 XXCOMM:: .WORD 0 ;XXDP+ COMM BLOCK POINTER.
539 003114 000000 FREE:: .WORD 0 ;1ST FREE MEMORY ADDRESS...
540 003116 000000 FRESIZ:: .WORD 0 ;...AND SIZE (IN WORDS).
541 003120 000000 FREEHI: .WORD 0 ;LAST WORD IN FREE SPACE
542 003122 000000 KTFLG:: .WORD 0 ;KT11, MEM AVAIL FLAG -
543                                ;- .WORD 0 = <24K OR NO KT -
544                                ;- NZ = >24K AND KT.
545 003124 000000 KTENABLE:: .WORD 0 ;SET BY TEST ROUTINES TO FLAG >28K UNDER TEST
546 003126 000000 NXMFLG:: .WORD 0 ;SET IF WE CAN TEST CLEARED OTHERWISE
547 003130 000000 NXMLO:: .WORD 0 ;NXM LO ADDRESS BITS
548 003132 000000 NXMHI:: .WORD 0 ;NXM HI ADDRESS BITS FOR DAL'S 16-21
549 003134 000000 T23A:: .WORD 0 ;PROCESSOR TYPE FLAG
550 003136 000000 T23B:: .WORD 0 ;PROCESSOR TYPE FLAG B
551 003140 000000 T3BFLG:: .WORD 0 ;TEST 3B FLAG +0
552 003142 002000 PST32W:: .WORD 2000 ;32W BLOCK ADDRESS FOR 32K START
553 003144 000000 SIFLAG:: .WORD 0
554 003146 000000 BADDAT:: .WORD 0 ;ACTUAL DATA
555 003150 000000 GOODAT:: .WORD 0 ;EXPECTED DATA
556 003152 000000 LOOPFL:: .WORD 0
557 003154 CTAB:: .WORD 0 ;CONFIGURATION TABLES.
558 003154 000000 CTABM:: .WORD 0 ;CONFIG WORK.
559 003156 000000
560 003160 000000

```

H3

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
GLOBAL ENVIRONMENT STORAGE

SEQ 033

```

561 003162 000000
562 003164 177777
563 003166
564
565
566
567
568
569
570
571
572
573 003166
574 003366 000000
575
576 003370 000000
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591 003372
    003372
    003372 124 123 125
592
607
608
609
610 003400
    003400
    003400 052 052 052
618
619
620
621
622
623
624
625 003472 003532' 003535' 003541'
626 003512 003573' 003577' 003603'
627 003532 123 103 000
628 003535 102 111 105
629 003541 123 103 105
630 003545 122 115 122
631 003551 116 130 115
632 003555 116 102 101

                                .WORD 0
                                .WORD -1
                                ;END OF MEM TABLE.

CTABE::
;ERROR STATISTICS TABLE (1 WORD PER UNIT), 64 UNITS MAX:
;
;      0      =      UNIT NOT TESTED
;      100000 =      UNIT ONLINE, NO ERRORS
;      10XXXX =      UNIT ONLINE, ENCOUNTERED XXXX ERRORS
;      160000 =      UNIT DROPPED, NON-EXISTENT DEVICE REGISTER
;      160001 =      UNIT DROPPED, NOT IDLE AT START
;      14XXXX =      UNIT DROPPED, ENCOUNTERED XXXX ERRORS
;
ERTABL:      .BLKW 64,
ERTABE:      .WORD 0

SKIPT: .WORD 0 ;1=SKIP SUBTEST 0=NO SKIP OF SUBTEST

.SBTTL GLOBAL TEXT MESSAGES
;+
; THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
; MORE THAN ONE TEST.
;--

;+
; NAMES OF DEVICES SUPPORTED
;-

      DEVTYP <TSU05>
L$DVTYP::
      .ASCIZ /TSU05/
      .EVEN

;+
; TEST DESCRIPTION
;-
      DESCRIPT <**** TSU05 DIAG PART 3 - CHK CABLES-TRANSPORT IF ERR ****>
L$DESC::
      .ASCIZ /**** TSU05 DIAG PART 3 - CHK CABLES-TRANSPORT IF ERR ****/
      .EVEN

;+
; BIT TO ASCII CONVERSION FOR TSSR REGISTER
;-

TSSRBIT::      .WORD 1$,2$,3$,4$,5$,6$,7$,8$
                .WORD 9$,10$,11$,12$,13$,14$,15$,16$
                .ASCIZ 'SC'
                .ASCIZ 'BIE'
                .ASCIZ 'SCE'
                .ASCIZ 'RMR'
                .ASCIZ 'NXM'
                .ASCIZ 'NBA'

```

TSV3 - GLOBAL AREAS
GLOBAL TEXT MESSAGES

MACRO M1113 01-FEB-84 17:54

SEQ 034

```

633 003561      102      111      124      7:      .ASCIZ  'BIT9'
634 003566      102      111      124      8:      .ASCIZ  'BIT8'
635 003573      123      123      122      9:      .ASCIZ  'SSR'
636 003577      117      106      114     10:      .ASCIZ  'OFL'
637 003603      102      111      124     11:      .ASCIZ  'BIT5'
638 003610      102      111      124     12:      .ASCIZ  'BIT4'
639 003615      102      111      124     13:      .ASCIZ  'BIT3'
640 003622      102      111      124     14:      .ASCIZ  'BIT2'
641 003627      102      111      124     15:      .ASCIZ  'BIT1'
642 003634      102      111      124     16:      .ASCIZ  'BIT0'
643              .EVEN
644 003642      124      123      123     SFIERR: .ASCIZ  'TSSR ERROR AFTER SOFT INIT'
645 003675      124      123      123     SFHERR: .ASCIZ  'TSSR ERROR AFTER BUS RESET'
646 003730      040      040      116      NXR:      .ASCIZ  / NON-EXISTANT DEVICE REGISTER/
647 003767      045      101      040      NXR:      .ASCIZ  /#A ADDRESS: #06/
648 004010      045      101      040      TSSX:      .ASCIZ  /#A TSBA,TSSR EXP'D: #06#A,#06#N/
649 004050      045      101      040      TSSX:      .ASCIZ  /#A TSBA,TSSR REC'D: #06#A,#06/
650 004107      045      116      045      FUSI:      .ASCIZ  /#N#A/
651 004113      040      040      125      USI:      .ASCIZ  / UNEXPECTED INTERRUPT/
652 004142      040      040      111      NSI:      .ASCIZ  / INTERRUPT EXPECTED, NOT RECEIVED/
653 004205      045      116      045      FNOINTR: .ASCIZ  /#N#A/
654 004211      040      040      116      NOINTR: .ASCIZ  / NO INTERRUPT WAS GENERATED/
655 004246      040      040      111      IFAULT: .ASCIZ  / INTERRUPT FAULT/
656 004270      045      101      040      INTX:      .ASCIZ  /#A CPU PC: #06#A TSBA: #06/
657 004325      040      040      042      NOINIT: .ASCIZ  / "BUS-INIT" DIDN'T INITIALIZE CONTROLLER/
658 004377      040      040      042      NSINIT: .ASCIZ  / "SOFT-INIT" DIDN'T INITIALIZE THE DPU/
659 004447      040      040      042      BRINIT: .ASCIZ  / "BUS-RESET" DIDN'T INITIALIZE THE DPU/
660
661 004517      000              NUL:      .ASCIZ  //
662 004520      045      116      000      NULCR: .ASCIZ  /#N/
663 004523      045      101      040      EXPGOT: .ASCIZ  /#A EXP'D: #06#A, REC'D: #06/
664 004557      045      116      045      EXPGT2: .ASCIZ  /#N#A EXP'D: #06#A, #06#N#A REC'D: #0#A, #06/
665 004633      045      101      040      DUAD12: .ASCIZ  /#A REG(W) WRITTEN TO: #06#A REG(R) READ: EXP'D: #06#A, REC'D: #06/
666 004735      122      101      115      PKTRAM: .ASCIZ  'RAM Contents Do Not Match Packet Sent'
667 005003      040      040      103      SCME:      .ASCIZ  / CONFIG DOESN'T MATCH MFG. MASTER/
668 005046      127      122      111      WRTMSG: .ASCIZ  'WRITE CHARACTERISTICS Failed'
669 005103      124      123      123      WRTERR: .ASCIZ  'TSSR Incorrect After WRITE Command. More Bits Set Than SSR'
670 005176      124      123      123      RDERR:      .ASCIZ  'TSSR Incorrect After READ Command. More Bits Set Than SSR'
671 005270      106      101      124      SCHERR: .ASCIZ  'FATAL ERROR IN SUBTEST - CHECK TAPE,CABLES,TRANSPORT etc.'
672 005362      105      122      122      RETERR: .ASCIZ  'ERROR IN SUBTEST - WRITE DATA RETRY FIVE TIMES FAILED'
673 005450      045      116      045      NOMEM: .ASCIZ  /#N#A ***** NO NXM ADDRESS--CANNOT TEST NXM TIMEOUT. *****N'
674              .EVEN
675
676              .SBTTL  GLOBAL ERROR REPORT SECTION
677
678      ;**
679      ; THE GLOBAL ERROR REPORT SECTION CONTAINS THE PRINTB AND PRINTX
680      ; CALLS THAT ARE USED IN MORE THAN ONE TEST.
681      ; ASCII TEXT STRINGS ARE FOUND IN THE GLOBAL TEXT SECTION.
682      ;--
683
684 005544      BGNMSG  NXRERR              ;NON-EXISTANT DEVICE REGISTER.
685 005544      NXRERR: PRINTX  #NXRX,NOCEV      ;NODEV = NEXM ADDRESS.
686 005544      MOV      NODEV, -(SP)
687 005550      MOV      #NXRX, -(SP)
688 005554      MOV      #2, -(SP)

```


686	005560	010600		MOV	SP,RO	
687	005562	104415		TRAP	C\$PNTX	
	005564	062706	000006	ADD	#6,SP	
	005570	004737	005576'	JSR	PC,EXTEND	; PRINT EXTENSION IF REQUIRED.
	005574			ENDMSG		
	005574	104423		L10002:	TRAP	C\$MSG
688						
689						
690						
691						
692						
693						
694	005576	005727				
695	005600	000000				
696	005602	001402				
697	005604	004777	177770			
698	005610					
	005610	012746	004520'			
	005614	012746	000001			
	005620	010600				
	005622	104415				
	005624	062706	000004			
699	005630	000207				
700						
701						
702						
703						
704						
705						
706						
707						
708						
709						
710						
711						
712						
713						
714						
715						
716						
717						
718						
719	005632					
720	005632					
721	005636	010104				
722	005640					
	005640	010446				
	005642	012746	006315'			
	005646	012746	000002			
	005652	010600				
	005654	104414				
	005656	062706	000006			
723	005662	010400				
724	005664	004737	015744'			
725	005670	103410				
726	005672					


```

; THIS ROUTINE APPENDS A UNIQUE EXTENSION (IF REQUIRED)
; TO ANY OF THE ABOVE ERROR SIGNATURES.
;
EXTEND: TST      (PC)+
EXTA:      0                      ; 0 = NO EXTENSION.
          BEQ     1$
          JSR     PC,EXTA          ; APPEND EXTENSION TEXT.
          PRINTX  #NULCR          ; PRINT A BLANK LINE
1$:         MOV     #NULCR, -(SP)
          MOV     #1, -(SP)
          MOV     SP,RO
          TRAP    C$PNTX
          ADD     #4,SP
          RTS     PC

.SBTTL  PRITSSR - PRINT TSSR CONTENTS

;
; ROUTINE TO DISPLAY THE CONTENTS, AND BIT DEFINITIONS OF
; THE TSSR REGISTER. THIS ROUTINE IS NORMALLY CALLED ONLY
; BY A MESSAGE PRINTING ROUTINE.
;
; INPUTS:
;
;      R1      CONTENTS OF TSSR
;
; SUBORDINATE ROUTINES:
;
;      CHKAMB  CHECK FOR AMBIGUOUS CONTENTS
;
; -
PRITSSR:
          SAVREG          ; SAVE GENERAL REGISTERS
          MOV     R1,R4    ; SAVE THE TSSR CONTENTS
          PRINTB  #TSSRFOR,R4 ; PRINT THE CONTENTS OF TSSR
          MOV     R4, -(SP)
          MOV     #TSSRFOR, -(SP)
          MOV     #2, -(SP)
          MOV     SP,RO
          TRAP    C$PNTB
          ADD     #6,SP
          MOV     R4,RO    ; GET TSSR BACK FOR CHKAMB
          JSR     PC,CHKAMB ; ARE CONTENTS AMBIGUOUS ?
          BCS     5$       ; BRANCH IF NOT
          PRINTX  #AMBTSSR ; SHOW CONTENTS ARE AMBIGUOUS

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 PRITSSR - PRINT TSSR CONTENTS

SEQ 036

005672	012746	006535'		MOV	0AMBTSSR, -(SP)	
005676	012746	000001		MOV	01, -(SP)	
005702	010600			MOV	SP, R0	
005704	104415			TRAP	C:PNTX	
005706	062706	000004		ADD	04, SP	
727 005712	010403		5\$:	MOV	R4, R3	; CONTENTS OF TSSR
728 005714	042703	001476		BIC	0HIADDR!FATERR!TERCLS, R3	; CLEAR ALL MULTIPLE BIT FIELDS
729 005720	001434			BEQ	20\$	; NO BITS ARE SET
730 005722	012702	002622'		MOV	0TMPBFR, R2	; TEMPORARY ASCII BUFFER
731 005726	012701	003472'		MOV	0TSSRBIT, R1	; ASCII EQUIVALENT OF BITS
732 005732	005703		10\$:	TST	R3	; REMAINING BITS TO CONVERT
733 005734	001413			BEQ	15\$	; BRANCH WHEN ALL ARE DONE
734 005736	000241			CLC		; CLEAR CARRY FOR SHIFT
735 005740	006103			ROL	R3	; SHIFT NEXT BIT TO CARRY
736 005742	103006			BCC	13\$	; BRANCH IF BIT NOT SET
737 005744	011100			MOV	(R1), R0	; POINTER TO BIT DEFINITION
738 005746	112022		11\$:	MOVB	(R0)+, (R2)+	; MOVE ASCII TO BUFFER
739 005750	001376			BNE	11\$	; MOVE ALL BITS
740 005752	112762	000054 177777		MOVB	0'...-1(R2)	; INSERT A COMMA TO TERMINATE
741 005760	005721		13\$:	TST	(R1)+	; POINT TO NEXT DESCRIPTION
742 005762	000763			BR	10\$	; GET THE REMAINING BITS
743 005764	105042		15\$:	CLRB	-(R2)	; TERMINATE THE LINE
744 005766				PRINTX	0TSSDEF, 0TMPBFR	; PRINT THE BIT DEFINITIONS
005766	012746	002622'		MOV	0TMPBFR, -(SP)	
005772	012746	006506'		MOV	0TSSDEF, -(SP)	
005776	012746	000002		MOV	02, -(SP)	
006002	010600			MOV	SP, R0	
006004	104415			TRAP	C:PNTX	
006006	062706	000006		ADD	06, SP	
745						
746 006012	010403		20\$:	MOV	R4, R3	; GET THE TSSR CONTENTS
747 006014	042703	177761		BIC	0+CTERCLS, R3	; CLEAR ALL BUT TERMINATION
748 006020	016303	006576'		MOV	TCOCOD(R3), R3	; GET THE TERMINATION CODE MEANING
749 006024				PRINTX	0TCOASC, R3	; PRINT THE TERMINATION CODE
006024	010346			MOV	R3, -(SP)	
006026	012746	006376'		MOV	0TCOASC, -(SP)	
006032	012746	000002		MOV	02, -(SP)	
006036	010600			MOV	SP, R0	
006040	104415			TRAP	C:PNTX	
006042	062706	000006		ADD	06, SP	
750 006046	010403			MOV	R4, R3	; TSSR CONTENTS AGAIN
751 006050	042703	177717		BIC	0+CFATERR, R3	; CLEAR ALL BUT FATAL TERMINATION
752 006054	001416			BEQ	25\$	; DON'T PRINT IF ZERO
753 006056	006203			ASR	R3	
754 006060	006203			ASR	R3	
755 006062	006203			ASR	R3	; ALINE TERMINATION CODE FOR INDEX
756 006064	016303	007136'		MOV	TSFCOD(R3), R3	; GET THE FATAL TERMINATION CODE
757 006070				PRINTX	0TFCASC, R3	; PRINT THE FATAL TERMINATION CODE
006070	010346			MOV	R3, -(SP)	
006072	012746	006437'		MOV	0TFCASC, -(SP)	
006076	012746	000002		MOV	02, -(SP)	
006102	010600			MOV	SP, R0	
006104	104415			TRAP	C:PNTX	
006106	062706	000006		ADD	06, SP	
758 006112	042704	176377	25\$:	BIC	0+CHIADDR, R4	; CLEAR ALL BUT EXTENDED ADDRESS
759 006116	001411			BEQ	30\$	; DON'T PRINT IF ZERO
760 006120				PRINTX	0TEXASC, R4	; PRINT THE EXTENDED ADDRESS BITS

L3

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PRITSSR - PRINT TSSR CONTENTS

SEQ 037

```

006120 010446      MOV      R4,-(SP)
006122 012746 006335' MOV      #TEXASC,-(SP)
006124 012746 000002' MOV      #2,-(SP)
006132 010600      MOV      SP,R0
006134 104415      TRAP     C#PNTX
006136 062706 000006' ADD      #6,SP
761 006142 013703 002170' 30$: MOV      EPRTSW,R3      ;PRINT MEASGE BUFFER ADDRESS
762 006146      PRINTX   R3      ;PRINT PROPER MESSAGE
006146 010346      MOV      R3,-(SP)
006150 012746 000001' MOV      #1,-(SP)
006154 010600      MOV      SP,R0
006156 104415      TRAP     C#PNTX
006160 062706 000004' ADD      #4,SP
763 006164 000207      RTS      PC      ;RETURN TO CALLER
764
775 006166      045      116      045  EPRT1: .ASCIZ  'NMA *****CHECK CABLES BETWEEN M7455 AND TRANSPORT*****'
776 006256      045      116      045  EPRT2: .ASCIZ  'NMA *****CHECK TRANSPORT*****'
782 006315      045      116      045  TSSRFOR: .ASCIZ  'NMA TSSR = #06'
783 006335      045      116      045  TEXASC: .ASCIZ  'NMA Extended Address Bits = #06'
784 006376      045      116      045  TCOASC: .ASCIZ  'NMA Termination Class Code = #T'
785 006437      045      116      045  TFCASC: .ASCIZ  'NMA Fatal Termination Class Code = #T'
786 006506      045      116      045  TSSDEF: .ASCIZ  'NMA TSSR Bits Set: #T'
787 006535      045      116      045  AMBTSSR: .ASCIZ  'NMA TSSR Contents Are Ambiguous'
788
789 006576 006616' 006641' 006667' TCOCOD: .WORD  1$,2$,3$,4$,5$,6$,7$,8$
790 006616      116      157      162  1$: .ASCIZ  'Normal Termination'
791 006641      124      145      162  2$: .ASCIZ  'Termination Condition'
792 006667      124      141      160  3$: .ASCIZ  'Tape Status Alert'
793 006711      106      165      156  4$: .ASCIZ  'Function Reject'
794 006731      122      145      143  5$: .ASCIZ  'Recoverable Error - Tape Position One Record Down'
795 007013      122      145      143  6$: .ASCIZ  'Recoverable Error - Tape Was Not Moved'
796 007062      125      156      162  7$: .ASCIZ  'Unrecoverable Error'
797 007106      106      141      164  8$: .ASCIZ  'Fatal Controller Error'
798      .EVEN
799
800 007136 007146' 007202' 007213' TSFCOD: .WORD  1$,2$,3$,4$
801 007146      111      156      164  1$: .ASCIZ  'Internal Diagnostic Failure'
802 007202      122      145      163  2$: .ASCIZ  'Reserved'
803 007213      102      163      163  3$: .ASCIZ  'Bus Interface or Sanity Check Error'
804 007257      122      145      163  4$: .ASCIZ  'Reserved'
805      .EVEN
806
807      .SBTTL  PRIPKT - PRINT THE ADDRESS/CONTENTS OF COMMAND PACKET
808
809
810      ;*
811      ;THIS ROUTINE PRINTS THE ADDRESS AND CONTENTS OF A COMMAND PACKET.
812      ;THIS ROUTINE IS NORMALLY ONLY CALLED FROM A PRINT ROUTINE.
813      ;
814      ;INPUT:
815      ;
816      ;      R0      NUMBER OF WORDS IN PACKET
817      ;      R3      HIGH ORDER COMMAND PACKET ADDRESS
818      ;      R4      ADDRESS OF COMMAND PACKET
819      ;
820      ;      NOTE:  R3 IS IGNORED IF THE KTENABLE FLAG IS CLEAR.
821      ;-

```

M3

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 PRIPKT - PRINT THE ADDRESS/CONTENTS OF COMMAND PACKET

SEQ 038

```

822 007270          PRIPKT::
823 007270          SAVREG          ;SAVE THE REGISTERS
824 007274 010005    MOV R0,R5      ;SAVE NO. OF WORDS IN PACKET
825 007276 005737 003124'  TST KTENABLE ;ABOVE 28K UNDER TEST?
826 007302 001001    BNE 10$        ;BR IF YES
827 007304 005003    CLR R3         ;SET HIGH ORDER ADDRESS TO 0
828 007306 010301    10$: MOV R3,R1 ;COPY HIGH ORDER ADDRESS
829 007310 010400    MOV R4,R0      ;GET LOWER ADDRESS
830 007312 006100    ROL R0         ;SHIFT BIT 15 INTO C BIT
831 007314 006101    ROL R1         ;AND INTO HIGH ORDER.
832 007316          PRINTB #PKTADD,R1,R4 ;PRINT PACKET ADDRESS
      007316 010446    MOV R4,-(SP)
      007320 010146    MOV R1,-(SP)
      007322 012746 007454'  MOV #PKTADD,-(SP)
      007326 012746 000003    MOV #3,-(SP)
      007332 010600    MOV SP,R0
      007334 104414    TRAP C$PNTB
      007336 062706 000010    ADD #10,SP
833 007342 010300    15$: MOV R3,R0 ;GET HIGH ORDER ADDRESS
834 007344 001404    BEQ 20$        ;BR IF NOT ABOVE 28K.
835 007346 010401    MOV R4,R1      ;GET LOW ORDER ADDRESS
836 007350 004737 017220'  JSR PC,SETMAP ;SETUP PAR6 MAPPING FOR 18 BIT ADDRESS
837 007354 010004    MOV R0,R4      ;GET RETURNED PAR6 ADDRESS BIAS
838 007356 005001    20$: CLR R1     ;SAVE WORD NUMBER
839 007360 012402    25$: MOV (R4)+,R2 ;GET PACKET CONTENTS
840 007362          PRINTB #PKTFRM,R1,R2 ;PRINT THE DATA
      007362 010246    MOV R2,-(SP)
      007364 010146    MOV R1,-(SP)
      007366 012746 007416'  MOV #PKTFRM,-(SP)
      007372 012746 000003    MOV #3,-(SP)
      007376 010600    MOV SP,R0
      007400 104414    TRAP C$PNTB
      007402 062706 000010    ADD #10,SP
841 007406 005201    INC R1         ;NEXT WORD NUMBER
842 007410 020105    CMP R1,PC      ;DONE ALL PACKET WORDS?
843 007412 002762    BLT 25$        ;LOOP TILL ALL DONE
844 007414 000207    RTS           ;RETURN

```

```

846 007416      045      116      045 PKTFRM: .ASCIZ 'N/A Packet'
847 007454      045      116      045 PKTADD: .ASCIZ 'N/A Packet'
848                                     .EVEN

```

```

850
851                                     .SBTTL PRIPKT
852                                     .IN EXPD, RECD, AND XOR
853

```

```

854
855 ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE DATA E I.
856 ;THIS ROUTINE IS NORMALLY CALLED ONLY FOR PRINT ROUTINES.
857
858 ;INPUTS:
859
860 ;      R1      RECEIVED DATA
861 ;      R2      EXPECTED DATA
862
863 ;OUTPUT:
864

```

N3

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PRIBXOR - PRINT EXPD, RECV AND XOR BYTE

SEQ 039

```

865      ;      R0      XOR OF EXPECTED/RECEIVED DATA
866      ;
867      ; -
868
869 007512      PRIBXOR::
870 007512      SAVREG      ;SAVE THE REGISTERS
871 007516      MOV      R2,R3      ;EXPECTED DATA
872 007520      XOR      R1,R3      ;FORM THE EXCLUSIVE OR
873 007530      MOV      #C<377>,R0      ;BYTE MASK
874 007534      BIC      R0,R1      ;SAVE LOW BYTE RECV
875 007536      BIC      R0,R2      ;SAVE LOW BYTE EXPD
876 007540      BIC      R0,R3      ;SAVE LOW BYTE XOR
877 007542      PRINTB      #XORBFOR,R2,R1,R3 ;PRINT THE MESSAGE
      007542      MOV      R3,-(SP)
      007544      MOV      R1,-(SP)
      007546      MOV      R2,-(SP)
      007550      MOV      #XORBFOR,-(SP)
      007554      MOV      #4,-(SP)
      007560      MOV      SP,R0
      007562      TRAP      C$PNTB
      007564      ADD      #12,SP
878 007570      MOV      R3,R0      ;R0 HAS XOR ON RETURN
879 007572      RTS      PC      ;RETURN TO CALLER
880
881 007574      045      116      045 XORBFOR:      .ASCIZ      'N/A EXPD: 03A RECV: 03A XOR: 03'
882      .EVEN
883
884
885      .SBTTL PRIBXOR - PRINT EXPD, RECV AND XOR
886
887      ;+
888      ;
889      ;PRINT EXPECTED DATA, RECEIVED DATA, AND XOR OF THE TWO
890      ;THIS ROUTINE IS NORMALL' CALLED ONLY FOR PRINT ROUTINES.
891      ;
892      ;INPUTS:
893      ;
894      ;      R1      RECEIVED DATA
895      ;      R2      EXPECTED DATA
896      ;
897      ;OUTPUT:
898      ;
899      ;      R0      XOR OF EXPECTED/RECEIVED DATA
900      ;
901      ; -
902
903 007642      PRIBXOR::
904 007642      SAVREG      ;SAVE THE REGISTERS
905 007646      MOV      R2,R3      ;EXPECTED DATA
906 007650      XOR      R1,R3      ;FORM THE EXCLUSIVE OR
907 007660      PRINTB      #XORFOR,R2,R1,R3 ;PRINT THE MESSAGE
      007660      MOV      R3,-(SP)
      007662      MOV      R1,-(SP)
      007664      MOV      R2,-(SP)
      007666      MOV      #XORFOR,-(SP)
      007672      MOV      #4,-(SP)
      007676      MOV      SP,R0

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 PRI XOR - PRINT EXPD, RECV AND XOR

SEQ 040

```

007700 104414
007702 062706 000012
908 007706 010300
909 007710 000207
910
911 007712 045 116 045 XORFOR: .ASCIZ 'NMA EXPD; #06#A RECV; #06#A XOR; #06'
912 .EVEN
913
914 .SBTTL PRI EQU - PRINT BIT NUMBERS AS ASCII EQUIVALENT
915
916
917
918
919
920
921
922
923
924
925
926
927
928 007760
929 007760
930 007764 000207
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946 007766
947 007766
948 007772 010446
007774 012746 010016
010000 012746 000002
010004 010600
010006 104414
010010 062706 000006
949 010014 000207
950
951 010016 045 116 045 RAMFOR: .ASCIZ 'NMA CONTROLLER RAM ADDRESS = #06'
952 .EVEN
953
954
955
956

```

```

TRAP C:PNTB
ADD #12,SP
MOV R3,R0 ;R0 HAS XOR ON RETURN
RTS PC ;RETURN TO CALLER

ROUTINE TO CONVERT BIT VALUES TO ASCII AND PRINT THE STRING
THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE
INPUTS:
R0 OCTAL VALUE TO CONVERT
R1 TABLE OF POINTERS TO ASCII EQUIVALENT

PRI EQU:
SAVREG ;SAVE THE REGISTERS
RTS PC ;RETURN TO CALLER

.SBTTL PRI RAM - PRINT RAM ADDRESS
PRINT CONTROLLER RAM ADDRESS.
THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
INPUTS:
R4 RAM ADDRESS

PRI RAM:
SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
PRINTB #RAMFOR,R4 ;PRINT RAM ADDRESS IN ERROR
MOV R4,-(SP)
MOV #RAMFOR,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C:PNTB
ADD #6,SP
RTS PC ;RETURN

```

C4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PRIADD - PRINT MEMORY ERROR ADDRESS

SEQ 041

```

957
958      ;PRINT MEMORY ADDRESS
959      ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
960
961      ; IMPLICIT INPUTS
962
963      ;      ERRHI   - HIGH ORDER ADDRESS
964      ;      ERRLO   - LOW ORDER ADDRESS
965
966
967      PRIADD:
968      SAVREG
969      MOV     ERRHI,R0      ;SAVE R1-R5 UNTIL NEXT RETURN
970      MOV     ERRLO,R1      ;GET HIGH ADDRESS
971      MOV     R1,R2        ;GET LOW ADDRESS
972      ROL     R1            ;COPY LOW ADDRESS
973      ROL     R0            ;SHIFT BIT 15 TO C BIT
974      PRINTB  @PRIAO,R0,R2  ;SHIFT INTO HIGH ORDER
975      MOV     R2,-(SP)      ;PRINT MEMORY ADDRESS IN ERROR
976      MOV     R0,-(SP)
977      MOV     @PRIAO,-(SP)
978      MOV     #3,-(SP)
979      MOV     SP,R0
980      TRAP    C:PNTB
981      ADD     #10,SP
982      RTS     PC            ;RETURN
983
984      010130      045      116      045  PRIAO: .ASCIZ  'MEMORY ERROR ADDRESS = 0105'
985      .EVEN
986
987      .SBTTL  PRITADD - PRINT MEMORY TEST ADDRESS
988
989      ;
990      ;PRINT MEMORY ADDRESS
991      ;THIS ROUTINE IS NORMALLY CALLED ONLY FROM PRINT ROUTINES.
992
993      ; IMPLICIT INPUTS
994
995      ;      ERRHI   - HIGH ORDER ADDRESS
996      ;      ERRLO   - LOW ORDER ADDRESS
997
998
999      PRITADD:
1000     SAVREG
1001     MOV     ERRHI,R2      ;SAVE R1-R5 UNTIL NEXT RETURN
1002     MOV     ERRLO,R1      ;GET HIGH ADDRESS
1003     MOV     R1,R2        ;GET LOW ADDRESS
1004     ROL     R1            ;COPY LOW ADDRESS
1005     ROL     R0            ;SHIFT BIT 15 TO C BIT
1006     PRINTB  @PRITO,R1     ;SHIFT INTO HIGH ORDER
1007     MOV     R1,-(SP)      ;PRINT MEMORY ADDRESS LOW IN ERROR
1008     MOV     @PRITO,-(SP)
1009     MOV     #2,-(SP)
1010     MOV     SP,R0
1011     TRAP    C:PNTB
1012     ADD     #6,SP

```

D4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PRITADD - PRINT MEMORY TEST ADDRESS

SEQ 042

```

1001 010232          PRINTB 4PRIT1,R2          ;PRINT MEMORY ADDRESS HIGH IN ERROR
      010232 010246      MOV      R2,-(SP)
      010234 012746 010321'  MOV      4PRIT1,-(SP)
      010240 012746 000002'  MOV      42,-(SP)
      010244 010600      MOV      SP,R0
      010246 104414      TRAP     C1PNTB
      010250 062706 000006'  ADD      46,SP
1002 010254 000207      RTS      PC          ;RETURN
1003
1004 010256      045      116      045 PRIT0: .ASCIZ 'NMA MEMORY TEST ADDRESS LOW = 06'
1005 010321      045      116      045 PRIT1: .ASCIZ 'NMA MEMORY TEST ADDRESS HIGH = 06'
1006
1007
1008
1009          .SBTTL  SPACE  - SPACE RECORDS (FORWARD AND REVERSE) COMMAND
1010
1011          ;
1012          ;ROUTINE TO ISSUE A SPACE RECORDS
1013          ;COMMAND (FORWARD OR REVERSE)
1014
1015          ;INPUT:
1016
1017          ;
1018          ;      R3      NUMBER OF RECORDS TO BE SPACED OVER
1019          ;              BIT15 CONTROLS DIRECTION
1020          ;              BIT15 = 0 IS FORWARD
1021          ;              BIT15 = 1 IS REVERSE
1022          ;      R5      FIRST DEVICE UNIBUS ADDRESS
1023
1024          ;REQUIRES A WRITE CHARACTERISTICS DONE PREVIOUSLY
1025
1026          ;OUTPUT:
1027
1028          ;      CARRY   SET - SPACE RECORDS COMMAND OK
1029          ;              CLR - SPACE RECORDS FAILED
1030
1031          ;
1032          ;      R0      THE CONTENTS OF R4 IS MOVED TO R0
1033
1034          ;
1035          ;IMPLICIT OUTPUT:
1036
1037          ;      TAPE HAS BEEN MOVED
1038
1039          ;SIDE EFFECTS:
1040
1041          ;
1042          ;
1043          ;
1044 010346          SPACE::
1045 010346          SAVREG
1046 010372 012737 000764 010560'  MOV      4500.,SDELAY          ;SAVE THE GENERAL REGISTERS
1047 010400 012737 140010 010550'  MOV      4140010,801          ;SET UP DELAY
1048 010406 005703          TST      R3          ;SET UP COMMAND, SPACE FORWARD
1049 010410 100403          BMI      54          ;CHECK FOR DIRECTION
1050 010412 010337 010552'  MOV      R3,901          ;BR, IF REVERSE INDICATED
1051 010416 000407          BR       101          ;LOAD UP NUMBER OF RECORDS TO SPACE
                                   ;GO DO COMMAND

```


E4

TSV3 - GLOBAL AREAS
SPACE - SPACE RECORDS (FORWARD AND REVERSE) COMMAND

SEQ 043

```

1052 010420 042703 100000      5$: BIC      #BIT15,R3      ;CLEAR DIRECTION BIT
1053 010424 010337 010552'    MOV      R3,90$      ;LOAD UP NUMBER OF RECORDS TO SPACE
1054 010430 052737 000400 010550'  BIS      #BIT8,80$      ;SET REVERSE BIT IN COMMAND PACKET
1055 010436 012704 010550'    10$: MOV      #80$,R4      ;SET UP R4 WITH PACKET ADDRESS
1056 010442 010465 000000      MOV      R4,TSDB(R5)    ;SEND OUT COMMAND
1057 010446 004737 016150'    15$: JSR      PC,WAITF      ;WAIT FOR SSR
1058 010452 103420      BCS      20$      ;BR, IF SSR IS SET AND OK
1059 010454      DELAY      250      ;DELAY ABOUT .25 SECONDS
      010454 012727 000250      MOV      #250,(PC)+
      010460 000000      .WORD      0
      010462 013727 002116'    MOV      L$DLY,(PC)+
      010466 000000      .WORD      0
      010470 005367 177772      DEC      -6(PC)
      010474 001375      BNE      .-4
      010476 005367 177756      DEC      -22(PC)
      010502 001367      BNE      .-20
1060 010504 005337 010560'    DEC      SDELAY      ;BUMP DELAY COUNTER DOWN
1061 010510 001356      BNE      15$      ;BR, IF MORE DELAY
1062 010512 000411      BR      60$      ;BR IF TROUBLE CARRY = CLEAR
1063 010514 016501 000002      20$: MOV      TSSR(R5),R1    ;READ TSSR
1064 010520 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
1065 010524 020201      25$: CMP      R2,R1      ;ARE THEY OK
1066 010526 001401      BEQ      40$      ;BR, IF EQUAL = OK
1067 010530 000402      BR      60$      ;TROUBLE EXIT
1068 010532 000261      40$: SEC      70$      ;SET CARRY NO TROUBLE
1069 010534 000401      BR      70$      ;EXIT
1070 010536 000241      60$: CLC      ;CARRY CLEAR = ERROR
1071 010540      70$:      ;
1072 010540 010400      MOV      R4,R0      ;PASS PACKET ADDRESS
1073 010542 000207      RTS      PC      ;RETURN
1074      ;
1075      ;
1076      ;
1077      ;
1078      ; PACKET FOR SPACE COMMAND
1079      ;
1081 010544      .BLKB      10-<,-TSV2&7>
1083      ;
1084      ; COMMAND WORD
1085 010550 000000      80$: .WORD
1086      ; NUMBER OF RECORDS TO BE SPACED OVER WORD
1087 010552 000000      90$: .WORD
1088 010554 000000      .WORD
1089 010556 000000      .WORD
1090 010560 000000      SDELAY: .WORD      0      ;DELAY COUNTER
1091      .EVEN
1092      ;
1093      ;
1094      ; SBTTL WRTCHR - WRITE CHARACTERISTICS COMMAND
1095      ;
1096      ;
1097      ;
1098      ; ROUTINE TO ISSUE A WRITE CHARACTERISTICS
1099      ; COMMAND SO THAT OTHER COMMANDS WILL BE ACCEPTED
1100      ;
1101      ; INPUT:
1102      ;

```

F4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
WRTCHR - WRITE CHARACTERISTICS COMMAND

SEQ 044

```

1103      R4      ADDRESS OF PACKET FROM TEST
1104      R5      FIRST DEVICE UNIBUS ADDRESS
1105      REQUIRES A CALL TO SOFINIT BE DONE PREVIOUSLY
1106
1107      OUTPUT:
1108
1109      R0      TSSR CONTENTS
1110      CARRY    SET - WRITE CHARACTERISTICS COMMAND OK
1111              CLR - WRITE CHARACTERISTICS FAILED
1112
1113      IMPLICIT OUTPUT:
1114
1115      MESSAGE BUFFER AND OTHER BUFFERS ALL SET UP
1116      SOFTWARE SWITCHES SET AS FOLLOWS:
1117      EXTFEA = EXTENDED FEATURES PRESENT
1118      BENBSW = BUFFER ENABLE SWITCH ON OR OFF
1119
1120
1121      SIDE EFFECTS:
1122
1123
1124
1125
1126      WRTCHR:
1127      SAVREG      ;SAVE THE GENERAL REGISTERS
1128      CLR BENBSW  ;CLEAR BUFFER ENABLE SWITCH
1129      CLR EXTFEA  ;CLEAR EXTENDED FEATURES SW SWITCH
1130      10$: MOV R4,TSD8(R5) ;SEND OUT COMMAND
1131      JSR PC,CHKTSSR ;WAIT FOR SSR
1132      BCS 20$      ;BR, IF SSR IS SET AND OK
1133      BR 60$      ;BR, IF TROUBLE CARRY = CLEAR
1134      20$: MOV TSSR(R5),R1 ;READ TSSR
1135      MOV #SSR,R2 ;SET UP EXPECTED
1136      BIT #OFL,R1 ;WAS OFF LINE SET IN TSSR
1137      BEQ 25$      ;BR, IF NO OFL SET
1138      BIS #OFL,R2 ;MAKE THEM LOOK ALIKE
1139      25$: CMP R2,R1 ;ARE THEY OK
1140      BEQ 40$      ;BR, IF EQUAL = OK
1141      BR 60$      ;TROUBLE EXIT
1142      40$: ADD #8,R4 ;POINT TO WRT CHARA DATA PACKET
1143      MOV (R4),R3 ;GET ADDRESS OF MESSAGE BUFFER
1144      BIT #X2.EXTF,XST2(R3) ;EXTENDED FEATURES BIT SET?
1145      BEQ 45$      ;BR IF NO
1146      INC EXTFEA ;SET EXTENDED FEATURES SW SWITCH
1147      45$:
1148      BIT #X2.BUFE,XST2(R3) ;BUFFER ENABLE SWITCH SET
1149      BEQ 50$      ;BR, IF SWITCH NOT SET
1150      INC BENBSW ;SET SOFTWARE SWITCH FOR ENABLED
1151      50$:
1152      SEC ;SET CARRY NO TROUBLE
1153      BR 70$      ;EXIT
1154      60$: CLC ;CARRY CLEAR = ERROR
1155      70$: MOV TSSR(R5),R0 ;RETURN TSSR CONTENTS
1156      RTS PC ;RETURN
1157
1158      .SBITL REWIND - POSITION TAPE (REWIND) COMMAND
1159

```


G4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 REWIND - POSITION TAPE (REWIND) COMMAND

SEQ 045

```

1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187 010710
1188 010710
1189 010720 012704 011010'
1190 010720 010465 000000
1191 010730 012703 000550
1192 010730 004737 016150'
1193 010740 103417
1194 010740
      010740 012727 000372
      010740 000000
      010750 013727 002116'
      010750 000000
      010750 005367 177772
      010760 001375
      010760 005367 177756
      010760 001367
1195 010770 005303
1196 010770 001357
1197 010770 000241
1198 011000 010400
1199 011000 000207
1200
1201
1203 011000
1205 011010
1206 011010 102010
1207 011010 000000
1208
1209
1210

```

```

;+
; THIS ROUTINE WILL REWIND THE SELECTED TAPE.
;
; CAUTION: THE ROUTINE DOES NOT WAIT FOR BOT
; TO ARRIVE, ALSO THE CALLER MUST CHECK FOR
; SSR TO SET IN THE TSSR
;
; CALLING SEQUENCE:
;
; DO A SOFT INIT
; DO A WRITE CHARACTERISTICS
; JSR PC,REWIND
;
; INPUT:
;
; R5 FIRST DEVICE UNIBUS ADDRESS
;
; OUTPUT
;
; R0 THE CONTENTS OF R4 IS PASSED TO R0
;
; -
REWIND::
      SAVREG
      MOV R4,TSDB(R5)
      MOV R4,TSDB(R5)
      MOV R3,PC
      JSR PC,WAITF
      BCS 20$
      DELAY 250.
      MOV R4,PC
      .WORD 0
      MOV R4,PC
      .WORD 0
      DEC R3
      BNE 10$
      DEC R3
      BNE 20$
      DEC R3
      BNE 10$
      CLC
      MOV R4,R0
      RTS PC
      .BLKB 10-<.-TSV2&7>
RWPACK:
      .WORD 102010
      .WORD 0
      .SBTTL CKRAM - COMPARE RAM TO I/O PACKET
; SAVE R1-R5 UNTIL NEXT RETURN
; GET PACKET ADDRESS
; SEND PACKET ADDRESS TO EXECUTE
; 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
; CLEAR CARRY TO SET ERROR
; PASS THE PACKET ADDRESS
; RETURN
; POSITION COMMAND (REWIND)
; NOT USED

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CKRAM - COMPARE RAM TO I/O PACKET

SEQ 046

```

1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239 011014
1240 011014
1241 011020 012701 002232'
1242 011024 012702 000201
1243 011030 005003
1244 011032 004737 016236'
1245 011036 112765 000000 000000
1246 011044 004737 016236'
1247 011050 010265 000000
1248 011054 004737 016236'
1249 011060 116511 000000
1250 011064 122124
1251 011066 001401
1252 011070 005203
1253 011072 005202
1254 011074 020227 000210
1255 011100 003761
1256 011102 005703
1257 011104 001402
1258 011106 000241
1259 011110 000401
1260 011112 000261
1261 011114 012737 000010 002272'
1262 011122 000207
1263
1264
1265
1266
1267

ROUTINE TO READ THE FIRST 8 BYTES FROM RAM
MEMORY AND COMPARE THIS DATA TO A COMMAND PACKET.
INPUT:
R4 ADDRESS OF THE COMMAND PACKET
R5 FIRST DEVICE UNIBUS ADDRESS
OUTPUT:
CARRY SET - RAM MATCHES PACKET
CLR - RAM DOES NOT MATCH PACKET
IMPLICIT OUTPUT:
THE TABLE RAMDATA IS FILLED WITH THE
DATA HELD IN RAM.
RAMSIZ IS SET TO 8. FOR PRAMPKT ROUTINE
SIDE EFFECTS:
THE SUBSYSTEM IS LEFT IN MAINTENANCE MODE
CKRAM::
SAVREG
MOV #RAMDATA,R1 ;SAVE THE GENERAL REGISTERS
MOV #RMPKTBEG,R2 ;ADDRESS TO SAVE THE RAM DATA
CLR R3 ;BYTE ADDRESS OF FIRST RAM DATA
JSR PC,CHKTSSR ;CLEAR THE ERROR FLAG
MOVB #0,TSDB(R5) ;WAIT FOR SSR
JSR PC,CHKTSSR ;SET MAINTENANCE MODE
MOV R2,TSDB(R5) ;WAIT FOR SSR TO SET
JSR PC,CHKTSSR ;SELECT NEXT RAM ADDRESS
MOVB TSBA(R5),(R1) ;WAIT FOR SSR TO SET
CMPB (R1)+,(R4)+ ;READ THE RAM DATA
BEQ 20$ ;COMPARE TO EXPECTED
INC R3 ;BRANCH IF OK
INC R2 ;SET ERROR FLAG
CMP R2,#RMPKTBEND ;ADDRESS OF NEXT RAM LOCATION
BLE 10$ ;REACHED END YET ?
TST R3 ;BRANCH TILL ALL READ
BEQ 30$ ;WAS AN ERROR FOUND ?
CLC ;BRANCH IF NOT
BR 50$ ;CLEAR CARRY TO SHOW ERROR
SEC ;AND EXIT
MOV #8,RAMSIZ ;SHOW GOOD COMPARE
RTS PC ;SETUP RAMSIZ FOR PRAMPKT ROUTINE
;RETURN

.SBTTL CKRAM2 - COMPARE RAM TO I/O CHARACTERISTICS DATA

```

SV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CKRAM2 - COMPARE RAM TO I/O CHARACTERISTICS DATA

SEQ 047

```

1268 ;ROUTINE TO READ THE FIRST 8 OR 10 BYTES FROM RAM
1269 ;MEMORY AND COMPARE THIS DATA TO A CHARACTERISTICS DATA BLOCK.
1270 ;
1271 ;INPUT:
1272 ;
1273 ;      R4      ADDRESS OF THE CHARACTERISTICS DATA
1274 ;      R5      FIRST DEVICE UNIBUS ADDRESS
1275 ;
1276 ;OUTPUT:
1277 ;
1278 ;      CARRY   SET - RAM MATCHES PACKET
1279 ;             CLR - RAM DOES NOT MATCH PACKET
1280 ;
1281 ;IMPLICIT OUTPUT:
1282 ;
1283 ;      THE TABLE RAMDATA IS FILLED WITH THE
1284 ;      DATA HELD IN RAM.
1285 ;      RAMSIZ IS SET TO 8. OR 10. FOR PRAMPKT ROUTINE
1286 ;
1287 ;SIDE EFFECTS:
1288 ;
1289 ;      THE SUBSYSTEM IS LEFT IN MAINTENANCE MODE
1290 ;
1291 ;
1292 ;
1293 CKRAM2::
1294 ;
1295 ;      REG
1296 ;      RAMDATA,R1
1297 ;      RMCHBEG,R2
1298 ;      R3
1299 ;      PC,CHKTSSR
1300 ;      00,TSDB(R5)
1301 ;      JSR
1302 ;      PC,CHKTSSR
1303 ;      MOV
1304 ;      TSDB(R5)
1305 ;      JSR
1306 ;      PC,CHKTSSR
1307 ;      MOV
1308 ;      TSDB(R5),(R1)
1309 ;      CMP
1310 ;      (R1)+,(R4)+
1311 ;      BEQ
1312 ;      20$
1313 ;      INC
1314 ;      R3
1315 ;      INC
1316 ;      R2
1317 ;      MOV
1318 ;      08,,RAMSIZ
1319 ;      TST
1320 ;      EXTFEA
1321 ;      BEQ
1322 ;      25$
1323 ;      MOV
1324 ;      10,,RAMSIZ
1325 ;      CMP
1326 ;      R2,RMCHEND
1327 ;      BLE
1328 ;      10$
1329 ;      BR
1330 ;      27$
1331 ;      CMP
1332 ;      R2,RMCHEND-2
1333 ;      BLE
1334 ;      10$
1335 ;      TST
1336 ;      R3
1337 ;      BEQ
1338 ;      30$
1339 ;      CLC
1340 ;      BR
1341 ;      50$
1342 ;      SEC
1343 ;      30$
1344 ;      RTS
1345 ;      PC
1346 ;
1347 ;SAVE THE GENERAL REGISTERS
1348 ;ADDRESS TO SAVE THE RAM DATA
1349 ;BYTE ADDRESS OF FIRST RAM DATA
1350 ;CLEAR THE ERROR FLAG
1351 ;WAIT FOR SSR
1352 ;SET MAINTENANCE MODE
1353 ;WAIT FOR SSR TO SET
1354 ;SELECT NEXT RAM ADDRESS
1355 ;WAIT FOR SSR TO SET
1356 ;READ THE RAM DATA
1357 ;COMPARE TO EXPECTED
1358 ;BRANCH IF OK
1359 ;SET ERROR FLAG
1360 ;ADDRESS OF NEXT RAM LOCATION
1361 ;ASSUME EXTFEA NOT SET
1362 ;IS THE SOFTWARE EXTENDED FEATURES SET
1363 ;BR, IF NOT SET
1364 ;SET RAMSIZ FOR EXTEND FEATURES
1365 ;AT END OF EXTENDED BUFFER
1366 ;BR, IF NOT AT END YET
1367 ;AT END BRANCH
1368 ;REACHED END YET ?
1369 ;BRANCH TILL ALL READ
1370 ;WAS AN ERROR FOUND ?
1371 ;BRANCH IF NOT
1372 ;CLEAR CARRY TO SHOW ERROR
1373 ;AND EXIT
1374 ;SHOW GOOD COMPARE
1375 ;RETURN

```

SV3 - LOCAL AREAS MACRO M1113 01-FEB-84 17:54
CKMSG - COMPARE WRITE CHAR. MESSAGE BUFFERS

SEQ 048

```

132      .SBTTL CKMSG - COMPARE WRITE CHAR. MESSAGE BUFFERS
133
134      ;
135      ; ROUTINE TO COMPARE A WRITE CHARACTERISTICS EXPD AND RECV
136      ; BUFFER. THE EXPECTED AND RECEIVED BUFFERS ARE STORED FOR
137      ; ERROR PRINT ROUTINES.
138
139      ; INPUT:
140      ;
141      ; R0      RECV MESSAGE BUFFER HIGH ORDER ADDRESS
142      ; R1      RECV MESSAGE BUFFER LOW ORDER ADDRESS
143      ; R2      EXPD MESSAGE BUFFER ADDRESS
144
145      ; OUTPUT:
146      ;
147      ; CARRY    SET - MESSAGE BUFFERS MATCH
148      ; CLR      -MESSAGE BUFFERS DON'T MATCH
149
150      ; IMPLICIT OUTPUT:
151      ;
152      ; EXPMSG    BUFFER IS SET TO EXPD DATA
153      ; RECVMSG   BUFFER IS SET TO RECV DATA
154      ; RCVHIADD  SET TO HIGH ORDER ADDRESS OF RECV
155      ; RCVLOAD   SET TO LOW ORDER ADDRESS OF RECV
156
157      CKMSG::
158      SAVREG                                ;SAVE R1-R5 UNTIL NEXT RETURN
159      MOV R0,RCVHIADD                       ;SAVE RECV HIGH ADDRESS
160      MOV R1,RCVLOAD                         ;SAVE RECV LOW ADDRESS
161      TST KTENABLE                          ;TESTING ABOVE 28K?
162      BEQ 10$                               ;BR IF NO
163      JSR PC,SETMAP                         ;RETURN ADDRESS BIASED TO PAR6 IN R0
164      MOV R0,R1                             ;GET RETURNED ADDRESS BIASED TO PAR6
165      10$: CLR R4                           ;WORD IN BUFFER
166      CLR R3                               ;CLEAR ERROR SEEN FLAG
167      MOV R2,R5                             ;GET EXPD BUFFER ADDRESS
168      15$: MOV (R2),EXPMSG(R4)              ;SAVE EXPD FOR ERROR REPORT
169      MOV (R1),RECVMSG(R4)                 ;SAVE RECV FOR ERROR REPORT
170      CMP (R2)+,(R1)+                       ;EXPD EQUAL RECV?
171      BEQ 25$                               ;BR IF YES
172      INC R3                               ;SET ERROR SEEN FLAG
173      25$: ADD #2,R4                        ;POINT TO NEXT WORD ADDRESS
174      CMP R4,#14                            ;DONE FIRST 7 WORDS?
175      BLE 15$                               ;BR IF NO
176      BIT #X2.EXTF,XST2(R5),IS EXTENDED FEATURES SET IN EXPD?
177      BEQ 50$                               ;BR IF NO
178      CMP R4,#16                            ;DONE EXTENDED FEATURES WORD?
179      BLE 15$                               ;BR IF NO
180      50$: TST R3                           ;ANY ERRORS SEEN?
181      BEQ 55$                               ;BR IF NO
182      CLC                                   ;SET FAILURE
183      BR 60$
184      55$: SEC                               ;SET SUCCESS
185      60$: RTS PC                           ;RETURN
186
187      .SBTTL CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

SEQ 049

```

1382
1383
1384 ;ROUTINE TO COMPARE AN EXPECTED AND RECEIVED MESSAGE
1385 ;BUFFER. THE EXPECTED AND RECEIVED BUFFERS ARE STORED FOR
1386 ;ERROR PRINT ROUTINES.
1387
1388 ;INPUT:
1389
1390 ;      R0      RECV MESSAGE BUFFER HIGH ORDER ADDRESS
1391 ;      R1      RECV MESSAGE BUFFER LOW ORDER ADDRESS
1392 ;      R2      EXPD MESSAGE BUFFER ADDRESS
1393 ;      R3      NUMBER OF BYTES TO COMPARE
1394
1395 ;OUTPUT:
1396
1397 ;      CARRY   SET - MESSAGE BUFFERS MATCH
1398 ;             CLR - MESSAGE BUFFERS DON'T MATCH
1399
1400 ;IMPLICIT OUTPUT:
1401
1402 ;      EXPMSG   BUFFER IS SET TO EXPD DATA
1403 ;      RECVMSG  BUFFER IS SET TO RECV DATA
1404 ;      RCVHIADD SET TO HIGH ORDER ADDRESS OF RECV
1405 ;      RCVLOADD SET TO LOW ORDER ADDRESS OF RECV
1406
1407
1408 011400 CKMSG2:: SAVREG ;SAVE R1-R5 UNTIL NEXT RETURN
1409 011400 CMP R3, #RECVMSG-EXPMSG, #000 ;IS COUNT ABOVE MAX ALLOWED?
1410 011404 020327 000144 BLE 5$ ;000 BR IF NO
1411 011410 003412 MOV #RECVMSG-EXPMSG, R3, #000
1412 011412 012703 000144 PRINTF #DEBUGMSG, #000
1413 011416 011416 012746 011532' MOV #DEBUGMSG, -(SP)
1414 011416 011422 012746 000001' MOV #1, -(SP)
1415 011426 010600 MOV SP, R0
1416 011430 104417 TRAP C:PNTF
1417 011432 062706 000004' ADD #4, SP
1418 011436 010037 002274' 5$: MOV R0, RCVHIADD ;SAVE RECV HIGH ADDRESS
1419 011442 010137 002276' MOV R1, RCVLOADD ;SAVE RECV LOW ADDRESS
1420 011446 005737 003124' TST KTENABLE ;TESTING ABOVE 28K?
1421 011452 001403 BEQ 10$ ;BR IF NO
1422 011454 004737 017220' JSR PC, SETMAP ;RETURN ADDRESS BIASED TO PAR6 IN R0
1423 011460 010001 MOV R0, R1 ;GET RETURNED ADDRESS BIASED TO PAR6
1424 011462 005004 10$: CLR R4 ;WORD IN BUFFER
1425 011464 005005 CLR R5 ;CLEAR ERROR SEEN FLAG
1426 011466 111264 002312' 15$: MOV B(R2), EXPMSG(R4) ;SAVE EXPD FOR ERROR REPORT
1427 011472 111164 002456' MOV B(R1), RECVMSG(R4) ;SAVE RECV FOR ERROR REPORT
1428 011476 122221 CMPB (R2)+, (R1)+ ;EXPD EQUAL RECV?
1429 011500 001401 BEQ 25$ ;BR IF YES
1430 011502 005205 INC R5 ;SET ERROR SEEN FLAG
1431 011504 062704 000001' 25$: ADD #1, R4 ;POINT TO NEXT BYTE
1432 011510 020403 CMP R4, R3 ;DONE ALL BYTES?
1433 011512 002001 BGE 50$ ;BR IF YES
1434 011514 000764 BR 15$ ;DO NEXT BYTE
1435 011516 005705 50$: TST R5 ;ANY ERRORS SEEN?
1436 011520 001402 BEQ 55$ ;BR IF NO
1437 011522 000241 CLC ;SET FAILURE

```

L4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

SEQ 050

```

1434 011524 000401
1435 011526 000261
1436 011530 000207
1437
1438 011532 120 122 117 DEBUGMSG: .ASCIZ 'PROGRAM INTERNAL ERROR -CKMSG2 MESSAGE BUFFER EXCEEDED-';@@D
1439 011622 045 116 045 FERCM: .ASCII /NMA ***/
1440 011633 040 040 124 ERCM: .ASCIZ / TSSR ERROR CODE REC'D - /
1441 011666 056 056 056 SIMSG: .ASCIZ /... AFTER DOING SOFT INIT/
1442 011721 124 105 123 TINERR: .ASCIZ /TEST: .../
1443 .EVEN
1444
1445
1446
1447
1448 ;PRINT ROUTINE TO FATAL SOFT INIT ERRORS
1449
1450 ;INPUT:
1451
1452 ; R1 CONTENTS OF TSSR AT ERROR
1453
1454 ;SIDE EFFECTS:
1455
1456 ; EXECUTES DROP UNIT TO CEASE TESTING
1457
1458
1459
1460 011734 BGNMSG SFMSG
1461 011734 SFMSG:: JSR PC,PRITSSR ;PRINT CONTENTS OF TSSR REGISTER
1462 011740 004737 005632' JSR PC,CKDROP ;DROP UNIT, IF ALLOWED
1463 011744 004737 017104' ENDMSG
1464 011744 L10003: TRAP C$MSG
1465 011744 104423
1466
1467 ;PRINT ROUTINE TO PRINT THE CONTENTS OF
1468 ;TSSR AND A COMMAND PACKET OTHER THAN GET STATUS COMMAND PACKET.
1469
1470 ;INPUTS:
1471
1472 ; R1 TSSR CONTENTS
1473 ; R4 ADDRESS OF COMMAND PACKET
1474
1475
1476 011746 BGNMSG PKTSSR
1477 011746 PKTSSR:: JSR PC,PRITSSR ;PRINT THE CONTENTS OF TSSR REGISTER
1478 011752 004737 005632' MOV #4,R0 ;NO. OF WORDS IN PACKET
1479 011756 004737 007270' JSR PC,PRIPKT ;PRINT THE CONTENTS OF COMMAND PACKET
1480 011762 ENDMSG
1481 011762 L10004: TRAP C$MSG
1482 011762 104423
1483
1484 ;PRINT ROUTINE TO PRINT THE CONTENTS OF
;TSSR AND A GET STATUS COMMAND PACKET.

```


M4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CKMSG2 - COMPARE EXPD RECV MESSAGE BUFFERS

SEQ 051

```

1485
1486      ;INPUTS:
1487      ;
1488      ;      R1      TSSR CONTENTS
1489      ;      R4      ADDRESS OF COMMAND PACKET
1490      ;
1491      ; -
1492
1493      BGNMSG  PKTGETS
1494      PKTGETS:
1495      JSR      PC,PRITSSR      ;PRINT THE CONTENTS OF TSSR REGISTER
1496      MOV      #2,R0          ;NO. OF WORDS IN GET STATUS PACKET
1497      JSR      PC,PRIPKT      ;PRINT THE CONTENTS OF COMMAND PACKET
1498      ENDMSG
1499      L10005:
1500      TRAP      C$MSG
1501
1502      ;+
1503      ;PRINT TSSR ERRORS FOR INITIALIZATION TESTS
1504      ;
1505      ;INPUTS:
1506      ;
1507      ;      R1      TSSR CONTENTS
1508      ;      R4      ADDRESS OF COMMAND PACKET
1509      ;
1510      ; -
1511
1512      BGNMSG  SFFMSG
1513      SFFMSG:
1514      JSR      PC,PRITSSR      ;PRINT CONTENTS OF TSSR REGISTER
1515      ENDMSG
1516      L10006:
1517      TRAP      C$MSG
1518
1519      .SBTTL  PKTMES  - PRINT TSSR AND MESSAGE BUFFER
1520      ;+
1521      ;PRINT ROUTINE TO PRINT THE CONTENTS OF TSSR AND MESSAGE
1522      ;BUFFER FOR ERROR REPORTS
1523      ;
1524      ;INPUTS:
1525      ;
1526      ;      R1      CONTENTS OF TSSR
1527      ;      R2      LOW ORDER MESSAGE BUFFER
1528      ;      R3      HIGH ORDER MESSAGE BUFFER ADDRESS
1529      ;      NOTE: R3 IS IGNORED IF KTENABLE FLAG IS CLEAR
1530      ; -
1531
1532      BGNMSG  PKTMES
1533      PKTMES:
1534      JSR      PC,PRITSSR      ;PRINT CONTENTS OF TSSR
1535      MOV      R2,R0          ;LOW ORDER ADDRESS
1536      MOV      R3,R1          ;HIGH ORDER ADDRESS
1537      JSR      PC,PRMESS      ;PRINT THE MESSAGE BUFFER
1538      ENDMSG
1539      L10007:
1540      TRAP      C$MSG

```

N4

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PKTMES - PRINT TSSR AND MESSAGE BUFFER

SEQ 052

```

1533
1534
1535          .SBTTL  ADDSSR  - PRINT TEST ADDRESS AND TSSR
1536          ;
1537          ;PRINT ROUTINE TO PRINT THE CONTENTS OF
1538          ;TSSR AND A MEMORY TEST ADDRESS
1539          ;
1540          ;INPUTS:
1541          ;
1542          ;      R5      FIRST DEVICE UNIBUS ADDRESS
1543          ;      ERRHI   HIGH ORDER MEMORY TEST ADDRESS
1544          ;      ERRLO   LOW ORDER MEMORY TEST ADDRESS
1545          ;
1546
1547          BGNMSG  ADDSSR
1548          ADDSSR: JSR      PC,PRITADD      ;PRINT MEMORY TEST ADDRESS
1549                  MOV     TSSR(R5),R1    ;GET CURRENT TSSR
1550                  JSR     PC,PRITSSR     ;PRINT THE CONTENTS OF TSSR REGISTER
1551                  ENDMMSG
1552          L10010: TRAP     C$MSG
1553
1554          .SBTTL  MSGEXP  - PRINT WRITE CHAR. EXPD-RECV MESSAGE BUFFERS
1555          ;
1556          ;PRINT ROUTINE TO PRINT WRITE CHARACTERISTIC MESSAGE BUFFER
1557          ;
1558          ;IMPLICIT INPUTS:
1559          ;
1560          ;      EXPMSG   EXPECTED MESSAGE BUFFER
1561          ;      RECMSG   - RECEIVED MESSAGE BUFFER
1562          ;      RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1563          ;      RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1564          ;
1565          ;
1566          BGNMSG  MSGEXP
1567          MSGEXP: MOV     #7,R0            ;ASSUME NO EXT FEATURES
1568                  TST     EXTFEA          ;EXT FEATURES SET?
1569                  BEQ     5$              ;BR IF NO
1570                  MOV     #8.,R0         ;EXT FEATURE BUFFER IS 8 WORDS
1571                  JSR     PC,PRMSGEXP     ;PRINT EXPD/RECV MESSAGE BUFFERS
1572                  ENDMMSG
1573          L10011: TRAP     C$MSG
1574
1575          .SBTTL  FIFEXP  - PRINT FIFO EXP/RECV DATA
1576          ;
1577          ;PRINT ROUTINE TO PRINT FIFO EXP/RECV DATA
1578          ;
1579          ;      R1      - BYTE COUNT
1580          ;
1581          ;IMPLICIT INPUTS:
1582          ;
1583          ;      EXPMSG   - EXPECTED MESSAGE BUFFER (CONTAINS FIFO DATA ONLY

```



```

1584      RECMSG - RECEIVED MESSAGE BUFFER (CONTAINS FIFO DATA ONLY)
1585      BGNMSG FIFEXP
1586 012070 FIFEXP::
1587 012070 PRINTX 0FIF1MSG,R1 ;PRINT BYTES TRANSFERRED
1588 012070 010146 MOV R1,-(SP)
1589 012072 012746 012142' MOV 0FIF1MSG,-(SP)
1590 012076 012746 000002 MOV 02,-(SP)
1591 012102 010600 MOV SP,R0
1592 012104 104415 TRAP C1PNTX
1593 012106 062706 000006 ADD 06,SP
1594 012112 PRINTX 0FIF2MSG ;PRINT HEADER MSG
1595 012112 012746 012211' MOV 0FIF2MSG,-(SP)
1596 012116 012746 000001 MOV 01,-(SP)
1597 012122 010600 MOV SP,R0
1598 012124 104415 TRAP C1PNTX
1599 012126 062706 000004 ADD 04,SP
1600 012132 010100 MOV R1,R0 ;GET BYTE COUNT
1601 012134 004737 015022' JSR PC,PRBYTEXP ;PRINT FIFO BYTES IN ERROR
1602 012140 ENDMMSG
1603 012140 104423 L10012: TRAP C1MSG
1604 012142 045 116 045 FIF1MSG: .ASCIZ 'NNA NUMBER OF BYTES TRANSFERRED * #D2'
1605 012211 045 116 045 FIF2MSG: .ASCIZ 'NNA FIFO DATA BYTES IN ERROR:'
1606 .EVEN
1607 .SBTTL MSGSTAT - PRINT STATUS HEADER AND MESSAGE BUFFERS
1608
1609 ;
1610 ;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RECV
1611 ;
1612 ;IMPLICIT INPUTS:
1613 ;
1614 ; EXPMSG - EXPECTED MESSAGE BUFFER
1615 ; RECMSG - RECEIVED MESSAGE BUFFER
1616 ; RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1617 ; RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1618 ;
1619 BGNMSG MSGSTAT
1620 MSGSTAT::
1621 MOV 0STATCOD,R1 ;ASCII ADDRESS TABLE
1622 101: MOV (R1),R0 ;DONE ALL MSG LINES?
1623 BEQ 201 ;BR IF YES
1624 PRINTX R0 ;PRINT STATUS BIT NAMES
1625 MOV R0,-(SP)
1626 MOV 01,-(SP)
1627 MOV SP,R0
1628 TRAP C1PNTX
1629 ADD 04,SP
1630 BR 101 ;DO ANOTHER MSG LINE
1631 201: MOV 010,,R0 ;NUMBER OF WORDS IN A READ STATUS BUFFER
1632 JSR PC,PRMSGEXP ;PRINT EXPD/RECV MESSAGE BUFFERS
1633 ENDMMSG
1634 L10013: TRAP C1MSG

```

C5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
MSGSTAT - PRINT STATUS HEADER AND MESSAGE BUFFERS

SEQ 054

```

1619 012312 012330' 012372' 012463' STATCOD: .WORD 1#,2#,3#,4#,5#,6#,0
1620 012330 045 116 045 1#::ASCIZ 'NMA Tape Bus Signals in Word #8:'
1621 012372 045 116 045 2#::ASCIZ 'NMA PARERR<15> IEOT <12> IFMK <9> IRDY<6> IRWD<2>'
1622 012463 045 116 045 3#::ASCIZ 'NMA IRESV2<14> IIDENT<11> IHER <8> IONL<5> IFBY<1>'
1623 012554 045 116 045 4#::ASCIZ 'NMA IRESV1<13> ICER <10> ISPEED<7> ILDP<4> IFPT<0>'
1624 012645 045 116 045 5#::ASCIZ 'NMA Tape Bus Signals in Word #9:'
1625 012707 045 116 045 6#::ASCIZ 'NMA DATMIS<7> ILW<6> OUTRDY<5> INRDY<4>'
1626 .EVEN

```

.SBTTL MSGLOOP - PRINT LOOPBACK HEADER AND MESSAGE BUFFERS

```

;
;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RCV
;IMPLICIT INPUTS:
;
;EXPMSG - EXPECTED MESSAGE BUFFER
;RCMSG - RECEIVED MESSAGE BUFFER
;RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
;RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
;
;BGNMSG MSGLOOP
MSGLOOP:
MOV @LOOPCOD,R1 ;ASCII ADDRESS TABLE
10$: MOV (R1),R0 ;DONE ALL MSG LINES?
BEQ 20$ ;BR IF YES
PRINTX R0 ;PRINT STATUS BIT NAMES
MOV R0,-(SP)
MOV @1,-(SP)
MOV SP,R0
TRAP C$PNTX
ADD @4,SP
BR 10$ ;DO ANOTHER MSG LINE
20$: MOV @10,R0 ;NUMBER OF WORDS IN A READ STATUS BUFFER
JSR PC,PRMSGEXP ;PRINT EXPD/RCV MESSAGE BUFFERS
ENDMSG
L10014: TRAP C$MSG

```

```

1651
1652 013026 013046' 013121' 013220' LOOPCOD: .WORD 1#,2#,3#,4#,5#,6#,7#,0
1653 013046 045 116 045 1#::ASCIZ 'NMA Tape Bus Loopback Signals in Word #8:'
1654 013121 045 116 045 2#::ASCIZ 'NMA PARERR<15> IRESV2<14> IRESV1<13>'
1655 013220 045 116 045 3#::ASCIZ 'NMA IHISP->IEOT<12> IWRT->IIDENT<11> IREV ->ICER <10>'
1656 013317 045 116 045 4#::ASCIZ 'NMA IWMF ->IFMK<09> IEDIT->IHER <08> IFAD ->ISPEED<07>'
1657 013416 045 116 045 5#::ASCIZ 'NMA ITADO->IRDY<06> ITAD1->IONL <05> IERASE->ILDP <04>'
1658 013515 045 116 045 6#::ASCIZ 'NMA IREW ->IDBY<03> IRWU ->IRWD <02> IFEN ->IFBY <01>'
1659 013614 045 116 045 7#::ASCIZ 'NMA IGO ->IFPT<00>'
1660 .EVEN

```

.SBTTL MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER

```

;
;PRINT ROUTINE TO PRINT MESSAGE BUFFER EXPD/RCV
;

```

D5

TSV3 - GLOBAL AREAS MACBO M1113 01-FEB-84 17:54
MSGSUB - PRINT WRITE SUBSYSTEM MESSAGE BUFFER

SEQ 055

```

1668 ;IMPLICIT INPUTS:
1669 ;
1670 ;     EXPMSG - EXPECTED MESSAGE BUFFER
1671 ;     RECMSG - RECEIVED MESSAGE BUFFER
1672 ;     RCVHIADD- RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1673 ;     RCVLOADD- RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1674 ;
1675 013642 ;
1676 013642 ;     BGNMSG MSGSUB
1677 013642 012700 000012 MSGSUB: ;
1678 013646 004737 014452' ;     MOV #10.,R0 ;SIZE OF WRITE SUBSYSTEM BUFFER.
1679 013652 ;     JSR PC,PRMSGEXP ;PRINT EXPD/RCV MESSAGE BUFFERS
1680 013652 ;     ENDMMSG
1681 013652 104423 L10015: ;
1682 ;     TRAP C#MSG
1683 ;
1684 ;.SBTTL MEMADD - PRINT MEMORY ADDRESS DATA ERROR
1685 ;
1686 ;PRINT ROUTINE TO PRINT MEMORY ADDRESS DATA COMPARE ERROR
1687 ;
1688 ;IMPLICIT INPUTS:
1689 ;
1690 ;     ERRHI - MEMORY ERROR HIGH ORDER ADDRESS
1691 ;     ERRLO - MEMORY ERROR LOW ORDER ADDRESS
1692 ;     EXP - EXPECTED DATA
1693 ;     RECV - RECEIVED DATA
1694 ;
1695 ;
1696 013654 ;     BGNMSG MEMADD
1697 013654 ;
1698 013654 004737 010060' MEMADD: ;
1699 013660 013701 002222' ;     JSR PC,PRIADD ;PRINT MEMORY ADDRESS IN ERROR
1700 013664 013702 002224' ;     MOV EXPD,R1 ;GET EXPD DATA
1701 013670 004737 007642' ;     MOV RECV,R2 ;GET RECEIVED DATA
1702 013674 ;     JSR PC,PRI XOR ;PRINT EXPD/RCV
1703 013674 ;     ENDMMSG
1704 013674 104423 L10016: ;
1705 ;     TRAP C#MSG
1706 ;
1707 ;.SBTTL PRAMPKT - PRINT RAM AND PACKET DATA
1708 ;
1709 ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1710 ;WHEN THE RAM DATA DOES NOT MATCH.
1711 ;
1712 ;INPUTS:
1713 ;
1714 ;     R4 POINTER TO COMMAND PACKET
1715 ;
1716 ;IMPLICIT INPUTS:
1717 ;
1718 ;     RAMDATA DATA AS READ FROM THE RAM
1719 ;     RAMSIZ NUMBER OF BYTES IN PACKET
1720 ;     IF RAMSIZ=0 THEN DEFAULT TO 8.

```

E5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 PRAMPKT - PRINT RAM AND PACKET DATA

SEQ 056

```

1719      ;IMPLICIT OUTPUTS:
1720      ;
1721      ;      RAMSIZ  SET TO 0
1722      ;
1723
1724 013676      PRAMPKT:
1725 013676      SAVREG
1726 013702 012701 002232'      MOV      #RAMDATA,R1      ;SAVE R1-R5 UNTIL NEXT RETURN
1727 013706 005002      CLR      R2      ;DATA FROM THE RAM
1728 013710 122124      5$:      CMPB      (R1)+,(R4)+      ;INIT BYTE NUMBER
1729 013712 001005      BNE      7$      ;COMPARE EXPECTED, RECEIVED
1730 013714      FORCERHOR      7$,NOTSSR      ;BR IF NO MATCH
1731 013724 000436      BR      10$      ;
1732 013726 116105 177777      7$:      MOVB      -1(R1),R5      ;GET RECV RAM DATA
1733 013732 116403 177777      MOVB      -1(R4),R3      ;GET EXPD PACKET DATA
1734 013736      XOR      R5,R3      ;XOR EXPD/RECV
1735 013746 042703 177400      BIC      #177400,R3      ;LOW BYTE ONLY
1736 013752 116137 177777 002224'      MOVB      -1(R1),RECV      ;GET RECEIVED RAM DATA
1737 013760 116437 177777 002222'      MOVB      -1(R4),EXPD      ;GET EXPECTED RAM DATA
1738 013766      PRINTB      #RAMASC,R2,RECV,EXPD,R3
1739      013766 010346      MOV      R3,-(SP)
1740      013770 013746 002222'      MOV      EXPD,-(SP)
1741      013774 013746 002224'      MOV      RECV,-(SP)
1742      014000 010246      MOV      R2,-(SP)
1743      014002 012746 014056'      MOV      #RAMASC,-(SP)
1744      014006 012746 000005      MOV      #5,-(SP)
1745      014012 010600      MOV      SP,R0
1746      014014 104414      TRAP      C$PN1B
1747      014016 062706 000014      ADD      #14,SP
1748      014022 005202      10$:      INC      R2      ;UPDATE BYTE COUNT
1749      014024 005737 002272'      TST      RAMSIZ      ;DEFAULT TO 8.?
1750      014030 001404      JEQ      15$      ;BR IF YES
1751      014032 020237 002272'      CMP      R2,RAMSIZ      ;DONE ALL BYTES?
1752      014036 003724      BLE      5$      ;BR IF NO
1753      014040 000403      BR      25$      ;
1754      014042 020227 000010      15$:      CMP      R2,#8.      ;DONE DEFAULT NUMBER OF BYTES?
1755      014046 002720      20$:      BLT      5$      ;BR IF NO
1756      014050 005037 002272'      25$:      CLR      RAMSIZ      ;SET DEFAULT RAMSIZ
1757      014054 000207      RTS      PC      ;RETURN
1758
1759      1750 014056      045      116      045      RAMASC: .ASCIZ      '##A BYTE: #D2A RAM: #03A Packet: #03A XOR:#03'
1760      1751      .EVEN
1761
1762      .SBTTL      PRMESS - PRINT CONTENTS OF MESSAGE BUFFER
1763      ;
1764      ;      THIS ROUTINE PRINTS THE CONTENTS OF
1765      ;      THE 7 OR 8 WORD MESSAGE BUFFER RETURNED BY THE
1766      ;      TSV-05.
1767      ;
1768      ;      INPUT:
1769      ;
1770      ;      R0      LOW ORDER ADDRESS OF MESSAGE BUFFER
1771      ;      R1      HIGH ORDER ADDRESS OF MESSAGE BUFFER
1772      ;      NOTE: R1 IS IGNORED IF KTENABLE FLAG IS CLEAR
1773      ;
1774      ;      THIS ROUTINE IS NORMALLY CALLED FROM A PRINT ROUTINE

```

F5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 PRMESS - PRINT CONTENTS OF MESSAGE BUFFER

SEQ 057

```

1767      ;
1768      ; -
1769
1770      PRMESS:
1771      SAVREG
1772      MOV R0,R5 ;SAVE THE REGISTERS
1773      TST KTENABLE ;SAVE LOW ORDER ADDRESS
1774      BNE 10$ ;ADDRESS ABOVE 28K?
1775      CLR R1 ;BR IF YES
1776      MOV R1,R3 ;SET HIGH ORDER ADDRESS TO 0
1777      ROL R0 ;SAVE HIGH ORDER ADDRESS
1778      ROL R1 ;SHIFT BIT15 TO C BIT
1779      PRINTX @PROASC,R1,R5 ;SHIFT TO HIGH ORDER FOR PRINTOUT
1780      MOV R5,-(SP) ;PRINT MESSAGE BUFFER ADDRESS
1781      MOV R1,-(SP)
1782      MOV @PROASC,-(SP)
1783      MOV @3,-(SP)
1784      MOV SP,R0
1785      TRAP C$PNTX
1786      ADD @10,SP
1787      PRINTX @PR1ASC ;PRINT HEADER FOR CONTENTS
1788      MOV @PR1ASC,-(SP)
1789      MOV @1,-(SP)
1790      MOV SP,R0
1791      TRAP C$PNTX
1792      ADD @4,SP
1793      CLR R4 ;NUMBER OF THE NEXT WORD
1794      MOV R5,R1 ;COPY LOW ORDER ADDRESS
1795      MOV R3,R0 ;COPY HIGH ORDER ADDRESS
1796      BEQ 20$ ;BR IF NOT ABOVE 28K
1797      JSR PC,SETMAP ;SETUP PAR ADDRESS IN R0
1798      MOV R0,R5 ;GET PAR FORMAT ADDRESS ABOVE 28K
1799      PRINTX @PRASC,R4,(R5)+ ;PRINT THE CONTENTS OF MEMORY BUFFER
1800      MOV (R5)+,-(SP)
1801      MOV R4,-(SP)
1802      MOV @PRASC,-(SP)
1803      MOV @3,-(SP)
1804      MOV SP,R0
1805      TRAP C$PNTX
1806      ADD @10,SP
1807      INC R4 ;NUMBER OF THE NEXT
1808      CMP R4,@7 ;DONE ALL YET ?
1809      BGT 50$ ;BRANCH IF ALL DONE
1810      BLT 20$ ;PRINT FIRST 7 WORDS
1811      BIT @X2,EXTF,XST2(R3) ;EXTENDED FEATUTES ON ?
1812      BNE 20$ ;PRINT EXTENDED STATUS WORD
1813      RTS PC ;RETURN
1814
1815      20$:
1816      PRINTX @PRASC,R4,(R5)+
1817      MOV (R5)+,-(SP)
1818      MOV R4,-(SP)
1819      MOV @PRASC,-(SP)
1820      MOV @3,-(SP)
1821      MOV SP,R0
1822      TRAP C$PNTX
1823      ADD @10,SP
1824      INC R4 ;NUMBER OF THE NEXT
1825      CMP R4,@7 ;DONE ALL YET ?
1826      BGT 50$ ;BRANCH IF ALL DONE
1827      BLT 20$ ;PRINT FIRST 7 WORDS
1828      BIT @X2,EXTF,XST2(R3) ;EXTENDED FEATUTES ON ?
1829      BNE 20$ ;PRINT EXTENDED STATUS WORD
1830      RTS PC ;RETURN
1831
1832      50$:
1833      PROASC: .ASCIZ '##A Message Buffer Address = #01#05'
1834      PR1ASC: .ASCIZ '##A Message Buffer Contents:'
1835      PRASC: .ASCIZ '##A Word#D1#A: #0'
1836      .EVEN
1837
1838      .SBTTL PRMSGEXP - PRINT EXPD/RECV MESSAGE BUFFERS
1839      ;*
1840      ;
1841      ;ROUTINE TO PRINT EXPECTED AND RECEIVED MESSAGE BUFFERS

```

G5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PRMSGEXP - PRINT EXPD/RECV MESSAGE BUFFERS

SEQ 058

```

1805
1806      ;      RO      - NUMBER OF WORDS IN BUFFER
1807
1808      ;IMPLICIT INPUTS:
1809
1810      ;      EXPMSG    - EXPECTED MESSAGE BUFFER
1811      ;      RECMSG    - RECEIVED MESSAGE BUFFER
1812      ;      RCVHIADD - RECEIVED MESSAGE BUFFER HIGH ORDER ADDRESS
1813      ;      RCVLOADD - RECEIVED MESSAGE BUFFER LOW ORDER ADDRESS
1814
1815      ;-
1815      PRMSGEXP::
1816      SAVREG                                ;SAVE R1-R5 UNTIL NEXT RETURN
1817      MOV      RO,R5                        ;SAVE NUMBER OF WORDS
1818      MOV      RCVLOADD,RO                  ;GET RECV LOW ADDRESS
1819      MOV      RO,R4                        ;COPY LOW ADDRESS
1820      MOV      RCVHIADD,R1                  ;GET RECV HIGH ADDRESS
1821      ROL      R0                            ;SHIFT BIT15 TO C BIT
1822      ROL      R1                            ;SHIFT TO HIGH ORDER FOR PRINTOUT
1823      PRINTX   #PRMSG0,R1,R4                ;PRINT MESSAGE BUFFER ADDRESS
1824      MOV      R4,-(SP)
1825      MOV      R1,-(SP)
1826      MOV      #PRMSG0,-(SP)
1827      MOV      #3,-(SP)
1828      MOV      SP,RO
1829      TRAP     C#PNTX
1830      ADD      #10,SP
1831      PRINTX   #PRMSG1                        ;PRINT HEADER FOR CONTENTS
1832      MOV      #PRMSG1,-(SP)
1833      MOV      #1,-(SP)
1834      MOV      SP,RO
1835      TRAP     C#PNTX
1836      ADD      #4,SP
1837      CLR      R4                            ;NUMBER OF THE CURRENT WORD
1838      MOV      #EXPMSG,R1                    ;GET EXPD BUFFER ADDRESS
1839      MOV      #RECMSG,R2                    ;GET RECV BUFFER ADDRESS
1840      20$:    MOV      (R1),R0                ;GET EXPD
1841      MOV      (R2),R3                        ;GET RECV
1842      XOR      R0,R3                          ;XOR EXPD/RECV
1843      PRINTX   #PRMSG2,R4,(R1)+,(R2)+,R3
1844      MOV      R3,-(SP)
1845      MOV      (R2)+,-(SP)
1846      MOV      (R1)+,-(SP)
1847      MOV      R4,-(SP)
1848      MOV      #PRMSG2,-(SP)
1849      MOV      #5,-(SP)
1850      MOV      SP,RO
1851      TRAP     C#PNTX
1852      ADD      #14,SP
1853      INC      R4                            ;NUMBER OF THE NEXT
1854      CMP      R4,R5                        ;DONE ALL YET?
1855      BGE      50$                          ;BR IF YES
1856      BR       20$                          ;DO ANOTHER
1857      50$:    RTS      PC                    ;RETURN
1858
1859      045      PRMSG0: .ASCIZ 'NNA Message Buffer Address * 0105'
1860      045      PRMSG1: .ASCIZ 'NNA Message Buffer Contents:'
1861      045      PRMSG2: .ASCIZ 'NNA WORD *D2NA EXPD: *06NA RECV: *06NA XOR: *06'

```


H5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
PRMSGEXP - PRINT EXPD/RCV MESSAGE BUFFERS

SEQ 059

```

1841                                     ,EVEN
1842
1843                                     ,SBTTL PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER
1844
1845                                     ;+
1846                                     ;ROUTINE TO PRINT ERROR BYTES IN MESSAGE BUFFERS
1847                                     ; ONLY THE FIRST 8 ERRORS ENCOUNTERED ARE PRINTED DUE TO SCREEN SPACE
1848
1849                                     ; RO - NUMBER OF BYTES IN BUFFER
1850
1851                                     ;IMPLICIT INPUTS:
1852
1853                                     ; EXPMSG - EXPECTED MESSAGE BUFFER
1854                                     ; RECMSG - RECEIVED MESSAGE BUFFER
1855
1856 PRBYTEXP::
1857     SAVREG                                     ;SAVE R1-R5 UNTIL NEXT RETURN
1858     MOV R0,R5                                     ;SAVE NUMBER OF BYTES
1859     CLR PRMNO                                     ;INIT ERROR COUNT
1860     CLR R4                                         ;NUMBER OF THE CURRENT BYTE
1861     MOV #EXPMSG,R1                                 ;GET EXPD BUFFER ADDRESS
1862     MOV #RECMSG,R2                                 ;GET RCV BUFFER ADDRESS
1863     MOV (R1),R0                                     ;GET EXPD BYTE
20$:     BIC #C<377>,R0                                 ;CLEAR UPPER BYTE
1864     MOV R0,PRBEXP                                 ;SAVE FOR ERROR REPORT
1865     MOV (R2),R3                                     ;GET RCV BYTE
1866     BIC #C<377>,R3                                 ;CLEAR UPPER BYTE
1867     MOV R3,PRBREC                                 ;FOR ERROR REPORT
1868     XOR R0,R3                                     ;XOR EXPD/RCV
1869     CMPB (R1)+,(R2)+                               ;EXPD = RCV?
1870     BEQ 30$                                       ;BR IF YES
1871     INC PRMNO                                     ;UPDATE ERROR COUNT
1872     CMP PRMNO,#8.                                ;PRINTED 8?
1873     BHI 30$                                       ;BR IF YES
1874     PRINTX #PRBMSG,R4,PRBEXP,PRBREC,R3
27$:     MOV R3,-(SP)
1875     MOV PRBREC,-(SP)
1876     MOV PRBEXP,-(SP)
1877     MOV R4,-(SP)
1878     MOV #PRBMSG,-(SP)
1879     MOV #5,-(SP)
1880     MOV SP,R0
1881     TRAP C#PNTX
1882     ADD #14,SP
1883     FORCEEXIT 50$                                ;END
1884     BR 35$                                       ;END
30$:     FORCERROR 27$,NOTSSR                      ;END
35$:     INC R4                                     ;NUMBER OF THE NEXT
1881     CMP R4,R5                                   ;DONE ALL YET?
1882     BGE 50$                                       ;BR IF YES
1883     BR 20$                                       ;DO ANOTHER
1884     PRINTX #PRBTOT,PRMNO                         ;PRINT TOTAL ERROR COUNT
50$:     MOV PRMNO,-(SP)
1885     MOV #PRBTOT,-(SP)
1886     MOV #2,-(SP)

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 PRBYTEXP - PRINT ERROR BYTES IN EXP/REC MESSAGE BUFFER

SEQ 060

```

      015224 010600      MOV SP,R0
      015226 104415      TRAP C$PNTX
      015230 062706 000006 ADD 06,SP
1886 015234 000207      RTS PC ;RETURN
1887
1888 015236 045 116 045 PRBMSG: .ASCIZ 'N#A BYTE 0#D2#A EXPD: #03#A RECV: #03#A XOR: #03'
1889 015323 045 116 045 PRBTOT: .ASCIZ 'N#A NUMBER OF BYTES IN ERROR = #D2'
1890
1891 015370 000000      PRBEXP: .WORD 0 ;EXPD
1892 015372 000000      PRBREC: .WORD 0 ;RECV
1893
1894      .SBTTL EXPREC - PRINT EXPD/RECV WORD DATA
1895      ;+
1896      ;
1897      ;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
1898      ;
1899      ;INPUTS:
1900      ;
1901      ; R1 RECEIVED DATA
1902      ; R2 EXPECTED DATA
1903      ;
1904      ;-
1905
1906 015374      BGNMSG EXPREC
1907 015374 004737 007642' EXPREC: ; JSR PC,PRIXOR ;PRINT THE DATA
1908 015400      ENDMSG
1909 015400 104423      L10017: TRAP C$MSG
1910
1911
1912
1913      .SBTTL EXPBREC - PRINT EXPD/RECV BYTE DATA
1914      ;+
1915      ;
1916      ;PRINT ROUTINE TO DISPLAY BYTE EXPD/RECV DATA
1917      ;
1918      ;INPUTS:
1919      ;
1920      ; R1 RECEIVED DATA BYTE
1921      ; R2 EXPECTED DATA BYTE
1922      ;
1923      ;-
1924
1925
1926 015402      BGNMSG EXPBREC
1927 015402 004737 007512' EXPBREC: ; JSR PC,PRIBXOR ;PRINT THE DATA
1928 015406      ENDMSG
1929 015406 104423      L10020: TRAP C$MSG
1930
1931
1932
1933      .SBTTL RAMERR - PRINT RAM AND PACKET DATA

```


J5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 RAMERR - PRINT RAM AND PACKET DATA

SEQ 061

```

1934
1935
1936      ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1937      ;
1938      ;INPUTS:
1939      ;
1940      ;      R4      POINTER TO COMMAND PACKET
1941      ;
1942      ;IMPLICIT INPUTS:
1943      ;
1944      ;      RAMDATA      DATA AS READ FROM THE RAM
1945      ;      RAMSIZ      NUMBER OF BYTES IN PACKET
1946      ;                  IF RAMSIZ=0 THEN DEFAULT TO 8.
1947      ;
1948      ;IMPLICIT OUTPUTS:
1949      ;
1950      ;      RAMSIZ  SET TO 0
1951      ;
1952      ;
1953      BGNMSG  RAMERR
1954      RAMERR: JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
1955      ENDMSG
1956      L10021: TRAP      C#MSG
1957
1958      .SBTTL  RAMTADD - PRINT TEST ADDRESS, RAM AND PACKET DATA
1959      ;
1960      ;PRINT ROUTINE TO DISPLAY RAM/PACKET DATA
1961      ;
1962      ;INPUTS:
1963      ;
1964      ;      R4      POINTER TO COMMAND PACKET
1965      ;
1966      ;IMPLICIT INPUTS:
1967      ;
1968      ;      RAMDATA      DATA AS READ FROM THE RAM
1969      ;      RAMSIZ      NUMBER OF BYTES IN PACKET
1970      ;                  IF RAMSIZ=0 THEN DEFAULT TO 8.
1971      ;      ERRHI      HIGH ORDER TEST ADDRESS
1972      ;      ERRLO      LOW ORDER TEST ADDRESS
1973      ;
1974      ;IMPLICIT OUTPUTS:
1975      ;
1976      ;      RAMSIZ  SET TO 0
1977      ;
1978      ;
1979      BGNMSG  RAMTADD
1980      RAMTADD: JSR      PC,PRITADD      ;PRINT TEST ADDRESS
1981      JSR      PC,PRAMPKT      ;PRINT RAM/PACKET DATA
1982      ENDMSG
1983      L10022: TRAP      C#MSG
1984

```

K5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 RAMTADD - PRINT TEST ADDRESS, RAM AND PACKET DATA

SEQ 062

```

1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998 015430
      015430
1999 015430 042701 177400
2000 015434 042702 177400
2001 015440 004737 007766'
2002 015444 004737 007642'
2003 015450
      015450
      015450 104423
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017 015452
      015452
2018 015452
      015452 012746 015500'
      015456 012746 000001
      015462 010600
      015464 104415
      015466 062706 000004
2019 015472 004737 007642'
2020 015476
      015476
      015476 104423
2021
2022
2023 015500 045 116 045 TIMSGO: .ASCIZ 'NNA TIMER A STATUS IS IN BIT 3NNA TIMER B STATUS IS IN BIT 2'
2024 .EVEN
2025
2026
2027
2028
2029
2030

```

```

      .SBTTL  RAMEXP  - PRINT RAM EXPD/RECV DATA
;+
;
;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
;
;INPUTS:
;
;      R1      RECEIVED DATA
;      R2      EXPECTED DATA
;      R4      CONTROLLER RAM ADDRESS
;-
      BGNMSG  RAMEXP
RAMEXP::
      BIC     0+C<377>,R1          ;SAVE EXPD RAM DATA BYTE
      BIC     0+C<377>,R2          ;SAVE EXPD RAM DATA BYTE
      JSR     PC,PRIRAM            ;PRINT THE RAM ADDRESS
      JSR     PC,PRIXOR            ;PRINT THE DATA
      ENDMSG
L10023:
      TRAP    C$MSG

      .SBTTL  TIMEXP  - PRINT TIMER A,B AND EXP/REC
;+
;
;PRINT ROUTINE TO DISPLAY EXPD/RECV DATA
;AND TIMER A,B HEADER MESSAGE
;
;INPUTS:
;
;      R1      RECEIVED DATA
;      R2      EXPECTED DATA
;-
      BGNMSG  TIMEXP
TIMEXP::
      PRINTX  0TIMSGO              ;PRINT HEADER
      MOV     0TIMSGO,-(SP)
      MOV     01,-(SP)
      MOV     SP,R0
      TRAP    C$PNTX
      ADD     04,SP
      JSR     PC,PRIXOR            ;PRINT THE DATA
      ENDMSG
L10024:
      TRAP    C$MSG

      .SBTTL  BADSSR  - PRINT TSSR ERRORS ON DATA TRANSFERS
;+
;

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 BADSSR - PRINT TSSR ERRORS ON DATA TRANSFERS

SEQ 063

```

2031 ;PRINT ROUTINE FOR TSSR ERRORS ON DATA TRANSFERS
2032 ;
2033 ;INPUTS:
2034 ;
2035 ;      R1      CONTENTS OF TSSR
2036 ;      R2      DATA WRITTEN (8 BITS)
2037 ;
2038 ;-
2039
2040      BGNMSG  BADSSR
2041      BADSSR:
2042      MOV     R2, -(SP) ;SAVE DATA TRANSFERRED
2043      BIC     @177400,R2 ;GET JUST ONE BYTE
2044      PRINTB  @XFERASC,R2
2045      MOV     R2, -(SP)
2046      MOV     @XFERASC, -(SP)
2047      MOV     @2, -(SP)
2048      MOV     SP,R0
2049      TRAP    C:PNTB
2050      ADD     @6,SP
2051      MOV     (SP)+,R2 ;RESTORE R2
2052      JSR     PC,PRITSSR ;DECODE TSSR CONTENTS
2053      ENDMMSG
2054
2055      L10025:
2056      TRAP    C:MSG
2057      .ASCIZ  'NMA Data Transferred = #03'
2058
2059      045  XFERASC:
2060
2061      .SBTTL  GLOBAL SUBROUTINES SECTION
2062
2063      ;+
2064      ; THE GLOBAL SUBROUTINES SECTION CONTAINS THE SUBROUTINES
2065      ; THAT ARE USED IN MORE THAN ONE TEST.
2066      ;--
2067
2068      .SBTTL  SOFINIT - SOFT INITIALIZE OF CONTROLLER
2069
2070      ;+
2071      ; ROUTINE TO DO A SOFT INITIALIZE OF THE CONTROLLER
2072      ; BY WRITING INTO THE TSSR REGISTER. AFTER THE INIT,
2073      ; THE TSSR REGISTER IS TESTED FOR ERRORS. ANY ERRORS
2074      ; DETECTED SHOULD BE TREATED AS DEVICE FATAL ERRORS.
2075      ;
2076      ;INPUTS:
2077      ;
2078      ;      R5      ADDRESS OF FIRST REGISTER
2079      ;
2080      ;OUTPUTS:
2081      ;
2082      ;      R0      CONTENTS OF TSSR, IF ERROR
2083      ;      CARRY   SET IF INIT WAS OKAY
2084      ;              CLEAR IF FATAL ERROR
2085      ;
2086      ;CALLING SEQUENCE:
2087      ;
2088      ;      MOV     @ADDRESS,R5

```

M5

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
SOFINIT - SOFT INITIALIZE OF CONTROLLER

SEQ 064

```

2079      ;      JSR      PC,SOFINIT
2080      ;      BCS      CONTINUE
2081      ;      ERDF      ;REPORT FATAL ERROR
2082      ;
2083      ; -
2084
2085 015674      SOFINIT:
2086 015674      SAVREG      ; SAVE THE REGISTERS
2087 015700 012765 000000 000002      MOV      #0,TSSR(R5)      ; DO THE INIT.
2088 015706 004737 016150      JSR      PC,WAITF      ; WAIT FOR SSR
2089 015712 016500 000002      MOV      TSSR(R5),R0      ; GET THE TSSR REGISTER
2090 015716 010004      MOV      R0,R4      ; TSSR CONTENTS
2091 015720 042704 176277      BIC      #C<HIADDR!OFL>,R4
2092 015724 052704 002200      BIS      #SSR!NBA,R4      ; R4 HAS EXPECTED CONTENTS
2093 015730 020400      CMP      R4,R0      ; ONLY EXPECTED BITS SET ?
2094 015732 001402      BEQ      5$      ; BRANCH IF OKAY
2095 015734 000241      CLC      ; CLEAR THE CARRY FOR ERROR
2096 015736 000401      BR      10$      ; GO TO EXIT
2097 015740 000261      5$:      SEC      ; SET THE CARRY BIT
2098 015742 000207      10$:      RTS      PC      ; RETURN TO CALLER
2099
2100      .SBTTL  CHKAMB - CHECK TSSR FOR AMBIGUITY
2101
2102      ;
2103      ;
2104      ; THIS ROUTINE TESTS THE CONTENTS OF THE TSSR REGISTER
2105      ; FOR AMBIGUITY
2106      ;
2107      ; INPUT:
2108      ;
2109      ;      R0      CONTENTS OF TSSR
2110      ;
2111      ; OUTPUT:
2112      ;
2113      ;      R0      CONTENTS OF TSSR
2114      ;
2115      ;      CARRY   SET - NO AMBIGUITY
2116      ;              CLR - AMBIGUOUS CONTENTS
2117      ;
2118      ; -
2119
2120 015744      CHKAMB:
2121 015744      SAVREG      ; SAVE THE GENERAL REGISTERS
2122 015750 010004      MOV      R0,R4      ; CONTENTS OF TSSR
2123 015752 032700 100000      BIT      #SC,R0      ; IS BIT 15 SET ?
2124 015756 001004      BNE      5$      ; BRANCH IF YES
2125 015760 032700 174077      BIT      #C<NBA!OFL!SSR!HIADDR>,R0      ; ANY OTHER BITS SET ?
2126 015764 001023      BNE      40$      ; MUST BE AN ERROR
2127 015766 000424      BR      45$      ; RETURN WITH SUCCESS
2128 015770 032700 000200      5$:      BIT      #SSR,R0      ; IS READY BIT SET ?
2129 015774 001011      BNE      10$      ; BRANCH IF READY BIT IS SET.
2130 015776 032700 000040      BIT      #BIT5,R0      ; IS FATAL ERROR BIT SET ?
2131 016002 001414      BEQ      40$      ; ERROR IF NOT
2132 016004 042704 177761      BIC      #CTERCLS,R4      ; CLEAR ALL BUT TERMINATION CODE
2133 016010 020427 000016      CMP      R4,#16      ; ALL THREE BITS MUST BE SET
2134 016014 001007      BNE      40$      ; ERROR IF NOT SET
2135 016016 000410      BR      45$      ; OK IF ALL ARE SET

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-34 17:54
CHIKAMB - CHECK TSSR FOR AMBIGUITY

SEQ 065

```

2136 016020 032700 000040 10$: BIT #BIT5,RO ;IS FATAL ERROR BIT SET ?
2137 016024 001405 BEQ 45$ ;ERROR IF BIT IS SET WITH SSR
2138 016026 032700 000006 BIT #BIT2!BIT1,PO ;IS THIS A FUNCTION REJECT
2139 016032 001002 BNE 45$ ;BR, IF TSSR IS OK
2140 016034 000241 40$: CLC ;AMBIGUOUS CONTENTS
2141 016036 000401 BR 50$
2142 016040 000261 45$: SEC ;SHOW SUCCESS - NO AMBIGUITY
2143 016042 000207 50$: RTS PC ;RETURN TO CALLER
2144
2145 ;.SBTTL ENAINT,DSBINT - ENABLE/DISABLE INTERRUPTS
2146
2147 ;
2148 ; DEFAULT DISPLAY INTERRUPT HANDLERS.
2149 ; IF DISPLAY TIME-OUT, REPORT DEV FATAL, AND ABORT PASS.
2150 ; OTHERWISE, SAVE DPU REGISTERS AND DISM-TSS.
2151 ;
2152 ; BIT DEFINITIONS FOR "INTMASK" AND "INTFLAG" BYTES:
2153 ;
2154 000200 IOKCKIN=BIT7 ; DON'T CHECK FOR BAD INTERRUPTS -- TEST WILL.
2155 000001 IOKSTP=BIT0 ; EXPECT "STOP" INTERRUPT.
2156 ;
2157 ;INTERRUPT MASK -- SAYS EXPECTING INTERRUPTS
2158 016044 000 INTMASK: .BYTE 0
2159 ;INTERRUPT FLAG -- SAYS WE GOT ONE (IF POSITIVE)
2160 016045 000 INTFLAG: .BYTE 0
2161
2162 ;SAVED INTERRUPT VECTOR:
2163 016046 000000 INTVEC: .WORD 0
2164 ;SAVE CPU PC
2165 016050 000000 INTCPC: .WORD 0
2166
2167 ;SUBROUTINE TO ENABLE INTERRUPTS:
2168 016052 010046 ENAINT: MOV RO,-(SP) ;SAVE RO
2169 016054 013700 002200' MOV IVEC,RO ;GET POINTER TO VECTORS
2170 016060 012720 016116' MOV #INTR,(RO) ;SET UP INTERRUPT VECTOR
2171 016064 012720 000340 MOV #PRI07,(RO)
2172 016070 012600 MOV (SP)+,RO ;RESTORE RO
2173 016072 011646 MOV (SP),-(SP)
2174 016074 012766 000000 000002 MOV #0,2(SP) ;SET CPU TO LEVEL 0
2175 016102 000002 RTI
2176
2177 ;SUBROUTINE TO DISABLE INTERRUPTS (RAISE PRIORITY TO LEVEL 7)
2178 016104 011646 DSBINT: MOV (SP),-(SP)
2179 016106 012766 000340 000002 MOV #PRI07,2(SP)
2180 016114 000002 RTI
2181
2182 ;.SBTTL INTR - INTERRUPT HANDLERS
2183
2184 016116 BGNSRV INTR ;DEFINE INTERRUPT ENTRY
2185 016116 INTR:: MOV #1,INTRECV ;SET FLAG TO SHOW INTERRUPT RECEIVED
2186 016124 105037 016045' CLRB INTFLAG ;CLEAR FLAG TO SAY WE GOT INTERRUPT
2187 016130 132737 000001 016044' BITB #IOKSTP,INTMASK ;EXPECTING STOP INTERRUPT?
2188 016136 001003 BNE 1$ ;BR IF YES
2189 016140 152737 000001 016045' BISB #IOKSTP,INTFLAG ;NO, SET THE ERROR FLAG.
2190
2191 ;SAVE REGISTERS, MSG BUFFER, ETC.

```

```

2192 016146
2193 016146
      016146
      016146 000002
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209 016150 000401
2210 016152
      016152 104422
2211 016154 012746 011000
2212 016160 016500 000002
2213 016164 105700
2214
2215 016166 100420
2216 016170
      016170 012727 000001
      016174 000000
      016176 013727 002116
      016202 000000
      016204 005367 177772
      016210 001375
      016212 005367 177756
      016216 001367
2217 016220 005316
2218 016222 001356
2219 016224 000241
2220 016226 000401
2221 016230 000261
2222 016232 005326
2223 016234 000207
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237

1:
ENDSRV
L10026: RTI

      .SBTTL WAITF - WAIT FOR SUBSYSTEM READY
      SUBROUTINE TO WAIT FOR THE SUBSYSTEM READY FLAG
      INPUTS:
      R5 ADDRESS OF FIRST DEVICE REGISTER
      OUTPUTS:
      R0 CONTENTS OF LAST TSSR READ
      CARRY SET - READY BIT SET
      CLH - TIMEOUT WAITING FOR READY
WAITF:: BR 1: ;NOP WHEN SUPER FIXED
      BREAK ; DO A SUPVSR BREAK FIRST.
      TRAP C#BRK
1: MOV #11000, -(SP) ;25-APRIL-83 REV B . 1100 MSEC TIMER
2: MOV TSSR(R5), R0 ;READ THE TSSR REGISTER
      TSTB R0 ;TEST FOR READY BIT SET

      BMI 3: ; EXIT ON STOP FLAG,
      DELAY 1 ; WAIT 100 USEC
      MOV #1, (PC),
      .WORD 0
      MOV L#DLY, (PC),
      .WORD 0
      DEC -6(PC)
      BNE -4
      DEC -22(PC)
      BNE -20
      DEC (SP) ;REDUCE DELAY COUNT
      BNE 2: ;RETRY UNTIL TIMER EXPIRES
      CLC ; C = 0, CONTROLLER STILL RUNNING...
      BR 4: ;...OR HUNG-UP AFTER 300 MSEC.
3: SEC ; C = 1, CONTROLLER IS STOPPED.
4: DEC (SP), ;RESTORE STACK WITHOUT CHANGING CARRY BIT
      RTS PC

      .SBTTL CHKTSSR - CHECK TSSR FOR READY
      THIS ROUTINE WAITS FOR READY IN THE TSSR
      AND TESTS FOR AMBIGUOUS BIT SETTINGS IN TSSR.
      INPUT:
      R5 ADDRESS OF CSR REGISTERS
      OUTPUT:

```



```

2238      ;      RO      CONTENTS OF TSSR
2239      ;      CARRY    SET - OKAY
2240      ;              CLR - NOT READY AMBIGUOUS, OR SC SET
2241      ;
2242      ;
2243      ;
2244 016236      CHKTSSR:
2245 016236      JSR      PC, WAITF      ;WAIT FOR READY
2246 016242      BCC      20$           ;BRANCH IF TIME OUT
2247 016244      JSR      PC, CHKAMB    ;TSSR AMBIGUOUS?
2248 016250      BCC      10$           ;BR IF YES
2249 016252      BIT      0SC, RO      ;SPECIAL CONDITION SET?
2250 016256      BEQ      15$           ;BR IF NO
2251 016260      BIT      0<SC!BIE!RMR!NXM>, RO ;ANY ERROR BITS SET?
2252 016264      BEQ      15$           ;BR IF NO
2253 016266      10$:      CLC              ;SET FAILURE
2254 016270      BR       20$           ;
2255 016272      15$:      SEC              ;SET SUCCESS
2256 016274      20$:      RTS      PC      ;RETURN TO CALLER
2257
2258      .SBTTL  NXNM      - CHECK FOR NONEXISTENT MEMORY
2259
2260      ;
2261      ; ROUTINE TO TEST FOR A NEXM IN THE RANGE (R1) THRU (R2).
2262      ; ON RETURN, IF "C" = 1, (R1) = NEXM ADDRESS.
2263      ; "C" = 0, ALL ADDRESSES OK.
2264      ;
2265      ;CALL:  MOV  ADR1,R1
2266      ;        MOV  ADR2,R2
2267      ;        JSR  PC,NXM
2268      ;        RETURN      ;TEST "C" AND PROCEED.
2269 016276      012737      016332' 000004  NXNM:  MOV      02$, 004      ; SET BUSERR VECTOR.
2270 016304      012737      000200 000006      MOV      0PRI04, 006
2271 016312      005003      CLC      R3      ; FLAG.
2272 016314      000241      CLC              ; CLEAR THE CARRY FOR NO NXM FOUND
2273 016316      005711      1$:      TST      (R1)      ; TEST THE ADDRESS(ES).
2274      ;
2275 016320      020102      CMP      R1,R2      ; IF ANY TRAP, CONTINUE AT 2$.
2276 016322      001407      BEQ      3$      ; OTHERWISE, CONTINUE HERE.
2277 016324      062701      000002      ADD      02$, R1      ; BR IF FINISHED (NO NEXM'S).
2278 016330      000772      BR       1$      ; SET NEXT ADDRESS...
2279      ;
2280 016332      005103      2$:      COM      R3      ; ...AND CONTINUE.
2281 016334      012716      016342'      MOV      03$, (SP)      ; GOT ONE, SET FLAG...
2282 016340      000002      RTI              ; ...AND DISMISS INTERRUPT...
2283 016342      012700      000004      3$:      CLRVEC  04      ; ...AND GIVE BACK THE VECTOR.
2284 016346      104436      MOV      04, RO
2285 016350      005703      TRAP      C: CVEC
2286 016352      001401      TST      R3      ; DID WE CATCH ONE ??
2287 016354      000261      BEQ      .+4      ; NO, "C" = 0, SKIP NEXT.
2288      ;
2289      ;
2290      ;
2291      ;
2292      ;
2292      .SBTTL  TSTLOOP - CHECK ITERATION COUNT

```

```

2293
2294
2295
2296
2297
2298
2299
2300 016360
2301 016360 005737 002160'
2302 016364 001006
2303 016366 005737 002174'
2304 016372 100403
2305 016374 005337 002206'
2306 016400 001002
2307 016402 000241
2308 016404 000401
2309 016406 000261
2310 016410 000207
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338 016412
2339 016412 010046
2340 016414 005037 003144'
2341 016420 005037 016660'
2342 016424 005037 005600'
2343 016430 105037 016044'
2344 016434 013700 002172'
2345 016440 006300
2346 016442 005737 003104'
2347 016446 001430
2348 016450 100010
2349 016452 052760 160000 003166'

; SUBROUTINE TO EXECUTE TEST ITERATIONS.
; EXIT WITH "C" SET IF LOOPS ALLOWED AND LOOP COUNT NON-ZERO.
; LOOP COUNTER IS SET BY "BEGIN.TEST" MACRO.
;
; CALL: LOOPTO ARG
;
TSTLOOP::
    TST     MOITS           ; ITERATIONS INHIBITED?
    BNE     1$             ; YES.
    TST     QVP             ; NO.
    BMI     1$             ; LOOPS DISALLOWED IN QUICK PASS.
    DEC     LOOPCNT         ; BUMP LOOP COUNTER.
    BNE     2$
1$:        CLC              ; LOOP DISALLOWED, OR DONE.
    BR      3$
2$:        SEC              ; LOOP ENABLED.
3$:        RTS             PC

; SBTTL TSTSETUP - PRINT TEST NAME AND INIT ERROR COUNTS
;
; PRINT THE NUMBER AND NAME OF EACH TEST AS WE GO ALONG.
; INCREMENT "TESTK" TO INDICATE THE NUMBER OF TESTS
; IN THE CURRENT RUN SEQUENCE.
; CLEAR THE ERROR COUNTER AND SIGNATURE EXTENSION FLAGS.
;
; INPUT:
;
;     R0      POINTER TO TEST ID ASCIZ STRING
;
; OUTPUT:
;
;     R5      ADDRESS OF FIRST DEVICE REGISTER
;
; IMPLICIT OUTPUTS:
;
;     TSTCNT  UPDATED TO COUNT TESTS PERFORMED SINCE START OR RESTART
;
; SIDE EFFECTS:
;
;     INTERRUPT LEVEL IS RAISED TO LEVEL OF
;     THE DEVICE UNDER TEST
;
;
TSTSETUP::
    MOV     R0, -(SP)       ; SAVE THE TEST ID MESSAGE
    CLR     SIFLAG          ; CLEAR "SOFT INIT" FLAG
    CLR     ERRK            ; CLEAR LOCAL ERROR COUNTER.
    CLR     EXTA            ; CLEAR ERROR EXTENSION FLAG.
    CLRB    INTMASK         ; CLEAR INTERRUPT MASK (CHECK ERROR)
    MOV     UNITN, R0        ; GET THE UNIT NUMBER.
    ASL     R0              ; ... AND MAKE IT A WORD OFFSET.
    TST     NODEV           ; DID STARTUP FIND THE DEVICE?
    BEQ     4$              ; BR IF YES
    BPL     3$              ; BR IF NOT IDLE
    BIS     #160000, ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE

```



```

2350 016460      ERRDF 1,NXR,NXRERR ; NO DEVICE HERE -- PRINT IT
      016460      104455 TRAP C$ERDF
      016462      000001 .WORD 1
      016464      003730' .WORD NXR
      016466      005544' .WORD NXERR
2351 016470      000407 BR 2$
2352 016472      052760 160001 003166' 3$: BIS $160001,ERTABL(R0) ; FLAG ERROR IN THE ERROR TABLE
2353 016500      ERRDF 2,NOINIT ; DEVICE NOT IDLE
      016500      104455 TRAP C$ERDF
      016502      000002 .WORD 2
      016504      004325' .WORD NOINIT
      016506      000000 .WORD 0
2354 016510      012737 177777 003102' 2$: MOV $-1,DUFLG ; DROP THE UNIT
2355 016516      DODU UNITN
      016516      013700 002172' MOV UNITN,R0
      016522      104451 TRAP C$DODU
2356 016524      DOCLN ; ABORT THE PASS
      016524      104444 TRAP C$DCLN
2357 016526      000423 BR 5$
2358
2359 016530      4$: RFLAGS R0 ; GET THE OPERATOR FLAGS.
      016530      104421 TRAP C$RFLA
2360 016532      032700 001000 BIT $PNT,R0 ; PRINT THE TEST NUMBERS?
2361 016536      001412 BEQ 1$ ; BR IF NO
2362 016540      011600 MOV (SP),R0 ; GET THE ID MESSAGE
2363 016542      PRINTF $TNAM,R0 ; DISPLAY THE TEST ID
      016542      010046 MOV R0,-(SP)
      016544      012746 016606' MOV $TNAM,-(SP)
      016550      012746 000002 MOV $2,-(SP)
      016554      010600 MOV SP,R0
      016556      104417 TRAP C$PNTF
      016560      062706 000006 ADD $6,SP
2364 016564      005237 002204' 1$: INC TSTCNT ; BUMP TEST COUNTER.
2365 016570      SETPRI IPRI ; PRIORITY THAT OF DEVICE
      016570      013700 002202' MOV IPRI,R0
      016574      104441 TRAP C$SPRI
2366 016576      005726 5$: TST (SP)+ ; FIX UP THE STACK
2367 016600      013705 002176' MOV CSRADDR,R5 ; ADDRESS OF TSV REGISTERS ON UNIBUS
2368 016604      000207 RTS PC
2369 016606      045 123 045 TNAM: .ASCIZ 'S#T#A Test'
2370      .EVEN
2371
2372      .SBTTL TSTEND - PRINT ERRORS RECEIVED
2373
2374      ; AT END OF EACH TEST, PRINT THE NUMBER OF ERRORS RECEIVED
2375      ; IF NORMAL ERROR REPORTING IS DISABLED (FLA:IER).
2376
2377 016622      TSTEND: RFLAGS R0
      016622      104421 TRAP C$RFLA
2378 016624      030027 020000 BIT R0,$IER
2379 016630      001412 BEQ 1$ ; BR IF "IER" NOT SET.
2380 016632      PRINTF $ESUM,ERRK ; PRINT ERROR COUNT.
      016632      013746 016660' MOV ERRK,-(SP)
      016636      012746 016662' MOV $ESUM,-(SP)
      016642      012746 000002 MOV $2,-(SP)
      016646      010600 MOV SP,R0
      016650      104417 TRAP C$PNTF

```

F6

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
TSTEND - PRINT ERRORS RECEIVED

SEQ 070

```

2381 016652 062706 000006          1$: ADD    #6,SP
2382 016656 000207          RTS    PC
2383 016660 000000          ERRK: 0          ; LOCAL ERROR COUNT.
2384 016662      045      101      040 ESUM: .ASCIZ /#A #D#A ERRORS/
2385 016701      105      122      122 EMAXDU: .ASCIZ /ERROR LIMIT REACHED -- DROPPING UNIT/
2386                                     .EVEN
2387                                     .SBTTL INCERK - INCREMENT LOCAL ERROR COUNT
2388
2389 ;+
2390 ; ROUTINES TO INCREMENT LOCAL ERROR COUNT AND CHECK FOR LIMIT:
2391 ; -
2392 016746 005237 016660' INCERK: INC    ERRK          ; INCREMENT LOCAL ERROR COUNT
2393 016752 010046      MOV    RO,-(SP)      ; SAVE RO
2394 016754 013700 002172'      MOV    UNITN,RO    ; GET UNIT NUMBER,
2395 016760 006300      ASL    RO              ; ... AND MAKE IT A WORD OFFSET.
2396 016762 062700 003166'      ADD    #ERTABL,RO    ; RO GETS ADDRESS OF ERROR TABLE ENTRY.
2397 016766 005210      INC    (RO)          ; INCREMENT THE DEVICE ERROR COUNT
2398 016770 032710 007777      BIT    #7777,(RO)    ; DID WE OVERFLOW THE FIELD?
2399 016774 001001      BNE    1$            ; BR IF NO.
2400 016776 005310      DEC    (RO)          ; YES -- BACK IT UP TO 7777.
2401 017000 012600 1$:      MOV    (SP)+,RO    ; RESTORE RO
2402 017002 000207      RTS    PC              ; RETURN TO CALLER.
2403
2404 017004 010046      CKEMAX: MOV    RO,-(SP)      ; SAVE RO
2405 017006 013700 002172'      MOV    UNITN,RO    ; GET UNIT NUMBER
2406 017012 006300      ASL    RO              ; ... AND MAKE IT A WORD OFFSET
2407 017014 016000 003166'      MOV    ERTABL(RO),RO ; GET ERROR TABLE ENTRY
2408 017020 042700 170000      BIC    #170000,RO    ; EXTRACT ERROR COUNT FIELD
2409 017024 020037 002164'      CMP    RO,GERRMAX    ; IS GLOBAL LIMIT EXCEEDED FOR THIS UNIT?
2410 017030 103004      BHIS    1$            ; BR IF YES
2411 017032 023737 016660' 002162'      CMP    ERRK,LERRMAX ; IS LOCAL LIMIT EXCEEDED FOR THIS TEST?
2412 017040 103417      BLO    2$            ; BR IF NO
2413 017042      1$:      RFLAGS RO          ; GET OPERATOR FLAGS
2414      017042 104421      TRAP    C#RFLA
2415 017044 032700 000040      BIT    #IDU,RO      ; IS DROPPING INHIBITED?
2416 017050 001013      BNE    2$            ; BR IF YES.
2417 017052 012737 177777 003102'      MOV    #-1,DUFLG ; NO -- DROP THE UNIT
2418      017060 104455      ERDF    4,EMAXDU
2419      017062 000004      TRAP    C#ERDF
2420      017064 016701'      .WORD    4
2421      017066 000000      .WORD    EMAXDU
2422      017070      .WORD    0
2423      017070 013700 002172'      DODU    UNITN
2424      017074 104451      MOV    UNITN,RO
2425      017076 104444      TRAP    C#DODU
2426      017100 012600 2$:      DOCLN      TRAP    C#DCLN
2427      017102 000207      MOV    (SP)+,RO    ; RESTORE RO
2428      017106      RTS    PC              ; RETURN TO CALLER
                                     .SBTTL CKDROP - CHECK IF UNIT SHOULD BE DROPPED
;+
; CHECK IF UNIT SHOULD BE DROPPED
;-
CKDROP: MOV    RO,-(SP)
FORCERROR 1$,NOTSSR

```

G6

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CKDROP - CHECK IF UNIT SHOULD BE DROPPED

SEQ 071

```

2429 017116          RFLAGS RO
      017116 104421    TRAP   C#RFLA
2430 017120 032700 000040    BIT   #IDU,RO
2431 017124 001010    BNE    1$
2432 017126 011600    MOV    (SP),RO
2433 017130 012737 177777 003102'    MOV    #-1,DUFLG
2434 017136          DODU    UNITN
      017136 013700 002172'    MOV    UNITN,RO
      017142 104451    TRAP   C#DODU
2435 017144          DOCLN          ;ABORT THE PASS
      017144 104444    TRAP   C#DCLN
2436 017146 012600 1$:    MOV    (SP)+,RO
2437 017150 000207    RTS     PC
2438
2439          .SBTTL  CONFIG - DETERMINE CONFIGURATION OF SYSTEM
2440
2441          ; SUBROUTINE - DETERMINE CONFIGURATION OF TSU05 SYSTEM.
2442          ;
2443          CONFIG:
2444 017152 004737 015674'    JSR     PC,SOFINIT
2445 017156 000207    RTS     PC
2446
2447          .SBTTL  KTON,KTOFF - ENABLE/DISABLE MEMORY MANAGEMENT
2448
2449          ; SUBROUTINE - ENABLE MEM MGT.
2450          ;
2451 017160 005737 003122'    KTON:   TST     KTFLG          ; GOT KT?
2452 017164 001403          BEQ     1$          ; NO.
2453 017166 012737 000001 177572    MOV    #1,SRO          ; YES. ENABLE KT11.
2454 017174 000207 1$:    RTS     PC
2455
2456
2457
2458
2459          ; SUBROUTINE - DISABLE MEM MGT.
2460          ;
2461 017176 005737 003122'    KTOFF:  TST     KTFLG          ; GOT KT11?
2462 017202 001405          BEQ     1$          ; NO.
2463 017204 000240          NOP
2464 017206 000240          NOP
2465 017210 012737 000000 177572    MOV    #0,SRO          ; DISABLE KT.
2466 017216 000207 1$:    RTS     PC
2467
2468          .SBTTL  SETMAP - SETUP PAR6 MAPPING
2469
2470          ;
2471          ;
2472          ; THIS ROUTINE SETS UP KERNEL PAR6 TP HANDLE
2473          ; AN 22 BIT ADDRESS. THE OFFSET INTO THE PAGE
2474          ; IS RETURNED BIASED TO PAR6.
2475          ;
2476          ; INPUTS:
2477          ;
2478          ;     R0     HIGH ORDER ADDRESS BITS
2479          ;     R1     LOW ORDER ADDRESS BITS
2480          ;
2481          ; OUTPUTS:

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 SETMAP - SETUP PAR6 MAPPING

SEQ 072

```

2482
2483
2484
2485
2486
2487 017220
2488 017220
2489 017224 005737 003122'
2490 017230 001433
2491 017232 010102
2492 000006
2493
2494
2495
2496 017264 042701 000177
2497 017270 020137 003122'
2498 017274 103011
2499 017276 010137 172354
2500 017302 042702 160000
2501 017306 062702 140000
2502 017312 010200
2503 017314 000261
2504 017316 000401
2505 017320 000241
2506 017322 000207
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524 017324
2525 017324
2526 017330 004737 017176'
2527 017334 010003
2528 017336 013701 003114'
2529 017342 013702 003116'
2530 017346 010321
2531 017350 005302
2532 017352 003375
2533 017354 005737 003122'
2534 017360 001502
2535 017362 004737 017160'
2536 017366 005000
2537 017370 013701 003142'
2538 000006

;
; RO OFFSET INTO BLOCK WITH PAR6 BIAS (I.E. THE ADDRESS)
; CARRY SET IF SUCCESS
; CLR IF ERROR
;
; SETMAP:
; SAVREG
; TST KTFLG ;SAVE R1-R4 UNTIL NEXT RETURN
; BEQ 10$ ;SYSTEM HAVE ABOVE 28K?
; MOV R1,R2 ;BR IF NO
; .REPT 6 ;SAVE LOW ORDER BITS
; ASR R0 ;CONVERT WORD ADDRESS TO 32W BLOCKS
; ROR R1 ;MAKE IT DOUBLE PRECISION
; .ENDR
; BIC #177,R1 ;ALTM FOR LOWER 4K BOUNDARY
; CMP R1,KTFLG ;HIGHER THAN EXISTING MEMORY?
; BHIS 10$ ;BR IF YES
; MOV R1,#0KIPAR6 ;SETUP MAPPING REGISTER PAR6
; BIC #160000,R2 ;SETUP DISPLACEMENT IN PAGE
; ADD #140000,R2 ;ADD IN PAR6 BIAS
; MOV R2,R0 ;RETURN IN R0
; SEC ;SET SUCCESS
; BR 15$
10$: CLC ;SET FAILURE
15$: RTS PC ;RETURN

; .SBTTL FILLMEM - FILL MEMORY WITH BACKGROUND PATTERN
; *
; FILL MEMORY WITH A BACKGROUND PATTERN
;
; INPUTS:
;
; RO = BACKGROUND PATTERN
; FREE = FIRST LOCATION AVAILABLE TO DIAGNOSTIC
; KTFLG = SET TO HIGHEST MEMORY LOCATION IF > 28K.
;
; OUTPUTS:
;
; NONE
;
; FILLMEM:
; SAVREG
; JSR PC,KTFF ;SAVE R1-R5 UNTIL NEXT RETURN
; MOV R0,R3 ;DISABLE KT.
; MOV FREE,R1 ;COPY TEST PATTERN
; MOV FRESIZ,R2 ;GET FIRST FREE LOCATION
; MOV R3,(R1)+ ;SIZE OF FREE SPACE BELOW 28K.
10$: DEC R2 ;STORE A BACKGROUND WORD
; BGT 10$ ;DONE ALL MEMORY IN FREE SPACE?
; TST KTFLG ;BR IF NO
; BEQ 55$ ;GOT KT?
; JSR PC,KTON ;NO. GET OUT.
; CLR R0 ;YES. ENABLE KT.
; MOV PST32W,R1 ;HIGH ORDER ADDRESS START
; .REPT 6 ;GET >28K START ADDRESS (IN 32W BLOCKS)

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
FILLMEM - FILL MEMORY WITH BACKGROUND PATTERN

SEQ 073

```

2539          CLC          ;CLEAR C BIT
2540          ROL          R1      ;CONVERT BLOCKS TO WORDS
2541          ROL          R0      ;MAKE IT DOUBLE PRECISION
2542          .ENDR
2543 017440 004737 017220'      JSR      PC,SETMAP      ;SETUP PAR6 MAPPING REGISTER
2544 017444 010320          30$: MOV      R3,(R0)      ;STORE TEST PATTERN IN >28K ADDRESS
2545 017446 020027 160000      CMP      R0,#160000      ;END OF PAR6 MAPPING AREA?
2546 017452 103774          BLO      30$              ;BP IF NO
2547 017454 162700 020000      SUB      #20000,R0      ;BACKUP INTO PAR6 MAPPING BEGIN
2548 017460 062737 000200 172354 ADD      #200,#KIPAR6 ;POINT TO NEXT 4K BLOCK >28K.
2549 017466 013705 003122'      MOV      KTFLG,R5      ;GET VALUE FROM MEMORY SIZER
2550 017472 042705 170000      BIC      #170000,R5      ;ONLY 18 BITS PASS
2551 017476 023705 172354      CMP      #KIPAR6,R5      ;END OF MEMORY?
2552 017502 001427          BEQ      50$              ;BR IF YES
2553 017504 005737 003134'      TST      T23A          ;PROCESSOR TYPE A
2554 017510 001407          BEQ      35$              ;NO KEEP GOING
2555 017512 013704 177572      MOV      SR0,R4          ;GET SR0 CONTENTS
2556 017516 042704 177761      BIC      #177761,R4      ;CLEAR ALL BUT PAGE NUMBER
2557 017522 022704 000016      CMP      #16,R4          ;SEE IF PAGE 7
2558 017526 001415          BEQ      50$              ;EXIT IF THERE
2559 017530 005737 003136'      35$: TST      T23B          ;PROCESSOR TYPE B
2560 017534 001410          BEQ      45$              ;NO KEEP GOING
2561 017536 023727 172354 007600 CMP      #KIPAR6,#7600 ;REACHED 18 BITS?
2562 017544 103001          BHS      40$              ;YES
2563 017546 000403          BR       45$              ;NO KEEP GOING
2564 017550 012737 000020 172516 40$: MOV      #20,SR3      ;SET MMU RELOCATION
2565 017556 000137 017444'      45$: JMP      30$              ;KEEP GOING ON ETC.
2566 017562 004737 017176'      50$: JSR      PC,KTOFF      ;DISABLE KT.
2567 017566 000207          55$: RTS      PC
2568
2569          .SBTTL  CMPMEM  - COMPARE MEMORY TO BACKGROUND PATTERN
2570
2571          ;
2572          ; COMPARE MEMORY WITH A BACKGROUND PATTERN
2573          ;
2574          ; INPUTS:
2575          ;
2576          ;     RO - BACKGROUND PATTERN
2577          ;     FREE  - FIRST LOCATION AVAILABLE TO DIAGNOSTIC
2578          ;     KTFLG  - SET TO HIGHEST MEMORY LOCATION IF > 28K.
2579          ;
2580          ; OUTPUTS:
2581          ;
2582          ;     CARRY  - SET IF NO ERROR
2583          ;     CARRY  - CLR IF ERROR
2584          ;
2585          ; IMPLICIT OUTPUTS:
2586          ;
2587          ;     ERRHI  - ERROR HIGH ADDRESS
2588          ;     ERRLO  - ERROR LOW ADDRESS
2589          ;     EXPD   - EXPECTED DATA
2590          ;     RECV   - RECEIVED DATA
2591          ;
2591 017570          CMPMEM:
2592 017570          SAVREG
2593 017574 010003          MOV      RO,R3      ;SAVE R1-R5 UNTIL NEXT RETURN
2594 017576 004737 017176'      JSR      PC,KTOFF      ;COPY TEST PATTERN
2595 017602 013701 003114'      MOV      FREE,R1      ;DISABLE KT.

```

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
CMPMEM - COMPARE MEMORY TO BACKGROUND PATTERN

SEQ 074

```

2596 017606 013702 003116'      MOV    FRESIZ,R2      ;SIZE OF FREE SPACE BELOW 28K.
2597 017612 020311      10$:    CMP    R3,(R1)      ;FREE SPACE LOCATION EQUAL TO EXPD?
2598 017614 001411      BEQ     15$              ;BR IF YES
2599 017616 010137 002230'      MOV    R1,ERRLO      ;SAVE ADDRESS IN ERROR
2600 017622 005037 002226'      CLR     ERRHI       ;NO HIGH ADDRESS
2601 017626 010337 002222'      MOV    R3,EXPD      ;SAVE EXPD FOR ERROR REPORT
2602 017632 011137 002224'      MOV    (R1),RECV     ;SAVE RECV FOR ERROR REPORT
2603 017636 000474      BR      50$              ;
2604 017640 005721      15$:    TST    (R1)+        ;POINT TO NEXT ADDRESS
2605 017642 005302      DEC     R2              ;DONE ALL MEMORY IN FREE SPACE?
2606 017644 003362      BGT     10$              ;BR IF NO
2607 017646 005737 003122'      TST    KTFLG        ; GOT KT?
2608 017652 001472      BEQ     55$              ; NO. GET OUT.
2609 017654 004737 017160'      JSR    PC,KTON      ; YES. ENABLE KT.
2610 017660 005000      CLR     R0              ;HIGH ORDER ADDRESS START
2611 017662 013701 003142'      MOV    PST32W,R1     ;GET >28K START ADDRESS (IN 32W BLOCKS)
2612      000006      .REPT    6
2613      ROL     R1              ;CONVERT BLOCKS TO WORDS
2614      ROL     R0              ;MAKE IT DOUBLE PRECISION
2615      .ENDR
2616 017716 042701 000177      BIC     @177,R1      ;ALINE 4K BOUNDARY
2617 017722 010046      MOV     R0,-(SP)          ;SAVE HIGH ORDER
2618 017724 010146      MOV     R1,-(SP)          ;SAVE LOW ORDER
2619 017726 004737 017220'      JSR    PC,SETMAP      ;SETUP PAR6 MAPPING REGISTER
2620 017732 010004      MOV     R0,R4            ;COPY ADDRESS BIASED TO PAR6
2621 017734 012601      MOV     (SP)+,R1        ;RESTORE LOW ORDER IN NON PAR6 FORMAT
2622 017736 012600      MOV     (SP)+,R0        ;RESTORE HIGH ORDER IN NON PAR6 FORMAT
2623 017740 020314      30$:    CMP     R3,(R4)      ;ABOVE 28K LOCATION EQUAL EXPD?
2624 017742 001411      BEQ     32$              ;BR IF YES
2625 017744 010037 002226'      MOV     R0,ERRHI      ;SAVE HIGH ORDER IN ERROR
2626 017750 010137 002230'      MOV     R1,ERRLO      ;SAVE LOW ORDER IN ERROR
2627 017754 010337 002222'      MOV     R3,EXPD      ;SAVE EXPD FOR ERROR REPORT
2628 017760 011437 002224'      MOV     (R4),RECV     ;SAVE RECV FOR ERROR REPORT
2629 017764 000421      BR      50$              ;
2630 017766 062701 000002      32$:    ADD     @2,R1      ;UPDATE NON PAR6 ADDRESS
2631 017772 005500      ADC     R0              ;MAKE IT DOUBLE PRECISION ADD
2632 017774 062704 000002      ADD     @2,R4      ;UPDATE PAR6 FORMAT ADDRESS
2633 020000 020427 160000      CMP     R4,@160000     ;END OF PAR6 MAPPING AREA?
2634 020004 103755      BLO     30$              ;BR IF NO
2635 020006 162704 020000      SUB     @20000,R4     ;BACKUP INTO PAR6 MAPPING BEGIN
2636 020012 062737 000200 172354      ADD     @200,@KIPAR6      ;POINT TO NEXT 4K BLOCK >28K.
2637 020020 023737 172354 003122'      CMP     @KIPAR6,KTFLG      ;END OF MEMORY?
2638 020026 101744      BLOS    30$              ;BR IF NO
2639 020030 004737 017176'      50$:    JSR    PC,KTOFF      ;TURN OFF MEMORY MAPPING
2640 020034 000241      CLC              ;SET FAILURE
2641 020036 000403      BR      60$              ;
2642 020040 004737 017176'      55$:    JSR    PC,KTOFF      ;TURN OFF MEMORY MAPPING
2643 020044 000261      SEC              ;SET SUCCESS
2644 020046 000207      60$:    RTS     PC
2645
2646      .SBTTL  REGSAV - SAVE R1-R5 ON STACK
2647      ;
2648      ;
2649      ;ROUTINE TO
2650      ;SAVE R1 THROUGH R5 ON THE STACK
2651      ;
2652      ;CALLING SEQUENCE:

```


TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 REGSAV - SAVE R1-R5 ON STACK

SEQ 075

```

2653
2654
2655
2656
2657
2658
2659
2660
2661
2662
2663
2664
2665
2666 020050
2667 020050 010446
2668 020052 010346
2669 020054 010246
2670 020056 010146
2671 020060 010546
2672 020062 016605 000012
2673 020066 004736
2674 020070 012601
2675 020072 012602
2676 020074 012603
2677 020076 012604
2678 020100 012605
2679 020102 000207
2680
2681
2682
2683
2684
2685
2686
2687
2688
2689
2690
2691
2692
2693
2694
2695
2696
2697
2698
2699
2700 020104
2701 020104
2702 020110
    020110 104443
    020112 000406
    020114 020140
    020116 000022
    020120 020142
    020122 000377
    020124 000000

;
;      JSR      R5,REGSAV
;
;THIS IS A COOROUTINE WHICH TRANSFER CONTROL BACK TO
;THE CALLING ROUTINE. AT THE END OF THE CALLING ROUTINE,
;THE R1S PC RETURNS CONTROL TO THIS ROUTINE TO RESTORE
;REGISTERS.
;
;THIS ROUTINE SHOULD ONLY BE CALLED FROM ROUTINES WHICH ARE
;CALLED VIA A JSR PC INSTRUCTION
;
;-
REGSAV:
      MOV      R4,-(SP)
      MOV      R3,-(SP)
      MOV      R2,-(SP)
      MOV      R1,-(SP)
      MOV      R5,-(SP)
      MOV      10,(SP),R5
      JSR      PC,8(SP),
      MOV      (SP)+,R1
      MOV      (SP)+,R2
      MOV      (SP)+,R3
      MOV      (SP)+,R4
      MOV      (SP)+,R5
      RTS      PC

      .SBTTL   GETPAT  - GET 8 BIT PATTERN FROM OPERATOR
;+
;
;ROUTINE TO REQUEST AN 8 BIT DATA PATTERN FROM THE OPERATOR
;
;INPUTS:
;
;      NONE.
;
;OUTPUTS:
;
;      R0      OCTAL NUMBER FROM THE OPERATOR
;
;CALLING SEQUENCE:
;
;      JSR      PC,GETPAT
;
;-
GETPAT::
      SAVREG          ;SAVE THE GENERAL REGISTERS
1:      GMANID  DATASC,PATDAT,0,377,0,377,NO
      TRAP      C$GMAN
      BR        10000$
      .WORD     PATDAT
      .WORD     T$CODE
      .WORD     DATASC
      .WORD     377
      .WORD     T$LCLIM

```

L6

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
 GETPAT - GET 8 BIT PATTERN FROM OPERATOR

SEQ 076

```

020126 000377          .WORD  T$HILIM
020130          10000$:
2703 020130          BNCOMPLETE 1$      ;RETRY IF ERROR
020130 103367          PCC 1$
2704 020132 013700 020140'      MOV  PATDAT,RO      ;DATA PATTERN FROM OPERATOR
2705 020136 000207          RTS  PC      ;RETURN TO CALLER
2706
2707          ;+
2708          ;LOCAL DATA AREA
2709          ;-
2710
2711 020140 000000          PATDAT: .WORD  0      ;TEMPORARY STORAGE FOR DATA
2712 020142 105 116 124  DATASC: .ASCIZ  'ENTER DATA PATTERN'
2713          .EVEN
2714
2715          .SBTTL  GETSEL - ISSUE MENU AND GET OPERATOR RESPONSE
2716          ;+
2717          ;ROUTINE TO ISSUE A MENU AND GET
2718          ;THE OPERATOR'S RESPONSE.
2719          ;
2720          ;INPUTS:
2721          ;
2722          ;      RO      ADDRESS OF ASCIZ STRING OF MENU
2723          ;      R1      MAXIMUM ALLOWABLE OPERATOR RESPONSE
2724          ;
2725          ;OUTPUTS:
2726          ;
2727          ;      RO      NUMBER OF THE OPERATOR'S SELECTION
2728          ;
2729          ;-
2730
2731          GETSEL::
2732          SAVREG          ;SAVE GENERAL REGISTERS
2733          MOV  R0,R2      ;SAVE THE MENU ADDRESS
2734 020166 010002          1$: MOV  R2,R3      ;START OF MENU STRING
2735 020172 010203          2$: TST  (R3)      ;END OF ASCII ?
2736 020176 005713          BEQ  3$      ;BRANCH IF ALL LINES DISPLAYED
2737 020200 001412          PRINTF 0$SELASC,(R3)+ ;DISPLAY THE MENU
2738 020202          MOV  (R3)+,-(SP)
020202 012346          MOV  0$SELASC,-(SP)
020204 012746 020352'      MOV  02,-(SP)
020210 012746 000002      MOV  SP,R0
020214 010600          TRAP  C$PNTF
020216 104417          ADD  06,SP
020220 062706 000006      BR  2$
2739 020224 000764          3$: GMANID MENASC,MENRES,D,-1,0,-1,NO
2740 020226          TRAP  C$GMAN
020226 104443          BR  10001$
020230 000406          .WORD  MENRES
020232 020406'          .WORD  T$CCDE
020234 000042          .WORD  MENASC
020236 020357'          .WORD  -1
020240 177777          .WORD  T$LOLIM
020242 000000          .WORD  T$HILIM
020244 177777          10001$:
2741 020246          BNCOMPLETE 1$      ;RETRY IF ERROR

```


M6

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
GETSEL - ISSUE MENU AND GET OPERATOR RESPONSE

SEQ 077

```

2742 020246 103352      BCC 1$
2743 020250 013700 020406' MOV MENRES,R0 ;GET THE OPERATOR'S REPLY
2744 020254 020001      CMP R0,R1 ;COMPARE TO MAXIMUM ALLOWED
2745 020256 101411      BLOS 5$ ;BRANCH IF OK
2746 020260      PRINTF #MENERR ;DISPLAY ERROR MESSAGE
2747 020260 012746 020304' MOV #MENERR,-(SP)
2748 020264 012746 000001 MOV #1,-(SP)
2749 020270 010600      MOV SP,R0
2750 020272 104417      TRAP C$PNTF
2751 020274 062706 000004 ADD #4,SP
2752 020300 000735      BR 1$ ;RETRY
2753 020302 000207      RTS PC ;RETURN TO CALLER
2754 020304 045 116 045 MENERR: .ASCIZ '*** Menu Selection Too Large ***'
2755 020352 045 116 045 SELASC: .ASCIZ '***'
2756 020357 105 156 164 MENASC: .ASCIZ 'Enter Menu Selection: '
2757      .EVEN
2758 020406 000000      MENRES: .WORD 0
2759      .SBTTL CHKMAN - CHECK MANUAL INTERVENTION LEGALITY
2760      ;+
2761      ;ROUTINE TO TEST FOR MANUAL INTERVENTION LEGALITY.
2762      ;
2763      ;INPUT:
2764      ;
2765      ; NONE.
2766      ;
2767      ;OUTPUT:
2768      ;
2769      ; CARRY 0 MANUAL INTERVENTION NOT ALLOWED
2770      ; 1 MANUAL INTERVENTION IS OK
2771      ;
2772      ;SIDE EFFECTS:
2773      ;
2774      ; A MESSAGE IS DISPLAYED WARNING THAT TEST IS
2775      ; NOT EXECUTED IF MANUAL INTERVENTION IS NOT
2776      ; ALLOWED.
2777      ;
2778      ;-
2779 020410      CHKMAN:
2780 020410      SAVREG ;SAVE THE REGISTERS
2781 020414      MANUAL ;SEE IF MANUAL INTERVENTION OK
2782 020414 104450      TRAP C$MANI
2783 020416      BCOMPLETE 1$ ;BRANCH IF ALLOWED
2784 020416 103411      BCS 1$
2785 020420      PRINTF #NOMAN ;PRINT THE WARNING MESSAGE
2786 020420 012746 020444' MOV #NOMAN,-(SP)
2787 020424 012746 000001 MOV #1,-(SP)
2788 020430 010600      MOV SP,R0
2789 020432 104417      TRAP C$PNTF
2790 020434 062706 000004 ADD #4,SP
2791 020440 000241      CLC ;CLEAR CARRY FOR ERROR
2792 020442 000207      RTS PC ;RETURN
2793 020444 045 116 045 NOMAN: .ASCIZ '*** Manual Intervention not Allowed - Test Aborted ***'
2794      .even

```

```

2786
2787          .SBTTL  ENVIRN  - SETUP FREE DIAGNOSTIC SPACE
2788          ;
2789          ; SUBROUTINE TO SET-UP VARIOUS ENVIRONMENTAL PARAMETERS.
2790          ;
2791          ENVIRN: MEMORY R0
2792          020540 104431      TRAP C$MEM
2793          020542 010037 003114'  MOV R0,FREE          ; GET 1ST FREE ADDRESS...
2794          020546 062737 000002 003114'  ADD #2,FREE
2795          020554 011037 003116'  MOV (R0),FRESIZ      ; ...AND WORD COUNT.
2796          020560 162737 000004 003116'  SUB #4,FRESIZ
2797          020566 013702 002012'  MOV L$UNIT,R2        ; GET NUMBER OF UNITS
2798          020572 162737 000007 003116' 10$: SUB #7,FRESIZ  ; TAKE AWAY 7 WORDS PER UNIT
2799          020600 005302      DEC R2
2800          020602 001373      BNE 10$
2801          020604 013700 003114'  MOV FREE,R0          ; GET FIRST FREE ADDRESS
2802          020610 063700 003116'  ADD FRESIZ,R0        ; POINT TO LAST FREE ADDRESS
2803          020614 162700 000002      SUB #2,R0          ; BACKUP 1 WORD
2804          020620 010037 003120'  MOV R0,FREEHI        ; STORE LAST FREE ADDRESS
2805          020624 000207      40$: RTS PC                ; RETURN
2806          .SBTTL  KTINIT  - SETUP KT11 MEMORY MANAGEMENT REGISTERS
2807          ;
2808          ;
2809          ; ROUTINE TO INIT KT-11
2810          ;
2811          ;
2812          ;
2813          KTINIT:
2814          020626 005037 003122'  CLR KTFLG             ; INIT >28K MEMORY FLAG
2815          020632 005037 003124'  CLR KTENABLE          ; INIT TEST >28K FLAG
2816          020636 023727 002120' 001577  CMP L$HIME,#1577 ; GOT ENOUGH MEMORY (>28K)?
2817          020644 101453      BLOS 9$                  ; NO.
2818          020646 023727 002120' 001777  CMP L$HIME,#1777 ; GOT ENOUGH MEMORY (>32K)?
2819          020654 101447      BLOS 9$                  ; NO.
2820          020656 013700 000004      MOV #ERRVEC,R0      ; SAVE OLD ERR VEC PTR.
2821          020662 012737 020754' 000004  MOV #2,#ERRVEC  ; SET ERR VEC PTR.
2822          020670 005737 177572      TST #SRO           ; GOT KT11?
2823          020674 000240      NOP                      ; (TRAP IF NO).
2824          020676 013737 002120' 003122'  MOV L$HIME,KTFLG ; YES. SET KT FLAG.
2825          020704 042737 000177 003122'  BIC #177,KTFLG
2826          020712 010037 000004      MOV R0,#ERRVEC     ; RESTORE OLD ERR VEC PTR.
2827          020716 005000      CLR R0                   ; R0 = AR DATA.
2828          020720 012701 172340      MOV #KIPAR,R1      ; R1 = KI REGS PTR.
2829          020724 012761 077406 177740 1$: MOV #77406,-40(R1) ; SET DESCRIPTOR REG.
2830          020732 010021      MOV R0,(R1)+             ; SET KIPAR REG.
2831          020734 062700 000200      ADD #200,R0        ; BUMP AR DATA BY "4K".
2832          020740 020027 002000      CMP R0,#2000      ; AT "I/O"?
2833          020744 001367      BNE 1$                   ; NO.
2834          020746 012741 177600      MOV #177600,-(R1) ; YES. SET KIPAR7 FOR I/O.
2835          020752 000410      BR 9$
2836          ;
2837          020754 012716 020770' 2$: MOV #6$,(SP)      ; SET UP RETURN
2838          020760 000002      RTI                        ; RTI TO NEXT LOCATION
2839          ;
2840          ;
2841          020762 012716 021016' 3$: MOV #10$,(SP)      ; SET UP RETURN

```

```

2842 020766 000002          RTI          ; RTI TO NEXT LOCATION
2843
2844 020770 010037 000004    6$:  MOV     R0,00ERRVEC    ; RESTORE OLD ERR VEC PTR.
2845
2846 020774          9$:
2847 020774 013700 000004    MOV     00ERRVEC,R0      ; SAVE OLD ERR VEC PTR.
2848 021000 012737 020762' 000004    MOV     03$,00ERRVEC    ; SET ERR VEC PTR.
2849 021006 042737 000001 170200    BIC     0BIT0,00MMR0    ;BE SURE UNIBUS MAP IS OFF
2850 021014 000240          NOP
2851 021016 010037 000004    10$:  MOV     R0,00ERRVEC    ; RESET VECTOR BACK TO ERROR POINTER
2852 021022 000207          RTS     PC
2853
2854
2855
2856          ;
2857          ;      SUBROUTINE TO SET EXTENDED FEATURES SWITCH
2858          ;
2859          ;      Requires that SOFINIT and WRTHR have been done previous to call.
2860          ;
2861          ; INPUTS:
2862          ;      R5      CURRENT UNIT NUMBER
2863          ; OUTPUTS:
2864          ;      The Extended Features Switch is set.
2865          ;
2866          ;
2867          ;
2868 021024          INVERT::
2869
2870 021024 005737 002216'      TST     EXTFEA          ; IS SWITCH SET?
2871 021030 001020          BNE     1$              ; YES.EXIT STAGE RIGHT!(or the next one outa town!)
2872 021032 012737 100206 021100'  MOV     0100206,CMDPKT    ; WRT SUB-SYS MEM CMD
2873 021040 012737 021110' 021102'  MOV     0WSMBK,CMDPKT+2    ; MSG BUF ADDR
2874 021046 012737 000006 021106'  MOV     06,CMDPKT+6      ; BYTE COUNT
2875 021054 012737 100010 021110'  MOV     0100010,WSMBK    ; INVERT THE SWITCH
2876 021062 012704 021100'  MOV     0CMDPKT,R4      ; SET CMDPKT INTO R4
2877 021066 004737 010562'  JSR     PC,WRTHR        ; DO IT
2878 021072 000207          1$:  RTS     PC          ; RETURN
2879
2880
2881          ;
2882          ;      COMMAND PACKET.
2883          ;
2884 021074          .BLKB    10-<,-TSV267>
2885
2886          ;
2887 021100 000000          CMDPKT:: 0              ; 1ST WORD IS TSO5 COMMAND.
2888 021102 000000          0              ; 2ND WORD IS THE BUFFER LOW ADDRESS.
2889 021104 000000          0              ; 3RD WORD IS THE BUFFER HIGH ADDRESS.
2890 021106 000000          0              ; 4TH WORD IS THE BYTE/RECORD/FILE COUNT.
2891
2892
2893          ;
2894          ;      WRITE SUB-SYSTEM MEMORY CHARACTERISTIC BLOCK.
2895 021110 000000          WSMBK:: 0              ; 1ST WORD:: SEL 0
2896 021112 000000          0              ; 2ND WORD:: SEL 2
2897 021114 000000          0              ; 3RD WORD:: SEL 4
2898          .EVEN
2899
2900          ;

```

```

2901      SUBROUTINE TO CHECK WETHER OR NOT WE'LL TEST NXM
2902
2903
2904      INPUTS:
2905      OUTPUTS:
2906      The NXMFLG is set if we can test.
2907      The NXMLO and NXMHI addresses are setup.
2908
2909
2910      MEMCK::
2911
2912      SAVREG
2913      CLR      NXMFLG
2914      CLR      NXMLO
2915      CLR      NXMHI
2916      BIT      0170000,L#HIME
2917
2918      BNE      14#
2919      TST      T23B
2920      BEQ      1#
2921      CMP      L#HIME,07777
2922      BLO      2#
2923      JSR      PC,NXMTST
2924      BR      13#
2925      TST      T23A
2926      BEQ      4#
2927      CMP      L#HIME,05777
2928      BHI      14#
2929      CMP      L#HIME,03777
2930      BLO      4#
2931      JSR      PC,NXMTST
2932      BR      13#
2933      CMP      L#HIME,01577
2934      BLO      14#
2935      JSR      PC,NXMTST
2936      ADD      077,NXMHI
2937      BIT      0177774,NXMHI
2938      BNE      15#
2939      INC      NXMFLG
2940      BR      15#
2941      BR      15#
2942      PRINTF   0NOMEM
2943      MOV      0NOMEM,-(SP)
2944      MOV      01,-(SP)
2945      MOV      SP,R0
2946      TRAP     C#PNTF
2947      ADD      04,SP
2948      RTS      PC
2949
2950      RETURN
2951
2952
2953      SUBROUTINE TO SETUP THE NXM ADDRESS FOR TESTING
2954
2955      OUTPUTS: NXMLO,NXMHI
2956      SETUP WITH NXM ADDRESS
2957
2958
2959
2960
2961
2962

```

D7

TSV3 - GLOBAL AREAS MACRO M1113 01-FEB-84 17:54
KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

SEQ 081

2953	021312	013701	002120'	NXMTST: MOV	L#HIME,R1	;GET TOP OF MEMORY
2954	021316	062701	000200	ADD	#200,R1	;MAKE IT I/O BLOCK OR OTHER NXM
2955	021322	042701	000177	BIC	#177,R1	
2956	021326	010102		MOV	R1,R2	;RESAVE RESULTS
2957		000006		.REPT	6	
2958				ASL	R1	;PUT IN PLACE FOR XFER
2959				.ENDR		
2960	021344	010137	003130'	MOV	R1,NXMLO	;SAVE TEST ADDRESS LOW
2961		000012		.REPT	10.	
2962				ASR	R2	;PUT IN PLACE FOR XFER
2963				.ENDR		
2964	021374	042702	177700	BIC	#177700,R2	;DON'T WANT ILA!
2965	021400	010237	003132'	MOV	R2,NXMHI	;SAVE TEST ADDRESS HIGH
2966	021404	000207		RTS	PC	;RETURN
2967						
2968						
2969						
2970						
2971	021406			ENDMOD		

E7

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
KTINIT - SETUP KT11 MEMORY MANAGEMENT REGISTERS

SEQ 082

```

6          .TITLE  TSV4 - MISCELLANEOUS SECTIONS
7
8 021406    TSV4:: BGNMOD  TSV4
9 021406
10
11
12
13
14          .SBTTL  PROTECTION TABLE
15          BGNPROT
16          L$PROT::
17 021406    .WORD  -1, -1, -1, -1          ;NO DEVICE PROTECTION REQUIRED.
18 021406    177777 177777 177777
19 021416    ENDPROT
20
21          .SBTTL  INITIALIZE SECTION
22
23          ;++
24          ;THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
25          ;AT THE BEGINNING OF EACH PASS.
26
27          ;IF "START" OR "RESTART", SET QUICK-PASS FLAG AND BUS-INIT.
28          ;IF "CONTINUE", NOTHING IS REQUIRED.
29
30          ;--
31          ;+
32          ;INSERT TEMPORARY JUMP TO ODT
33          ;-
34 021416    BGNINIT
35 021416    L$INIT::
36 021416    40$: CLR      EXTFEA
37 021422    CLR      NXMFLG
38 021426    MOV      @EPT1,EPTSW          ;SET UP PRIMARY MESSAGE FOR REPLACEMENT
39 021434    CLR      SIFLAG                ;CLEAR "SOFT INIT" FLAG
40 021440    CLR      KTENABLE              ;CLEAR TEST ABOVE 28K FLAG
41 021444    CLR      RAMSIZ                ;CLEAR RAM SIZE FOR RAMERR ROUTINE
42 021450    READDEF @EF.CONTINUE
43 021450    MOV      @EF.CONTINUE,R0
44 021454    TRAP     C$REFG
45 021456    BNCOMPLETE 1$
46 021456    BCC      1$
47 021460    CMP      UNITN,L$UNIT          ;UNIT IN RANGE?
48 021466    BHIS     4$                    ;BR IF NO.
49 021470    TST      DUFLG                ;DROPPED UNIT?
50 021474    BMI      NXTU                 ;BR IF YES
51 021476    MOV      UNITN,R1
52 021502    ASL      R1
53 021504    TST      ERTABL(R1)
54 021510    BEQ      SETU
55 021512    BIT      @BIT14,ERTABL(R1)    ;DROPPED?
56 021520    BNE      NXTU
57 021522    EXIT     INIT                 ;DO NOTHING IF "CONTINUE".
58 021522    TRAP     C$EXIT
59 021524    .WORD    L10030-
60 021526    READDEF @EF.NEW
61 021526    MOV      @EF.NEW,R0
62 021532    TRAP     C$REFG
63 021534    BNCOMPLETE NXTU
64 021534    BCC      NXTU
65 021536    READDEF @EF.START

```


TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
INITIALIZE SECTION

SEQ 083

021536	012700	000040		MOV	DEF.START,RO	
021542	104447			TRAP	C#REFG	
57 021544				BCOMplete	2\$	
021544	103404			BCS	2\$	
58 021546				READEf	DEF.RESTART	
021546	012700	000037		MOV	DEF.RESTART,RO	
021552	104447			TRAP	C#REFG	
59 021554				BNCOMplete	31\$	
021554	103031			BCC	31\$	
60 021556			2\$:			1ST PASS, BUS-INIT...
61 021556				BRESET		BUS RESET.
021556	104433			TRAP	C#RESET	
62 021560	005037	002204'		CLR	TSTCNT	NUMBER OF TESTS RUN IN PASS
63 021564	005037	002212'		CLR	FATFLG	CLEAR FATAL ERROR COUNT
64 021570	005037	003134'		CLR	T23A	CLEAR PROCSSOR TYPE A FLAG
65 021574	005037	003136'		CLR	T23B	CLEAR PROCSSOR TYPE B FLAG
66				MOV	340,-(SP)	
67				MOV	20\$,-(SP)	
68				JMP	0.00T	RETURN TO DEBUGGER
69 021600	005037	003370'		CLR	SKIPT	ENTER THE DEBUGGER
70 021604						CLEAR THE SUBTEST "SKIPPER"
71 021604	012737	177777	002174'	20\$:	MOV	-1,QVP
72 021612	004737	020540'			JSR	PC,ENVIRN
73 021616	004737	020626'			JSR	PC,KTINIT
74 021622	012700	003166'			MOV	ERTABL,RO
75 021626	005020			30\$:	CLR	(RO)
76 021630	020027	003366'			CMP	RO,ERTABE
77 021634	103774				BLO	30\$
78 021636	000404				BR	4\$
79 021640	005037	002174'		31\$:	CLR	QVP
80 021644	000137	021714'			JMP	PASRPT
81						GO REPORT THE STATUS
82 021650				4\$:		
83 021650	012737	177777	002172'	NEWPAS:	MOV	-1,UNITN
84 021656	005037	002210'			CLR	DEVCNT
85 021662				NXTU:	BREAK	
021662	104422				TRAP	C#BRK
86 021664	005237	002172'			INC	UNITN
87 021670	023737	002172'	002012'		CMP	UNITN,L\$UNIT
88 021676	103423				BLO	SETU
89 021700	012737	177777	003102'		MOV	-1,DUFLG
90 021706	000401				BR	11\$
91 021710					DOCLN	
021710	104444				TRAP	C#DCLN
92 021712	000240			11\$:	NOP	
93 021714				PASRPT:		
94 021714	023727	002012'	000001		CMP	L\$UNIT,#1
95 021722	101752				BLOS	NEWPAS
96 021724	005737	002210'			TST	DEVCNT
97 021730	001747				BEQ	NEWPAS
98 021732					RFLAGS	RO
021732	104421				TRAP	C#RFLA
99 021734	032700	000100			BIT	ISR,RO
100 021740	001343				BNE	NEWPAS
101						
102 021742					DORPT	
021742	104424				TRAP	C#DRPT

G7

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
INITIALIZE SECTION

SEQ 084

```

103 021744 000741          BR      NEWPAS
104 021746
105
106 021746          SETU:  GPWARD  UNITN,R0          ;GET UNIT N P-TABLE POINTER.
      021746 013700 002172'  MOV      UNITN,R0
      021752 104442          TRAP    C#GPWARD
107 021754          BNCOMPLETE NXTU          ;BR IF UNIT NOT AVAILABLE.
      021754 103342          BCC     NXTU
108 021756 005037 003102'  CLR      DUFLG          ;CLEAR "DROPPED" FLAG.
109 021762 005237 002210'  INC      DEVCNT
110 021766 012001          MOV      (R0)+,R1          ;GET 1ST REGISTER ADDRESS.
111 021770 010137 002176'  MOV      R1,CSRADDR          ;ADDRESS OF REGISTERS OF UNIT UNDER TEST
112
113 021774 012001          MOV      (R0)+,R1          ;GET VECTOR ADDRESS.
114          ;MOV      (R0),R2          ;GET INTERRUPT PRIORITY
115          ;MOV      R2,IPRI          ;SET INTERRUPT PRIORITY.
116 021776 010137 002200'  MOV      R1,IVEC          ;SET INTERRUPT VECTOR POINTER...
117 022002 012721 016116'  MOV      #INTR,(R1)+          ;...VECTOR...
118 022006 013721 002202'  MOV      IPRI,(R1)+          ;...AND PRIORITY.
119
120 022012          1$:
121          ;          TST      QVP          ;1ST PASS ??
122          ;          BEQ      S$          ;NO, SKIP THE PASS 1 STUFF.
123
124          ;
125          ;1ST PASS, CHECK THAT DEVICE ADDRESSES ARE VALID, AND
126          ;THAT THE DISPLAY STATUS IS PROPERLY INITIALIZED.
127          ;
128 022012 013701 002172'  MOV      UNITN,R1
129 022016 006301          ASL      R1
130 022020 052761 100000 003166'  BIS      #BIT15,ERTABL(R1)          ;SAY DEVICE RUNNING
131 022026 005037 005600'  CLR      EXTA          ;CLEAR ERROR EXTENSION FLAG.
132 022032 023727 002012' 000001  CMP      L#UNIT,#1          ;ARE WE TESTING MULTIPLE UNITS?
133 022040 101416          BLOS     10$          ;BR IF NO.
134 022042          RFLAGS     R0          ;YES -- GET OPERATOR FLAGS.
      022042 104421          TRAP    C#RFLA
135 022044 032700 001000          BIT      #PNT,R0          ;SHOULD WE PRINT UNIT #?
136 022050 001412          BEQ      10$          ;BR IF NOT.
137 022052          PRINTF     #PUNIT,UNITN          ;PRINT THE UNIT #
      022052 013746 002172'  MOV      UNITN,-(SP)
      022056 012746 022144'  MOV      #PUNIT,-(SP)
      022062 012746 000002          MOV      #2,-(SP)
      022066 010600          MOV      SP,R0
      022070 104417          TRAP    C#PNTF
      022072 062706 000006          ADD      #6,SP
138 022076          10$:
139 022076 005037 003104'  CLR      NODEV
140 022102 013701 002176'  MOV      CSRADDR,R1          ;ADDRESS OF FIRST REGISTER
141 022106 010102          MOV      R1,R2          ;START OF REGISTERS
142 022110 062702 000002          ADD      #TSSR,R2          ;ADDRESS OF TSSR REGISTER
143 022114 004737 016276'  JSR      PC,XNXH          ;TEST BOTH CONTROLLER REGISTERS...
144 022120 103005          BCC      2$          ;...AND BR IF ALL OK.
145 022122 010137 003104'  MOV      R1,NODEV          ;FLAG DEVICE AS NON-EXISTENT
146 022126 012737 177777 003102'  MOV      #-1,DUFLG          ;DROP THIS UNIT.
147 022134
148          2$:
149          ;
          ;FINALLY, SET CPU PRIORITY AND WE'RE DONE.

```


TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
INITIALIZE SECTION

SEQ 085

```

150
151 022134      5$:  SETPRI  #PRI00      ;ENABLE INTERRUPTS.
      022134 012700 000000      MOV    #PRI00,R0
      022140 104441      TRAP    C$SPRI
152 022142      L10030:  ENDINIT
      022142      TRAP    C$INIT
      022142 104411
153
154 022144      045      116      045 PUNIT: .ASCIZ  /#NN#A***** TESTING UNIT #D#A *****/
155      .EVEN
156
157      .SBTTL  ADD AND DROP UNITS SECTIONS
158
159      ;++
160      ; THE ADD-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
161      ; TO BE (A) ADDED TO THE TEST LIST FOR THE FIRST TIME,
162      ; OR (B) RE-INSERTED IF IT HAD BEEN PREVIOUSLY DROPPED.
163      ;--
164 022212      BGNAU
      022212      L$AU::
165 022212 010001      MOV    R0,R1      ; GET UNIT TO BE ADDED (R0)
166 022214 006301      ASL     R1          ; MAKE IT A WORD INDEX
167 022216 052761 100000 003166'      BIS    #100000,ERTABL(R1) ; SET THE "ACTIVE" BIT
168 022224 042761 040000 003166'      BIC    #40000,ERTABL(R1) ; CLEAR THE "DROPPED" BIT
169 022232      PRINTF  #1$,R0
      022232 010046      MOV    R0,-(SP)
      022234 012746 022260'      MOV    #1$,-(SP)
      022240 012746 000002      MOV    #2$,-(SP)
      022244 010600      MOV    SP,R0
      022246 104417      TRAP    C$PNTF
      022250 062706 000006      ADD     #6,SP
170 022254      EXIT    AU
      022254 000167      .WORD   J$JMP
      022256 000026      .WORD   L10031-2-
171 022260      045      116      045 1$: .ASCIZ  /#N#A UNIT #D#A ADDED/
172      .EVEN
173
174 022306      ENDAU      ; UNUSED.
      022306      L10031:
      022306 104452      TRAP    C$AU
175
176      ;++
177      ; THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
178      ; TO BE REMOVED FROM THE TEST LIST.
179      ;
180      ; SUPVSR DOES THE "DROPPING". THIS IS JUST TO TELL THE MAN.
181      ; "DROPPED" UNITS ARE RE-SELECTED ON OPERATOR "STA" OR "ADD"
182      ; COMMAND. OTHERWISE REMAIN INACTIVE. THE "DISPLAY" COMMAND
183      ; WILL PRINT ALL DROPPED UNITS, AND THE P-TABLES OF THOSE
184      ; WHICH ARE STILL ACTIVE.
185      ; UPON ENTRY, R0 CONTAINS THE UNIT TO BE DROPPED.
186 022310      BGNDU
      022310      L$DU::
187 022310 012737 177777 003102'      MOV    #1,DUFLG
188 022316 010001      MOV    R0,R1
189 022320 006301      ASL     R1
190 022322 052761 140000 003166'      BIS    #140000,ERTABL(R1) ; SAY DROPPED

```

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
ADD AND DROP UNITS SECTIONS

SEQ 086

```

191 022330 000240 000240 000240      240,240,240      ; ??????????
192 022336      010046      PRINTF  #1$,R0
      022340 012746 022364'      MOV    R0,-(SP)
      022344 012746 000002      MOV    #1$,-(SP)
      022350 010600      MOV    #2,-(SP)
      022352 104417      MOV    SP,R0
      022354 062706 000006      TRAP   C$PNTF
193 022360      EXIT    DU
      022360 000167      .WORD   J$JMP
      022362 000030      .WORD   L10032-2-
194 022364      045      116      045 1$: .ASCIZ /NNMA UNIT *D$A DROPPED/
195      .EVEN
196 022414      ENDDU
      022414      L10032: TRAP   C$DU
      022414 104453
197      ;++
198      ; AUTO-DROP CODE SECTION.
199      ;--
200 022416      BGNAUTO
      022416      L$AUTO::
201 022416 013705 002176'      MOV    CSRADDR,R5      ;POINT TO DEVICE REGISTER
202 022422 012703 000550      MOV    #360,,R3      ;ENOUGH TIME FOR 240 REEL TO REWIND
203 022426 004737 016150'      10$: JSR    PC,WAITF      ;WAIT FOR SSR TO SET
204 022432 103420      BCS     20$      ;LEAVE WHEN SSR IS SET
205 022434      DELAY    250.      ;WAIT FOR .25 SECONDS
      022434 012727 000372      MOV    #250,,(PC)+
      022440 000000      .WORD   0
      022442 013727 002116'      MOV    L$DLY,(PC)+
      022446 000000      .WORD   0
      022450 005367 177772      DEC     -6(PC)
      022454 001375      BNE     .-4
      022456 005367 177756      DEC     -22(PC)
      022462 001367      BNE     .-20
206 022464 005303      DEC     R3      ;BUMP COUNTER DOWN
207 022466 001357      BNE     10$      ;KEEP GOING
208 022470 004737 017104'      JSR    PC,CKDROP      ;TRY AND DROP UNIT
209 022474      20$:
210 022474      ENDAUTO      ; UNUSED.
      022474      L10033:
      022474 104461      TRAP   C$AUTO
211
212      .SBTTL  CLEAN-UP AND REPORT CODING SECTIONS
213
214      ;++
215      ; THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS
216      ; EXECUTED AT THE END OF EACH PASS (OR SUB-PASS).
217      ; USE TO RETURN DEVICE UNDER TEST TO A NEUTRAL STATE.
218      ;--
219 022476      BGNCLN
      022476      L$CLEAN::
220 022476 013705 002176'      MOV    CSRADDR,R5      ;POINT TO DEVICE REGISTER
221 022502 005737 003102'      TST     DUFLG      ;"DROPPED" FLAG IS SET ON...
222 022506 100405      BMI     1$      ;...AND GROSS CONTROLLER FAULT...
223      ;...DON'T TRY TO XCT CLEANUP CODE.
224
225 022510 012765 000000 000002      MOV    #0,TSSR(R5)      ;DO SOFT INIT

```

J7

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
CLEAN-UP AND REPORT CODING SECTIONS

SEQ 087

226	022516	004737	016150'	JSR	PC, WAITF	
227	022522			1\$:		
228	022522			2\$:	ENDCLN	
	022522			L10034:		
	022522	104412		TRAP	C#CLEAN	
229				1++		
230					THE REPORT CODING SECTION CONTAINS THE	
231					"PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.	
232				1--		
233	022524			BGNRPT		
	022524			L#RPT::		
234	022524			PRINTS	#DEVSUM	
	022524	012746	022766'	MOV	#DEVSUM, -(SP)	
	022530	012746	000001	MOV	#1, -(SP)	
	022534	010600		MOV	SP, R0	
	022536	104416		TRAP	C#PNTS	
	022540	062706	000004	ADD	#4, SP	
235	022544	010246		MOV	R2, -(SP)	
236	022546	010346		MOV	R3, -(SP)	
237	022550	010446		MOV	R4, -(SP)	
238	022552	012704	003166'	MOV	#ERTABL, R4	; GET START OF ERROR TABLE.
239	022556	005003		CLR	R3	; CLEAR UNIT NUMBER
240	022560	011402		1\$:	MOV (R4), R2	; GET ERROR TABLE ENTRY & TEST IT.
241	022562	001467		BSEQ	4\$	; ZERO IF UNIT NOT RUN
242	022564	100066		BPL	4\$	
243	022566	032702	040000	BIT	#BIT14, R2	; WAS UNIT DROPPED?
244	022572	001015		BNE	2\$	; BR IF YES
245	022574	042702	170000	BIC	#C7777, R2	; GET ERROR COUNT FIELD
246	022600			PRINTS	#DEVONL, R3, R2	; PRINT
	022600	010246		MOV	R2, -(SP)	
	022602	010346		MOV	R3, -(SP)	
	022604	012746	023023'	MOV	#DEVONL, -(SP)	
	022610	012746	000003	MOV	#3, -(SP)	
	022614	010600		MOV	SP, R0	
	022616	104416		TRAP	C#PNTS	
	022620	062706	000010	ADD	#10, SP	
247	022624	000446		BR	4\$	
248	022626	020227	160000	2\$:	CMP R2, #160000	; WAS UNIT NON-EXISTENT?
249	022632	001012		BNE	3\$	; BR IF NO
250	022634			PRINTS	#DEVNXR, R3	
	022634	010346		MOV	R3, -(SP)	
	022636	012746	023073'	MOV	#DEVNXR, -(SP)	
	022642	012746	000002	MOV	#2, -(SP)	
	022646	010600		MOV	SP, R0	
	022650	104416		TRAP	C#PNTS	
	022652	062706	000006	ADD	#6, SP	
251	022656	000431		BR	4\$	
252	022660	020227	160001	3\$:	CMP R2, #160001	; WAS UNIT NOT READY AT STARTUP?
253	022664	001012		BNE	30\$	; BR IF NO.
254	022666			PRINTS	#DEVNRD, R3	
	022666	010346		MOV	R3, -(SP)	
	022670	012746	023155'	MOV	#DEVNRD, -(SP)	
	022674	012746	000002	MOV	#2, -(SP)	
	022700	010600		MOV	SP, R0	
	022702	104416		TRAP	C#PNTS	
	022704	062706	000006	ADD	#6, SP	
255	022710	000414		BR	4\$	

K7

TSV4 - MISCELLANEOUS SECTIONS MACRO M1113 01-FEB-84 17:54
 CLEAN-UP AND REPORT CODING SECTIONS

SEQ 088

```

256 022712 042702 170000      30$: BIC      #+C7777,R2
257 022716      PRINTS    #DEVDR0,R3,R2
      022716 010246      MOV      R2,-(SP)
      022720 010346      MOV      R3,-(SP)
      022722 012746 023236'    MOV      #DEVDR0,-(SP)
      022726 012746 000003      MOV      #3,-(SP)
      022732 010600      MOV      SP,R0
      022734 104416      TRAP     C#PNTS
      022736 062706 000010      ADD      #10,SP
258 022742 062704 000002      4$:  ADD      #2,R4
259 022746 005203      INC      R3
260 022750 020427 003366'    CMP      R4,#ERTABE
261 022754 103701      BLO      1$
262 022756 012604      MOV      (SP)+,R4
263 022760 012603      MOV      (SP)+,R3
264 022762 012602      MOV      (SP)+,R2
265 022764      ENDRPT      ; UNUSED.
      022764      L10035:
      022764 104425      TRAP     C#RPT
266
267
268 022766      045      116      045  DEVSUM: .ASCIZ  /#N#ADEVICE STATUS SUMMARY:#N/
269 023023      045      101      040  DEVONL: .ASCIZ  /#A UNIT #D3#A  ONLINE,  ERRORS = #D#N/
270 023073      045      101      040  DEVNXR: .ASCIZ  /#A UNIT #D3#A  DROPPED, NON-EXISTENT REGISTER#N/
271 023155      045      101      040  DEVNRD: .ASCIZ  /#A UNIT #D3#A  DROPPED, NOT READY AT STARTUP#N/
272 023236      045      101      040  DEVDR0: .ASCIZ  /#A UNIT #D3#A  DROPPED, ERRORS = #D#N/
273      .EVEN
274
275 023306      ENDMOD
276
277
278

```

L7

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
CLEAN-UP AND REPORT CODING SECTIONS

SEQ 089

```

1          .TITLE   TSV7 - HARDWARE TESTS 1-8
2
9
10 023306      BGNMOD   TSV7
    023306      TSV7::
16
24          .SBTTL   TEST 1: INITIALIZE #4 TEST
25
26          ;+
27          ; THIS TEST VERIFIES THAT WRITING INTO THE TSSR RETURNS THE
28          ; CONTROLLER TO ITS INITIALIZED STATE FROM VARIOUS CONDITIONS
29          ; (I.E. LOOPBACK ENABLED, FORCING WRONG PARITY, INVERTING SENSE OF
30          ; EXTENDED FEATURES SWITCH, ETC.)
31          ;
32          ; -
33
34 023306      BGNTST
    023306
35 023306      012737   006166' 002170'      MOV      #EPRT1,EPRTSW      ;SET UP PRIMARY ERROR MESSAGE
36
37          ;
38          ; TEST 1
39          ;
40          ; -
41
42
43
48 023314      004737   016104'      JSR      PC,DSBINT      ;DISABLE INTERRUPTS
49 023320      012700   024244'      MOV      #TST21ID,R0      ;ASCII MESSAGE TO IDENTIFY TEST
50 023324      004737   016412'      JSR      PC,TSTSEL,UP      ;DO INITIAL TEST SETUP
51 023330      012737   000005' 002206'      MOV      #5,LOOPCNT      ;PERFORM 5 ITERATIONS
52 023336      T21LOOP:
53 023336      004737   024266'      JSR      PC,T21REST      ;SET COMMAND PACKET
54 023342      004737   024356'      JSR      PC,T21RT2      ;SET UP OTHER COMMAND PACKET
55
56          ;*****
57          ;
58          ; ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
59          ;
60          ;*****
61
62 023346      012737   176750' 023722'      MOV      #65000,,T21DLY      ;SET DELAY ROUTINE
63 023354      004737   015674'      11$: JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
64 023360      103426      BCS      20$      ;BR IF INIT WAS OK
65 023362      DELAY      250      ;DELAY FOR A REWIND TO FINISH
    023362      012727   000250      MOV      #250,(PC)+
    023366      000000      .WORD      0
    023370      013727   002116'      MOV      #DLY,(PC)+
    023374      000000      .WORD      0
    023376      005367   177772      DEC      -6(PC)
    023402      001375      BNE      -4
    023404      005367   177756      DEC      -22(PC)
    023410      001367      BNE      -20
66 023412      005337   023722'      DEC      T21DLY      ;BUMP COUNTER DOWN
67 023416      001356      BNE      11$      ;BR, IF MORE TIME TO GO
68 023420      005237   002212'      INC      FATELG      ;BUMP COUNT
72 023424      010001      MOV      R0,R1      ;CONTENTS OF TSSR REGISTER

```

M7

TSV7 - HARDWARE TESTS 1-8
TEST 1: INITIALIZE #4 TEST

MACRO M1113 01-FEB-84 17:54

SEQ 090

```

73 023426          ERRDF  ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
      023426 104455          TRAP  C$ERDF
      023430 000145          .WORD 101
      023432 003642'        .WORD SFIERR
      023434 011734'        .WORD SFIMSG
74 023436          20$:
75 023436 012704 023700'    MOV  #T21PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
76
77      ;*****
78      ;
79      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
80      ;
81      ;*****
82
83 023442 013737 002172' 023720'    MOV  UNITN,T21DSW      ;SET UP DRIVE NUMBER
84 023450 004737 010562'    JSR  PC,WRTPCHR      ;ISSUE WRITE CHARACTERISTICS
85 023454 103407          BCS  23$      ;BR, IF COMMAND ISSUED OK
86 023456 005237 002212'    INC  FATFLG      ;BUMP COUNT
87 023462 010001          MOV  R0,R1      ;SAVE CONTENTS OF TSSR
88 023464          ERRHRD  ERRNO,WRTPMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
      023464 104456          TRAP  C$ERHRD
      023466 000146          .WORD 102
      023470 005046'        .WORD WRTPMSG
      023472 011734'        .WORD SFIMSG
92 023474          23$:  CKLOOP
      023474 104406          TRAP  C$CLP1
93 023476 112737 000200 024020'    MOV  #200,T21BS0      ;WRITE MISCELLANEOUS CONT/READ STATUS
94 023504 112737 000010 024021'    MOV  #10,T21BS1      ;FUNCTION SELECTION BIT
95 023512          25$:
96 023512 012704 024010'    MOV  #T21PK2,R4      ;WRITE SUBSYS MEM PACKET
97 023516 010465 000000      MOV  R4,TSDR(R5)      ;ISSUE COMMAND
98 023522 004737 016236'    JSR  PC,CHKTSSR      ;WAIT FOR SSR
99 023526 103407          BCS  30$      ;BR, IF NO ERROR
100 023530 010001          MOV  R0,R1      ;ERROR, SAVE TSSR
101 023532 005237 002212'    INC  FATFLG      ;BUMP COUNT
102 023536          ERRHRD  ERRNO,T21SSR,PKTSSR      ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
      023536 104456          TRAP  C$ERHRD
      023540 000147          .WORD 103
      023542 024026'        .WORD T21SSR
      023544 011746'        .WORD PKTSSR
106 023546          30$:  CKLOOP      ;SCOPE LOOP
      023546 104406          TRAP  C$CLP1
107 023550 012765 000000 000002    MOV  #0,TSSR(R5)      ;ISSUE A SOFT INITIALIZE
108 023556 004737 016150'    JSR  PC,WAITF      ;WAIT FOR JUST THE SSR BIT TO SET
109 023562 016501 000002      MOV  TSSR(R5),R1      ;READ THE TSSR BACK
110 023566 010102          MOV  R1,R2      ;WORK REGISTER
111 023570 042702 176377      BIC  #C<HTADDR>,R2      ;CLEAR OUT OTHER BITS
112 023574 052702 002200      BIS  #SSR!MBA,R2      ;SOME OF THE BITS THAT SHOULD BE SET
113 023600 032701 000100      BIT  #OFL,R1      ;IS OFF LINE BIT SET
114 023604 001012          BNE  38$      ;BR, IF DRIVE IS OFF LINE
115 023606 020102          35$:  CMP  R1,R2      ;EXPECTED (R2) = RECEIVED (R1)
116 023610 001406          BEQ  37$      ;BR, IF THEY ARE EQUAL (OK)
117 023612 005237 002212'    INC  FATFLG      ;BUMP COUNT
118 023616          ERRHRD  ERRNO,T21AM3,EXPREC      ;"ERROR TRYING TO INIT AFTER WRITE MISC.
      023616 104456          TRAP  C$ERHRD
      023620 000150          .WORD 104
      023622 024123'        .WORD T21AM3

```


N7

TSV7 - HARDWARE TESTS 1-8
TEST 1: INITIALIZE #4 TEST

MACRO M1113 01-FEB-84 17:54

SEQ 091

```

122 023624 012374'
023626 104406
123 023630 000406
124 023632
128 023632
023632 104455
023634 000151
023636 024223'
023640 015374'
129 023642 004737 017104'
130 023646 000241
131 023650 106037 024021'
132 023654 001316
133 023656
023656 104406
134 023660 004737 016360'
135 023664 103002
136 023666 000137 023336'
137 023672
023672 104432
023674 000524

138
139
140
141
143 023676
145 023700
146 023700 100004
147 023702 023710'
148 023704 000000
149 023706 000012
150 023710
151 023710 023724'
152 023712 000000
153 023714 000024
154 023716 000000
155 023720 000000
156 023722 000000
157 023724
158
159
160
162 024006
164 024010
165 024010 100206
166 024012 024020'
167 024014 000000
168 024016 000006
169
170
171 024020
172 024020 000
173 024021 000
174 024022 000000
175 024024 000000
176

37$: CKLOOP
38$: ERRDF ERRNO,T210FL,EXPREC
40$: JSR PC,CKDROP
CLC
RORB T21BS1
BNE 25$
50$: CKLOOP
JSR PC,TSTLOOP
BCC 63$
JMP T21LOOP
63$: EXIT TST

;+
;LOCAL STORAGE FOR THIS TEST
;-
;BLKB 10-<.-TSV2&7>
T21PACKET:
.WORD 100004
.WORD T21DATA
.WORD 0
.WORD 10.
T21DATA:
.WORD T21BFR
.WORD 0
.WORD 20.
.WORD 0
T21DSW: .WORD 0
T21DLY: .WORD 0
T21BFR: .BLKW 25.
;
;WRITE SUBSYSTEM MEMORY COMMAND PACKET
;
;BLKB 10-<.-TSV2&7>
T21PK2:
.WORD 100206
.WORD T21BF2
.WORD 0
.WORD 6.
;
.EVEN
T21BF2:
T21BS0: .BYTE 0
T21BS1: .BYTE 0
T21S2: .WORD 0
T21S3: .WORD 0

;LOOP IF SELECTED
;SKIP OVER OFF-LINE STUFF
;DRIVE IS OFF LINE
;TRY AND DROP UNIT
;DON'T LET CARRY SNEAK IN
;TRY NEXT "LOWEST" BIT POSITION
;LOOP UNTIL ALL EIGHT BITS TESTED
;SCOPE LOOP
;DO WE NEED TO ITERATE TEST
;BR, IF NO LOOP REQUIRED
;EXECUTE AGAIN
;ALL DONE THIS TEST

;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
;DRIVE SELECT WORD
;DELAY COUNTER
;MESSAGE BUFFER
;WRITE SUB SYS MEM COMMAND, IE AND ACK
;ADDRESS OF SELECT BLOCK DATA
;SIZE OF DATA PACKET
;BSEL0 AREA --- "COMMAND" BYTE
;BSEL1 AREA
;SEL 2 AREA
;DATA AREA

```

TSV7 - HARDWARE TESTS 1-8
TEST 1: INITIALIZE #4 TEST

MACRO M1113 01-FEB-84 17:54

SEQ 092

```

177
178
179      ; LOCAL TEXT MESSAGES FOR TEST
180      ;
181
182 024026      127      122      111  T21SSR: .ASCIIZ 'WRITE MISCELLANEOUS CONTROL/READ STATUS Command Not Accepted'
183 024123      124      123      123  T21AM3: .ASCIIZ 'TSSR Init. Failed After WRITE MISCELLANEOUS CONRTOL/READ STATUS'
184 024223      104      162      151  T21OFL: .ASCIIZ 'Drive is OFFLINE'
185 024244      111      156      151  T21ID:  .ASCIIZ 'Initialization #4'
186
187      ;
188
189      ; ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
190      ; WRITE SUBSYSTEM MEMORY COMMAND
191      ;
192      ;
193
194 024266      T21REST:
195 024266      SAVREG
196 024272      012701 023700'      MOV      #T21PACKET,R1      ;SAVE THE REGISTERS
197 024276      012721 100004      MOV      #100004,(R1)      ;START OF THE PACKET
198 024302      012721 023710'      MOV      #T21DATA,(R1)      ;WRITE SUBSYSTEM MEM. WITH ACK.
199 024306      005021      CLR      (R1)      ;ADDRESS OF CHARAISTICS DATA BLOCK
200 024310      012721 000010      MOV      #8,(R1)      ;EXTENDED ADDRESS
201 024314      012721 023724'      MOV      #T21BFR,(R1)      ;SIZE OF DATA BLOCK IN BYTES
202 024320      005021      CLR      (R1)      ;ADDRESS OF MESSAGE BUFFER
203 024322      012721 000024      MOV      #20,(R1)      ;LENGTH OF MESSAGE BUFFER
204 024326      005021      CLR      (R1)
205 024330      005011      CLR      (R1)
206 024332      012702 000020      MOV      #20,R2      ;NUMBER OF LOCATIONS TO BE CLEARED
207 024336      012762 177777 023724' 64: MOV      #1 7777,T21BFR(R2) ;ALL ONES TO MESSAGE BUFFER
208 024344      005742      TST      -(R2)      ;NEXT LOCATION
209 024346      020227 000000      CMP      R2,#0      ;CHECK R2 FOR ZERO
210 024352      001371      BNE      64:      ;BR, IF NOT AT ZERO YET
211 024354      000207      RTS      PC      ;RETURN
212
213
214 024356      T21RT2:
215 024356      SAVREG
216 024362      012701 024010'      MOV      #T21PK2,R1      ;SAVE THE REGISTERS
217 024366      012721 100206      MOV      #100206,(R1)      ;START OF THE PACKET
218 024372      012721 024020'      MOV      #T21BF2,(R1)      ;WRITE SUBSYSTEM MEM. WITH ACK, IE
219 024376      005021      CLR      (R1)      ;ADDRESS OF DATA BLOCK
220 024400      012721 000006      MOV      #6,(R1)      ;EXTENDED ADDRESS
221 024404      005021      CLR      (R1)      ;SIZE OF DATA BLOCK IN BYTES
222 024406      012701 024020'      MOV      #T21BF2,R1      ;ADDRESS OF DATA FOR WRT SUB SYS MEM
223 024412      005021      CLR      (R1)
224 024414      005011      CLR      (R1)
225 024416      000207      RTS      PC      ;RETURN
226 024420      ENDTST
227      024420      104401
228
229      ;
230
231      ; THIS TEST VERIFIES BASIC TAPE-MOTION COMMAND DECODING AND BASIC

```

L10036: TRAP C1ETST

.SBTTL TEST 2: OFF-LINE AND REJECT REWIND


```

232      ;OPERATION OF THE REWIND POSITIONING COMMAND. IT DOES NOT
233      ;NECESSARILY DEMONSTRATE THAT THE TRANSPORT CAN BE REWOUND FROM AN
234      ;ARBITRARY POSITION ON THE TAPE. SUBSEQUENT TESTS IMPLICITLY
235      ;CHECK THE OPERATION OF THE REWIND COMMAND SINCE THEY MUST
236      ;TYPICALLY REWIND THE TAPE IN THE NORMAL COURSE OF THEIR TEST
237      ;SEQUENCES. THE TEST CONSISTS OF THE FOLLOWING THREE SUBTESTS
238      ;
239      ;
240      ;-
241      BGNTST
242      T2::
243      MOV     #EPRT1,EPRTSW          ;SET UP PRIMARY ERROR MESSAGE
244      JSR     PC,DSBINT              ;DISABLE INTERRUPTS
245      MOV     #TST2ID,R0             ;ASCII MESSAGE TO IDENTIFY TEST
246      JSR     PC,TSTSETUP            ;DO INITIAL TEST SETUP
247      MOV     #5,LOOPCNT             ;PERFORM 5 ITERATIONS
248      ;
249      ;
250      ;
251      ;
252      ;
253      ;TEST 2, SUBTEST 1
254      ;
255      ;VERIFIES THAT ALL TAPE-MOTION COMMANDS (WITH VALID
256      ;MODE CODES) TERMINATE WITH FUNCTION REJECT AND
257      ;OFF-LINE STATUS WHEN THE TAPE TRANSPORT IS OFF-LINE.
258      ;THE SUBTEST OPERATES BY PLACING THE CONTROLLER INTO
259      ;EXTENDED MODE, SELECTING UNIT 7, AND ISSUING EACH
260      ;TAPE-MOTION COMMAND, CHECKING, AFTER EACH COMMAND,
261      ;THAT FUNCTION REJECT TERMINATION WAS ACCOMPLISHED.
262      ;-
263      ;
264      T22LOOP:
265      BGNSUB                          ;>>>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>>>
266      T2.1:
267      TRAP    C#BSUB
268      JSR     PC,T22REST              ;SET COMMAND PACKET
269      JSR     PC,T22RT2               ;SET UP OTHER COMMAND PACKET
270      ;*****
271      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
272      ;
273      ;*****
274      ;
275      JSR     PC,SOFINIT              ;DO INITIALIZE ON CONTROLLER
276      BCS     20$                     ;BR IF INIT WAS OK
277      INC     FATFLG                  ;BUMP COUNT
278      MOV     R0,R1                   ;CONTENTS OF TSSR REGISTER
279      ERDIF   ERRNO,SFIERR,SFIMSG     ;FATAL ERROR TSSR WAS NOT OK
280      TRAP    C#ERDF
281      .WORD   20$
282      .WORD   SFIERR
283      .WORD   SFIMSG
284      20$:
285      MOV     #T22PACKET,R4           ;SUBROUTINE NEEDS PACKET ADDRESS
286      ;*****
287      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRCHR)
288      ;

```

```

289
290
291
292 024514 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
293 024520 103407              BCS      23$      ;BR, IF COMMAND ISSUED OK
294 024522 005237 002212'      INC      FATFLG      ;BUMP COUNT
298 024526 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
299 024530              ERRHRD  ERRNO,WRTMSG,SFMSG    ;WRITE CHARACTERISTICS FAILED
      024530 104456              TRAP      C$ERHRD
      024532 000312              .WORD    202
      024534 005046'            .WORD    WRTMSG
      024536 011734'            .WORD    SFMSG
300 024540              23$:    CKLOOP              TRAP      C$CLP1
      024540 104406              MOV      T22BFR+6,R1    ;PICK UP XT50
301 024542 013701 026020'      BIT      4,R1      ;IS UNIT WRITE-LOCKED?
302 024546 032701 000004      BEQ      24$      ;NO, PROCEED WITH TESTING
303 024552 001407              INC      FATFLG      ;BUMP COUNT
304 024554 005237 002212'      ERRDF  ERRNO,T22WLK,SFMSG ;TAPE IS WRITE LOCKED
308 024560              TRAP      C$ERDF
      024560 104455              .WORD    203
      024562 000313              .WORD    T22WLK
      024564 026622'            .WORD    SFMSG
      024566 011734'
309 024570              DOCLN              TRAP      C$DCLN
      024570 104444              24$:    CKLOOP              TRAP      C$CLP1
310 024572              TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
      024572 104406              BNE      50$      ;BR IF SWITCH IS ON
311 024574 005737 002216'      MOV      200,T22BS1    ;WRITE MISCELLANEOUS CONT/READ STATUS
312 024600 001041              MOV      10,T22BS0    ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
313 024602 112737 000200 026111'  MOV      12,T22PK2,R4    ;WRITE SUBSYS MEM PACKET
314 024610 112737 000010 026110'  MOV      R4,TSD8(R5)    ;ISSUE COMMAND
315 024616 012704 026100'      JSR      PC,CHKTSSR    ;WAIT FOR SSR
316 024622 010465 000000      BCS      30$      ;BR, IF NO ERROR
317 024626 004737 016236'      MOV      R0,R1      ;ERROR, SAVE TSSR
318 024632 103407              INC      FATFLG      ;BUMP COUNT
319 024634 010001              ERRHRD  ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
320 024636 005237 002212'      TRAP      C$ERHRD
324 024642              .WORD    204
      024642 104456              .WORD    T22SSR
      024644 000314              .WORD    PKTSSR
      024646 026130'
      024650 011746'
325 024652              30$:    CKLOOP              ;LOOP IF SELECTED
      024652 104406              TRAP      C$CLP1
326 024654 012704 025770'      MOV      0T22PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
327
328
329
330
331
332
333
334 024660 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
335 024664 103407              BCS      50$      ;BR, IF COMMAND ISSUED OK
336 024666 005237 002212'      INC      FATFLG      ;BUMP COUNT
340 024672 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
341 024674              ERRHRD  ERRNO,WRTMSG,SFMSG    ;WRITE CHARACTERISTICS FAILED

```


		BGNSUB		; >>>>>>> BEGIN SUBTEST >>>>>>>
	025044			T2.2:
	025044	104402		TRAP C\$BSUB
389	025046	004737	026742'	JSR PC,T22REST ;SET COMMAND PACKET
390	025052	004737	027034'	JSR PC,T22RT2 ;SET UP OTHER COMMAND PACKET
391				
392				;*****
393				:
394				;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
395				:
396				;*****
397				
398	025056	004737	015674'	JSR PC,SOFINIT ;DO INITIALIZ ON CONTROLLER
399	025062	103407		BCS 20\$;BR IF INIT WAS OK
400	025064	005237	002212'	INC FATFLG ;BUMP COUNT
404	025070	010001		MOV R0,R1 ;CONTENTS OF TSSR REGISTER
405	025072			ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
	025072	104455		TRAP C\$ERDF
	025074	000320		.WORD 208
	025076	003642'		.WORD SFIERR
	025100	011734'		.WORD SFIMSG
406	025102			20\$: MOV #T22PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
407	025102	012704	025770'	
408				
409				;*****
410				:
411				;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
412				:
413				;*****
414				
415	025106	004737	010562'	JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
416	025112	103407		BCS 23\$;BR. IF COMMAND ISSUED OK
417	025114	005237	002212'	INC FATFLG ;BUMP COUNT
421	025120	010001		MOV R0,R1 ;SAVE CONTENTS OF TSSR
422	025122			ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTISC FAILED
	025122	104456		TRAP C\$ERHRD
	025124	000321		.WORD 209
	025126	005046'		.WORD WRTMSG
	025130	011734'		.WORD SFIMSG
423	025132	005737	002216'	23\$: TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SWITCH
424	025136	001041		BNE 50\$;BR IF SWITCH IS ON
425				
426	025140	112737	000200 026111'	MOVB #200,T22BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
427	025146	112737	000010 026110'	MOVB #10,T22BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
428	025154	012704	026100'	MOV #T22PK2,R4 ;WRITE SUBSYS MEM PACKET
429	025160	010465	000000	MOV R4,TSD8(R5) ;ISSUE COMMAND
430	025164	004737	016236'	JSR PC,CMTSSR ;WAIT FOR SSR
431	025170	103407		BCS 30\$;BR. IF NO ERROR
432	025172	010001		MOV R0,R1 ;ERROR, SAVE TSSR
433	025174	005237	002212'	INC FATFLG ;BUMP COUNT
437	025200			ERRHRD ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
	025200	104456		TRAP C\$ERHRD
	025202	000322		.WORD 210
	025204	026130'		.WORD T22SSR
	025206	011746'		.WORD PKTSSR
438	025210			30\$: CKLOOP ;LOOP IF SELECTED
	025210	104406		TRAP C\$CLP1

[illegible]

```

488      ;VERIFIES THAT A REWIND COMMAND WITH CVC=1 CLEARS VCK
490      ;AND RETURNS PROPER STATUS IN THE MESSAGE BUFFER.
491      ;
492      ;
493      ; -
494      025366          BGNSUB                                ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
         025366                                          T2.3:
         025366    104402                                TRAP      C$BSUB
495      025370    004737    026742'                    JSR        PC,T22REST    ;SET COM:AND PACKET
496      025374    004737    027034'                    JSR        PC,T22RT2     ;SET UP OTHER COMMAND PACKET
497
498      ;*****
499      ;
500      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
501      ;
502      ;*****
503
504      025400    004737    015674'                    JSR        PC,SOFINIT    ;DO INITIALIZE ON CONTROLLER
505      025404    103407                                BCS        20$           ;BR IF INIT WAS OK
506      025406    005237    002212'                    INC        FATFLG       ;BUMP COUNT
507      025412    010001                                MOV        R0,R1        ;CONTENTS OF TSSR REGISTER
508      025414                                ERDZF      ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
         025414    104455                                TRAP      C$ERDF
         025416    000326                                .WORD    214
         025420    003642'                                .WORD    SFIERR
         025422    011734'                                .WORD    SFIMSG
512      025424    20$:                                  MOV        @T22PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
513      025424    012704    025770'
514
515      ;*****
516      ;
517      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
518      ;
519      ;*****
520
521      025430    004737    010562'                    JSR        PC,WRTHCR     ;ISSUE WRITE CHARACTERISTICS
522      025434    103407                                BCS        23$           ;BR, IF COMMAND ISSUED OK
523      025436    005237    002212'                    INC        FATFLG       ;BUMP COUNT
524      025442    010001                                MOV        R0,R1        ;SAVE CONTENTS OF TSSR
525      025444                                ERHRD      ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTISC FAILED
         025444    104456                                TRAP      C$ERHRD
         025446    000327                                .WORD    215
         025450    005046'                                .WORD    WRTMSG
         025452    011734'                                .WORD    SFIMSG
529      025454    005737    002216'                    23$:   TST        EXTFEA    ;CHECK FOR EXTENDED FEATURES SW SWITCH
530      025460    001041                                BNE        50$           ;BR IF SWITCH IS ON
531
532      025462    112737    000200    026111'            MOVB       #200,T22B51    ;WRITE MISCELLANEOUS CONT/READ STATUS
533      025470    112737    000010    026110'            MOVB       #10,T22B50   ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
534      025476    012704    026100'            MOV        @T22PK2,R4   ;WRITE SUBSYS MEM PACKET
535      025502    010465    000000            MOV        R4,TSD8(R5)   ;ISSUE COMMAND
536      025506    004737    016236'            JSR        PC,CMTSSR     ;WAIT FOR SSR
537      025512    103407                                BCS        30$           ;BR, IF NO ERROR
538      025514    010001                                MOV        R0,R1        ;ERROR, SAVE TSSR
539      025516    005237    002212'            INC        FATFLG       ;BUMP COUNT
540      025522                                ERHRD      ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS

```


TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 2: OFF-LINE AND REJECT REWIND

SEQ 099

025522	104456				TRAP	C\$ERHRD
025524	000330				.WORD	216
025526	026130'				.WORD	T22SSR
025530	011746'				.WORD	PKTSSR
544	025532		304:	CKLOOP		;LOOP IF SELECTED
	025532	104406			TRAP	C\$CLP1
545	025534	012704	025770'	MOV	#T22PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS
546						
547						
548						
549						
550						
551						
552						
553	025540	004737	010562'	JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS
554	025544	103407		BCS	504	;BR, IF COMMAND ISSUED OK
555	025546	005237	002212'	INC	FATFLG	;BUMP COUNT
559	025552	010001		MOV	R0,R1	;SAVE CONTENTS OF TSSR
560	025554			ERRHRD	ERRNO,WRTMSG,SFMSG	;WRITE CHARACTERISTICS FAILED
	025554	104456				
	025556	000331				TRAP C\$ERHRD
	025560	005046'				.WORD 217
	025562	011734'				.WORD WRTMSG
						.WORD SFMSG
561	025564		504:	CKLOOP		;SCOPE LOOP
	025564	104406			TRAP	C\$CLP1
562	025566	016501	000002	MOV	TSSR(R5),R1	;GET TSSR CONTENTS
563	025572	012701	000100	BIT	#OFL,R1	;CHECK FOR THE OFFLINE BIT SET
564	025576	001006		BNE	604	;BR, IF OFFLINE (GOOD)
565	025600	005237	002212'	INC	FATFLG	;BUMP COUNT
569	025604			ERRDF	ERRNO,T22OFL,SFMSG	;OFF LINE SHOULD HAVE BEEN SET (BAD)
	025604	104455				TRAP C\$ERDF
	025606	000332				.WORD 218
	025610	026325'				.WORD T22OFL
	025612	011734'				.WORD SFMSG
570	025614		604:	CKLOOP		;LOOP IF SELECTED
	025614	104406			TRAP	C\$CLP1
571	025616	012737	142010	MOV	#142010,T22PK2	;POSITION COMMAND (REWIND MODE) CVC=1
572	025624	012704	026100'	MOV	#T22PK2,R4	;R4 = POINTER TO PACKET
573	025630	010465	000000	MOV	R4,TSD8(R5)	;ISSUE COMMAND
574	025634	004737	016150'	JSR	PC,WAITF	;WAIT FOR SSR TO SET
575	025640	016501	000002	MOV	TSSR(R5),R1	;GET TSSR CONTENTS
576	025644	012702	100306	MOV	#SSR!OFL!SC!BIT1!BIT2 R2	;SET UP EXPECTED
577	025650	020102		CMP	R1,R2	;ARE THEY EQUAL
578	025652	001406		BEQ	804	;BR, IF OK ESP. FUNCTION REJECT
579	025654	005237	002212'	INC	FATFLG	;BUMP COUNT
583	025660			ERRHRD	ERRNO,T22RWJ,EXPREC	;TSSR INCORRECT AFTER TAPE MOTION CMD
	025660	104456				TRAP C\$ERHRD
	025662	000333				.WORD 219
	025664	026474'				.WORD T22RWJ
	025666	015374'				.WORD EXPREC
584	025670		804:	CKLOOP		;LOOP IF SELECTED
	025670	104406			TRAP	C\$CLP1
585	025672	012703	026012'	MOV	#T22BFR,R3	;POINTER TO MESSAGE BUFFER
586	025676	016301	000006	MOV	XSTO(R3),R1	;PICK UP XSTO FROM MESSAGE BUFFER
587	025702	010102		MOV	R1,R2	;SET UP EXPECTED
588	025704	042702	000020	BIC	#BIT4,R2	;VCK SHOULD BE CLEAR
589	025710	020102		CMP	R1,R2	;ARE THEY EQUAL

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 2: OFF-LINE AND REJECT REWIND

SEQ 100

```

590 025712 001406          BEQ 90$          ;BR, IF OK (GOOD)
591 025714 005237 002212'  INC  FATFLG      ;BUMP COUNT
595 025720          ERRHRD  ERRNO,T22VCK,EXPREC ;VCK WASN'T CLEAR (BAD)
      025720 104456          TRAP  C$ERHRD
      025722 000334          .WORD 220
      025724 026547'        .WORD T22VCK
      025726 015374'        .WORD EXPREC
596 025730          90$;
597 025730          ENDSUB
      025730          ;>>>>>>>>> END SUBTEST >>>>>>>>>
      025730          L10042:
598 025732 104403          TRAP  C$ESUB
599 025732 023727 002212' 000017  CMP  FATFLG,15. ;IS ERROR COUNT AT 25
600 025740 103402          BLO  999$        ;BR, IF LESS THAN 25
601 025742 004737 017104'  JSR  PC,CKDROP ;TRY TO DROP THE UNIT
602 025746 004737 016360'  999$: JSR  PC,TSTLOOP
603 025752 103002          BCC 163$
604 025754 000137 024452'  JMP  T22LOOP
605 025760          163$: EXIT  TST
      025760 104432          ;DO WE NEED TO ITERATE TEST
      025762 001116          ;BR, IF NO LOOP REQUIRED
                                ;EXECUTE AGAIN
                                ;ALL DONE THIS TEST
                                TRAP  C$EXIT
                                .WORD L10037-.
606
607
608 ;*
609 ;LOCAL STORAGE FOR THIS TEST
611 025764          ;
613 025770          .BLKB 10-<.-TSV2&7>
614 025770 100204          T22PACKET:
615 025772 026000'        .WORD 100204
616 025774 000000          .WORD T22DATA
617 025776 000012          .WORD 0
618 026000          .WORD 10.
619 026000 026012'        T22DATA:
620 026002 000000          .WORD T22BFR
621 026004 000024          .WORD 0
622 026006 000000          .WORD 20.
623 026010 000007          .WORD 0
624 026012          .WORD 7
625          T22BFR: .BLKW 25.
626 ;
627 ;WRITE SUBSYSTEM MEMORY COMMAND PACKET
629 026074          ;
631 026100          .BLKB 10-<.-TSV2&7>
632 026100 100206          T22PK2:
633 026102 026110'        .WORD 100206
634 026104 000000          .WORD T22BF2
635 026106 000006          .WORD 0
636          .WORD 6.
637          .EVEN
638 026110          T22BF2:
639 026110 000          T22BS0: .BYTE 0
640 026111 000          T22BS1: .BYTE 0
641 026112 000000          T22S2: .WORD 0
642 026114 000000          T22S3: .WORD 0
643          ;
644          ;
645          .EVEN
;COMMAND PACKET FOR TEST
;WRITE CHARACTERISTICS COMMAND, WITH IE, ACK
;ADDRESS OF CHARACTERISTICS BLOCK
;STARTING VALUE OF BLOCK SIZE
;CHARACTERISTICS DATA BLOCK
;ADDRESS OF MESSAGE BUFFER
;LENGTH OF MESSAGE BUFFER
;SELECT DRIVE 7
;MESSAGE BUFFER
;WRITE SUB SYS MEM COMMAND, IE AND ACK
;ADDRESS OF SELECT BLOCK DATA
;SIZE OF DATA PACKET
;BSEL0 AREA
;BSEL1 AREA
;SEL 2 AREA
;DATA AREA

```


K8

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 2: OFF-LINE AND REJECT REWIND

SEQ 101

```

646                                     ;TAPE MOTION PACKET COMMAND VALUES
647 026116 100201                      T22RD: .WORD 100201                      ;READ TAPE FORWARD
648 026120 100205                      T22WRT: .WORD 100205                      ;WRITE TAPE FORWARD
649 026122 100210                      T22POS: .WORD 100210                      ;POSITION TAPE
650 026124 100211                      T22FOR: .WORD 100211                      ;FORMAT TAPE
651 026126 177777                      .WORD 177777                      ;END OF DATA
652
653
654                                     ;*
655                                     ;LOCAL TEXT MESSAGES FOR TEST
656                                     ;*
657
658 026130 127 122 111 T22SSR: .ASCIZ 'WRITE MISCELLANEOUS CONTROL/READ STATUS Command Not Accepted'
659 026225 124 123 123 T22AM3: .ASCIZ 'TSSR Init. Failed After WRITE MISCELLANEOUS CONTROL/READ STATUS'
660 026325 104 162 151 T22OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
661 026400 124 123 123 T22TM: .ASCIZ 'TSSR Incorrect After Tape Motion Command To Off-Line Device'
662 026474 124 123 123 T22RWJ: .ASCIZ 'TSSR Not Correct After REWIND With VCK Set'
663 026547 103 126 103 T22VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
664 026622 052 052 052 T22WLK: .ASCIZ '*****TAPE IS WRITE-LOCKED AND WILL CAUSE ERRORS*****'
665 026707 117 146 146 TST22ID: .ASCIZ 'Off-Line And Reject Rewind'
666                                     .EVEN
667
668                                     ;*
669                                     ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
670                                     ;WRITE SUBSYSTEM MEMORY COMMAND
671                                     ;
672                                     ;*
673
674 026742                                     T22REST:
675 026742                                     SAVREG
676 026746 012701 025770'                     MOV     #T22PACKET,R1                      ;SAVE THE REGISTERS
677 026752 012721 100204'                     MOV     #100204,(R1)+                      ;START OF THE PACKET
678 026756 012721 026000'                     MOV     #T22DATA,(R1)+                      ;WRITE SUBSYSTEM MEM. WITH ACK, IE
679 026762 005021'                             CLR     (R1)+                      ;ADDRESS OF CHARAISTICS DATA BLOCK
680 026764 012721 000012'                     MOV     #10.,(R1)+                      ;EXTENDED ADDRESS
681 026770 012721 026012'                     MOV     #T22BFR,(R1)+                      ;SIZE OF DATA BLOCK IN BYTES
682 026774 005021'                             CLR     (R1)+                      ;ADDRESS OF MESSAGE BUFFER
683 026776 012721 000024'                     MOV     #20.,(R1)+                      ;LENGTH OF MESSAGE BUFFER
684 027002 005021'                             CLR     (R1)+
685 027004 012711 000007'                     MOV     #7,(R1)                      ;SELECT DRIVE SEVEN
686 027010 012702 000020'                     MOV     #20,R2                      ;NUMBER OF LOCATIONS TO BE CLEARED
687 027014 012762 177777 026012' 64$:        MOV     #177777,T22BFR(R2)          ;ALL ONES TO MESSAGE BUFFER
688 027022 005742'                             TST     -(R2)                      ;BUMP R2 DOWN
689 027024 020227 000000'                     CMP     R2,#0                      ;IS R2 AT ZERO YET
690 027030 001371'                             BNE     64$                      ;KEEP GOING UNTIL DONE
691 027032 000207'                             RTS     PC                      ;RETURN
692
693
694 027034                                     T22RT2:
695 027034                                     SAVREG
696 027040 012701 026100'                     MOV     #T22PK2,R1                      ;SAVE THE REGISTERS
697 027044 012721 100206'                     MOV     #100206,(R1)+                      ;START OF THE PACKET
698 027050 012721 026110'                     MOV     #T22BF2,(R1)+                      ;WRITE SUBSYSTEM MEM. WITH ACK, IE
699 027054 005021'                             CLR     (R1)+                      ;ADDRESS OF DATA BLOCK
700 027056 012721 000006'                     MOV     #6.,(R1)+                      ;EXTENDED ADDRESS
701 027062 005021'                             CLR     (R1)+                      ;SIZE OF DATA BLOCK IN BYTES
702 027064 012701 026110'                     MOV     #T22BF2,R1                      ;POINT TO DATA SEL AREA

```

```

703 027070 005021 CLR (R1)+
704 027072 005011 CLR (R1)
705 027074 005011 CLR (R1) ;LAST LOC TO BE CLEARED
706 027076 000207 RTS PC ;RETURN
707 027100
    027100
    027100 104401
                                     L10037:
                                     TRAP C$ETST

```

```

708
709 .SBTTL TEST 3: BASIC WRITE DATA

```

```

710      ;
711      ;
712      ; THIS TEST VERIFIES THAT THE WRITE DATA (NEXT) COMMAND OPERATES
713      ; PROPERLY, UP TO THE POINT OF CHECKING THAT THE DATA WAS ACTUALLY
714      ; WRITTEN ONTO THE TAPE CORRECTLY. CHECKING IN THIS TEST IS
715      ; LIMITED TO VERIFYING THAT THE COMMAND TERMINATED CORRECTLY WITH
716      ; THE CORRECT REGISTER, MESSAGE BUFFER AND RAM CONTENTS.

```

```

BGNTST
MOV      #EPRT1,EPRTSW      ;SET UP PRIMARY ERROR MESSAGE
CLR      KTENABLE           ;TURN OFF KT11
JSR      PC,KTOFF           ;TURN OFF KT11
JSR      PC,DSBINT          ;DISABLE INTERRUPTS
MOV      #TST23ID,RO        ;ASCII MESSAGE TO IDENTIFY TEST
JSR      PC,TSTSETUP        ;DO INITIAL TEST SETUP
JSR      PC,MEMCK           ;CHECK FOR MEMORY
MOV      #5,LOOPCNT         ;PERFORM 5 ITERATIONS

```

TEST 3, SUBTEST 1

```

;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).

```

```
T23LOOP:      BGNSUB                      ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
                                     T3.1:
                                           TRAP      C$BSUB
```

```

JSR      PC,T23REST      ;SET COMMAND PACKET
JSR      PC,T23RT2       ;SET UP OTHER COMMAND PACKET

```

```

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

```

```
JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
```

M8

TSV7 - HARDWARE TESTS 1-8
TEST 3: BASIC WRITE DATA

MACRO M1113 01-FEB-84 17:54

SEQ 103

```

759 027164 103407          BCS      20$          ;BR IF INIT WAS OK
760 027166 005237 002212'  INC      FATFLG      ;BUMP COUNT
764 027172 010001          MOV      R0,R1        ;CONTENTS OF TSSR REGISTER
765 027174          ERRDF   ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
          027174 104455          TRAP    C$ERDF
          027176 000455          .WORD   301
          027200 003642'        .WORD   SFIERR
          027202 011734'        .WORD   SFIMSG
756 027204          20$:      MOV      @7,T23DSW      ;SET DRIVE NUMBER IN PACKET
767 027204 012737 000007 032400'  MOV      @T23PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
768 027212 012704 032360'
769
770          ;*****
771          ;
772          ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
773          ;
774          ;*****
775
776 027216 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
777 027222 103407          BCS      23$          ;BR, IF COMMAND ISSUED OK
778 027224 005237 002212'  INC      FATFLG      ;BUMP COUNT
782 027230 010001          MOV      R0,R1        ;SAVE CONTENTS OF TSSR
783 027232          ERRHRD   ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
          027232 104456          TRAP    C$ERHRD
          027234 000456          .WORD   302
          027236 005046'        .WORD   WRTMSG
          027240 011734'        .WORD   SFIMSG
784 027242 005737 002216'      23$:  TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
785 027246 001044          BNE      50$          ;BR IF SWITCH IS ON
786
787 027250 112737 000200 032523'  MOVB     @200,T23BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
788 027256 112737 000010 032522'  MOVB     @10,T23BS0      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
789 027264 012704 032470'  MOV      @T23PK2,R4      ;WRITE SUBSYS MEM PACKET
790 027270 010465 000000      MOV      R4,T23DB(R5) ;ISSUE COMMAND
791 027274 004737 016236'      JSR      PC,CHKTSSR      ;WAIT FOR SSR
792 027300 103407          BCS      30$          ;BR, IF NO ERROR
793 027302 010001          MOV      R0,R1        ;ERROR, SAVE TSSR
794 027304 005237 002212'  INC      FATFLG      ;BUMP COUNT
798 027310          ERRHRD   ERRNO,T23SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
          027310 104456          TRAP    C$ERHRD
          027312 000457          .WORD   303
          027314 032544'        .WORD   T23SSR
          027316 011746'        .WORD   PKTSSR
799 027320          30$:      CKLOOP          ;LOOP IF SELECTED
          027320 104406          TRAP    C$CLP1
800 027322 012737 000007 032400'  MOV      @7,T23DSW      ;SET DRIVE NUMBER IN PACKET
801 027330 012704 032360'  MOV      @T23PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
802
803          ;*****
804          ;
805          ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
806          ;
807          ;*****
808
809 027334 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
810 027340 103407          BCS      50$          ;BR, IF COMMAND ISSUED OK
811 027342 005237 002212'  INC      FATFLG      ;BUMP COUNT

```

TSV7 - HARDWARE TESTS 1-8
TEST 3: BASIC WRITE DATA

MACRO M1.13 01-FEB-84 17:54

SEQ 104

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+381	PC+382	PC+383	PC+384	PC+385	PC+386	PC+387	PC+388	PC+389	PC+390	PC+391	PC+392	PC+393	PC+394	PC+395	PC+396	PC+397	PC+398	PC+399	PC+400	PC+401	PC+402	PC+403	PC+404	PC+405	PC+406	PC+407	PC+408	PC+409	PC+410	PC+411	PC+412	PC+413	PC+414	PC+415	PC+416	PC+417	PC+418	PC+41

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

```

914 027634      231:  CKLOOP                      ;LOOP IF SELECTED
      027634 104406                                TRAP  C#CLP1
915
916      ;*****
917      ;
918      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
919      ;
920      ;*****
921
922 027636 004737 010714'      JSR  PC,REWIND          ;CALL THE TAPE REWIND
923 027642 012703 000024'      MOV  #20,R3           ;STARTING RECORD SIZE
924 027646 013737 003114' 032512' 651:  MOV  FREE,T23WB      ;STARTING WRITE BUFFER ADDRESS
925
926      ;*****
927      ;
928      ;WRITE DATA,CVC=1,ACK COMMAND
929      ;
930      ;*****
931
932 027654 012737 140005 032510'      MOV  #140005,T23PK3      ;WRITE DATA,CVC=1,ACK COMMAND
933 027662 012737 140005 032532'      MOV  #140005,T23WRT      ;SETUP FOR RETRY COMMAND
934 027670 052737 004000 032532'      BIS  #4000,T23WRT      ;MAKE IT A RETRY
935 027676 012704 032510'      MOV  #T23PK3,R4           ;SET UP R4 WITH PACKET ADDRESS
936 027702 010300              MOV  R3,R0               ;SET PATTERN IN CORRECT REGISTER
937 027704 004737 017324'      JSR  PC,FILLMEM          ;FILL MEMORY WITH RECORD SIZE
938 027710 010337 032516'      MOV  R3,T23SZ            ;SET UP RECORD SIZE IN PACKET
939 027714 010465 000000      MOV  R4,TSDB(R5)          ;ISSUE COMMAND
940 027720 004737 016150'      JSR  PC,WAITF            ;WAIT FOR SSR TO SET
941 027724 016501 000002      MOV  TSSR(R5),R1          ;GET TSSR CONTENTS
942 027730 012702 000200      MOV  #SSR,R2             ;SET UP EXPECTED
943 027734 020102              CMP  R1,R2               ;ARE THEY EQUAL
944 027736 001402              BEQ  #0$                 ;BR, IF OK
945 027740 004737 034062'      JSR  PC,T23CHK           ;CHECK SPECIAL CONDITION
946 027744      801:  CKLOOP                      ;LOOP IF SELECTED
      027744 104406                                TRAP  C#CLP1
947 027746 016501 000000      MOV  TSBA(R5),R1          ;GET TSBA CONTENTS
948 027752 012702 032402'      MOV  #T23BFR,R2          ;SET UP EXPECTED
949 027756 062702 000016      ADD  #16,R2              ;SET TO END OF MESSAGE BUFFER
950 027762 005737 002216'      TST  EXTFEA              ;CHECK FOR EXTENDED FEATURES SW SET
951 027766 001402              BEQ  #5$                 ;BR, IF IT NOT SET
952 027770 062702 000002      ADD  #2,R2               ;BUMP R2 FOR EXTRA DATA
953 027774 020102              CMP  R1,R2               ;ARE THEY EQUAL
954 027776 001406              BEQ  #90$                ;BR, IF TSBA IS CORRECT
955 030000 005237 002212'      INC  FATFLG              ;BUMP COUNT
959 030004      ERRHRD  ERRNO,T23BA,EXPREC          ;TSBA WAS NOT CORRECT AFTER WRITE DATA
      030004 104456                                TRAP  C#ERRHRD
      030006 000465                                .WORD  309
      030010 033525'                                .WORD  T23BA
      030012 015374'                                .WORD  EXPREC
960 030014      901:  CKLOOP                      ;LOOP IF SELECTED
      030014 104406                                TRAP  C#CLP1
961 030016 020327 007376      CMP  R3,#7376           ;ONLY CHECK RAM UNTIL ITS FULL
962 030022 002114              BGE  #115$             ;IT WRAPS AROUND ETC.
963 030024 004737 033774'      JSR  PC,T23RT2          ;MAKE SURE PACKET AND DATA ARE CLEAN
964 030030 012737 000400 032524'      MOV  #256,T23S2      ;STARTING RAM ADDRESS
965 030036 112737 000000 032522'      MOVB  #0,T23BS0      ;STOP INTERNAL TSV05 DIAGNOSTICS
966 030044 112737 000000 032523'      MOVB  #0,T23BS1      ;SIZE OF RAM READ

```


967	030052	012704	032470'	MOV	#T23PK2,R4	!SET R4 WITH PACKET ADDRESS
968	030056	010465	000000	MOV	R4,TSDB(R5)	!ISSUE WRITE SUB SYS MEM COMMAND
969	030062	004737	016236'	JSR	PC,CHKTSSR	!CHECK TSSR AND WAIT FOR SSR TO SET
970	030066	103407		BCS	92\$	!BR, IF NO ERRORS IN TSSR
971	030070	010001		MOV	R0,R1	!SAVE TSSR
972	030072	005237	002212'	INC	FATFLG	!BUMP COUNT
976	030076			ERRHRD	ERRNO,T23WSS,PKTSSR	!TSSR BAD AFTER WRITE SUB SYS MEM
	030076	104456				TRAP C\$ERHRD
	030100	000466				.WORD 310
	030102	033577'				.WORD T23WSS
	030104	011746'				.WORD PKTSSR
977	030106			92\$: CKLOOP		!LOOP IF SELECTED
	030106	104406				TRAP C\$CLP1
978	030110	004737	033774'	JSR	PC,T23RT2	!MAKE SURE PACKET AND DATA ARE CLEAN
979	030114	012737	000400 032524'	MOV	#256.,T23S2	!STARTING RAM ADDRESS
980	030122	112737	000001 032522'	MOVB	#1,T23BS0	!READ RAM COMMAND FOR WRITE SUB SYS M.
981	030130	112737	000002 032523'	MOVB	#2,T23BS1	!SIZE OF RAM READ
982	030136	012704	032470'	MOV	#T23PK2,R4	!SET R4 WITH PACKET ADDRESS
983	030142	010465	000000	95\$: MOV	R4,TSDB(R5)	!ISSUE WRITE SUB SYS MEM COMMAND
984	030146	004737	016236'	JSR	PC,CHKTSSR	!CHECK TSSR AND WAIT FOR SSR TO SET
985	030152	103407		BCS	100\$	!BR, IF NO ERRORS IN TSSR
986	030154	010001		MOV	R0,R1	!SAVE TSSR
987	030156	005237	002212'	INC	FATFLG	!BUMP COUNT
991	030162			ERRHRD	ERRNO,T23WSS,PKTSSR	!TSSR BAD AFTER WRITE SUB SYS MEM
	030162	104456				TRAP C\$ERHRD
	030164	000467				.WORD 311
	030166	033577'				.WORD T23WSS
	030170	011746'				.WORD PKTSSR
992	030172			100\$: CKLOOP		!LOOP IF SELECTED
	030172	104406				TRAP C\$CLP1
993	030174	005001		CLR	R1	!CLEAR REGISTER
994	030176	005002		CLR	R2	!CLEAR REGISTER
995	030200	013701	032422'	MOV	T23BFR+20,R1	!PICK UP BYTE READ FROM RAM
996	030204	010302		MOV	R3,R2	!SET UP EXPECTED
997	030206	020102		CMP	R1,R2	!IS RAM DATA CORRECT
998	030210	001406		BEQ	110\$	!BR, IF OK (EQUAL)
999	030212	005237	002212'	INC	FATFLG	!BUMP COUNT
1003	030216			ERRHRD	ERRNO,T23RNC,EXPREC	!RNC=RAM NOT CORRECT
	030216	104456				TRAP C\$ERHRD
	030220	000470				.WORD 312
	030222	033065'				.WORD T23RNC
	030224	015374'				.WORD EXPREC
1004	030226			110\$: CKLOOP		!LOOP IF SELECTED
	030226	104406				TRAP C\$CLP1
1005	030230	005237	032524'	INC	T23S2	!BUMP RAM ADDRESS TO BE CHECKED
1006	030234	005237	032524'	INC	T23S2	!BUMP RAM ADDRESS TO BE CHECKED
1007	030240	010301		MOV	R3,R1	!GET SIZE OF RECORD
1008	030242	062701	000400	ADD	#256.,R1	!FIGURE OUT END RECORD ADDRESS
1009	030246	023701	032524'	CMP	T23S2,R1	!AT END OF RAM CHECK YET
1010	030252	001333		BNE	95\$	!BR, IF MORE TO CHECK
1011	030254	062703	001750	115\$: ADD	#1000.,R3	!NEXT RECORD SIZE/DATA PATTERN
1012	030260	020337	032520'	CMP	R3,T23RSZ	!IS R3 OVER MAX RECORD SIZE
1013	030264	002005		BGE	120\$	!IF RECORD SIZE IS TOO BIG QUIT
1014	030266	020327	177776	CMP	R3,#65534.	!END OF SUBTEST MAX RECORD SIZE
1015	030272	001402		BEQ	120\$	!BR, IF COMPLETED
1016	030274	000137	027646'	JMP	65\$	!DO MORE RECORDS
1017	030300			120\$:		

1018	030300	004737	034036'		JSR	PC,T23RT3	;RESTORE PACKET		
1019	030304	004737	033774'		JSR	PC,T23RT2	;CLEAN UP PACKET		
1020	030310	012737	102010' 032470'		MOV	#102010,T23PK2	;REWIND (POSITION) COMMAND		
1021	030316	012704	032470'		MOV	#T23PK2,R4	;LOAD R4 WITH PACKET ADDRESS		
1022	030322	010465	000000		MOV	R4,TSD8(R5)	;ISSUE REWIND COMMAND		
1023	030326	004737	016236'		JSR	PC,CHKTSSR	;WAIT FOR SSR TO SET		
1024	030332	103407			BCS	130\$	;BR, IF TSSR IS OK (GOOD)		
1025	030334	010001			MOV	RO,R1	;SAVE TSSR CONTENTS		
1026	030336	005237	002212'		INC	FATFLG	;BUMP COUNT		
1030	030342				ERRHRD	ERRNO,T23RWN,PKTSSR	;TSSR IS INCORRECT AFTER REWIND		
	030342	104456						TRAP	C\$ERHRD
	030344	000471						.WORD	313
	030346	033016'						.WORD	T23RWN
	030350	011746'						.WORD	PKTSSR
1031	030352			130\$:					
1032	030352				ENDSUB		;>>>>>>>>>> END SUBTEST >>>>>>>>>		
	030352						L10045:		
1033	030354	104403						TRAP	C\$ESUB
1033	030354	023727	002212' 000017		CMP	FATFLG,#15.	;IS ERROR COUNT AT 25		
1034	030362	103402			BLO	999\$	;BR, IF LESS THAN 25		
1035	030364	004737	017104'		JSR	PC,CKDROP	;TRY TO DROP THE UNIT		
1036	030370			999\$:					
1037									
1038				*					
1039				:					
1040				;TEST 3, SUBTEST 3					
1041				:					
1042				;VERIFIES THAT WRITE DATA COMMANDS WITH CVC-1 AND THE					
1043				;SWAP BYTES (SWB) BIT SET OPERATES PROPERLY. THE TEST					
1044				;SEQUENCE IS IDENTICAL TO THAT USED IN SUBTEST 2.					
1045				;THE RESULTS, EXCEPT FOR RAM CONTENTS, SHOULD BE THE SAME.					
1046				:					
1047				:					
1048				:					
1049				:					
1050	030370			;-					
	030370				BGN SUB		;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	030370	104402					T3.3:		
1051	030372	004737	033702'		JSR	PC,T23REST	;SET COMMAND PACKET	TRAP	C\$BSUB
1052	030376	004737	033774'		JSR	PC,T23RT2	;SET UP OTHER COMMAND PACKET		
1053									
1054									
1055									
1056									
1057									
1058									
1059									
1060	030402	004737	015674'		JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER		
1061	030406	103407			BCS	20\$	;BR IF INIT WAS OK		
1062	030410	005237	002212'		INC	FATFLG	;BUMP COUNT		
1066	030414	010001			MOV	RO,R1	;CONTENTS OF TSSR REGISTER		
1067	030416				ERRDF	ERRNO,SFIERR,SFMSG	;FATAL ERROR TSSR WAS NOT OK		
	030416	104455						TRAP	C\$ERDF
	030420	000472						.WORD	314
	030422	003642'						.WORD	SFIERR
	030424	011734'						.WORD	SFMSG
1068	030426			20\$:					

TSV7 - HARDWARE TESTS 1-8
TEST 3: BASIC WRITE DATA

MACRO M1113 01-FEB-84 17:54

SEQ 109

```

1069 030426 013737 002172' 032400'      MOV      UNITN,T23DSW      ;SET UP UNIT NUMBER
1070 030434 012704 032360'      MOV      #T23PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
1071
1072      ;*****
1073      ;
1074      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
1075      ;
1076      ;*****
1077
1078 030440 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
1079 030444 103407      BCS      23$      ;BR, IF COMMAND ISSUED OK
1080 030446 005237 002212'      INC      FATFLG      ;BUMP COUNT
1084 030452 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
1085 030454      ERRHRD      ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
      030454 104456      TRAP      C$ERHRD
      030456 000473      .WORD      315
      030460 005046'      .WORD      WRTMSG
      030462 011734'      .WORD      SFMSG
1086 030464      23$:
1087 030464 012703 000024      MOV      #20.,R3      ;STARTING RECORD SIZE
1088 030470 013737 003114' 032512' 65$:      MOV      FREE,T23WB      ;STARTING WRITE BUFFER ADDRESS
1089
1090      ;*****
1091      ;
1092      ;WRITE DATA,CVC=1,ACK,SWB COMMAND
1093      ;
1094      ;*****
1095
1096 030476 012737 150005 032510'      MOV      #150005,T23PK3      ;WRITE DATA,CVC=1,ACK,SWB COMMAND
1097 030504 012737 150005 032532'      MOV      #150005,T23WRT      ;SETUP FOR RETRY COMMAND
1098 030512 052737 004000 032532'      BIS      #4000,T23WRT      ;MAKE IT A RETRY
1099 030520 012704 032510'      MOV      #T23PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1100 030524 010300      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
1101 030526 004737 017324'      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
1102 030532 010337 032516'      MOV      R3,T23SZ      ;SET UP RECORD SIZE IN PACKET
1103 030536 010465 000000      MOV      R4,TSDB(R5)      ;ISSUE COMMAND
1104 030542 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
1105 030546 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
1106 030552 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
1107 030556 020102      CMP      R1,R2      ;ARE THEY EQUAL
1108 030560 001402      BEQ      80$      ;BR, IF OK
1109 030562 004737 034062'      JSR      PC,T23CHK      ;CHECK SPECIAL CONDITION
1110 030566      80$:      CKLOOP      ;LOOP IF SELECTED
      030566 104406      TRAP      C$CLP1
1111 030570 016501 000000      MOV      TSBA(R5),R1      ;GET TSBA CONTENTS
1112 030574 012702 032402'      MOV      #T23BFR,R2      ;SET UP EXPECTED
1113 030600 062702 000016      ADD      #16,R2      ;SET TO END OF MESSAGE BUFFER
1114 030604 005737 002216'      TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SET
1115 030610 001402      BEQ      85$      ;BR, IF IT NOT SET
1116 030612 062702 000002      ADD      #2,R2      ;BUMP R2 FOR EXTRA DATA
1117 030616 020102      85$:      CMP      R1,R2      ;ARE THEY EQUAL
1118 030620 001406      BEQ      90$      ;BR, IF TSBA IS CORRECT
1119 030622 005237 002212'      INC      FATFLG      ;BUMP COUNT
1123 030626      ERRHRD      ERRNO,T23BA,EXPREC      ;TSBA WAS NOT CORRECT AFTER WRITE DATA
      030626 104456      TRAP      C$ERHRD
      030630 000474      .WORD      316
      030632 033525'      .WORD      T23BA

```

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	

Line	Address	Operation	Operand 1	Operand 2	Comment
1173	031066	062701	000400		
1174	031072	023701	032524'		
1175	031076	001332			
1176	031100	062703	001750		
1177	031104	020337	032520'		
1178	031110	002005			
1179	031112	020327	177776		
1180	031116	001402			
1181	031120	000137	030470'		
1182	031124				
1183	031124	004737	033774'		
1184	031130	012737	102010	032470'	
1185	031136	012704	032470'		
1186	031142	010465	000000		
1187	031146	004737	016236'		
1188	031152	103407			
1189	031154	010001			
1190	031156	005237	002212'		
1194	031162				
	031162	104456			
	031164	000500			
	031166	033016'			
	031170	011746'			
1195	031172				
1196	031172				
	031172				
	031172	104403			
1197	031174	023727	002212'	000017	
1198	031202	103402			
1199	031204	004737	017104'		
1200	031210				
1201					
1202					
1203					
1204					
1205					
1206					
1207					
1208					
1209					
1210					
1211					
1212					
1213	031210				
	031210				
	031210	104402			
1214	031212	004737	033702'		
1215	031216	004737	034036'		
1216	031222	004737	033774'		
1217					
1218					
1219					
1220					
1221					
1222					
1223					
1224	031226	004737	015674'		

Address	Offset	Hex	Label	Operation	Comments	Trap	Count
1225	031232	103407		BCS 20:	BR IF INIT WAS OK		
1226	031234	005237	002212'	INC	FATFLG		
1230	031240	010001		MOV	R0,R1		
1231	031242			ERRDF	ERRNO,SFIERR,SFIMSG		
	031242	104455				TRAP	C1ERDF
	031244	000501				.WORD	321
	031246	003642'				.WORD	SFIERR
	031250	011734'				.WORD	SFIMSG
1232	031252			20:			
1233	031252	013737	002172'	MOV	UNITN,T23DSW		
1234	031260	012704	032360'	MOV	#T23PACKET,R4		
1235							
1236							
1237							
1238							
1239							
1240							
1241							
1242	031264	004737	010562'	JSR	PC,WRTCHR		
1243	031270	103407		BCS 23:			
1244	031272	005237	002212'	INC	FATFLG		
1248	031276	010001		MOV	R0,R1		
1249	031300			ERRHRD	ERRNO,WRTMSG,SFIMSG		
	031300	104456				TRAP	C1ERHRD
	031302	000502				.WORD	322
	031304	005046'				.WORD	WRTMSG
	031306	011734'				.WORD	SFIMSG
1250							
1251							
1252							
1253							
1254							
1255							
1256							
1257	031310	012737	104405	23:	MOV #104405,T23PK3		
1258	031316	013737	003114'	MOV	FREE,T23WB		
1259	031324	062737	000001	ADD	#1,T23WB		
1260	031332	012737	000400	MOV	#256.,T23SZ		
1261	031340	012704	032510'	MOV	#T23PK3,R4		
1262	031344	010465	000000	MOV	R4,T23DB(R5)		
1263	031350	004737	016150'	JSR	PC,WAITF		
1264	031354	016501	000002	MOV	TSSR(R5),R1		
1265	031360	012702	100206	MOV	#SSR!SC!BIT1!BIT2,R2		
1266	031364	020102		CMP	R1,R2		
1267	031366	001406		BEQ	80:		
1268	031370	005237	002212'	INC	FATFLG		
1272	031374			ERRHRD	ERRNO,T23TM,PKTSSR		
	031374	104456				TRAP	C1ERHRD
	031376	000503				.WORD	323
	031400	032742'				.WORD	T23TM
	031402	011746'				.WORD	PKTSSR
1273	031404			80:	CKLOOP		
	031404	104406					
1274	031406						
	031406						
	031406	104403					
1275	031410	023727	002212'	CMP	FATFLG,#15.		

1276	031416	103402		BLO	999\$		;BR, IF LESS THAN 25
1277	031420	004737	017104'	JSR	PC,CKDROP		;TRY TO DROP THE UNIT
1278	031424			999\$;			
1279							
1280				;*			
1281				;			
1282				;TEST 3, SUBTEST 5			
1283				;			
1284				;VERIFIES THAT A WRITE DATA COMMAND SPECIFYING A DATA			
1285				;BUFFER STARTING IN NONEXISTANT MEMORY TERMINATES WITH			
1286				;THE PROPER ERROR STATUS WITHOUT MOVING TAPE			
1287				;			
1288				;-			
1289							
1290	031424			BGNSUB		;>>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>	
	031424					T3.5:	
	031424	104402				TRAP	C\$BSUB
1291	031426	005737	003126'	TST	NXMFLG		;DO WE HAVE IT?
1292	031432	001002		BNE	10\$		;BR, IF ENOUGH
1293	031434	000137	031754'	JMP	90\$		;SKIP THIS TEST IF NOT
1294	031440	004737	033702'	10\$: JSR	PC,T23REST		;SET COMMAND PACKET
1295	031444	004737	034036'	JSR	PC,T23RT3		;RESTORE PACKET
1296	031450	004737	033774'	JSR	PC,T23RT2		;SET UP OTHER COMMAND PACKET
1297							
1298				;*****			
1299				;			
1300				;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR			
1301				;			
1302				;*****			
1303							
1304	031454	004737	015674'	JSR	PC,SOFINIT		;DO INITIALIZE ON CONTROLLER
1305	031460	103407		BCS	20\$		;BR IF INIT WAS OK
1306	031462	005237	002212'	INC	FATFLG		;BUMP COUNT
1310	031466	010001		MOV	R0,R1		;CONTENTS OF TSSR REGISTER
1311	031470			ERRDF	ERRNO,SFIERR,SFIMSG		;FATAL ERROR TSSR WAS NOT OK
	031470	104455				TRAP	C\$ERDF
	031472	000504				.WORD	324
	031474	003642'				.WORD	SFIERR
	031476	011734'				.WORD	SFIMSG
1312	031500			20\$: MOV	UNITN,T23DSW		;SET DRIVE NUMBER UP
1313	031500	013737	002172' 032400'	MOV	@T23PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
1314	031506	012704	032360'				
1315							
1316				;*****			
1317				;			
1318				;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCH)			
1319				;			
1320				;*****			
1321							
1322	031512	004737	010562'	JSR	PC,WRTPCH		;ISSUE WRITE CHARACTERISTICS
1323	031516	103407		BCS	123\$		;BR, IF COMMAND ISSUED OK
1324	031520	005237	002212'	INC	FATFLG		;BUMP COUNT
1328	031524	010001		MOV	R0,R1		;SAVE CONTENTS OF TSSR
1329	031526			ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTICSC FAILED
	031526	104456				TRAP	C\$ERRRD
	031530	000505				.WORD	325
	031532	005046'				.WORD	WRTMSG

```

031534 011734'                                     .WORD SFIMSG
1330
1331
1332
1333
1334
1335
1336
1337 031536
1338 031536 005737 002216'
1339 031542 001026
1340 031544 005237 002216'
1341 031550 112737 000200 032523'
1342 031556 112737 000010 032522'
1343 031564 012704 032470'
1344 031570 010465 000000
1345 031574 004737 016236'
1346 031600 103407
1347 031602 010001
1348 031604 005237 002212'
1352 031610
031610 104456
031612 000506
031614 026130'
031616 011746'
1353 031620
031620 104406
1354
1355 031622 012701 160000
1356 031626 012702 177776
1357 031632 004737 016276'
1358 031636 103045
1359 031640 010137 003130'
1360
1361
1362 031644 005037 032514'
1363 031650
1364 031650 012737 140005 032510'
1365 031656 013737 003130' 032512'
1366 031664 012737 000100 032516'
1367 031672 012704 032510'
1368 031676 010465 000000
1369 031702 004737 016150'
1370 031706 016501 000002
1371 031712 012702 104210
1372 031716 020102
1373 031720 001414
1374 031722 005237 032514'
1375 031726 023727 032514' 000004
1376 031734 001345
1377 031736 005237 002212'
1381 031742
031742 104456
031744 000507
031746 032742'
031750 011746'
1382 031752

;*****
;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
MOV8 #200,T23BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
MOV8 #10,T23BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
MOV #T23PK2,R4 ;WRITE SUBSYS MEM PACKET
MOV R4,TSUB(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 C$ERHRD
.WORD 326
.WORD T22SSR
.WORD PKTSSR

130$: CKLOOP ;LOOP IF SELECTED
TRAP C$CLP1

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

24$:
CLR T23WB+2 ;CLEAR OUT THE HIGH BITS AREA
MOV #140005,T23PK3 ;WRITE DATA, ACK, CVC=1
MOV NXMLO,T23WB ;SET UP WRITE BUFFER ADDRESS
MOV #64,T23SZ ;SET UP BUFFER SIZE
MOV #T23PK3,R4 ;R4 = POINTER TO PACKET
MOV R4,TSUB(R5) ;ISSUE COMMAND
JSR PC,WAITF ;WAIT FOR SSR TO SET
MOV TSSR(R5),R1 ;GET TSSR CONTENTS
MOV #SC!NXM!SSR!BIT3,R2 ;SET UP EXPECTED
CMP R1,R2 ;ARE THEY EQUAL
BEQ 80$ ;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,T23TM,PKTSSR ;TSSR INCORRECT AFTER WRITE COMMAND
TRAP C$ERHRD
.WORD 327
.WORD T23TM
.WORD PKTSSR

25$:
INC FATFLG
ERRHRD ERRNO,T23TM,PKTSSR

80$: CKLOOP ;LOOP IF SELECTED

```


	031752	104406						TRAP	C\$CLP1
1383	031754			90\$;					
1384	031754			ENDSUB			; >>>>>>>>>> END SUBTEST >>>>>>>>>>		
	031754						L10050:		
	031754	104403						TRAP	C\$ESUB
1385	031756	023727	002212'	000017	CMP	FATFLG,#15.		; IS ERROR COUNT AT 25	
1386	031764	103402			BLO	999\$		; BR, IF LESS THAN 25	
1387	031766	004737	017104'		JSR	PC,CKDROP		; TRY TO DROP THE UNIT	
1388	031772			999\$;					
1389									
1390									
1391									
1392									
1393									
1394									
1395									
1396									
1397									
1398									
1399									
1400									
1401	031772				BGNSUB		; >>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>		
	031772						T3.6:		
	031772	104402						TRAP	C\$BSUB
1402	031774	005737	003126'		TST	NXMFLG		; DO WE HAVE IT?	
1403	032000	001002			BNE	10\$		; BR, IF ENOUGH	
1404	032002	000137	032320'		JMP	130\$		; SKIP THIS TEST IF NOT	
1405	032006	004737	034036'	10\$;	JSR	PC,T23RT3		; RESTORE PACKET	
1406	032012	004737	033702'		JSR	PC,T23REST		; SET COMMAND PACKET	
1407	032016	004737	033774'		JSR	PC,T23RT2		; SET UP OTHER COMMAND PACKET	
1408									
1409									
1410									
1411									
1412									
1413									
1414									
1415	032022	004737	015674'		JSR	PC,SOFINIT		; DO INITIALIZE ON CONTROLLER	
1416	032026	103407			BCS	20\$		; BR IF INIT WAS OK	
1417	032030	005237	002212'		INC	FATFLG		; BUMP COUNT	
1421	032034	010001			MOV	R0,R1		; CONTENTS OF TSSR REGISTER	
1422	032036				ERRDF	ERRNO,SFIERR,SFIMSG		; FATAL ERROR TSSR WAS NOT OK	
	032036	104455						TRAP	C\$ERDF
	032040	000510						.WORD	328
	032042	003642'						.WORD	SFIERR
	032044	011734'						.WORD	SFIMSG
1423	032046			20\$;					
1424	032046	013737	002172'	032400'	MOV	UNITN,T23DSW		; SET DRIVE NUMBER IN PACKET	
1425	032054	012704	032360'		MOV	#T23PACKET,R4		; SUBROUTINE NEEDS PACKET ADDRESS	
1426									
1427									
1428									
1429									
1430									
1431									
1432									
1433	032060	004737	010562'		JSR	PC,WRTCHR		; ISSUE WRITE CHARACTERISTICS	

TSV7 - HARDWARE TESTS 1-8
TEST 3: BASIC WRITE DATA

MACRO M1113 01-FEB-84 17:54

SEQ 116

1434	032064	103407		BCS	23:		;BR, IF COMMAND ISSUED OK	
1435	032066	005237	002212'	INC		FATFLG	;BUMP COUNT	
1439	032072	010001		MOV		R0,R1	;SAVE CONTENTS OF TSSR	
1440	032074			ERRHRD		ERRNO,WRTMSG,SFIMSG	;WRITE CHARACTERISTICS FAILED	
	032074	104456					TRAP	C\$ERHRD
	032076	000511					.WORD	329
	032100	005046'					.WORD	WRTMSG
	032102	011734'					.WORD	SFIMSG
1441								
1442								
1443								
1444								
1445								
1446								
1447								
1448	032104			23:				
1449	032104	012701	160000		MOV	#160000,R1	;NXM LOW ADDRESS START	
1450	032110	012702	177776		MOV	#177776,R2	;LIMIT CHECK FOR NXM (HIGHEST)	
1451	032114	004737	016276'		JSR	PC,XNXM	;LOOK FOR NXM ADDRESS	
1452	032120	103051			BCC	80:	;BR, IF NOT FOUND	
1453	032122	010137	003130'		MOV	R1,NXML0	;SET ADDRESS UP FOR TEST	
1454	032126	012737	000000	032514'	MOV	#0,T23WB+2	;SET TO 16 BIT ADDRESS	
1455	032134							
1456	032134	012737	140005	032510'	24:	MOV	#140005,T23PK3	;WRITE DATA, ACK,CVC=1
1457	032142	013701	003130'		MOV	NXML0,R1	;HIGHEST MEMORY ADDRESS LOW BITS	
1458	032146	162701	000500		SUB	#500,R1	;SET ADDRESS A LITTLE LOWER	
1459	032152	010137	032512'		MOV	R1,T23WB	;LOAD INTO THE PACKET	
1460	032156	012737	000000	032516'	MOV	#0,T23SZ	;SET UP BUFFER SIZE (64K BYTES)	
1461	032164	012704	032510'		MOV	#T23PK3,R4	;R4 = POINTER TO PACKET	
1462	032170	010465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND	
1463	032174	004737	010150'		JSR	PC,WAITF	;WAIT FOR SSR TO SET	
1464	032200	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS	
1465	032204	012702	104210		MOV	#SC!NXM!SSR!BIT3,R2	;SET UP EXPECTED	
1466	032210	020102			CMP	R1,R2	;ARE THEY EQUAL	
1467	032212	001414			BEQ	80:	;BR, IF OK ESP. FUNCTION REJECT	
1468	032214	005237	032514'		INC	T23WB+2	;BUMP TO NEXT ADDRESS RANGE	
1469	032220	023727	032514'	000004	CMP	T23WB+2,#4	;CHECK TO SEE IF WE WENT TO HIGH	
1470	032226	001342			BNE	24:	;BR, IF NO OVER FLOW	
1471	032230	005237	002212'		25:	INC	FATFLG	;BUMP COUNT
1475	032234				ERRHRD	ERRNO,T23TM,PKTSSR	;TSSR INCORRECT AFTER WRITE COMMAND	
	032234	104456					TRAP	C\$ERHPD
	032236	000512					.WORD	330
	032240	032742'					.WORD	T23TM
	032242	011746'					.WORD	PKTSSR
1476	032244				80:	CKLOOP	;LOOP IF SELECTED	
	032244	104406					TRAP	C\$CLP1
1477	032246	004737	033774'		JSR	PC,T23RT2	;CLEAN UP PACKET	
1478	032252	004737	034036'		JSR	PC,T23RT3	;RESTORE PACKET	
1479	032256	012737	102010	032470'	MOV	#102010,T23PK2	;REWIND (POSITION) COMMAND	
1480	032264	012704	032470'		MOV	#T23PK2,R4	;LOAD R4 WITH PACKET ADDRESS	
1481	032270	010465	000000		MOV	R4,TSD8(R5)	;ISSUE REWIND COMMAND	
1482	032274	004737	016236'		JSR	PC,CHKTSSR	;WAIT FOR SSR TO SET	
1483	032300	103407			BCS	130:	;BR, IF TSSR IS OK (GOOD)	
1484	032302	010001			MOV	R0,R1	;SAVE TSSR CONTENTS	
1485	032304	005237	002212'		INC	FATFLG	;BUMP COUNT	
1489	032310				ERRHRD	ERRNO,T23RWN,PKTSSR	;TSSR IS INCORRECT AFTER REWIND	
	032310	104456					TRAP	C\$ERHRD


```

032312 000513
032314 033016'
032316 011746'
1490 032320 130$:
1491 032320 ENDSUB
032320
032320 104403
1492 032322 023727 002212' 000017
1493 032330 103402
1494 032332 004737 017104'
1495 032336
1496 032336 004737 016360'
1497 032342 103002
1498 032344 000137 027146'
1499 032350
1500 032350
032350 104432
032352 001676
1501
1502
1503
1504
1506 032354
1508 032360
1509 032360 100004
1510 032362 032370'
1511 032364 000000
1512 032366 000010
1513 032370
1514 032370 032402'
1515 032372 000000
1516 032374 000012
1517 032376 000000
1518 032400 000000
1519 032402
1520
1521
1522
1524 032464
1526 032470
1527 032470 100006
1528 032472 032522'
1529 032474 000000
1530 032476 000006
1531
1533 032500
1535 032510
1536 032510 100005
1537 032512 000000
1538 032514 000000
1539 032516 000000
1540
1541
1542 032520 000000
1543
1544
1545 032522
000513
033016'
011746'
130$:
ENDSUB
;
;LOCAL STORAGE FOR THIS TEST
;-
T23PACKET: .BLKB 10-<.-TSV2&7>
;COMMAND PACKET FOR TEST
;WRITE CHARACTERISTICS COMMAND, WITH ACK
;ADDRESS OF CHARACTERISTICS BLOCK
T23DATA: .WORD 100004
;STARTING VALUE OF BLOCK SIZE
;CHARACTERISTICS DATA BLOCK
;ADDRESS OF MESSAGE BUFFER
;LENGTH OF MESSAGE BUFFER
T23DSW: .WORD 0
;SELECT DRIVE 0
T23BFR: .BLKW 25.
;MESSAGE BUFFER
;WRITE SUBSYSTEM MEMORY COMMAND PACKET
;
T23PK2: .BLKB 10-<.-TSV2&7>
;WRITE SUB SYS MEM COMMAND, AND ACK
;ADDRESS OF SELECT BLOCK DATA
;SIZE OF DATA PACKET
T23PK3: .BLKB 10-<.-TSV2&7>
;WRITE COMMAND, AND ACK
;ADDRESS OF WRITE BUFFER
;SIZE OF BUFFER (EXTENT)
T23WB: .WORD 0
T23SZ: .WORD 0
;LARGEST TAPE RECORD IN BYTES
;
;
T23BF2:

```

1546 032522	010			T23BS0: .BYTE	10		;BSELO AREA
1547 032523	200			T23BS1: .BYTE	200		;BSEL 1 AREA
1548 032524	000000			T23S2: .WORD	0		;SEL 2 AREA
1549 032526	000000			T23S3: .WORD	0		;DATA AREA
1550							
1551							
1552 032530	000000			T23TMP: .WORD	0		;TEMPORARY REGISTER
1553 032532	000000			T23WRT: .WORD	0		;RETRY COMMAND
1554							
1555							
1556							
1557							
1558 032534	100005			T23WD: .WORD	100005		;WRITE DATA (NEXT)
1559 032536	100405			T23WDR: .WORD	100405		;WRITE DATA RETRY
1560 032540	102005			T23CON: .WORD	102005		;WRITE CONTINUOUS
1561 032542	177777				177777		;END OF DATA
1562							
1563							
1564							
1565							
1566							
1567 032544	127	122	111	T23SSR: .ASCIZ		'WRITE Command Not Accepted'	
1568 032577	105	117	124	T23ET: .ASCIZ		'EOT Not Found In 12000 4k Writes. (Use Shorter Tape)'	
1569 032664	127	122	111	T23EOT: .ASCIZ		'WRITE DATA OVER EOT GAVE NO TAPE STATUS ALERT'	
1570 032742	124	123	123	T23TM: .ASCIZ		'TSSR Not Correct After WRITE Command Reject'	
1571 033016	122	145	167	T23RMN: .ASCIZ		'Rewind (POSITION) Command Not Accepted'	
1572 033065	122	101	115	T23RNC: .ASCIZ		'RAM Error, Correct Data Pattern Not In Ram'	
1573 033140	124	123	123	T23AM3: .ASCIZ		'TSSR Init. Failed After WRITE Command'	
1574 033206	104	162	151	T23OFL: .ASCIZ		'Drive 7 Select Failed To Set "OFL" In TSSR'	
1575 033261	124	123	123	T23WDD: .ASCIZ		'TSSR Not Correct After WRITE DATA Command, SWB Bit Set'	
1576 033350	124	123	123	T23WDC: .ASCIZ		'TSSR Not Correct After WRITE DATA Command, Check For Tape Offline'	
1577 033452	103	126	103	T23VCK: .ASCIZ		'CVC Set, Didn't Reset VCK In Message Buffer'	
1578 033525	124	123	102	T23BA: .ASCIZ		'TSBA Not Correct After WRITE DATA Command'	
1579 033577	127	122	111	T23WSS: .ASCIZ		'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'	
1580 033666	102	141	163	TST23ID: .ASCIZ		'Basic Write'	
1581							
1582							
1583							
1584							
1585							
1586							
1587							
1588							
1589 033702				T23REST:			
1590 033702				SAVREG			;SAVE THE REGISTERS
1591 033706	012701	032360		MOV	#T23PACKET,R1		;START OF THE PACKET
1592 033712	012721	100004		MOV	#100004,(R1),		;WRITE SUBSYSTEM MEM. WITH ACK
1593 033716	012721	032370		MOV	#T23DATA,(R1),		;ADDRESS OF CHARACTERISTICS DATA BLOCK
1594 033722	005021			CLR	(R1),		;EXTENDED ADDRESS
1595 033724	012721	000012		MOV	#10,,(R1),		;SIZE OF DATA BLOCK IN BYTES
1596 033730	012721	032402		MOV	#T23BFR,(R1),		;ADDRESS OF MESSAGE BUFFER
1597 033734	005021			CLR	(R1),		
1598 033736	012721	000024		MOV	#20,,(R1),		;LENGTH OF MESSAGE BUFFER
1599 033742	005021			CLR	(R1),		
1600 033744	012711	000000		MOV	#0,(R1)		;SELECT DRIVE ZERO
1601 033750	012702	000030		MOV	#24,,R2		;NUMBER OF LOCATIONS TO BE CLEARED
1602 033754	012762	177777	032402' 64#:	MOV	#177777,T23BFR(R2)		;ALL ONES TO MESSAGE BUFFER

```

1603 033762 005742          TST      -(R2)          ;BUMP DOWN TO NEXT LOCATION
1604 033764 020227 000000    CMP      R2, #0        ;R2 AT ZERO YET
1605 033770 001371          BNE      641          ;KEEP GOING UNTIL DONE
1606 033772 000207          RTS      PC              ;RETURN
1607
1608
1609 033774          T23RT2:
1610 033774          SAVREG
1611 034000 012701 032470'    MOV      #T23PK2,R1        ;SAVE THE REGISTERS
1612 034004 012721 100006    MOV      #100006,(R1)+    ;START OF THE PACKET
1613 034010 012721 032522'    MOV      #T23BF2,(R1)+    ;WRITE SUBSYSTEM MEM. WITH ACK
1614 034014 005021          CLR      (R1)+          ;ADDRESS OF DATA BLOCK
1615 034016 012721 000006    MOV      #6,(R1)+        ;EXTENDED ADDRESS
1616 034022 012701 032522'    MOV      #T23BF2,R1      ;SIZE OF DATA BLOCK IN BYTES
1617 034026 005021          CLR      (R1)+          ;POINT TO DATA SEL AREA
1618 034030 005021          CLR      (R1)+
1619 034032 005011          CLR      (R1)+
1620 034034 000207          RTS      PC              ;RETURN
1621 034036          T23RT3:
1622 034036          SAVREG
1623 034042 012701 032510'    MOV      #T23PK3,R1        ;SAVE THE REGISTERS
1624 034046 012721 100005    MOV      #100005,(R1)+    ;START OF THE PACKET
1625 034052 005021          CLR      (R1)+          ;WRITE TAPE. WITH ACK
1626 034054 005021          CLR      (R1)+          ;ADDRESS OF DATA BLOCK
1627 034056 005011          CLR      (R1)+          ;EXTENDED ADDRESS
1628 034060 000207          RTS      PC              ;SIZE OF DATA BLOCK
1629                                     ;RETURN
1630
1631                                     ;
1632                                     ;ROUTINE TO RETRY WRITE DATA IN CASE OF BAD TAPE FOR TEST
1633                                     ;3.SUBTEST 2 & 3
1634                                     ;
1635                                     ;INPUTS:          R1=TSSR
1636                                     ;SUBROUTINE SETS UP T23WRT FOR RETRY
1637                                     ;
1638 034062          T23CHK:
1639 034062          SAVREG
1640 034066 005037 032530'    CLR      T23TMP          ;SAVE THE REGISTERS
1641 034072 032701 100000    BIT      #SC,R1          ;CLEAR LOCAL REGISTER
1642 034076 001452          BEQ      FATAL          ;IS SC SET IN TSSR?
1643 034100 013702 032412'    MOV      T23BFR+10,R2    ;NO, YOU GOT PROBLEMS!
1644 034104 032702 000002    BIT      #X1,UNC,R2      ;YES, GET XSTAT1
1645 034110 001401          BEQ      11            ;IS UNC SET IN XSTAT1?
1646 034112 000405          BR      RETRY          ;NO, CHECK COR
1647 034114 032702 020000    11:    BIT      #X1,COR,R2 ;YES, DO WRITE DATA RETRY
1648 034120 001002          BNE      RETRY          ;IS COR SET IN XSTAT1 THEN?
1649 034122 000440          BR      FATAL          ;YES SO RETRY
1650 034124 000207          EXIT:    RTS      PC        ;NO, YOU GOT PROBLEMS
1651                                     ;RETURN
1652 034126          RETRY:
1653 034126 012703 000024    21:    MOV      #20,R3      ;STARTING RECORD SIZE
1654 034132 013737 003114' 032512' MOV      FREE,T23WB    ;STARTING WRITE BUFFER ADDRESS
1655 034140 012737 032532' 032510' MOV      #T23WRT,T23PK3 ;WRITE DATA RETRY COMMAND SETUP BY SUBROUTINE
1656 034146 012704 032510'    MOV      #T23PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1657 034152 010300          MOV      R3,R0            ;SET PATTERN IN CORRECT REGISTER
1658 034154 004737 017324'    JSR      PC,FILLMEM    ;FILL MEMORY WITH RECORD SIZE
1659 034160 010337 032516'    MOV      R3,T23SZ      ;SET UP RECORD SIZE IN PACKET

```

TSV7 - HARDWARE TESTS 1-8
TEST 3: BASIC WRITE DATA

MACRO M1113 01-FEB-84 17:54

SEQ 120

1660	034164	010465	000000		MOV	R4,TSD8(R5)		;ISSUE COMMAND
1661	034170	004737	016150'		JSR	PC,WAITF		;WAIT FOR SSR TO SET
1662	034174	016501	000002		MOV	TSSR(R5),R1		;GET TSSR CONTENTS
1663	034200	012702	000200		MOV	*SSR,R2		;SET UP EXPECTED
1664	034204	020102			CMP	R1,R2		;ARE THEY EQUAL
1665	034206	001746			BEQ	EXIT		;BR, IF OK
1666	034210	005237	032530'		INC	T23TMP		;TRY FIVE TIMES THEN EXIT
1667	034214	022737	000005	032530'	CMP	*5,T23TMP		;DONE FIVE YET?
1668	034222	001341			BNE	2*		;NO GO AGAIN
1669	034224	005237	002212'		FATAL: INC	FATFLG		;BUMP COUNT
1673	034230	013702	032402'		MOV	T23BFR,R2		;LOW ORDER MSGBUF
1674	034234				ERRHRD	ERRNO,SCHERR,PKTMES		;TSSR INCORRECT AFTER WRITE DATA
	034234	104456					TRAP	C#ERHRD
	034236	000514					.WORD	332
	034240	005270'					.WORD	SCHERR
	034242	012010'					.WORD	PKTMES
1675	034244	004737	017104'		JSR	PC,CKDROP		;DROP THE UNIT
1676	034250				ENDTST			
	034250						L10043:	
	034250	104401					TRAP	C#ETST

.SBTTL 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 AVAILABLE), 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. THE TEST
;
;

```

THE TEST CONSISTS OF THE FOLLOWING 14 SUBTESTS

```

;
;
;
;
;-

```

BGNTST

1699	034252	012737	006166'	002170'		MOV	*EPRT1,EPRTSW		T4::
1700	034260	005037	003124'			CLR	KTENABLE		;SET UP PRIMARY ERROR MESSAGE
1701	034264	004737	017176'			JSR	PC,KTOFF		;TURN OFF KT11
1706	034270	012700	046252'			MOV	*TST24ID,R0		;TURN KT11 OFF
1707	034274	004737	016412'			JSR	PC,TSTSETUP		;ASCII MESSAGE TO IDENTIFY TEST
1708	034300	004737	021116'			JSR	PC,MEMCK		;DO INITIAL TEST SETUP
1709	034304	012737	000005	002206'		MOV	*5,LOOPCNT		;CHECK FOR MEMORY
									;PERFORM 5 ITERATIONS

```

;+
;

```

TEST 4, SUBTEST 1

```

;
;

```

VERIFIES THAT A READ DATA COMMAND WITH THE CLEAR
VOLUME CHECK (CVC) BIT CLEAR IS REJECTED IF THE

```

1717 ;VOLUME CHECK (VCK) IS SET, ALL LEGAL
1718 ;COMBINATIONS OF THE COMMAND MODE FIELD ARE TESTED
1719 ;(I.E., IT IS VERIFIED THAT THE COMMAND IS REJECTED
1720 ;DUE TO VCK BEING SET RATHER THAN ERRONEOUS DECODING
1721 ;OF THE MODE FIELD.
1722 ;
1723 ;
1724 ;-
1725
1726 T24LOOP:
1727 BGNSUB                                ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
                                         T4.1:
034312                                     TRAP      C#BSUB
034312 104402
1728 034314 004737 046320' JSR PC,T24REST ;SET COMMAND PACKET
1729 034320 004737 046454' JSR PC,T24RT3 ;SET UP OTHER COMMAND PACKET
1730 034324 004737 046412' JSR PC,T24RT2 ;SET UP OTHER COMMAND PACKET
1731 034330 012737 176750 044006' MOV #65000.,T24DLY ;LOAD UP DELAY ROUTINE
1732
1733 ;*****
1734 ;
1735 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
1736 ;
1737 ;*****
1738
1739 034336 004737 015674' 5$: JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
1740 034342 103426 BCS 20$ ;BR IF INIT WAS OK
1741 034344 DELAY 250 ;DELAY AWHILE
034344 012727 000250 MOV #250,(PC)+
034350 000000 .WORD 0
034352 013727 002116' MOV L#DLY,(PC)+
034356 000000 .WORD 0
034360 005367 177772 DEC -6(PC)
034364 001375 BNE -.4
034366 005367 177756 DEC -22(PC)
034372 001367 BNE -.20
1742 034374 005337 044006' DEC T24DLY ;BUMP DELAY COUNTER
1743 034400 001356 BNE 5$ ;BR, IF MORE DELAY REQUIRED
1744 034402 005237 002212' INC FATFLG ;BUMP COUNT
1748 034406 010001 MOV RO,R1 ;CONTENTS OF TSSR REGISTER
1749 034410 ERROF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
034410 104455 TRAP C#ERDF
034412 000621 .WORD 401
034414 003642' .WORD SFIERR
034416 011734' .WORD SFIMSG
1750 034420
1751 034420 012737 000007 043650' 20$: MOV #7,T24DSW ;SET DRIVE NUMBER IN PACKET
1752 034426 012704 043630' MOV #T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
1753
1754 ;*****
1755 ;
1756 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRCHRR)
1757 ;
1758 ;*****
1759
1760 034432 004737 010562' JSR PC,WRCHRR ;ISSUE WRITE CHARACTERISTICS
1761 034436 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
1762 034440 005237 002212' INC FATFLG ;BUMP COUNT

```

F10

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 122

```

1766 034444 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
1767 034446      ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERRHRD
                                .WORD     402
                                .WORD     WRTMSG
                                .WORD     SFMSG
1768 034456 005737 002216' 24$: TST      EXTFEA      ;CHECK FOR EXTENDED FEATURES SW SWITCH
1769 034462 001044      BNE      50$      ;BR IF SWITCH IS ON
1770
1771 034464 112737 000200 043771'  MOVB     #200,T24BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
1772 034472 112737 000010 043770'  MOVB     #10,T243S0      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
1773 034500 012704 043740'  MOV      #T24PK2,R4      ;WRITE SUBSYS MEM PACKET
1774 034504 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
1775 034510 004737 016236'  JSR      PC,CHKTSSR      ;WAIT FOR SSR
1776 034514 103407      BCS      30$      ;BR, IF NO ERROR
1777 034516 010001      MOV      R0,R1      ;ERROR, SAVE TSSR
1778 034520 005237 002212'  INC      FATFLG          ;BUMP COUNT
1782 034524      ERRHRD  ERRNO,T24SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                TRAP      C$ERRHRD
                                .WORD     403
                                .WORD     T24SSR
                                .WORD     PKTSSR
1783 034534      30$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
1784 034536 012737 000007 043650'  MOV      #7,T24DSW      ;SET DRIVE NUMBER IN PACKET
1785 034544 012704 043630'  MOV      #T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
1786
1787 ;*****
1788 ;
1789 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPHR)
1790 ;
1791 ;*****
1792
1793 034550 004737 010562'  JSR      PC,WRTPHR      ;ISSUE WRITE CHARACTERISTICS
1794 034554 103407      BCS      50$      ;BR, IF COMMAND ISSUED OK
1795 034556 005237 002212'  INC      FATFLG          ;BUMP COUNT
1799 034562 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
1800 034564      ERRHRD  ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERRHRD
                                .WORD     404
                                .WORD     WRTMSG
                                .WORD     SFMSG
1801 034574      50$: CKLOOP          ;SCOPE LOOP
                                TRAP      C$CLP1
1802 034576 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
1803 034602 032701 000100      BIT      #0FL,R1      ;CHECK FOR THE OFFLINE BIT SET
1804 034606 001006      BNE      60$      ;BR, IF OFFLINE (GOOD)
1805 034610 005237 002212'  INC      FATFLG          ;BUMP COUNT
1809 034614      ERRDF  ERRNO,T240FL,SFMSG ;OFF LINE SHOULD HAVE BEEN SET (BAD)
                                TRAP      C$ERRDF
                                .WORD     405
                                .WORD     T240FL
                                .WORD     SFMSG
1810 034624      60$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
1811 034626 012703 043776'  MOV      #T24RN,R3      ;POINTER FOR COMMANDS
1812

```



```

1864 034746 004737 046412'      JSR      PC,T24RT2      ;SET UP OTHER COMMAND PACKET
1865
1866      ;*****
1867      ;
1868      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
1869      ;
1870      ;*****
1871
1872 034752 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
1873 034756 103407      BCS      20$      ;BR IF INIT WAS OK
1874 034760 005237 002212'      INC      FATFLG      ;BUMP COUNT
1878 034764 010001      MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
1879 034766      ERRDF      ERRNO,SFIERR,SFMSG      ;FATAL ERROR TSSR WAS NOT OK
      034766 104455      TRAP      C$ERDF
      034770 000627      .WORD      407
      034772 003642'      .WORD      SFIERR
      034774 011734'      .WORD      SFMSG
1880 034776
1881 034776 013737 002172' 043650' 20$:      MOV      UNITN,T24DSW      ;SET DRIVE NUMBER IN PACKET
1882 035004 012704 043630'      MOV      @T24PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
1883
1884      ;*****
1885      ;
1886      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
1887      ;
1888      ;*****
1889
1890 035010 004737 010562'      JSR      PC,WRTPCHR      ;ISSUE WRITE CHARACTERISTICS
1891 035014 103407      BCS      24$      ;BR, IF COMMAND ISSUED OK
1892 035016 005237 002212'      INC      FATFLG      ;BUMP COUNT
1896 035022 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
1897 035024      ERRHRD      ERRNO,WRTPMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
      035024 104456      TRAP      C$ERHRD
      035026 000630      .WORD      408
      035030 005046'      .WORD      WRTPMSG
      035032 011734'      .WORD      SFMSG
1898 035034
1899 035034 104406      24$:      CKLOOP      ;LOOP IF SELECTED
1900      TRAP      C$CLP1
1901
1902      ;*****
1903      ;
1904      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
1905      ;
1906      ;*****
1906 035036 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
1907 035042 103407      BCS      30$      ;BR, IF NO PROBLEM
1908 035044 010001      MOV      R0,R1      ;SAVE TSSR
1909 035046 005237 002212'      INC      FATFLG      ;BUMP COUNT
1913 035052      ERRHRD      ERRNO,T24RWN,PKTSSR      ;REWIND NOT ACCEPTED
      035052 104456      TRAP      C$ERHRD
      035054 000631      .WORD      409
      035056 045116'      .WORD      T24RWN
      035060 011746'      .WORD      PKTSSR
1914 035062
1915 035062 104406      30$:      CKLOOP      ;LOOP IF SELECTED
      TRAP      C$CLP1

```


TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 125

```

1916 ;*****
1917 ;
1918 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
1919 ;
1920 ;*****
1921
1922 035064 013701 043660'      MOV      T24BFR+6,R1      ;PICK UP XSTO
1923 035070 010102             MOV      R1,R2          ;SET UP EXPECTED
1924 035072 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
1925 035076 020102             CMP      R1,R2          ;DOES EXP = REC'D
1926 035100 001406             BEQ      40$            ;BR, IF EQUAL (OK)
1927 035102 005237 002212'      INC      FATFLG        ;BUMP COUNT
1931 035106             ERRHRD  ERRNO,T24BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERRRD
                                .WORD    410
                                .WORD    T24BOT
                                .WORD    EXPREC
                                TRAP      C$CLP1
1932 035116             40$:   CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                .WORD    104406
1933 035120 012703 000400      MOV      #256.,R3        ;RECORD SIZE
1934 035124 013737 003114' 043762'  MOV      FREE,T24RB    ;STARTING WRITE BUFFER ADDRESS
1935
1936 ;*****
1937 ;
1938 ;WRITE DATA,CVC=1,ACK COMMAND
1939 ;
1940 ;*****
1941
1942 035132 012737 140005 043760'  MOV      #140005,T24PK3    ;WRITE DATA,CVC=1,ACK COMMAND
1943 035140 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
1944 035144             65$:   MOV      R3,R0            ;SET PATTERN IN CORRECT REGISTER
1945 035144 010300             JSR      PC,FILLMEM        ;FILL MEMORY WITH RECORD SIZE
1946 035146 004737 017324'      MOV      R3,T24SZ        ;SET UP RECORD SIZE IN PACKET
1947 035152 010337 043766'      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
1948 035156 010465 000000      JSR      PC,WAITF        ;WAIT FOR SSR TO SET
1949 035162 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
1950 035166 016501 000002      MOV      #SSR,R2          ;SET UP EXPECTED
1951 035172 012702 000200      CMP      R1,R2          ;ARE THEY EQUAL
1952 035176 020102             BEQ      75$            ;BR, IF OK
1953 035200 001406             INC      FATFLG        ;BUMP COUNT
1954 035202 005237 002212'      ERRHRD  ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
1958 035206             TRAP      C$ERRRD
                                .WORD    411
                                .WORD    WRERR
                                .WORD    PKTSSR
                                TRAP      C$CLP1
                                .WORD    104406
1959 035216             75$:   CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                .WORD    005723
1960 035220 005723             TST      (R3),+          ;BUMP RECORD SIZE
1961 035222 022703 000414      CMP      #268.,R3        ;END OF RECORD YET
1962 035226 001346             BNE      65$            ;BR, IF MORE RECORDS TO WRITE
1963 035230             80$:   CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                .WORD    104406
1964 035232             120$:
1965 ;*****
1966 ;
1967 ;

```

```

1968      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
1969      ;
1970      ;*****
1971      ;
1972 035232 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
1973 035236 004737 016236'      JSR      PC,CHKTSSR      ;SEE HOW TSSR IS
1974 035242 103407              BCS      130$      ;BR, IF NO PROBLEM
1975 035244 010001              MOV      R0,R1      ;SAVE TSSR
1976 035246 005237 002212'      INC      FATFLG      ;BUMP COUNT
1980 035252              ERRHRD  ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
      035252 104456              TRAP      C$ERRHRD
      035254 000634              .WORD    412
      035256 045116'              .WORD    T24RWN
      035260 011746'              .WORD    PKTSSR
1981 035262              130$:  CKLOOP      ;LOOP IF SELECTED
      035262 104406              TRAP      C$CLP1
1982      ;*****
1983      ;
1984      ;
1985      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
1986      ;
1987      ;*****
1988      ;
1989 035264 013701 043660'      MOV      T24BFR+6,R1      ;PICK UP XST0
1990 035270 010102              MOV      R1,R2      ;SET UP EXPECTED
1991 035272 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
1992 035276 020102              CMP      R1,R2      ;DCES EXP = REC'D
1993 035300 001406              BEQ      140$      ;BR, IF EQUAL (OK)
1994 035302 005237 002212'      INC      FATFLG      ;BUMP COUNT
1998 035306              ERRHRD  ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      035306 104456              TRAP      C$ERRHRD
      035310 000635              .WORD    413
      035312 044633'              .WORD    T24BOT
      035314 015374'              .WORD    EXPREC
1999 035316              140$:  CKLOOP      ;LOOP IF SELECTED
      035316 104406              TRAP      C$CLP1
2000 035320 012703 000400      MOV      #256.,R3      ;RECORD SIZE
2001 035324 013737 003114' 043762'  MOV      FREE,T24RB      ;STARTING READ BUFFER ADDRESS
2002      ;*****
2003      ;
2004      ;
2005      ;READ DATA,CVC=1,ACK COMMAND
2006      ;
2007      ;*****
2008      ;
2009 035332 012737 140001 043760' 165$:  MOV      #140001,T24PK3 ;READ DATA,CVC=1,ACK COMMAND
2010 035340 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2011 035344 010337 043766'      MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2012 035350 010465 000000      MOV      R4,T24B(R5) ;ISSUE COMMAND
2013 035354 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
2014 035360 016501 000002      MOV      TSSR(R5),R1 ;GET TSSR CONTENTS
2015 035364 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
2016 035370 020102              CMP      R1,R2      ;ARE THEY EQUAL
2017 035372 001406              BEQ      170$      ;BR, IF OK
2018 035374 005237 002212'      INC      FATFLG      ;BUMP COUNT
2022 035400              ERRHRD  ERRNO,RDERR,PKTSSR ;TSSR INCORRECT AFTER READ DATA
      035400 104456              TRAP      C$ERRHRD

```

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 127

	035402	000636				.WORD	414
	035404	005176'				.WORD	RDERR
	035406	011746'				.WORD	PKTSSR
2023	035410		170\$:	CKLOOP	; LOOP IF SELECTED		
	035410	104406				TRAP	C\$CLP1
2024	035412	013702	003114'	MOV	FREE,R2		
2025	035416	010304		MOV	R3,R4		
2026	035420	162704	000400	SUB	#256.,R4		
2027	035424	060204		ADD	R2,R4		
2028	035426	021403		CMP	(R4),R3		
2029	035430	001410		BEQ	180\$		
2030	035432	011401		MOV	(R4),R1		
2031	035434	010302		MOV	R3,R2		
2032	035436	005237	002212'	INC	FATFLG		
2036	035442			ERRHRD	ERRNO,T24DTA,EXPREC		
	035442	104456				TRAP	C\$ERHRD
	035444	000637				.WORD	415
	035446	044700'				.WORD	T24DTA
	035450	015374'				.WORD	EXPREC
2037	035452		180\$:	CKLOOP	; LOOP IF SELECTED		
	035452	104406				TRAP	C\$CLP1
2038	035454	005724		TST	(R4),		
2039	035456	160204		SUB	R2,R4		
2040	035460	020403		CMP	R4,R3		
2041	035462	001360		BNE	173\$		
2042	035464	005723		TST	(R3),		
2043	035466	022703	000412	CMP	#266.,R3		
2044	035472	001322		BNE	165\$		
2045	035474		190\$:	CKLOOP	; LOOP IF SELECTED		
	035474	104406				TRAP	C\$CLP1
2046	035476			ENDSUB	; >>>>>>>>> END SUBTEST >>>>>>>>>		
	035476				L10054:		
	035476	104403				TRAP	C\$ESUB
2047	035500	023727	002212' 000017	CMP	FATFLG,#15,		
2048	035506	103402		BLO	999\$		
2049	035510	004737	017104'	JSR	PC,CKDROP		
2050	035514		999\$:				
2051							
2052							
2053							
2054							
2055							
2056							
2057							
2058							
2059							
2060							
2061							
2062							
2063							
2064	035514			BGNSUB	; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	035514				T4,3:		
	035514	104402				TRAP	C\$BSUB
2065	035516	004737	046454'	JSR	PC,T24RT3		
2066	035522	004737	046320'	JSP	PC,T24REST		
2067	035526	004737	046412'	JSR	PC,T24RT2		
2068							

L10

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 128

```

2069 ;*****
2070 ;
2071 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
2072 ;
2073 ;*****
2074
2075 035532 004737 015674' JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
2076 035536 103407 BCS 20$ ;BR IF INIT WAS OK
2077 035540 005237 002212' INC FATFLG ;BUMP COUNT
2081 035544 010001 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
2082 035546 ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
      035546 104455 TRAP C$ERDF
      035550 000640 .WORD 416
      035552 003642' .WORD SFIERR
      035554 011734' .WORD SFIMSG
2083 035556
2084 035556 013737 002172' 043650' 20$: MOV UNITN,T24DSW ;SET DRIVE NUMBER IN PACKET
2085 035564 012704 043630' MOV @T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
2086
2087 ;*****
2088 ;
2089 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
2090 ;
2091 ;*****
2092
2093 035570 004737 010562' JSR PC,WRTPCHR ;ISSUE WRITE CHARACTERISTICS
2094 035574 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
2095 035576 005237 002212' INC FATFLG ;BUMP COUNT
2099 035602 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
2100 035604 ERRHRD ERRNO,WRTPMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
      035604 104456 TRAP C$ERRHD
      035606 000641 .WORD 417
      035610 005046' .WORD WRTPMSG
      035612 011734' .WORD SFIMSG
2101 035614 24$: CKLOOP ;LOOP IF SELECTED
      035614 104406 TRAP C$CLP1
2102
2103 ;*****
2104 ;
2105 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2106 ;
2107 ;*****
2108
2109 035616 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
2110 035622 103407 BCS 30$ ;BR, IF NO PROBLEM
2111 035624 010001 MOV R0,R1 ;SAVE TSSR
2112 035626 005237 002212' INC FATFLG ;BUMP COUNT
2116 035632 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
      035632 104456 TRAP C$ERRHD
      035634 000642 .WORD 418
      035636 045116' .WORD T24RWN
      035640 011746' .WORD PKTSSR
2117 035642 30$: CKLOOP ;LOOP IF SELECTED
      035642 104406 TRAP C$CLP1
2118
2119 ;*****
2120 ;

```

M10

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 129

```

2121 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
2122 ;
2123 ;*****
2124
2125 035644 013701 043660'      MOV      T24BFR+6,R1      ;PICK UP XSTO
2126 035650 010102      MOV      R1,R2      ;SET UP EXPECTED
2127 035652 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
2128 035656 020102      CMP      R1,R2      ;DOES EXP = REC'D
2129 035660 001406      BEQ      40$      ;BR, IF EQUAL (OK)
2130 035662 005237 002212'      INC      FATFLG      ;BUMP COUNT
2131 035666      ERRHRD ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
2132      035666 104456      TRAP      C$ERHRD
2133      035670 000643      .WORD     419
2134      035672 044633'      .WORD     T24BOT
2135      035674 015374'      .WORD     EXPREC
2136 035676      40$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
2137 035700 012703 000400      MOV      @256.,R3      ;RECORD SIZE
2138 035704 013737 003114' 043762'      MOV      FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
2139 ;*****
2140 ;
2141 ;WRITE DATA,ACK,SWB,CVC=1 COMMAND
2142 ;
2143 ;*****
2144
2145 035712 012737 150005 043760'      MOV      @150005,T24PK3      ;WRITE DATA,ACK,SWB,CVC=1 COMMAND
2146 035720 012704 043760'      MOV      @T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2147 035724      65$:      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
2148 035726 010300      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
2149 035732 004737 017324'      MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2150 035736 010337 043766'      MOV      R4,T24DB(R5)      ;ISSUE COMMAND
2151 035742 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
2152 035746 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
2153 035752 016501 000002      MOV      @SSR,R2      ;SET UP EXPECTED
2154 035756 012702 000200      CMP      R1,R2      ;ARE THEY EQUAL
2155 035760 020102      BEQ      75$      ;BR, IF OK
2156 035762 001406      INC      FATFLG      ;BUMP COUNT
2157 035766 005237 002212'      ERRHRD ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
2158      035766 104456      TRAP      C$ERHRD
2159      035770 000644      .WORD     420
2160      035772 005103'      .WORD     WRTErr
2161      035774 011746'      .WORD     PKTSSR
2162 035776      75$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
2163 035776 104406      TST      (R3)+      ;BUMP RECORD SIZE
2164 036000 005723      CMP      @268.,R3      ;END OF RECORD YET
2165 036002 022703 000414      BNE      65$      ;BR, IF MORE RECORDS TO WRITE
2166 036006 001346      80$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
2167 036010 104406      120$:
2168      036012
2169 ;*****
2170 ;
2171 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2172 ;

```

N10

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 130

```

2173 ;*****
2174
2175 036012 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
2176 036016 103407 BCS 130$ ;BR, IF NO PROBLEM
2177 036020 010001 MOV R0,R1 ;SAVE TSSR
2178 036022 005237 002212' INC FATFLG ;BUMP COUNT
2182 036026 ERRHRD ERRNO,T24RWN,EXPREC ;REWIND NOT ACCEPTED
      036026 104456 TRAP C$ERHRD
      036030 000645 .WORD 421
      036032 045116' .WORD T24RWN
      036034 015374' .WORD EXPREC
2183 036036 130$: CKLOOP ;LOOP IF SELECTED
      036036 104406 TRAP C$CLP1
2184
2185 ;*****
2186 ;
2187 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
2188 ;
2189 ;*****
2190
2191 036040 013701 043660' MOV T24BFR+0,R1 ;PICK UP XSTO
2192 036044 010102 MOV R1,R2 ;SET UP EXPECTED
2193 036046 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
2194 036052 020102 CMP R1,R2 ;DOES EXP = REC'D
2195 036054 001406 BEQ 140$ ;BR, IF EQUAL (OK)
2196 036056 005237 002212' INC FATFLG ;BUMP COUNT
2200 036062 ERRHRD ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      036062 104456 TRAP C$ERHRD
      036064 000646 .WORD 422
      036066 044633' .WORD T24BOT
      036070 015374' .WORD EXPREC
2201 036072 140$: CKLOOP ;LOOP IF SELECTED
      036072 104406 TRAP C$CLP1
2202 036074 012703 000400 MOV #256.,R3 ;RECORD SIZE
2203 036100 013757 003114' 043762' MOV FREE,T24RB ;STARTING READ BUFFER ADDRESS
2204
2205 ;*****
2206 ;
2207 ;READ DATA,IE,ACK,SWB COMMAND
2208 ;
2209 ;*****
2210
2211 036106 012737 110001 043760' 165$: MOV #110001,T24PK3 ;READ DATA,IE,ACK,SWB COMMAND
2212 036114 012704 043760' MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
2213 036120 010337 043766' MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
2214 036124 010465 000000 MOV R4,T24SDB(R5) ;ISSUE COMMAND
2215 036130 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
2216 036134 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
2217 036140 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
2218 036144 020102 CMP R1,R2 ;ARE THEY EQUAL
2219 036146 001406 BEQ 170$ ;BR, IF OK
2220 036150 005237 002212' INC FATFLG ;BUMP COUNT
2224 036154 ERRHRD ERRNO,RDERR,PKTSSR ;TSSR INCORRECT AFTER READ DATA
      036154 104456 TRAP C$ERHRD
      036156 000647 .WORD 423
      036160 005176' .WORD RDERR
      036162 011746' .WORD PKTSSR

```


Line	Address	Offset	Label	Operation	Comments
2225	036164	104406	170\$:	CKLOOP	LOOP IF SELECTED
2226	036166	013702		MOV FREE,R2	GET BUFFER ADDRESS
2227	036172	010304		MOV R3,R4	CURRENT RECORD SIZE
2228	036174	162704		SUB #256,,R4	FIRST LOCATION IN BUFFER
2229	036200	060204	173\$:	ADD R2,R4	GET LOCATION IN BUFFER (ADDRESS)
2230	036202	021403		CMP (R4),R3	CHECK DATA READ (R3=DATA ALSO)
2231	036204	001410		BEQ 180\$	BR, IF ALL IS WELL
2232	036206	011401		MOV (R4),R1	RECD DATA
2233	036210	010302		MOV R3,R2	EXPECTED DATA
2234	036212	005237		INC FATFLG	BUMP COUNT
2238	036216			ERRHRD ERRNO,T24DTA,EXPREC	DATA READ NOT - WRITTEN
	036216	104456			TRAP C\$ERHRD
	036220	000650			.WORD 424
	036222	044700			.WORD T24DTA
	036224	015374			.WORD EXPREC
2239	036226		180\$:	CKLOOP	LOOP IF SELECTED
	036226	104406			TRAP C\$CLP1
2240	036230	005724		TST (R4),	BUMP TO NEXT LOCATION
2241	036232	160204		SUB R2,R4	SET SIZE TO CORRECT VALUE
2242	036234	020403		CMP R4,R3	END OF RECORD YET
2243	036236	001360		BNE 173\$	BR, IF NOT AT END OF RECORD
2244	036240	005723		TST (R3),	BUMP RECORD SIZE
2245	036242	022703		CMP #266,,R3	END OF RECORD YET
2246	036246	001322		BNE 165\$	BR, IF MORE RECORDS TO WRITE
2247	036250		190\$:	CKLOOP	LOOP IF SELECTED
	036250	104406			TRAP C\$CLP1
2248	036252			ENDSUB	END SUBTEST
	036252				L10055;
2249	036254	023727		CMP FATFLG,#15,	IS ERROR COUNT AT 25
2250	036262	103402		BLO 999\$	BR, IF LESS THAN 25
2251	036264	004737		JSR PC,CKDROP	TRY TO DROP THE UNIT
2252	036270		999\$:		
2253					
2254					
2255					
2256					
2257					
2258					
2259					
2260					
2261					
2262					
2263					
2264					
2265					
2266	036270			BGNSUB	BEGIN SUBTEST
	036270				T4.4;
	036270	104402			TRAP C\$BSUB
2267	036272	004737		JSR PC,T24RT3	SET UP OTHER COMMAND PACKET
2268	036276	004737		JSR PC,T24REST	SET COMMAND PACKET
2269	036302	004737		JSR PC,T24RT2	SET UP OTHER COMMAND PACKET
2270					
2271					
2272					
2273					

C11

ISV7 - HARDWARE TESTS 1-8, MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 132

```

2274
2275
2276
2277 036306 004737 015674'      JSR      PC,SOFINLY      ;DO INITIALIZE ON CONTROLLER
2278 036312 103407              BCS      20$              ;BR IF INIT WAS OK
2279 036314 005237 002212'      INC      FATFLG          ;BUMP COUNT
2283 036320 010001              MOV      R0,R1            ;CONTENTS OF TSSR REGISTER
2284 036322              ERROF   ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
                                TRAP      C1ERDF
                                .WORD     425
                                .WORD     SFIERR
                                .WORD     SFIMSG
                                036322 104455
                                036324 000651
                                036326 003642'
                                036330 011734'
2285 036332
2286 036332 013737 002172' 043650' 20$: MOV      L'NITN,T24DSW      ;SET DRIVE NUMBER IN PACKET
2287 036340 012704 043630'      MOV      @T24PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
2288
2289
2290
2291 ;WRITE CHARACTERISTICS COMMAND (CALL TO WATCHR)
2292
2293
2294
2295 036344 004737 010562'      JSR      PC,WATCHR          ;ISSUE WRITE CHARACTERISTICS
2296 036350 103407              BCS      24$              ;BR, IF COMMAND ISSUED OK
2297 036352 005237 002212'      INC      FATFLG          ;BUMP COUNT
2301 036356 010001              MOV      R0,R1            ;SAVE CONTENTS OF TSSR
2302 036360              ERHRD   ERRNO,WRTMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
                                TRAP      C1ERHRD
                                .WORD     426
                                .WORD     WRTMSG
                                .WORD     SFIMSG
                                036360 104456
                                036362 000652
                                036364 005046'
                                036366 011734'
2303 036370              24$: CKLOOP              ;LOOP IF SELECTED
                                TRAP      C1CLP1
                                036370 104406
2304
2305
2306
2307 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2308
2309
2310
2311 036372 004737 010714'      JSR      PC,REWIND          ;CALL TAPE REWIND COMMAND
2312 036376 103407              BCS      30$              ;BR, IF NO PROBLEM
2313 036400 010001              MOV      R0,R1            ;SAVE TSSR
2314 036402 005237 002212'      INC      FATFLG          ;BUMP COUNT
2318 036406              ERHRD   ERRNO,T24RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP      C1ERHRD
                                .WORD     427
                                .WORD     T24RWN
                                .WORD     PKTSSR
                                036406 104456
                                036410 000653
                                036412 045116'
                                036414 011746'
2319 036416              30$: CKLOOP              ;LOOP IF SELECTED
                                TRAP      C1CLP1
                                036416 104406
2320
2321
2322
2323 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XS"0)
2324
2325

```



```

2326
2327 036420 013701 043660'      MOVL    T24BOT+6,R1      ;PICK UP XSTO
2328 036424 010102              MOV     R1,R2      ;SET UP EXPECTED
2329 036426 052702 000002      BIS     @BIT1,R2      ;SET BOT BIT IN EXPECTED
2330 036432 020102              CMP     R1,R2      ;DOES EXP = REC'D
2331 036434 001406              BEQ     40$      ;BR, IF EQUAL (OK)
2332 036436 005237 002212'      INC     FATFLG      ;BUMP COUNT
2336 036442              ERRHRD   ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                036442 104456              TRAP     C$ERHRD
                036444 000654              .WORD    428
                036446 044633'              .WORD    T24BOT
                036450 015374'              .WORD    EXPREC
2337 036452              40$:    CKLOOP              ;LOOP IF SELECTED              TRAP     C$CLP1
                036452 104406              MOV     @512,R3      ;RECORD SIZE
2338 036454 012703 001000      MOV     FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
2339 036460 013737 003114' 043762'
2340
2341      ;*****
2342      ;
2343      ;WRITE DATA,ACK,CVC=1 COMMAND
2344      ;
2345      ;*****
2346
2347 036466 012737 140005 043760'      MOV     @140005,T24PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
2348 036474 012704 043760'      MOV     @T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2349 036500              65$:
2350 036500 010337 043766'      MOV     R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2351 036504 010465 000000      MOV     R4,TSDB(R5)      ;ISSUE COMMAND
2352 036510 004737 016150'      JSR     PC,WAITF      ;WAIT FOR SSR TO SET
2353 036514 016501 000002      MOV     TSSR(R5),R1      ;GET TSSR CONTENTS
2354 036520 012702 000200      MOV     @SSR,R2      ;SET UP EXPECTED
2355 036524 020102              CMP     R1,R2      ;ARE THEY EQUAL
2356 036526 001406              BEQ     75$      ;BR, IF OK
2357 036530 005237 002212'      INC     FATFLG      ;BUMP COUNT
2361 036534              ERRHRD   ERRNO,WTERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
                036534 104456              TRAP     C$ERHRD
                036536 000655              .WORD    429
                036540 005103'              .WORD    WTERR
                036542 011746'              .WORD    PKTSSR
2362 036544              75$:    CKLOOP              ;LOOP IF SELECTED              TRAP     C$CLP1
                036544 104406
2363 036546              120$:
2364
2365      ;*****
2366      ;
2367      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2368      ;
2369      ;*****
2370
2371 036546 004737 010714'      JSR     PC,REWIND      ;CALL TAPE REWIND COMMAND
2372 036552 103407              BCS     130$      ;BR, IF NO PROBLEM
2373 036554 010001              MOV     R0,R1      ;SAVE TSSR
2374 036556 005237 002212'      INC     FATFLG      ;BUMP COUNT
2378 036562              ERRHRD   ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
                036562 104456              TRAP     C$ERHRD
                036564 000656              .WORD    430
                036566 045116'              .WORD    T24RWN

```

E11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 134

```

2379 036570 011746'
036572 104406
130$: CKLOOP                                ;LOOP IF SELECTED
                                           .WORD PKTSSR
                                           TRAP C$CLP1
2380
2381 ;*****
2382 ;
2383 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
2384 ;
2385 ;*****
2386
2387 036574 013701 043660'      MOV     T24BFR+6,R1      ;PICK UP XSTO
2388 036600 010102              MOV     R1,R2            ;SET UP EXPECTED
2389 036602 052702 000002      BIS     @BIT1,R2         ;SET BOT BIT IN EXPECTED
2390 036606 020102              CMP     R1,R2            ;DOES EXP = REC'D
2391 036610 001406              BEQ     140$             ;BR, IF EQUAL (OK)
2392 036612 005237 002212'      INC     FATFLG           ;BUMP COUNT
2396 036616                      ERRHRD  ERRNO,T24BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                           TRAP C$ERHRD
                                           .WORD 431
                                           .WORD T24BOT
                                           .WORD EXPREC
036616 104456
036620 000657
036622 044633'
036624 015374'
2397 036626 140$: CKLOOP                                ;LOOP IF SELECTED
036626 104406                                           .WORD C$CLP1
2398 036630 012703 000400      MOV     @256.,R3         ;RECORD SIZE
2399 036634 013737 003114' 043762'  MOV     FREE,T24RB      ;STARTING READ BUFFER ADDRESS
2400
2401 ;*****
2402 ;
2403 ;READ DATA,ACK,CVC=1 COMMAND
2404 ;
2405 ;*****
2406
2407 036642 012737 140001 043760' 165$: MOV     @140001,T24PK3 ;READ DATA,ACK,CVC=1 COMMAND
2408 036650 012704 043760'      MOV     @T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2409 036654 010337 043766'      MOV     R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2410 036660 010465 000000      MOV     R4,TSD8(R5)       ;ISSUE COMMAND
2411 036664 004737 016150'      JSR     PC,WAITF       ;WAIT FOR SSR TO SET
2412 036670 016501 000002      MOV     TSSR(R5),R1      ;GET TSSR CONTENTS
2413 036674 012702 100204      MOV     @SSR!SC!BIT2,R2    ;SET UP EXPECTED
2414 036700 020102              CMP     R1,R2            ;ARE THEY EQUAL
2415 036702 001406              BEQ     170$             ;BR, IF OK
2416 036704 005237 002212'      INC     FATFLG           ;BUMP COUNT
2420 036710                      ERRHRD  ERRNO,T24TRL,PKTSSR ;TSSR INCORRECT AFTER READ DATA
                                           TRAP C$ERHRD
                                           .WORD 432
                                           .WORD T24TRL
                                           .WORD PKTSSR
036710 104456
036712 000660
036714 046164'
036716 011746'
2421 036720 170$: CKLOOP                                ;LOOP IF SELECTED
036720 104406                                           .WORD C$CLP1
2422
2423 ;*****
2424 ;
2425 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
2426 ;
2427 ;*****
2428
2429 036722 013701 043660'      MOV     T24BFR+6,R1      ;GET MESSAGE BUFFER

```

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 135

2430	036726	010102			MOV R1,R2	;SET UP EXPECTED		
2431	036730	052702	010000		BIS #BIT12,R2	;SET THE RLL BIT IN EXPECTED		
2432	036734	020102			CMP R1,R2	;ARE THEY EQUAL		
2433	036736	001406			BEQ 180\$	;BR, IF EQUAL (ALL IS WELL)		
2434	036740	005237	002212'		INC FATFLG	;BUMP COUNT		
2438	036744				ERRHRD ERNO,T24LON,EXPREC	;THE RLL BIT WAS NOT SET IN XSTO		
	036744	104456					TRAP C\$ERHRD	
	036746	000661					.WORD 433	
	036750	045732'					.WORD T24LON	
	036752	015374'					.WORD EXPREC	
2439	036754			180\$:				
2440	036754			ENDSUB		;>>>>>>>>>>> END SUBTEST >>>>>>>>>>		
	036754					L10056:		
	036754	104403					TRAP C\$ESUB	
2441	036756	023727	002212' 000017		CMP FATFLG,#15.	;IS ERROR COUNT AT 25		
2442	036764	103402			BLO 999\$	;BR, IF LESS THAN 25		
2443	036766	004737	017104'		JSR PC,CKDROP	;TRY TO DROP THE UNIT		
2444	036772			999\$:				
2445								
2446				;+				
2447				;				
2448				;TEST 4, SUBTEST 5				
2449				;				
2450				;VERIFIES THAT A READ FORWARD COMMAND READING A RECORD				
2451				;SHORTER THAN THE SPECIFIED BYTE COUNT CAUSES TAPE				
2452				;STATUS ALERT TERMINATION WITH THE RECORD LENGTH SHORT				
2453				;(RLS) BITS SET. IT IS VERIFIED THAT THE RESIDUAL BYTE				
2454				COUNT (RBPOR) IN THE MESSAGE BUFFER CONTAINS THE				
2455				PROPER NONZERO VALUE (E.G. THE DIFFERENCE BETWEEN				
2456				THE ORIGINAL BYTE COUNT AND THE ACTUAL RECORD				
2457				LENGTH).				
2458				;				
2459				;				
2460				;				
2461				;-				
2462								
2463	036772			BGN SUB		;>>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>		
	036772					T4.5:		
	036772	104402					TRAP C\$BSUB	
2464	036774	004737	046454'		JSR PC,T24RT3	;SET UP OTHER COMMAND PACKET		
2465	037000	004737	046320'		JSR PC,T24REST	;SET COMMAND PACKET		
2466	037004	004737	046412'		JSR PC,T24RT2	;SET UP OTHER COMMAND PACKET		
2467								
2468				;*****				
2469				;				
2470				;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR				
2471				;				
2472				;*****				
2473								
2474	037010	004737	015674'		JSR PC,SOFINIT	;DO INITIALIZE ON CONTROLLER		
2475	037014	103407			BCS 20\$	;BR IF INIT WAS OK		
2476	037016	005237	002212'		INC FATFLG	;BUMP COUNT		
2480	037022	010001			MOV RO,R1	;CONTENTS OF TSSR REGISTER		
2481	037024				ERRDF ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK		
	037024	104455					TRAP C\$ERDF	
	037026	000662					.WORD 434	
	037030	003642'					.WORD SFIERR	

G11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 136

```

037032 011734' .WORD SFMSG
2482 037034 20$: MOV UNITN,T24DSW ;SET DRIVE NUMBER IN PACKET
2483 037034 013737 002172' 043650' MOV ;SUBROUTINE NEEDS PACKET ADDRESS
2484 037042 012704 043630'
2485
2486 ;*****
2487 ;
2488 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
2489 ;
2490 ;*****
2491
2492 037046 004737 010562' JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
2493 037052 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
2494 037054 005237 002212' INC FATFLG ;BUMP COUNT
2498 037060 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
2499 037062 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
037062 104456 TRAP C$ERHRD
037064 000663 .WORD 435
037066 005046' .WORD WRTMSG
037070 011734' .WORD SFMSG
2500 037072 24$: CKLOOP ;LOOP IF SELECTED
037072 104406 TRAP C$CLP1
2501
2502 ;*****
2503 ;
2504 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2505 ;
2506 ;*****
2507
2508 037074 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
2509 037100 103407 BCS 30$ ;BR, IF NO PROBLEM
2510 037102 010001 MOV R0,R1 ;SAVE TSSR
2511 037104 005237 002212' INC FATFLG ;BUMP COUNT
2515 037110 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
037110 104456 TRAP C$ERHRD
037112 000664 .WORD 436
037114 045116' .WORD T24RWN
037116 011746' .WORD PKTSSR
2516 037120 30$: CKLOOP ;LOOP IF SELECTED
037120 104406 TRAP C$CLP1
2517 037122 012703 000400 MOV #256.,R3 ;RECORD SIZE
2518 037126 013737 003114' 043762' MOV FREE,T24FB ;STARTING WRITE BUFFER ADDRESS
2519
2520 ;*****
2521 ;
2522 ;WRITE DATA,ACK,CVC=1 COMMAND
2523 ;
2524 ;*****
2525
2526 037134 012737 140005 043760' MOV #140005,T24PK3 ;WRITE DATA,ACK,CVC=1 COMMAND
2527 037142 012704 043760' MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
2528 037146 65$:
2529 037146 010337 043766' MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
2530 037152 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
2531 037156 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
2532 037162 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
2533 037166 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED

```

H11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 137

```

2534 037172 020102          CMP      R1,R2          ;ARE THEY EQUAL
2535 037174 001406          BEQ      75$           ;BR, IF OK
2536 037176 005237 002212'  INC      FATFLG        ;BUMP COUNT
2540 037202          ERRHRD  ERRNO,WRterr,PKTSSR    ;TSSR INCORRECT AFTER WRITE DATA
                037202 104456          TRAP      C$ERHRD
                037204 000665          .WORD    437
                037206 005103'         .WORD    WRterr
                037210 011746'         .WORD    PKTSSR
2541 037212          75$:   CKLOOP          ;LOOP IF SELECTED
                037212 104406          TRAP      C$CLP1
2542 037214          120$:
2543
2544          ;*****
2545          ;
2546          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2547          ;
2548          ;*****
2549
2550 037214 004737 010714'    JSR      PC,REWIND        ;CALL TAPE REWIND COMMAND
2551 037220 103407          BCS      130$           ;BR, IF NO PROBLEM
2552 037222 010001          MOV      R0,R1           ;SAVE TSSR
2553 037224 005237 002212'  INC      FATFLG        ;BUMP COUNT
2557 037230          ERRHRD  ERRNO,T24RWN,PKTSSR    ;REWIND NOT ACCEPTED
                037230 104456          TRAP      C$ERHRD
                037232 000666          .WORD    438
                037234 045116'         .WORD    T24RWN
                037236 011746'         .WORD    PKTSSR
2558 037240          130$:   CKLOOP          ;LOOP IF SELECTED
                037240 104406          TRAP      C$CLP1
2559 037242 012703 001000    MOV      #512.,R3       ;RECORD SIZE
2560 037246 013737 003114' 043762'  MOV      FREE,T24RB    ;STARTING READ BUFFER ADDRESS
2561
2562          ;*****
2563          ;
2564          ;READ DATA,ACK,CVC=1 COMMAND
2565          ;
2566          ;*****
2567
2568 037254 012737 140001 043760'  MOV      #140001,T24PK3    ;READ DATA,ACK,CVC=1 COMMAND
2569 037262 012704 043760'  165$:   MOV      #T24PK3,R4    ;SET UP R4 WITH PACKET ADDRESS
2570 037266 010337 043766'  MOV      R3,T24SZ        ;SET UP RECORD SIZE IN PACKET
2571 037272 010465 000000    MOV      R4,TSD8(R5)      ;ISSUE COMMAND
2572 037276 004737 016150'  JSR      PC,WAITEF    ;WAIT FOR SSR TO SET
2573 037302 016501 000002    MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
2574 037306 012702 100204    MOV      #SSR!SC!BIT2,R2    ;SET UP EXPECTED
2575 037312 020102          CMP      R1,R2          ;ARE THEY EQUAL
2576 037314 001406          BEQ      170$           ;BR, IF OK
2577 037316 005237 002212'  INC      FATFLG        ;BUMP COUNT
2581 037322          ERRHRD  ERRNO,T24TRL,EXPREC    ;TSSR INCORRECT AFTER READ DATA
                037322 104456          TRAP      C$ERHRD
                037324 000667          .WORD    439
                037326 046164'         .WORD    T24TRL
                037330 015374'         .WORD    EXPREC
2582 037332          170$:   CKLOOP          ;LOOP IF SELECTED
                037332 104406          TRAP      C$CLP1
2583
2584          ;*****

```

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 138

2585					; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)			
2586								
2587								
2588					*****			
2589								
2590	037334	013701	043660'		MOV T24BFR+6,R1	;GET MESSAGE BUFFER		
2591	037340	010102			MOV R1,R2	;SET UP EXPECTED		
2592	037342	052702	040000		BIS #BIT14,R2	;SET THE RLS BIT IN EXPECTED		
2593	037346	020102			CMP R1,R2	;ARE THEY EQUAL		
2594	037350	001406			BEQ 180\$	;BR, IF EQUAL (ALL IS WELL)		
2595	037352	005237	002212'		INC FATFLG	;BUMP COUNT		
2599	037356				ERRHRD ERRNO,T24LOP,EXPREC	;THE RLL BIT WAS NOT SET IN XSTO		
	037356	104456					TRAP C\$ERHRD	
	037360	000670					.WORD 440	
	037362	046014'					.WORD T24LOP	
	037364	015374'					.WORD EXPREC	
2600	037366			180\$:				
2601	037366	013701	043656'		MOV T24BFR+4,R1	;PICK UP RESIDUAL BYTE COUNTER		
2602	037372	012702	000400		MOV #256.,R2	;THIS SHOULD BE THE DIFFERENCE		
2603	037376	020102			CMP R1,R2	;IS THE DIFFERENCE CORRECT		
2604	037400	001406			BEQ 190\$	;BR, IF CORRECT		
2605	037402	005237	002212'		INC FATFLG	;BUMP COUNT		
2609	037406				ERRHRD ERRNO,T24PBP,EXPREC	;RBPCR NOT CORRECT		
	037406	104456					TRAP C\$ERHRD	
	037410	000671					.WORD 441	
	037412	046076'					.WORD T24PBP	
	037414	015374'					.WORD EXPREC	
2610	037416			190\$:	CKLOOP	;LOOP IF SELECTED		
	037416	104406					TRAP C\$CLP1	
2611	037420				ENDSUB	;>>>>>>>>> END SUBTEST >>>>>>>>>		
	037420					L10057:		
	037420	104403					TRAP C\$ESUB	
2612	037422	023727	002212' 000017		CMP FATFLG,#15.	;IS ERROR COUNT AT 25		
2613	037430	103402			BLO 999\$	;BR, IF LESS THAN 25		
2614	037432	004737	017104'		JSR PC,CKDROP	;TRY TO DROP THE UNIT		
2615	037436			999\$:				
2616								
2617								
2618								
2619					; TEST 4, SUBTEST 6			
2620								
2621					; VERIFIES THAT READ REVERSE COMMANDS WITH SWB=0			
2622					; OPERATES PROPERLY. THE TAPE IS FIRST REWOUND AND THEN			
2623					; WRITTEN WITH A SERIES OF TEST RECORDS VARYING IN			
2624					; LENGTH AND DATA CONTENT. THE TAPE IS THEN READ IN REVERSE			
2625					; SEQUENTIALLY AND THE RESULTS			
2626					; (STATUS, DATA, ETC.) VERIFIED. THE BYTE COUNT ON			
2627					; EACH READ REVERSE COMMAND IS SET TO THE LENGTH OF THE			
2628					; EXPECTED RECORD, SO NO EXCEPTIONAL CONDITIONS SHOULD			
2629					; OCCUR.			
2630								
2631								
2632								
2633								
2634	037436				BGNSUB	;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	037436					T4.6:		
	037436	104402					TRAP C\$BSUB	

J11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 139

```

2635 037440 004737 046454'      JSR      PC,T24RT3      ;SET UP OTHER COMMAND PACKET
2636 037444 004737 046320'      JSR      PC,T24REST     ;SET COMMAND PACKET
2637 037450 004737 046412'      JSR      PC,T24RT2      ;SET UP OTHER COMMAND PACKET
2638
2639 ;*****
2640 ;
2641 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
2642 ;
2643 ;*****
2644
2645 037454 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
2646 037460 103407              BCS      20$              ;BR IF INIT WAS OK
2647 037462 005237 002212'      INC      FATFLG          ;BUMP COUNT
2651 037466 010001              MOV      R0,R1            ;CONTENTS OF TSSR REGISTER
2652 037470              ERRDF   ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
                037470 104455              TRAP      C$ERDF
                037472 000672              .WORD     442
                037474 003642'              .WORD     SFIERR
                037476 011734'              .WORD     SFIMSG
2653 037500
2654 037500 013737 002172' 043650' 20$: MOV      UNITN,T24DSW      ;SET DRIVE NUMBER IN PACKET
2655 037506 012704 043630'      MOV      #T24PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
2656
2657 ;*****
2658 ;
2659 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
2660 ;
2661 ;*****
2662
2663 037512 004737 010562'      JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
2664 037516 103407              BCS      24$              ;BR, IF COMMAND ISSUED OK
2665 037520 005237 002212'      INC      FATFLG          ;BUMP COUNT
2669 037524 010001              MOV      R0,R1            ;SAVE CONTENTS OF TSSR
2670 037526              ERRHRD  ERRNO,WRTMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
                037526 104456              TRAP      C$ERHRD
                037530 000673              .WORD     443
                037532 005046'              .WORD     WRTMSG
                037534 011734'              .WORD     SFIMSG
2671 037536              24$: CKLOOP                      ;LOOP IF SELECTED
                037536 104406              TRAP      C$CLP1
2672
2673 ;*****
2674 ;
2675 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2676 ;
2677 ;*****
2678
2679 037540 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
2680 037544 103407              BCS      30$              ;BR, IF NO PROBLEM
2681 037546 010001              MOV      R0,R1            ;SAVE TSSR
2682 037550 005237 002212'      INC      FATFLG          ;BUMP COUNT
2686 037554              ERRHRD  ERRNO,T24RWN,PKTSSR      ;REWIND NOT ACCEPTED
                037554 104456              TRAP      C$ERHRD
                037556 000674              .WORD     444
                037560 045116'              .WORD     T24RWN
                037562 011746'              .WORD     PKTSSR
2687 037564              30$: CKLOOP                      ;LOOP IF SELECTED

```

K11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 140

Address	Offset	Register	Value	Label	Instruction	Comment	Trap	CLP1
2688	037564	012703	000400		MOV	#256.,R3	RECORD SIZE	
2689	037572	013737	003114'	043762'	MOV	FREE,T24RB	STARTING WRITE BUFFER ADDRESS	
2690								
2691						*****		
2692								
2693						WRITE DATA,ACK,CVC=1 COMMAND		
2694								
2695						*****		
2696								
2697	037600	012737	140005	043760'	MOV	#140005,T24PK3	WRITE DATA,ACK,CVC=1 COMMAND	
2698	037606	012704	043760'		MOV	#T24PK3,R4	SET UP R4 WITH PACKET ADDRESS	
2699	037612				65\$:			
2700	037612	010300			MOV	R3,R0	SET PATTERN IN CORRECT REGISTER	
2701	037614	004737	017324'		JSR	PC,FILLMEM	FILL MEMORY WITH RECORD SIZE	
2702	037620	010337	043766'		MOV	R3,T24SZ	SET UP RECORD SIZE IN PACKET	
2703	037624	010465	000000		MOV	R4,TSDB(R5)	ISSUE COMMAND	
2704	037630	004737	016150'		JSR	PC,WAITF	WAIT FOR SSR TO SET	
2705	037634	016501	000002		MOV	TSSR(R5),R1	GET TSSR CONTENTS	
2706	037640	012702	000200		MOV	#SSR,R2	SET UP EXPECTED	
2707	037644	020102			CMP	R1,R2	ARE THEY EQUAL	
2708	037646	001406			BEQ	75\$	BR, IF OK	
2709	037650	005237	002212'		INC	FATFLG	BUMP COUNT	
2713	037654				ERRHRD	ERRNO,WRERR,PKTSSR	TSSR INCORRECT AFTER WRITE DATA	
	037654	104456					TRAP	C\$ERHRD
	037656	000675					.WORD	445
	037660	005103'					.WORD	WRERR
	037662	011746'					.WORD	PKTSSR
2714	037664				75\$:	CKLOOP	LOOP IF SELECTED	
	037664	104406					TRAP	C\$CLP1
2715	037666	005723			TST	(R3)+	BUMP RECORD SIZE	
2716	037670	022703	000414		CMP	#268.,R3	END OF RECORD YET	
2717	037674	001346			BNE	65\$	BR, IF MORE RECORDS TO WRITE	
2718	037676				80\$:	CKLOOP	LOOP IF SELECTED	
	037676	104406					TRAP	C\$CLP1
2719	037700	005743			TST	-(R3)	SET BACK TO 512.	
2720	037702	013737	003114'	043762'	MOV	FREE,T24RB	STARTING READ BUFFER ADDRESS	
2721								
2722						*****		
2723								
2724						READ REVERSE DATA,ACK COMMAND		
2725								
2726						*****		
2727								
2728	037710	012737	100401	043760'	MOV	#100401,T24PK3	READ REVERSE DATA,ACK COMMAND	
2729	037716	012704	043760'		MOV	#T24PK3,R4	SET UP R4 WITH PACKET ADDRESS	
2730	037722	010337	043766'		MOV	R3,T24SZ	SET UP RECORD SIZE IN PACKET	
2731	037726	010465	000000		MOV	R4,TSDB(R5)	ISSUE COMMAND	
2732	037732	004737	016150'		JSR	PC,WAITF	WAIT FOR SSR TO SET	
2733	037736	016501	000002		MOV	TSSR(R5),R1	GET TSSR CONTENTS	
2734	037742	012702	000200		MOV	#SSR,R2	SET UP EXPECTED	
2735	037746	020102						

	037762	045445'				.WORD	T24WDC
	037764	011746'				.WORD	PKTSSR
2742	037766		170\$:	CKLOOP	; LOOP IF SELECTED		
	037766	104406				TRAP	C\$CLP1
2743	037770	013702	003114'	MOV	FREE,R2		
2744	037774	010304		MOV	R3,R4		
2745	037776	162704	000400	SUB	#256.,R4		
2746	040002	060204		173\$:	ADD R2,R4		
2747	040004	021403		CMP	(R4),R3		
2748	040006	001410		BEQ	180\$		
2749	040010	011401		MOV	(R4),R1		
2750	040012	010302		MOV	R3,R2		
2751	040014	005237	002212'	INC	FATFLG		
2755	040020			ERRHRD	ERRNO,T24DTA,EXPREC		
	040020	104456				TRAP	C\$ERHRD
	040022	000677				.WORD	447
	040024	044700'				.WORD	T24DTA
	040026	015374'				.WORD	EXPREC
2756	040030		180\$:	CKLOOP	; LOOP IF SELECTED		
	040030	104406				TRAP	C\$CLP1
2757	040032	005724		TST	(R4)+		
2758	040034	160204		SUB	R2,R4		
2759	040036	020403		CMP	R4,R3		
2760	040040	001360		BNE	173\$		
2761	040042	005743		TST	-(R3)		
2762	040044	022703	000400	CMP	#256.,R3		
2763	040050	001322		BNE	165\$		
2764	040052		190\$:	CKLOOP	; LOOP IF SELECTED		
	040052	104406				TRAP	C\$CLP1
2765	040054			ENDSUB	; >>>>>>>>> END SUBTEST >>>>>>>>>		
	040054				L10060:		
	040054	104403				TRAP	C\$ESUB
2766	040056	023727	002212' 000017	CMP	FATFLG,#15.		
2767	040064	103402		BLO	999\$		
2768	040066	004737	017104'	JSR	PC,CKDROP		
2769	040072		999\$:				
2770							
2771							
2772							
2773							
2774							
2775							
2776							
2777							
2778							
2779							
2780							
2781							
2782							
2783	040072						
	040072			BGNBUB	; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	040072	104402			T4.7:		
2784	040074	004737	046454'	JSR	PC,T24RT3	TRAP	C\$BSUB
2785	040100	004737	046320'	JSR	PC,T24REST		
2786	040104	004737	046412'	JSR	PC,T24RT2		
2787							
2788							

M11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-80 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 142

```

2789
2790 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
2791 ;
2792 ;*****
2793
2794 040110 004737 015674' JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
2795 040114 103407 BCS 20$ ;BR IF INIT WAS OK
2796 040116 005237 002212' INC FATFLG ;BUMP COUNT
2800 040122 010001 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
2801 040124 ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
      040124 104455 TRAP C$ERDF
      040126 000700 .WORD 448
      040130 003642' .WORD SFIERR
      040132 011734' .WORD SFIMSG
2802 040134
2803 040134 013737 002172' 043650' 20$: MOV UNITN,T24DSW ;SET DRIVE NUMBER IN PACKET
2804 040142 012704 043630' MOV $T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
2805
2806 ;*****
2807 ;
2808 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
2809 ;
2810 ;*****
2811
2812 040146 004737 010562' JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
2813 040152 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
2814 040154 005237 002212' INC FATFLG ;BUMP COUNT
2818 040160 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
2819 040162 ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
      040162 104456 TRAP C$ERHRD
      040164 000701 .WORD 449
      040166 005046' .WORD WRTMSG
      040170 011734' .WORD SFIMSG
2820 040172 24$: CKLOOP ;LOOP IF SELECTED
      040172 104406 TRAP C$CLP1
2821
2822 ;*****
2823 ;
2824 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2825 ;
2826 ;*****
2827
2828 040174 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
2829 040200 103407 BCS 30$ ;BR, IF NO PROBLEM
2830 040202 010001 MOV R0,R1 ;SAVE TSSR
2831 040204 005237 002212' INC FATFLG ;BUMP COUNT
2835 040210 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
      040210 104456 TRAP C$ERHRD
      040212 000702 .WORD 450
      040214 045116' .WORD T24RWN
      040216 011746' .WORD PKTSSR
2836 040220 30$: CKLOOP ;LOOP IF SELECTED
      040220 104406 TRAP C$CLP1
2837 040222 012703 000400 MOV $256,R3 ;RECORD SIZE
2838 040226 013737 003114' 043762' MOV FREE,T24RB ;STARTING WRITE BUFFER ADDRESS
2839
2840 ;*****

```

N11

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 143

```

2841
2842      ;WRITE DATA,ACK,CVC=1,SWB COMMAND
2843      ;
2844      ;*****
2845
2846 040234 012737 150005 043760'      MOV      #150005,T24PK3      ;WRITE DATA,ACK,CVC=1,SWB COMMAND
2847 040242 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2848 040246      65$:      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
2849 040246 010300      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
2850 040250 004737 017324'      MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2851 040254 010337 043766'      MOV      R4,T24DB(R5)      ;ISSUE COMMAND
2852 040260 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
2853 040264 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
2854 040270 016501 000002      MOV      #SSR,R2      ;SET UP EXPECTED
2855 040274 012702 000200      CMP      R1,R2      ;ARE THEY EQUAL
2856 040300 020102      BEQ      75$      ;BR, IF OK
2857 040302 001406      INC      FATFLG      ;BUMP COUNT
2858 040304 005237 002212'      ERRHRD   ERRNO,WRTErr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
2862 040310      040310 104456      TRAP      C$ERHRD
2862 040310      040312 000703      .WORD      451
2862 040310      040314 005103'      .WORD      WRTErr
2862 040310      040316 011746'      .WORD      PKTSSR
2863 040320      75$:      CKLOOP      ;LOOP IF SELECTED
2864 040320 104406      TRAP      C$CLP1
2864 040322 005723      TST      (R3),      ;BUMP RECORD SIZE
2865 040324 022703 000414      CMP      #268.,R3      ;END OF RECORD YET
2866 040330 001346      BNE      65$      ;BR, IF MORE RECORDS TO WRITE
2867 040332      80$:      CKLOOP      ;LOOP IF SELECTED
2868 040332 104406      TRAP      C$CLP1
2868 040334 005743      TST      -(R3)      ;SET RECORD SIZE BACK TO 512.
2869 040336 013737 003114' 043762'      MOV      FREE,T24RB      ;STARTING READ BUFFER ADDRESS
2870
2871      ;*****
2872      ;READ REVERSE DATA,ACK,SWB COMMAND
2873      ;
2874      ;*****
2875
2876
2877 040344 012737 110401 043760'      MOV      #110401,T24PK3      ;READ REVERSE DATA,ACK,SWB COMMAND
2878 040352 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2879 040356 010337 043766'      MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2880 040362 010465 000000      MOV      R4,T24DB(R5)      ;ISSUE COMMAND
2881 040366 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
2882 040372 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
2883 040376 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
2884 040402 020102      CMP      R1,R2      ;ARE THEY EQUAL
2885 040404 001406      BEQ      170$      ;BR, IF OK
2886 040406 005237 002212'      INC      FATFLG      ;BUMP COUNT
2890 040412      ERRHRD   ERRNO,T24WDC,EXPREC      ;TSSR INCORRECT AFTER READ DATA
2890 040412      040412 104456      TRAP      C$ERHRD
2890 040412      040414 000704      .WORD      452
2890 040412      040416 045446'      .WORD      T24WDC
2890 040412      040420 015374'      .WORD      EXPREC
2891 040422      170$:      CKLOOP      ;LOOP IF SELECTED
2892 040422 104406      TRAP      C$CLP1
2892 040424 013702 003114'      MOV      FREE,R2      ;GET BUFFER ADDRESS

```

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 144

2893	040430	010304			MOV R3,R4	;CURRENT RECORD SIZE		
2894	040432	162704	000400		SUB #256,,R4	;FIRST LOCATION IN BUFFER		
2895	040436	060204		1731:	ADD R2,R4	;SET POINTER TO FRAME (WORD)		
2896	040440	021403			CMP (R4),R3	;CHECK DATA READ (R3=DATA ALSO)		
2897	040442	001410			BEG 1801	;BR, IF ALL IS WELL		
2898	040444	011401			MOV (R4),R1	;RECD DATA		
2899	040446	010302			MOV R3,R2	;EXPECTED DATA		
2900	040450	005237	002212'		INC FATFLG	;BUMP COUNT		
2904	040454				ERRHRD ERRNO,T24DTA,EXPREC	;DATA READ NOT = WRITTEN		
	040454	104456					TRAP C\$ERHPO	
	040456	000705					.WORD 453	
	040460	044700'					.WORD T24DTA	
	040462	015374'					.WORD EXPREC	
2905	040464			1801:	CKLOOP	;LOOP IF SELECTED		
	040464	104406					TRAP C\$CLP1	
2906	040466	005724			TST (R4),	;BUMP TO NEXT LOCATION		
2907	040470	160204			SUB R2,R4	;GET RID OF BASE ADDRESS		
2908	040472	020403			CMP #4,R3	;END OF RECORD YET		
2909	040474	001360			BNE 1731	;BR, IF NOT AT END OF RECORD		
2910	040476	005743			TST -(R3)	;BUMP RECORD SIZE		
2911	040500	022703	000400		CMP #256,,R3	;END OF RECORD YET		
2912	040504	001322			BNE 1651	;BR, IF MORE RECORDS TO WRITE		
2913	040506			1901:	CKLOOP	;LOOP IF SELECTED		
	040506	104406					TRAP C\$CLP1	
2914	040510				ENDSUB	;***** END SUBTEST *****		
	040510					L10061:		
	040510	104403					TRAP C\$ESUB	
2915	040512	023727	002212' U00017		CMP FATFLG,#15.	;IS ERROR COUNT AT 25		
2916	040520	103402			BLO 9991	;BR, IF LESS THAN 25		
2917	040522	004737	017104'		JSR PC,CKDROP	;TRY TO DROP THE UNIT		
2918	040526			9991:				
2919				I*				
2920				I				
2921				I TEST 4, SUBTEST 8				
2922				I				
2923				I VERIFIES THAT A READ REVERSE COMMAND READING A RECORD				
2924				I LONGER THAN THE SPECIFIED BYTE COUNT CAUSES TAPE				
2925				I STATUS ALERT TERMINATION WITH THE RECORD LENGTH LONG				
2926				I (RL) BIT SET.				
2927				I				
2928				I				
2929				I *				
2930				I				
2931	040526				BGNSUB	;***** BEGIN SUBTEST *****		
	040526					T4.8:		
	040526	104402					TRAP C\$BSUB	
2932	040530	004737	046454'		JSR PC,I24RT3	;SET UP OTHER COMMAND PACKET		
2933	040534	004737	046320'		JSR PC,I24REST	;SET COMMAND PACKET		
2934	040540	004737	046412'		JSR PC,I24RT2	;SET UP OTHER COMMAND PACKET		
2935								
2936					I*****			
2937					I			
2938					I ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR			
2939					I			
2940					I*****			
2941								
2942	040544	004737	015674'		JSR PC,SOFINIT	IDU INITIALIZE ON CONTROLLER		

C12

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 145

```

2943 040550 103407          BCS      20:          ;BR IF INIT WAS OK
2944 040552 005237 002212'  INC      FATFLG      ;BUMP COUNT
2948 040556 010001          MOV      R0,R1        ;CONTENTS OF TSSR REGISTER
2949 040560          ERRDF   ERRNO,SFIERR,SFIMSG  ;FATAL ERROR TSSR WAS NOT OK
          040560 104455          TRAP      C:ERDF
          040562 000706          .WORD    454
          040564 003642'        .WORD    SFIERR
          040566 011734'        .WORD    SFIMSG
2950 040570          20:
2951 040570 013737 002172' 043650' MOV      UNITN,T24DSW      ;SET DRIVE NUMBER IN PACKET
2952 040576 012704 043630'  MOV      @T24PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
2953
2954 ;*****
2955 ;
2956 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPHR)
2957 ;
2958 ;*****
2959
2960 040602 004737 010562'      JSR      PC,WRTPHR      ;ISSUE WRITE CHARACTERISTICS
2961 040606 103407          BCS      24:          ;BR, IF COMMAND ISSUED OK
2962 040610 005237 002212'  INC      FATFLG      ;BUMP COUNT
2966 040614 010001          MOV      R0,R1        ;SAVE CONTENTS OF TSSR
2967 040616          ERRHRD   ERRNO,WRTPHR,SFIMSG  ;WRITE CHARACTERISTICS FAILED
          040616 104456          TRAP      C:ERHRD
          040620 000707          .WORD    455
          040622 005046'        .WORD    WRTPHR
          040624 011734'        .WORD    SFIMSG
2968 040626          24:      CKLOOP          ;LOOP IF SELECTED
          040626 104406          TRAP      C:CLP1
2969
2970 ;*****
2971 ;
2972 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
2973 ;
2974 ;*****
2975
2976 040630 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
2977 040634 004737 016236'      JSR      PC,CHKTSSR      ;SEE HOW TSSR IS
2978 040640 103407          BCS      30:          ;BR, IF NO PROBLEM
2979 040642 010001          MOV      R0,R1        ;SAVE TSSR
2980 040644 005237 002212'  INC      FATFLG      ;BUMP COUNT
2984 040650          ERRHRD   ERRNO,T24RWN,PKTSSR  ;REWIND NOT ACCEPTED
          040650 104456          TRAP      C:ERHRD
          040652 000710          .WORD    456
          040654 045116'        .WORD    T24RWN
          040656 011746'        .WORD    PKTSSR
2985 040660          30:      CKLOOP          ;LOOP IF SELECTED
          040660 104406          TRAP      C:CLP1
2986 040662 012703 001000      MOV      @512,R3      ;RECORD SIZE
2987 040666 013737 003114' 043762' MOV      FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
2988
2989 ;*****
2990 ;
2991 ;WRITE DATA,ACK,CVC=1 COMMAND
2992 ;
2993 ;*****
2994

```

```

2995 040674 012737 140005 043760'      MOV      #140005,T24PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
2996 040702 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
2997 040706                                65$:      MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
2998 040706 010337 043766'      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
2999 040712 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
3000 040716 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
3001 040722 016501 000002      MOV      #SSR,R2      ;SET UP EXPECTED
3002 040726 012702 000200      CMP      R1,R2      ;ARE THEY EQUAL
3003 040732 020102      BEQ      75$      ;BR, IF OK
3004 040734 001406      INC      FATFLG      ;BUMP COUNT
3005 040736 005237 002212'      ERRHRD   ERRNO,WRterr,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
3009 040742                                TRAP      C$ERRHRD
                                .WORD      457
                                .WORD      WRterr
                                .WORD      PKTSSR
                                3010 040752                                75$:      CKLOOP      ;LOOP IF SELECTED
                                040752 104406                                TRAP      C$CLP1
3011 040754 012703 000400      MOV      #256,R3      ;SIZE OF RECORD
3012 040760 013737 003114' 043762'      MOV      FREE,T24RB      ;STARTING READ BUFFER ADDRESS
3013
3014      ;*****
3015      ;
3016      ;READ DATA,ACK COMMAND
3017      ;
3018      ;*****
3019
3020 040766 012737 100401 043760'      MOV      #100401,T24PK3      ;READ DATA,ACK COMMAND
3021 040774 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
3022 041000 010337 043766'      MOV      R3,T24SZ      ;SET UP RECORD SIZE IN PACKET
3023 041004 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
3024 041010 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
3025 041014 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
3026 041020 012702 100204      MOV      #SSR!SC!BIT2,R2      ;SET UP EXPECTED
3027 041024 020102      CMP      R1,R2      ;ARE THEY EQUAL
3028 041026 001406      BEQ      170$      ;BR, IF OK
3029 041030 005237 002212'      INC      FATFLG      ;BUMP COUNT
3033 041034      ERRHRD   ERRNO,T24TRL,EXPREC      ;TSSR INCORRECT AFTER READ DATA
                                TRAP      C$ERRHRD
                                .WORD      458
                                .WORD      T24TRL
                                .WORD      EXPREC
                                3034 041044                                170$:      CKLOOP      ;LOOP IF SELECTED
                                041044 104406                                TRAP      C$CLP1
3035
3036      ;*****
3037      ;
3038      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
3039      ;
3040      ;*****
3041
3042 041046 013701 043660'      MOV      T24BFR+6,R1      ;GET MESSAGE BUFFER (XSTO)
3043 041052 010102      MOV      R1,R2      ;SET UP EXPECTED
3044 041054 052702 010000      BIS      #BIT12,R2      ;SET THE RLL BIT IN EXPECTED
3045 041060 020102      CMP      R1,R2      ;ARE THEY EQUAL
3046 041062 001406      BEQ      180$      ;BR, IF EQUAL (ALL IS WELL)
3047 041064 005237 002212'      INC      FATFLG      ;BUMP COUNT

```



```

3051 041070          ERRHRD  ERRNO,T24LON,EXPREC      ;THE RLL BIT WAS NOT SET IN XSTO
      041070 104456
      041072 000713
      041074 045732'
      041076 015374'
3052 041100          180$: CKLOOP
      041100 104406
3053 041102          ENDSUB
      041102
      041102 104403
3054 041104 023727 002212' 000017          CMP      FATFLG,015.          ;IS ERROR COUNT AT 25
3055 041112 103402          BLO      999$          ;BR, IF LESS THAN 25
3056 041114 004737 017104'          JSR      PC,CKDROP          ;TRY TO DROP THE UNIT
3057 041120          999$:
3058
3059
3060
3061
3062
3063
3064
3065
3066
3067
3068 041120          BGNSUB
      041120
      041120 104402
3069 041122 005737 003126'          TST      NXMFLG          ;DO WE HAVE IT?
3070 041126 001002          BNE      10$          ;BR, IF ENOUGH
3071 041130 000137 041604'          JMP      180$          ;SKIP THIS TEST IF NOT
3072 041134 004737 046454'          10$: JSR      PC,T24RT3          ;SET UP OTHER COMMAND PACKET
3073 041140 004737 046320'          JSR      PC,T24REST          ;SET COMMAND PACKET
3074 041144 004737 046412'          JSR      PC,T24RT2          ;SET UP OTHER COMMAND PACKET
3075
3076
3077
3078
3079
3080
3081
3082 041150 004737 015674'          JSR      PC,SOFINIT          ;DO INITIALIZE ON CONTROLLER
3083 041154 103407          BCS      20$          ;BR IF INIT WAS OK
3084 041156 005237 002212'          INC      FATFLG          ;BUMP COUNT
3088 041162 010001          MOV      R0,R1          ;CONTENTS OF TSSR REGISTER
3089 041164          ERRDF  ERRNO,SFIERR,SFIMSG          ;FATAL ERROR TSSR WAS NOT OK
      041164 104455
      041166 000714
      041170 003642'
      041172 011734'
3090 041174          20$:
3091 041174 013737 002172' 043650'          MOV      UNITN,T24DSW          ;SET DRIVE NUMBER IN PACKET
3092 041202 012704 043630'          MOV      0T24PACKET,R4          ;SUBROUTINE NEEDS PACKET ADDRESS
3093
3094
3095
3096
3097

```

```

3098 ;*****
3099
3100 041206 004737 010562' JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
3101 041212 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
3102 041214 005237 002212' INC FATFLG ;BUMP COUNT
3106 041220 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
3107 041222 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
      041222 104456 TRAP C$ERHRD
      041224 000715 .WORD 461
      041226 005046' .WORD WRTMSG
      041230 011734' .WORD SFMSG
3108 041232 24$: CKLOOP ;LOOP IF SELECTED
      041232 104406 TRAP C$CLP1
3109 ;*****
3110 ;
3111 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
3112 ;
3113 ;*****
3114 ;
3115 ;
3116
3117 041234 005737 002216' TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SWITCH
3118 041240 001024 BNE 27$ ;BR IF SWITCH IS ON
3119 041242 112737 000200 043771' MOVB #200,T24BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
3120 041250 112737 000010 043770' MOVB #10,T24BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
3121 041256 012704 043740' MOV #T24PK2,R4 ;WRITE SUBSYS MEM PACKET
3122 041262 010465 000000 MOV R4,TSDR(R5) ;ISSUE COMMAND
3123 041266 004737 016236' JSR PC,CHKTSSR ;WAIT FOR SSR
3124 041272 103407 BCS 28$ ;BR, IF NO ERROR
3125 041274 010001 MOV R0,R1 ;ERROR, SAVE TSSR
3126 041276 005237 002212' INC FATFLG ;BUMP COUNT
3130 041302 ERRHRD ERRNO,T22SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
      041302 104456 TRAP C$ERHRD
      041304 000716 .WORD 462
      041306 026130' .WORD T22SSR
      041310 011746' .WORD PKTSSR
3131 041312 27$:
3132 041312 28$: CKLOOP ;LOOP IF SELECTED
      041312 104406 TRAP C$CLP1
3133 ;
3134 ;
3135 ;
3136 041314 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
3137 041320 004737 016236' JSR PC,CHKTSSR ;SEE HOW TSSR IS
3138 041324 103407 BCS 30$ ;BR, IF NO PROBLEM
3139 041326 010001 MOV R0,R1 ;SAVE TSSR
3140 041330 005237 002212' INC FATFLG ;BUMP COUNT
3144 041334 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
      041334 104456 TRAP C$ERHRD
      041336 000717 .WORD 463
      041340 045116' .WORD T24RWN
      041342 011746' .WORD PKTSSR
3145 041344 30$: CKLOOP ;LOOP IF SELECTED
      041344 104406 TRAP C$CLP1
3146 041346 012703 000005 MOV #5,R3 ;NUMBER OF RECORDS
3147 041352 013737 003114' 043762' MOV FREE,T24RB ;STARTING WRITE BUFFER ADDRESS
3148 ;*****

```



```

3149
3150      ;WRITE DATA,ACK,CVC=1 COMMAND
3151      ;
3152      ;*****
3153
3154 041360 012737 140005 043760'      MOV      #140005,T24PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
3155 041366 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
3156 041372      65$:      MOV      #256,T24SZ      ;SET UP RECORD SIZE IN PACKET
3157 041372 012737 000256 043766'      MOV      R4,T24SZ      ;ISSUE COMMAND
3158 041400 010465 000000      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
3159 041404 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
3160 041410 016501 000002      MOV      #SSR,R2      ;SET UP EXPECTED
3161 041414 012702 000200      CMP      R1,R2      ;ARE THEY EQUAL
3162 041420 020102      BEQ      75$      ;BR, IF OK
3163 041422 001406      INC      FATFLG      ;BUMP COUNT
3164 041424 005237 002212'      ERRHRD   ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
3165 041430      TRAP      C$ERHRD
3166 041430 104456      .WORD   464
3167 041432 000720      .WORD   WRERR
3168 041434 005103'      .WORD   PKTSSR
3169 041436 011746'
3170 041440      75$:      CKLOOP      ;LOOP IF SELECTED
3171 041440 104406      TRAP      C$CLP1
3172 041442 005303      DEC      R3      ;BUMP DOWN RECORD COUNTER
3173 041444 001352      BNE      65$      ;BR, IF NOT AT 5 RECORDS YET
3174 041446 012703 000400      MOV      #256.,R3      ;RECORD SIZE
3175 041452 012701 160000      MOV      #160000,R1      ;NXM LOW ADDRESS START
3176 041456 012702 177776      MOV      #177776,R2      ;LIMIT CHECK FOR NXM (HIGHEST)
3177 041462 004737 016276'      JSR      PC,NXM      ;LOOK FOR NXM ADDRESS
3178 041466 103046      BCC      180$      ;BR, IF NON FOUND
3179 041470 010137 003130'      MOV      R1,NXMLO      ;SET ADDRESS UP FOR TEST
3180 041474 013737 003130' 043762'      MOV      NXMLO,T24RB      ;STARTING READ BUFFER ADDRESS
3181 041502 005037 043764'      CLR      T24RB+2      ;SET TO 16 BIT ADDRESSING
3182
3183      ;*****
3184      ;READ DATA,ACK COMMAND
3185      ;
3186      ;*****
3187 041506 012737 100001 043760'      MOV      #100001,T24PK3      ;READ DATA,ACK COMMAND
3188 041514 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
3189 041520 012737 000400 043766'      MOV      #256.,T24SZ      ;SET UP RECORD SIZE IN PACKET
3190 041526 010465 000000      MOV      R4,T24SZ      ;ISSUE COMMAND
3191 041532 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
3192 041536 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
3193 041542 012702 104210      MOV      #SSR!NXM!SC!BIT3,R2      ;SET UP EXPECTED
3194 041546 020102      CMP      R1,R2      ;ARE THEY EQUAL
3195 041550 001414      BEQ      170$      ;BR, IF OK
3196 041552 005237 043764'      INC      T24RB+2      ;SET TO NEXT HIGHER ADDRESSING MODE
3197 041556 023727 043764' 000004      CMP      T24RB+2,#4      ;DID WE OVERFLOW INTO 19 BITS
3198 041564 001353      BNE      165$      ;BR, IF STILL IN 16-18 BITS RANGE
3199 041566 005237 002212'      INC      FATFLG      ;BUMP COUNT
3200 041572      ERRHRD   ERRNO,T24NXM,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
3201 041572 104456      TRAP      C$ERHRD
3202 041574 000721      .WORD   465
3203 041576 044221'      .WORD   T24NXM

```

H12

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 150

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

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 151

PC	PC+4	PC+8	PC+12	PC+16	PC+20	PC+24	PC+28	PC+32	PC+36	PC+40	PC+44	PC+48	PC+52	PC+56	PC+60	PC+64	PC+68	PC+72	PC+76	PC+80	PC+84	PC+88	PC+92	PC+96	PC+100	PC+104	PC+108	PC+112	PC+116	PC+120	PC+124	PC+128	PC+132	PC+136	PC+140	PC+144	PC+148	PC+152	PC+156	PC+160	PC+164	PC+168	PC+172	PC+176	PC+180	PC+184	PC+188	PC+192	PC+196	PC+200	PC+204	PC+208	PC+212	PC+216	PC+220	PC+224	PC+228	PC+232	PC+236	PC+240	PC+244	PC+248	PC+252	PC+256	PC+260	PC+264	PC+268	PC+272	PC+276	PC+280	PC+284	PC+288	PC+292	PC+296	PC+300	PC+304	PC+308	PC+312	PC+316	PC+320	PC+324	PC+328	PC+332	PC+336	PC+340	PC+344	PC+348	PC+352	PC+356	PC+360	PC+364	PC+368	PC+372	PC+376	PC+380	PC+384	PC+388	PC+392	PC+396	PC+400	PC+404	PC+408	PC+412	PC+416	PC+420	PC+424	PC+428	PC+432	PC+436	PC+440	PC+444	PC+448	PC+452	PC+456	PC+460	PC+464	PC+468	PC+472	PC+476	PC+480	PC+484	PC+488	PC+492	PC+496	PC+500	PC+504	PC+508	PC+512	PC+516	PC+520	PC+524	PC+528	PC+532	PC+536	PC+540	PC+544	PC+548	PC+552	PC+556	PC+560	PC+564	PC+568	PC+572	PC+576	PC+580	PC+584	PC+588	PC+592	PC+596	PC+600	PC+604	PC+608	PC+612	PC+616	PC+620	PC+624	PC+628	PC+632	PC+636	PC+640	PC+644	PC+648	PC+652	PC+656	PC+660	PC+664	PC+668	PC+672	PC+676	PC+680	PC+684	PC+688	PC+692	PC+696	PC+700	PC+704	PC+708	PC+712	PC+716	PC+720	PC+724	PC+728	PC+732	PC+736	PC+740	PC+744	PC+748	PC+752	PC+756	PC+760	PC+764	PC+768	PC+772	PC+776	PC+780	PC+784	PC+788	PC+792	PC+796	PC+800	PC+804	PC+808	PC+812	PC+816	PC+820	PC+824	PC+828	PC+832	PC+836	PC+840	PC+844	PC+848	PC+852	PC+856	PC+860	PC+864	PC+868	PC+872	PC+876	PC+880	PC+884	PC+888	PC+892	PC+896	PC+900	PC+904	PC+908	PC+912	PC+916	PC+920	PC+924	PC+928	PC+932	PC+936	PC+940	PC+944	PC+948	PC+952	PC+956	PC+960	PC+964	PC+968	PC+972	PC+976	PC+980	PC+984	PC+988	PC+992	PC+996	PC+1000	PC+1004	PC+1008	PC+1012	PC+1016	PC+1020	PC+1024	PC+1028	PC+1032	PC+1036	PC+1040	PC+1044	PC+1048	PC+1052	PC+1056	PC+1060	PC+1064	PC+1068	PC+1072	PC+1076	PC+1080	PC+1084	PC+1088	PC+1092	PC+1096	PC+1100	PC+1104	PC+1108	PC+1112	PC+1116	PC+1120	PC+1124	PC+1128	PC+1132	PC+1136	PC+1140	PC+1144	PC+1148	PC+1152	PC+1156	PC+1160	PC+1164	PC+1168	PC+1172	PC+1176	PC+1180	PC+1184	PC+1188	PC+1192	PC+1196	PC+1200	PC+1204	PC+1208	PC+1212	PC+1216	PC+1220	PC+1224	PC+1228	PC+1232	PC+1236	PC+1240	PC+1244	PC+1248	PC+1252	PC+1256	PC+1260	PC+1264	PC+1268	PC+1272	PC+1276	PC+1280	PC+1284	PC+1288	PC+1292	PC+1296	PC+1300	PC+1304	PC+1308	PC+1312	PC+1316	PC+1320	PC+1324	PC+1328	PC+1332	PC+1336	PC+1340	PC+1344	PC+1348	PC+1352	PC+1356	PC+1360	PC+1364	PC+1368	PC+1372	PC+1376	PC+1380	PC+1384	PC+1388	PC+1392	PC+1396	PC+1400	PC+1404	PC+1408	PC+1412	PC+1416	PC+1420	PC+1424	PC+1428	PC+1432	PC+1436	PC+1440	PC+1444	PC+1448	PC+1452	PC+1456	PC+1460	PC+1464	PC+1468	PC+1472	PC+1476	PC+1480	PC+1484	PC+1488	PC+1492	PC+1496	PC+1500	PC+1504	PC+1508	PC+1512	PC+1516	PC+1520	PC+1524	PC+1528	PC+1532	PC+1536	PC+1540	PC+1544	PC+1548	PC+1552	PC+1556	PC+1560	PC+1564	PC+1568	PC+1572	PC+1576	PC+1580	PC+1584

	042050	104403					TRAP	C\$ESUB
3304	042052	023727	002212'	000017	CMP	FATFLG, #15,	;IS ERROR COUNT AT 25	
3305	042060	103402			BLO	999#	;BR, IF LESS THAN 25	
3306	042062	004737	017104'		JSR	PC, CKDROP	;TRY TO DROP THE UNIT	
3307	042066					999#;		
3308								
3309								
3310								
3311						: TEST 4, SUBTEST 11		
3312								
3313						;VERIFIES THAT ILLEGAL BUFFER ADDRESSES CAUSE A		
3314						;FUNCTION REJECT TERMINATION WITH ILLEGAL ADDRESS		
3315						; (ILA) ERROR BIT SET.		
3316								
3317								
3318								
3319								
3320								
3321	042066				BGENSUB		>>>>>>>>> BEGIN SUBTEST >>>>>>>>> T4.11:	
	042066							
	042066	104402						
3322	042070	004737	046454'		JSR	PC, T24RT5	;SET COMMAND PACKET UP CLEAR	C\$BSUB
3323	042074	004737	046320'		JSR	PC, T24REST	;SET COMMAND PACKET	
3324	042100	004737	046412'		JSR	PC, T24RT2	;SET UP OTHER COMMAND PACKET	
3325								
3326								
3327								
3328								
3329								
3330								
3331								
3332	042104	004737	015674'		JSR	PC, SOFINIT	;DO INITIALIZE ON CONTROLLER	
3333	042110	103407			BCS	20#	;OR IF INIT WAS OK	
3334	042112	005237	002212'		INC	FATFLG	;BUMP COUNT	
3338	042116	010001			MOV	R0, R1	;CONTENTS OF ISSK REGISTER	
3339	042120				ERRDF	ERRNO, SFIERR, SFIMSG	;FATAL ERROR TSSR WAS NOT OK	
	042120	104455						
	042122	000726						C\$ERDF 470
	042124	003642'					.WORD	SFIERR
	042126	011734'					.WORD	SFIMSG
3340	042130							
3341	042130	013737	002172'	043650'	MOV	UNITN, T24DSW	;SET UP DRIVE NUMBER	
3342	042136	012704	043630'		MOV	T24PACKET, R4	;SUBROUTINE NEEDS PACKET ADDRESS	
3343								
3344								
3345								
3346								
3347								
3348								
3349								
3350	042142	004737	010562'		JSR	PC, WRTPCH	;ISSUE WRITE CHARACTERISTICS	
3351	042146	103407			BCS	24#	;BR, IF COMMAND ISSUED OK	
3352	042150	005237	002212'		INC	FATFLG	;BUMP COUNT	
3356	042154	010001			MOV	R0, R1	;SAVE CONTENTS OF ISSR	
3357	042156				ERRHRD	ERRNO, WRTMSG, SFIMSG	;WRITE CHARACTERISTICSC FAILED	
	042156	104456						
	042160	000727						C\$ERHRD 471

PC	PC+4	PC+8	PC+12	PC+16	PC+20	PC+24	PC+28	PC+32	PC+36	PC+40	PC+44	PC+48	PC+52	PC+56	PC+60	PC+64	PC+68	PC+72	PC+76	PC+80	PC+84	PC+88	PC+92	PC+96	PC+100	PC+104	PC+108	PC+112	PC+116	PC+120	PC+124	PC+128	PC+132	PC+136	PC+140	PC+144	PC+148	PC+152	PC+156	PC+160	PC+164	PC+168	PC+172	PC+176	PC+180	PC+184	PC+188	PC+192	PC+196	PC+200	PC+204	PC+208	PC+212	PC+216	PC+220	PC+224	PC+228	PC+232	PC+236	PC+240	PC+244	PC+248	PC+252	PC+256	PC+260	PC+264	PC+268	PC+272	PC+276	PC+280	PC+284	PC+288	PC+292	PC+296	PC+300	PC+304	PC+308	PC+312	PC+316	PC+320	PC+324	PC+328	PC+332	PC+336	PC+340	PC+344	PC+348	PC+352	PC+356	PC+360	PC+364	PC+368	PC+372	PC+376	PC+380	PC+384	PC+388	PC+392	PC+396	PC+400	PC+404	PC+408	PC+412	PC+416	PC+420	PC+424	PC+428	PC+432	PC+436	PC+440	PC+444	PC+448	PC+452	PC+456	PC+460	PC+464	PC+468	PC+472	PC+476	PC+480	PC+484	PC+488	PC+492	PC+496	PC+500	PC+504	PC+508	PC+512	PC+516	PC+520	PC+524	PC+528	PC+532	PC+536	PC+540	PC+544	PC+548	PC+552	PC+556	PC+560	PC+564	PC+568	PC+572	PC+576	PC+580	PC+584	PC+588	PC+592	PC+596	PC+600	PC+604	PC+608	PC+612	PC+616	PC+620	PC+624	PC+628	PC+632	PC+636	PC+640	PC+644	PC+648	PC+652	PC+656	PC+660	PC+664	PC+668	PC+672	PC+676	PC+680	PC+684	PC+688	PC+692	PC+696	PC+700	PC+704	PC+708	PC+712	PC+716	PC+720	PC+724	PC+728	PC+732	PC+736	PC+740	PC+744	PC+748	PC+752	PC+756	PC+760	PC+764	PC+768	PC+772	PC+776	PC+780	PC+784	PC+788	PC+792	PC+796	PC+800	PC+804	PC+808	PC+812	PC+816	PC+820	PC+824	PC+828	PC+832	PC+836	PC+840	PC+844	PC+848	PC+852	PC+856	PC+860	PC+864	PC+868	PC+872	PC+876	PC+880	PC+884	PC+888	PC+892	PC+896	PC+900	PC+904	PC+908	PC+912	PC+916	PC+920	PC+924	PC+928	PC+932	PC+936	PC+940	PC+944	PC+948	PC+952	PC+956	PC+960	PC+964	PC+968	PC+972	PC+976	PC+980	PC+984	PC+988	PC+992	PC+996	PC+1000	PC+1004	PC+1008	PC+1012	PC+1016	PC+1020	PC+1024	PC+1028	PC+1032	PC+1036	PC+1040	PC+1044	PC+1048	PC+1052	PC+1056	PC+1060	PC+1064	PC+1068	PC+1072	PC+1076	PC+1080	PC+1084	PC+1088	PC+1092	PC+1096	PC+1100	PC+1104	PC+1108	PC+1112	PC+1116	PC+1120	PC+1124	PC+1128	PC+1132	PC+1136	PC+1140	PC+1144	PC+1148	PC+1152	PC+1156	PC+1160	PC+1164	PC+1168	PC+1172	PC+1176	PC+1180	PC+1184	PC+1188	PC+1192	PC+1196	PC+1200	PC+1204	PC+1208	PC+1212	PC+1216	PC+1220	PC+1224	PC+1228	PC+1232	PC+1236	PC+1240	PC+1244	PC+1248	PC+1252	PC+1256	PC+1260	PC+1264	PC+1268	PC+1272	PC+1276	PC+1280	PC+1284	PC+1288	PC+1292	PC+1296	PC+1300	PC+1304	PC+1308	PC+1312	PC+1316	PC+1320	PC+1324	PC+1328	PC+1332	PC+1336	PC+1340	PC+1344	PC+1348	PC+1352	PC+1356	PC+1360	PC+1364	PC+1368	PC+1372	PC+1376	PC+1380	PC+1384	PC+1388	PC+1392	PC+1396	PC+1400	PC+1404	PC+1408	PC+1412	PC+1416	PC+1420	PC+1424	PC+1428	PC+1432	PC+1436	PC+1440	PC+1444	PC+1448	PC+1452

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 154

3406					;*
3407					;
3408					;TEST 4, SUBTEST 12
3409					;
3410					;VERIFIES THAT A DATA BUFFER ADDRESS REFERENCING
3411					;NONEXISTANT MEMORY CAUSES RECOVERABLE ERROR
3412					;TERMINATION (TC=4), WITH THE NXM BIT SET IN THE TSSR, AND
3413					;THAT THE TAPE IS ULTIMATELY POSITIONED PROPERLY.
3414					-
3415					
3416					
3417	042340			BGNSUB	; >> >> >> >> BEGIN SUBTEST >> >> >> >> T4.12:
	042340				TAP C\$BSUB
3418	042342	005737	003126'	TST	NXMFLG ;DO WE HAVE IT?
3419	042346	001002		BNE	10\$;BR, IF ENOUGH
3420	042350	000137	042606'	JMP	80\$;SKIP THIS TEST IF NOT
3421	042354	004737	046454'	JSR	PC,T24RT3 ;SET COMMAND PACKET UP CLEAR
3422	042360	004737	046320'	JSR	PC,T24REST ;SET COMMAND PACKET
3423	042364	004737	046412'	JSR	PC,T24RT2 ;SET UP OTHER COMMAND PACKET
3424					
3425					*****
3426					;
3427					;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
3428					;
3429					*****
3430					
3431	042370	004737	015674'	JSR	PC,SOFINIT ;DO INITIALIZ ON CONTROLLER
3432	042374	103407		BCS	20\$;BR IF INIT WAS OK
3433	042376	005237	002212'	INC	FATFLG ;BUMP COUNT
3437	042402	010001		MOV	R0,R1 ;CONTENTS OF TSSR REGISTER
3438	042404			ERRDF	ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
	042404	104455			TRAP C\$ERDF
	042406	000732			.WORD 474
	042410	003642'			.WORD SFIERR
	042412	011734'			.WORD SFIMSG
3439	042414			20\$:	
3440	042414	013737	002172' 043650'	MOV	UNITN,T24DSW ;SET UP DRIVE NUMBER
3441	042422	012704	043630'	MOV	@T24PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
3442					
3443					*****
3444					;
3445					;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCH)
3446					;
3447					*****
3448					
3449	042426	004737	010562'	JSR	PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
3450	042432	103407		BCS	24\$;BR, IF COMMAND ISSUED OK
3451	042434	005237	002212'	INC	FATFLG ;BUMP COUNT
3455	042440	010001		MOV	R0,R1 ;SAVE CONTENTS OF TSSR
3456	042442			ERRHRD	ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTISC FAILED
	042442	104456			TRAP C\$ERHRD
	042444	000733			.WORD 475
	042446	005046'			.WORD WRTMSG
	042450	011734'			.WORD SFIMSG
3457	042452			24\$: CKLOOP	; LOOP IF SELECTED
	042452	104406			TRAP C\$CLP1

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 155

3458	042454	012701	160000		MOV	#160000,R1	;NXM LOW ADDRESS START
3459	042460	012702	177776		MOV	#177776,R2	;LIMIT CHECK FOR NXM (HIGHEST)
3460	042464	004737	016276'		JSR	PC,NXXM	;LOOK FOR NXM ADDRESS
3461	042470	103046			BCC	80\$	;BR, IF NON FOUND
3462	042472	010137	003130'		MOV	R1,NXMLO	;SET ADDRESS UP FOR TEST
3463	042476	013737	003130'	043762'	MOV	NXMLO,T24RB	;SET TO NXM MEMORY ADDRESS
3464	042504	005037	043764'		CLR	T24RB+2	;SET TO 16 BITS ADDRESSING
3465							
3466							
3467							
3468							
3469							
3470							
3471							
3472	042510	012737	140001	043760'	30\$: MOV	#140001,T24PK3	;READ, ACK, CVC=1, COMMAND
3473	042516	012704	043760'		MOV	#T24PK3,R4	;SET UP R4 WITH PACKET ADDRESS
3474	042522	012737	000400	043766'	MOV	#256.,T24SZ	;SET UP RECORD SIZE IN PACKET
3475	042530	010465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND
3476	042534	004737	016150'		JSR	PC,WAITF	;WAIT FOR SSR!BIT1!BIT2 TO SET
3477	042540	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS
3478	042544	012702	104210		MOV	#SSR!SC!NXM!BIT3,R2	;SET UP EXPECTED
3479	042550	020102			CMP	R1,R2	;ARE THEY EQUAL
3480	042552	001414			BEQ	75\$	;BR, IF OK
3481	042554	005237	043764'		INC	T24RB+2	;BUMP TO NEXT ADDRESSING RANGE
3482	042560	023727	043764'	000004	CMP	T24RB+2,#4	;CHECK FOR OVERFLOW
3483	042566	001350			BNE	30\$	;BR, IF STILL IN 16-18 BIT RANGE
3484	042570	005237	002212'		INC	FATFLG	;BUMP COUNT
3488	042574				ERRHRD	ERRNO,T24NXM,PKTSSR	;TSSR INCORRECT AFTER READ DATA
	042574	104456					TRAP C\$ERHRD
	042576	000734					.WORD 476
	042600	044221'					.WORD T24NXM
	042602	011746'					.WORD PKTSSR
3489	042604				75\$: CKLOOP		;LOOP IF SELECTED
	042604	104406					TRAP C\$CLP1
3490	042606				80\$:		
3491	042606				ENDSUB		; >>>>>>>> END SUBTEST >>>>>>>>
	042606	104403					L10066:
3492	042610	023727	002212'	000017	CMP	FATFLG,#15.	TRAP C\$ESUB
3493	042616	103402			BLO	999\$	;IS ERROR COUNT AT 25
3494	042620	004737	017104'		JSR	PC,CKDROP	;BR, IF LESS THAN 25
3495	042624				999\$:		;TRY TO DROP THE UNIT
3496							
3497							
3498							
3499							
3500							
3501							
3502							
3503							
3504							
3505							
3506							
3507							
3508							
3509	042624				BGNSUB		; >>>>>>>> BEGIN SUBTEST >>>>>>>>
	042624						T4.13:

N12

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
 TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 156

```

042624 104402
3510 042626 004737 046454' JSR PC,T24RT3 ;SET COMMAND PACKET UP CLEAR TRAP C$BSUB
3511 042632 004737 046320' JSR PC,T24REST ;SET COMMAND PACKET
3512 042636 004737 046412' JSR PC,T24RT2 ;SET UP OTHER COMMAND PACKET
3513
3514 ;*****
3515 ;
3516 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
3517 ;
3518 ;*****
3519
3520 042642 004737 015674' JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
3521 042646 103407 BCS 20$ ;BR IF INIT WAS OK
3522 042650 005237 002212' INC FATFLG ;BUMP COUNT
3526 042654 010001 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
3527 042656 ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
042656 104455 TRAP C$ERDF
042660 000735 .WORD 477
042662 003642' .WORD SFIERR
042664 011734' .WORD SFIMSG
3528 042666 20$: MOV UNITN,T24DSW ;SET UP DRIVE NUMBER
3529 042666 013737 002172' 043650' MOV ;SUBROUTINE NEEDS PACKET ADDRESS
3530 042674 012704 043630'
3531
3532 ;*****
3533 ;
3534 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
3535 ;
3536 ;*****
3537
3538 042700 004737 010562' JSR PC,WRTHCR ;ISSUE WRITE CHARACTERISTICS
3539 042704 103407 BCS 24$ ;BR, IF COMMAND ISSUED OK
3540 042706 005237 002212' INC FATFLG ;BUMP COUNT
3544 042712 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
3545 042714 ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
042714 104456 TRAP C$ERHRD
042716 000736 .WORD 478
042720 005046' .WORD WRTMSG
042722 011734' .WORD SFIMSG
3546 042724 24$: CKLOOP ;LOOP IF SELECTED
042724 104406 TRAP C$CLP1
3547
3548 ;*****
3549 ;
3550 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
3551 ;
3552 ;*****
3553
3554 042726 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
3555 042732 004737 016236' JSR PC,CHKTSSR ;SEE HOW TSSR IS
3556 042736 103407 BCS 30$ ;BR, IF NO PROBLEM
3557 042740 010001 MOV R0,R1 ;SAVE TSSR
3558 042742 005237 002212' INC FATFLG ;BUMP COUNT
3562 042746 ERRHRD ERRNO,T24RWN,PKTSSR ;REWIND NOT ACCEPTED
042746 104456 TRAP C$ERHRD
042750 000737 .WORD 479
042752 045116' .WORD T24RWN

```


B13

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 157

```

3563 042754 011746' 301: CKLOOP ;LOOP IF SELECTED .WORD PKTSSR
      042756 104406 ;READ REVERSE DATA,ACK COMMAND TRAP C1CLP1
      042756 012703 000400 MOV #256.,R3 ;RECORD SIZE
3564 042760 012703 000400 MOV FREE,T24R8 ;STARTING WRITE BUFFER ADDRESS
3565 042764 013737 003114' 043762'
3566
3567 ;*****
3568 ;
3569 ;READ REVERSE DATA,ACK COMMAND
3570 ;
3571 ;*****
3572
3573 042772 012737 100401 043760' MOV #100401,T24PK3 ;READ REVERSE DATA,ACK COMMAND
3574 043000 012704 043760' MOV #T24PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
3575 043004 651:
3576 043004 010337 043766' MOV R3,T24SZ ;SET UP RECORD SIZE IN PACKET
3577 043010 010465 000000 MOV R4,T24SZ(R5) ;ISSUE COMMAND
3578 043014 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
3579 043020 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
3580 043024 012702 100206 MOV #SSR!SC!BIT1!BIT2,R2 ;SET UP EXPECTED
3581 043030 020102 CMP R1,R2 ;ARE THEY EQUAL
3582 043032 001406 BEQ 751 ;BR, IF OK
3583 043034 005237 002212' INC FATFLG ;BUMP COUNT
3587 043040 ERRHRD ERRNO,T24WDE,PKTSSR ;TSSR INCORRECT AFTER READ DATA
      043040 104456 TRAP C1ERHRD
      043042 000740 .WORD 480
      043044 044561' .WORD T24WDE
      043046 011746' .WORD PKTSSR
3588 043050 751: CKLOOP ;LOOP IF SELECTED TRAP C1CLP1
      043050 104406
3589
3590 ;*****
3591 ;
3592 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
3593 ;
3594 ;*****
3595
3596 043052 013701 043660' MOV T24BFR+6,R1 ;GET MESSAGE BUFFER
3597 043056 010102 MOV R1,R2 ;SET UP EXPECTED
3598 043060 052702 002000 BIS #BIT10,R2 ;SET THE NEF BIT IN EXPECTED
3599 043064 020102 CMP R1,R2 ;ARE THEY EQUAL
3600 043066 001406 BEQ 1801 ;BR, IF EQUAL (ALL IS WELL)
3601 043070 005237 002212' INC FATFLG ;BUMP COUNT
3605 043074 ERRHRD ERRNO,T24NEF,EXPREC ;THE RLL BIT WAS NOT SET IN XSTO
      043074 104456 TRAP C1ERHRD
      043076 000741 .WORD 481
      043100 044010' .WORD T24NEF
      043102 015374' .WORD EXPREC
3606 043104 1801: CKLOOP
      043104 104406 TRAP C1CLP1
3607 043106 ENDSUB ;***** END SUBTEST *****
      043106 104403 L10067: TRAP C1ESUB
      043106 023727 002212' 000017 CMP FATFLG,#15, ;IS ERROR COUNT AT 25
3608 043110 103402 BLO 9991 ;BR, IF LESS THAN 25
3609 043116 004737 017104' JSR PC,CKDROP ;TRY TO DROP THE UNIT
3610 043120
3611 043124 9991:

```

Line	Address	Offset	Label	Instruction	Comment	Trap	Offset
3612							
3613							
3614							
3615				TEST 4, SUBTEST 14			
3616							
3617				VERIFIES THAT A READ REVERSE COMMAND ISSUED WHILE THE			
3618				TAPE IS POSITIONED BEFORE THE FIRST RECORD ON TAPE			
3619				(BUT NOT AT BOT) RESULTS IN TAPE STATUS ALERT.			
3620							
3621							
3622							
3623							
3624							
3625	043124			BGNSUB	***** BEGIN SUBTEST *****		
	043124				T4.14:		
	043124	104402				TRAP	C#BSUB
3626	043126	004737	046454'	JSR PC,T24RT3	SET COMMAND PACKET UP CLEAR		
3627	043132	004737	046320'	JSR PC,T24REST	SET COMMAND PACKET		
3628	043136	004737	046412'	JSR PC,T24R12	SET UP OTHER COMMAND PACKET		
3629							
3630				*****			
3631							
3632				ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR			
3633							
3634				*****			
3635							
3636	043142	004737	015674'	JSR PC,SOFINIT	DO INITIALIZE ON CONTROLLER		
3637	043146	103407		BCS 204	BR IF INIT WAS OK		
3638	043150	005237	002212'	INC FATFLG	BUMP COUNT		
3642	043154	010001		MOV RO,R1	CONTENTS OF TSSR REGISTER		
3643	043156			ERRDF ERRNO,SFIERR,SFIMSG	FATAL ERROR TSSR WAS NOT OK		
	043156	104455				TRAP	C#ERDF
	043160	000742				.WORD	482
	043162	003642'				.WORD	SFIERR
	043164	011734'				.WORD	SFIMSG
3644	043166						
3645	043166	013737	002172'	204: MOV UNITN,T24DSW	SET UP DRIVE NUMBER		
3646	043174	012704	043630'	MOV T24PACKET,R4	SUBROUTINE NEEDS PACKET ADDRESS		
3647							
3648				*****			
3649							
3650				WRITE CHARACTERISTICS COMMAND (CALL TO WRCHRA)			
3651							
3652				*****			
3653							
3654	043200	004737	010562'	JSR PC,WRCHRA	ISSUE WRITE CHARACTERISTICS		
3655	043204	103407		BCS 244	BR, IF COMMAND ISSUED OK		
3656	043206	005237	002212'	INC FATFLG	BUMP COUNT		
3660	043212	010001		MOV RO,R1	SAVE CONTENTS OF TSSR		
3661	043214			ERRHRD ERRNO,WRMSG,SFIMSG	WRITE CHARACTERISTICS FAILED		
	043214	104456				TRAP	C#ERRHRD
	043216	000743				.WORD	482
	043220	005046'				.WORD	WRMSG
	043222	011734'				.WORD	SFIMSG
3662	043224			244: CKLOOP	LOOP IF SELECTED		
	043224	104406				TRAP	C#CLP1
3663							

```

3664 ;*****
3665 ;
3666 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
3667 ;
3668 ;*****
3669
3670 043226 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
3671 043232 004737 016236'      JSR      PC,CHKTSSR     ;SEE HOW TSSR IS
3672 043236 103407              BCS      30$           ;BR, IF NO PROBLEM
3673 043240 010001              MOV      R0,R1           ;SAVE TSSR
3674 043242 005237 002212'      INC      FATFLG         ;BUMP COUNT
3678 043246              ERRHRD  ERRNO,T24RWN,PKTSSR     ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     484
                                .WORD     T24RWN
                                .WORD     PKTSSR
                                043246 104456
                                043250 000744
                                043252 045116'
                                043254 011746'
3679 043256 104406              30$:  CKLOOP              ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                043256 104406
3680 043260 012703 000400      MOV      #256.,R3         ;RECORD SIZE
3681 043264 013737 003114' 043762'  MOV      FREE,T24RB      ;STARTING WRITE BUFFER ADDRESS
3682 ;*****
3683 ;
3684 ;WRITE DATA,ACK,CVC-1 COMMAND
3685 ;
3686 ;*****
3687 ;
3688 ;
3689 043272 012737 140005 043760'  MOV      #140005,T24PK3    ;WRITE DATA,ACK,CVC-1 COMMAND
3690 043300 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
3691 043304              65$:  MOV      R3,T24SZ          ;SET UP RECORD SIZE IN PACKET
3692 043304 010337 043766'      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
3693 043310 010465 000000      JSR      PC,WAITF         ;WAIT FOR SSR TO SET
3694 043314 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
3695 043320 016501 000002      MOV      #SSR,R2          ;SET UP EXPECTED
3696 043324 012702 000200      CMP      R1,R2           ;ARE THEY EQUAL
3697 043330 020102              BEQ      75$             ;BR, IF OK
3698 043332 001406              INC      FATFLG         ;BUMP COUNT
3699 043334 005237 002212'      ERRHRD  ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER READ DATA
3703 043340              TRAP      C$ERHRD
                                .WORD     485
                                .WORD     WRTErr
                                .WORD     PKTSSR
                                043340 104456
                                043342 000745
                                043344 005103'
                                043346 011746'
3704 043350 104406              75$:  CKLOOP              ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                043350 104406
3705 0 352 012703 000400      MOV      #256.,R3         ;RECORD SIZE
3706 0 356 013737 003114' 043762'  MOV      FREE,T24RB      ;STARTING READ BUFFER ADDRESS
3707 ;*****
3708 ;
3709 ;READ REVERSE DATA,ACK COMMAND
3710 ;
3711 ;*****
3712 ;
3713 ;
3714 043364 012737 100401 043760'  MOV      #100401,T24PK3    ;READ REVERSE DATA,ACK COMMAND
3715 043372 012704 043760'      MOV      #T24PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
3716 043376 010337 043766'      MOV      R3,T24SZ          ;SET UP RECORD SIZE IN PACKET

```

Address	Offset	Hex	Label	Operation	Comment	Trap	Value
3717	043402	010465	000000	MOV	R4,TSDB(R5)		
3718	043406	004737	016150'	JSR	PC,WAITF		
3719	043412	016501	000002	MOV	TSSR(R5),R1		
3720	043416	012702	000200	MOV	SSR,R2		
3721	043422	020102		CMP	R1,R2		
3722	043424	001406		BEQ	170\$		
3723	043426	005237	002212'	INC	FATFLG		
3727	043432			ERRHRD	ERRNO,T24TRL,PKTSSR		
	043432	104456				TRAP	C\$ERHRD
	043434	000746				.WORD	486
	043436	046164'				.WORD	T24TRL
	043440	011746'				.WORD	PKTSSR
3728	043442		170\$:	CKLOOP			
	043442	104406				TRAP	C\$CLP1
3729	043444	012703	000400	MOV	256.,R3		
3730	043450	013737	003114' 043762'	MOV	FREE,T24RB		
3731							
3732							
3733							
3734							
3735							
3736							
3737							
3738	043456	012737	100401 043760'	MOV	S100401,T24PK3		
3739	043464	012704	043760'	MOV	T24PK3,R4		
3740	043470	010337	043766'	MOV	R3,T24SZ		
3741	043474	010465	000000	MOV	R4,TSDB(R5)		
3742	043500	004737	016150'	JSR	PC,WAITF		
3743	043504	016501	000002	MOV	TSSR(R5),R1		
3744	043510	012702	100204	MOV	SSR!SC!BIT2,R2		
3745	043514	020102		CMP	R1,R2		
3746	043516	001406		BEQ	200\$		
3747	043520	005237	002212'	INC	FATFLG		
3751	043524			ERRHRD	ERRNO,T24TRL,PKTSSR		
	043524	104456				TRAP	C\$ERHRD
	043526	000747				.WORD	487
	043530	046164'				.WORD	T24TRL
	043532	011746'				.WORD	PKTSSR
3752	043534		200\$:	CKLOOP			
	043534	104406				TRAP	C\$CLP1
3753	043536	013701	043666'	MOV	T24BFR*14,R1		
3754	043542	010102		MOV	R1,R2		
3755	043544	052702	000001	BIS	BIT0,R2		
3756	043550	020102		CMP	R1,R2		
3757	043552	001406		BEQ	210\$		
3758	043554	005237	002212'	INC	FATFLG		
3762	043560			ERRHRD	ERRNO,T24LOR,EXPREC		
	043560	104456				TRAP	C\$ERHRD
	043562	000750				.WORD	488
	043564	044062'				.WORD	T24LOR
	043566	015374'				.WORD	EXPREC
3763	043570		210\$:	CKLOOP			
	043570	104406				TRAP	C\$CLP1
3764	043572			ENDSUB			
	043572						
	043572	104403				TRAP	C\$ESUB
3765	043574	023727	002212' 000017	CMP	FATFLG,#15.		

Address	Offset	Value	Operation	Comment
3766	043602	103402	BLO	999\$
3767	043604	004737	JSR	PC,CKDROP
3768	043610			
3769				
3770				
3771				
3772	043610	004737	JSR	PC,TSTLOOP
3773	043614	103002	BCC	163\$
3774	043616	000137	JMP	T24LOOP
3775	043622			
3776	043622		EXI*	TST
	043622	104432		
	043624	002660		
3777				
3778				
3779				
3780				
3782	043626			
3784	043630			
3785	043630	100204		
3786	043632	043640		
3787	043634	000000		
3788	043636	000012		
3789	043640			
3790	043640	043652		
3791	043642	000000		
3792	043644	000024		
3793	043646	000000		
3794	043650	000000		
3795	043652			
3796				
3797				
3798				
3800	043734			
3802	043740			
3803	043740	100206		
3804	043742	043770		
3805	043744	000000		
3806	043746	000006		
3807				
3809	043750			
3811	043760			
3812	043760	100205		
3813	043762			
3814	043762	003114		
3815	043764	000000		
3816	043766	000000		
3817				
3818				
3819				
3820				
3821	043770			
3822	043770	010		
3823	043771	200		
3824	043772	000000		
3825	043774	000000		
3826				

```

3827
3828
3829
3830
3831 043775 100005 T24RN: .WORD 100005 ;READ DATA (NEXT)
3832 044000 100405 T24WDR: .WORD 100405 ;READ DATA RETRY
3833 044002 102005 T24CON: .WORD 102005 ;WRITE CONTINUOUS
3834 044004 177777 .WORD 177777 ;END OF DATA
3835 044006 000000 T24DLY: .WORD 0 ;DELAY STORAGE AREA
3836
3837
3838
3839
3840
3841
3842 044010 116 105 106 T24NEF: .ASCIZ 'NEF Not Set After NON-EXECUTABLE FUNCTION'
3843 044062 122 111 102 T24LOR: .ASCIZ 'RIB Not Set After READ REVERSE Into BOT'
3844 044132 124 123 123 T24WOG: .ASCIZ 'TSSR Not Correct After Illegal Buffer Address Bits Set'
3845 044221 124 123 123 T24NXM: .ASCIZ 'TSSR Not Correct After NXM Memory Address In Packet'
3846 044305 124 123 123 T24WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
3847 044362 111 154 154 T24ILA: .ASCIZ 'Illegal Address Bits, Failed To Set ILA Bit In XST0'
3848 044446 111 154 154 T24LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XST0'
3849 044527 122 105 101 T24SSR: .ASCIZ 'READ COMMAND Not Accepted'
3850 044561 124 123 123 T24WDE: .ASCIZ 'TSSR Not Correct After WRITE DATA Command'
3851 044633 124 141 160 T24BOT: .ASCIZ 'Tape Not At BOT After REWIND Command'
3852 044700 104 141 164 T24DTA: .ASCIZ 'Data Written To Tape Not Equal To Data Read From Tape'
3853 044766 122 105 101 T24EOT: .ASCIZ 'READ DATA OVER EOT GAVE NO TAPE STATUS ALERT'
3854 045043 124 123 123 T24TM: .ASCIZ 'TSSR Not Correct After READ COMMAND Reject'
3855 045116 122 145 167 T24RMN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
3856 045165 122 101 115 T24RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
3857 045240 124 123 123 T24AM3: .ASCIZ 'TSSR Init. Failed After READ COMMAND'
3858 045305 104 162 151 T24OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
3859 045360 124 123 123 T24WDC: .ASCIZ 'TSSR Not Correct After READ DATA Command, SWB Bit Set'
3860 045446 124 123 123 T24WDC: .ASCIZ 'TSSR Not Correct After READ DATA Command'
3861 045517 103 126 103 T24VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
3862 045572 124 123 102 T24BA: .ASCIZ 'TSRA Not Correct After READ DATA Command'
3863 045643 127 122 111 T24WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
3864 045732 122 145 141 T24LON: .ASCIZ 'Reading Long Record Failed To Set RLL Bit In XST0'
3865 046014 122 145 141 T24LOP: .ASCIZ 'Reading Long Record Failed To Set RLS Bit In XST0'
3866 046076 122 145 163 T24PBP: .ASCIZ 'Residual Byte Count Incorrect After Short Record Read'
3867 046164 122 145 141 T24TRL: .ASCIZ 'Reading Long Record Failed To Give Tape Status Alert'
3868 046252 102 141 163 T24ID: .ASCIZ 'Basic Read Data (Forward and Reverse)'
3869
3870
3871
3872
3873
3874
3875
3876
3877 046320 T24REST:
3878 046320 SAVREG
3879 046324 012701 043630 MOV #T24PACKET,R1 ;SAVE THE REGISTERS
3880 046330 012721 100004 MOV #100004,(R1)+ ;START OF THE PACKET
3881 046334 012721 043640 MOV #T24DATA,(R1)+ ;WRITE SUBSYSTEM MEM. WITH ACK,
3882 046340 005021 CLR (R1)+ ;ADDRESS OF CHARACTERISTICS DATA BLOCK
3883 046342 012721 000012 MOV #10.,(R1)+ ;EXTENDED ADDRESS
;SIZE OF DATA BLOCK IN BYTES

```


H13

TSV7 - HARDWARE TESTS 1-8 MACRO M1113 01-FEB-84 17:54
TEST 4: BASIC READ DATA (FORWARD AND REVERSE)

SEQ 163

```

3884 046346 012721 043652'      MOV    #T24BFR,(R1)+      ;ADDRESS OF MESSAGE BUFFER
3885 046352 005021                CLR    (R1)+              ;
3886 046354 012721 000024        MOV    #20,(R1)+          ;LENGTH OF MESSAGE BUFFER
3887 046360 005021                CLR    (R1)+              ;
3888 046362 012711 000000        MOV    #0,(R1)             ;SELECT DRIVE ZERO
3889 046366 012702 000030        MOV    #24,,R2             ;NUMBER OF LOCATIONS TO BE CLEARED
3890 046372 012762 177777 043652' 64$: MOV    #177777,T24BFR(R2) ;ALL ONES TO MESSAGE BUFFER
3891 046400 005742                TST     -(R2)              ;NEXT LOCATION
3892 046402 022702 000000        CMP     #0,R2              ;CHECK FOR END OF LOOP
3893 046406 001371                BNE     64$                ;KEEP GOING UNTIL DONE
3894 046410 000207                RTS     PC                  ;RETURN
3895
3896

```

T24RT2:

```

3897 046412                SAVREG      ;SAVE THE REGISTERS
3898 046412                MOV     #T24PK2,R1      ;START OF THE PACKET
3899 046416 012701 043740'      MOV     #100206,(R1)+    ;WRITE SUBSYSTEM MEN. WITH ACK, IE
3900 046422 012721 100206        MOV     #T24BF2,(R1)+    ;ADDRESS OF DATA BLOCK
3901 046426 012721 043770'      CLR     (R1)+          ;EXTENDED ADDRESS
3902 046432 005021                MOV     #6,,(R1)+        ;SIZE OF DATA BLOCK IN BYTES
3903 046434 012721 000006        CLR     (R1)+          ;
3904 046440 005021                MOV     #T24BF2,R1       ;POINT TO DATA SEL AREA
3905 046442 012701 043770'      CLR     (R1)+          ;
3906 046446 005021                CLR     (R1)+          ;
3907 046450 005011                RTS     PC                  ;RETURN
3908 046452 000207
3909 046454

```

T24RT3:

```

3910 046454                SAVREG      ;SAVE THE REGISTERS
3911 046460 012701 043760'      MOV     #T24PK3,R1       ;START OF THE PACKET
3912 046464 012721 000000        MOV     #0,(R1)+         ;CLEAR AREA OUT
3913 046470 012721 000000        MOV     #0,(R1)+         ;ADDRESS OF DATA BLOCK
3914 046474 005021                CLR     (R1)+          ;EXTENDED ADDRESS
3915 046476 012711 000000        MOV     #0,(R1)+         ;SIZE OF DATA BLOCK IN BYTES
3916 046502 000207                RTS     PC                  ;RETURN
3917 046504                ENDTST

```

L10052: TRAP C\$ETST

3918 046504 104401

3918
3919
3920
3921
3922
3923
3924
3925
3926
3927
3928
3929
3930
3931
3932
3933
3934
3935
3936
3937
3938

.SBTTL 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.
;
;
;THE TEST CONSISTS OF THE FOLLOWING 8 SUBTESTS
;
;

```

1939									
3940									
3941	046506			BGNTST		T5::			
	046506								
3942	046506	012737	006256'	MOV	%PRT2,%PRTSW			;SECONDARY ERROR MESSAGE	
3947	046514	004737	017176'	JSR	PC,KTOFF			;DON'T NEED LOTS OF MEMORY	
3948	046520	012700	055230'	MOV	%TST25ID,R0			;ASCCT MESSAGE TO IDENTIFY TEST	
3949	046524	004737	016412'	JSR	PC,TSTSETUP			;DO INITIAL TEST SETUP	
3950	046530	012737	000005' 002206'	MOV	%5,L00PCNT			;PERFORM 5 ITERATIONS	
3951									
3952									
3953									
3954									
3955									
3956									
3957									
3958									
3959									
3960									
3961									
3962									
3963	046536			T25LOOP:					
3964	046536			BGN SUB				>>>>>>>>> BEGIN SUBTEST >>>>>>>>>	
	046536							T5.1:	
	046536	104402						TRAP	C\$BSUB
3965	046540	004737	055246'	JSR	PC,T25REST			;SET COMMAND PACKET	
3966	046544	005037	054060'	CLR	T25CNT			;CLEAR THE RECORD COUNTER AREA	
3967	046550	004737	055340'	JSR	PC,T25RT2			;SET UP OTHER COMMAND PACKET	
3968	046554	004737	055402'	JSR	PC,T25RT3			;SET UP OTHER COMMAND PACKET	
3969	046560	012737	176750' 054062'	MOV	%65000.,T25DLY			;SET UP LOOP COUNTER	
3970									
3971									
3972									
3973									
3974									
3975									
3976									
3977	046566	004737	015674'	S\$: JSR	PC,SOFINIT			;DO INITIALIZATION ON CONTROLLER	
3978	046572	103427		BCS	10\$			;BR IF INIT WAS OK	
3979	046574			DELAY	250			;DELAY IF REQUIRED	
	046574	012727	000250					MOV	%250,(PC)+
	046600	000000						.WORD	0
	046602	013727	002116'					MOV	L%DLY,(PC)+
	046606	000000						.WORD	0
	046610	005367	177772					DEC	-6(PC)
	046614	001375						BNE	-4
	046616	005367	177756					DEC	-22(PC)
	046622	001367						BNE	-20
3980	046624	005337	054062'	DEC	T25DLY			;DEC DELAY COUNTER	
3981	046630	001356		BNE	\$			;BR, IF LOOP IS REQUIRED	
3982	046632	005237	002212'	INC	FATFLG			;BUMP COUNT	
3986	046636	016501	000002	MOV	TSSR(R5),R1			;CONTENTS OF TSSR REGISTER	
3987	046642			ERRDF	ERRNO,SFIERR,SFIMSG			;FATAL ERROR TSSR WAS NOT OK	
	046642	104455						TRAP	C\$ERDF
	046644	000765						.WORD	501
	046646	003642'						.WORD	SFIERR
	046650	011734'						.WORD	SFIMSG

J13

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 165

```

3988 046652
3989 046652 013737 002172' 053720' 10$: MOV UNITN,T25DSW ;SET UP DRIVE NUMBER
3990 046660 012704 053700' MOV #T25PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
3991
3992 ;*****
3993 ;
3994 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPHR)
3995 ;
3996 ;*****
3997
3998 046664 004737 010562' JSR PC,WRTPHR ;ISSUE WRITE CHARACTERISTICS
3999 046670 103407 BCS 15$ ;BR, IF COMMAND ISSUED OK
4000 046672 005237 002212' INC FATFLG ;BUMP COUNT
4004 046676 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
4005 046700 ERRHRD ERRNO,WRTPMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
      046700 104456 TRAP C$ERRHRD
      046702 000766 .WORD 502
      046704 005046' .WORD WRTPMSG
      046706 011734' .WORD SFMSG
4006
4007 ;*****
4008 ;
4009 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
4010 ;
4011 ;*****
4012
4013 046710 15$: CKLOOP
      046710 104406 TRAP C$CLP1
4014 046712 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
4015 046716 103407 BCS 30$ ;BR, IF NO PROBLEM
4016 046720 010001 MOV R0,R1 ;SAVE TSSR
4017 046722 005237 002212' INC FATFLG ;BUMP COUNT
4021 046726 ERRHRD ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
      046726 104456 TRAP C$ERRHRD
      046730 000767 .WORD 503
      046732 055035' .WORD T25RWN
      046734 011746' .WORD PKTSSR
4022 046736 30$: CKLOOP ;LOOP IF SELECTED
      046736 104406 TRAP C$CLP1
4023
4024 ;*****
4025 ;
4026 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
4027 ;
4028 ;*****
4029
4030 046740 013701 053730' MOV T25BFR+6,R1 ;PICK UP XSTO
4031 046744 010102 MOV R1,R2 ;SET UP EXPECTED
4032 046746 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
4033 046752 020102 CMP R1,R2 ;DOES EXP = REC'D
4034 046754 001406 BEQ 40$ ;BR, IF EQUAL (OK)
4035 046756 005237 002212' INC FATFLG ;BUMP COUNT
4039 016762 ERRHRD ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      046762 104456 TRAP C$ERRHRD
      046764 000770 .WORD 504
      046766 054225' .WORD T25BOT
      046770 015374' .WORD EXPREC

```

K13

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 166

```

4040 046772          40$:  CKLOOP                                ;LOOP IF SELECTED
      046772 104406                                     TRAP  C$CLP1
4041 046774 012703 000400      MOV  #256.,R3              ;RECORD SIZE
4042 047000 013737 003114' 054032'  MOV  FREE,T25R8      ;STARTING WRITE BUFFER ADDRESS
4043
4044 ;*****
4045 ;
4046 ;WRITE DATA,ACK,CVC=1 COMMAND
4047 ;
4048 ;*****
4049
4050 047006 012737 140005 054030'      MOV  #140005,T25PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
4051 047014 012704 054030'      MOV  #T25PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
4052 047020          65$:
4053 047020 010337 054036'      MOV  R3,T25SZ          ;SET UP RECORD SIZE IN PACKET
4054 047024 013777 054060' 134062      MOV  T25CNT,0FREE      ;LOAD UP RECORD COUNTER IN WRT BUFFER
4055 047032 062737 000001 054060'      ADD  #1,T25CNT      ;GET READY FOR NEXT RECORD
4056 047040 010465 000000      MOV  R4,T25DB(R5)      ;ISSUE COMMAND
4057 047044 004737 016150'      JSR  PC,WAITF          ;WAIT FOR SSR TO SET
4058 047050 016501 000002      MOV  TSSR(R5),R1      ;GET TSSR CONTENTS
4059 047054 012702 000200      MOV  #SSR,R2          ;SET UP EXPECTED
4060 047060 020102      CMP  R1,R2          ;ARE THEY EQUAL
4061 047062 001411      BEQ  75$          ;BR, IF OK
4062 047064 032701 000004      BIT  #BIT2,R1          ;CHECK FOR TAPE STATUS ALERT
4063 047070 001014      BNE  120$          ;BR, IF TSA IS SET (SUSPECT IS EOT)
4064 047072 005237 002212'      INC  FATFLG          ;BUMP COUNT
4068 047076          ERRHRD  ERRNO,WRTERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
      047076 104456
      047100 000771
      047102 005103'
      047104 011746'
4069 047106          75$:  CKLOOP                                ;LOOP IF SELECTED
      047106 104406                                     TRAP  C$CLP1
4070 047110 005203      INC  R3
4071 047112 022703 001000      CMP  #512.,R3          ;BUMP RECORD SIZE
4072 047116 001340      BNE  65$          ;END OF RECORD YET
4073 047120 000415      BR   125$          ;BR, IF MORE RECORDS TO WRITE
4074 047122          120$:
4075 ;*****
4076 ;
4077 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
4078 ;
4079 ;*****
4080
4081
4082 047122 013701 053730'      MOV  T25BFR+6,R1      ;QUICK CHECK FOR EOT SET
4083 047126 010102      MOV  R1,R2          ;SET UP EXPECTED
4084 047130 052702 000001      BIS  #BIT0,R2          ;SET THE EOT BIT XSTO
4085 047134 020102      CMP  R1,R2          ;IS THE EOT BIT SET IN XSTO
4086 047136 001406      BEQ  125$          ;BR, IF SET (GOOD)
4087 047140 005237 002212'      INC  FATFLG          ;BUMP COUNT
4091 047144          ERRDF  ERRNO,T25NET,EXPREC      ;DEVICE FATAL NOT EOT FOUND ETC.
      047144 104455
      047146 000772
      047150 054361'
      047152 015374'
4092 047154          125$:

```

L13

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 167

```

4093
4094
4095
4096
4097
4098
4099
4100 047154 004737 010714'
4101 047160 103407
4102 047162 010001
4103 047164 005237 002212'
4107 047170
      047170 104456
      047172 000773
      047174 055035'
      047176 011746'
4108 047200
      047200 104406
4109 047202 012737 000007 053720'
4110 047210 012704 053700'
4111
4112
4113
4114
4115
4116
4117
4118 047214 004737 010562'
4119 047220 103407
4120 047222 005237 002212'
4124 047226 010001
4125 047230
      047230 104456
      047232 000774
      047234 005046'
      047236 011734'
4126 047240
      047240 104406
4127 047242 005737 002216'
4128 047246 001044
4129
4130 047250 112737 000200 054041'
4131 047256 112737 000010 054040'
4132 047264 012704 054010'
4133 047270 010465 000000
4134 047274 004737 016236'
4135 047300 103407
4136 047302 010001
4137 047304 005237 002212'
4141 047310
      047310 104456
      047312 000775
      047314 054064'
      047316 011746'
4142 047320
      047320 104406
4143 047322 012737 000007 053720'

```

```

; *****
;
; ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
;
; *****
      JSR      PC,REWIND          ;CALL TAPE REWIND COMMAND
      BCS      130$              ;BR, IF NO PROBLEM
      MOV      R0,R1             ;SAVE TSSR
      INC      FATFLG            ;BUMP COUNT
      ERHRD    ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
                                     TRAP      C$ERHRD
                                     .WORD     507
                                     .WORD     T25RWN
                                     .WORD     PKTSSR
130$:  CKLOOP                    ;LOOP IF SELECTED
                                     TRAP      C$CLP1
      MOV      #7,T25DSW         ;SET UP DRIVE NUMBER
      MOV      #T25PACKET,R4    ;SUBROUTINE NEEDS PACKET ADDRESS
; *****
;
; WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
;
; *****
      JSR      PC,WRTHCR         ;ISSUE WRITE CHARACTERISTICS
      BCS      140$              ;BR, IF COMMAND ISSUED OK
      INC      FATFLG            ;BUMP COUNT
      MOV      R0,R1             ;SAVE CONTENTS OF TSSR
      ERHRD    ERRNO,WRTHMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
                                     TRAP      C$ERHRD
                                     .WORD     508
                                     .WORD     WRTHMSG
                                     .WORD     SFMSG
140$:  CKLOOP                    ;SCOPE LOOP
                                     TRAP      C$CLP1
      TST      EXTFEA            ;CHECK FOR EXTENDED FEATURES
      BNE      160$              ;BR IF SWITCH IS ON
      MOV      #200,T25BS1      ;WRITE MISCELLANEOUS CONT/READ STATUS
      MOV      #10,T25BS0       ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
      MOV      #T25PK2,R4       ;WRITE SUBSYS MEM PACKET
      MOV      R4,T25DB(R5)      ;ISSUE COMMAND
      JSR      PC,CHKTSSR        ;WAIT FOR SSR
      BCS      150$              ;BR, IF NO ERROR
      MOV      R0,R1             ;ERROR, SAVE TSSR
      INC      FATFLG            ;BUMP COUNT
      ERHRD    ERRNO,T25SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
                                     TRAP      C$ERHRD
                                     .WORD     509
                                     .WORD     T25SSR
                                     .WORD     PKTSSR
150$:  CKLOOP                    ;LOOP IF SELECTED
                                     TRAP      C$CLP1
      MOV      #7,T25DSW         ;SET UP DRIVE NUMBER

```

M13

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 168

4144	047330	012704	053700'		MOV	#T25PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS	
4145									
4146									
4147									
4148									
4149									
4150									
4151									
4152	047334	004737	010562'		JSR	PC,WRTCHR		;ISSUE WRITE CHARACTERISTICS	
4153	047340	103407			BCS	160\$		;BR, IF COMMAND ISSUED OK	
4154	047342	005237	002212'		INC	FATFLG		;BUMP COUNT	
4158	047346	010001			MOV	R0,R1		;SAVE CONTENTS OF TSSR	
4159	047350				ERRHRD	ERRNO,WRTMSG,SFIMSG		;WRITE CHARACTERISTISC FAILED	
	047350	104456						TRAP	C\$ERHRD
	047352	000776						.WORD	510
	047354	005046'						.WORD	WRTMSG
	047356	011734'						.WORD	SFIMSG
4160	047360			160\$:	CKLOOP			;SCOPE LOOP	
	047360	104406						TRAP	C\$CLP1
4161	047362	016501	000002		MOV	TSSR(R5),R1		;GET TSSR CONTENTS	
4162	047366	032701	000100		BIT	#OFL,R1		;CHECK FOR THE OFFLINE BIT SET	
4163	047372	001006			BNE	170\$		;BR, IF OFFLINE (GOOD)	
4164	047374	005237	002212'		INC	FATFLG		;BUMP COUNT	
4168	047400				ERRDF	ERRNO,T25OFL,SFIMSG		;OFF LINE SHOULD HAVE BEEN SET (BAD)	
	047400	104455						TRAP	C\$ERDF
	047402	000777						.WORD	511
	047404	055104'						.WORD	T25OFL
	047406	011734'						.WORD	SFIMSG
4169	047410			170\$:	CKLOOP			;LOOP IF SELECTED	
	047410	104406						TRAP	C\$CLP1
4170									
4171									
4172									
4173									
4174									
4175									
4176									
4177	047412	012737	140010	054030'	180\$:	MOV	#140010,T25PK3	;SPACE FORWARD COMMAND IN PLACE	
4178	047420	012737	000001	054032'		MOV	#1,T25RB	;NUMBER OF RECORDS TO SPACE	
4179	047426	012704	054030'			MOV	#T25PK3,R4	;R4 = POINTER TO PACKET	
4180	047432	010465	000000			MOV	R4,TSD8(R5)	;ISSUE COMMAND	
4181	047436	004737	016150'			JSR	PC,WAITF	;WAIT FOR SSR TO SET	
4182	047442	016501	000002			MOV	TSSR(R5),R1	;GET TSSR CONTENTS	
4183	047446	012702	100306			MOV	#SSR!SC!OFL!BIT1!BIT2,R2	;SET UP EXPECTED	
4184	047452	020102				CMP	R1,R2	;ARE THEY EQUAL	
4185	047454	001406				BEQ	190\$	;BR, IF OK ESP. FUNCTION REJECT	
4186	047456	005237	002212'			INC	FATFLG	;BUMP COUNT	
4190	047462					ERRHRD	ERRNO,T25TM,PKTSSR	;TSSR INCORRECT AFTER TAPE MOTION CMD	
	047462	104456						TRAP	C\$ERHRD
	047464	001000						.WORD	512
	047466	054272'						.WORD	T25TM
	047470	011746'						.WORD	PKTSSR
4191	047472			190\$:	CKLOOP			;LOOP IF SELECTED	
	047472	104406						TRAP	C\$CLP1
4192	047474				ENDSUB			;>>>>>>>>> END SUBTEST >>>>>>>	
	047474							L10072:	
	047474	104403						TRAP	C\$ESUB

N13

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 1.69

[illegible]

```

4246
4247
4248
4249
4250
4251
4252
4253 047612
      047612 104406
4254 047614 004737 010714'
4255 047620 103407
4256 047622 010001
4257 047624 005237 002212'
4261 047630
      047630 104456
      047632 001003
      047634 055035'
      047636 011746'
4262 047640
      047640 104406
4263 047642 005737 002216'
4264 047646 001044
4265
4266 047650 112737 000200 054041'
4267 047656 112737 000010 054040'
4268 047664 012704 054010'
4269 047670 010465 000000
4270 047674 004737 016236'
4271 047700 105407
4272 047702 010001
4273 047704 005237 002212'
4277 047710
      047710 104456
      047712 001004
      047714 054064'
      047716 011746'
4278 047720
      047720 104406
4279 047722 012737 000007 053720'
4280 047730 012704 053700'
4281
4282
4283
4284
4285
4286
4287
4288 047734 004737 010562'
4289 047740 103407
4290 047742 005237 002212'
4294 047746 010001
4295 047750
      047750 104456
      047752 001005
      047754 005046'
      047756 011734'
4296 047760

;*****
;
;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
;
;*****
150:  CKLOOP
      JSR      PC,REWIND
      BCS      301
      MOV      R0,R1
      INC      FATFLG
      ERHRD    ERNO,T25RWN,PKTSSR
      ;CALL TAPE REWIND COMMAND
      ;BR, IF NO PROBLEM
      ;SAVE TSSR
      ;BUMP COUNT
      ;REWIND NOT ACCEPTED
      TRAP     C1CLP1
      .WORD    515
      .WORD    T25RWN
      .WORD    PKTSSR
301:  CKLOOP
      ;LOOP IF SELECTED
      TRAP     C1CLP1
140:  TST      EXTFEA
      BNE      160
      ;CHECK FOR EXTENDED FEATURES SW SWITCH
      ;BR IF SWITCH IS ON
      MOV      #200,T25S1
      MOV      #10,T25S0
      MOV      #T25PK2,R4
      MOV      R4,T508(R5)
      JSR      PC,CHKTSSR
      BCS      150
      MOV      R0,R1
      INC      FATFLG
      ERHRD    ERNO,T25SSR,PKTSSR
      ;WRITE MISCELLANEOUS CONT/READ STATUS
      ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
      ;WRITE SUBSYS MEM PACKET
      ;ISSUE COMMAND
      ;WAIT FOR SSR
      ;BR, IF NO ERROR
      ;ERROR, SAVE TSSR
      ;BUMP COUNT
      ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
      TRAP     C1ERHRD
      .WORD    516
      .WORD    T25SSR
      .WORD    PKTSSR
150:  CKLOOP
      ;LOOP IF SELECTED
      TRAP     C1CLP1
      MOV      #7,T25DSW
      MOV      #T25PACKET,R4
      ;SET UP DRIVE NUMBER
      ;SUBROUTINE NEEDS PACKET ADDRESS
;*****
;
;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
;
;*****
      JSR      PC,WRTCHR
      BCS      160
      INC      FATFLG
      MOV      R0,R1
      ERHRD    ERNO,WRTMSG,SPMSG
      ;ISSUE WRITE CHARACTERISTICS
      ;BR, IF COMMAND ISSUED OK
      ;BUMP COUNT
      ;SAVE CONTENTS OF TSSR
      ;WRITE CHARACTERISTICS FAILED
      TRAP     C1ERHRD
      .WORD    517
      .WORD    WRTMSG
      .WORD    SPMSG
160:  CKLOOP
      ;SCOPE LOOP

```


TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 171

```

047760 104406
4297 047762 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS      TRAP    C1CLP1
4298 047766 032701 000100      BII    #OFL,R1        ;CHECK FOR THE OFFLINE BIT SET
4299 047772 001006              BNE     1701            ;BR, IF OFFLINE (GOOD)
4300 047774 005237 002212'      INC     FATFLG         ;BUMP COUNT
4304 050000              ERHDF  ERRNO,T25OFL,SFIMSG ;OFF LINE SHOULD HAVE BEEN SET (BAD)
050000 104455              TRAP    C1ERDF
050002 001006              .WORD   518
050004 055104'            .WORD   T25OFL
050006 011734'            .WORD   SFIMSG
4305 050010              1701:  CKLOOP                ;LOOP IF SELECTED      TRAP    C1CLP1
050010 104406
4306
4307      ;*****
4308      ;SPACE REVERSE COMMAND IN PLACE
4309      ;*****
4310
4311
4312
4313 050012 012737 100410 054030' 1801:  MOV    #100410,T25PK3      ;SPACE REVERSE COMMAND IN PLACE
4314 050020 012737 000001 054032'      MOV    #1,T25R8        ;NUMBER OF RECORDS TO SPACE
4315 050026 012704 054030'      MOV    #T25PK3,R4     ;R4 - POINTER TO PACKET
4316 050032 010465 000000      MOV    R4,TSD8(R5)     ;ISSUE COMMAND
4317 050036 004737 016150'      JSR    PC,WAITF       ;WAIT FOR SSR TO SET
4318 050042 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
4319 050046 012702 100306      MOV    #SSR!SC!OFL!BIT1!BIT2,R2 ;SET UP EXPECTED
4320 050052 020102              CMP     R1,R2          ;ARE THEY EQUAL
4321 050054 001406              BEQ     1901            ;BR, IF OK ESP. FUNCTION REJECT
4322 050056 005237 002212'      INC     FATFLG         ;BUMP COUNT
4326 050062              ERHDF  ERRNO,T25TM,PKTSSR ;TSSR INCORRECT AFTER TAPE MOTION CMD
050062 104456              TRAP    C1ERHDF
050064 001007              .WORD   519
050066 054272'            .WORD   T25TM
050070 011746'            .WORD   PKTSSR
4327 050072              1901:  CKLOOP                ;LOOP IF SELECTED      TRAP    C1CLP1
050072 104406              ENDSUB                      ;***** END SUBTEST *****
4328 050074              L10073:
050074 104403              TRAP    C1ESUB
4329 050076 023727 002212' 000017      CMP     FATFLG,#15.    ;IS ERROR COUNT AT 25
4330 050104 103402              BLO     9991            ;BR, IF LESS THAN 25
4331 050106 004737 017104'      JSR    PC,CKDROP      ;TRY TO DROP THE UNIT
4332 050112              9991:
4333
4334      ;*
4335      ;TEST 5, SUBTEST 3
4336      ;
4337      ;VERIFIES THAT SPACE RECORDS FORWARD CAN SPACE ONE
4338      ;RECORD OFF BOT AND CAUSES BOT STATUS TO BE CLEARED,
4339      ;
4340      ;
4341      ;
4342      ;
4343      ;*
4344 050112              BGNSUB                      ;***** BEGIN SUBTEST *****
050112              T5.3:
050112 104402              TRAP    C1BSUB

```

D14

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 172

```

4345 050114 004737 055246'      JSR      PC,T25REST      ;SET COMMAND PACKET
4346 050120 004737 055340'      JSR      PC,T25RT2      ;SET UP OTHER COMMAND PACKET
4347 050124 004737 055402'      JSR      PC,T25RT3      ;SET UP OTHER COMMAND PACKET
4348
4349
4350
4351
4352
4353
4354
4355 050130 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
4356 050134 103407              BCS      101          ;BR IF INIT WAS OK
4357 050136 005237 002212'      INC      FATFLG      ;BUMP COUNT
4361 050142 010001              MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
4362 050144              ERDIF      ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
4363 050154 013737 002172' 053720' 101:  MOV      UNITN,T25DSW      ;SET UP DRIVE NUMBER
4364
4365 050162 012704 053700'      MOV      @T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
4366
4367
4368
4369
4370
4371
4372
4373 050166 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
4374 050172 103407              BCS      151          ;BR, IF COMMAND ISSUED OK
4375 050174 005237 002212'      INC      FATFLG      ;BUMP COUNT
4379 050200 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
4380 050202              ERHRD      ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
4381
4382
4383
4384
4385
4386
4387
4388 050212 104406              151:  CKLOOP
4389 050214 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
4390 050220 103407              BCS      301          ;BR, IF NO PROBLEM
4391 050222 010001              MOV      R0,R1      ;SAVE TSSR
4392 050224 005237 002212'      INC      FATFLG      ;BUMP COUNT
4396 050230              ERHRD      ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
4397 050240              301:  CKLOOP

```


E14

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 173

```

050240 104406                                TRAP    C$CLP1
4398
4399
4400
4401
4402
4403
4404
4405 050242 013701 053730'                   MOV     T25BFR+6,R1           ;PICK UP XSTO
4406 050246 010102                           MOV     R1,R2             ;SET UP EXPECTED
4407 050250 052702 000002                     BIS     @BIT1,R2          ;SET BOT BIT IN EXPECTED
4408 050254 020102                           CMP     R1,R2             ;DOES EXP = REC'D
4409 050256 001405                           BEQ     40$              ;BR, IF EQUAL (OK)
4410 050260 005237 002212'                   INC     FATFLG           ;BUMP COUNT
4411 050264                           ERRHRD  ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
4412 050264 104456                                TRAP    C$ERHRD
4413 050266 001013                                .WORD   523
4414 050270 054225'                                .WORD   T25BOT
4415 050272 015374'                                .WORD   EXPREC
4416 050274 104406                                40$:    CKLOOP                ;LOOP IF SELECTED
4417 050276 012737 000001 054032'               MOV     @000001,T25RB        ;NUMBER OF RECORDS TO SPACE OVER
4418
4419
4420
4421
4422
4423
4424 050304 012737 140010 054030'               MOV     @140010,T25PK3      ;SPACE FORWARD,ACK,CVC=1 COMMAND
4425 050312 012704 054030'               MOV     @T25PK3,R4         ;SET UP R4 WITH PACKET ADDRESS
4426 050316                                65$:    MOV     R4,T25B(R5)      ;ISSUE COMMAND
4427 050316 010465 000000                   JSR     PC,WAITF           ;WAIT FOR SSR TO SET
4428 050322 004737 016150'                   MOV     TSSR(R5),R1        ;GET TSSR CONTENTS
4429 050326 016501 000002                   MOV     @SSR,R2           ;SET UP EXPECTED
4430 050332 012702 000200                   CMP     R1,R2             ;ARE THEY EQUAL
4431 050336 020102                           BEQ     75$              ;BR, IF OK
4432 050340 001411                           BIT     @BIT2,R1          ;CHECK FOR TAPE STATUS ALERT
4433 050342 032701 000004                   BNE     75$              ;BR, IF TSA IS SET (SUSPECT IS EOT)
4434 050346 001006                           INC     FATFLG           ;BUMP COUNT
4435 050350 005237 002212'                   ERRHRD  ERRNO,T25WDE,EXPREC ;TSSR INCORRECT AFTER READ DATA
4436 050354 104456                                TRAP    C$ERHRD
4437 050356 001014                                .WORD   524
4438 050360 054145'                                .WORD   T25WDE
4439 050362 015374'                                .WORD   EXPREC
4440 050364 104406                                75$:    CKLOOP                ;LOOP IF SELECTED
4441 050366                                120$:   TRAP    C$CLP1
4442
4443
4444
4445
4446
4447
4448
4449 050366 013701 053730'                   MOV     T25BFR+6,R1           ;QUICK CHECK FOR BOT SET

```

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 174

```

4450 050372 010102          MOV      R1,R2          ;SET UP EXPECTED
4451 050374 042702 000002    BIC      #BIT1,R2      ;CLEAR THE BOT BIT (XSTO)
4452 050400 020102          CMP      R1,R2          ;IS THE EOT BIT SET IN XSTO
4453 050402 001406          BEQ      125$          ;BR, IF SET (GOOD)
4454 050404 005237 002212'   INC      FATFLG        ;BUMP COUNT
4458 050410          ERRHRD   ERRNO,T25BNC,EXPREC    ;BOT NOT CLEARED AFTER SPACE FROM BOT
                                TRAP      C$ERHRD
                                .WORD     525
                                .WORD     T25BNC
                                .WORD     EXPREC
                                TRAP      C$CLP1
4459 050420          125$:   CKLOOP
                                .WORD     525
                                .WORD     T25BNC
                                .WORD     EXPREC
                                TRAP      C$CLP1
4460 050422 004737 055402'   JSR      PC,T25RT3      ;CLEAN UP PACKET
4461 050426 012737 000401 054036' MOV      #257,T25SZ      ;SET THE CORRECT SIZE UP
4462
4463          ;*****
4464          ;
4465          ;READ DATA COMMAND IN PLACE
4466          ;
4467          ;*****
4468
4469 050434 012737 140001 054030' MOV      #140001,T25PK3    ;READ DATA COMMAND IN PLACE
4470 050442 013737 003114' 054032' MOV      FREE,T25RB      ;READ BUFFER ADDRESS TO PACKET
4471 050450 012704 054030'   MOV      #T25PK3,R4      ;R4 = POINTER TO PACKET
4472 050454 010465 000000   MOV      R4,T25DB(R5)    ;ISSUE COMMAND
4473 050460 004737 016150'   JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4474 050464 016501 000002   MOV      TSSR(R5),R1    ;GET TSSR CONTENTS
4475 050470 012702 000200   MOV      #SSR,R2      ;SET UP EXPECTED
4476 050474 020102          CMP      R1,R2          ;ARE THEY EQUAL
4477 050476 001406          BEQ      190$          ;BR, IF OK ESP. FUNCTION REJECT
4478 050500 005237 002212'   INC      FATFLG        ;BUMP COUNT
4482 050504          ERRHRD   ERRNO,RDERR,PKTSSR    ;TSSR INCORRECT AFTER READ DATA CMD
                                TRAP      C$ERHRD
                                .WORD     526
                                .WORD     RDERR
                                .WORD     PKTSSR
                                TRAP      C$CLP1
4483 050514          190$:   CKLOOP
                                .WORD     526
                                .WORD     RDERR
                                .WORD     PKTSSR
                                TRAP      C$CLP1
4484 050516 017701 132372   MOV      #FREE,R1      ;GET FIRST WORD FROM BUFFER
4485 050522 012702 000001   MOV      #1,R2          ;SET UP EXPECTED
4486 050526 020102          CMP      R1,R2          ;WAS RECORD NUMBERED 1
4487 050530 001406          BEQ      200$          ;BR, IF CORRECT RECORD
4488 050532 005237 002212'   INC      FATFLG        ;BUMP COUNT
4492 050536          ERRHRD   ERRNO,T25WNG,EXPREC    ;SHOULD HAVE BEEN RECORD NUMBER 1
                                TRAP      C$ERHRD
                                .WORD     527
                                .WORD     T25WNG
                                .WORD     EXPREC
                                TRAP      C$CLP1
4493 050546          200$:   CKLOOP
                                .WORD     527
                                .WORD     T25WNG
                                .WORD     EXPREC
                                TRAP      C$CLP1
4494 050550          ENDSUB
                                ;***** END SUBTEST *****
                                L10074:
                                TRAP      C$ESUB
                                .WORD     527
                                .WORD     T25WNG
                                .WORD     EXPREC
                                TRAP      C$CLP1
4495 050552 023727 002212' 000017 CMP      FATFLG,#15,      ;IS ERROR COUNT AT 25
4496 050560 103402          BLO      999$          ;BR, IF LESS THAN 25
4497 050562 004737 017104'   JSR      PC,CKDROP      ;TRY TO DROP THE UNIT
4498 050566          999$:

```

```

4499          ;+
4500          |
4501          | TEST 5, SUBTEST 4
4502          |
4503          |
4504          | VERIFIES THAT SPACE RECORDS REVERSE CAN SPACE BACK
4505          | OVER THE FIRST RECORD ON TAPE.
4506          |
4507          |
4508          |-
4509
4510 050566      BGNSUB                                ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
4511 050566      050566      104402                                T5.4:
4512 050570      004737      055246'                               TRAP        C$BSUB
4513 050574      004737      055340'                               JSR         PC,T25REST    ;SET COMMAND PACKET
4514 050600      004737      055402'                               JSR         PC,T25RT2     ;SET UP OTHER COMMAND PACKET
4515                                     JSR         PC,T25RT3     ;SET UP OTHER COMMAND PACKET
4516
4517          ;*****\*****
4518          ; ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
4519          ; *****
4520
4521 050604      004737      015674'                               JSR         PC,SOFINIT    ;DO INITIALIZE ON CONTROLLER
4522 050610      103407                                BCS         20$           ;BR IF INIT WAS OK
4523 050612      005237      002212'                               INC         FATFLG       ;BUMP COUNT
4524 050616      010001                                MOV         R0,R1        ;CONTENTS OF TSSR REGISTER
4525 050620      050620      104455                                ERROF       ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
4526 050622      001020                                .WORD      528           TRAP        C$ERDF
4527 050624      003642'                                .WORD      SFIERR       .WORD      SFIMSG
4528 050626      011734'
4529 050630      013737      002172' 053720' 20$:                MOV         UNITN,T25DSW    ;SET UP DRIVE NUMBER
4530
4531 050636      012704      053700'                                MOV         @T25PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
4532
4533          ;*****
4534          ; WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
4535          ; *****
4536
4537 050642      004737      010562'                               JSR         PC,WRTHCR     ;ISSUE WRITE CHARACTERISTICS
4538 050646      103407                                BCS         25$           ;BR, IF COMMAND ISSUED OK
4539 050650      005237      002212'                               INC         FATFLG       ;BUMP COUNT
4540 050654      010001                                MOV         R0,R1        ;SAVE CONTENTS OF TSSR
4541 050656      050656      104455                                ERHRD       ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTIC FAILED
4542 050660      001021                                .WORD      529           TRAP        C$ERHRD
4543 050662      005046'                                .WORD      WRTMSG       .WORD      SFIMSG
4544 050664      011734'
4545          25$:                CKLOOP                                ;LOOP 1 SELECTED
4546 050666      104406                                TRAP        C$CLP1
4547
4548          ;*****
4549          ;
4550          |

```

```

4551      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
4552      ;
4553      ;*****
4554
4555 050670 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
4556 050674 103407      BCS      30$      ;BR, IF NO PROBLEM
4557 050676 010001      MCV      R0,R1      ;SAVE TSSR
4558 050700 005237 002212'      INC      FATFLG      ;BUMP COUNT
4559 050704      ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
4560 050704 104456      TRAP      C$ERHRD
4561 050706 001022      .WORD    530
4562 050710 055035'      .WORD    T25RWN
4563 050712 011746'      .WORD    PKTSSR
4564
4565      30$:      CKLOOP      ;LOOP IF SELECTED
4566      TRAP      C$CLP1
4567      ;*****
4568      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
4569      ;
4570      ;*****
4571 050716 013701 053730'      MOV      T25BFR+6,R1      ;PICK UP XSTO
4572 050722 010102      MOV      R1,R2      ;SET UP EXPECTED
4573 050724 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
4574 050730 020102      CMP      R1,R2      ;DOES EXP = REC'D
4575 050732 001406      BEQ      40$      ;BR, IF EQUAL (OK)
4576 050734 005237 002212'      INC      FATFLG      ;BUMP COUNT
4577 050740      ERRHRD  ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
4578 050740 104456      TRAP      C$ERHRD
4579 050742 001023      .WORD    531
4580 050744 054225'      .WORD    T25BOT
4581 050746 015374'      .WORD    EXPREC
4582
4583      40$:      CKLOOP      ;LOOP IF SELECTED
4584      TRAP      C$CLP1
4585      ;*****
4586      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
4587      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
4588      ;
4589      ;*****
4590 050752 012703 000001      MOV      #000001,R3      ;NUMBER OF RECORDS TO SPACE FORWARD
4591 050756 004737 010366'      JSR      PC,SPACE      ;CALL SPACE COMMAND
4592 050762 103410      BCS      50$      ;CHECK FOR ERROR
4593 050764 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4594 050770 005237 002212'      INC      FATFLG      ;BUMP COUNT
4595 050774      ERRHRD  ERRNO,T25WDE,SFFMSG ;SPACE FORWARD FAILED
4596 050774 104456      TRAP      C$ERHRD
4597 050776 001024      .WORD    532
4598 051000 054145'      .WORD    T25WDE
4599 051002 012002'      .WORD    SFFMSG
4600
4601      50$:      CKLOOP      ;LOOP IF SELECTED
4602      TRAP      C$CLP1
4603 051004 104406      MOV      #1,T25RB      ;NUMBER OF RECORDS TO SPACE OVER
4604 051006 012737 000001 054032'

```

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 177

```

4602 ;*****
4603 ;
4604 ;SPACE REVERSE,ACK,CVC=1 COMMAND
4605 ;
4606 ;*****
4607
4608 051014 012737 140410 054030'      MOV      #140410,T25PK3      ;SPACE REVERSE,ACK,CVC=1 COMMAND
4609 051022 012704 054030'      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4610 051026      65$:
4611 051026 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4612 051032 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSH TO SET
4613 051036 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4614 051042 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
4615 051046 020102      CMP      R1,R2      ;ARE THEY EQUAL
4616 051050 001406      BEQ      75$      ;BR, IF OK
4617 051052 005237 002212'      INC      FATFLG      ;BUMP COUNT
4621 051056      ERRHRD      ERRNO,T25WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      051056 104456      TRAP      C$ERRHRD
      051060 001025      .WORD      533
      051062 054145'      .WORD      T25WDE
      051064 011746'      .WORD      PKTSSR
4622 051066      75$:      CKLOOP      ;LOOP IF SELECTED
      051066 104406      TRAP      C$CLP1
4623 051070      120$:
4624 051070 012703 000400      MOV      #256,R3      ;RECORD SIZE
4625 051074 013737 003114' 054032'      MOV      FREE,T25RB      ;STARTING READ BUFFER ADDRESS
4626
4627 ;*****
4628 ;
4629 ;READ DATA,ACK,CVC=1 COMMAND
4630 ;
4631 ;*****
4632
4633 051102 012737 140001 054030'      MOV      #140001,T25PK3      ;READ DATA,ACK,CVC=1 COMMAND
4634 051110 012704 054030'      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4635 051114 010337 054036'      MOV      R3,T25SZ      ;SET UP RECORD SIZE IN PACKET
4636 051120 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
4637 051124 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4638 051130 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4639 051134 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
4640 051140 020102      CMP      R1,R2      ;ARE THEY EQUAL
4641 051142 001406      BEQ      170$      ;BR, IF OK
4642 051144 005237 002212'      INC      FATFLG      ;BUMP COUNT
4646 051150      ERRHRD      ERRNO,RDERR,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      051150 104456      TRAP      C$ERRHRD
      051152 001026      .WORD      534
      051154 005176'      .WORD      RDERR
      051156 011746'      .WORD      PKTSSR
4647 051160      170$:      CKLOOP      ;LOOP IF SELECTED
      051160 104406      TRAP      C$CLP1
4648 051162 017701 131726      MOV      #FREE,R1      ;GET FIRST WORD FROM BUFFER
4649 051166 012702 000000      MOV      #0,R2      ;SET UP EXPECTED
4650 051172 020102      CMP      R1,R2      ;WAS RECORD NUMBERED 1
4651 051174 001406      BEQ      200$      ;BR, IF CORRECT RECORD
4652 051176 005237 002212'      INC      FATFLG      ;BUMP COUNT
4656 051202      ERRHRD      ERRNO,T25WNG,EXPREC      ;SHOULD HAVE BEEN RECORD NUMBER 1
      051202 104456      TRAP      C$ERRHRD

```

	051204	001027				.WORD	535
	051206	054435'				.WORD	T25WNG
	051210	015374'				.WORD	EXPREC
4657	051212		200\$:	CKLOOP			
	051212	104406				TRAP	C\$CLP1
4658	051214			ENDSUB	; >>>>>>>>>> END SUBTEST >>>>>>>>>		
	051214				L10075:		
	051214	104403				TRAP	C\$ESUB
4659	051216	023727	002212'	000017	CMP	FATFLG,#15,	; IS ERROR COUNT AT 25
4660	051224	103402			BLO	999\$	; BR, IF LESS THAN 25
4661	051226	004737	017104'		JSR	PC,CKDROP	; TRY TO DROP THE UNIT
4662	051232		999\$:				
4663							
4664							
4665							
4666							
4667							
4668							
4669							
4670							
4671							
4672							
4673							
4674							
4675							
4676							
4677	051232			BGN SUB	; >>>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	051232				T5.5:		
	051232	104402				TRAP	C\$BSUB
4678	051234	004737	055246'		JSR	PC,T25REST	; SET COMMAND PACKET
4679	051240	004737	055340'		JSR	PC,T25RT2	; SET UP OTHER COMMAND PACKET
4680	051244	004737	055402'		JSR	PC,T25RT3	; SET UP OTHER COMMAND PACKET
4681	051250	013737	054060' 054056'		MOV	T25CNT,T25CN2	; HOLD NUMBER OF RECORDS
4682	051256	162737	000002' 054056'		SUB	#2,T25CN2	; ACTUAL NUMBER OF RECORDS ON TAPE
4683	051264	013737	054060' 054062'		MOV	T25CNT,T25DLY	; SET UP REWIND DELAY COUNTER
4684							
4685							
4686							
4687							
4688							
4689							
4690							
4691	051272	004737	015674'	10\$:	JSR	PC,SOFINIT	; DO INITIALIZE ON CONTROLLER
4692	051276	103427			BCS	20\$	; BR IF INIT WAS OK
4693	051300				DELAY	250	; WAIT ABOUT .25 SECONDS
	051300	012727	000250				
	051304	000000				MOV	#250,(PC),
	051306	013727	002116'			.WORD	0
	051312	000000				MOV	L\$DLY,(PC),
	051314	005367	177772			.WORD	0
	051320	001375				DEC	-6(PC)
	051322	005367	177756			BNE	, -4
	051326	001367				DEC	-20(PC)
						BNE	, -20
4694	051330	005337	054062'		DEC	T25DLY	; DEC COUNTER
4695	051334	001356			BNE	10\$	; BR, IF MORE LOOPS REQUIRED
4696	051336	016501	000002		MOV	TSSR(R5),R1	; CONTENTS OF TSSR REGISTER
4697	051342	005237	002212'		INC	FATFLG	; BUMP COUNT


```

4701 051346          ERRDF  ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
      051346 104455          TRAP  C$ERDF
      051350 001030          .WORD 536
      051352 003642'        .WORD SFIERR
      051354 011734'        .WORD SFIMSG
4702 051356          20$:
4703 051356 013737 002172' 053720'  MOV  UNITN,T25DSW      ;SET UP UNIT NUMBER
4704 051364 012704 053700'  MOV  @T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
4705
4706 ;*****
4707 ;
4708 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPHR)
4709 ;
4710 ;*****
4711
4712 051370 004737 010562'  JSR  PC,WRTPHR      ;ISSUE WRITE CHARACTERISTICS
4713 051374 103407          BCS  25$          ;BR, IF COMMAND ISSUED OK
4714 051376 005237 002212'  INC  FATFLG      ;BUMP COUNT
4718 051402 010001          MOV  R0,R1      ;SAVE CONTENTS OF TSSR
4719 051404          ERRHRD  ERRNO,WRTPMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
      051404 104456          TRAP  C$ERHRD
      051406 001031          .WORD 537
      051410 005046'        .WORD WRTPMSG
      051412 011734'        .WORD SFIMSG
4720 051414          25$:  CKLOOP          ;LOOP IF SELECTED
      051414 104406          TRAP  C$CLP1
4721
4722 ;*****
4723 ;
4724 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
4725 ;
4726 ;*****
4727
4728 051416 004737 010714'  JSR  PC,REWIND      ;CALL TAPE REWIND COMMAND
4729 051422 103407          BCS  30$          ;BR, IF NO PROBLEM
4730 051424 010001          MOV  R0,R1      ;SAVE TSSR
4731 051426 005237 002212'  INC  FATFLG      ;BUMP COUNT
4735 051432          ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
      051432 104456          TRAP  C$ERHRD
      051434 001032          .WORD 538
      051436 055035'        .WORD T25RWN
      051440 011746'        .WORD PKTSSR
4736 051442          30$:  CKLOOP          ;LOOP IF SELECTED
      051442 104406          TRAP  C$CLP1
4737 051444 013701 054056'  MOV  T25CN2,R1      ;NUMBER OF RECORDS ON TAPE
4738 051450 012702 177776'  MOV  @65534.,R2      ;MAX IT CAN SPACE OVER
4739 051454 020201          CMP  R2,R1      ;WHICH VALUE CAN WE USE
4740 051456 003002          RGT  46$          ;BR, IF 0 WRITTEN > 64K
4741 051460 010103          MOV  R1,R3      ;0 WRITTEN CAN BE USED
4742 051462 000401          BR   47$          ;MOVE ON
4743 051464 010203          46$:  MOV  R2,R3      ;USE MAX NUMBER
4744 051466 162703 000001    47$:  SUB  @1,R3      ;DON'T GO ALL THE WAY YET
4745 051472 010337 054032'  MOV  R3,T25RB      ;NUMBER OF RECORDS TO SPACE OVER
4746
4747 ;*****
4748 ;
4749 ;SPACE FORWARD,ACK,CVC*1 COMMAND

```

```

4750 ;
4751 ;*****
4752 ;
4753 051476 012737 140010 054030'      MOV      0140010,T25PK3      ;SPACE FORWARD,ACK,CVC=1 COMMAND
4754 051504 012704 054030'      MOV      0T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4755 051510      65$:
4756 051510 013737 054056' 054062'      MOV      T25CN2,T25DLY      ;NUMBER OF RECORDS USED AS DELAY COUNTER
4757 051516 010465 000000      MOV      R4,T25DB(R5)      ;ISSUE COMMAND
4758 051522 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4759 051526 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4760 051532 012702 000200      MOV      0SSR,R2      ;SET UP EXPECTED
4761 051536 020102      CMP      R1,R2      ;ARE THEY EQUAL
4762 051540 001425      BEQ      75$      ;BR, IF OK
4763 051542      DELAY      250      ;DELAY .25 SECONDS
      MOV      0250,(PC)+
      .WORD      0
      MOV      L$DLY,(PC)+
      .WORD      0
      DEC      -6(PC)
      BNE      -4
      DEC      -22(PC)
      BNE      -20
4764 051572 005337 054062'      DEC      T25DLY      ;BUMP DOWN COUNTER
4765 051576 001351      BNE      67$      ;BR, IF NOT AT END OF DELAY
4766 051600 005237 002212'      INC      FATFLG      ;BUMP COUNT
4770 051604      ERRHRD      ERRNO,T25WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      TRAP      C$ERRHRD
      .WORD      539
      .WORD      T25WDE
      .WORD      PKTSSR
      051604 104456
      051606 001033
      051610 054145'
      051612 011746'
4771 051614      75$:      CKLOOP      ;LOOP IF SELECTED
      TRAP      C$CLP1
      051614 104406
4772 051616 012703 010000      MOV      04096.,R3      ;RECORD SIZE
4773 051622 013737 003114' 054032'      MOV      FREE,T25RB      ;STARTING READ BUFFER ADDRESS
4774 ;*****
4775 ;
4776 ;
4777 ;READ DATA,ACK COMMAND
4778 ;
4779 ;*****
4780 ;
4781 051630 012737 100001 054030'      MOV      0100001,T25PK3      ;READ DATA,ACK COMMAND
4782 051636 012704 054030'      MOV      0T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4783 051642 010337 054036'      MOV      R3,T25S2      ;SET UP RECORD SIZE IN PACKET
4784 051646 010465 000000      MOV      R4,T25DB(R5)      ;ISSUE COMMAND
4785 051652 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4786 051656 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4787 051662 012702 000200      MOV      0SSR,R2      ;SET UP EXPECTED
4788 051666 020102      CMP      R1,R2      ;ARE THEY EQUAL
4789 051670 001411      BEQ      170$      ;BR, IF OK
4790 051672 032701 000004      BIT      0BIT2,R1      ;CHECK FOR TAPE STATUS ALERT
4791 051676 001006      BNE      170$      ;IF SET ALL IS WELL
4792 051700 005237 002212'      INC      FATFLG      ;BUMP COUNT
4796 051704      ERRHRD      ERRNO,RDERR,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      TRAP      C$ERRHRD
      .WORD      540
      .WORD      RDERR
      051704 104456
      051706 001034
      051710 005176'

```


	051712	011746'						.WORD	PKTSSR
4797	051714		170\$:	CKLOOP			;LOOP IF SELECTED		
	051714	104406						TRAP	C\$CLP1
4798	051716	017701	131172	MOV	@FREE,R1		;GET FIRST WORD FROM BUFFER		
4799	051722	013702	054056'	MOV	T25CN2,R2		;SET UP EXPECTED		
4800	051726	162702	000001	SUB	#1,R2		;SHOULD BE LAST RECORD		
4801	051732	020102		CMP	R1,R2		;WAS RECORD NUMBERED R3		
4802	051734	001406		BEQ	200\$		;BR, IF CORRECT RECORD		
4803	051736	005237	002212'	INC	FATFLG		;BUMP COUNT		
4807	051742			ERRHRD	ERRNO,T25WNG,EXPREC		;SHOULD HAVE BEEN RECORD NUMBER 1		
	051742	104456						TRAP	C\$ERHRD
	051744	001035						.WORD	541
	051746	054435'						.WORD	T25WNG
	051750	015374'						.WORD	EXPREC
4808	051752		200\$:	CKLOOP				TRAP	C\$CLP1
	051752	104406							
4809	051754			ENDSUB			;>>>>>>>>>> END SUBTEST >>>>>>>>>		
	051754						L10076:		
4810	051756	023727	002212' 000017	CMP	FATFLG,#15,		;IS ERROR COUNT AT 25	TRAP	C\$ESUB
4811	051764	103402		BLO	999\$		;BR, IF LESS THAN 25		
4812	051766	004737	017104'	JSR	PC,CKDROP		;TRY TO DROP THE UNIT		
4813	051772		999\$:						
4814									
4815									
4816									
4817									
4818									
4819									
4820									
4821									
4822									
4823									
4824									
4825									
4826									
4827	051772								
	051772			BGN SUB			;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>		
	051772	104402					T5.6:		
4828	051774	004737	055246'	JSR	PC,T25REST		;SET COMMAND PACKET	TRAP	C\$BSUB
4829	052000	013737	054060' 054056'	MOV	T25CNT,T25CN2		;SET UP RECORD COUNTER		
4830	052006	004737	055340'	JSR	PC,T25RT2		;SET UP OTHER COMMAND PACKET		
4831	052012	004737	055402'	JSR	PC,T25RT3		;SET UP OTHER COMMAND PACKET		
4832	052016	013737	054060' 054062'	MOV	T25CNT,T25DLX		;SET UP REWIND DELAY COUNTER		
4833									
4834									
4835									
4836									
4837									
4838									
4839									
4840	052024	004737	015674'	10\$:	JSR PC,SOFINIT		;DO INITIALIZE ON CONTROLLER		
4841	052030	103427		BCS	20\$		;BR IF INIT WAS OK		
4842	052032			DELAY	250		;WAIT ABOUT .25 SECONDS		
	052032	012727	000250					MOV	#250,(PC)+
	052036	000000						.WORD	0
	052040	013727	002116'					MOV	L\$DLX,(PC)

N14

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 182

```

052044 000000
052046 005367 177772
052052 001375
052054 005367 177756
052060 001367
4843 052062 005337 054062'      DEC      T25DLY      ;DEC COUNTER
4844 052066 001356      BNE      10$      ;BR, IF MORE LOOPS REQUIRED
4845 052070 016501 000002      MOV      TSSR(R5),R1      ;CONTENTS OF TSSR REGISTER
4846 052074 005237 002212'      INC      FATFLG      ;BUMP COUNT
4850 052100      ERRDF      ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
052100 104455      TRAP      C$ERDF
052102 001036      .WORD      542
052104 003642'      .WORD      SFIERR
052106 011734'      .WORD      SFIMSG
4851 052110 013737 002172' 053720' 20$:      MOV      UNITN,T25DSW      ;SET UP UNIT NUMBER
4852
4853 052116 012704 053700'      MOV      #T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
4854
4855      ;*****
4856      ;
4857      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
4858      ;
4859      ;*****
4860
4861 052122 004737 010562'      JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
4862 052126 103407      BCS      25$      ;BR, IF COMMAND ISSUED OK
4863 052130 005237 002212'      INC      FATFLG      ;BUMP COUNT
4867 052134 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
4868 052136      ERRHRD      ERRNO,WRTHMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
052136 104456      TRAP      C$ERHRD
052140 001037      .WORD      543
052142 005046'      .WORD      WRTHMSG
052144 011734'      .WORD      SFIMSG
4869 052146      25$:      CKLOOP      ;LOOP IF SELECTED
052146 104406      TRAP      C$CLP1
4870
4871      ;*****
4872      ;
4873      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
4874      ;
4875      ;*****
4876
4877 052150 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
4878 052154 103407      BCS      30$      ;BR, IF NO PROBLEM
4879 052156 010001      MOV      R0,R1      ;SAVE TSSR
4880 052160 005237 002212'      INC      FATFLG      ;BUMP COUNT
4884 052164      ERRHRD      ERRNO,T25RWN,PKTSSR      ;REWIND NOT ACCEPTED
052164 104456      TRAP      C$ERHRD
052166 001040      .WORD      544
052170 055035'      .WORD      T25RWN
052172 011746'      .WORD      PKTSSR
4885 052174      30$:      CKLOOP      ;LOOP IF SELECTED
052174 104406      TRAP      C$CLP1
4886
4887      ;*****
4888      ;
4889      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)

```

```

4890
4891
4892
4893 052176 013701 053730'      MOV      T25BFR-6,R1      ;PICK UP XSTO
4894 052202 010102              MOV      R1,R2      ;SET UP EXPECTED
4895 052204 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
4896 052210 020102              CMP      R1,R2      ;DOES EXP = REC'D
4897 052212 001406              BEQ      401      ;BR, IF EQUAL (OK)
4898 052214 005237 002212'      INC      FATFLG      ;BUMP COUNT
4902 052220              ERRHRD  ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERRRD
                                .WORD    545
                                .WORD    T25BOT
                                .WORD    EXPREC
                                TRAP      C$CLP1
052220 104456
052222 001041
052224 054225'
052226 015374'
4903 052230              401:    CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
052230 104406
4904 052232 013701 054056'      MOV      T25CN2,R1      ;NUMBER OF RECORDS ON TAPE
4905 052236 012702 177776      MOV      #65534,,R2      ;MAX IT CAN SPACE OVER
4906 052242 020201              CMP      R2,R1      ;WHICH VALUE CAN WE USE
4907 052244 003002              BGT      461      ;BR, IF # WRITTEN > 64K
4908 052246 010103              MOV      R1,R3      ;# WRITTEN CAN BE USED
4909 052250 000401              BR       471      ;MOVE ON
4910 052252 010203              461:    MOV      R2,R3      ;USE MAX NUMBER
4911 052254
4912 052254 010337 054032'      471:    MOV      R3,T25kB      ;NUMBER OF RECORDS TO SPACE OVER
4913
4914
4915
4916
4917
4918
4919
4920 052260 012737 140010 054030'      MOV      #140010,T25PK3      ;SPACE FORWARD,ACK,CVC=1 COMMAND
4921 052266 012704 054030'      MOV      #T25PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
4922 052272 010465 000000      MOV      R4,T25B(R5)      ;ISSUE COMMAND
4923 052276 013737 054056' 054062'      MOV      T25CN2,T25DLY      ;SET UP DELAY COUNTER
4924 052304 004737 016150'      481:    JSR      PC,WAITF      ;WAIT FOR SSR TO SET
4925 052310 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
4926 052314 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
4927 052320 020102              CMP      R1,R2      ;ARE THEY EQUAL
4928 052322 001425              BEQ      501      ;BR, IF OK
4929 052324              DELAY      250      ;WAIT .25 SECONDS
                                MOV      #250,(PC).
                                .WORD    0
                                MOV      L$DLY,(PC).
                                .WORD    0
                                DEC      -6(PC)
                                BNE      -4
                                DEC      -22(PC)
                                BNE      -20
052324 012727 000250
052330 000000
052332 013727 002116'
052336 000000
052340 005367 177772
052344 001375
052346 005367 177756
052352 001367
4930 052354 005337 054062'      DEC      T25DLY      ;DEC THE DELAY COUNTER
4931 052360 001351              BR       481      ;BR, IF COUNTER HASN'T EXPIRED
4932 052362 005237 002212'      INC      FATFLG      ;BUMP COUNT
4936 052366              ERRHRD  ERRNO,T25WDE,EXPREC ;TSSR INCORRECT AFTER READ DATA
                                TRAP      C$ERRRD
                                .WORD    546
                                .WORD    T25WDE
052366 104456
052370 001042
052372 054145'

```

```

4937 052374 015374'
4938 052376 104406
4939 052400 013701 054056'
4940 052404 012702 177776
4941 052410 020201
4942 052412 003002
4943 052414 010103
4944 052416 000401
4945 052420 010203
4946 052422 162703 000001
4947 052426 010337 054032'
4948
4949
4950
4951
4952
4953
4954 052432 012737 140410 054030'
4955 052440 012704 054030'
4956 052444 010465 000000
4957 052450 013737 054056' 054062'
4958 052456 004737 016150'
4959 052462 016501 000002
4960 052466 012702 000200
4961 052472 020102
4962 052474 001425
4963 052476
4964 052526 005337 054062'
4965 052532 001351
4966 052534 005237 002212'
4970 052540
4971 052550
4972 052552 012703 010000
4973 052556 013737 003114' 054032'
4974
4975
4976
4977
4978
4979
4980
4981 052564 012737 100001 054030'

501: CKLOOP
MOV T25CN2,R1
MOV #65534,R2
CMP R2,R1
BGT 551
MOV R1,R3
BR 601
551: MOV R2,R3
601: SUB #1,R3
MOV R3,T25RB

;*****
;SPACE REVERSE,ACK,CVC=1 COMMAND
;*****
MOV #140410,T25PK3
MOV #T25PK3,R4
MOV R4,T25DB(R5)
MOV T25CN2,T25DLY
701: JSR PC,WAITF
MOV T25R(R5),R1
MOV #SSH,R2
CMP R1,R2
BEQ 751
DELAY 250

;SPACE REVERSE,ACK,CVC=1 COMMAND
;SET UP R4 WITH PACKET ADDRESS
;ISSUE COMMAND
;SET UP COUNTER
;WAIT FOR SSR TO SET
;GET T25R CONTENTS
;SET UP EXPECTED
;ARE THEY EQUAL
;BR, IF OK
;WAIT ABOUT .25 SECONDS
MOV #250,(PC)+
;WORD 0
MOV L#DLY,(PC)+
;WORD 0
DEC -6(PC)
BNE -4
DEC -22(PC)
BNE -20

;BUMP COUNTER DOWN
;BR, IF COUNTER HASN'T EXPIRED
;BUMP COUNT
;T25R INCORRECT AFTER READ DATA
TRAP C#ERRRD
;WORD 547
;WORD T25WDE
;WORD EXPREC

751: CKLOOP
;LOOP IF SELECTED
TRAP C#CLP1

MOV #4096,R3
MOV FREE,T25RB
;RECORD SIZE
;STARTING READ BUFFER ADDRESS

;*****
;READ DATA,ACK COMMAND
;*****
MOV #100001,T25PK3
;READ DATA,ACK COMMAND

```

Line	Address	Offset	Hex	Label	Operation	Comment
4982	052572	012704	054030'	165\$:	MOV	0T25PK3,R4
4983	052576	012700	177777		MOV	0177777,R0
4984	052602	004737	017324'		JSR	PC,FILLMEM
4985	052606	010337	054036'		MOV	R3,T25SZ
4986	052612	010465	000000		MOV	R4,T5DB(R5)
4987	052616	004737	016150'		JSR	PC,WAITF
4988	052622	016501	000002		MOV	T5SR(R5),R1
4989	052626	012702	000200		MOV	05SR,R2
4990	052632	020102			CMP	R1,R2
4991	052634	001411			BEQ	170\$
4992	052636	032701	000004		BIT	0BIT2,R1
4993	052642	001006			BNE	170\$
4994	052644	005237	002212'		INC	FATFLG
4998	052650				ERRHRD	ERRNO,RDERR,EXPREC
	052650	104456				
	052652	001044				
	052654	005176'				
	052656	015374'				
4999	052660			170\$:	CKLOOP	
	052660	104406				
5000	052662	017701	130226		MOV	0FREE,R1
5001	052666	012702	000001		MOV	01,R2
5002	052672	020102			CMP	R1,R2
5003	052674	001406			BEQ	200\$
5004	052676	005237	002212'		INC	FATFLG
5008	052702				ERRHRD	ERRNO,T25WNH,EXPREC
	052702	104456				
	052704	001045				
	052706	054610'				
	052710	015374'				
5009	052712			200\$:	CKLOOP	
	052712	104406				
5010	052714				ENDSUB	
	052714	104403				
5011	052716	023727	002212' 000017		CMP	FATFLG,015.
5012	052724	103402			BLO	999\$
5013	052726	004737	017104'		JSR	PC,CKDROP
5014	052732			999\$:		
5015						
5016						
5017						
5018						
5019						
5020						
5021						
5022						
5023						
5024						
5025						
5026						
5027	052732				BGNSUB	
	052732					
	052732	104402				
5028	052734	004737	055246'		JSR	PC,T25RES1
5029	052740	004737	055340'		JSR	PC,T25RT2
5030	052744	004737	055402'		JSR	PC,T25RT3

```

5:
5033 *****
5034 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
5035 ;
5036 *****
5037
5038 052750 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
5039 052754 103407              BCS      20$      ;BR IF INIT WAS OK
5040 052756 005237 002212'      INC      FATFLG      ;BUMP COUNT
5044 052762 010001              MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
5045 052764              ERRDF   ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
                    052764 104455              TRAP      C$ERDF
                    052766 001046              .WORD     550
                    052770 003642'              .WORD     SFIERR
                    052772 011734'              .WORD     SFIMSG
5046 052774 013737 002172' 053720' 20$:  MOV      UNITN,T25DSW      ;SET UP UNIT NUMBER
5047
5048 053002 012704 053700'      MOV      0T25PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
5049
5050 *****
5051 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
5052 ;
5053 *****
5054
5055
5056 053006 004737 010562'      JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
5057 053012 103407              BCS      25$      ;BR, IF COMMAND ISSUED OK
5058 053014 005237 002212'      INC      FATFLG      ;BUMP COUNT
5062 053020 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
5063 053022              ERRHRD  ERRNO,WRTHMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
                    053022 104456              TRAP      C$ERRRD
                    053024 001047              .WORD     551
                    053026 005046'              .WORD     WRTHMSG
                    053030 011734'              .WORD     SFIMSG
5064 053032              25$:  CKLOOP      ;LOOP IF SELECTED
                    053032 104406              TRAP      C$CLP1
5065
5066 *****
5067 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5068 ;
5069 *****
5070
5071
5072 053034 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
5073 053040 103407              BCS      30$      ;BR, IF NO PROBLEM
5074 053042 010001              MOV      R0,R1      ;SAVE TSSR
5075 053044 005237 002212'      INC      FATFLG      ;BUMP COUNT
5079 053050              ERRHRD  ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
                    053050 104456              TRAP      C$ERRRD
                    053052 001050              .WORD     552
                    053054 055035'              .WORD     T25RWN
                    053056 011746'              .WORD     PKTSSR
5080 053060              30$:  CKLOOP      ;LOOP IF SELECTED
                    053060 104406              TRAP      C$CLP1
5081
5082 *****

```



```

5083                                     ;
5084                                     ; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
5085                                     ;
5086                                     ; *****
5087                                     ;
5088 053062 013701 053730'               MOV    T25BFR+6,R1           ; PICK UP XSTO
5089 053066 010102                       MOV    R1,R2              ; SET UP EXPECTED
5090 053070 052702 000002               BIS    @BIT1,R2            ; SET BOT BIT IN EXPECTED
5091 053074 020102                       CMP    R1,R2              ; DOES EXP = REC'D
5092 053076 001406                       BEQ    40$                 ; BR, IF EQUAL (OK)
5093 053100 005237 002212'               INC    FATFLG              ; BUMP COUNT
5097 053104                               ERRHRD  ERRNO,T25BOT,EXPREC ; TAPE NOT AT BOT AFTER REWIND
                                     TRAP    C$ERHRD
                                     .WORD   553
                                     .WORD   T25BOT
                                     .WORD   EXPREC
5098 053114                               40$:  CKLOOP                ; LOOP IF SELECTED
                                     TRAP    C$CLP1
5099 053116 012737 000001 054032'       MOV    @1,T25RB            ; NUMBER OF RECORDS TO SPACE OVER
5100                                     ; *****
5101                                     ;
5102                                     ; SPACE REVERSE,ACK COMMAND
5103                                     ;
5104                                     ; *****
5105                                     ;
5106                                     ;
5107 053124 012737 100410 054030'       MOV    @100410,T25PK3        ; SPACE REVERSE,ACK COMMAND
5108 053132 012704 054030'               MOV    @T25PK3,R4          ; SET UP R4 WITH PACKET ADDRESS
5109 053136                               65$:
5110 053136 010465 000000               MOV    R4,T25DB(R5)         ; ISSUE COMMAND
5111 053142 004737 016150'               JSR    PC,WAITF           ; WAIT FOR SSR TO SET
5112 053146 016501 000002               MOV    TSSR(R5),R1          ; GET TSSR CONTENTS
5113 053152 012702 100206               MOV    @SSR!SC!BIT1!BIT2,R2 ; SET UP EXPECTED
5114 053156 020102                       CMP    R1,R2              ; ARE THEY EQUAL
5115 053160 001406                       BEQ    75$                 ; BR, IF OK
5116 053162 005237 002212'               INC    FATFLG              ; BUMP COUNT
5120 053166                               ERRHRD  ERRNO,T25WDE,PKTSSR ; TSSR INCORRECT AFTER READ DATA
                                     TRAP    C$ERHRD
                                     .WORD   554
                                     .WORD   T25WDE
                                     .WORD   PKTSSR
5121 053176                               75$:  CKLOOP                ; LOOP IF SELECTED
                                     TRAP    C$CLP1
5122                                     ; *****
5123                                     ;
5124                                     ; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
5125                                     ;
5126                                     ; *****
5127                                     ;
5128                                     ;
5129 053200 013701 053730'               MOV    T25BFR+6,R1           ; GET XSTO STATUS WORD
5130 053204 010102                       MOV    R1,R2              ; SET UP EXPECTED
5131 053206 052702 002000               BIS    @BIT1,R2            ; SET THE NEF BIT
5132 053212 020102                       CMP    R1,R2              ; ARE THEY EQUAL
5133 053214 001406                       BEQ    170$                 ; BR, IF EQUAL (GOOD)
5134 053216 005237 002212'               INC    FATFLG              ; BUMP COUNT
5138 053222                               ERRHRD  ERRNO,T25NEF,EXPREC ; NEF SHOULD BE SET

```


H15

TSV7 - HARDWARE TESTS 1-8
TEST 5: SPACE RECORDS

MACRO M1113 01-FEB-84 17:54

SEQ 189

```

5186 ;*****
5187 ;
5188 053326 004737 010562' JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
5189 053332 103407 BCS 254 ;BR, IF COMMAND ISSUED OK
5190 053334 005237 002212' INC FATFLG ;BUMP COUNT
5194 053340 010001 MOV RO,R1 ;SAVE CONTENTS OF TSSR
5195 053342 ERRHRD ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
      053342 104456 TRAP C$ERHRD
      053344 001055 .WORD 557
      053346 005046' .WORD WRTMSG
      053350 011734' .WORD SFMSG
5196 053352 254: CKLOOP ;LOOP IF SELECTED
      053352 104406 TRAP C$CLP1
5197 ;*****
5198 ;
5199 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5200 ;
5201 ;
5202 ;*****
5203 ;
5204 053354 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
5205 053360 103407 BCS 304 ;BR, IF NO PROBLEM
5206 053362 010001 MOV RO,R1 ;SAVE TSSR
5207 053364 005237 002212' INC FATFLG ;BUMP COUNT
5211 053370 ERRHRD ERRNO,T25RWN,PKTSSR ;REWIND NOT ACCEPTED
      053370 104456 TRAP C$ERHRD
      053372 001056 .WORD 558
      053374 055035' .WORD T25RWN
      053376 011746' .WORD PKTSSR
5212 053400 304: CKLOOP ;LOOP IF SELECTED
      053400 104406 TRAP C$CLP1
5213 ;*****
5214 ;
5215 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
5216 ;
5217 ;
5218 ;*****
5219 ;
5220 053402 013701 053730' MOV T25BFR+6,R1 ;PICK UP XSTO
5221 053406 010102 MOV R1,R2 ;SET UP EXPECTED
5222 053410 052702 000002 BIS ^BIT1,R2 ;SET BOT BIT IN EXPECTED
5223 053414 020102 CMP R1,R2 ;DOES EXP = REC'D
5224 053416 001406 BEQ 404 ;BR, IF EQUAL (OK)
5225 053420 005237 002212' INC FATFLG ;BUMP COUNT
5229 053424 ERRHRD ERRNO,T25BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      053424 104456 TRAP C$ERHRD
      053426 001057 .WORD 559
      053430 054225' .WORD T25BOT
      053432 015374' .WORD EXPREC
5230 053434 404: CKLOOP
      053434 104406 TRAP C$CLP1
5231 053436 012737 000001 054032' MOV #1,T25RB ;NUMBER OF RECORDS TO SPACE OVER
5232 ;*****
5233 ;
5234 ;SPACE FORWARD,IE,ACK,CVC=1 COMMAND
5235 ;
5236 ;

```


Address	Offset	Value	Label	Comment	Trap	Exit		
5287	053640	023727	002212'	000017	CMP	FATFLG, #15,	IS ERROR COUNT AT 25	C\$ESUB
5288	053646	103402			BLO	999\$	BR, IF LESS THAN 25	
5289	053650	004737	017104'		JSR	PC, CKDROP	TRY TO DROP THE UNIT	
5290	053654			999\$;				
5291				;				
5292				;				
5293				;				
5294	053654	004737	016360'		JSR	PC, TSTLOOP	DO WE NEED TO ITERATE TEST	
5295	053660	103002			BCC	193\$	BR, IF NO LOOP REQUIRED	
5296	053662	000137	046536'		JMP	T25LOOP	EXECUTE AGAIN	
5297	053666			193\$;				
5298	053666				EXIT	TST	ALL DONE THIS TEST	
	053666	104432					TRAP	C\$EXIT
	053670	001542					.WORD	L10071-.
5299								
5300				;;				
5301				LOCAL STORAGE FOR THIS TEST				
5302				;-				
5304	053672			.BLKB	10- < . - TSV2&7>			
5306	053700			T25PACKET:			COMMAND PACKET FOR TEST	
5307	053700	100004		.WORD	100004		WRITE CHARACTERISTICS COMMAND, WITH ACK	
5308	053702	053710'		.WORD	T25DATA		ADDRESS OF CHARACTERISTICS BLOCK	
5309	053704	000000		.WORD	0			
5310	053706	000010		.WORD	8.		STARTING VALUE OF BLOCK SIZE	
5311	053710			T25DATA:			CHARACTERISTICS DATA BLOCK	
5312	053710	053722'		.WORD	T25BFR		ADDRESS OF MESSAGE BUFFER	
5313	053712	000000		.WORD	0			
5314	053714	000012		.WORD	10.		LENGTH OF MESSAGE BUFFER	
5315	053716	000000		.WORD	0			
5316	053720	000000		T25DSW:	.WORD 0		SELECT DRIVE ZERO	
5317	053722			T25BFR:	.BLKW 25.		MESSAGE BUFFER	
5318				;				
5319				WRITE SUBSYSTEM MEMORY COMMAND, PACKET				
5320				;				
5322	054004			.BLKB	10- < . - TSV2&7>			
5324	054010			T25PK2:			WRITE SUB SYS MEM COMMAND, AND ACK	
5325	054010	100006		.WORD	100006		ADDRESS OF SELECT BLOCK DATA	
5326	054012	054040'		.WORD	T25BF2			
5327	054014	000000		.WORD	0			
5328	054016	000006		.WORD	6.		SIZE OF DATA PACKET	
5329								
5331	054020			.BLKB	10- < . - TSV2&7>			
5333	054030			T25PK3:			READ COMMAND, AND ACK	
5334	054030	100005		.WORD	100005		ADDRESS OF WRITE BUFFER	
5335	054032			T25RB:				
5336	054032	003114'		T25WB:	.WORD FREE			
5337	054034	000000		.WORD	0			
5338	054036	000000		T25SZ:	.WORD 0		SIZE OF BUFFER (EXTENT)	
5339				.EVEN				
5340				;				
5341				;				
5342				;				
5343	054040			T25BF2:			BSEL0 AREA	
5344	054040	010		T25BS0:	.BYTE 10		BSEL1 AREA	
5345	054041	200		T25BS1:	.BYTE 200		SEL 2 AREA	
5346	054042	000000		T25S2:	.WORD 0			

```

5347 054044 000000      T25S3: .WORD 0          ;DATA AREA
5348                      ;
5349                      ;
5350                      ;EVEN
5351                      ;TAPE MOTION PACKET COMMAND VALUES
5352
5353 054046 100005      T25RN: .WORD 100005        ;READ DATA (NEXT)
5354 054050 100405      T25WDR: .WORD 100405        ;READ DATA RETRY
5355 054052 102005      T25CON: .WORD 102005        ;WRITE CONTINUOUS
5356 054054 177777      .WORD 177777              ;END OF DATA
5357
5358 054056 000000      T25CN2: .WORD 0            ;COUNTER FOR RECORDS
5359 054060 000000      T25CNT: .WORD 0            ;COUNTER FOR RECORDS
5360 054062 000000      T25DLY: .WORD 0            ;COUNTER FOR RECORDS
5361
5362                      ;
5363                      ;LOCAL TEXT MESSAGES FOR TEST
5364                      ;
5365
5366 054064 127 122 111 T25SSR: .ASCIZ 'WRITE SUBSYSTEM Miscellaneous Read Status Failed'
5367 054145 124 123 123 T25WDE: .ASCIZ 'TSSR Not Correct After POSITION (SPACE) Command'
5368 054225 124 141 160 T25BOT: .ASCIZ 'Tape Not At BOT After REWIND Command'
5369 054272 124 123 123 T25TM: .ASCIZ 'TSSR Not Correct After POSITION (Space Command) Reject'
5370 054361 127 162 151 T25NET: .ASCIZ 'Write Tape, Status Alert, But No EOT Sensed'
5371 054435 123 160 141 T25WNG: .ASCIZ 'Space Forward Failed To Position On Correct Record'
5372 054520 123 160 141 T25BNC: .ASCIZ 'Space Forward, From BOT, Failed To Clear BOT Indication'
5373 054610 123 160 141 T25WNH: .ASCIZ 'Space Reverse Failed To Position On Correct Record'
5374 054673 123 160 141 T25NEF: .ASCIZ 'Space Reverse, At BOT, Failed To Set NEF (XST0)'
5375 054753 123 160 141 T25RIB: .ASCIZ 'Space Reverse, Into BOT, Failed To Set RIB (XST3)'
5376 055035 122 145 167 T25RWN: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
5377 055104 104 162 151 T25OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
5378 055157 124 123 123 T25WDC: .ASCIZ 'TSSR Not Correct After READ DATA Command'
5379 055230 123 160 141 T25ID: .ASCIZ 'Space Records'
5380                      ;EVEN
5381                      ;
5382                      ;
5383                      ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
5384                      ;WRITE SUBSYSTEM MEMORY COMMAND
5385                      ;
5386                      ;
5387
5388 055246      T25REST:
5389 055246      SAVREG
5390 055252 012701 053700' MOV #T25PACKET,R1          ;SAVE THE REGISTERS
5391 055256 012721 100004' MOV #100004,(R1)+        ;START OF THE PACKET
5392 055262 012721 053710' MOV #T25DATA,(R1)+        ;WRITE SUBSYSTEM MEM. WITH ACK
5393 055266 005021      CLR (R1)+                    ;ADDRESS OF CHARAISTICS DATA BLOCK
5394 055270 012721 000012' MOV #10,(R1)+            ;EXTENDED ADDRESS
5395 055274 012721 053722' MOV #T25BFR,(R1)+        ;SIZE OF DATA BLOCK IN BYTES
5396 055300 005021      CLR (R1)+                    ;ADDRESS OF MESSAGE BUFFER
5397 055302 012721 000024' MOV #20,(R1)+            ;LENGTH OF MESSAGE BUFFER
5398 055306 005021      CLR (R1)+
5399 055310 012711 000000' MOV #0,(R1)               ;SELECT DRIVE ZERO
5400 055314 012702 000030' MOV #24,R2                ;NUMBER OF LOCATIONS TO BE CLEARED
5401 055320 012762 177777 053722' 64$: MOV #177777,T25BFR(R2) ;ALL ONES TO MESSAGE BUFFER
5402 055326 005742      TST -(R2)                    ;NEXT LOCATION
5403 055330 022702 000000' CMP #0,R2                 ;IS R2 AT ZERO YET

```

```

5404 055334 001371      BNE      64$      ;KEEP GOING UNTIL DONE
5405 055336 000207      RTS      PC      ;RETURN
5406
5407 055340      T25RT2:
5408 055340      SAVREG      ;SAVE THE REGISTERS
5409 055344 012701 054010'  MOV      #T25PK2,R1      ;START OF THE PACKET
5410 055350 012721 100006'  MOV      #100006,(R1)+    ;WRITE SUBSYSTEM MEM. WITH ACK,
5411 055354 012721 054040'  MOV      #T25BF2,(R1)+    ;ADDRESS OF DATA BLOCK
5412 055360 005021          CLR      (R1)+      ;EXTENDED ADDRESS
5413 055362 012721 000006'  MOV      #6,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
5414 055366 005021          CLR      (R1)+
5415 055370 012701 054040'  MOV      #T25BF2,R1      ;POINT TO DATA SEL AREA
5416 055374 005021          CLR      (R1)+
5417 055376 005011          CLR      (R1)
5418 055400 000207      RTS      PC      ;RETURN
5419 055402      T25RT3:
5420 055402      SAVREG      ;SAVE THE REGISTERS
5421 055406 012701 054030'  MOV      #T25PK3,R1      ;START OF THE PACKET
5422 055412 012721 000000'  MOV      #0,(R1)+      ;WRITE SUBSYSTEM MEM. WITH ACK,
5423 055416 012721 000000'  MOV      #0,(R1)+      ;ADDRESS OF DATA BLOCK
5424 055422 005021          CLR      (R1)+      ;EXTENDED ADDRESS
5425 055424 012721 000000'  MOV      #0,(R1)+      ;SIZE OF DATA BLOCK IN BYTES
5426 055430 000207      RTS      PC      ;RETURN
5427 055432      ENDTST
      055432
      055432 104401      L10071:      TRAP      C$ETST
5428
5429      .SBTTL TEST 6: REREADS
5430
5431      ;
5432      ;THIS TEST VERIFIES THAT THE REREAD PREVIOUS AND REREAD NEXT
5433      ;COMMANDS OPERATE PROPERLY. VARIOUS COMBINATIONS OF ODD AND EVEN
5434      ;DATA BUFFER BOUNDARIES, RECORD SIZES (UP TO 64K BYTES IF MEMORY
5435      ;SPACE IS AVAILIABLE), AND BYTE-SWAP (SWP) AND OPPOSITE (OPP)
5436      ;CONRTOL ARE USED. ALSO TESTED ARE PROPER TERMINATIONS ON
5437      ;EXCEPTIONAL OR ERROR CONDITIONS: RECORD LENGTH LONG, RECORD
5438      ;LENGTH SHORT, READ REVERSE AT BOT, ILLEGAL DATA BUFFER ADDRESSES,
5439      ;AND DATA BUFFERS IN NONEXISTENT MEMORY.
5440      ;
5441      ;
5442      ;THE TEST CONSISTS OF THE FOLLOWING 15 SUBTESTS
5443      ;
5444      ;
5445      ;
5446      ;
5447 055434      BGNTST
      055434
5448 055434 012737 006256' 002170'  MOV      #EPRT2,EPRTSW    ;SECONDARY ERROR MESSAGE
5449 055442 004737 017176'  JSR      PC,KTOFF      ;DON'T NEED K111
5454 055446 012700 074607'  MOV      #TST26ID,R0    ;ASCII MESSAGE TO IDENTIFY TEST
5455 055452 004737 016412'  JSR      PC,TSTSETUP    ;DO INITIAL TEST SETUP
5456 055456 012737 000005'  MOV      #5,LOOPCNT      ;PERFORM 5 ITERATIONS
5457 055464 004737 021116'  JSR      PC,MEMCHK      ;CHECK FOR MEMORY
5458 055470 005037 072056'  CLR      T26CNT        ;CLEAR TAPE RECORD COUNTER
5459
5460      ;
5461      ;TEST 6, SUBTEST 1

```

```

5462 ;
5463 ;
5464 ;VERIFIES THAT THE REREAD PREVIOUS COMMAND WITH OPP=0
5465 ;AND SWB=0 OPERATES PROPERLY. THE TAPE IS FIRST
5466 ;REWOUND AND THEN WRITTEN WITH A SERIES OF TEST
5467 ;RECORDS VARYING IN LENGTH AND DATA CONTENT. THE TAPE
5468 ;IS THEN REWOUND AGAIN. FOR EACH TEST RECORD, THE
5469 ;TAPE IS SPACED FORWARD ONE RECORD AND A REREAD
5470 ;PREVIOUS COMMAND ISSUED. RESULTS (STATUS, DATA,
5471 ;ETC.) ARE VERIFIED. THE BYTE COUNT ON EACH REREAD
5472 ;PREVIOUS COMMAND IS SET TO THE LENGTH OF THE EXPECTED
5473 ;RECORD, SO NO EXCEPTIONAL CONDITIONS SHOULD OCCUR.
5474 ;
5475 ;
5476 ;-
5477
5478 055474 T26LOOP:
5479
5480 055474 BGNSUB ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
5481 055474 T6.1: TRAP C$BSUB
5482 055476 004737 074620' JSR PC,T26REST ;SET COMMAND PACKET
5483 055506 004737 074712' JSR PC,T26RT2 ;SET UP OTHER COMMAND PACKET
5484 055512 004737 074754' JSR PC,T26RT3 ;SET UP OTHER COMMAND PACKET
5485 055512 012737 176750 072064' MOV #65000.,T26DLY ;SET UP DELAY COUNTER
5486
5487 ;*****
5488 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
5489 ;
5490 ;*****
5491
5492 055520 004737 015674' 10$: JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
5493 055524 103426 BCS 20$ ;BR IF INIT WAS OK
5494 055526 DELAY 250 ;DELAY FOR A REWIND TO FINISH
5495 055526 012727 000250 MOV #250,(PC)+
5496 055532 000000 .WORD 0
5497 055534 013727 002116' MOV L$DLY,(PC)+
5498 055540 000000 .WORD 0
5499 055542 005367 177772 DEC -6(PC)
5500 055546 001375 BNE -.4
5501 055550 005367 177756 DEC -22(PC)
5502 055554 001367 DNE -.20
5503 055556 005337 072064' DEC T26DLY ;DEC COUNTER
5504 055562 001356 RNF 10$ ;BR, IF DELAY NOT READY
5505 055564 005237 002212' INC FATFLG ;BUMP COUNT
5506 055570 010001 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
5507 055572 ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
5508 055572 104455 TRAP C$ERDF
5509 055574 001131 .WORD 601
5510 055576 003642' .WORD SFIERR
5511 055600 011734' .WORD SFIMSG
5512
5513 20$:
5514 055602 013737 002172' 071720' MOV UNITN,T26DSW ;SET UP UNIT NUMBER
5515 055610 012701 071700' MOV #T26PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
5516
5517 ;*****

```


N15

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 195

```

5508
5509 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPHR)
5510 ;
5511 ;*****
5512
5513 055614 004737 010562'      JSR      PC,WRTPHR      ;ISSUE WRITE CHARACTERISTICS
5514 055620 103407              BCS      26$              ;BR, IF COMMAND ISSUED OK
5515 055622 005237 002212'      INC      FATFLG          ;BUMP COUNT
5519 055626 010001              MOV      R0,R1            ;SAVE CONTENTS OF TSSR
5520 055630              ERRHRD  ERRNO,WRTPHR,SFIMSG      ;WRITE CHARACTERISTICS FAILED
                    055630 104456              TRAP      C$ERHRD
                    055632 001132              .WORD     602
                    055634 005046'              .WORD     WRTMSG
                    055636 011734'              .WORD     SFIMSG
5521 055640              26$:      CKLOOP              ;LOOP IF SELECTED
                    055640 104406              TRAP      C$CLP1
5522
5523 ;*****
5524 ;
5525 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5526 ;
5527 ;*****
5528
5529 055642 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
5530 055646 103413              BCS      30$              ;BR, IF NO PROBLEM
5531 055650 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
5532 055654 012702 000200      MOV      #SSR,R2          ;SET UP EXPECTED TSSR
5533 055660 010004              MOV      R0,R4            ;PACKET ADDRESS SET UP
5534 055662 005237 002212'      INC      FATFLG          ;BUMP COUNT
5538 055666              ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                    055666 104456              TRAP      C$ERHRD
                    055670 001133              .WORD     603
                    055672 073364'              .WORD     T26RWN
                    055674 011746'              .WORD     PKTSSR
5539 055676              30$:      CKLOOP              ;LOOP IF SELECTED
                    055676 104406              TRAP      C$CLP1
5540
5541 ;*****
5542 ;
5543 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
5544 ;
5545 ;*****
5546
5547 055700 013701 071730'      MOV      T26BFR+6,R1      ;PICK UP XSTO
5548 055704 010102              MOV      R1,R2            ;SET UP EXPECTED
5549 055706 052702 000002      BIS      #BIT1,R2          ;SET BOT BIT IN EXPECTED
5550 055712 020102              CMP      R1,R2            ;DOES EXP = REC'D
5551 055714 001406              BEQ      40$              ;BR, IF EQUAL (OK)
5552 055716 005237 002212'      INC      FATFLG          ;BUMP COUNT
5556 055722              ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                    055722 104456              TRAP      C$ERHRD
                    055724 001134              .WORD     604
                    055726 073075'              .WORD     T26BOT
                    055730 015374'              .WORD     EXPREC
5557 055732              40$:      CKLOOP              ;LOOP IF SELECTED
                    055732 104406              TRAP      C$CLP1
5558 055734 012703 000400      MOV      #256.,R3          ;RECORD SIZE

```

```

5559 055740 013737 003114' 072032'      MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
5560
5561      ;*****
5562      ;WRITE DATA,ACK,CVC=1 COMMAND
5563      ;
5564      ;*****
5565
5566
5567 055746 012737 140005 072030'      MOV      #140005,T26PK3      ;WRITE DATA,ACK,CVC=1 COMMAND
5568 055754 012704 072030'      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
5569 055760      651:
5570 055760 010300      MOV      R3,R0      ;SET PATTERN IN CORRECT REGISTER
5571 055762 004737 017324'      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
5572 055766 010337 072036'      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
5573 055772 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
5574 055776 0C 737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
5575 056002 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
5576 056006 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
5577 056012 020102      CMP      R1,R2      ;ARE THEY EQUAL
5578 056014 001406      BEQ      751      ;BR, IF OK
5579 056016 005237 002212'      INC      FATFLG      ;BUMP COUNT
5583 056022      ERRHRD ERRNO,WRERR,EXPREC      ;TSSR INCORRECT AFTER WRITE DATA
5584 056022 104456      TRAP      C$ERHRD
5585 056024 001135      .WORD      605
5586 056026 005103'      .WORD      WRERR
5587 056030 015374'      .WORD      EXPREC
5588 056032      751:  CKLOOP      ;LOOP IF SELECTED
5589 056032 104406      TRAP      C$CLP1
5590 056034 005723      TST      (R3),      ;BUMP RECORD SIZE
5591 056036 022703 000414      CMP      #268,,R3      ;END OF RECORD YET
5592 056042 001346      BNE      651      ;BR, IF MORE RECORDS TO WRITE
5593 056044      801:  CKLOOP      ;LOOP IF SELECTED
5594 056044 104406      TRAP      C$CLP1
5595 056046      1201:
5596      ;*****
5597      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5598      ;
5599      ;*****
5600
5601 056046 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
5602 056052 103413      BCS      1301      ;BR, IF NO PROBLEM
5603 056054 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
5604 056060 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
5605 056064 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
5606 056066 005237 002212'      INC      FATFLG      ;BUMP COUNT
5607 056072      ERRHRD ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
5608 056072 104456      TRAP      C$ERHRD
5609 056074 001136      .WORD      606
5610 056076 073364'      .WORD      T26RWN
5611 056100 011746'      .WORD      PKTSSR
5612 056102      1301:  CKLOOP      ;LOOP IF SELECTED
5613 056102 104406      TRAP      C$CLP1
5614
5615      ;*****
5616      ;

```



```

5611      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
5612      ;
5613      ;*****
5614
5615 056104 013701 071730'      MOV      T26BFR+6,R1      ;PICK UP XSTO
5616 056110 010102      MOV      R1,R2      ;SET UP EXPECTED
5617 056112 052702 000002      BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED
5618 056116 020102      CMP      R1,R2      ;DOES EXP = REC'D
5619 056120 001406      BEQ      1401      ;BR, IF EQUAL (OK)
5620 056122 005237 002212'      INC      FATFLG      ;BUMP COUNT
5624 056126      ERRHRD  ERRNO,T26BOT,PKTSSR      ;TAPE NOT AT BOT AFTER REWIND
      056126 104456      TRAP      C:ERHRD
      056130 001137      .WORD    607
      056132 073075'      .WORD    T26BOT
      056134 011746'      .WORD    PKTSSR
5625 056136      1401:  CKLOOP      ;LOOP IF SELECTED      TRAP      C:CLP1
      056136 104406
5626 056140 012737 000400 072062'      MOV      @256.,T26RSZ      ;SET RECORD SIZE
5627
5628      ;*****
5629      ;
5630      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
5631      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
5632      ;
5633      ;*****
5634
5635 056146 012703 000001      1451:  MOV      @1,R3      ;SPACE ONE RECORD PARAMETER
5636 056152 004737 010366'      JSR      PC,SPACE      ;CALL SPACE ROUTINE
5637 056156 103412      BCS      1501      ;BR, IF NO PROBLEM WITH SPACE COMMAND
5638 056160 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
5639 056164 012702 000200      MOV      @SSR,R2      ;SET UP EXPECTED TSSR
5640 056170 005237 002212'      INC      FATFLG      ;BUMP COUNT
5644 056174      ERRHRD  ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
      056174 104456      TRAP      C:ERHRD
      056176 001140      .WORD    608
      056200 072477'      .WORD    T26SC
      056202 015374'      .WORD    EXPREC
5645 056204      1501:  CKLOOP      ;RECORD SIZE      TRAP      C:CLP1
      056204 104406
5646 056206 013703 072062'      MOV      T26RSZ,R3      ;RECORD SIZE
5647 056212 013737 003114' 072032'      MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
5648
5649      ;*****
5650      ;
5651      ;REREREAD DATA,CVC=1,ACK COMMAND
5652      ;
5653      ;*****
5654
5655 056220 012737 141001 072030'      1651:  MOV      @141001,T26PK3      ;REREREAD DATA,CVC=1,ACK COMMAND
5656 056226 012704 072030'      MOV      @T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
5657 056232 010337 072036'      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
5658 056236 010465 000000      MOV      R4,T508(R5)      ;ISSUE COMMAND
5659 056242 004737 016150'      JSR      PC,WAITE      ;WAIT FOR SSR TO SET
5660 056246 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
5661 056252 012702 000200      MOV      @SSR,R2      ;SET UP EXPECTED
5662 056256 020102      CMP      R1,R2      ;ARE THEY EQUAL
5663 056260 001406      BEQ      1701      ;BR, IF OK

```

Address	Offset	Hex	Label	Operation	Comments
5664	056262	005237	002212'	INC	FATFLG
5668	056266			ERRHRD	ERRNO,T26WDC,PKTSSR
	056266	104456			
	056270	001141			
	056272	073720'			
	056274	011746'			
5669	056276		170\$:	CKLOOP	
	056276	104406			
5670	056300	013702	003114'	MOV	FREE,R2
5671	056304	010304		MOV	R3,R4
5672	056306	162704	000400	SUB	#256,,R4
5673	056312	060204	173\$:	ADD	R2,R4
5674	056314	021403		CMP	(R4),R3
5675	056316	001410		BEQ	180\$
5676	056320	011401		MOV	(R4),R1
5677	056322	010302		MOV	R3,R2
5678	056324	005237	002212'	INC	FATFLG
5682	056330			ERRHRD	ERRNO,T26DTA,EXPREC
	056330	104456			
	056332	001142			
	056334	073142'			
	056336	015374'			
5683	056340		180\$:	CKLOOP	
	056340	104406			
5684	056342	003724		TST	(R4):
5685	056344	160204		SUB	R2,R4
5686	056346	020403		CMP	R4,R3
5687	056350	001360		BNE	173\$
5688	056352	005723		TST	(R3):
5689	056354	010337	072062'	MOV	R3,T26RSZ
5690	056360	022703	000412	CMP	#266,,R3
5691	056364	001270		BNE	145\$
5692	056366		190\$:	CKLOOP	
	056366	104406			
5693	056370			ENDSUB	
	056370				
	056370	104403			
5694	056372	023727	002212'	CMP	FATFLG,#15.
5695	056400	103402	000017	BLO	999\$
5696	056402	004737	017104'	JSR	PC,CKDROP
5697	056406		999\$:		
5698					
5699					
5700					
5701					
5702					
5703					
5704					
5705					
5706					
5707					
5708					
5709					
5710					
5711					
5712	056406			BGNSUB	
	056406				

```

056406 104402
5713 056410 004737 074620'      JSR      PC,T26REST      ;SET COMMAND PACKET      TRAP      C$BSUB
5714 056414 004737 074712'      JSR      PC,T26RT2      ;SET UP OTHER COMMAND PACKET
5715 056420 004737 074754'      JSR      PC,T26RT3      ;SET UP OTHER COMMAND PACKET
5716
5717      ;*****
5718      ;
5719      ;ISSUE CONTROLLER "SOF1" INITIALIZE - CARRY BIT CLEAR IF ERROR
5720      ;
5721      ;*****
5722
5723 056424 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
5724 056430 103407      BCS      20$      ;BR IF INIT WAS OK
5725 056432 005237 002212'      INC      FATFLG      ;BUMP COUNT
5729 056436 010001      MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
5730 056440      ERDRF      ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
056440 104455      TRAP      C$ERDRF
056442 001143      .WORD      611
056444 003642'      .WORD      SFIERR
056446 011734'      .WORD      SFIMSG
5731 056450 013737 002172' 071720' 20$:      MOV      UNITN,T26DSW      ;SET UP UNIT NUMBER
5732
5733 056456 012704 071700'      MOV      @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
5734
5735      ;*****
5736      ;
5737      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
5738      ;
5739      ;*****
5740
5741 056462 004737 010562'      JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
5742 056466 103407      BCS      26$      ;BR, IF COMMAND ISSUED OK
5743 056470 005237 002212'      INC      FATFLG      ;BUMP COUNT
5747 056474 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
5748 056476      ERHRD      ERRNO,WRTHMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
056476 104456      TRAP      C$ERHRD
056500 001144      .WORD      612
056502 005046'      .WORD      WRTHMSG
056504 011734'      .WORD      SFIMSG
5749 056506      26$:      CKLOOP      ;LOOP IF SELECTED
056506 104406      TRAP      C$CLP1
5750
5751      ;*****
5752      ;
5753      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5754      ;
5755      ;*****
5756
5757 056510 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
5758 056514 103413      BCS      30$      ;BR, IF NO PROBLEM
5759 056516 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
5760 056522 012702 000200      MOV      @SSR,R2      ;SET UP EXPECTED TSSR
5761 056526 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
5762 056530 005237 002212'      INC      FATFLG      ;BUMP COUNT
5766 056534      ERHRD      ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
056534 104456      TRAP      C$ERHRD
056536 001145      .WORD      613

```

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

```

056712 104406                                TRAP    C$CLP1
5817 056714                                120$:
5818
5819 ;*****
5820 ;
5821 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
5822 ;
5823 ;*****
5824
5825 056714 004737 010714'                JSR      PC,REWIND                ;CALL TAPE REWIND COMMAND
5826 056720 103413                        BCS      130$                ;BR, IF NO PROBLEM
5827 056722 016501 000002                MOV      TSSR(R5),R1            ;GET TSSR
5828 056726 012702 000200                MOV      QSSR,R2                ;SET UP EXPECTED TSSR
5829 056732 010004                        MOV      R0,R4                ;PACKET ADDRESS SET UP
5830 056734 005237 002212'                INC      FATFLG                ;BUMP COUNT
5834 056740                                ERRHRD  ERRNO,T26RWN,PKTSSR    ;REWIND NOT ACCEPTED
                                056740 104456                                TRAP    C$ERHRD
                                056742 001150                                .WORD  616
                                056744 073364'                                .WORD  T26RWN
                                056746 011746'                                .WORD  PKTSSR
5835 056750                                130$:  CKLOOP                ;LOOP IF SELECTED
                                056750 104406                                TRAP    C$CLP1
5836
5837 ;*****
5838 ;
5839 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
5840 ;
5841 ;*****
5842
5843 056752 013701 071730'                MOV      T26BFR+6,R1            ;PICK UP XSTO
5844 056756 010102                        MOV      R1,R2                ;SET UP EXPECTED
5845 056760 052702 000002                BIS      QBIT1,R2            ;SET BOT BIT IN EXPECTED
5846 056764 020102                        CMP      R1,R2                ;DOES EXP = REC'D
5847 056766 001406                        BEQ      140$                ;BR, IF EQUAL (OK)
5848 056770 005237 002212'                INC      FATFLG                ;BUMP COUNT
5852 056774                                ERRHRD  ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
                                056774 104456                                TRAP    C$ERHRD
                                056776 001151                                .WORD  617
                                057000 073075'                                .WORD  T26BOT
                                057002 015374'                                .WORD  EXPREC
5853 057004                                140$:  CKLOOP                ;LOOP IF SELECTED
                                057004 104406                                TRAP    C$CLP1
5854 057006 012737 000400 072062'        MOV      Q256.,T26RSZ            ;SET UP RECORD SIZE
5855
5856 ;*****
5857 ;
5858 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
5859 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
5860 ;
5861 ;*****
5862
5863 057014 012703 000001                145$:  MOV      Q1,R3                ;SPACE ONE RECORD PARAMETER
5864 057020 004737 010366'                JSR      PC,SPACE                ;CALL SPACE ROUTINE
5865 057024 103413                        BCS      150$                ;BR, IF NO PROBLEM WITH SPACE COMMAND
5866 057026 016501 000002                MOV      TSSR(R5),R1            ;GET TSSR
5867 057032 012702 000200                MOV      QSSR,R2                ;SET UP EXPECTED TSSR
5868 057036 005237 002212'                INC      FATFLG                ;BUMP COUNT

```

```

5872 057042          ERRHRD  ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
      057042 104456          TRAP C$ERHRD
      057044 001152          .WORD 618
      057046 072477'        .WORD T26SC
      057050 015374'        .WORD EXPREC
5873 057052          150$: CKLOOP                    TRAP C$CLP1
      057052 104406
5874 057054 013703 072062'      MOV T26RSZ,R3      ;RECORD SIZE
5875 057060 013737 003114' 072032'  MOV FREE,T26RB  ;STARTING READ BUFFER ADDRESS
5876
5877 ;*****
5878 ;
5879 ;REREAD DATA,CVC=1,ACK,SWB COMMAND
5880 ;
5881 ;*****
5882
5883 057066 012737 151001 072030'      MOV 0151001,T26PK3  ;REREAD DATA,CVC=1,ACK,SWB COMMAND
5884 057074 012704 072030'      165$: MOV 0T26PK3,R4  ;SET UP R4 WITH PACKET ADDRESS
5885 057100 010337 072036'      MOV R3,T26SZ  ;SET UP RECORD SIZE IN PACKET
5886 057104 010465 000000      MOV R4,T26B(R5)  ;ISSUE COMMAND
5887 057110 004737 016150'      JSR PC,WAITF  ;WAIT FOR SSR TO SET
5888 057114 016501 000002      MOV TSSR(R5),R1  ;GET TSSR CONTENTS
5889 057120 012702 000200      MOV 0SSR,R2  ;SET UP EXPECTED
5890 057124 020102          CMP R1,R2  ;ARE THEY EQUAL
5891 057126 001406          BEQ 170$  ;BR, IF OK
5892 057130 005237 002212'      INC FATFLG  ;BUMP COUNT
5896 057134          ERRHRD  ERRNO,T26WDC,PKTSSR  ;TSSR INCORRECT AFTER REREAD DATA
      057134 104456          TRAP C$ERHRD
      057136 001153          .WORD 619
      057140 073720'        .WORD T26WDC
      057142 011746'        .WORD PKTSSR
5897 057144          170$: CKLOOP                    TRAP C$CLP1
      057144 104406
5898 057146 013702 003114'      MOV FREE,R2  ;CURRENT BUFFER ADDRESS TO R2
5899 057152 010304          MOV R3,R4  ;CURRENT RECORD SIZE
5900 057154 162704 000400      SUB 0256.,R4  ;FIRST LOCATION IN BUFFER
5901 057160 060204          173$: ADD R2,R4  ;SET UP POINTER
5902 057162 021403          CMP (R4),R3  ;CHECK DATA READ (R3=DATA ALSO)
5903 057164 001410          BEQ 180$  ;BR, IF ALL IS WELL
5904 057166 011401          MOV (R4),R1  ;RECD DATA
5905 057170 010302          MOV R3,R2  ;EXPECTED DATA
5906 057172 005237 002212'      INC FATFLG  ;BUMP COUNT
5910 057176          ERRHRD  ERRNO,T26DTA,EXPREC  ;DATA READ NOT = WRITTEN
      057176 104456          TRAP C$ERHRD
      057200 001154          .WORD 620
      057202 073142'        .WORD T26DTA
      057204 015374'        .WORD EXPREC
5911 057206          180$: CKLOOP                    TRAP C$CLP1
      057206 104406
5912 057210 005724          TST (R4),  ;BUMP TO NEXT LOCATION
5913 057212 160204          SUB R2,R4  ;CORRECT RECORDS SIZE VALUE
5914 057214 020403          CMP R4,R3  ;END OF RECORD YET
5915 057216 001360          BNE 173$  ;BR, IF NOT AT END OF RECORD
5916 057220 005723          TST (R3),  ;BUMP RECORD SIZE
5917 057222 010337 072062'      MOV R3,T26RSZ  ;STORE RECORD SIZE
5918 057226 022703 000412      CMP 0266.,R3  ;END OF RECORD YET
5919 057232 001270          BNE 145$  ;BR, IF MORE RECORDS TO READ

```



```

5920 057234      104406      190$: CKLOOP                                ;LOOP IF SELECTED                TRAP    C$CLP1
      057234      104406      ENDSUB                                ;>>>>>>>>>>> END SUBTEST >>>>>>>>>>> L10104:
5921 057236      104403      002212' 000017          CMP     FATFLG,#15.        ;IS ERROR COUNT AT 25
      057236      103402      004737 017104'          BLO     999$              ;BR, IF LESS THAN 25
8000 057250      004737 017104'          JSR     PC,CKDROP           ;TRY TO DROP THE UNIT
8001 057254      999$:
8002
8003
8004 ;TEST 6, SUBTEST 3
8005
8006 ;VERIFIES THAT THE REREAD PREVIOUS COMMAND WITH OPP=1
8007 ;(READ REVERSE, SPACE FORWARD) AND SWB=0 OPERATES
8008 ;PROPERLY. THE TAPE IS FIRST REWOUND AND THEN WRITTEN
8009 ;WITH A SERIES OF TEST RECORDS VARYING IN LENGTH AND
8010 ;DATA CONTENT; THE FIRST FOUR BYTES OF EACH RECORD
8011 ;CONTAIN ITS RECORD NUMBER (INDICATING POSITION ON
8012 ;TAPE). THE TAPE IS THEN REWOUND AGAIN, FOR EACH
8013 ;TEST RECORD, THE FOLLOWING SEQUENCE IS EXECUTED.
8014
8015 ;1.   THE REREAD PREVIOUS COMMAND WITH OPP=1 IS ISSUED
8016 ;      AND THE RESULTS CHECKED
8017
8018 ;2.   A READ FORWARD COMMAND IS THEN ISSUED AND THE
8019 ;      DATA IS CHECKED TO VERIFY THAT THE TAPE WAS
8020 ;      POSITIONED PROPERLY AFTER THE REREAD PREVIOUS'S
8021 ;      COMMAND (E.G. THE TAPE SHOULD HAVE BEEN LEFT
8022 ;      POSITIONED AT THE START OF THE TEST RECORD). THE
8023 ;      READ FORWARD COMMAND LEAVES THE TAPE POSITIONED
8024 ;      PROPERLY AT THE START OF THE NEXT TEST RECORD.
8025
8026 ;THE BYTE COUNT ON EACH REREAD PREVIOUS COMMAND IS SET
8027 ;TO THE LENGTH OF THE EXPECTED RECORD, SO NO
8028 ;EXCEPTIONAL CONDITIONS SHOULD OCCUR.
8029
8030
8031
8032
8033
8034
8035
8036
8037
8038
8039
8040
8041
8042
8043
8044
8045
8046
8047
8048
8049
8050
8051
8052
8053
8054
8055
8056
8057
8058
8059
8060 057254      BGNSUB                                ;>>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>> T6.3:
      057254      104402      004737 074620'          JSR     PC,T26REST       ;SET COMMAND PACKET
      057262      005037 072056'          CLR     T26CNT         ;CLEAR TAPE RECORD COUNTER
8063 057266      004737 074712'          JSR     PC,T26RT2        ;SET UP OTHER COMMAND PACKET
8064 057272      004737 074754'          JSR     PC,T26RT3        ;SET UP OTHER COMMAND PACKET
8065
8066 ;*****
8067
8068 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
8069
8070 ;*****
8071

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 204

```

5972 057276 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
5973 057302 103407                BCS      20$      ;BR IF INIT WAS OK
5974 057304 005237 002212'      INC      FATFLG      ;BUMP COUNT
5978 057310 010001                MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
5979 057312                ERRDF   ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
                                TRAP      C$ERDF
                                .WORD    621
                                .WORD    SFIERR
                                .WORD    SFIMSG
5980 057322 013737 002172' 071720' 20$: MOV      UNITN,T26DSW      ;SET UP UNIT NUMBER
5981                                MOV      @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
5982 057330 012704 071700'
5983
5984 ;*****
5985 ;
5986 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
5987 ;
5988 ;*****
5989
5990 057334 004737 010562'      JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
5991 057340 103407                BCS      26$      ;BR, IF COMMAND ISSUED OK
5992 057342 005237 002212'      INC      FATFLG      ;BUMP COUNT
5996 057346 010001                MOV      R0,R1      ;SAVE CONTENTS OF TSSR
5997 057350                ERRHRD   ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD    622
                                .WORD    WRTMSG
                                .WORD    SFIMSG
5998 057360                26$: CKLOOP      ;LOOP IF SELECTED
5999                                TRAP      C$CLP1
6000
6001 ;*****
6002 ;
6003 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6004 ;
6005 ;*****
6006 057362 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
6007 057366 103413                BCS      30$      ;BR, IF NO PROBLEM
6008 057370 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
6009 057374 012702 000200      MOV      @SSR,R2      ;SET UP EXPECTED TSSR
6010 057400 010004                MOV      R0,R4      ;PACKET ADDRESS SET UP
6011 057402 005237 002212'      INC      FATFLG      ;BUMP COUNT
6015 057406                ERRHRD   ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD    623
                                .WORD    T26RWN
                                .WORD    PKTSSR
6016 057416                30$: CKLOOP      ;LOOP IF SELECTED
6017                                TRAP      C$CLP1
6018
6019 ;*****
6020 ;
6021 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
6022 ;
6023 ;*****

```


K16

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 205

```

6024 057420 013701 071730'      MOV      T26BFR+6,R1      ;PICK UP XSTO
6025 057424 010102              MOV      R1,R2          ;SET UP EXPECTED
6026 057426 052702 000002      BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
6027 057432 020102              CMP      R1,R2          ;DOES EXP = REC'D
6028 057434 001406              BEQ      40$            ;BR, IF EQUAL (OK)
6029 057436 005237 002212'      INC      FATFLG         ;BUMP COUNT
6033 057442              ERRHRD   ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
        057442 104456              TRAP      C$ERRHRD
        057444 001160              .WORD    624
        057446 073075'              .WORD    T26BOT
        057450 015374'              .WORD    EXPREC
6034 057452              40$:    CKLOOP                  ;LOOP IF SELECTED
        057452 104406              TRAP      C$CLP1
6035 057454 012703 000400      MOV      #256,,R3          ;RECORD SIZE
6036 057460 013737 003114' 072032'  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
6037
6038 ;*****
6039 ;
6040 ;WRITE DATA,CVC=1,ACK COMMAND
6041 ;
6042 ;*****
6043
6044 057466 012737 140005 072030'      MOV      #140005,T26PK3    ;WRITE DATA,CVC=1,ACK COMMAND
6045 057474 012704 072030'      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6046 057500              65$:
6047 057500 010300              MOV      R3,R0          ;SET PATTERN IN CORRECT REGISTER
6048 057502 004737 017324'      JSR      PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
6049 057505 010337 072036'      MOV      R3,T26SZ        ;SET UP RECORD SIZE IN PACKET
6050 057512 013777 072056' 123374      MOV      T26CNT,#FREE    ;MOVE TAPE RECORD NUMBER TO BUFFER
6051 057520 062737 000001 072056'      ADD      #1,T26CNT      ;NUMBER READY FOR NEXT RECORD
6052 057526 010465 000000      MOV      R4,TSD8(R5)    ;ISSUE COMMAND
6053 057532 004737 016150'      JSR      PC,WAITF        ;WAIT FOR SSR TO SET
6054 057536 016501 000002      MOV      TSSR(R5),R1    ;GET TSSR CONTENTS
6055 057542 012702 000200      MOV      #SSR,R2        ;SET UP EXPECTED
6056 057546 020102              CMP      R1,R2          ;ARE THEY EQUAL
6057 057550 001406              BEQ      75$            ;BR, IF OK
6058 057552 005237 002212'      INC      FATFLG         ;BUMP COUNT
6062 057556              ERRHRD   ERRNO,WRTErr,PKTSSR    ;TSSR INCORRECT AFTER WRITE DATA
        057556 104456              TRAP      C$ERRHRD
        057560 001161              .WORD    625
        057562 005103'              .WORD    WRTErr
        057564 011746'              .WORD    PKTSSR
6063 057566              75$:    CKLOOP                  ;LOOP IF SELECTED
        057566 104406              TRAP      C$CLP1
6064 057570 005723              TST      (R3),+          ;BUMP THE RECORD SIZE
6065 057572 022703 000414      CMP      #268,,R3        ;MAXIMUM SIZE YET
6066 057576 001401              BEQ      120$          ;BR, IF AT END OF WRITE SEQUENCE
6067 057600 000737              BR       65$            ;WRITE MORE RECORDS
6068 057602              120$:
6069 057602 005037 072056'      CLR      T26CNT        ;SET RECORD COUNTER BACK TO ZERO
6070
6071 ;*****
6072 ;
6073 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6074 ;
6075 ;*****
6076

```

L16

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 206

```

6077 057606 004737 010714'      JSR      PC,REWIND          ;CALL TAPE REWIND COMMAND
6078 057612 103413                BCS      130$              ;BR, IF NO PROBLEM
6079 057614 016501 000002        MOV      TSSR(R5),R1        ;GET TSSR
6080 057620 012702 000200        MOV      #SSR,R2            ;SET UP EXPECTED TSSR
6081 057624 010004                MOV      R0,R4              ;PACKET ADDRESS SET UP
6082 057626 005237 002212'      INC       FATFLG             ;BUMP COUNT
6086 057632                ERRHRD   ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     626
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                057632 104456
                                057634 001162
                                057636 073364'
                                057640 011746'
6087 057642                130$:   CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                057642 104406
6088
6089
6090
6091
6092
6093
6094
6095 057644 013701 071730'      MOV      T26BFR+6,R1          ;PICK UP XST0
6096 057650 010102                MOV      R1,R2              ;SET UP EXPECTED
6097 057652 052702 000002        BIS      #BIT1,R2            ;SET BOT BIT IN EXPECTED
6098 057656 020102                CMP      R1,R2              ;DOES EXP = REC'D
6099 057660 001406                BEQ      140$              ;BR, IF EQUAL (OK)
6100 057662 005237 002212'      INC       FATFLG             ;BUMP COUNT
6104 057666                ERRHRD   ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     627
                                .WORD     T26BOT
                                .WORD     EXPREC
                                057666 104456
                                057670 001163
                                057672 073075'
                                057674 015374'
6105 057676                140$:   CKLOOP                    ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                057676 104406
6106
6107
6108
6109
6110
6111
6112
6113
6114 057700 012703 000001        MOV      #1,R3              ;SPACE 1 RECORD FORWARD
6115 057704 004737 010366'      JSR      PC,SPACE            ;SPACE CALL
6116 057710 012703 000400        MOV      #256,R3            ;RECORD SIZE
6117 057714 013737 003114' 072032' 150$: MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
6118
6119
6120
6121
6122
6123
6124
6125 057722 012737 161001 072030' 165$: MOV      #161001,T26PK3      ;REREAD DATA,CVC=1,ACK, OPP COMMAND
6126 057730 012704 072030'      MOV      #T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
6127 057734 010337 072036'      MOV      R3,T26SZ        ;SET UP RECORD SIZE IN PACKET
6128 057740 010465 000000        MOV      R4,TSD8(R5)        ;ISSUE COMMAND
6129 057744 004737 016150'      JSR      PC,WAITF          ;WAIT FOR SSR TO SET

```

6130	057750	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
6131	057754	012702	000200		MOV	%SSR,R2	;SET UP EXPECTED		
6132	057760	020102			CMP	R1,R2	;ARE THEY EQUAL		
6133	057762	001406			BEQ	170\$	;BR, IF OK		
6134	057764	005237	002212'		INC	FATFLG	;BUMP COUNT		
6138	057770				ERRHRD	ERRNO,T26RRG,PKTSSR	;TSSR INCORRECT AFTER REREAD DATA		
	057770	104456						TRAP	C\$ERHRD
	057772	001164						.WORD	628
	057774	072402'						.WORD	T26RRG
	057776	011746'						.WORD	PKTSSR
6139	060000			170\$:	CKLOOP		;LOOP IF SELECTED		
	060000	104406						TRAP	C\$CLP1
6140	060002	005723			TST	(R3)+	;BUMP RECORD SIZE		
6141	060004	062737	000001	072056'	ADD	#1,T26CNT	;BUMP TAPE RECORD COUNTER		
6142									
6143									
6144									
6145									
6146									
6147									
6148									
6149	060012	012737	140001	072030'	MOV	#140001,T26PK3	;READ DATA, CVC=1, ACK COMMAND		
6150	060020	010337	072036'		MOV	R3,T26SZ	;SET SIZE INTO PACKET		
6151	060024	010465	000000		MOV	R4,TSD8(R5)	;ISSUE READ DATA COMMAND		
6152	060030	004737	016150'		JSR	PC,WAITF	;WAIT FOR SSR		
6153	060034	016501	000002		MOV	TSSR(R5),R1	;PICK UP THE TSSR		
6154	060040	012702	000200		MOV	%SSR,R2	;SET UP EXPECTED		
6155	060044	020102			CMP	R1,R2	;IS THE TSSR OK		
6156	060046	001406			BEQ	195\$	;BR, IF TSSR OK (GOOD)		
6157	060050	005237	002212'		INC	FATFLG	;BUMP COUNT		
6161	060054				ERRHRD	ERRNO,ROERR,PKTSSR	READ DATA COMMAND FAILED		
	060054	104456						TRAP	C\$ERHRD
	060056	001165						.WORD	629
	060060	003176'						.WORD	RDERR
	060062	011746'						.WORD	PKTSSR
6162	060064			195\$:	CKLOOP		;LOOP IF SELECTED		
	060064	104406						TRAP	C\$CLP1
6163	060066	017701	123022		MOV	%FREE,R1	;FIRST WORD FROM READ BUFFER		
6164	060072	013702	072056'		MOV	T26CNT,R2	;SET UP EXPECTED		
6165	060076	020102			CMP	R1,R2	;IS TAPE POSITION CORRECT		
6166	060100	001406			BEQ	197\$	;KEEP GOING POSITION OK		
6167	060102	005237	002212'		INC	FATFLG	;BUMP COUNT		
6171	060106				ERRHRD	ERRNO,T26WNG,EXPREC	;TAPE POSITION INCORRECT		
	060106	104456						TRAP	C\$ERHRD
	060110	001166						.WORD	630
	060112	072066'						.WORD	T26WNG
	060114	015374'						.WORD	EXPREC
6172	060116			197\$:	CKLOOP				
	060116	104406						TRAP	C\$CLP1
6173	060120	022703	000412		CMP	%266.,R3	;AT MAX SIZE YET		
6174	060124	001401			BEQ	200\$	;BR, IF AT END OF THE SUBTEST		
6175	060126	000672			BR	150\$	;KEEP GOING MORE RECORDS		
6176	060130			200\$:					
6177	060130				ENDSUB				
	060130								
	060130	104403							
6178	060132	023727	002212' 000017		CMP	FATFLG,%15,	;IS ERROR COUNT AT 25</		

....B1	FIFEXP - PRINT FIFO....B5	TEST 3: BASIC WRITE....B9	TEST 4: BASIC READ B13
....C1	MSGSTAT - PRINT STAT....C5	TEST 3: BASIC WRITE....C9	TEST 4: BASIC READ C13
....D1	MSGSUB - PRINT WRITE....D5	TEST 3: BASIC WRITE....D9	TEST 4: BASIC READ D13
....E1	PRAMPKT - PRINT RAM E5	TEST 3: BASIC WRITE....E9	TEST 4: BASIC READ E13
....F1	PRMESS - PRINT CONT....F5	TEST 3: BASIC WRITE....F9	TEST 4: BASIC READ F13
....G1	PRMSGEXP - PRINT EXP....G5	TEST 3: BASIC WRITE....G9	TEST 4: BASIC READ G13
....H1	PRMSGEXP - PRINT EXP....H5	TEST 3: BASIC WRITE....H9	TEST 4: BASIC READ H13
....I1	PRBYTEXP - PRINT ERR....I5	TEST 3: BASIC WRITE....I9	TEST 5: SPACE RECOR....I13
....J1	RAMERR - PRINT RAM J5	TEST 3: BASIC WRITE....J9	TEST 5: SPACE RECOR....J13
....K1	RAMTADD - PRINT TEST....K5	TEST 3: BASIC WRITE....K9	TEST 5: SPACE RECOR....K13
....L1	BADSSR - PRINT TSSR L5	TEST 3: BASIC WRITE....L9	TEST 5: SPACE RECOR....L13
....M1	SOFINIT - SOFT INITI....M5	TEST 3: BASIC WRITE....M9	TEST 5: SPACE RECOR....M13
....N1	CHKAMB - CHECK TSSR....N5	TEST 3: BASIC WRITE....N9	TEST 5: SPACE RECOR....N13
....B2	INTR - INTERRUPT B6	TEST 3: BASIC WRITE....B10	TEST 5: SPACE RECOR....B14
....C2	CHKTSSR - CHECK TSSR....C6	TEST 3: BASIC WRITE....C10	TEST 5: SPACE RECOR....C14
....D2	TSTLOOP - CHECK ITER....D6	TEST 3: BASIC WRITE....D10	TEST 5: SPACE RECOR....D14
....E2	TSTSETUP - PRINT TES....E6	TEST 4: BASIC READ E10	TEST 5: SPACE RECOR....E14
PROGRAM HEADER	TSTEND - PRINT ERRO....F6	TEST 4: BASIC READ F10	TEST 5: SPACE RECOR....F14
DISPATCH TABLE	CKDROP - CHECK IF U....G6	TEST 4: BASIC READ G10	TEST 5: SPACE RECOR....G14
SOFTWARE P-TABLE	SETMAP - SETUP PAR6....H6	TEST 4: BASIC READ H10	TEST 5: SPACE RECOR....H14
GLOBAL EQUATES SECTI....I2	FILLMEM - FILL MEMOR....I6	TEST 4: BASIC READ I10	TEST 5: SPACE RECOR....I14
MEMORY MANAGEMENT DE....J2	CMPMEM - COMPARE ME....J6	TEST 4: BASIC READ J10	TEST 5: SPACE RECOR....J14
MEMORY MANAGEMENT DE....K2	REGSAV - SAVE R1-R5....K6	TEST 4: BASIC READ K10	TEST 5: SPACE RECOR....K14
TSU05 REGISTER AND P....L2	GETPAT - GET 8 BIT L6	TEST 4: BASIC READ L10	TEST 5: SPACE RECOR....L14
TSU05 REGISTER AND P....M2	GETSEL - ISSUE MENU....M6	TEST 4: BASIC READ M10	TEST 5: SPACE RECOR....M14
TSU05 REGISTER AND P....N2	CHKMAN - CHECK MANU....N6	TEST 4: BASIC READ N10	TEST 5: SPACE RECOR....N14
TSU05 REGISTER AND P....B3	KTINIT - SETUP KT11....B7	TEST 4: BASIC READ B11	TEST 5: SPACE RECOR....B15
TSU05 REGISTER AND P....C3	KTINIT - SETUP KT11....C7	TEST 4: BASIC READ C11	TEST 5: SPACE RECOR....C15
TSU05 REGISTER AND P....D3	KTINIT - SETUP KT11....D7	TEST 4: BASIC READ D11	TEST 5: SPACE RECOR....D15
SPECIAL MACROS AND O....E3	KTINIT - SETUP KT11....E7	TEST 4: BASIC READ E11	TEST 5: SPACE RECOR....E15
GLOBAL DATA SECTION F3	INITIALIZE SECTION F7	TEST 4: BASIC READ F11	TEST 5: SPACE RECOR....F15
TSTBLK - TEST DATA G3	INITIALIZE SECTION G7	TEST 4: BASIC READ G11	TEST 5: SPACE RECOR....G15
GLOBAL ENVIRONMENT S....H3	INITIALIZE SECTION H7	TEST 4: BASIC READ H11	TEST 5: SPACE RECOR....H15
GLOBAL TEXT MESSAGES....I3	ADD AND DROP UNITS S....I7	TEST 4: BASIC READ I11	TEST 5: SPACE RECOR....I15
GLOBAL ERROR REPORT J3	CLEAN-UP AND REPORT J7	TEST 4: BASIC READ J11	TEST 5: SPACE RECOR....J15
PRITSSR - PRINT TSSR....K3	CLEAN-UP AND REPORT K7	TEST 4: BASIC READ K11	TEST 5: SPACE RECOR....K15
PRITSSR - PRINT TSSR....L3	CLEAN-UP AND REPORT L7	TEST 4: BASIC READ L11	TEST 5: SPACE RECOR....L15
PRIPKT - PRINT THE M3	TEST 1: INITIALIZE M7	TEST 4: BASIC READ M11	TEST 6: REREADS M15
PRIBXOR - PRINT EXPD....N3	TEST 1: INITIALIZE N7	TEST 4: BASIC READ N11	TEST 6: REREADS N15
PRIXOR - PRINT EXPD....B4	TEST 1: INITIALIZE B8	TEST 4: BASIC READ B12	TEST 6: REREADS B16
PRIADD - PRINT MEMO....C4	TEST 2: OFF-LINE AN...C8	TEST 4: BASIC READ C12	TEST 6: REREADS C16
PRITADD - PRINT MEMO....D4	TEST 2: OFF-LINE AN...D8	TEST 4: BASIC READ D12	TEST 6: REREADS D16
SPACE - SPACE RECO....E4	TEST 2: OFF-LINE AN...E8	TEST 4: BASIC READ E12	TEST 6: REREADS E16
WRCHR - WRITE CHAR....F4	TEST 2: OFF-LINE AN...F8	TEST 4: BASIC READ F12	TEST 6: REREADS F16
REWIND - POSITION T....G4	TEST 2: OFF-LINE AN...G8	TEST 4: BASIC READ G12	TEST 6: REREADS G16
CKRAM - COMPARE RA....H4	TEST 2: OFF-LINE AN...H8	TEST 4: BASIC READ H12	TEST 6: REREADS H16
CKRAM2 - COMPARE RA....I4	TEST 2: OFF-LINE AN...I8	TEST 4: BASIC READ I12	TEST 6: REREADS I16
CKMSG - COMPARE WR....J4	TEST 2: OFF-LINE AN...J8	TEST 4: BASIC READ J12	TEST 6: REREADS J16
CKMSG2 - COMPARE EX....K4	TEST 2: OFF-LINE AN...K8	TEST 4: BASIC READ K12	TEST 6: REREADS K16
CKMSG2 - COMPARE EX....L4	TEST 2: OFF-LINE AN...L8	TEST 4: BASIC READ L12	TEST 6: REREADS L16
CKMSG2 - COMPARE EX....M4	TEST 3: BASIC WRITE....M8	TEST 4: BASIC READ M12	TEST 6: REREADS M16
PKTMES - PRINT TSSR....N4	TEST 3: BASIC WRITE....N8	TEST 4: BASIC READ N12	

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 208

6179	060140	103402		BLO	999:		;BR, IF LESS THAN 25
6180	060142	004737	017104'	JSR	PC,CKDROP		;TRY TO DROP THE UNIT
6181	060146						
6182							
6183							
6184							
6185							
6186							
6187							
6188							
6189							
6190							
6191							
6192							
6193							
6194							
6195							
6196							
6197							
6198	060146			BGNSUB		>>>>>>>>>>	BEGIN SUBTEST >>>>>>>>>>
	060146					T6.4:	
	060146	104402				TRAP	C#BSUB
6199	060150	004737	074620'	JSR	PC,T26REST		;SET COMMAND PACKET
6200	060154	005037	072056'	CLR	T26CNT		;CLEAR TAPE RECORD COUNTER
6201	060160	004737	074712'	JSR	PC,T26RT2		;SET UP OTHER COMMAND PACKET
6202	060164	004737	074754'	JSR	PC,T26RT3		;SET UP OTHER COMMAND PACKET
6203							
6204							
6205							
6206							
6207							
6208							
6209							
6210	060170	004737	015674'	JSR	PC,SOFINIT		;DO INITIALIZE ON CONTROLLER
6211	060174	103407		BCS	20:		;BR IF INIT WAS OK
6212	060176	005237	002212'	INC	FATFLG		;BUMP COUNT
6216	060202	010001		MOV	R0,R1		;CONTENTS OF TSSR REGISTER
6217	060204			ERRDF	ERRNO,SFIERR,SFIMSG		;FATAL ERROR TSSR WAS NOT OK
	060204	104455					
	060206	001167				TRAP	C\$ERDF
	060210	003642'				.WORD	631
	060212	011734'				.WORD	SFIERR
6218	060214	013737	002172' 071720' 20:	MOV	UNITN,T26DSW		;SET UP UNIT NUMBER
6219							
6220	060222	012704	071700'	MOV	@T26PACKET,R4		;SUBROUTINE NEEDS PACKET ADDRESS
6221							
6222							
6223							
6224							
6225							
6226							
6227							
6228	060226	004737	010562'	JSR	PC,WATCHR		;ISSUE WRITE CHARACTERISTICS
6229	060232	103407		BCS	26:		;BR, IF COMMAND ISSUED OK
6230	060234	005237	002212'	INC	FATFLG		;BUMP COUNT
6234	060240	010001		MOV	R0,R1		;SAVE CONTENTS OF TSSR
6235	060242			ERRRD	ERRNO,WRMSG,SFIMSG		;WRITE CHARACTERISTIC FAILED

C1

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 209

Line	Address	Offset	Label	Instruction	Comment	Trap	Trap Data
6236	060252	104406	26:	CKLOOP	LOOP IF SELECTED	TRAP	C\$ERHRD 632
6237	060252	104406				TRAP	C\$CLP1
6238				*****			
6239				ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE			
6240				*****			
6241	060254	004737	010714	JSR PC,REWIND	CALL TAPE REWIND COMMAND		
6242	060260	103413		BCS 30	BR, IF NO PROBLEM		
6243	060262	016501	000002	MOV TSSR(R5),R1	GET TSSR		
6244	060266	012702	000200	MOV #SSR,R2	SET UP EXPECTED TSSR		
6245	060272	010004		MOV R0,R4	PACKET ADDRESS SET UP		
6246	060274	005237	002212	INC FATFLG	BUMP COUNT		
6247	060300			ERRHRD ERRNO,T26RWN,PKTSSR	REWIND NOT ACCEPTED		
6248	060300	104456				TRAP	C\$ERHRD 633
6249	060302	001171				TRAP	T26RWN
6250	060304	073364				TRAP	PKTSSR
6251	060306	011746				TRAP	C\$CLP1
6252	060310		30:	CKLOOP	LOOP IF SELECTED		
6253	060310	104406				TRAP	C\$CLP1
6254				*****			
6255				READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)			
6256				*****			
6257	060312	013701	071730	MOV T26BFR+6,R1	PICK UP XSTO		
6258	060316	010102		MOV R1,R2	SET UP EXPECTED		
6259	060320	052702	000002	BIS #BIT1,R2	SET BOT BIT IN EXPECTED		
6260	060324	020102		CMP R1,R2	DOES EXP = REC'D		
6261	060326	001406		BEQ 40	BR, IF EQUAL (OK)		
6262	060330	005237	002212	INC FATFLG	BUMP COUNT		
6263	060334			ERRHRD ERRNO,T26BOT,EXPREC	TAPE NOT AT BOT AFTER REWIND		
6264	060334	104456				TRAP	C\$ERHRD 634
6265	060336	001172				TRAP	T26BOT
6266	060340	073075				TRAP	EXPREC
6267	060342	015374				TRAP	C\$CLP1
6268	060344	104406	40:	CKLOOP	LOOP IF SELECTED		
6269	060344	104406				TRAP	C\$CLP1
6270	060346	012703	000400	MOV #256,R3	RECORD SIZE		
6271	060352	013737	003114	MOV FREE,T26RB	STARTING WRITE BUFFER ADDRESS		
6272				*****			
6273				WRITE DATA,CVC=1,ACK COMMAND			
6274				*****			
6275	060360	012737	140005	MOV #140005,T26PK3	WRITE DATA,CVC=1,ACK COMMAND		
6276	060366	012704	072030	MOV #T26PK3,R4	SET UP R4 WITH PACKET ADDRESS		

D1

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 210

```

6284 060372
6285 060372 010300
6286 060374 004737 017324'
6287 060400 010337 072036'
6288 060404 013777 072056' 122502
6289 060412 062737 000001 072056'
6290 060420 010465 000000
6291 060424 004737 016150'
6292 060430 016501 000002
6293 060434 012702 000200
6294 060440 020102
6295 060442 001406
6296 060444 005237 002212'
6300 060450
      060450 104456
      060452 001173
      060454 005103'
      060456 011746'
6301 060460
      060460 104406
6302 060462 005723
6303 060464 022703 000412
6304 060470 001401
6305 060472 000737
6306 060474
6307 060474 005037 072056'
6308
6309
6310
6311
6312
6313
6314
6315 060500 004737 010714'
6316 060504 103413
6317 060506 016501 000002
6318 060512 012702 000200
6319 060516 010004
6320 060520 005237 002212'
6324 060524
      060524 104456
      060526 001174
      060530 073364'
      060532 011746'
6325 060534
      060534 104406
6326
6327
6328
6329
6330
6331
6332
6333 060536 013701 071730'
6334 060542 010102
6335 060544 052702 000002
6336 060550 020102

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,0FREE   ;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 REREAD DATA
                                TRAP C$ERRHRD
                                .WORD 635
                                .WORD WRTErr
                                .WORD PKTSSR
754:  CKLOOP            ;LOOP IF SELECTED
                                TRAP C$CLP1
      TST (R3),          ;BUMP THE RECORD SIZE
      CMP #266.,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
      ;*****
      JSR PC,REWIND      ;CALL TAPE REWIND COMMAND
      BCS 1304           ;BR, IF NO PROBLEM
      MOV TSSR(R5),R1    ;GET TSSR
      MOV #SSR,R2        ;SET UP EXPECTED TSSR
      MOV R0,R4          ;PACKET ADDRESS SET UP
      INC FATFLG         ;BUMP COUNT
      ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP C$ERRHRD
                                .WORD 636
                                .WORD T26RWN
                                .WORD PKTSSR
1304: CKLOOP            ;LOOP IF SELECTED
                                TRAP C$CLP1
      ;*****
      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
      ;*****
      MOV T26RFR+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

```

E1

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 211

```

6337 060552 001406          BEQ      140$          ;BR, IF EQUAL (OK)
6338 060554 005237 002212'  INC      FATFLG        ;BUMP COUNT
6342 060560          ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
        060560 104456          TRAP      C$ERHRD
        060562 001175          .WORD    637
        060564 073075'        .WORD    T26BOT
        060566 015374'        .WORD    EXPREC
6343 060570          140$:  CKLOOP          ;LOOP IF SELECTED
        060570 104406          TRAP      C$CLP1
6344
6345          ;*****
6346          ;
6347          ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
6348          ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
6349          ;
6350          ;*****
6351
6352 060572 012703 000001      MOV      #1,R3          ;SET UP SPACE FORWARD 1
6353 060576 004737 010366'    JSR      PC,SPACE        ;ISSUE SPACE COMMAND
6354 060602 012703 000400      MOV      #256.,R3       ;RECORD SIZE
6355 060606 013737 003114' 072032' 150$:  MOV      FREE,T26RB    ;STARTING READ BUFFER ADDRESS
6356
6357          ;*****
6358          ;
6359          ;REREAD DATA,CVC=1,ACK, OPP COMMAND
6360          ;
6361          ;*****
6362
6363 060614 012737 171001 072030'  MOV      #171001,T26PK3    ;REREAD DATA,CVC=1,ACK, OPP COMMAND
6364 060622 012704 072030'  165$:  MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6365 060626 010337 072036'    MOV      R3,T26SZ        ;SET UP RECORD SIZE IN PACKET
6366 060632 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
6367 060636 004737 016150'    JSR      PC,WAITF        ;WAIT FOR SSR TO SET
6368 060642 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
6369 060646 012702 000200      MOV      #SSR,R2        ;SET UP EXPECTED
6370 060652 020102          CMP      R1,R2            ;ARE THEY EQUAL
6371 060654 001406          BEQ      170$            ;BR, IF OK
6372 060656 005237 002212'  JNC      FATFLG          ;BUMP COUNT
6376 060662          ERRHRD  ERRNO,T26RRF,PKTSSR ;TSSR INCORRECT AFTER REREAD DATA
        060662 104456          TRAP      C$ERHRD
        060664 001176          .WORD    638
        060666 072305'        .WORD    T26RRF
        060670 011746'        .WORD    PKTSSR
6377 060672          170$:  CKLOOP          ;LOOP IF SELECTED
        060672 104406          TRAP      C$CLP1
6378 060674 017701 122214      MOV      #FREE,R1        ;FIRST WORD FROM READ BUFFER
6379 060700 013702 072056'    MOV      T26CNT,R2      ;SET UP EXPECTED
6380 060704 000302          SWAB      R2              ;SWAP BYTES IN EXPECTED
6381 060706 020102          CMP      R1,R2            ;IS TAPE POSITION CORRECT
6382 060710 001406          BEQ      190$            ;KEEP GOING POSITION OK
6383 060712 005237 002212'  INC      FATFLG          ;BUMP COUNT
6387 060716          ERRHRD  ERRNO,T26WNG,EXPREC ;TAPE POSITION INCORRECT
        060716 104456          TRAP      C$ERHRD
        060720 001177          .WORD    639
        060722 072066'        .WORD    T26WNG
        060724 015374'        .WORD    EXPREC
6388 060726          190$:  CKLOOP

```



```

7109      ;
7110      ; -
7111 063366          BGNSUB                      ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
       063366                                     T6.8:
       063366 104402                                TRAP      C$BSUB
7112 063370 004737 074620'        JSR      PC,T26REST        ;SET COMMAND PACKET
7113 063374 004737 074712'        JSR      PC,T26RT2         ;SET UP OTHER COMMAND PACKET
7114 063400 004737 074754'        JSR      PC,T26RT3         ;SET UP OTHER COMMAND PACKET
7115
7116      ;*****
7117      ;
7118      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
7119      ;
7120      ;*****
7121
7122 063404 004737 015674'        JSR      PC,SOFINIT          ;DO INITIALIZE ON CONTROLLER
7123 063410 103407                BCS      20$               ;BR IF INIT WAS OK
7124 063412 005237 002212'        INC      FATFLG            ;BUMP COUNT
7128 063416 010001                MOV      R0,R1              ;CONTENTS OF TSSR REGISTER
7129 063420                ERRDF     ERRNO,SFIERR,SFIMSG       ;FATAL ERROR TSSR WAS NOT OK
       063420 104455                                TRAP      C$ERDF
       063422 001237                                .WORD    671
       063424 003642'                               .WORD    SFIERR
       063426 011734'                               .WORD    SFIMSG
7130 063430 013737 002172' 071720' 20$:   MOV      UNITN,T26DSW        ;SET UP UNIT NUMBER
7131
7132 063436 012704 071700'        MOV      @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
7133
7134      ;*****
7135      ;
7136      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
7137      ;
7138      ;*****
7139
7140 063442 004737 010562'        JSR      PC,WRTPCHR           ;ISSUE WRITE CHARACTERISTICS
7141 063446 103407                BCS      26$               ;BR, IF COMMAND ISSUED OK
7142 063450 005237 002212'        INC      FATFLG            ;BUMP COUNT
7143 063454 010001                MOV      R0,R1              ;SAVE CONTENTS OF TSSR
7144 063456                ERHRD     ERRNO,WRTMSG,SFIMSG       ;WRITE CHARACTERISTIC FAILED
       063456 104456                                TRAP      C$ERHRD
       063460 001240                                .WORD    672
       063462 005046'                               .WORD    WRTMSG
       063464 011734'                               .WORD    SFIMSG
7148 063466                26$:   CKLOOP                        ;LOOP IF SELECTED
       063466 104406                                TRAP      C$CLP1
7149
7150      ;*****
7151      ;
7152      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7153      ;
7154      ;*****
7155
7156 063470 004737 010714'        JSR      PC,REWIND           ;CALL TAPE REWIND COMMAND
7157 063474 103413                BCS      30$               ;BR, IF NO PROBLEM
7158 063476 016501 000002        MOV      TSSR(R5),R1         ;GET TSSR
7159 063502 012702 000200        MOV      @SSR,R2             ;SET UP EXPECTED TSSR
7160 063506 010004                MOV      R0,R4              ;PACKET ADDRESS SET UP

```

```

7161 063510 005237 002212'          INC    FATFLG          ;BUMP COUNT
7165 063514          ERRHRD    ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
          063514 104456
          063516 071241
          063520 073364'
          063522 011746'
7166 063524          30$:    CKLOOP          ;LOOP IF SELECTED
          063524 104406
                                     TRAP    C$ERHRD
7167                                     .WORD  673
7168                                     .WORD  T26RWN
7169                                     .WORD  PKTSSR
7170                                     TRAP    C$CLP1
7171                                     .WORD
7172                                     .WORD
7173                                     .WORD
          ;*****
          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
          ;*****
7174 063526 013701 071730'          MOV     T26BFR+6,R1          ;PICK UP XST0
7175 063532 010102          MOV     R1,R2          ;SET UP EXPECTED
7176 063534 052702 000002          BIS     @BIT1,R2          ;SET BOT BIT IN EXPECTED
7177 063540 020102          CMP     R1,R2          ;DOES EXP = REC'D
7178 063542 001406          BEQ     40$          ;BR, IF EQUAL (OK)
7179 063544 005237 002212'          INC     FATFLG          ;BUMP COUNT
7183 063550          ERRHRD    ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          063550 104456
          063552 001242
          063554 073075'
          063556 015374'
                                     TRAP    C$ERHRD
7184 063560          40$:    CKLOOP          ;LOOP IF SELECTED
          063560 104406
                                     .WORD  674
7185 063562 012703 000400          MOV     @256,R3          ;RECORD SIZE
          063566 013737 003114' 072032'      MOV     FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
          063566 013737 003114' 072032'
                                     TRAP    C$CLP1
7187                                     .WORD
7188                                     .WORD
7189                                     .WORD
7190                                     .WORD
7191                                     .WORD
7192                                     .WORD
7193                                     .WORD
          ;*****
          ;WRITE DATA,CVC=1,ACK,SWB COMMAND
          ;*****
7194 063574 012737 150005 072030'      MOV     @150005,T26PK3      ;WRITE DATA,CVC=1,ACK,SWB COMMAND
7195 063602 012704 072030'      MOV     @T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7196 063606          65$:    MOV     R3,R0          ;SET PATTERN IN CORRECT REGISTER
7197 063606          65$:    JSR     PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
7198 063610          65$:    MOV     R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
7199 063614          65$:    MOV     R4,T26S2      ;ISSUE COMMAND
7200 063620          65$:    JSR     PC,WAITF      ;WAIT FOR SSR TO SET
7201 063624          65$:    MOV     TSSR(R5),R1      ;GET TSSR CONTENTS
7202 063630          65$:    MOV     @SSR,R2      ;SET UP EXPECTED
7203 063634          65$:    CMP     R1,R2      ;ARE THEY EQUAL
7204 063640          65$:    BEQ     75$      ;BR, IF OK
7205 063642          65$:    INC     FATFLG      ;BUMP COUNT
7206 063644          65$:    ERRHRD    ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
7210 063650          65$:    ERRHRD    ERRNO,WRERR,PKTSSR
          063650 104456
          063652 001243
          063654 005103'
          063656 011746'
                                     TRAP    C$ERHRD
7211 063660          75$:    CKLOOP          ;LOOP IF SELECTED
          063660 104406
                                     .WORD  675
                                     .WORD  WRERR
                                     .WORD  PKTSSR
                                     TRAP    C$CLP1

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 228

```

7212 063662 005723          TST      (R3)+          ;BUMP RECORD SIZE
7213 063664 022703 000414    CMP      #268.,R3      ;END OF RECORD YET
7214 063670 001346          BNE      65$          ;BR, IF MORE RECORDS TO WRITE
7215 063672          80$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7216 063674          120$:
7217
7218          ;*****
7219          ;
7220          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7221          ;
7222          ;*****
7223
7224 063674 004737 010714'    JSR      PC,REWIND          ;CALL TAPE REWIND COMMAND
7225 063700 103413          BCS      130$          ;BR, IF NO PROBLEM
7226 063702 016501 000002    MOV      TSSR(R5),R1      ;GET TSSR
7227 063706 012702 000200    MOV      #SSR,R2          ;SET UP EXPECTED TSSR
7228 063712 010004          MOV      R0,R4          ;PACKET ADDRESS SET UP
7229 063714 005237 002212'    INC      FATFLG          ;BUMP COUNT
7233 063720          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     676
                                .WORD     T26RWN
                                .WORD     PKTSSR
7234 063730          130$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7235 063730 104406
7236          ;*****
7237          ;
7238          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
7239          ;
7240          ;*****
7241
7242 063732 013701 071730'    MOV      T26BFR+6,R1      ;FICK UP XST0
7243 063736 010102          MOV      R1,R2          ;SET UP EXPECTED
7244 063740 052702 000002    BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
7245 063744 020102          CMP      R1,R2          ;DOES EXP = REC'D
7246 063746 001406          BEQ      140$          ;BR, IF EQUAL (OK)
7247 063750 005237 002212'    INC      FATFLG          ;BUMP COUNT
7251 063754          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     677
                                .WORD     T26BOT
                                .WORD     EXPREC
7252 063764          140$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7253 063766 012737 000400 072062'    MOV      #256.,T26RSZ      ;START RECORD SIZE
7254 063774 000420          BR      150$          ;SKIP SPCCE THIS TIME
7255
7256          ;*****
7257          ;
7258          ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
7259          ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
7260          ;
7261          ;*****
7262
7263 063776 012703 000001    145$:    MOV      #1,R3          ;SPACE ONE RECORD PARAMETER

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-34 17:54

SEQ 229

```

7264 064002 004737 010366'      JSR      PC,SPACE          ;CALL SPACE ROUTINE
7265 064006 103413              BCS      150$          ;BR, IF NO PROBLEM WITH SPACE COMMAND
7266 064010 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
7267 064014 012702 000200      MOV      *SSR,R2          ;SET UP EXPECTED TSSR
7268 064020 010004              MOV      R0,R4          ;PACKET ADDRESS SET UP
7269 064022 005237 002212'      INC      FATFLG          ;BUMP COUNT
7273 064026              ERRHRD  ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
                                TRAP      C$ERRHRD
                                .WORD     678
                                .WORD     T26SC
                                .WORD     EXPREC
7274 064036              150$: CKLOOP
                                TRAP      C$CLP1
7275 064040 013703 072062'      MOV      T26RSZ,R3          ;RECORD SIZE
7276 064044 013737 003114' 072032'  MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
7277
7278 ;*****
7279 ;
7280 ;REREAD DATA,ACK,CVC=1,SWB COMMAND
7281 ;
7282 ;*****
7283
7284 064052 012737 151401 072030'  MOV      *151401,T26PK3      ;REREAD DATA,ACK,CVC=1,SWB COMMAND
7285 064060 012704 072030' 165$: MOV      *T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
7286 064064 010337 072036'      MOV      R3,T26SZ          ;SET UP RECORD SIZE IN PACKET
7287 064070 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
7288 064074 004737 016150'      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
7289 064100 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7290 064104 012702 000200      MOV      *SSR,R2          ;SET UP EXPECTED
7291 064110 020102              CMP      R1,R2          ;ARE THEY EQUAL
7292 064112 001406              BEQ      170$          ;BR, IF OK
7293 064114 005237 002212'      INC      FATFLG          ;BUMP COUNT
7297 064120              ERRHRD  ERRNO,T26WDC,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
                                TRAP      C$ERRHRD
                                .WORD     679
                                .WORD     T26WDC
                                .WORD     PKTSSR
7298 064130              170$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7299 064132 013702 003114'      MOV      FREE,R2          ;CURRENT BUFFER ADDRESS TO R2
7300 064136 010304              MOV      R3,R4          ;CURRENT RECORD SIZE
7301 064140 162704 000400      SUB      *256.,R4          ;FIRST LOCATION IN BUFFER
7302 064144 060204 173$: ADD      R2,R4          ;SET UP POINTER
7303 064146 021403              CMP      (R4),R3          ;CHECK DATA READ (R3=DATA ALSO)
7304 064150 001410              BEQ      180$          ;BR, IF ALL IS WELL
7305 064152 011401              MOV      (R4),R1          ;RECD DATA
7306 064154 010302              MOV      R3,R2          ;EXPECTED DATA
7307 064156 005237 002212'      INC      FATFLG          ;BUMP COUNT
7311 064162              ERRHRD  ERRNO,T26DTA,EXPREC      ;DATA READ NOT - WRITTEN
                                TRAP      C$ERRHRD
                                .WORD     680
                                .WORD     T26DTA
                                .WORD     EXPREC
7312 064172              180$: CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7313 064174 104406              TST      (R4),          ;BUMP TO NEXT LOCATION
7314 064176 160204              SUB      R2,R4          ;CORRECT RECORDS SIZE VALUE

```

7315	064200	020403		CMP	R4,R3	;END OF RECORD YET	
7316	064202	001360		BNE	173\$	;BR, IF NOT AT END OF RECORD	
7317	064204	005723		TST	(R3),	;BUMP RECORD SIZE	
7318	064206	010337	072062'	MOV	R3,T26RSZ	;STORE RECORD SIZE	
7319	064212	022703	000410	CMP	#264,,R3	;END OF RECORD YET	
7320	064216	001267		BNE	145\$	;BR, IF MORE RECORDS TO WRITE	
7321	064220			CKLOOP		;LOOP IF SELECTED	
	064220	104406					TRAP C\$CLP1
7322	064222			ENDSUB		; >>>>>>>>> END SUBTEST >>>>>>>>>	
	064222					L10112:	
	064222	104403					TRAP C\$ESUB
7323	064224	023727	002212' 00J017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25	
7324	064232	103402		BLO	999\$	;BR, IF LESS THAN 25	
7325	064234	004737	017104'	JSR	PC,CKDROP	;TRY TO DROP THE UNIT	
7326	064240			999\$;			
7327							
7328				+*			
7329				:			
7330				;TEST 6, SUBTEST 9			
7331				:			
7332				;VERIFIES THAT THE REREAD NEXT COMMAND WITH OPP=1			
7333				;(READ FORWARD, SPACE REVERSE) AND SWB=0 OPERATES			
7334				;PROPERLY. THE TAPE IS FIRST REWOUND AND THEN WRITTEN			
7335				;WITH A SERIES OF TEST RECORDS VARYING IN LENGTH AND			
7336				;DATA CONTENT; THE FIRST FOUR BYTES OF EACH RECORD			
7337				;CONTAIN ITS RECORD NUMBER (INDICATING POSITION ON			
7338				;TAPE). THE TAPE IS THEN REWOUND AGAIN, FOR EACH			
7339				;TEST RECORD, THE FOLLOWING SEQUENCE IS EXECUTED.			
7340				:			
7341				;1. THE REREAD NEXT COMMAND WITH OPP=1 IS ISSUED			
7342				;AND THE RESULTS CHECKED			
7343				:			
7344				;2. A READ FORWARD COMMAND IS THEN ISSUED AND THE			
7345				;DATA IS CHECKED TO VERIFY THAT THE TAPE WAS			
7346				;POSITIONED PROPERLY AFTER THE REREAD NEXT			
7347				;COMMAND (E.G. THE TAPE SHOULD HAVE BEEN LEFT			
7348				;POSITIONED AT THE START OF THE TEST RECORD). THE			
7349				;READ FORWARD COMMAND LEAVES THE TAPE POSITIONED			
7350				;PROPERLY AT THE START OF THE NEXT TEST RECORD.			
7351				:			
7352				;THE BYTE COUNT ON EACH REREAD NEXT COMMAND IS SET			
7353				;TO THE LENGTH OF THE EXPECTED RECORD, SO NO			
7354				;EXCEPTIONAL CONDITIONS SHOULD OCCUR.			
7355				:			
7356				:			
7357				:			
7358				:			
7359				:			
7360				-			
7361	064240			BGNSUB		; >>>>>>>>> BEGIN SUBTEST >>>>>>>>>	
	064240					T6.9;	
	064240	104402					TRAP C\$BSUB
7362	064242	004737	074620'	JSR	PC,T26REST	;SET COMMAND PACKET	
7363	064246	005037	072056'	CLR	T26CNT	;CLEAR TAPE RECORD COUNTER	
7364	064252	004737	074712'	JSR	PC,T26RT2	;SET UP OTHER COMMAND PACKET	
7365	064256	004737	074754'	JSR	PC,T26RT3	;SET UP OTHER COMMAND PACKET	
7366							


```

7367 ;*****
7368 ;
7369 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
7370 ;
7371 ;*****
7372
7373 064262 004737 015674'      JSR      PC,SOFINIT      ;DO INITIALIZE ON CONTROLLER
7374 064266 103407              BCS      20$              ;BR IF INIT WAS OK
7375 064270 005237 002212'      INC      FATFLG          ;BUMP COUNT
7379 064274 010001              MOV      R0,R1            ;CONTENTS OF TSSR REGISTER
7380 064276              ERRDF   ERRNO,SFIERR,SFIMSG      ;FATAL ERROR TSSR WAS NOT OK
7380 064276 104455              TRAP      C$ERDF          ;
7380 064300 001251              .WORD    681              ;
7380 064302 003642'            .WORD    SFIERR           ;
7380 064304 011734'            .WORD    SFIMSG           ;
7381 064306 013737 002172' 071720' 20$:  MOV      UNITN,T26DSW      ;SET UP UNIT NUMBER
7382
7383 064314 012704 071700'      MOV      @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
7384
7385 ;*****
7386 ;
7387 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
7388 ;
7389 ;*****
7390
7391 064320 004737 010562'      JSR      PC,WRTPCHR      ;ISSUE WRITE CHARACTERISTICS
7392 064324 103407              BCS      26$              ;BR, IF COMMAND ISSUED OK
7393 064326 005237 002212'      INC      FATFLG          ;BUMP COUNT
7397 064332 010001              MOV      R0,R1            ;SAVE CONTENTS OF TSSR
7398 064334              ERRHRD  ERRNO,WRTMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
7398 064334 104456              TRAP      C$ERRHRD        ;
7398 064336 001252              .WORD    682              ;
7398 064340 005046'            .WORD    WRTMSG           ;
7398 064342 011734'            .WORD    SFIMSG           ;
7399 064344              26$:  CKLOOP                      ;LOOP IF SELECTED
7399 064344 104406              TRAP      C$CLP1          ;
7400
7401 ;*****
7402 ;
7403 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7404 ;
7405 ;*****
7406
7407 064346 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
7408 064352 103413              BCS      30$              ;BR, IF NO PROBLEM
7409 064354 016501              MOV      TSSR(R5),R1      ;GET TSSR
7410 064360 012702 000200      MOV      @SSR,R2          ;SET UP EXPECTED TSSR
7411 064364 010004              MOV      R0,R4            ;PACKET ADDRESS SET UP
7412 064366 005237 002212'      INC      FATFLG          ;BUMP COUNT
7416 064372              ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
7416 064372 104456              TRAP      C$ERRHRD        ;
7416 064374 001253              .WORD    683              ;
7416 064376 073364'            .WORD    T26RWN           ;
7416 064400 011746'            .WORD    PKTSSR           ;
7417 064402              30$:  CKLOOP                      ;LOOP IF SELECTED
7417 064402 104406              TRAP      C$CLP1          ;
7418

```

```

7419 ;*****
7420 ;
7421 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
7422 ;
7423 ;*****
7424
7425 064404 013701 071730'      MOV      T26BFR+6,R1      ;PICK UP XSTO
7426 064410 010102              MOV      R1,P2          ;SET UP EXPECTED
7427 064412 052702 000002      BIS      @BIT1,R2        ;SET BOT BIT IN EXPECTED
7428 064416 020102              CMP      R1,R2          ;DOES EXP = REC'D
7429 064420 001406              BEQ      40$            ;BR, IF EQUAL (OK)
7430 064422 005237 002212'      INC      FATFLG         ;BUMP COUNT
7431 064426              ERRHRD  ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
7432 064426 104456              TRAP      C$ERHRD
7433 064430 001254              .WORD    684
7434 064432 073075'            .WORD    T26BOT
7435 064434 015374'            .WORD    EXPREC
7436 064436              40$:    CKLOOP                  ;LOOP IF SELECTED
7437 064440 012703 000400      MOV      @256.,R3          ;RECORD SIZE
7438 064444 013737 003114' 072032'  MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
7439 ;*****
7440 ;
7441 ;WRITE DATA,CVC=1,ACK COMMAND
7442 ;
7443 ;*****
7444
7445 064452 012737 140005 072030'  MOV      @140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
7446 064460 012704 072030'      MOV      @T26PK3,R4        ;SET UP R4 WITH PACKET ADDRESS
7447 064464              65$:    MOV      R3,T26SZ          ;SET UP RECORD SIZE IN PACKET
7448 064464 010337 072036'      MOV      T26CNT,@FREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
7449 064470 013717 072056' 116416  ADD      @1,T26CNT      ;NUMBER READY FOR NEXT RECORD
7450 064476 062737 000001 072056'  MOV      R4,T26DB(R5)    ;ISSUE COMMAND
7451 064504 010465 000000      JSR      PC,WAITF        ;WAIT FOR SSR TO SET
7452 064510 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7453 064514 016501 000002      MOV      @SSR,R2          ;SET UP EXPECTED
7454 064520 012702 000200      CMP      R1,R2          ;ARE THEY EQUAL
7455 064524 020102              BEQ      75$            ;BR, IF OK
7456 064526 001406              INC      FATFLG         ;BUMP COUNT
7457 064530 005237 002212'      ERRHRD  ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER REREAD DATA
7458 064534 104456              TRAP      C$ERHRD
7459 064536 001255              .WORD    685
7460 064540 005103'            .WORD    WRTErr
7461 064542 011746'            .WORD    PKTSSR
7462 064544              75$:    CKLOOP                  ;LOOP IF SELECTED
7463 064544 101406              TRAP      C$CLP1
7464 064546 005723              TST      (R3)+          ;BUMP THE RECORD SIZE
7465 064550 022703 000414      CMP      @268.,R3      ;MAXIMUM SIZE YET
7466 064554 001401              BEQ      120$           ;BR, IF AT END OF WRITE SEQUENCE
7467 064556 000742              BR       65$            ;WRITE MORE RECORDS
7468 064560 005037 072056'      CLR      T26CNT          ;SET RECORD COUNTER BACK TO ZERO
7469 ;*****
7470 ;
7471 ;

```



```

7472 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7473 ;
7474 ;*****
7475
7476 064564 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
7477 064570 103411 BCS 130$ ;BR, IF NO PROBLEM
7478 064572 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7479 064576 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7480 064600 005237 002212' INC FATFLG ;BUMP COUNT
7484 064604 ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
      064604 104456 TRAP C$ERHRD
      064606 001256 .WORD 686
      064610 073364' .WORD T26RWN
      064612 011746' .WORD PKTSSR
7485 064614 130$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
      064614 104406
7486
7487 ;*****
7488 ;
7489 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
7490 ;
7491 ;*****
7492
7493 064616 013701 071730' MOV T26BFR+6,R1 ;PICK UP XST0
7494 064622 010102 MOV R1,R2 ;SET UP EXPECTED
7495 064624 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
7496 064630 020102 CMP R1,R2 ;DOES EXP = REC'D
7497 064632 001406 BEQ 135$ ;BR, IF EQUAL (OK)
7498 064634 005237 002212' INC FATFLG ;BUMP COUNT
7502 064640 ERRHRD ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      064640 104456 TRAP C$ERHRD
      064642 001257 .WORD 687
      064644 073075' .WORD T26BOT
      064646 015374' .WORD EXPREC
7503 064650 135$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
      064650 104406
7504 064652 012737 000400 072062' MOV #256.,T26RSZ ;STARTING RECORD SIZE
7505 064660 000420 BR 140$ ;SKIP OVER THE SPACE THIS TIME
7506
7507 ;*****
7508 ;
7509 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
7510 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
7511 ;
7512 ;*****
7513
7514 064662 012703 000001 132$: MOV #000001,R3 ;SET UP SPACE COMMAND (1 FORWARD)
7515 064666 004737 010366' JSR PC,SPACE ;CALL SPACE ROUTINE
7516 064672 103413 BCS 140$ ;BR, IF NO TROUBLE
7517 064674 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7518 064700 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED TSSR
7519 064704 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7520 064706 005237 002212' INC FATFLG ;BUMP COUNT
7524 064712 ERRHRD ERRNO,T26SC,PKTSSR ;SPACE (FORWARD) FAILED
      064712 104456 TRAP C$ERHRD
      064714 001260 .WORD 688
      064716 072477' .WORD T26SC

```

	062470	074354'				.WORD	T26PBP
	062472	015374'				.WORD	EXPREC
6854	062474		290#:	CKLOOP	;LOOP IF SELECTED		
	062474	104406				TRAP	C#CLP:
6855	062476			ENDSUB	; >>>>>>>>> END SUBTEST >>>>>>>>		
	062476				L10110:		
	062476	104403				TRAP	C#ESUB
6856	062500	023727	002212'	000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
6857	062506	103402			BLO	999#	;BR, IF LESS THAN 25
6858	062510	004737	017104'		JSR	PC,CKDROP	;TRY TO DROP THE UNIT
6859	062514		999#:				
6860							
6861							
6862							
6863							
6864							
6865							
6866							
6867							
6868							
6869							
6870							
6871							
6872							
6873							
6874							
6875							
6876							
6877							
6878							
6879							
6880							
6881	062514						
	062514						
	062514	104402					
6882	062516	004737	074620'		JSR	PC,T26REST	;SET COMMAND PACKET
6883	062522	004737	074712'		JIR	PC,T26RT2	;SET UP OTHER COMMAND PACKET
6884	062526	004737	074754'		JSR	PC,T26RT3	;SET UP OTHER COMMAND PACKET
6885							
6886							
6887							
6888							
6889							
6890							
6891							
6892	062532	004737	015674'		JSR	PC,SFINIT	;DO INITIALIZE ON CONTROLLER
6893	062536	103407			BCS	20#	;BR IF INIT WAS OK
6894	062540	005237	002212'		INC	FATFLG	;BUMP COUNT
6898	062544	010001			MOV	R0,R1	;CONTENTS OF TSSR REGISTER
6899	062546				ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK
	062546	104455					TRAP
	062550	001225					C#ERDF
	062552	003642'					.WORD
	062554	011734'					.WORD
6900	062556	013737	002172'	071720'	20#:	MOV	UNITN,T26DSW
6901							;SET UP UNIT NUMBER
6902	062564	012704	071700'			MOV	#T26PACKET,R4
							;SUBROUTINE NEEDS PACKET ADDRESS

C2

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 222

```

6903
6904
6905
6906
6907
6908
6909
6910 062570 004737 010562'
6911 062574 103407
6912 062576 005237 002212'
6916 062602 010001
6917 062604
        062604 104456
        062606 001226
        062610 005046'
        062612 011734'
6918 062614
        062614 104406
6919
6920
6921
6922
6923
6924
6925
6926 062616 004737 010714'
6927 062622 103413
6928 062624 016501 000002
6929 062630 012702 000200
6930 062634 010004
6931 062636 005237 002212'
6935 062642
        062642 104456
        062644 001227
        062646 073364'
        062650 011746'
6936 062652
        062652 104406
6937
6938
6939
6940
6941
6942
6943
6944 062654 013701 071730'
6945 062660 010102
6946 062662 052702 000002
6947 062666 020102
6948 062670 001406
6949 062672 005237 002212'
6953 062676
        062676 104456
        062700 001230
        062702 073075'
        062704 015374'
6954 062706

```

```

;*****
;
;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
;
;*****
        JSR      PC,WRTCHR          ;ISSUE WRITE CHARACTERISTICS
        BCS      26$              ;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$ERRHRD
                                   .WORD     662
                                   .WORD     WRTMSG
                                   .WORD     SFMSG
26$:      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      TSSR(R5),R1      ;GET TSSR
        MOV      $SSR,R2         ;SET UP EXPECTED TSSR
        MOV      R0,R4           ;PACKET ADDRESS SET UP
        INC      FATFLG           ;BUMP COUNT
        ERRHRD   ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
                                   TRAP      C$ERRHRD
                                   .WORD     663
                                   .WORD     T26RWN
                                   .WORD     PKTSSR
30$:      CKLOOP                  ;LOOP IF SELECTED
                                   TRAP      C$CLP1
;*****
;
;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
;
;*****
        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      40$             ;BR, IF EQUAL (OK)
        INC      FATFLG           ;BUMP COUNT
        ERRHRD   ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                   TRAP      C$ERRHRD
                                   .WORD     664
                                   .WORD     T26BOT
                                   .WORD     EXPREC
40$:      CKLOOP                  ;LOOP IF SELECTED

```

```

6955 062706 104406
6956 062710 012703 000400      MOV    0256.,R3      ;RECORD SIZE      TRAP    C$CLP1
6957 062714 013737 003114' 072032'  MOV    FREE,T26RB    ;STARTING WRITE BUFFER ADDRESS
6958
6959      ;*****
6960      ;WRITE DATA,CVC=1,ACK COMMAND
6961      ;
6962      ;*****
6963
6964 062722 012737 140005 072030'      MOV    0140005,T26PK3    ;WRITE DATA,CVC=1,ACK COMMAND
6965 062730 012704 072030'      MOV    0T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
6966 062734      65$:
6967 062734 010300      MOV    R3,R0      ;SET PATTERN IN CORRECT REGISTER
6968 062736 004737 017324'      JSR    PC,FILLMEM    ;FILL MEMORY WITH RECORD SIZE
6969 062742 010337 072036'      MOV    R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
6970 062746 010465 000000      MOV    R4,TSD8(R5)    ;ISSUE COMMAND
6971 062752 004737 016150'      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
6972 062756 016501 000002      MOV    TSSR(R5),R1    ;GET TSSR CONTENTS
6973 062762 012702 000200      MOV    0SSR,R2      ;SET UP EXPECTED
6974 062766 020102      CMP    R1,R2      ;ARE THEY EQUAL
6975 062770 001406      BEQ    75$      ;BR, IF OK
6976 062772 005237 002212'      INC    FATFLG      ;BUMP COUNT
6980 062776      ERRHRD  ERRNO,WRterr,PKTSSR    ;TSSR INCORRECT AFTER WRITE DATA
6981 062776 104456      TRAP    C$ERRHRD
6982 063000 001231      .WORD  665
6983 063002 005103'      .WORD  WRterr
6984 063004 011746'      .WORD  PKTSSR
6985 063006      75$:  CKLOOP      ;LOOP IF SELECTED      TRAP    C$CLP1
6986 063006 104406
6987 063010 005723      TST    (R3)+      ;BUMP RECORD SIZE
6988 063012 022703 000414      CMP    0268.,R3    ;END OF RECORD YET
6989 063016 001346      BNE    65$      ;BR, IF MORE RECORDS TO WRITE
6990 063020      80$:  CKLOOP      ;LOOP IF SELECTED
6991 063020 104406      TRAP    C$CLP1
6992 063022      120$:
6993      ;*****
6994      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
6995      ;
6996      ;*****
6997 063022 004737 010714'      JSR    PC,REWIND    ;CALL TAPE REWIND COMMAND
6998 063026 103413      BCS    130$      ;BR, IF NO PROBLEM
6999 063030 016501 000002      MOV    TSSR(R5),R1    ;GET TSSR
7000 063034 012702 000200      MOV    0SSR,R2      ;SET UP EXPECTED TSSR
7001 063040 010004      MOV    R0,R4      ;PACKET ADDRESS SET UP
7002 063042 005237 002212'      INC    FATFLG      ;BUMP COUNT
7003 063046      ERRHRD  ERRNO,T26RWN,PKTSSR    ;REWIND NOT ACCEPTED
7004 063046 104456      TRAP    C$ERRHRD
7005 063050 001232      .WORD  666
7006 063052 073364'      .WORD  T26RWN
7007 063054 011746'      .WORD  PKTSSR
7008 063056      130$:  CKLOOP      ;LOOP IF SELECTED
7009 063056 104406      TRAP    C$CLP1

```

E2

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 224

```

7006 ;*****
7007 ;
7008 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
7009 ;
7010 ;*****
7011
7012 063060 013701 071730'      MOV      T26BFR+6,R1      ;PICK UP XSTO
7013 063064 010102              MOV      R1,R2          ;SET UP EXPECTED
7014 063066 052702 000002      BIS      4BIT1,R2        ;SET BOT BIT IN EXPECTED
7015 063072 020102              CMP      R1,R2          ;DOES EXP = REC'D
7016 063074 001406              BEQ      140$           ;BR, IF EQUAL (OK)
7017 063076 005237 002212'      INC      FATFLG         ;BUMP COUNT
7021 063102              ERRHRD   ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     667
                                .WORD     T26BOT
                                .WORD     EXPREC
                                TRAP      C$CLP1
                                .WORD     668
                                .WORD     T26SC
                                .WORD     EXPREC
063102 104456
063104 001233
063106 073075'
063110 015374'
7022 063112 140$: CKLOOP      ;LOOP IF SELECTED
063112 104406
7023 063114 012737 000400 072062'  MOV      256.,T26RSZ      ;STORE START RECORD SIZE
7024 063122 000420              BR       150$           ;SKIP THE SPACE THIS TIME
7025
7026 ;*****
7027 ;
7028 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
7029 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
7030 ;
7031 ;*****
7032
7033 063124 012703 000001      145$: MOV      1,R3          ;SPACE ONE RECORD PARAMETER
7034 063130 004737 010366'      JSR      PC,SPACE        ;CALL SPACE ROUTINE
7035 063134 103413              BCS      150$           ;BR, IF NO PROBLEM WITH SPACE COMMAND
7036 063136 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
7037 063142 012702 000200      MOV      2SSR,R2        ;SET UP EXPECTED TSSR
7038 063146 010004              MOV      R0,R4          ;PACKET ADDRESS SET UP
7039 063150 005237 002212'      INC      FATFLG         ;BUMP COUNT
7043 063154              ERRHRD   ERRNO,T26SC,EXPREC    ;POSITION (SPACE RECORDS) FAILED
                                TRAP      C$ERHRD
                                .WORD     668
                                .WORD     T26SC
                                .WORD     EXPREC
                                TRAP      C$CLP1
                                .WORD     668
                                .WORD     T26SC
                                .WORD     EXPREC
063154 104456
063156 001274
063160 072477'
063162 015374'
7044 063164 150$: CKLOOP      ;RECORD SIZE
063164 104406
7045 063166 013703 072062'      MOV      T26RSZ,R3      ;RECORD SIZE
7046 063172 013737 003114' 072032'  MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
7047
7048 ;*****
7049 ;
7050 ;REREREAD DATA,CVC=1,ACK COMMAND
7051 ;
7052 ;*****
7053
7054 063200 012737 141401 072030' 165$: MOV      141401,T26PK3      ;REREREAD DATA,CVC=1,ACK COMMAND
7055 063206 012704 072030'      MOV      26PK3,R4        ;SET UP R4 WITH PACKET ADDRESS
7056 063212 010337 072036'      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
7057 063216 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
7058 063222 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET

```

Line	Address	Offset	Label	Operation	Register/Value	Comment
7059	063226	016501	000002	MOV	TSSR(R5),R1	;GET TSSR CONTENTS
7060	063232	012702	000200	MOV	#SSR,R2	;SET UP EXPECTED
7061	063236	020102		CMP	R1,R2	;ARE THEY EQUAL
7062	063240	001406		BEQ	170\$	;BR, IF OK
7063	063242	005237	002212'	INC	FATFLG	;BUMP COUNT
7067	063246			ERRHRD	ERRNO,T26WDC,PKTSSR	;TSSR INCORRECT AFTER REREAD DATA
	063246	104456				TRAP C\$ERHRD
	063250	001235				.WORD 669
	063252	073720'				.WORD T26WDC
	063254	011746'				.WORD PKTSSR
7068	063256		170\$:	CKLOOP		;LOOP IF SELECTED
	063256	104406				TRAP C\$CLP1
7069	063260	013702	003114'	MOV	FREE,R2	;CURRENT BUFFER ADDRESS TO R2
7070	063264	010304		MOV	R3,R4	;CURRENT RECORD SIZE
7071	063266	162704	000400	SUB	#256.,R4	;FIRST LOCATION IN BUFFER
7072	063272	060204		ADD	R2,R4	;SET UP POINTER
7073	063274	021403		CMP	(R4),R3	;CHECK DATA READ (R3=DATA ALSO)
7074	063276	001410		BEQ	180\$	;BR, IF ALL IS WELL.
7075	063300	011401		MOV	(R4),R1	;RECD DATA
7076	063302	010302		MOV	R3,R2	;EXPECTED DATA
7077	063304	005237	002212'	INC	FATFLG	;BUMP COUNT
7081	063310			ERRHRD	ERRNO,T26DTA,EXPREC	;DATA READ NOT = WRITTEN
	063310	104456				TRAP C\$ERHRD
	063312	001236				.WORD 67C
	063314	073142'				.WORD T26DTA
	063316	015374'				.WORD EXPREC
7082	063320		180\$:	CKLOOP		;LOOP IF SELECTED
	063320	104406				TRAP C\$CLP1
7083	063322	005724		TST	(R4),	;BUMP TO NEXT LOCATION
7084	063324	160204		SUB	R2,R4	;CORRECT RECORDS SIZE VALUE
7085	063326	020403		CMP	R4,R3	;END OF RECORD YET
7086	063330	001360		BNE	173\$	;BR, IF NOT AT END OF RECORD
7087	063332	005723		TST	(R3),	;BUMP RECORD SIZE
7088	063334	010337	072062'	MOV	R3,T26R52	;STORE PRESENT RECORD SIZE
7089	063340	022703	000410	CMP	#264.,R3	;END OF RECORD YET
7090	063344	001267		BNE	145\$	;BR, IF MORE RECORDS TO READ
7091	063346		190\$:	CKLOOP		;LOOP IF SELECTED
	063346	104406				TRAP C\$CLP1
7092	063350			ENDSUB		;***** END SUBTEST *****
	063350					L10111:
	063350	104403				TRAP C\$ESUB
7093	063352	023727	002212' 000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
7094	063360	103402		BLO	999\$	;BR, IF LESS THAN 25
7095	063362	004737	017104'	JSR	PC,CKDROP	;TRY TO DROP THE UNIT
7096	063366		999\$:			
7097						
7098						
7099						
7100						
7101						
7102						
7103						
7104						
7105						
7106						
7107						
7108						


```

7109      ;
7110      ; -
7111      063366          BGNSUB                      ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
              063366                                T6.8:
              063366    104402                        TRAP        C$BSUB
7112      063370    004737    074620'                JSR         PC,T26REST            ;SET COMMAND PACKET
7113      063374    004737    074712'                JSR         PC,T26RT2           ;SET UP OTHER COMMAND PACKET
7114      063400    004737    074754'                JSR         PC,T26RT3           ;SET UP OTHER COMMAND PACKET
7115
7116      ; *****
7117      ;
7118      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
7119      ;
7120      ; *****
7121
7122      063404    004737    015674'                JSR         PC,SOFINIT            ;DO INITIALIZE ON CONTROLLER
7123      063410    103407                                BCS         20$                    ;BR IF INIT WAS OK
7124      063412    005237    002212'                INC         FATFLG             ;BUMP COUNT
7128      063416    010001                                MOV         R0,R1                 ;CONTENTS OF TSSR REGISTER
7129      063420                                ERROF     ERRNO,SFIERR,SFMSG       ;FATAL ERROR TSSR WAS NOT OK
              063420    104455                                TRAP        C$ERDF
              063422    001237                                .WORD      671
              063424    003642'                            .WORD      SFIERR
              063426    011734'                            .WORD      SFMSG
7130      063430    013737    002172'    071720'    20$:   MOV         UNITN,T26DSW            ;SET UP UNIT NUMBER
7131
7132      063436    012704    071700'                MOV         @T26PACKET,R4        ;SUBROUTINE NEEDS PACKET ADDRESS
7133
7134      ; *****
7135      ;
7136      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPHR)
7137      ;
7138      ; *****
7139
7140      063442    004737    010562'                JSR         PC,WRTPHR            ;ISSUE WRITE CHARACTERISTICS
7141      063446    103407                                BCS         26$                    ;BR, IF COMMAND ISSUED OK
7142      063450    005237    002212'                INC         FATFLG             ;BUMP COUNT
7143      063454    010001                                MOV         R0,R1                 ;SAVE CONTENTS OF TSSR
7144      063456                                ERHRD     ERRNO,WRTMSG,SFMSG       ;WRITE CHARACTERISTIC FAILED
              063456    104456                                TRAP        C$ERHRD
              063460    001240                                .WORD      672
              063462    005046'                            .WORD      WRTMSG
              063464    011734'                            .WORD      SFMSG
7148      063466    26$:   CKLOOP                      ;LOOP IF SELECTED
              063466    104406                                TRAP        C$CLP1
7149
7150      ; *****
7151      ;
7152      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7153      ;
7154      ; *****
7155
7156      063470    004737    010714'                JSR         PC,REWIND           ;CALL TAPE REWIND COMMAND
7157      063474    103413                                BCS         30$                    ;BR, IF NO PROBLEM
7158      063476    016501    000002                MOV         TSSR(R5),R1         ;GET TSSR
7159      063502    012702    000200                MOV         @SSR,R2             ;SET UP EXPECTED TSSR
7160      063506    010004                                MOV         R0,R4                 ;PACKET ADDRESS SET UP

```

```

7161 063510 005237 002212'          INC    FATFLG          ;BUMP COUNT
7165 063514          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
          063514 104456
          063516 001241
          063520 073364'
          063522 011746'
7166 063524          30$:    CKLOOP                      ;LOOP IF SELECTED
          063524 104406
          TRAP    C$ERHRD
7167          .WORD 673
7168          .WORD T26RWN
7169          .WORD PKTSSR
7170          ;*****
7171          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
7172          ;*****
7173          ;*****
7174 063526 013701 071730'          MOV    T26BFR+6,R1          ;PICK UP XSTO
7175 063532 010102          MOV    R1,R2          ;SET UP EXPECTED
7176 063534 052702 000002          BIS    #BIT1,R2          ;SET BOT BIT IN EXPECTED
7177 063540 020102          CMP    R1,R2          ;DOES EXP = REC'D
7178 063542 001406          BEQ    40$          ;BR, IF EQUAL (OK)
7179 063544 005237 002212'          INC    FATFLG          ;BUMP COUNT
7183 063550          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          063550 104456
          063552 001242
          063554 073075'
          063556 015374'
          TRAP    C$ERHRD
7184 063560          40$:    CKLOOP                      ;LOOP IF SELECTED
          063560 104406
          TRAP    C$CLP1
7185 063562 012703 000400          MOV    #256,R3          ;RECORD SIZE
7186 063566 013737 003114' 072032'  MOV    FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
7187          ;*****
7188          ;WRITE DATA,CVC=1,ACK,SWB COMMAND
7189          ;*****
7190          ;*****
7191          ;*****
7192          ;*****
7193          ;*****
7194 063574 012737 150005 072030'  MOV    #150005,T26PK3      ;WRITE DATA,CVC=1,ACK,SWB COMMAND
7195 063602 012704 072030'  MOV    #T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
7196 063606          65$:    MOV    R3,R0          ;SET PATTERN IN CORRECT REGISTER
7197 063606          JSR    PC,FILLMEM          ;FILL MEMORY WITH RECORD SIZE
7198 063610 004737 017324'  MOV    R3,T26SZ          ;SET UP RECORD SIZE IN PACKET
7199 063614 010337 072036'  MOV    R4,TSD8(R5)      ;ISSUE COMMAND
7200 063620 010465 000000          JSR    PC,WAITF          ;WAIT FOR SSR TO SET
7201 063624 004737 016150'  MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
7202 063630 016501 000002          MOV    #SSR,R2          ;SET UP EXPECTED
7203 063634 012702 000200          CMP    R1,R2          ;ARE THEY EQUAL
7204 063640 020102          BEQ    75$          ;BR, IF OK
7205 063642 001406          INC    FATFLG          ;BUMP COUNT
7206 063644 005237 002212'          ERRHRD  ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
7210 063650          TRAP    C$ERHRD
          063650 104456
          063652 001243
          063654 005103'
          063656 011746'
          TRAP    C$CLP1
7211 063660          75$:    CKLOOP                      ;LOOP IF SELECTED
          063660 104406
          TRAP    C$CLP1

```


TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 228

```

7212 063662 005723          TST      (R3)+          ;BUMP RECORD SIZE
7213 063664 022703 000414    CMP      0268.,R3      ;END OF RECORD YET
7214 063670 001346          BNE      65$           ;BR, IF MORE RECORDS TO WRITE
7215 063672          80$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7216 063674          120$:
7217
7218          ;*****
7219          ;
7220          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7221          ;
7222          ;*****
7223
7224 063674 004737 010714'    JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
7225 063700 103413          BCS      130$           ;BR, IF NO PROBLEM
7226 063702 016501 000002    MOV      TSSR(R5),R1    ;GET TSSR
7227 063706 012702 000200    MOV      0SSR,R2       ;SET UP EXPECTED TSSR
7228 063712 010004          MOV      R0,R4          ;PACKET ADDRESS SET UP
7229 063714 005237 002212'    INC      FATFLG       ;BUMP COUNT
7233 063720          ERRHRD  ERRNO,T26RWN,PKTSSR    ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD    676
                                .WORD    T26RWN
                                .WORD    PKTSSR
7234 063730          130$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7235
7236          ;*****
7237          ;
7238          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
7239          ;
7240          ;*****
7241
7242 063732 013701 071730'    MOV      T26BFR+6,R1    ;FICK UP XSTO
7243 063736 010102          MOV      R1,R2          ;SET UP EXPECTED
7244 063740 052702 000002    BIS      0BIT1,R2      ;SET BOT BIT IN EXPECTED
7245 063744 020102          CMP      R1,R2          ;DOES EXP = REC'D
7246 063746 001406          BEQ      140$           ;BR, IF EQUAL (OK)
7247 063750 005237 002212'    INC      FATFLG       ;BUMP COUNT
7251 063754          ERRHRD  ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD    677
                                .WORD    T26BOT
                                .WORD    EXPREC
7252 063764          140$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
7253 063766 012737 000400 072062'    MOV      0256.,T26RSZ    ;START RECORD SIZE
7254 063774 000420          BR      150$           ;SKIP SPACE THIS TIME
7255
7256          ;*****
7257          ;
7258          ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
7259          ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
7260          ;
7261          ;*****
7262
7263 063776 012703 000001    145$:    MOV      01,R3          ;SPACE ONE RECORD PARAMETER

```

```
7264 064002 004737 010366'      JSR      PC,SPACE          ;CALL SPACE ROUTINE
7265 064006 103413              BCS      150$              ;BR, IF NO PROBLEM WITH SPACE COMMAND
7266 064010 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
7267 064014 012702 000200      MOV      *SSR,R2          ;SET UP EXPECTED TSSR
7268 064020 010004              MOV      R0,R4          ;PACKET ADDRESS SET UP
7269 064022 005237 002212'      INC      FATFLG          ;BUMP COUNT
7273 064026              ERRHRD  ERRNO,T26SC,EXPREC      ;POSITION (SPACE RECORDS) FAILED
                        104456              TRAP      C$ERRHRD
                        001246              .WORD     678
                        064032 072477'          .WORD     T26SC
                        015374'          .WORD     EXPREC
7274 064036              150$: CKLOOP              TRAP      C$CLP1
                        064036 104406              ;RECORD SIZE
7275 064040 013703 072062'      MOV      T26RSZ,R3          ;STARTING READ BUFFER ADDRESS
7276 064044 013737 003114' 072032'      MOV      FREE,T26RB
7277
7278 ;*****
7279 ;
7280 ;REREAD DATA,ACK,CVC=1,SWB COMMAND
7281 ;
7282 ;*****
7283
7284 064052 012737 151401 072030'      MOV      *151401,T26PK3      ;REREAD DATA,ACK,CVC=1,SWB COMMAND
7285 064060 012704 072030'      165$: MOV      *T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7286 064064 010337 072036'      MOV      R3,T26SZ          ;SET UP RECORD SIZE IN PACKET
7287 064070 010465 000000      MOV      R4,TSD0(R5)      ;ISSUE COMMAND
7288 064074 004737 016150'      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
7289 064100 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7290 064104 012702 000200      MOV      *SSR,R2          ;SET UP EXPECTED
7291 064110 020102              CMP      R1,R2          ;ARE THEY EQUAL
7292 064112 001406              BEQ      170$          ;BR, IF OK
7293 064114 005237 002212'      INC      FATFLG          ;BUMP COUNT
7297 064120              ERRHRD  ERRNO,T26WDC,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
                        104456              TRAP      C$ERRHRD
                        001247              .WORD     679
                        064124 073720'          .WORD     T26WDC
                        011746'          .WORD     PKTSSR
7298 064130              170$: CKLOOP              ;LOOP IF SELECTED
                        064130 104406              TRAP      C$CLP1
7299 064132 013702 003114'      MOV      FREE,R2          ;CURRENT BUFFER ADDRESS TO R2
7300 064136 010304              MOV      R3,R4          ;CURRENT RECORD SIZE
7301 064140 162704 000400      SUB      *256,R4          ;FIRST LOCATION IN BUFFER
7302 064144 060204              173$: ADD      R2,R4          ;SET UP POINTER
7303 064146 021403              CMP      (R4),R3          ;CHECK DATA READ (R3=DATA ALSO)
7304 064150 001410              BEQ      180$          ;BR, IF ALL IS WELL
7305 064152 011401              MOV      (R4),R1          ;RECD DATA
7306 064154 010302              MOV      R3,R2          ;EXPECTED DATA
7307 064156 005237 002212'      INC      FATFLG          ;BUMP COUNT
7311 064162              ERRHRD  ERRNO,T26DTA,EXPREC      ;DATA READ NOT - WRITTEN
                        104456              TRAP      C$ERRHRD
                        001250              .WORD     680
                        064166 073142'          .WORD     T26DTA
                        015374'          .WORD     EXPREC
7312 064172              180$: CKLOOP              ;LOOP IF SELECTED
                        064172 104406              TRAP      C$CLP1
7313 064174 005724              TST      (R4),          ;BUMP TO NEXT LOCATION
7314 064176 160204              SUB      R2,R4          ;CORRECT RECORDS SIZE VALUE
```

7315	064200	020403		CMP	R4,R3	;END OF RECORD YET	
7316	064202	001360		BNE	173\$	;BR, IF NOT AT END OF RECORD	
7317	064204	005723		TST	(R3)+	;BUMP RECORD SIZE	
7318	064206	010337	072062'	MOV	R3,T26RSZ	;STORE RECORD SIZE	
7319	064212	022703	000410	CMP	#264,,R3	;END OF RECORD YET	
7320	064216	001267		BNE	145\$	;BR, IF MORE RECORDS TO WRITE	
7321	064220		190\$:	CKLOOP		;LOOP IF SELECTED	
	064220	104406					TRAP C\$CLP1
7322	064222			ENDSUB		;>>>>>>>>>> END SUBTEST >>>>>>>>>	
	064222					L10112:	
	064222	104403					TRAP C\$ESUB
7323	064224	023727	002212' 000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25	
7324	064232	103402		BLO	999\$	;BR, IF LESS THAN 25	
7325	064234	004737	017104'	JSR	PC,CKDROP	;TRY TO DROP THE UNIT	
7326	064240		999\$:				
7327							
7328			+*				
7329			:				
7330			; TEST 6. SUBTEST 9				
7331			:				
7332			; VERIFIES THAT THE REREAD NEXT COMMAND WITH OPP=1				
7333			; (READ FORWARD, SPACE REVERSE) AND SWB=0 OPERATES				
7334			; PROPERLY. THE TAPE IS FIRST REWOUND AND THEN WRITTEN				
7335			; WITH A SERIES OF TEST RECORDS VARYING IN LENGTH AND				
7336			; DATA CONTENT; THE FIRST FOUR BYTES OF EACH RECORD				
7337			; CONTAIN ITS RECORD NUMBER (INDICATING POSITION ON				
7338			; TAPE). THE TAPE IS THEN REWOUND AGAIN. FOR EACH				
7339			; TEST RECORD, THE FOLLOWING SEQUENCE IS EXECUTED.				
7340			:				
7341			1. THE REREAD NEXT COMMAND WITH OPP=1 IS ISSUED				
7342			; AND THE RESULTS CHECKED				
7343			:				
7344			2. A READ FORWARD COMMAND IS THEN ISSUED AND THE				
7345			; DATA IS CHECKED TO VERIFY THAT THE TAPE WAS				
7346			; POSITIONED PROPERLY AFTER THE REREAD NEXT				
7347			; COMMAND (E.G. THE TAPE SHOULD HAVE BEEN LEFT				
7348			; POSITIONED AT THE START OF THE TEST RECORD). THE				
7349			; READ FORWARD COMMAND LEAVES THE TAPE POSITIONED				
7350			; PROPERLY AT THE START OF THE NEXT TEST RECORD.				
7351			:				
7352			; THE BYTE COUNT ON EACH REREAD NEXT COMMAND IS SET				
7353			; TO THE LENGTH OF THE EXPECTED RECORD, SO NO				
7354			; EXCEPTIONAL CONDITIONS SHOULD OCCUR.				
7355			:				
7356			:				
7357			:				
7358			:				
7359			-				
7360							
7361	064240			BGN SUB		;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>	
	064240					T6.9:	
	064240	104402					TRAP C\$BSUB
7362	064242	004737	074620'	JSR	PC,T26REST	;SET COMMAND PACKET	
7363	064246	005037	072056'	CLR	T26CNT	;CLEAR TAPE RECORD COUNTER	
7364	064252	004737	074712'	JSR	PC,T26RT2	;SET UP OTHER COMMAND PACKET	
7365	064256	004737	074754'	JSR	PC,T26RT3	;SET UP OTHER COMMAND PACKET	
7366							

```

7367 ;*****
7368 ;
7369 ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
7370 ;
7371 ;*****
7372 ;
7373 064262 004737 015674' JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
7374 064266 103407 BCS 20$ ;BR IF INIT WAS OK
7375 064270 005237 002212' INC FATFLG ;BUMP COUNT
7379 064274 010001 MOV R0,R1 ;CONTENTS OF TSSR REGISTER
7380 064276 ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
7381 064276 104455 TRAP C$ERDF
7382 064300 001251 .WORD 681
7383 064302 003642' .WORD SFIERR
7384 064304 011734' .WORD SFIMSG
7385 064306 013737 002172' 071720' 20$: MOV UNITN,T26DSW ;SET UP UNIT NUMBER
7386 064314 012704 071700' MOV @T26PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
7387 ;*****
7388 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
7389 ;
7390 ;*****
7391 064320 004737 010562' JSR PC,WRTPCHR ;ISSUE WRITE CHARACTERISTICS
7392 064324 103407 BCS 26$ ;BR, IF COMMAND ISSUED OK
7393 064326 005237 002212' INC FATFLG ;BUMP COUNT
7397 064332 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
7398 064334 ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
7399 064334 104456 TRAP C$ERHRD
7400 064336 001252 .WORD 682
7401 064340 005046' .WORD WRTMSG
7402 064342 011734' .WORD SFIMSG
7403 26$: CKLOOP ;LOOP IF SELECTED
7404 TRAP C$CLP1
7405 ;*****
7406 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7407 ;
7408 ;*****
7409 064346 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
7410 064352 103413 BCS 30$ ;BR, IF NO PROBLEM
7411 064354 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7412 064360 012702 000200 MOV @SSR,R2 ;SET UP EXPECTED TSSR
7413 064364 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7414 064366 005237 002212' INC FATFLG ;BUMP COUNT
7415 064372 ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
7416 064372 104456 TRAP C$ERHRD
7417 064374 001253 .WORD 683
7418 064376 073364' .WORD T26RWN
7419 064400 011746' .WORD PKTSSR
7420 30$: CKLOOP ;LOOP IF SELECTED
7421 TRAP C$CLP1

```

```

7419 ;*****
7420 ;
7421 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
7422 ;
7423 ;*****
7424
7425 064404 013701 071730'      MOV      T26BFR+6,R1      ;PICK UP XSTO
7426 064410 010102              MOV      R1,P2           ;SET UP EXPECTED
7427 064412 052702 000002      BIS      *BIT1,R2         ;SET BOT BIT IN EXPECTED
7428 064416 020102              CMP      R1,R2           ;DOES EXP = REC'D
7429 064420 001406              BEQ      40$              ;BR, IF EQUAL (OK)
7430 064422 005237 002212'      INC      FATFLG          ;BUMP COUNT
7431 064426              ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
7432 064426 104456              TRAP      C$ERHRD
7433 064430 001254              .WORD    684
7434 064432 073075'            .WORD    T26BOT
7435 064434 015374'            .WORD    EXPREC
7436 064436 104406 40$:      CKLOOP              ;LOOP IF SELECTED
7437 064440 012703 000400      MOV      *256.,R3          ;RECORD SIZE
7438 064444 013737 003114' 072032'      MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
7439 ;*****
7440 ;WRITE DATA,CVC=1,ACK COMMAND
7441 ;
7442 ;*****
7443 ;*****
7444
7445 064452 012737 140005 072030'      MOV      *140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
7446 064460 012704 072030'      MOV      *T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
7447 064464 65$:      MOV      R3,T26SZ              ;SET UP RECORD SIZE IN PACKET
7448 064464 010337 072036'      MOV      T26CNT,*FREE      ;MOVE TAPE RECORD NUMBER TO BUFFER
7449 064470 013717 072056' 116416      ADD      *1,T26CNT      ;NUMBER READY FOR NEXT RECORD
7450 064476 062737 000001 072056'      MOV      R4,T26DB(R5)      ;ISSUE COMMAND
7451 064504 010465 000000      JSR      PC,WAITF          ;WAIT FOR SSR TO SET
7452 064510 004737 016150'      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7453 064514 016501 000002      MOV      *SSR,R2           ;SET UP EXPECTED
7454 064520 012702 000200      CMP      R1,R2           ;ARE THEY EQUAL
7455 064524 020102              BEQ      75$              ;BR, IF OK
7456 064526 001406              INC      FATFLG          ;BUMP COUNT
7457 064530 005237 002212'      ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
7458 064534 104456              TRAP      C$ERHRD
7459 064536 001255              .WORD    685
7460 064540 005103'            .WORD    WRERR
7461 064542 011746'            .WORD    PKTSSR
7462 064544 101406 75$:      CKLOOP              ;LOOP IF SELECTED
7463 064546 005723              TRAP      C$CLP1
7464 064550 022703 000414      TST      (R3),          ;BUMP THE RECORD SIZE
7465 064554 001401              CMP      *268.,R3        ;MAXIMUM SIZE YET
7466 064556 000742              BEQ      120$              ;BR, IF AT END OF WRITE SEQUENCE
7467 064560 120$:      BR      65$              ;WRITE MORE RECORDS
7468 064560 005037 072056'      CLR      T26CNT          ;SET RECORD COUNTER BACK TO ZERO
7469 ;*****
7470 ;
7471 ;

```

```

7472 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7473 ;
7474 ;*****~*****
7475
7476 064564 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
7477 064570 103411 BCS 130$ ;BR, IF NO PROBLEM
7478 064572 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7479 064576 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7480 064600 005237 002212' INC FATFLG ;BUMP COUNT
7484 064604 ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
      064604 104456 TRAP C$ERHRD
      064606 001256 .WORD 686
      064610 073364' .WORD T26RWN
      064612 011746' .WORD PKTSSR
7485 064614 130$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
      064614 104406
7486
7487 ;*****~*****
7488 ;
7489 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
7490 ;
7491 ;*****~*****
7492
7493 064616 013701 071730' MOV T26BFR+6,R1 ;PICK UP XST0
7494 064622 010102 MOV R1,R2 ;SET UP EXPECTED
7495 064624 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
7496 064630 020102 CMP R1,R2 ;DOES EXP = REC'D
7497 064632 001406 BEQ 135$ ;BR, IF EQUAL (OK)
7498 064634 005237 002212' INC FATFLG ;BUMP COUNT
7502 064640 ERRHRD ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
      064640 104456 TRAP C$ERHRD
      064642 001257 .WORD 687
      064644 073075' .WORD T26BOT
      064646 015374' .WORD EXPREC
7503 064650 135$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
      064650 104406
7504 064652 012737 000400 072062' MOV #256.,T26RSZ ;STARTING RECORD SIZE
7505 064660 000420 BR 140$ ;SKIP OVER THE SPACE THIS TIME
7506
7507 ;*****~*****
7508 ;
7509 ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
7510 ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
7511 ;
7512 ;*****~*****
7513
7514 064662 012703 000001 132$: MOV #000001,R3 ;SET UP SPACE COMMAND (1 FORWARD)
7515 064666 004737 010366' JSR PC,SPACE ;CALL SPACE ROUTINE
7516 064672 103413 BCS 140$ ;BR, IF NO TROUBLE
7517 064674 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7518 064700 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED TSSR
7519 064704 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7520 064706 005237 002212' INC FATFLG ;BUMP COUNT
7524 064712 ERRHRD ERRNO,T26SC,PKTSSR ;SPACE (FORWARD) FAILED
      064712 104456 TRAP C$ERHRD
      064714 001260 .WORD 688
      064716 072477' .WORD T26SC

```



```

7525 064720 011746'          1401: CKLOOP                      ;LOOP IF SELECTED          .WORD  PKTSSR
064722 104406                      TRAP  C1CLP1
7526 064724 013703 072062'    MOV  T26RSZ,R3                ;RECORD SIZE
7527 064730 013737 003114' 072032' 1501: MOV  FREE,T26RB      ;STARTING READ BUFFER ADDRESS
7528
7529 ;*****
7530 ;
7531 ;REREAD DATA,CVC=1,ACK, OPP COMMAND
7532 ;
7533 ;*****
7534
7535 064736 012737 161401 072030'  MOV  0161401,T26PK3      ;REREAD DATA,CVC=1,ACK, OPP COMMAND
7536 064744 012704 072030' 1651: MOV  0126PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
7537 064750 010337 072036'    MOV  R3,T26SZ              ;SET UP RECORD SIZE IN PACKET
7538 064754 010465 000000    MOV  R4,T26DB(R5)          ;ISSUE COMMAND
7539 064760 004737 016150'    JSR  PC,WAITF              ;WAIT FOR SSR TO SET
7540 064764 016501 000002    MOV  TSSR(R5),R1          ;GET TSSR CONTENTS
7541 064770 012702 000200    MOV  0SSR,R2              ;SET UP EXPECTED
7542 064774 020102          CMP  R1,R2                  ;ARE THEY EQUAL
7543 064776 001406          BEQ  1701                    ;BR, IF OK
7544 065000 005237 002212'    INC  FATFLG                ;BUMP COUNT
7548 065004          ERRHRD  ERRNO,T26RRF',PKTSSR          ;TSSR INCORRECT AFTER REREAD DATA
065004 104456                      TRAP  C1ERRHRD
065006 001261                      .WORD  689
065010 072305'                      .WORD  T26RRF
065012 011746'                      .WORD  PKTSSR
7549 065014          1701: CKLOOP                      ;LOOP IF SELECTED
065014 104406                      TRAP  C1CLP1
7550 065016 017701 116072    MOV  0FREE,R1                ;FIRST WORD FROM READ BUFFER
7551 065022 013702 072056'    MOV  T26CNT,R2          ;SET UP EXPECTED
7552 065026 020102          CMP  R1,R2                  ;IS TAPE POSITION CORRECT
7553 065030 001406          BEQ  1901                    ;KEEP GOING POSITION OK
7554 065032 005237 002212'    INC  FATFLG                ;BUMP COUNT
7558 065036          ERRHRD  ERRNO,T26WNG,EXPREC          ;TAPE POSITION INCORRECT
065036 104456                      TRAP  C1ERRHRD
065040 001262                      .WORD  690
065042 072066'                      .WORD  T26WNG
065044 015374'                      .WORD  EXPREC
7559 065046          1901: CKLOOP                      ;LOOP IF SELECTED
065046 104406                      TRAP  C1CLP1
7560 065050 062737 000001 072056'  ADD  01,T26CNT          ;BUMP TAPE RECORD COUNTER
7561 065056 005723          TST  (R3),                  ;NEXT RECORD SIZE
7562 065060 010337 072062'    MOV  R3,T26RSZ          ;STORE RECORD SIZE
7563 065064 022703 000412    CMP  0266.,R3          ;AT MAX SIZE YET
7564 065070 001402          BEQ  2001                    ;BR, IF AT END OF THE SUBTEST
7565 065072 000137 064662'    JMP  1521                    ;KEEP GOING MORE RECORDS
7566 065076          2001:
7567 065076          ENDSUB                      ;***** END SUBTEST *****
065076                      L10113:
7568 065100 104403 002212' 000017  CMP  FATFLG,015,          ;IS ERROR COUNT AT 25
7569 065106 103402          BLO  9991                    ;BR, IF LESS THAN 25
7570 065110 004737 017104'    JSR  PC,CKDROP          ;TRY TO DROP THE UNIT
7571 065114          9991:
7572
7573

```

Line	Address	Offset	Value	Instruction	Comment
7574					TEST 6, SUBTEST 10
7575					
7576					
7577					VERIFIES THAT THE REREAD NEXT COMMAND WITH OPP=1
7578					AND SWB=1 OPERATES PROPERLY, THE TEST SEQUENCE IS
7579					THE SAME THAT IS USED IN SUBTEST 3, BUT IT IS
7580					VERIFIED THAT DATA STORED BY THE COMMAND CONTAINS
7581					SWAPPED BYTES.
7582					
7583					
7584					
7585					
7586					
7587					
7588	065114			BGNSUB	***** BEGIN SUBTEST *****
	065114				T6.10:
	065114	104402			TRAP C#BSUB
7589	065116	004737	074620'	JSR PC,T26REST	SET COMMAND PACKET
7590	065122	005037	072056'	CLR T26CNT	CLEAR TAPE RECORD COUNTER
7591	065126	004737	074712'	JSR PC,T26RT2	SET UP OTHER COMMAND PACKET
7592	065132	004737	074754'	JSR PC,T26RT3	SET UP OTHER COMMAND PACKET
7593					
7594					*****
7595					ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
7596					
7597					*****
7598					
7599					
7600	065136	004737	015674'	JSR PC,SOFINIT	DO INITIALIZE ON CONTROLLER
7601	065142	103407		BCS 20:	BR IF INIT WAS OK
7602	065144	005237	002212'	INC FATFLG	BUMP COUNT
7606	065150	010001		MOV R0,R1	CONTENTS OF TSSR REGISTER
7607	065152			ERRDF ERRNO,SFIERR,SFMSG	FATAL ERROR TSSR WAS NOT OK
	065152	104455			TRAP C#ERDF
	065154	001263			.WORD 691
	065156	003642'			.WORD SFIERR
	065160	011734'			.WORD SFMSG
7608	065162	013737	002172' 071720' 20:	MOV UNITN,T26DSW	SET UP UNIT NUMBER
7609					
7610	065170	012704	071700'	MOV #T26PACKET,R4	SUBROUTINE NEEDS PACKET ADDRESS
7611					
7612					*****
7613					
7614					WRITE CHARACTERISTICS COMMAND (CALL TO WRTHR)
7615					
7616					*****
7617					
7618	065174	004737	010562'	JSR PC,WRTHR	ISSUE WRITE CHARACTERISTICS
7619	065200	103407		BCS 26:	BR, IF COMMAND ISSUED OK
7620	065202	005237	002212'	INC FATFLG	BUMP COUNT
7624	065206	010001		MOV R0,R1	SAVE CONTENTS OF TSSR
7625	065210			ERRHRD ERRNO,WRMSG,SFMSG	WRITE CHARACTERISTICS FAILED
	065210	104456			TRAP C#ERRHRD
	065212	001264			.WORD 692
	065214	005046'			.WORD WRMSG
	065216	011734'			.WORD SFMSG
7626	065220			26:	CKLOOP
					LOOP IF SELECTED


```

065220 104406                                TRAP    C$CLP1
7627
7628
7629
7630
7631
7632
7633
7634 065222 004737 010714'                JSR      PC,REWIND                ;CALL TAPE REWIND COMMAND
7635 065226 016501 000002                MOV      TSSR(R5),R1            ;GET TSSR
7636 065232 012702 000200                MOV      #SSR,R2              ;SET UP EXPECTED TSSR
7637 065236 103407                        BCS      30$                    ;BR, IF NO PROBLEM
7638 065240 010004                        MOV      R0,R4                ;PACKET ADDRESS SET UP
7639 065242 005237 002212'                INC      FATFLG              ;BUMP COUNT
7643 065246                        ERRHRD  ERRNO,T26RWN,PKTSSR          ;REWIND NOT ACCEPTED
                                TRAP    C$ERHRD
                                .WORD   693
                                .WORD   T26RWN
                                .WORD   PKTSSR
                                TRAP    C$CLP1
065246 104456
065250 001265
065252 073364'
065254 011746'
7644 065256                        30$:    CKLOOP                    ;LOOP IF SELECTED
065256 104406                                TRAP    C$CLP1
7645
7646
7647
7648
7649
7650
7651
7652 065260 013701 071730'                MOV      T26BFR+6,R1          ;PICK UP XSTO
7653 065264 010102                        MOV      R1,R2                ;SET UP EXPECTED
7654 065266 052702 000002                BIS      #BIT1,R2            ;SET BOT BIT IN EXPECTED
7655 065272 020102                        CMP      R1,R2                ;DOES EXP = REC'D
7656 065274 001406                        BEQ      40$                    ;BR, IF EQUAL (OK)
7657 065276 005237 002212'                INC      FATFLG              ;BUMP COUNT
7661 065302                        ERRHRD  ERRNO,T26BOT,EXPREC          ;TAPE NOT AT BOT AFTER REWIND
                                TRAP    C$ERHRD
                                .WORD   694
                                .WORD   T26BOT
                                .WORD   EXPREC
                                TRAP    C$CLP1
065302 104456
065304 001265
065306 073075'
065310 015374'
7662 065312                        40$:    CKLOOP                    ;LOOP IF SELECTED
065312 104406                                TRAP    C$CLP1
7663 065314 012703 000400                MOV      #256,R3              ;RECORD SIZE
7664 065320 013737 003114' 072032'        MOV      FREE,T26RB            ;STARTING WRITE BUFFER ADDRESS
7665
7666
7667
7668
7669
7670
7671
7672 065326 012737 140005 072030'        MOV      #140005,T26PK3        ;WRITE DATA,CVC=1,ACK COMMAND
7673 065334 012704 072030'                MOV      #T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
7674 065340
7675 065340 010337 072036'                MOV      R3,T26SZ              ;SET UP RECORD SIZE IN PACKET
7676 065344 013777 072056' 115542        MOV      T26CNT,#FREE          ;MOVE TAPE RECORD NUMBER TO BUFFER
7677 065352 062737 000001 072056'        ADD      #1,T26CNT            ;NUMBER READY FOR NEXT RECORD
7678 065360 010465 000000                MOV      R4,T50B(R5)          ;ISSUE COMMAND

```

E3

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 237

```

7679 065364 004737 016150'      JSR      PC, WAITF      ;WAIT FOR SSR TO SET
7680 065370 016501 000002      MOV      TSSR(R5), R1    ;GET TSSR CONTENTS
7681 065374 012702 000200      MOV      #SSR, R2    ;SET UP EXPECTED
7682 065400 020102              CMP      R1, R2    ;ARE THEY EQUAL
7683 065402 001406              BEQ      75$      ;BR, IF OK
7684 065404 005237 002212'      INC      FATFLG    ;BUMP COUNT
7688 065410              ERRHRD  ERRNO, WRTERR, PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C$ERRHRD
                                .WORD     695
                                .WORD     WRTERR
                                .WORD     PKTSSR
                                TRAP      C$CLP1
7689 065420 104456              75$: CKLOOP      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                .WORD     695
                                .WORD     WRTERR
                                .WORD     PKTSSR
7690 065422 005723              TST      (R3)+      ;BUMP THE RECORD SIZE
7691 065424 022703 000414      CMP      #268., R3    ;MAXIMUM SIZE YET
7692 065430 001401              BEQ      120$      ;BR, IF AT END OF WRITE SEQUENCE
7693 065432 000742              BR       65$      ;WRITE MORE RECORDS
7694 065434              120$: CLR      T26CNT    ;SET RECORD COUNTER BACK TO ZERO
7695 065434 005037 072056'
7696
7697
7698
7699
7700
7701
7702
7703 065440 004737 010714'      JSR      PC, REWIND    ;CALL TAPE REWIND COMMAND
7704 065444 103411              BCS      130$      ;BR, IF NO PROBLEM
7705 065446 016501 000002      MOV      TSSR(R5), R1    ;GET TSSR
7706 065452 010004              MOV      R0, R4    ;PACKET ADDRESS SET UP
7707 065454 005237 002212'      INC      FATFLG    ;BUMP COUNT
7711 065460              ERRHRD  ERRNO, T26RWN, PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERRHRD
                                .WORD     696
                                .WORD     T26RWN
                                .WORD     PKTSSR
7712 065470 104406              130$: CKLOOP    ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                .WORD     696
                                .WORD     T26RWN
                                .WORD     PKTSSR
7713
7714
7715
7716
7717
7718
7719
7720 065472 013701 071730'      MOV      T26BFR+6, R1  ;PICK UP XSTO
7721 065476 010102              MOV      R1, R2    ;SET UP EXPECTED
7722 065500 052702 000002      BIS      #BIT1, R2    ;SET BOT BIT IN EXPECTED
7723 065504 020102              CMP      R1, R2    ;DOES EXP = REC'D
7724 065506 001406              BEQ      135$      ;BR, IF EQUAL (OK)
7725 065510 005237 002212'      INC      FATFLG    ;BUMP COUNT
7729 065514              ERRHRD  ERRNO, T26BOT, EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERRHRD
                                .WORD     697
                                .WORD     T26BOT
                                .WORD     EXPREC
7730 065524              135$: CKLOOP    ;LOOP IF SELECTED

```

F3

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 238

```

065524 104406
7731 065526 012737 000400 072062'      MOV      0256.,T26RSZ      ;START RECORD SIZE      TRAP      C$CLP1
7732 065534 000420                      BR          140$      ;SKIP OVER SPACE
7733
7734      ;*****
7735      ;
7736      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
7737      ;BIT 15 SETS DIRECTION - 0=FORWARD      1=REVERSE
7738      ;
7739      ;*****
7740
7741 065535 012703 000001      136$:      MOV      0000001,R3      ;SET UP SPACE COMMAND (1 FORWARD)
7742 065542 004737 010366'      JSR      PC,SPACE      ;CALL SPACE ROUTINE
7743 065546 103413      BCS      140$      ;RR, IF NO TROUBLE
7744 065550 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
7745 065554 012702 000200      MOV      0SSR,R2      ;SET UP EXPECTED TSSR
7746 065560 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
7747 065562 005237 002212'      INC      FATFLG      ;BUMP COUNT
7751 065566                      ERRHRD      ERRNO,T26SC,PKTSSR      ;SPACE (FORWARD) FAILED
065566 104456                      TRAP      C$ERHRD
065570 001272                      .WORD      698
065572 072477'                      .WORD      T26SC
065574 011746'                      .WORD      PKTSSR
7752 065576      140$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
065576 104406
7753 065600 013703 072062'      MOV      T26RSZ,R3      ;RECORD SIZE
7754 065604 013737 003114' 072032' 150$:      MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
7755
7756      ;*****
7757      ;
7758      ;REREAD DATA,CVC=1,ACK, OPP COMMAND
7759      ;
7760      ;*****
7761
7762 065612 012737 61401 072030'      165$:      MOV      0161401,T26PK3      ;REREAD DATA,CVC=1,ACK, OPP COMMAND
7763 065620 012704 072030'      MOV      0T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7764 065624 010337 072036'      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
7765 065630 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
7766 065634 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
7767 065640 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7768 065644 012702 000200      MOV      0SSR,R2      ;SET UP EXPECTED
7769 065650 020102      CMP      R1,R2      ;ARE THEY EQUAL
7770 065652 001406      BEQ      170$      ;RR, IF OK
7771 065654 005237 002212'      INC      FATFLG      ;BUMP COUNT
7775 065660                      ERRHRD      ERRNO,T26RRF,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
065660 104456                      TRAP      C$ERHRD
065662 001273                      .WORD      699
065664 072305'                      .WORD      T26RRF
065666 011746'                      .WORD      PKTSSR
7776 065670      170$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
065670 104406
7777 065672 017701 115216      MOV      0FREE,R1      ;FIRST WORD FROM READ BUFFER
7778 065676 013702 072056'      MOV      T26CNT,R2      ;SET UP EXPECTED
7779 065702 020102      CMP      R1,R2      ;IS TAPE POSITION CORRECT
7780 065704 001406      BEQ      190$      ;KEEP GOING POSITION OK
7781 065706 005237 002212'      INC      FATFLG      ;BUMP COUNT
7785 065712                      ERRHRD      ERRNO,T26WNG,EXPREC      ;TAPE POSITION INCORRECT

```


H3

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 240

```

7834 066030 011734'
7835 066032 013737 002172' 071720' 20$: MOV UNITN,T26DSW ;SET UP UNIT NUMBER .WORD SFIMSG
7836 066040 012704 071700' MOV #T26PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
7837
7838 ;*****
7839 ;
7840 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
7841 ;
7842 ;*****
7843
7844 066044 004737 010562' JSR PC,WRTHCR ;ISSUE WRITE CHARACTERISTICS
7845 066050 103407 BCS 26$ ;BR, IF COMMAND ISSUED OK
7846 066052 005237 002212' INC FATFLG ;BUMP COUNT
7850 066056 010001 MOV R0,R1 ;SAVE CONTENTS OF TSSR
7851 066060 ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
7852 066060 104456 TRAP C$ERHRD
7853 066062 001276 .WORD 702
7854 066064 005046' .WORD WRTMSG
7855 066066 011734' .WORD SFIMSG
7856 26$: CKLOOP ;LOOP IF SELECTED
7857 TRAP C$CLP1
7858 ;*****
7859 ;
7860 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7861 ;
7862 ;*****
7863
7864 066072 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
7865 066076 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7866 066102 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED TSSR
7867 066106 103407 BCS 30$ ;BR, IF NO PROBLEM
7868 066110 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7869 066112 005237 002212' INC FATFLG ;BUMP COUNT
7870 066116 104456 ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
7871 066120 001277 TRAP C$ERHRD
7872 066122 073364' .WORD 703
7873 066124 011746' .WORD T26RWN
7874 066126 104406 30$: CKLOOP ;LOOP IF SELECTED
7875 TRAP C$CLP1
7876 ;*****
7877 ;
7878 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
7879 ;
7880 ;*****
7881
7882 066130 013701 071730' MOV T26BFR+6,R1 ;PICK UP XST0
7883 066134 010102 MOV R1,R2 ;SET UP EXPECTED
7884 066136 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
7885 066142 020102 CMR R1,R2 ;DOES EXP = REC'D
7886 066144 001406 BEQ 40$ ;BR, IF EQUAL (OK)
7887 066146 005237 002212' INC FATFLG ;BUMP COUNT
7888 066152 104456 ERRHRD ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
7889 TRAP C$ERHRD

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 241

```

066154 001300
066156 073075'
066160 015374'
7888 066162 104406 40$: CKLOOP ;LOOP IF SELECTED
066162 104406 ;RECORD SIZE
7889 066164 012703 001000 MOV #512,R3 ;STARTING WRITE BUFFER ADDRESS
7890 066170 013737 003114' 072032' MOV FREE,T26RB
7891
7892 ;*****
7893 ;
7894 ;WRITE DATA,CVC=1,ACK COMMAND
7895 ;
7896 ;*****
7897
7898 066176 012737 140005 072030' MOV #140005,T26PK3 ;WRITE DATA,CVC=1,ACK COMMAND
7899 066204 012704 072030' MOV #T26PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
7900 066210
7901 066210 010337 072036' 65$: MOV R3,T26SZ ;SET UP RECORD SIZE IN PACKET
7902 066214 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
7903 066220 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
7904 066224 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
7905 066230 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
7906 066234 020102 CMP R1,R2 ;ARE THEY EQUAL
7907 066236 001406 BEQ 75$ ;BR, IF OK
7908 066240 005237 002212' INC FATFLG ;BUMP COUNT
7912 066244 ERRHRD ERRNO,WRterr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
066244 104456 TRAP C$ERRRD
066246 001301 .WORD 705
066250 005103' .WORD WRterr
066252 011746' .WORD PKTSSR
7913 066254 75$: CKLOOP ;LOOP IF SELECTED
066254 104406 TRAP C$CLP1
7914
7915 ;*****
7916 ;
7917 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
7918 ;
7919 ;*****
7920
7921 066256 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
7922 066262 016501 000002 MOV TSSR(R5),R1 ;GET TSSR
7923 066266 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED TSSR
7924 066272 103407 BCS 130$ ;BR, IF NO PROBLEM
7925 066274 010004 MOV R0,R4 ;PACKET ADDRESS SET UP
7926 066276 005237 002212' INC FATFLG ;BUMP COUNT
7930 066302 ERRHRD ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
066302 104456 TRAP C$ERRRD
066304 001302 .WORD 706
066306 073364' .WORD T26RWN
066310 011746' .WORD PKTSSR
7931 066312 130$: CKLOOP ;LOOP IF SELECTED
066312 104406 TRAP C$CLP1
7932
7933 ;*****
7934 ;
7935 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
7936 ;

```



```

7937
7938
7939 066314 013701 071730'      MOV      126BFR+6,R1      ;PICK UP XSTO
7940 066320 010102              MOV      R1,R2          ;SET UP EXPECTED
7941 066322 052702 000002      BIS      @BIT1,R2        ;SET BOT BIT IN EXPECTED
7942 066326 020102              CMP      R1,R2          ;DOES EXP = REC'D
7943 066330 001406              BEQ      140$            ;BR, IF EQUAL (OK)
7944 066332 005237 002212'      INC      FATFLG          ;BUMP COUNT
7948 066336              ERRHRD   ERRNO,T26BOT,EXPREC    ;TAPE NOT AT BOT AFTER REWIND
              066336 104456              TRAP      C$ERHRD
              066340 001303              .WORD     707
              066342 073075'              .WORD     T26BOT
              066344 015374'              .WORD     EXPREC
7949 066346              140$:  CKLOOP              ;LOOP IF SELECTED
              066346 104406              TRAP      C$CLP1
7950 066350 005303              DEC      R3              ;SET RECORD SIZE TO 511.
7951 066352 013737 003114' 072032'  MOV      FREE,T26RB      ;STARTING READ BUFFER ADDRESS
7952
7953
7954
7955
7956
7957
7958
7959 066360 012737 161401 072030' 165$:  MOV      @161401,T26PK3      ;REREAD DATA,CVC=1,ACK,OPP=1 COMMAND
7960 066366 012704 072030'      MOV      @T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
7961 066372 010337 072036'      MOV      R3,T26SZ      ;SET UP RECORD SIZE IN PACKET
7962 066376 010465 000000      MOV      R4,TSD@R5      ;ISSUE COMMAND
7963 066402 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
7964 066406 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
7965 066412 012702 100204      MOV      @SSR!SC!BIT2,R2      ;SET UP EXPECTED
7966 066416 020102              CMP      R1,R2          ;ARE THEY EQUAL
7967 066420 001406              BEQ      170$            ;BR, IF OK
7968 066422 005237 002212'      INC      FATFLG          ;BUMP COUNT
7972 066426              ERRHRD   ERRNO,T26TRL,PKTSSR    ;TSSR INCORRECT AFTER REREAD DATA
              066426 104456              TRAP      C$ERHRD
              066430 001304              .WORD     708
              066432 074442'              .WORD     T26TRL
              066434 011746'              .WORD     PKTSSR
7973 066436              170$:  CKLOOP              ;LOOP IF SELECTED
              066436 104406              TRAP      C$CLP1
7974
7975
7976
7977
7978
7979
7980
7981 066440 013701 071730'      MOV      T26BFR+6,R1      ;GET MESSAGE BUFFER
7982 066444 010102              MOV      R1,R2          ;SET UP EXPECTED
7983 066446 052702 010000      BIS      @BIT12,R2      ;SET THE RLL BIT IN EXPECTED
7984 066452 020102              CMP      R1,R2          ;ARE THEY EQUAL
7985 066454 001406              BEQ      180$            ;BR, IF EQUAL (ALL IS WELL)
7986 066456 005237 002212'      INC      FATFLG          ;BUMP COUNT
7990 066462              ERRHRD   ERRNO,T26LON,EXPREC    ;THE RLL BIT WAS NOT SET IN XSTO
              066462 104456              TRAP      C$ERHRD
              066464 001305              .WORD     709

```



```

      066734 005046'
      066736 011734'
8094 066740 104406      26$: CKLOOP      ;LOOP IF SELECTED      .WORD WRTMSG
      066740 104406      TRAP C$CLP1      .WORD SFIMSG
8095
8096
8097
8098
8099
8100
8101
8102 066742 004737 010714'      JSR PC,REWIND      ;CALL TAPE REWIND COMMAND
8103 066746 016501 000002      MOV TSSR(R5),R1      ;GET TSSR
8104 066752 012702 000200      MOV #SSR,R2      ;SET UP EXPECTED TSSR
8105 066756 103407      BCS 30$      ;BR, IF NO PROBLEM
8106 066760 010004      MOV R0,R4      ;PACKET ADDRESS SET UP
8107 066762 005237 002212'      INC FATFLG      ;BUMP COUNT
8111 066766      ERRHRD ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
      066766 104456      TRAP C$ERHRD
      066770 001312      .WORD 714
      066772 073364'      .WORD T26RWN
      066774 011746'      .WORD PKTSSR
8112 066776 104406      30$: CKLOOP      ;LOOP IF SELECTED      TRAP C$CLP1
      066776 104406
8113
8114
8115
8116
8117
8118
8119
8120 067000 013701 071730'      MOV T26BFR+6,R1      ;PICK UP XST0
8121 067004 010102      MOV R1,R2      ;SET UP EXPECTED
8122 067006 052702 000002      BIS #BIT1,R2      ;SET BOT BIT IN EXPECTED
8123 067012 020102      CMP R1,R2      ;DOES EXP = REC'D
8124 067014 001406      BEQ 40$      ;BR IF EQUAL (OK)
8125 067016 005237 002212'      INC FATFLG      ;BUMP COUNT
8129 067022      ERRHRD ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      067022 104456      TRAP C$ERHRD
      067024 001313      .WORD 715
      067026 073075'      .WORD T26BOT
      067030 015374'      .WORD EXPREC
8130 067032 104406      40$: CKLOOP      ;LOOP IF SELECTED      TRAP C$CLP1
      067032 104406
8131 067034 012703 000400      MOV #256,R3      ;SET UP R4 WITH PACKET ADDRESS
8132 067040 013737 003114' 072032'      MOV FREE,T26RB      ;STARTING TAPE BUFFER ADDRESS
8133
8134
8135
8136
8137
8138
8139
8140 067046 012737 140005 072030'      MOV #140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
8141 067054 012704 072030'      MOV #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8142 067060
8143 067060 010337 072036'      65$: MOV R3,T26SZ      ;SET UP RECORD SIZE IN PACKET

```

```

8144 067064 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
8145 067070 004737 016150'    JSR      PC,WAITF      ;WAIT FOR SSR TO SET
8146 067074 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8147 067100 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
8148 067104 020102              CMP      R1,R2      ;ARE THEY EQUAL
8149 067106 001406              BEQ      75$      ;BR, IF OK
8150 067110 005237 002212'    INC      FATFLG      ;BUMP COUNT
8154 067114              ERRHRD  ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
                                TRAP      C$ERHRD
                                .WORD     716
                                .WORD     WRERR
                                .WORD     PKTSSR
                                TRAP      C$CLP1
8155 067124 104406      75$:    CKLOOP      ;LOOP IF SELECTED
8156 067126      120$:
8157
8158      ;*****
8159      ;
8160      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8161      ;
8162      ;*****
8163
8164 067126 004737 010714'    JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
8165 067132 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR
8166 067136 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED TSSR
8167 067142 103407              BCS      130$      ;BR, IF NO PROBLEM
8168 067144 010004              MOV      R0,R4      ;PACKET ADDRESS SET UP
8169 067146 005237 002212'    INC      FATFLG      ;BUMP COUNT
8173 067152              ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     717
                                .WORD     T26RWN
                                .WORD     PKTSSR
                                TRAP      C$CLP1
8174 067162 104406      130$:    CKLOOP      ;LOOP IF SELECTED
8175
8176      ;*****
8177      ;
8178      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
8179      ;
8180      ;*****
8181
8182 067164 013701 071730'    MOV      T26BFR+6,R1      ;PICK UP XST0
8183 067170 010102              MOV      R1,R2      ;SET UP EXPECTED
8184 067172 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
8185 067176 020102              CMP      R1,R2      ;DOES EXP = REC'D
8186 067200 001406              BEQ      135$      ;BR, IF EQUAL (OK)
8187 067202 005237 002212'    INC      FATFLG      ;BUMP COUNT
8191 067206              ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     713
                                .WORD     T26BOT
                                .WORD     EXPREC
                                TRAP      C$CLP1
8192 067216 104406      135$:    CKLOOP      ;LOOP IF SELECTED
8193 067220 012703 001000      MOV      #512,R3      ;RECORD SIZE
8194 067224 013737 003114' 072032'  MOV      FREE,T26R8      ;STARTING READ BUFFER ADDRESS

```

```

8195
8196
8197
8198
8199
8200
8201
8202 067232 012737 161401 072030'
8203 067240 012704 072030'
8204 067244 010337 072036'
8205 067250 010465 000000
8206 067254 004737 016150'
8207 067260 016501 000002
8208 067264 012702 100204
8209 067270 020102
8210 067272 001406
8211 067274 005237 002212'
8215 067300
      067300 104456
      067302 001317
      067304 074442'
      067306 011746'
8216 067310
      067310 104406
8217
8218
8219
8220
8221
8222
8223
8224 067312 013701 071730'
8225 067316 010102
8226 067320 052702 040000
8227 067324 020102
8228 067326 001406
8229 067330 005237 002212'
8233 067334
      067334 104456
      067336 001320
      067340 074272'
      067342 015374'
8234 067344
      067344 104406
8235 067346 013701 071726'
8236 067352 012702 000400
8237 067356 020102
8238 067360 001405
8242 067364
      067364 104456
      067366 001320
      067370 074354'
      067372 015374'
8243 067374
      067374 104406
8244 067376 012703 001000
8245 067402 013737 003114' 072032'

;*****
;
;REREAD NEXT,ACK,CVC=1,OPP=1
;
;*****
165:  MOV    #161401,T26PK3      ;REREAD NEXT,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    170:              ;BR, IF OK
      INC    FATFLG            ;BUMP COUNT
      ERRHRD  ERRNO,T26TRL,PKTSSR ;TSSR INCORRECT AFTER READ DATA
                                TRAP    C!ERHRD
                                .WORD   719
                                .WORD   T26TRL
                                .WORD   PKTSSR
170:  CKLOOP                    ;LOOP IF SELECTED
                                TRAP    C!CLP1
;*****
;
;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
;
;*****
      MOV    T26BFR+6,R1       ;GET MESSAGE BUFFER
      MOV    R1,R2             ;SET UP EXPECTED
      BIS    #BIT14,R2         ;SET THE RLS BIT IN EXPECTED
      CMP    R1,R2             ;ARE THEY EQUAL
      BEQ    180:              ;BR, IF EQUAL (ALL IS WELL)
      INC    FATFLG            ;BUMP COUNT
      ERRHRD  ERRNO,T26LOP,EXPREC ;THE RLL BIT WAS NOT SET IN XSTO
                                TRAP    C!ERHRD
                                .WORD   720
                                .WORD   T26LOP
                                .WORD   EXPREC
180:  CKLOOP                    ;LOOP IF SELECTED
                                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    190:              ;BR, IF CORRECT
      ERRHRD  ERRNO,T26PBP,EXPREC ;RBPOR NOT CORRECT
                                TRAP    C!ERHRD
                                .WORD   720
                                .WORD   T26PBP
                                .WORD   EXPREC
190:  CKLOOP                    ;LOOP IF SELECTED
                                TRAP    C!CLP1
      MOV    #512,R3           ;RECORD SIZE
      MOV    FREE,T26RB        ;STARTING READ BUFFER ADDRESS

```

L10116:

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 249

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	

E4

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 250

```

8352 067700          ERRHRD  ERRNO,WRTMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
      067700 104456          TRAP                  C$ERHRD
      067702 001324          .WORD                  724
      067704 005046'         .WORD                  WRTMSG
      067706 011734'         .WORD                  SFMSG
8353 067710          26$:    CKLOOP                  ;LOOP IF SELECTED
      067710 104406          TRAP                  C$CLP1
8354
8355          ;*****
8356          ;
8357          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8358          ;
8359          ;*****
8360
8361 067712 004137 021024'    JSR      PC,INVERT      ;INVERT THE EXTENDED FEATURES SWITCH
8362 067716 004737 010714'    JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
8363 067722 103411          BCS      30$             ;BR, IF NO PROBLEM
8364 067724 016501 000002    MOV      TSSR(R5),R1      ;GET TSSR
8365 067730 010004          MOV      R0,R4             ;PACKET ADDRESS SET UP
8366 067732 005237 002212'    INC      FATFLG          ;BUMP COUNT
8370 067736          ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
      067736 104156          TRAP                  C$ERHRD
      067740 001325          .WORD                  725
      067742 073364'         .WORD                  T26RWN
      067744 011746'         .WORD                  PKTSSR
8371 067746          30$:    CKLOOP                  ;LOOP IF SELECTED
      067746 104406          TRAP                  C$CLP1
8372
8373          ;*****
8374          ;
8375          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8376          ;
8377          ;*****
8378
8379 067750 013701 071730'    MOV      T26BFR+6,R1      ;PICK UP XSTO
8380 067754 010102          MOV      R1,R2             ;SET UP EXPECTED
8381 067756 052702 000002    BIS      @BIT1,R2         ;SET BOT BIT IN EXPECTED
8382 067762 020102          CMP      R1,R2             ;DOES EXP = REC'D
8383 067764 001406          BEQ      40$             ;BR, IF EQUAL (OK)
8384 067766 005237 002212'    INC      FATFLG          ;BUMP COUNT
8388 067772          ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      067772 104456          TRAP                  C$ERHRD
      067774 001326          .WORD                  726
      067776 073075'         .WORD                  T26BOT
      070000 015374'         .WORD                  EXPREC
8389 070002          40$:    CKLOOP                  ;LOOP IF SELECTED
      070002 104406          TRAP                  C$CLP1
8390 070004 013737 003114' 072032'    MOV      FREE,T26RB      ;STARTING WRITE BUFFER ADDRESS
8391
8392          ;*****
8393          ;
8394          ;WRITE DATA,CVC=1,ACK COMMAND
8395          ;
8396          ;*****
8397
8398 070012 012737 140005 072030'    MOV      @140005,T26PK3      ;WRITE DATA,CVC=1,ACK COMMAND
8399 070020 012704 072030'    MOV      @T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 251

```

8400 070024 012737 000400 072036' 65$:  MOV    0256.,T26SZ      ;SET UP RECORD SIZE IN PACKET
8401 070032 013777 072056' 113054  MOV    T26CNT,0FREE    ;MOVE TAPE RECORD NUMBER TO BUFFER
8402 070040 062737 000001 072056'  ADD    01,T26CNT      ;NUMBER READY FOR NEXT RECORD
8403 070046 010465 000000      MOV    R4,TSD0(R5)    ;ISSUE COMMAND
8404 070052 004737 016150'      JSR     PC,WAITF      ;WAIT FOR SSR TO SET
8405 070056 016501 000002      MOV    TSSR(R5),R1    ;GET TSSR CONTENTS
8406 070062 012702 000200      MOV    0SSR,R2      ;SET UP EXPECTED
8407 070066 020102      CMP     R1,R2      ;ARE THEY EQUAL
8408 070070 001406      BEQ     75$      ;BR, IF OK
8409 070072 005237 002212'      INC     FATFLG      ;BUMP COUNT
8413 070076      ERRHRD  ERRNO,WRTErr,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
      070076 104456      TRAP    C$ERHRD
      070100 001327      .WORD   727
      070102 005103'      .WORD   WRTErr
      070104 011746'      .WORD   PKTSSR
8414 070106      75$:  CKLOOP      ;LOOP IF SELECTED
      070106 104406      TRAP    C$CLP1
8415 070110 022737 000013 072056'  CMP     011.,T26CNT    ;CHECK NUMBER OF RECORDS WRITTEN
8416 070116 001401      BEQ     120$      ;BR IF AT END OF WRITE SEQUENCE
8417 070120 000741      BR      65$      ;WRITE MORE RECORDS
8418 070122      120$:      CLR     NXMMHI      ;SET TO 16 BIT ADDRESS
8419 070122 005037 003132'      125$:      CLR     T26CNT      ;SET RECORD COUNTER BACK TO ZERO
8420 070126
8421 070126 005037 072056'
8422
8423 ;*****
8424 ;
8425 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8426 ;
8427 ;*****
8428
8429 070132 004737 010714'      JSR     PC,REWIND    ;CALL TAPE REWIND COMMAND
8430 070136 103411      BCS     130$      ;BR, IF NO PROBLEM
8431 070140 016501 000002      MOV    TSSR(R5),R1    ;GET TSSR
8432 070144 010004      MOV    R0,R4      ;PACKET ADDRESS SET UP
8433 070146 005237 002212'      INC     FATFLG      ;BUMP COUNT
8437 070152      ERRHRD  ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
      070152 104456      TRAP    C$ERHRD
      070154 001330      .WORD   728
      070156 073364'      .WORD   T26RWN
      070160 011746'      .WORD   PKTSSR
8438 070162      130$:  CKLOOP      ;LOOP IF SELECTED
      070162 104406      TRAP    C$CLP1
8439
8440 ;*****
8441 ;
8442 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8443 ;
8444 ;*****
8445
8446 070164 013701 071730'      MOV     T26BFR+6,R1    ;PICK UP XSTO
8447 070170 010102      MOV     R1,R2      ;SET UP EXPECTED
8448 070172 052702 000002      BIS     0BIT1,R2    ;SET BOT BIT IN EXPECTED
8449 070175 020102      CMP     R1,R2      ;DOES EXP = REC'D
8450 070200 001406      BEQ     140$      ;BR, IF EQUAL (OK)
8451 070202 005237 002212'      INC     FATFLG      ;BUMP COUNT
8455 070206      ERRHRD  ERRNO,T26BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND

```



```

      070206 104456
      070210 001331
      070212 073075
      070214 015374
8456 070216 104406      140$: CKLOOP      ;LOOP IF SELECTED
      070216 104406
8457 070220 012703 072046'      MOV      #T26RN,R3      ;COMMAND BUFFER ADDRESS
8458 070224 013737 003130' 072032' 150$: MOV      NXML0,T26RB      ;STARTING READ BUFFER ADDRESS
8459 070232 013737 003132' 072034'      MOV      NXMHI,T26RB+2      ;SET UP HIGH ORDER ADDRESS BITS
8460
8461      ;*****
8462      ;
8463      ;REREAD DATA,IE,ACK, OPP COMMAND
8464      ;
8465      ;*****
8466
8467 070240 011337 072030'      MOV      (R3),T26PK3      ;REREAD DATA,IE,ACK, OPP COMMAND
8468 070244 012704 072030'      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8469 070250 012737 000400 072036'      MOV      #256.,T26SZ      ;SET UP RECORD SIZE IN PACKET
8470 070256 010485 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
8471 070262 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
8472 070266 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8473 070272 012702 104210      MOV      #SSR!NXM!SC!BIT3,R2      ;SET UP EXPECTED
8474 070276 020102      CMP      R1,R2      ;ARE THEY EQUAL
8475 070300 001422      BEQ      170$      ;BR, IF OK
8476 070302 031327 001000      BIT      (R3),#BIT9      ;CHECK FOR A READ COMMAND
8477 070306 001403      BEQ      168$      ;BR, IF IT WAS A READ COMMAND
8478 070310 030127 000002      BIT      R1,#BIT1      ;WAS BIT1 SET
8479 070314 001014      BNE      170$      ;BR, IF REREAD AND BIT1 SET
8480 070316
8481 070316 005237 003132'      168$: INC      NXMHI      ;BUMP TO NEXT ADDRESS RANGE
8482 070322 023727 003132' 000004      CMP      NXMHI,#4      ;CHECK FOR OVERFLOW
8483 070330 001276      BNE      125$      ;BR, IF MORE BITS TO GO
8484 070332 005237 002212'      INC      FATFLG      ;BUMP COUNT
8488 070336      ERRHRD ERRNO,T26RRF,PKTSSR      ;TSSR INCORRECT AFTER REREAD DATA
      070336 104456
      070340 001332
      070342 072305
      070344 011746
8489 070346      170$: CKLOOP      ;LOOP IF SELECTED
      070346 104406      TRAP      C$CLP1
8490
8491      ;*****
8492      ;
8493      ;READ DATA, ACK,CVC=1 COMMAND
8494      ;
8495      ;*****
8496
8497 070350 012737 140001 072030'      MOV      #140001,T26PK3      ;READ DATA, ACK,CVC=1 COMMAND
8498 070356 012737 000400 072036'      MOV      #256.,T26SZ      ;SET SIZE INTO PACKET
8499 070364 005037 072034'      CLR      T26RB+2      ;CLEAR OUT HIGH ADDRESS BITS
8500 070370 013737 003114' 072032'      MOV      FREE,T26RB      ;GIVE READ A GOOD BUFFER
8501 070376 010405 000000      MOV      R4,TSD8(R5)      ;ISSUE READ DATA COMMAND
8502 070402 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR
8503 070406 016501 000002      MOV      TSSR(R5),R1      ;PICK UP THE TSSR
8504 070412 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
8505 070416 020102      CMP      R1,R2      ;IS THE TSSR OK

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REPEATS

MACRO M1113 01-FEB-84 17:54

SEQ 253

```

8506 070420 001406          BEQ      180$          ;BR, IF TSSR OK (GOOD)
8507 070422 005237 002212'  INC      FATFLG        ;BUMP COUNT
8511 070426          ERRHRD  ERRNO,RDERR,PKTSSR    ;READ DATA COMMAND FAILED
          070426 104456          TRAP      C$ERHRD
          070430 001333          .WORD    731
          070432 005176'        .WORD    RDERR
          070434 011746'        .WORD    PKTSSR
8512 070436          180$:  CKLOOP          ;LOOP IF SELECTED
          070436 104406          TRAP      C$CLP1
8513 070440 017701 112450    MOV      @FREE,R1    ;FIRST WORD FROM READ BUFFER
8514 070444 012702 000001    MOV      @1,R2      ;SET UP EXPECTED
8515 070450 020102          C.P      R1,R2        ;IS TAPE POSITION CORRECT
8516 070452 001406          BEQ      190$        ;KEEP GOING POSITION OK
8517 070454 005237 002212'  INC      FATFLG        ;BUMP COUNT
8521 070460          ERRHRD  ERRNO,T26WNG,EXPREC  ;TAPE POSITION INCORRECT
          070460 104456          TRAP      C$ERHRD
          070462 001334          .WORD    732
          070464 072066'        .WORD    T26WNG
          070466 015374'        .WORD    EXPREC
8522 070470          190$:  CKLOOP
          070470 104406          TRAP      C$CLP1
8523
8524          ;*****
8525          ;
8526          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8527          ;
8528          ;*****
8529
8530 070472 004737 010714'  JSR      PC,REWIND    ;CALL TAPE REWIND COMMAND
8531 070476 103411          BCS      194$        ;BR, IF NO PROBLEM
8532 070500 016501 000002    MOV      TSSR(R5),R1  ;GET TSSR
8533 070504 010004          MOV      R0,R4        ;PACKET ADDRESS SET UP
8534 070506 005237 002212'  INC      FATFLG        ;BUMP COUNT
8538 070512          ERRHRD  ERRNO,T26RWN,PKTSSR    ;REWIND NOT ACCEPTED
          070512 104456          TRAP      C$ERHRD
          070514 001335          .WORD    733
          070516 073364'        .WORD    T26RWN
          070520 011746'        .WORD    PKTSSR
8539 070522          194$:  CKLOOP          ;LOOP IF SELECTED
          070522 104406          TRAP      C$CLP1
8540
8541          ;*****
8542          ;
8543          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8544          ;
8545          ;*****
8546
8547 070524 013701 071730'  MOV      T26BFR+6,R1    ;PICK UP XSTO
8548 070530 010102          MOV      R1,R2        ;SET UP EXPECTED
8549 070532 052702 000002    BIS      @BIT1,R2    ;SFT BOT BIT IN EXPECTED
8550 070536 020102          CMP      R1,R2        ;DOES EXP = REC'D
8551 070540 001406          BEQ      196$        ;BR, IF EQUAL (OK)
8552 070542 005237 002212'  INC      FATFLG        ;BUMP COUNT
8556 070546          ERRHRD  ERRNO,T26BOT,EXPREC  ;TAPE NOT AT BOT AFTER REWIND
          070546 104456          TRAP      C$ERHRD
          070550 001336          .WORD    734
          070552 073075'        .WORD    T26BOT

```

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 254

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

```

8611 070654 000001      MOV      R0,R1      ;CONTENTS OF TSSR REGISTER
8612 070655      ERRDF      ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
      070656 104455      TRAP      C$ERDF
      070658 001337      .WORD      735
      070659 003642'     .WORD      SFIERR
      070660 011734'     .WORD      SFIMSG
8613 070666 013737 002172' 071720' 20$:  MOV      UNITN,T26DSW      ;SET UP UNIT NUMBER
8614                                ;
8615 070674 012704 071700'     MOV      @T26PACKET,R4      ;SUBROUTINE NEEDS PACKET ADDRESS
8616                                ;
8617                                ;*****
8618                                ;
8619                                ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTHCR)
8620                                ;
8621                                ;*****
8622                                ;
8623 070700 004737 010502'     JSR      PC,WRTHCR      ;ISSUE WRITE CHARACTERISTICS
8624 070704 103407      BCS      25$      ;BR. IF COMMAND ISSUED OK
8625 070706 005237 002212'     INC      FATFLG      ;BUMP COUNT
8629 070712 010001      MOV      R0,R1      ;SAVE CONTENTS OF TSSR
8630 070714      ERRHRD      ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
      070715 104456      TRAP      C$ERHRD
      070716 001340      .WORD      736
      070720 005046'     .WORD      WRTMSG
      070722 011734'     .WORD      SFIMSG
8631 070724      25$:  CKLOOP      ;LOOP IF SELECTED
      070724 104406      TRAP      C$CLP1
8632                                ;*****
8633                                ;
8634                                ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8635                                ;
8636                                ;*****
8637                                ;
8638                                ;
8639 070726 004737 010714'     26$:  JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
8640 070732 016501 000002     MOV      TSSR(R5),R1      ;GET TSSR
8641 070733 012702 000200     MOV      @SSR,R2      ;SET UP EXPECTED TSSR
8642 070742 103407      BCS      30$      ;BR. IF NO PROBLEM
8643 070744 010004      MOV      R0,R4      ;PACKET ADDRESS SET UP
8644 070746 005237 002212'     INC      FATFLG      ;BUMP COUNT
8648 070752      ERRHRD      ERRNO,T26RWN,PKTSSR ;REWIND NOT ACCEPTED
      070752 104456      TRAP      C$ERHRD
      070754 001341      .WORD      737
      070756 073364'     .WORD      T26RWN
      070760 011746'     .WORD      PKTSSR
8649 070762      30$:  CKLOOP      ;LOOP IF SELECTED
      070762 104406      TRAP      C$CLP1
8650                                ;*****
8651                                ;
8652                                ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8653                                ;
8654                                ;*****
8655                                ;
8656                                ;
8657 070764 013701 071730'     MOV      T26BFR+6,R1      ;PICK UP XSTO
8658 070770 010102      MOV      R1,R2      ;SET UP EXPECTED
8659 070772 052702 000002     BIS      @BIT1,R2      ;SET BOT BIT IN EXPECTED

```

```

8660 070776 020102          CMP      R1,R2          ;DO(S EXP = REC'D
8661 071000 001406          BEQ      40$           ;BR, IF EQUAL (OK)
8662 071002 005237 002212'  INC      FATFLG        ;BUMP COUNT
8666 071006          ERRHRD  ERRNO,T26BOT,EXPREC   ;TAPE NOT AT BOT AFTER REWIND
          071006 104456          TRAP      C$ERHRD
          071010 001342          .WORD    738
          071012 073075'        .WORD    T26BOT
          071014 015374'        .WORD    EXPREC
8667 071016          40$:      CKLOOP              ;LOOP IF SELECTED
          071016 104406          .AP      C$CLP1
8668 071020 012737 000400 072036'  MOV      $256.,T26SZ      ;SET UP RECORD SIZE IN .T
8669 071026 013737 003114' 072032'  MOV      FREE,T26RB      ;ADDRESS OF READ BUFFER
8670 071034 005703          TST      R3              ;CHECK NUMBER OF TIMES THROUGH HERE
8671 071036 001404          BEQ      50$           ;BR, IF FIRST TIME THROUGH HERE
8672
8673          ;*****
8674          ;
8675          ;REREAD,CVC=1,ACK COMMAND
8676          ;
8677          ;*****
8678
8679 071040 012737 161001 072030'  MOV      $161001,T26PK3      ;REREAD,CVC=1,ACK COMMAND
8680 071046 000403          BR       55$           ;SKIP NEXT COMMAND
8681
8682          ;*****
8683          ;
8684          ;REREAD,ACK COMMAND
8685          ;
8686          ;*****
8687
8688 071050 012737 141001 072030'  50$:      MOV      $141001,T26PK3      ;REREAD,ACK COMMAND
8689 071056          55$:
8690 071056 012704 072030'        MOV      $T26PK3,R4          ;SET UP R4 WITH PACKET ADDRESS
8691 071062          65$:
8692 071062 010465 000000        MOV      R4,TSDB(R5)          ;ISSUE COMMAND
8693 071066 004737 016150'        JSR      PC,WAITF          ;WAIT FOR SSR TO SET
8694 071072 016501 000002        MOV      TSSR(R5),R1          ;GET TSSR CONTENTS
8695 071076 012702 100206        MOV      $SSR!SC!BIT1!BIT2,R2  ;SET UP EXPECTED
3696 071102 020102          CMP      R1,R2          ;ARE THEY EQUAL
8697 071104 001406          BEQ      75$           ;BR, IF OK
8698 071106 005237 002212'  INC      FATFLG        ;BUMP COUNT
8702 071112          ERRHRD  ERRNO,T26WDE,PKTSSR   ;TSSR INCORRECT AFTER READ DATA
          071112 104456          TRAP      C$ERHRD
          071114 001343          .WORD    739
          071116 073023'        .WORD    T26WDE
          071120 011746'        .WORD    PKTSSR
8703 071122          75$:      CKLOOP              ;LOOP IF SELECTED
          071122 104406          TRAP      C$CLP1
8704
8705          ;*****
8706          ;
8707          ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
8708          ;
8709          ;*****
8710
8711 071124 013701 071730'        MOV      T26BFR+6,R1          ;GET XSTO STATUS WORD
8712 071130 010102          MOV      R1,R2          ;SET UP EXPECTED

```

Address	Offset	Hex	Label	Operation	Comments	Trap	Code
8713	071132	052702	002000	BIS	0BIT10,R2	;SET THE NEF BIT	
8714	071136	020102		CMP	R1,R2	;ARE THEY EQUAL	
8715	071140	001406		BEQ	170\$	;BR, IF EQUAL (GOOD)	
8716	071142	005237	002212'	INC	FATFLG	;BUMP COUNT	
8720	071146			ERRHRD	ERRNO,T26NEF,EXPREC	;NEF SHOULD BE SET	
	071146	104456					TRAP
	071150	001344					.WORD
	071152	072154'					.WORD
	071154	015374'					.WORD
8721	071156		170\$:	CKLOOP			
	071156	104406					TRAP
8722	071160	005103		COM	R3	;RESET THE SWITCH	C\$CLP1
8723	071162	001261		BNE	26\$	;BR, IF FIRST TIME THROUGH HERE	
8724	071164			ENDSUB			
	071164						
	071164	104403					
8725	071166	023727	002212' 000017	CMP	FATFLG,015.	;IS ERROR COUNT AT 25	TRAP
8726	071174	103402		BLO	999\$	;BR, IF LESS THAN 25	C\$ESUB
8727	071176	004737	017104'	JSR	PC,CKDROP	;TRY TO DROP THE UNIT	
8728	071202		999\$:				
8729							
8730							
8731							
8732							
8733							
8734							
8735							
8736							
8737							
8738							
8739							
8740							
8741							
8742							
8743							
8744	071202			BGNSUB		;***** BEGIN SUBTEST *****	
	071202					T6.15:	
	071202	104402					TRAP
8745	071204	005037	072060'	CLR	T26CNU	;CLEAR OUT COUNTER	C\$BSUB
8746	071210	004737	074620'	JSR	PC,T26REST	;SET COMMAND PACKET	
8747	071214	004737	074712'	JSR	PC,T26RT2	;SET UP OTHER COMMAND PACKET	
8748	071220	004737	074754'	JSR	PC,T26RT3	;SET UP OTHER COMMAND PACKET	
8749							
8750							
8751							
8752							
8753							
8754							
8755							
8756	071224	004737	015674'	JSR	PC,SOFINIT	;DO INITIALIZE ON CONTROLLER	
8757	071230	103407		BCS	20\$	;BR IF INIT WAS OK	
8758	071232	005237	002212'	INC	FATFLG	;BUMP COUNT	
8762	071236	010001		MOV	RC,R1	;CONTENTS OF TSSR REGISTER	
8763	071240			ERRDF	ERRNO,SFIERR,SFIMSG	;FATAL ERROR TSSR WAS NOT OK	
	071240	104455					TRAP
	071242	001345					.WORD
	071244	003642'					.WORD


```

      071246 011734'
8764 071250 013737 002172' 071720' 20$:   MOV     UNITN,T26DSW           ;SET UP UNIT NUMBER      .WORD  SFIMSG
8765
8766 071256 012704 071700'                MOV     #T26PACKET,R4           ;SUBROUTINE NEEDS PACKET ADDRESS
8767
8768 ;*****
8769 ;
8770 ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTCHR)
8771 ;
8772 ;*****
8773
8774 071262 004737 010562'                JSR     PC,WRTCHR           ;ISSUE WRITE CHARACTERISTICS
8775 071266 103407                        BCS     25$                ;BR, IF COMMAND ISSUED OK
8776 071270 005237 002212'                INC     FATFLG           ;BUMP COUNT
8780 071274 010001                        MOV     R0,R1           ;SAVE CONTENTS OF TSSR
8781 071276                ERRHRD  ERRNO,WRTMSG,SFIMSG      ;WRITE CHARACTERISTICS FAILED
                                TRAP     C$ERHRD
                                .WORD    742
                                .WORD    WRTMSG
                                .WORD    SFIMSG
                                071276 104456
                                071300 001346
                                071302 005046'
                                071304 011734'
8782 071306                25$:   CKLOOP                ;LOOP IF SELECTED
                                TRAP     C$CLP1
                                071306 104406
8783
8784 ;*****
8785 ;
8786 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
8787 ;
8788 ;*****
8789
8790 071310 004737 010714'                26$:   JSR     PC,REWIND           ;CALL TAPE REWIND COMMAND
8791 071314 016501 000002                MOV     TSSR(R5),R1       ;GET TSSR
8792 071320 012702 000200                MOV     #SSR,R2           ;SET UP EXPECTED TSSR
8793 071324 103407                        BCS     30$                ;BR, IF NO PROBLEM
8794 071326 010004                        MOV     R0,R4           ;PACKET ADDRESS SET UP
8795 071330 005237 002212'                INC     FATFLG           ;BUMP COUNT
8799 071334                ERRHRD  ERRNO,T26RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP     C$ERHRD
                                .WORD    743
                                .WORD    T26RWN
                                .WORD    PKTSSR
                                071334 104456
                                071336 001347
                                071340 073364'
                                071342 011746'
8800 071344                30$:   CKLOOP                ;LOOP IF SELECTED
                                TRAP     C$CLP1
                                071344 104406
8801
8802 ;*****
8803 ;
8804 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
8805 ;
8806 ;*****
8807
8808 071346 013701 071730'                MOV     T26BFR+6,R1       ;PICK UP XST0
8809 071352 010102                        MOV     R1,R2           ;SET UP EXPECTED
8810 071354 052702 000002                BIS     #BIT1,R2       ;SET BOT BIT IN EXPECTED
8811 071360 020102                        CMP     R1,R2           ;DOES EXP = REC'D
8812 071362 001406                        BEQ     40$                ;BR, IF EQUAL (OK)
8813 071364 005237 002212'                INC     FATFLG           ;BUMP COUNT
8817 071370                ERRHRD  ERRNO,T26BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP     C$ERHRD
                                071370 104456

```

```

      071372 001350
      071374 073075'
      071376 015374'
8818 071400 104406      40$: CKLOO'
      071400 104406
8819
8820
8821
8822
8823
8824
8825
8826
8827 071402 012703 000001      MOV      #000001,R3      ;SET UP SPACE FORWARD 1 RECORD
8828 071406 004737 010366'      JSR      PC,SPACE      ;ISSUE SPACE COMMAND
8829 071412 103411      BCS      75$      ;BR, IF OK
8830 071414 016501 000002      MOV      TSSR(R5),R1      ;GET STATUS DATA
8831 071420 010004      MOV      R0,R4      ;GET PACKET ADDRESS
8832 071422 005237 002212'      INC      FATFLG      ;BUMP COUNT
8836 071426      ERRHRD ERRNO,T26WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      071426 104456      TRAP      C$ERHRD
      071430 001351      .WORD    745
      071432 073023'      .WORD    T26WDE
      071434 011746'      .WORD    PKTSSR
8837 071436      75$: CKLOOP      ;LOOP IF SELECTED
      071436 104406      TRAP      C$CLP1
8838
8839
8840
8841
8842
8843
8844
8845
8846 071440 012703 100001      MOV      #100001,R3      ;SET SPACE REVERSE 1 RECORD
8847 071444 004737 010366'      JSR      PC,SPACE      ;ISSUE COMMAND
8848 071450 103411      BCS      175$      ;GO ON IF ALL IS WELL
8849 071452 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8850 071456 010004      MOV      R0,R4      ;SET UP EXPECTED (PACKET CONTENTS)
8851 071460 005237 002212'      INC      FATFLG      ;BUMP COUNT
8855 071464      ERRHRD ERRNO,T26WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      071464 104456      TRAP      C$ERHRD
      071466 001352      .WORD    746
      071470 073023'      .WORD    T26WDE
      071472 011746'      .WORD    PKTSSR
8856 071474      175$: CKLOOP      ;LOOP IF SELECTED
      071474 104406      TRAP      C$CLP1
8857 071476 013737 003114' 072032'      MOV      FREE,T26RE      ;ADDRESS OF BUFFER
8858 071504 005737 072060'      TST      T26CNU      ;CHECK FOR TIMES THROUGH HERE
8859 071510 001404      BLQ      176$      ;BR, IF FIRST TIME THROUGH
8860
8861
8862
8863
8864
8865
8866
; *****
;
; REREAD (PREVIOUS), IE, ACK, OPP=1 CMD.
;
; *****

```


B5

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 260

```

8867 071512 012737 161001 072030'      MOV      #161001,T26PK3      ;REREAD (PREVIOUS),IE,ACK,OPP=1 CMD.
8868 071520 000403                      BR      178#              ;SKIP NEXT COMMAND
8869
8870
8871
8872
8873
8874
8875
      ;*****
      ;REREAD ,ACK,OPP=1 COMMAND
      ;*****
8876 071522 012737 141001 072030' 176# : MOV      #141001,T26PK3      ;REREAD ,ACK,OPP=1 COMMAND
8877 071530 178# :
8878 071530 012704 072030'      MOV      #T26PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
8879 071534 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
8880 071540 004737 016150'      JSR      PC,WAITE      ;WAIT FOR SSR TO SET
8881 071544 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
8882 071550 012702 100204      MOV      #SSR!SC!BIT2,R2      ;SET UP EXPECTED
8883 071554 020102      CMP      R1,R2      ;ARE THEY EQUAL
8884 071556 001406      BEQ      180#      ;BR, IF OK
8885 071560 005237 002212'      INC      FATFLG      ;BUMP COUNT
8889 071564      ERRHRD      ERRNO,T26WDE,PKTSSR      ;TSSR INCURRECT AFTER READ DATA
      TRAP      C:ERHRD
      .WORD      747
      .WORD      T26WDE
      .WORD      PKTSSR
      071564 104456
      071566 001353
      071570 073023'
      071572 011746'
8890 071574      180# : CKLOOP      ;LOOP IF SELECTED
      TRAP      C:CLP1
      071574 104406
8891 071576 013701 071736'      MOV      T26BFR+14,R1      ;GET XST3 STATUS WORD
8892 071602 010102      MOV      R1,R2      ;SET UP EXPECTED
8893 071604 052702 000001      BIS      #BIT0,R2      ;SET THE NEF BIT
8894 071610 020102      CMP      R1,R2      ;ARE THEY EQUAL
8895 071612 001406      BEQ      190#      ;BR, IF EQUAL (GOOD)
8896 071614 005237 002212'      INC      FATFLG      ;BUMP COUNT
8900 071620      ERRHRD      FRRNO,T26NEF,EXPREC      ;NEF SHOULD BE SET
      TRAP      C:ERHRD
      .WORD      748
      .WORD      T26NEF
      .WORD      EXPREC
      071620 104456
      071622 001354
      071624 072154'
      071626 015374'
8901 071630      190# : CKLOOP
      TRAP      C:CLP1
      071630 104406
8902 071632 005137 072060'      COM      T26CNU      ;SET SWITCH THE OTHER WAY
8903 071636 001224      BNE      26#      ;BR, IF FIRST TIME THROUGH
8904 071640      ENDSUB      ;***** END SUBTEST *****
      L10121:
      TRAP      C:ESUB
      071640 104403
8905 071642 023727 002212' 000017      CMP      FATFLG,#15,      ;IS ERROR COUNT AT 25
8906 071650 103402      BLO      999#      ;BR, IF LESS THAN 25
8907 071652 004737 017104'      JSR      PL,CKDROP      ;TRY TO DROP THE UNIT
8908 071656      999# :
8909
8910
8911
8912 071656 004737 016360'      JSR      PC,TSTLOOP
8913 071662 103002      BCC      163#
8914 071664 000137 055474'      JMP      T26LOOP
8915 071670      163# :
8916 071670      EXIT      TST      ;ALL DONE THIS TEST
      TRAP      C:EXIT
      071670 104432

```

C5

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 261

8917	071672	003112			.WORD L10102-.
8918					
8919					
8920					
8922	071674				
8924	071700				
8925	071700	014004			
8926	071702	071710			
8927	071704	000000			
8928	071706	000012			
8929	071710				
8930	071710	071722			
8931	071712	000000			
8932	071714	000024			
8933	071716	000000			
8934	071720	000000			
8935	071722				
8936					
8937					
8938					
8940	072004				
8942	072010				
8943	072010	100006			
8944	072012	072040			
8945	072014	000000			
8946	072016	000006			
8947					
8949	072020				
8951	072030				
8952	072030	140005			
8953	072032				
8954	072032	003114			
8955	072034	000000			
8956	072036	000000			
8957					
8958					
8959					
8960					
8961	072040				
8962	072040	010			
8963	072041	200			
8964	072042	000000			
8965	072044	000000			
8966					
8967					
8968					
8969					
8970					
8971	072046	140001			
8972	072050	141401			
8973	072052	161401			
8974	072054	177777			
8975					
8976					
8977	072056	000000			
8978	072060	000000			

;	LOCAL STORAGE FOR THIS TEST		
;			
T26PACKET:	.BLKB	10-<.-TSV267>	
	.WORD	14004	COMMAND PACKET FOR TEST
	.WORD	T26DATA	WRITE CHARACTERISTICS COMMAND, WITH CVC=1, ACK
	.WORD	0	ADDRESS OF CHARACTERISTICS BLOCK
	.WORD	10.	STARTING VALUE OF BLOCK SIZE
T26DATA:	.WORD	T26BFR	CHARACTERISTICS DATA BLOCK
	.WORD	0	ADDRESS OF MESSAGE BUFFER
	.WORD	20.	LENGTH OF MESSAGE BUFFER
	.WORD	0	
T26DSW:	.WORD	0	SELECT DRIVE 0
T26BFR:	.BLKW	25.	MESSAGE BUFFER
;			
;	WRITE SUBSYSTEM MEMORY COMMAND PACKET		
;			
T26PK2:	.BLKB	10-<.-TSV267>	
	.WORD	100006	WRITE SUB SYS MEM COMMAND, AND ACK
	.WORD	T26BF2	ADDRESS OF SELECT BLOCK DATA
	.WORD	0	
	.WORD	6.	SIZE OF DATA PACKET
T26PK3:	.BLKB	10-<.-TSV267>	
	.WORD	140005	REREAD COMMAND, CVC=1 AND ACK
T26RB:			
T26WB:	.WORD	FREE	ADDRESS OF WRITE BUFFER
	.WORD	0	
T26SZ:	.WORD	0	SIZE OF BUFFER (EXTENT)
	.EVEN		
;			
;			
;			
T26BF2:			
T26BS0:	.BYTE	10	BSEL0 AREA
T26BS1:	.BYTE	200	BSEL1 AREA
T26S2:	.WORD	0	SEL 2 AREA
T26S3:	.WORD	0	DATA AREA
;			
;			
;	.EVEN		
;	TAPE MOTION PACKET COMMAND VALUES		
T26RN:	.WORD	140001	READ DATA
	.WORD	141401	REREAD NEXT OPP=0
	.WORD	161401	REREAD NEXT OPP=1
	.WORD	177777	END OF DATA
;			
T26CNT:	.WORD	0	TAPE RECORD COUNTER STORAGE AREA
T26CNU:	.WORD	0	TAPE RECORD COUNTER STORAGE AREA

D5

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 262

```

8979
8980 072062 000000          T26RSZ: .WORD 0          ;RECORD STORAGE SIZE AREA
8981
8982 072064 000000          T26DLY: .WORD 0          ;DELAY COUNTER AREA
8983
8984
8985          ;+
8986          ;LOCAL TEXT MESSAGES FOR TEST
8987          ;-
8988
8989
8990 072066      124      141      160 T26WNG: .ASCIZ 'Tape Position Incorrect After REREAD Previous (OPP=1)'
8991 072154      122      105      122 T26NEF: .ASCIZ 'REREAD PREVIOUS, At BOT, Failed To Set NEF (XSTO)'
8992 072236      124      123      123 T26RDF: .ASCIZ 'TSSR Incorrect After READ DATA Command'
8993 072305      122      105      122 T26RRF: .ASCIZ 'REREAD Previous (Space Reverse, Read Forward) Command Failed'
8994 072402      122      105      122 T26PRG: .ASCIZ 'REREAD Previous (Read Reverse, Space Forward) Command Failed'
8995 072477      120      117      123 T26SC: .ASCIZ 'POSITION (Space Command) Failed, TSSR Not Correct'
8996 072561      122      111      102 T26LOR: .ASCIZ 'RIB NOT SET AFTER READ REVERSE INTO BOT'
8997 072631      124      123      123 T26WDF: .ASCIZ 'TSSR Not Correct After Illegal Mode Bits Set'
8998 072706      111      154      154 T26LOQ: .ASCIZ 'Illegal Mode Bits, Failed To Set ILC Bit In XSTO'
8999 072767      122      105      122 T26SSR: .ASCIZ 'REREAD COMMAND Not Accepted'
9000 073023      124      123      123 T26WDE: .ASCIZ 'TSSR Not Correct After WRITE DATA Command'
9001 073075      124      141      160 T26BOT: .ASCIZ 'Tape Not At BOT After REWIND Command'
9002 073142      104      141      164 T26DTA: .ASCIZ 'Data Written To Tape Not Equal To Data Read From Tape'
9003 073230      122      105      122 T26EOT: .ASCIZ 'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
9004 073307      124      123      123 T26TM: .ASCIZ 'TSSR Not Correct After REREAD COMMAND Reject'
9005 073364      122      145      167 T26RW: .ASCIZ 'Rewind (POSITION) Command Not Accepted'
9006 073433      122      101      115 T26RNC: .ASCIZ 'RAM Error, Correct Data Pattern Not In Ram'
9007 073506      124      123      123 T26AMS: .ASCIZ 'TSSR Init. Failed After REREAD COMMAND'
9008 073555      104      162      151 T26OFL: .ASCIZ 'Drive 7 Select Failed To Set "OFL" In TSSR'
9009 073630      124      123      123 T26WDO: .ASCIZ 'TSSR Not Correct After REREAD DATA Command, SWB Bit Set'
9010 073720      124      123      123 T26WDC: .ASCIZ 'TSSR Not Correct After REREAD DATA Command'
9011 073773      103      126      103 T26VCK: .ASCIZ 'CVC Set, Didn't Reset VCK In Message Buffer'
9012 074046      124      123      102 T26BA: .ASCIZ 'TSBA Not Correct After REREAD DATA Command'
9013 074121      127      122      111 T26WSS: .ASCIZ 'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
9014 074210      122      145      141 T26LON: .ASCIZ 'Reading Long Record Failed To Set RLL Bit In XSTO'
9015 074272      122      145      141 T26LOP: .ASCIZ 'Reading Long Record Failed To Set RLS Bit In XSTO'
9016 074354      122      145      163 T26PBP: .ASCIZ 'Residual Byte Count Incorrect After Short Record Read'
9017 074442      122      145      141 T26TRL: .ASCIZ 'Reading Long Record Failed To Give Tape Status Alert'
9018 074530      104      141      164 T26NEQ: .ASCIZ 'Data REREAD From Tape Not Correct, After SWB=1'
9019 074607      122      145      162 T26ID: .ASCIZ 'Rereads'
9020          .EVEN
9021
9022          ;+
9023          ;ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES
9024          ;WRITE SUBSYSTEM MEMORY COMMAND
9025          ;-
9026
9027
9028 074620          T26REST:
9029 074620          SAVREG
9030 074624 012701 071700'      MOV      @T26PACKET,R1      ;SAVE THE REGISTERS
9031 074630 012721 140004'      MOV      @140004,(R1)      ;START OF THE PACKET
9032 074634 012721 071710'      MOV      @T26DATA,(R1)      ;WRITE SUBSYSTEM MEM. WITH ACK, CVC=1
9033 074640 005021          CLR      (R1)      ;ADDRESS OF CHARACTERISTICS DATA BLOCK
9034 074642 012721 000012'      MOV      @10,(R1)      ;EXTENDED ADDRESS
9035 074646 012721 071722'      MOV      @T26BFR,(R1)      ;SIZE OF DATA BLOCK IN BYTES
          ;ADDRESS OF MESSAGE BUFFER

```

E5

TSV7 - HARDWARE TESTS 1-8
TEST 6: REREADS

MACRO M1113 01-FEB-84 17:54

SEQ 263

```

9036 074652 005021          CLR      (R1)+
9037 074654 012721 000024    MOV      #20.,(R1)+      ;LENGTH OF MESSAGE BUFFER
9038 074660 005021          CLR      (R1)+
9039 074662 012711 000000    MOV      #0,(R1)          ;SELECT DRIVE ZERO (0)
9040 074666 012702 000030    MOV      #24.,R2          ;NUMBER OF LOCATIONS TO BE CLEARED
9041 074672 012762 177777 071722' 64$: MOV      #177777,T26BFR(R2) ;ALL ONES TO MESSAGE BUFFER
9042 074700 005742          TST      -(R2)             ;NEXT LOCATION
9043 074702 020227 000000    CMP      R2,#0            ;CHECK FOR END OF LOOP
9044 074706 001371          BNE      64$               ;KEEP GOING UNTIL DONE
9045 074710 000207          RTS      PC                 ;RETURN
9046
9047
9048 074712          T26RT2:
9049 074712          SAVREG
9050 074716 012701 072010'    MOV      #T26PK2,R1      ;SAVE THE REGISTERS
9051 074722 012721 140006    MOV      #140006,(R1)+    ;START OF THE PACKET
9052 074726 012721 072040'    MOV      #T26BF2,(R1)+    ;WRITE SUBSYSTEM MEM. WITH ACK,CVC=1,
9053 074732 005021          CLR      (R1)+             ;ADDRESS OF DATA BLOCK
9054 074734 012721 0C0006    MOV      #6.,(R1)+        ;EXTENDED ADDRESS
9055 074740 005021          CLR      (R1)+             ;SIZE OF DATA BLOCK IN BYTES
9056 074742 012701 072040'    MOV      #T26BF2,R1      ;POINT TO DATA SEL AREA
9057 074746 005021          CLR      (R1)+
9058 074750 005011          CLR      (R1)+
9059 074752 000207          RTS      PC                 ;RETURN
9060 074754          T26RT3:
9061 074754          SAVREG
9062 074760 012701 072030'    MOV      #T26PK3,R1      ;SAVE THE REGISTERS
9063 074764 012721 000000    MOV      #0,(R1)+        ;START OF THE PACKET
9064 074770 012721 000000    MOV      #0,(R1)+        ;WRITE SUBSYSTEM MEM. WITH ACK,
9065 074774 005021          CLR      (R1)+             ;ADDRESS OF DATA BLOCK
9066 074776 012711 000000    MOV      #0,(R1)+        ;EXTENDED ADDRESS
9067 075002 000207          RTS      PC                 ;SIZE OF DATA BLOCK IN BYTES
9068 075004          ENDTST
9069 075004 104401          L17102: TRAP      C$ETST
9070
9071          .SBTTL TEST 7: WRITE DATA RETRY
9072
9073          ;*
9074          ;THIS TEST VERIFIES PROPER OPERATION OF THE WRITE DATA RETRY
9075          ;COMMAND (SPACE REVERSE, ERASE, WRITE DATA)
9076          ;
9077          ;THE TEST CONSISTS OF THE FOLLOWING 5 SUBTESTS
9078          ;
9079          ;
9080          ;
9081          ;-
9082 075006          BGNSTST
9083 075006 012737 006256' 002170' MOV      #EPR12,EPRTSW      ;SECONDARY ERROR MESSAGE
9084 075014 005037 003124'    CLR      KTENABLE        ;TURN OFF KT11
9085 075020 004737 017176'    JSR      PC,KTOFF        ;TURN KT11 BACK OFF IF THERE
9086 075024 012700 104643'    MOV      #TST27ID,R0      ;ASCII MESSAGE TO IDENTIFY TEST
9087 075030 004737 016412'    JSR      PC,TSTSETUP      ;DO INITIAL TEST SETUP
9088 075034 012737 000005' 002206' MOV      #5,LOOPCNT      ;PERFORM 5 ITERATIONS
9089 075042 005037 101706'    CLR      T27CNT          ;CLEAR TAPE RECORD COUNTER

```

```

9094      ;+
9095      ;
9096      ;TEST 7, SUBTEST 1
9097      ;
9098      ;
9099      ;VERIFIES THAT A WRITE DATA RETRY COMMAND ISSUED WHILE
9100      ;THE TAPE IS POSITIONED AT BOT CAUSES FUNCTION REJECT
9101      ;TERMINATION, WITH THE NON-EXECUTABLE FUNCTION (NEF)
9102      ;ERROR BIT SET.
9103      ;
9104      ;
9105      ;
9106      ;
9107      T27LOOP:
9108      BGNSUB                                ;>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
9109      075046                                T7.1:
9110      075046                                TRAP          C$BSUB
9111      075046 104402
9112      075050 004737 104664'                JSR          PC,T27REST        ;SET COMMAND PACKET
9113      075054 004737 104756'                JSR          PC,T27RT2       ;SET UP OTHER COMMAND PACKET
9114      075060 004737 105020'                JSR          PC,T27RT3       ;SET UP OTHER COMMAND PACKET
9115      075064 012737 176750 101712'         MOV          #65000.,T27DLY    ;SET UP DELAY COUNTER
9116      075072 005037 101706'                CLR          T27CNT        ;CLEAR COUNTER
9117      ;*****
9118      ;
9119      ;ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
9120      ;
9121      ;*****
9122      10$:   JSR          PC,SOFINIT          ;DO INITIALIZE ON CONTROLLER
9123      BCS     20$                          ;BR IF INIT WAS OK
9124      DELAY   250                           ;DELAY ABOUT .25 SEC
9125      075104 012727 000250                  MOV          #250.(PC)+
9126      075110 000000                          .WORD          0
9127      075112 013727 002116'                  MOV          L$DLY,(PC)+
9128      075116 000000                          .WORD          0
9129      075120 005367 177772                    DEC          -6(PC)
9130      075124 001375                        BNE          -.4
9131      075126 005367 177756                    DEC          -22(PC)
9132      075132 001367                        BNE          -.20
9133      075134 005337 101712'                 DEC          T27DLY        ;BUMP COUNTER
9134      075140 001356                        BNE          10$         ;BR, IF COUNTER NOT DONE
9135      075142 005237 002212'                 INC          FATFLG       ;BUMP COUNT
9136      075146 010001                        MOV          R0,R1        ;CONTENTS OF TSSR REGISTER
9137      075150                                ERRDF     ERNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
9138      075150 104455                                TRAP          C$ERDF
9139      075152 001275                                .WORD          701
9140      075154 003642'                            .WORD          SFIERR
9141      075156 011734'                            .WORD          SFIMSG
9142      075160 013737 002172' 101550' 20$:   MOV          UNITN,T27DSW    ;SET UP DRIVE NUMBER
9143      075166 012704 101530'                MOV          @T27PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
9144      ;*****
9145      ;
9146      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
9147      ;
9148      ;*****

```

G5

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 265

```

9140
9141 075172 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
9142 075176 103407              BCS      25$          ;BR, IF COMMAND ISSUED OK
9143 075200 005237 002212'      INC      FATFLG      ;BUMP COUNT
9147 075204 010001              MOV      R0,R1      ;SAVE CONTENTS OF TSSR
9148 075206              ERRHRD  ERRNO,WRTMSG,SFMSG    ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     702
                                .WORD     WRTMSG
                                .WORD     SFMSG
                                075206 104456
                                075210 001276
                                075212 005046'
                                075214 011734'
9149 075216              25$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                075216 104406
9150
9151      ;*****
9152      ;
9153      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9154      ;
9155      ;*****
9156
9157 075220 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
9158 075224 103407              BCS      30$          ;BR, IF NO PROBLEM
9159 075226 010004              MOV      R0,R4      ;SET UP REWIND PACKET ADDRESS
9160 075230 005237 002212'      INC      FATFLG      ;BUMP COUNT
9164 075234              ERRHRD  ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     703
                                .WORD     T27RWN
                                .WORD     PKTSSR
                                075234 104456
                                075236 001277
                                075240 103065'
                                075242 011746'
9165 075244              30$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                075244 104406
9166
9167      ;*****
9168      ;
9169      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9170      ;
9171      ;*****
9172
9173 075246 013701 101560'      MOV      T27BFR+6,R1      ;PICK UP XSTO
9174 075252 010102              MOV      R1,R2      ;SET UP EXPECTED
9175 075254 052702 000002      BIS      0BIT1,R2      ;SET BOT BIT IN EXPECTED
9176 075260 020102              CMP      R1,R2      ;DOES EXP = REC'D
9177 075262 001406              BEQ      40$          ;BR, IF EQUAL (OK)
9178 075264 005237 002212'      INC      FATFLG      ;BUMP COUNT
9182 075270              ERRHRD  ERRNO,T27BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     704
                                .WORD     T27BOT
                                .WORD     EXPREC
                                075270 104456
                                075272 001300
                                075274 102561'
                                075276 015374'
9183 075300              40$:    CKLOOP          ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                075300 104406
9184 075302 012737 000400 101666' MOV      0256,,T27SZ      ;SET UP RECORD SIZE
9185 075310 013737 003114' 101662' MOV      FREE,T27WB      ;ADDRESS OF WRITE BUFFER
9186
9187      ;*****
9188      ;
9189      ;WRITE DATA RETRY,ACK,CVC-1 COMMAND
9190      ;

```


H5

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 266

```

9191
9192
9193 075316 012737 141005 101660'      MOV      #141005,T27PK3      ;WRITE DATA RETRY,ACK,CVC=1 COMMAND
9194 075324 012704 101660'      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9195 075330 010465 000000      MOV      R4,TSD0(R5)      ;ISSUE COMMAND
9196 075334 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9197 075340 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9198 075344 012702 100206      MOV      #SSR!SC!BIT1!BIT2,R2      ;SET UP EXPECTED
9199 075350 020102      CMP      R1,R2      ;ARE THEY EQUAL
9200 075352 001406      BEQ      75$      ;BR, IF OK
9201 075354 005237 002212'      INC      FATFLG      ;BUMP COUNT
9205 075360      ERRHRD      ERRNO,T27WDE,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
          075360 104456      TRAP      C$ERHRD
          075362 001301      .WORD      705
          075364 102472'      .WORD      T27WDE
          075366 011746'      .WORD      PKTSSR
9206 075370      75$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
          075370 104406
9207
9208
9209
9210      ;*****
9211      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
9212      ;*****
9213
9214 075372 013701 101560'      MOV      T27BFR+6,R1      ;GET XST0 STATUS WORD
9215 075376 010102      MOV      R1,R2      ;SET UP EXPECTED
9216 075400 052702 002000'      BIS      #BIT10,R2      ;SET THE NEF BIT
9217 075404 020102      CMP      R1,R2      ;ARE THEY EQUAL
9218 075406 001406      BEQ      170$      ;BR, IF EQUAL (GOOD)
9219 075410 005237 002212'      INC      FATFLG      ;BUMP COUNT
9223 075414      ERRHRD      ERRNO,T27NEF,EXPREC      ;NEF SHOULD BE SET
          075414 104456      TRAP      C$ERHRD
          075416 001302      .WORD      706
          075420 104231'      .WORD      T27NEF
          075422 015374'      .WORD      EXPREC
9224 075424      170$:      CKLOOP
          075424 104406      TRAP      C$CLP1
9225 075426      ENDSUB
          075426      L10123:
          075426 104403      TRAP      C$ESUB
9226 075430 023727 002212' 000017      CMP      FATFLG,#15,      ;IS ERROR COUNT AT 25
9227 075436 103402      BLO      999$      ;BR, IF LESS THAN 25
9228 075440 004737 017104'      JSR      PC,CKDROP      ;TRY TO DROP THE UNIT
9229 075444      999$:
9230
9231
9232
9233      ;TEST 7, SUBTEST 2
9234
9235      ;VERIFIES THAT WRITE DATA RETRY COMMAND ISSUED WHILE
9236      ;THE TAPE IS POSITIONED BEFORE THE FIRST RECORD ON
9237      ;TAPE (BUT NOT AT BOT) RESULTS IN TAPE STATUS ALERT
9238      ;TERMINATION, WITH THE REVERSE INTO BOT (RIB) STATUS
9239      ;ERROR BIT SET.
9240
9241

```

[illegible]

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 268

```

075566 104456
075570 001305
075572 103065'
075574 011746'
9297 075576 26$: CKLOOP ;LOOP IF SELECTED
075576 104406 ;TRAP C$ERHRD
9298 075600 012703 000400 MGV #256.,R3 ;STARTING RECORD SIZE
9299 075604 013737 003114' 101662' MOV FREE,T27WB ;STARTING WRITE BUFFER ADDRESS
9300
9301 ;*****
9302 ;
9303 ;WRITE DATA,CVC=1,ACK COMMAND
9304 ;
9305 ;*****
9306
9307 075612 J12737 140005 101660' MOV #140005,T27PK3 ;WRITE DATA,CVC=1,ACK COMMAND
9308 075620 012704 101660' MOV #T27PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
9309 075624 010337 101666' MOV R3,T27SZ ;SET UP RECORD SIZE IN PACKET
9310 075630 010465 000000 MOV R4,TSDB(R5) ;ISSUE COMMAND
9311 075634 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
9312 075640 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
9313 075644 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
9314 075650 020102 CMP R1,R2 ;ARE THEY EQUAL
9315 075652 001406 BEQ 28$ ;BR, IF OK
9316 075654 005237 002212' INC FATFLG ;BUMP COUNT
9320 075660 ERRHRD ERRNO,WTERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
075660 104456
075662 001306
075664 005103'
075666 011746'
9321 075670 28$: CKLOOP ;LOOP IF SELECTED
075670 104406 ;TRAP C$CLP1
9322
9323 ;*****
9324 ;
9325 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9326 ;
9327 ;*****
9328
9329 075672 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
9330 075676 103111 BCS 30$ ;BR, IF NO PROBLEM
9331 075700 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
9332 075704 010004 MOV R0,R4 ;SET UP REWIND PACKET ADDRESS
9333 075706 005237 002212' INC FATFLG ;BUMP COUNT
9337 075712 ERRHRD ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
075712 104456
075714 001307
075716 103065'
075720 011746'
9338 075722 30$: CKLOOP ;LOOP IF SELECTED
075722 104406 ;TRAP C$CLP1
9339
9340 ;*****
9341 ;
9342 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
9343 ;
9344 ;*****

```

```

9345
9346 075724 013701 101560'      MOV      T27BFR+6,R1      ;PICK UP XSTO
9347 075730 010102      MOV      R1,R2      ;SET UP EXPECTED
9348 075732 052702 000002      BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
9349 075736 020102      CMP      R1,R2      ;DOES EXP = REC'D
9350 075740 001406      BEQ      40$      ;BR, IF EQUAL (OK)
9351 075742 005237 002212'      INC      FATFLG      ;BUMP COUNT
9355 075746      ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
          075746 104456      TRAP      C$ERHRD
          075750 001310      .WORD    712
          075752 102561'      .WORD    T27BOT
          075754 015374'      .WORD    EXPREC
9356 075756      40$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
          075756 104406
9357
9358      ;*****
9359      ;
9360      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
9361      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
9362      ;
9363      ;*****
9364
9365 075760 012703 000001      MOV      #1,R3      ;PARAMETER SPACE FORWARD 1 RECORD
9366 075764 004737 010366'      JSR      PC,SPACE      ;CALL SPACE RECORDS ROUTINE
9367 075770 103413      BCS      50$      ;BR, IF NO ERRORS
9368 075772 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9369 075776 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
9370 076002 010004      MOV      R0,R4      ;SET UP REWIND PACKET ADDRESS
9371 076004 005237 002212'      INC      FATFLG      ;BUMP COUNT
9375 076010      ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE RECORDS COMMAND FAILED
          076010 104456      TRAP      C$ERHRD
          076012 001311      .WORD    713
          076014 104327'      .WORD    T27SCF
          076016 011746'      .WORD    PKTSSR
9376 076020      50$:      CKLOOP      ;LOOP IF SELECTED      TRAP      C$CLP1
          076020 104406
9377
9378      ;*****
9379      ;
9380      ;ISSUE SPACE RECORDS COMMAND - VALUE IN R3 SETS NUMBER OF RECORDS
9381      ;BIT 15 SETS DIRECTION - 0=FORWARD 1=REVERSE
9382      ;
9383      ;*****
9384
9385 076022 012703 100001      MOV      #100001,R3      ;PARAMETER SPACE REVERSE 1 RECORD
9386 076026 004737 010366'      JSR      PC,SPACE      ;CALL SPACE RECORDS ROUTINE
9387 076032 103413      BCS      60$      ;BR, IF NO ERRORS
9388 076034 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9389 076040 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
9390 076044 010004      MOV      R0,R4      ;SET UP REWIND PACKET ADDRESS
9391 076046 005237 002212'      INC      FATFLG      ;BUMP COUNT
9395 076052      ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE RECORDS COMMAND FAILED
          076052 104456      TRAP      C$ERHRD
          076054 001312      .WORD    714
          076056 104327'      .WORD    T27SCF
          076060 011746'      .WORD    PKTSSR
9396 076062      60$:      CKLOOP      ;LOOP IF SELECTED

```

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	OP465	

[illegible]

```

076346 001317 .WORD 719
076350 103065' .WORD T27RWN
076352 011746' .WORD PKTSSR
9501 076354 104406 30$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
076354 104406
9502
9503 ;*****
9504 ;
9505 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9506 ;
9507 ;*****
9508
9509 076356 013701 101560' MOV T27BFR+6,R1 ;PICK UP XSTO
9510 076362 010102 MOV R1,R2 ;SET UP EXPECTED
9511 076364 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
9512 076370 020102 CMP R1,R2 ;DOES EXP = REC'D
9513 076372 001406 BEQ 40$ ;BR, IF EQUAL (OK)
9514 076374 005237 002212' INC FATFLG ;BUMP COUNT
9518 076400 ERRHRD ERRNO,T27BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
076400 104456 TRAP C$ERHRD
076402 001320 .WORD 720
076404 102561' .WORD T27BOT
076406 015374' .WORD EXPREC
9519 076410 40$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
076410 104406
9520 076412 012703 000024 MOV #20.,R3 ;STARTING RECORD SIZE
9521 076416 013737 003114' 101662' MOV FREE,T27WB ;STARTING WRITE BUFFER ADDRESS
9522
9523 ;*****
9524 ;
9525 ;WRITE DATA,CVC=1,ACK COMMAND
9526 ;
9527 ;*****
9528
9529 076424 012737 140005 101660' 65$: MOV #140005,T27PK3 ;WRITE DATA,CVC=1,ACK COMMAND
9530 076432 012704 101660' MOV #T27PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
9531 076436 010300 MOV R3,R0 ;SET PATTERN IN CORRECT REGISTER
9532 076440 004737 017324' JSR PC,FILLMEM ;FILL MEMORY WITH RECORD SIZE
9533 076444 010337 101666' MOV R3,T27SZ ;SET UP RECORD SIZE IN PACKET
9534 076450 010465 000000 MOV R4,TSDR(R5) ;ISSUE COMMAND
9535 076454 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
9536 076460 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
9537 076464 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
9538 076470 020102 CMP R1,R2 ;ARE THEY EQUAL
9539 076472 001406 BEQ 80$ ;BR, IF OK
9540 076474 005237 002212' INC FATFLG ;BUMP COUNT
9544 076500 ERRHRD ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
076500 104456 TRAP C$ERHRD
076502 001321 .WORD 721
076504 005103' .WORD WRERR
076506 011746' .WORD PKTSSR
9545 076510 80$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
076510 104406
9546
9547 ;*****
9548 ;
9549 ;WRITE DATA RETRY,CVC=1,ACK COMMAND

```

```

9550
9551
9552
9553 076512 012737 141005 101660'      MOV      #141005,T27PK3      ;WRITE DATA RETRY,CVC=1,ACK COMMAND
9554 076520 010465 000000              MOV      R4,TSDB(R5)      ;ISSUE COMMAND
9555 076524 004737 016150'              JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9556 076530 016501 000002              MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9557 076534 012702 000200              MOV      #SSR,R2      ;SET UP EXPECTED
9558 076540 020102                      CMP      R1,R2      ;ARE THEY EQUAL
9559 076542 001406                      BEQ      901      ;BR, IF OK
9560 076544 005237 002212'              INC      FATFLG      ;BUMP COUNT
9561 076550                      ERRHRD  ERRNO,T27WRF,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA RETRY
9562                      076550 104456                      TRAP      C1ERRHRD
9563                      076552 001322                      .WORD      722
9564                      076554 104466'                      .WORD      T27WRF
9565                      076556 011746'                      .WORD      PKTSSR
9566 076560                      901:  CKLOOP                      ;LOOP IF SELECTED
9567 076562 005723                      TST      (R3),          ;BUMP RECORD SIZE COUNTER
9568 076564 020327 000050              CMP      R3,#40,      ;AT 40 SIZE YET
9569 076570 001315                      BNE      651          ;BR, IF MORE RECORDS TO WRITE
9570
9571
9572
9573
9574
9575
9576 076572 004737 010714'              JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
9577 076576 103407                      BCS      2301          ;BR, IF NO PROBLEM
9578 076600 010001                      MOV      R0,R1      ;SAVE TSSR
9579 076602 005237 002212'              INC      FATFLG      ;BUMP COUNT
9580 076606                      ERRHRD  ERRNO,T27RWN,EXPREC      ;REWIND NOT ACCEPTED
9581                      076606 104456                      TRAP      C1ERRHRD
9582                      076610 001323                      .WORD      723
9583                      076612 103065'                      .WORD      T27RWN
9584                      076614 015374'                      .WORD      EXPREC
9585 076616                      2301:  CKLOOP                      ;LOOP IF SELECTED
9586 076616 104406                      TRAP      C1CLP1
9587
9588
9589
9590
9591
9592 076620 013701 101560'              MOV      T27BFR+6,R1      ;PICK UP xSTO
9593 076624 010102                      MOV      R1,R2      ;SET UP EXPECTED
9594 076626 052702 000002              BIS      #BIT1,R2      ;SET BOT BIT IN EXPECTED
9595 076632 020102                      CMP      R1,R2      ;DOES EXP = REC'D
9596 076634 001406                      BEQ      2401          ;BR, IF EQUAL (OK)
9597 076636 005237 002212'              INC      FATFLG      ;BUMP COUNT
9598 076642                      ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
9599                      076642 104456                      TRAP      C1ERRHRD
9600                      076644 001324                      .WORD      724
9601                      076646 102561'                      .WORD      T27BOT
9602                      076650 015374'                      .WORD      EXPREC

```


Address	Offset	Hex	Dec	Label	Operation	Comments	Trap	Trap Code
9602	076652	104406		240:	CKLOOP	;LOOP IF SELECTED		
9603	076654	012703	000024		MOV #20.,R3	;STARTING RECORD SIZE	TRAP	C\$CLP1
9604	076660	013737	003114'	101662'	MOV FREE,T27R8	;STARTING READ BUFFER ADDRESS		
9605								
9606								
9607								
9608								
9609								
9610								
9611								
9612	076666	012737	100001	101660'	265:	MOV #100001,T27PK3	;READ DATA,ACK COMMAND	
9613	076674	012704	101660'		MOV #T27PK3,R4	;SET UP R4 WITH PACKET ADDRESS		
9614	076700	010337	101666'		MOV R3,T27S2	;SET UP RECORD SIZE IN PACKET		
9615	076704	010465	000000		MOV R4,TSD8(R5)	;ISSUE COMMAND		
9616	076710	004737	016150'		JSR PC,WAITF	;WAIT FOR SSR TO SET		
9617	076714	016501	000002		MOV TSSR(R5),R1	;GET TSSR CONTENTS		
9618	076720	012702	000200		MOV #SSR,R2	;SET UP EXPECTED		
9619	076724	020102			CMP R1,R2	;ARE THEY EQUAL		
9620	076726	001406			BEQ 280:	;BR, IF OK		
9621	076730	005237	002212'		INC FATFLG	;BUMP COUNT		
9625	076734				ERRHRD	ERRNO,RDERR,PKTSSR	;TSSR INCORRECT AFTER READ DATA	
	076734	104456					TRAP	C\$ERHRD
	076736	001325					.WORD	725
	076740	005176'					.WORD	RDERR
	076742	011746'					.WORD	PKTSSR
9626	076744				280:	CKLOOP	;LOOP IF SELECTED	
	076744	104406					TRAP	C\$CLP1
9627	076746	013702	003114'		MOV FREE,R2	;GET BUFFER ADDRESS		
9628	076752	010304			MOV R3,R4	;GET RECORD SIZE		
9629	076754	162704	000024		SUB #20.,R4	;POINT BACK TO 1ST RECORD		
9630	076760	060204			ADD #2,R4	;POINT TO 1ST LOC IN BUFFER		
9631	076762	021403			CMP (R4),R3	;DATA WRITTEN - READ		
9632	076764	001410			BEQ 290:	;BR, IF DATA OK (GOOD)		
9633	076766	011401			MOV (R4),R1	;PICK UP BAD DATA		
9634	076770	010302			MOV R3,R2	;SET UP EXPECTED		
9635	076772	005237	002212'		INC FATFLG	;BUMP COUNT		
9639	076776				ERRHRD	ERRNO,T27DTA,EXPREC	;DATA IN BUFFER NOT CORRECT	
	076776	104456					TRAP	C\$ERHRD
	077000	001326					.WORD	726
	077002	104546'					.WORD	T27DTA
	077004	015374'					.WORD	EXPREC
9640	077006				290:	CKLOOP	;LOOP IF SELECTED	
	077006	104406					TRAP	C\$CLP1
9641	077010	005724			TST (R4),	;BUMP TO NEXT ADDRESS		
9642	077012	160204			SUB R2,R4	;BACK TO RECORD SIZE		
9643	077014	020403			CMP R4,R3	;AT END OF RECORD YET		
9644	077016	001360			BNE 285:	;BR, IF MORE DATA TO CHECK		
9645	077020	005723			TST (R3),	;BUMP RECORD SIZE		
9646	077022	020327	000050		CMP R3,#40,	;DONE YET		
9647	077026	001317			BNE 265:	;BR, IF NOT DONE YET (MORE READS)		
9648	077030				300:	CKLOOP	;LOOP IF SELECTED	
	077030	104406					TRAP	C\$CLP1
9649	077032				330:			
9650	077032				ENDSUB			
	077032							
	077032	104403						

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 275

```

9651 077034 023727 002212' 000017      CMP      FATFLG, #15.          ;IS ERROR COUNT AT 25
9652 077042 103402                BLO      999$              ;BR, IF LESS THAN 25
9653 077044 004737 017104'            JSR      PC, CKDROP         ;TRY TO DROP THE UNIT
9654 077050                999$:
9655
9656
9657
9658
9659
9660
9661
9662
9663
9664
9665
9666
9667
9668 077050                BGNSUB                        ;>>>>>>>>> BEGIN SUBTEST >>>>>>>>>
9669 077050                T7.4:
9670 077050 104402                TRAP      C:BSUB
9671 077052 004737 104664'        JSR      PC, T27REST           ;SET COMMAND PACKET
9672 077056 004737 104756'        JSR      PC, T27RT2           ;SET UP OTHER COMMAND PACKET
9673 077062 004737 105020'        JSR      PC, T27RT3           ;SET UP OTHER COMMAND PACKET
9674 077066 012737 176750 101712' MOV      #65000., T27DLY       ;SET UP DELAY COUNTER
9675
9676
9677
9678
9679
9680 077074 004737 015674'        10$: JSR      PC, SOFINIT        ;DO INITIALIZE ON CONTROLLER
9681 077100 103426                BCS      20$                 ;BR IF INIT WAS OK
9682 077102                DELAY      250                       ;DELAY ABOUT .25 SEC
9683 077102 012727 000250                MOV      #250, (PC)+
9684 077106 000000                .WORD      0
9685 077110 013727 002116'        MOV      L#DLY, (PC)+
9686 077114 000000                .WORD      0
9687 077116 005367 177772                DEC      -6(PC)
9688 077122 001375                BNE      -.4
9689 077124 005367 177756                DEC      -22(PC)
9690 077130 001367                BNE      -.20
9691 077132 005337 101712'        DEC      T27DLY               ;BUMP COUNTER
9692 077136 001356                BNE      10$                   ;BR, IF COUNTER NOT DONE
9693 077140 005237 002212'        INC      FATFLG                ;BUMP COUNT
9694 077144 010001                MOV      R0, R1                 ;CONTENTS OF YSSR REGISTER
9695 077146                ERROF     ERRNO, SFIERR, SFIMSG         ;FATAL ERROR YSSR WAS NOT OK
9696 077146 104455                TRAP      C:ERDF
9697 077150 001327                .WORD      727
9698 077152 003642'                .WORD      SFIERR
9699 077154 011734'                .WORD      SFIMSG
9700 077156 013737 002172' 101550' 20$: MOV      UNITN, T27DSW    ;SET UP UNIT (DRIVE) NUMBER
9701 077164 012704 101530'        MOV      #T27PACKET, R4       ;SUBROUTINE NEEDS PACKET ADDRESS
9702
9703
9704
9705
9706

```


E6

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 276

```

9697
9698
9699
9700 077170 004737 010562'      JSR      PC,WRTCHR      ;ISSUE WRITE CHARACTERISTICS
9701 077174 103407              BCS      23$              ;BR, IF COMMAND ISSUED OK
9702 077176 005237 002212'      INC      FATFLG          ;BUMP COUNT
9706 077202 010001              MOV      R0,R1            ;SAVE CONTENTS OF TSSR
9707 077204              ERRHRD  ERRNO,WRTMSG,SFMSG        ;WRITE CHARACTERISTICS FAILED
                                TRAP      C$ERHRD
                                .WORD     728
                                .WORD     WRTMSG
                                .WORD     SFMSG
                                077204 104456
                                077206 001330
                                077210 005046'
                                077212 011734'
9708 077214              23$:    CKLOOP                      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                077214 104406
9709
9710
9711
9712
9713
9714
9715
9716 077216 004737 010714'      JSR      PC,REWIND      ;CALL TAPE REWIND COMMAND
9717 077222 103411              BCS      30$              ;BR, IF NO PROBLEM
9718 077224 016501 000002      MOV      TSSR(R5),R1        ;GET TSSR CONTENTS
9719 077230 010004              MOV      R0,R4            ;GET PACKET ADDRESS
9720 077232 005237 002212'      INC      FATFLG          ;BUMP COUNT
9724 077236              ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
                                TRAP      C$ERHRD
                                .WORD     729
                                .WORD     T27RWN
                                .WORD     PKTSSR
                                077236 104456
                                077240 001331
                                077242 103065'
                                077244 011746'
9725 077246              30$:    CKLOOP                      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                077246 104406
9726
9727
9728
9729
9730
9731
9732
9733 077250 013701 101560'      MOV      T27BFR+6,R1      ;PICK UP XSTO
9734 077254 010102              MOV      R1,R2            ;SET UP EXPECTED
9735 077256 052702 000002      BIS      @BIT1,R2          ;SET BOT BIT IN EXPECTED
9736 077262 020102              CMP      R1,R2            ;DOES EXP = REC'D
9737 077264 001406              BEQ      40$              ;BR, IF EQUAL (OK)
9738 077266 005237 002212'      INC      FATFLG          ;BUMP COUNT
9742 077272              ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
                                TRAP      C$ERHRD
                                .WORD     730
                                .WORD     T27BOT
                                .WORD     EXPREC
                                077272 104456
                                077274 001332
                                077276 102561'
                                077300 015374'
9743 077302              40$:    CKLOOP                      ;LOOP IF SELECTED
                                TRAP      C$CLP1
                                077302 104406
9744 077304 012703 000024      MOV      @20.,R3          ;STARTING RECORD SIZE
9745 077310 013737 003114' 101562'  MOV      FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
9746
9747

```

```

9748
9749      ;WRITE DATA,CVC=1,ACK COMMAND
9750      ;
9751      ;*****
9752
9753 077316 012737 140005 101660' 65$:  MOV    0140005,T27PK3      ;WRITE DATA,CVC=1,ACK COMMAND
9754 077324 012704 101650'      MOV    0T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9755 077330 010300      MOV    R3,R0      ;SET PATTERN IN CORRECT REGISTER
9756 077332 004737 017324'      JSR    PC,FILLMEM      ;FILL MEMORY WITH RECORD SIZE
9757 077336 010337 101666'      MOV    R3,T27SZ      ;SET UP RECORD SIZE IN PACKET
9758 077342 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
9759 077346 004737 016150'      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
9760 077352 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
9761 077356 012702 000200      MOV    0SSR,R2      ;SET UP EXPECTED
9762 077362 020102      CMP     R1,R2      ;ARE THEY EQUAL
9763 077364 001406      BEQ     80$      ;BR, IF OK
9764 077366 005237 002212'      INC     FATFLG      ;BUMP COUNT
9768 077372      ERRHRD   ERRNO,WRERR,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
          077372 104456      TRAP    C$ERRRD
          077374 001333      .WORD   731
          077376 005103'      .WORD   WRERR
          077400 011746'      .WORD   PKTSSR
9769 077402      80$:      CKLOOP      ;LOOP IF SELECTED
          077402 104406      TRAP    C$CLP1
9770
9771      ;*****
9772      ;
9773      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
9774      ;
9775      ;*****
9776
9777 077404 012737 111005 101660'      MOV    0111005,T27PK3      ;WRITE DATA RETRY,ACK,SWB=1 COMMAND
9778 077412 010465 000000      MOV    R4,TSD8(R5)      ;ISSUE COMMAND
9779 077416 004737 016150'      JSR    PC,WAITF      ;WAIT FOR SSR TO SET
9780 077422 016501 000002      MOV    TSSR(R5),R1      ;GET TSSR CONTENTS
9781 077426 012702 000200      MOV    0SSR,R2      ;SET UP EXPECTED
9782 077432 020102      CMP     R1,R2      ;ARE THEY EQUAL
9783 077434 001406      BEQ     90$      ;BR, IF OK
9784 077436 005237 002212'      INC     FATFLG      ;BUMP COUNT
9788 077442      ERRHRD   ERRNO,T27WRF,EXPREC      ;TSSR INCORRECT AFTER WRITE DATA RETRY
          077442 104456      TRAP    C$ERRRD
          077444 001334      .WORD   732
          077446 104466'      .WORD   T27WRF
          077450 015374'      .WORD   EXPREC
9789 077452      90$:      CKLOOP      ;LOOP IF SELECTED
          077452 104406      TRAP    C$CLP1
9790 077454 005723      TST     (R3),      ;BUMP RECORD SIZE COUNTER
9791 077456 020327 000050      CMP     R3,040,      ;AT 40 SIZE YET
9792 077462 001315      BNE     65$      ;BR, IF MORE RECORDS TO WRITE
9793
9794      ;*****
9795      ;
9796      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9797      ;
9798      ;*****
9799
9800 077464 004737 010714'      JSR     PC,REWIND      ;CALL TAPE REWIND COMMAND

```

G6

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 278

```

9801 077470 103411          BCS      230$          ;BR, IF NO PROBLEM
9802 077472 016501 000002   MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9803 077476 010004          MOV      R0,R4          ;GET PACKET ADDRESS
9804 077500 005237 002212'   INC      FATFLG        ;BUMP COUNT
9808 077504          ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
      077504 104456          ;
      077506 001335          ;
      077510 103065'        ;
      077512 011746'        ;
9809 077514          230$:  CKLOOP          ;LOOP IF SELECTED
      077514 104406          ;
9810
9811
9812
9813
9814
9815
9816
      ;*****
      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
      ;*****
9817 077516 013701 101560'   MOV      T27BFR+6,R1      ;PICK UP XSTO
9818 077522 010102          MOV      R1,R2          ;SET UP EXPECTED
9819 077524 052702 000002   BIS      #BIT1,R2        ;SET BOT BIT IN EXPECTED
9820 077530 020102          CMP      R1,R2          ;DOES EXP = REC'D
9821 077532 001406          BEQ      240$          ;BR, IF EQUAL (OK)
9822 077534 005237 002212'   INC      FATFLG        ;BUMP COUNT
9826 077540          ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      077540 104456          ;
      077542 001336          ;
      077544 102561'        ;
      077546 015374'        ;
9827 077550          240$:  CKLOOP          ;LOOP IF SELECTED
      077550 104406          ;
9828 077552 012703 000024   MOV      #20,R3          ;STARTING RECORD SIZE
9829 077556 013737 003114' 101662'   MOV      FREE,T27RE      ;STARTING READ BUFFER ADDRESS
9830
9831
9832
9833
9834
9835
9836
      ;*****
      ;READ DATA,ACK COMMAND
      ;*****
9837 077564 012737 100001 101660' 265$: MOV      #100001,T27PK3      ;READ DATA,ACK COMMAND
9838 077572 012704 101660'   MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
9839 077576 010337 101666'   MOV      R3,T27SZ        ;SET UP RECORD SIZE IN PACKET
9840 077602 010465 000000   MOV      R4,TSD8(R5)      ;ISSUE COMMAND
9841 077606 004737 016150'   JSR      PC,WAITF      ;WAIT FOR SSR TO SET
9842 077612 016501 000002   MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9843 077616 012702 000200   MOV      #SSR,R2        ;SET UP EXPECTED
9844 077622 020102          CMP      R1,R2          ;ARE THEY EQUAL
9845 077624 001406          BEQ      280$          ;BR, IF OK
9846 077626 005237 002212'   INC      FATFLG        ;BUMP COUNT
9850 077632          ERRHRD  ERRNO,RDERR,PKTSSR      ;TSSR INCORRECT AFTER READ DATA
      077632 104456          ;
      077634 001337          ;
      077636 005176'        ;
      077640 011746'        ;
9851 077642          280$:  CKLOOP          ;LOOP IF SELECTED
      077642 104406          ;

```

Line	Address	Offset	Label	Operation	Comments	Trap	Trap Address
9852	077644	013702	003114'	MOV	FREE,R2		
9853	077650	010304		MOV	R3,R4		
9854	077652	162704	000024	SUB	#20.,R4		
9855	077656	060204		ADD	R2,R4		
9856	077660	000303		SWAB	R3		
9857	077662	021403		CMP	(R4),R3		
9858	077664	001410		BEQ	290\$		
9859	077666	011401		MOV	(R4),R1		
9860	077670	010302		MOV	R3,R2		
9861	077672	005237	002212'	INC	FATFLG		
9865	077676			ERRHRD	ERRNO,T27DTA,EXPREC		
	077676	104456					
	077700	001340					
	077702	104546'					
	077704	015374'					
9866	077706						
	077706	104406					
9867	077710	005724		TST	(R4),		
9868	077712	160204		SUB	R2,R4		
9869	077714	000303		SWAB	R3		
9870	077716	020403		CMP	R4,R3		
9871	077720	001356		BNE	285\$		
9872	077722	005723		TST	(R3),		
9873	077724	020327	000046	CMP	R3,#38.		
9874	077730	001315		BNE	265\$		
9875	077732						
	077732	104406					
9876	077734			ENDSUB			
	077734						
	077734	104403					
9877	077736	023727	002212' 000017	CMP	FATFLG,#15.		
9878	077744	103402		BLO	999\$		
9879	077746	004737	017104'	JSR	PC,CKDROP		
9880	077752						
9881							
9882							
9883							
9884							
9885							
9886							
9887							
9888							
9889							
9890							
9891							
9892							
9893							
9894							
9895							
9896							
9897							
9898							
9899							
9900							
9901							
9902							
9903							

```

9904      ; RECORDS SEPARATED BY A LONG INTERRECORD GAP.
9905      ;
9906      ;4. THE TAPE IS AGAIN REWOUND, THE SPACING COMMAND
9907      ; ISSUED, AND THE NUMBER OF TIMMING LOOP CYCLES
9908      ; COUNTED TO COMPLETE THE OPERATION.
9909      ;
9910      ;5. THE TWO LOOP COUNTS ARE COMPARED, CHECKING TO SEE
9911      ; THAT THEY DIFFER BY A SIGNIFICANT AMOUNT.
9912      ;
9913      ;
9914      ;
9915      ;
9916      ;
9917      ;-
9918 077752 BGNSUB                                ,>>>>>>>>>> BEGIN SUBTEST >>>>>>>>>>
    077752                                     T7.5:
    077752 104402                                TRAP C$BSUB
9919 077754 005037 002214' CLR INTRECV          ; INTERRUPT INDICATOR
9920 077760 005037 101706' CLR T27CNT           ; TIMER FOR WRITE DATA SPACING
9921 077764 005037 101710' CLR T27CNU          ; TIMER FOR WRITE DATA RETRY SPACING
9922 077770 004737 104664' JSR PC,T27REST       ; SET COMMAND PACKET
9923 077774 004737 104756' JSR PC,T27RT2        ; SET UP OTHER COMMAND PACKET
9924 100000 004737 105020' JSR PC,T27RT3        ; SET UP OTHER COMMAND PACKET
9925 100004 012737 176750 101712' MOV #65000.,T27DLY ; SET UP DELAY COUNTER
9926
9927      ; *****
9928      ;
9929      ; ISSUE CONTROLLER "SOFT" INITIALIZE - CARRY BIT CLEAR IF ERROR
9930      ;
9931      ; *****
9932
9933 100012 004737 015674' 10$: JSR PC,SOFINIT     ; DO INITIALIZE ON CONTROLLER
9934 100016 103426 BCS 20$                          ; BR IF INIT WAS OK
9935 100020 DELAY 250                               ; DELAY ABOUT .25 SEC
    100020 012727 000250                                MOV #250,(PC)+
    100024 000000 .WORD 0
    100026 013727 002116'                                MOV L$DLY,(PC)+
    100032 000000 .WORD 0
    100034 005367 177772                                DEC -6(PC)
    100040 001375 BNE -4
    100042 005367 177756                                DEC -22(PC)
    100046 001367 BNE -20
9936 100050 005337 101712' DEC T27DLY            ; BUMP COUNTER
9937 100054 001356 BNE 10$                         ; BR, IF COUNTER NOT DONE
9938 100056 005237 002212' INC FATFLG             ; BUMP COUNT
9942 100062 010001 MOV R0,R1                      ; CONTENTS OF TSSR REGISTER
9943 100064 ERRDF ERNO,SFIERR,SFIMSG              ; FATAL ERROR TSSR WAS NOT OK
    100064 104455                                TRAP C$ERDF
    100066 001341 .WORD 737
    100070 003642' .WORD SFIERR
    100072 011734' .WORD SFIMSG
9944 100074 013737 002172' 101550' 20$: MOV UNITN,T27DSW ; SET UP UNIT NUMBER
9945
9946 100102 012704 101530' MOV #T27PACKET,R4      ; SUBROUTINE NEEDS PACKET ADDRESS
9947
9948      ; *****
9949      ;

```

```

9950      ;WRITE CHARACTERISTICS COMMAND (CALL TO WRTPCHR)
9951      ;
9952      ;*****
9953      ;
9954      100106 004737 010562'      JSR      PC,WRTPCHR      ;ISSUE WRITE CHARACTERISTICS
9955      100112 103407              BCS      23$              ;BR, IF COMMAND ISSUED OK
9956      100114 005237 002212'      INC      FATFLG          ;BUMP COUNT
9957      100120 010001              MOV      R0,R1            ;SAVE CONTENTS OF TSSR
9958      100122              ERRHRD  ERRNO,WRTPMSG,SFMSG      ;WRITE CHARACTERISTICS FAILED
9959      100122 104456              TRAP      C$ERHRD          ;
9960      100124 001342              .WORD    738              ;
9961      100126 005046'              .WORD    WRTMSG          ;
9962      100130 011734'              .WORD    SFMSG          ;
9963      100132 104406      23$:    CKLOOP              ;LOOP IF SELECTED
9964      100132              TRAP      C$CLP1                ;
9965      ;*****
9966      ;
9967      ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
9968      ;
9969      ;*****
9970      100134 004737 010714'      JSR      PC,REWIND        ;CALL TAPE REWIND COMMAND
9971      100140 103411              BCS      30$              ;BR, IF NO PROBLEM
9972      100142 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
9973      100146 010004              MOV      R0,R4            ;GET PACKET ADDRESS
9974      100150 005237 002212'      INC      FATFLG          ;BUMP COUNT
9975      100154              ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
9976      100154 104456              TRAP      C$ERHRD          ;
9977      100156 001343              .WORD    739              ;
9978      100160 103065'              .WORD    T27RWN          ;
9979      100162 011746'              .WORD    PKTSSR         ;
9980      100164 104406      30$:    CKLOOP              ;LOOP IF SELECTED
9981      100164              TRAP      C$CLP1                ;
9982      ;*****
9983      ;
9984      ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
9985      ;
9986      ;*****
9987      100166 013701 101560'      MOV      T27BFR+6,R1      ;PICK UP XSTO
9988      100172 010102              MOV      R1,R2            ;SET UP EXPECTED
9989      100174 052702 C00002      BIS      @BIT1,R2          ;SET BOT BIT IN EXPECTED
9990      100200 020102              CMP      R1,R2            ;DOES EXP = REC'D
9991      100202 001406              BEQ      40$              ;BR, IF EQUAL (OK)
9992      100204 005237 002212'      INC      FATFLG          ;BUMP COUNT
9993      100210              ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
9994      100210 104456              TRAP      C$ERHRD          ;
9995      100212 001344              .WORD    740              ;
9996      100214 102561'              .WORD    T27BOT          ;
9997      100216 015374'              .WORD    EXPREC         ;
9998      100220 104406      40$:    CKLOOP              ;LOOP IF SELECTED
9999      100220              TRAP      C$CLP1                ;
10000     100222 012703 000144      MOV      #100.,R3          ;NUMBER OF RECORDS TO BE WRITTEN
10001     100226 013737 003114' 101662'      MOV      FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS

```



```

10001 ; *****
10002 ;
10003 ; WRITE DATA,ACK,CVC=1 COMMAND
10004 ;
10005 ; *****
10006
10007 100234 012737 140005 101660' 65$: MOV #140005,T27PK3 ;WRITE DATA,ACK,CVC=1 COMMAND
10008 100242 012704 101660' MOV #T27PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
10009 100246 012737 000024 101666' MOV #20.,T27SZ ;SET UP RECORD SIZE IN PACKET
10010 100254 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
10011 100260 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
10012 100264 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10013 100270 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
10014 100274 020102 CMP R1,R2 ;ARE THEY EQUAL
10015 100276 001406 BEQ 70$ ;BR, IF OK
10016 100300 005237 002212' INC FATFLG ;BUMP COUNT
10020 100304 ERRHRD ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
      100304 104456 TRAP C$ERHRD
      100306 001345 .WORD 741
      100310 005103' .WORD WRERR
      100312 011746' .WORD PKTSSR
10021 100314 70$: CKLOOP ;LOOP IF SELECTED
      100314 104406 TRAP C$CLP1
10022 100316 005303 DEC R3 ;DEC RECORD COUNTER
10023 100320 001345 BNE 65$ ;BR, IF MORE RECORDS TO WRITE
10024
10025 ; *****
10026 ;
10027 ; ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10028 ;
10029 ; *****
10030
10031 100322 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
10032 100326 103411 BCS 130$ ;BR, IF NO PROBLEM
10033 100330 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10034 100334 010004 MOV R0,R4 ;GET PACKET ADDRESS
10035 100336 005237 002212' INC FATFLG ;BUMP COUNT
10039 100342 ERRHRD ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
      100342 104456 TRAP C$ERHRD
      100344 001346 .WORD 742
      100346 103065' .WORD T27RWN
      100350 011746' .WORD PKTSSR
10040 100352 130$: CKLOOP ;LOOP IF SELECTED
      100352 104406 TRAP C$CLP1
10041
10042 ; *****
10043 ;
10044 ; READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
10045 ;
10046 ; *****
10047
10048 100354 013701 101560' MOV T27BFR+6,R1 ;PICK UP XST0
10049 100360 010102 MOV R1,R2 ;SET UP EXPECTED
10050 100362 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
10051 100366 020102 CMP R1,R2 ;DOES EXP = REC'D
10052 100370 001406 BEQ 140$ ;BR, IF EQUAL (OK)
10053 100372 005237 002212' INC FATFLG ;BUMP COUNT

```

```

10057 100376          ERRHRD  ERRNO,T27BOT,EXPREC      ;TAPE NOT AT BOT AFTER REWIND
      100376 104456          TRAP  C$ERHRD
      100400 001347          .WORD 743
      100402 102561'        .WORD T27BOT
      100404 015374'        .WORD EXPREC
10058 100406          140$: CKLOOP                    ;LOOP IF SELECTED
      100406 104406          TRAP  C$CLP1
10059 100410 012704 101660'      MOV  #T27PK3,R4      ;SET UP PACKET ADDRESS
10060 100414 012737 000010 101662'  MOV  #10,T27RB    ;SET UP RECORDS TO SPACE OVER
10061
10062          ;*****
10063          ;
10064          ;ACK,CVC=1,SPACE FORWARD COMMAND
10065          ;
10066          ;*****
10067
10068 100422 012737 140010 101660'      MOV  #140010,T27PK3    ;ACK,CVC=1,SPACE FORWARD COMMAND
10069 100430 010465 000000          150$: MOV  R4,T5DB(R5)    ;ISSUE COMMAND
10070 100434 005237 101706'      152$: INC  T27CNT        ;BUMP TIMER
10071 100440          DELAY 1                        ;DELAY ABOUT 100US
      100440 012727 000001          MOV  #1,(PC)+
      100444 000000          .WORD 0
      100446 013727 002116'        MOV  L$DLY,(PC)+
      100452 000000          .WORD 0
      100454 005367 177772          DEC  -6(PC)
      100460 001375          BNE  -4
      100462 005367 177756          DEC  -22(PC)
      100466 001367          BNE  -20
10072 100470          MOV  TSSR(R5),R1                ;GET TSSR
10073 100474 032701 000200          BIT  #BIT7,R1      ;CHECK FOR TSSR'S SSR SET
10074 100500 001755          BEQ  152$                ;KEEP COUNTING UNTIL SET
10075 100502 016501 000002          MOV  TSSR(R5),R1    ;GET STATUS FROM TSSR
10076 100506 012702 000200          MOV  #SSR,R2        ;SET UP EXPECTED
10077 100512 020201          CMP  R2,R1                ;WAS EVERYTHING OK
10078 100514 001406          BEQ  160$                ;BR, IF ALL IS WELL
10079 100516 005237 002212'      INC  FATFLG          ;BUMP COUNT
10083 100522          ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE FORWARD DIDN'T WORK OUT
      100522 104456          TRAP  C$ERHRD
      100524 001350          .WORD 744
      100526 104327'        .WORD T27SCF
      100530 011746'        .WORD PKTSSR
10084 100532          160$: CKLOOP                    ;LOOP IF SELECTED
      100532 104406          TRAP  C$CLP1
10085
10086          ;*****
10087          ;
10088          ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10089          ;
10090          ;*****
10091
10092 100534 004737 010714'      JSR  PC,REWIND        ;CALL TAPE REWIND COMMAND
10093 100540 004737 016236'      JSR  PC,CHKTSSR      ;SEE HOW TSSR IS
10094 100544 103407          BCS  170$                ;BR, IF NO PROBLEM
10095 100546 010001          MOV  R0,R1                ;SAVE TSSR
10096 100550 005237 002212'      INC  FATFLG          ;BUMP COUNT
10100 100554          ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND NOT ACCEPTED
      100554 104456          TRAP  C$ERHRD

```



```

100556 001351 .WORD 745
100560 103065' .WORD T27RWN
100562 011746' .WORD PKTSSR
10101 100564 104406 170$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
10102
10103 ;*****
10104 ;
10105 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XST0)
10106 ;
10107 ;*****
10108
10109 100566 013701 101560' MOV T27BFR+6,R1 ;PICK UP XST0
10110 100572 010102 MOV R1,R2 ;SET UP EXPECTED
10111 100574 052702 000002 BIS #BIT1,R2 ;SET BOT BIT IN EXPECTED
10112 100600 020102 CMP R1,R2 ;DOES EXP = REC'D
10113 100602 001406 BEQ 175$ ;BR, IF EQUAL (OK)
10114 100604 005237 002212' INC FATFLG ;BUMP COUNT
10118 100610 ERRHRD ERRNO,T27BOT,EXPREC ;TAPE NOT AT BOT AFTER REWIND
100610 104456 TRAP C$ERHRD
100612 001352 .WORD 746
100614 102561' .WORD T27BOT
100616 015374' .WORD EXPREC
10119 100620 175$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
100620 104406
10120 100622 012703 000144 MOV #100.,R3 ;STARTING RECORD SIZE
10121 100626 013737 003114' 101662' 177$: MOV FREE,T27WB ;STARTING WRITE BUFFER ADDRESS
10122
10123 ;*****
10124 ;
10125 ;WRITE DATA,CVC=1,ACK COMMAND
10126 ;
10127 ;*****
10128
10129 100634 012737 140005 101660' MOV #140005,T27PK3 ;WRITE DATA,CVC=1,ACK COMMAND
10130 100642 012704 101660' MOV #T27PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
10131 100646 012737 000024 101660' MOV #20.,T27SZ ;SET UP RECORD SIZE IN PACKET
10132 100654 010465 000000 MOV R4,TSD8(R5) ;ISSUE COMMAND
10133 100660 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
10134 100664 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10135 100670 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
10136 100674 020102 CMP R1,R2 ;ARE THEY EQUAL
10137 100676 001406 BEQ 180$ ;BR, IF OK
10138 100700 005237 002212' INC FATFLG ;BUMP COUNT
10142 100704 ERRHRD ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
100704 104456 TRAP C$ERHRD
100706 001353 .WORD 747
100710 005103' .WORD WRERR
100712 011746' .WORD PKTSSR
10143 100714 180$: CKLOOP ;LOOP IF SELECTED TRAP C$CLP1
100714 104406
10144 100716 005303 DEC R3 ;COUNT NUMBER OF RECORDS
10145 100720 001342 BNE 177$ ;BR, IF MORE RECORDS TO WRITE
10146
10147 ;*****
10148 ;
10149 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE

```

```

10150
10151
10152
10153 100722 004737 010714'      JSR      PC,REWIND      ;ISSUE REWIND
10154 100726 103411      BCS      182$      ;BR, IF ALL IS WELL
10155 100730 010004      MOV      R0,R4      ;GET PACKET ADDRESS
10156 100732 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
10157 100736 005237 002212'      INC      FATFLG      ;BUMP COUNT
10161 100742      ERRHRD  ERRNO,T27RWN,PKTSSR      ;REWIND FAILED
10162 100742 104456      TRAP      C$ERHRD
10163 100744 001354      .WORD    748
10164 100746 103065'      .WORD    T27RWN
10165 100750 011746'      .WORD    PKTSSR
10166 100752 104406      182$:  CKLOOP      ;SELECT LOOP MAYBE
10167 100752      TRAP      C$CLP1
10168
10169
10170
10171 100754 012703 000001      MOV      #1.,R3      ;SPACE 1 RECORD FORWARD
10172 100760 004737 010366'      JSR      PC,SPACE      ;ISSUE SPACE COMMAND
10173 100764 103411      BCS      185$      ;BR, IF COMMAND OK
10174 100766 010004      MOV      R0,R4      ;GET PACKET ADDRESS
10175 100770 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR STATUS
10176 100774 005237 002212'      INC      FATFLG      ;BUMP COUNT
10180 101000      ERRHRD  ERRNO,T27SCF,PKTSSR      ;SPACE FORWARD COMMAND FAILED
10181 101000 104456      TRAP      C$ERHRD
10182 101002 001355      .WORD    749
10183 101004 104327'      .WORD    T27SCF
10184 101006 011746'      .WORD    PKTSSR
10185 101010      185$:  CKLOOP      ;LOOP IF SELECTED
10186 101010 104406      TRAP      C$CLP1
10187 101012 012703 000144      MOV      #100.,R3      ;NUMBER OF RECORDS TO BE WRITTEN
10188 101016 013737 003114' 101662'      MOV      FREE,T27WB      ;STARTING WRITE BUFFER ADDRESS
10189
10190
10191 101024 012737 101005 101660' 190$:  MOV      #101005,T27PK3      ;WRITE DATA RETRY,ACK COMMAND
10192 101032 012704 101660'      MOV      #T27PK3,R4      ;SET UP R4 WITH PACKET ADDRESS
10193 101036 012737 000024 101666'      MOV      #20.,T27SZ      ;SET UP RECORD SIZE IN PACKET
10194 101044 010465 000000      MOV      R4,TSD8(R5)      ;ISSUE COMMAND
10195 101050 004737 016150'      JSR      PC,WAITF      ;WAIT FOR SSR TO SET
10196 101054 016501 000002      MOV      TSSR(R5),R1      ;GET TSSR CONTENTS
10197 101060 012702 000200      MOV      #SSR,R2      ;SET UP EXPECTED
10198 101064 020102      CMP      R1,R2      ;ARE THEY EQUAL
10199 101066 001406      BEQ      200$      ;BR, IF OK
10200 101070 005237 002212'      INC      FATFLG      ;BUMP COUNT
10204 101074      ERRHRD  ERRNO,T27WDC,PKTSSR      ;TSSR INCORRECT AFTER WRITE DATA
10205 101074 104456      TRAP      C$ERHRD

```

B7

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 286

```

101076 001356
101100 103421'
101102 011746'
10205 101104 200: CKLOOP ;LOOP IF SELECTED
101104 104406 ;STARTING WRITE BUFFER ADDRESS
10206 101106 013737 003114' 101662' MOV FREE,T27WB TRAP C:CLP1
10207
10208 ;*****
10209 ;WRITE DATA,CVC=1,ACK COMMAND
10210 ;*****
10211
10212
10213
10214 101114 012737 140005 101660' MOV #140005,T27PK3 ;WRITE DATA,CVC=1,ACK COMMAND
10215 101122 012704 101660' MOV #T27PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
10216 101126 012737 000024 101666' MOV #20.,T27SZ ;SET UP RECORD SIZE IN PACKET
10217 101134 010465 000000 MOV R4,TSSB(R5) ;ISSUE COMMAND
10218 101140 004737 016150' JSR PC,WAITF ;WAIT FOR SSR TO SET
10219 101144 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10220 101150 012702 000200 MOV #SSR,R2 ;SET UP EXPECTED
10221 101154 020102 CMP R1,R2 ;ARE THEY EQUAL
10222 101156 001406 BEQ 210: ;BR, IF OK
10223 101160 005237 002212' INC FATFLG ;BUMP COUNT
10227 101164 ERRHRD ERRNO,WRERR,PKTSSR ;TSSR INCORRECT AFTER WRITE DATA
101164 104456 TRAP C:ERHRD
101166 001357 .WORD 751
101170 005103' .WORD WRERR
101172 011746' .WORD PKTSSR
10228 101174 210: CKLOOP ;LOOP IF SELECTED
101174 104406 ;STARTING WRITE BUFFER ADDRESS
10229 101176 005303 DEC R3 ;BUMP DOWN RECORD COUNTER
10230 101200 001311 BNE 190: ;BR, IF MORE RECORDS TO WRITE RETRY
10231
10232 ;*****
10233 ;ISSUE REWIND COMMAND TO SELECTED TAPE DRIVE
10234 ;*****
10235
10236
10237
10238 101202 004737 010714' JSR PC,REWIND ;CALL TAPE REWIND COMMAND
10239 101206 103411 BCS 230: ;BR, IF NO PROBLEM
10240 101210 016501 000002 MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10241 101214 010004 MOV R0,R4 ;GET PACKET ADDRESS
10242 101216 005237 002212' INC FATFLG ;BUMP COUNT
10246 101222 ERRHRD ERRNO,T27RWN,PKTSSR ;REWIND NOT ACCEPTED
101222 104456 TRAP C:ERHRD
101224 001360 .WORD 752
101226 103065' .WORD T27RWN
101230 011746' .WORD PKTSSR
10247 101232 230: CKLOOP ;LOOP IF SELECTED
101232 104406 ;STARTING WRITE BUFFER ADDRESS
10248
10249 ;*****
10250 ;READ MESSAGE BUFFER EXTENDED STATUS REGISTER ZERO (XSTO)
10251 ;*****
10252
10253

```

C7

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 287

10254									
10255	101234	013701	101560'		MOV	T27BFR+6,R1		PICK UP XSTO	
10256	101240	010102			MOV	R1,R2		SET UP EXPECTED	
10257	101242	052702	000002		BIS	#BIT1,R2		SET BOT BIT IN EXPECTED	
10258	101246	020102			CMP	R1,R2		DOES EXP = REC'D	
10259	101250	001406			BEQ	2401		BR, IF EQUAL (OK)	
10260	101252	005237	002212'		INC	FATFLG		BUMP COUNT	
10264	101256				ERRHRD	ERRNO,T27BOT,EXPREC		TAPE NOT AT BOT AFTER REWIND	
	101256	104456						TRAP	C#ERHRD
	101260	001361						.WORD	753
	101262	102561'						.WORD	T27BOT
	101264	015374'						.WORD	EXPREC
10265	101266			2401:	CKLOOP			LOOP IF SELECTED	
	101266	104406						TRAP	C#CLP1
10266	101270	012704	101660'		MOV	#T27PK3,R4		SET UP PACKET ADDRESS	
10267	101274	012737	000010 101662'		MOV	#10,T27RB		SET UP RECORDS TO SPACE OVER	
10268									
10269									
10270									
10271									
10272									
10273									
10274									
10275	101302	012737	140010 101660'		MOV	#140010,T27PK3		ACK,CVC=1,SPACE FORWARD COMMAND	
10276	101310	010465	000000	2501:	MOV	R4,TSD8(R5)		ISSUE COMMAND	
10277	101314	005237	101710'	2521:	INC	T27CNU		BUMP TIMER	
10278	101320				DELAY	1		DELAY ABOUT 100US	
	101320	012727	000001						
	101324	000000						MOV	#1,(PC)+
	101326	013727	002116'					.WORD	0
	101332	000000						MOV	L\$DLY,(PC)+
	101334	005367	177772					.WORD	0
	101340	001375						DEC	-6(PC)
	101342	005367	177756					BNE	.-4
	101346	001367						DEC	-22(PC)
								BNE	.-20
10279	101350	016501	000002		MOV	TSSR(R5),R1		GET TSSR	
10280	101354	032701	000200		BIT	#BIT7,R1		CHECK FOR TSSR'S SSR SET	
10281	101360	001755			BEQ	2521		KEEP COUNTING UNTIL SET	
10282	101362	016501	000002		MOV	TSSR(R5),R1		GET STATUS FROM TSSR	
10283	101366	012702	000200		MOV	#SSR,R2		SET UP EXPECTED	
10284	101372	020201			CMP	R2,R1		WAS EVERYTHING OK	
10285	101374	001406			BEQ	2601		BR, IF ALL IS WELL	
10286	101376	005237	002212'		INC	FATFLG		BUMP COUNT	
10290	101402				ERRHRD	ERRNO,T27SCF,PKTSSR		SPACE FORWARD DIDN'T WORK OUT	
	101402	104456						TRAP	C#ERHRD
	101404	001362						.WORD	754
	101406	104327'						.WORD	T27SCF
	101410	011746'						.WORD	PKTSSR
10291	101412			2601:	CKLOOP			LOOP IF SELECTED	
	101412	104406						TRAP	C#CLP1
10292	101414	013701	101706'		MOV	T27CNT,R1		TIME FOR WRITE SPACING	
10293	101420	013702	101710'		MOV	T27CNU,R2		TIME FOR WRITE RETRY SPACING	
10294	101424	160102			SUB	R1,R2		GET'EM PRETTY CLOSE	
10295	101426	160102			SUB	R1,R2		GET'EM PRETTY CLOSE	
10296	101430	160102			SUB	R1,R2		GET'EM PRETTY CLOSE	
10297	101432	042702	000077		BIC	#77,R2		CLEAR LOW 6 BITS	
10298	101436	042701	000777		BIC	#000777,R1		SETTING UP CONSTANTS	

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 288

10299	101442	020102		CMP	R1,R2	;CHECK FOR DIFFERENCE
10300	101444	002006		BGE	300\$	;BR, IF GOOD 8888 CHECK 8888
10301	101446	005237	002212'	INC	FATFLG	;BUMP COUNT
10305	101452			ERRHRD	ERRNO,T27TIM,EXPREC	;TIME WAS NOT DIFFERENT ENOUGH
	101452	104456				TRAP C\$ERHRD
	101454	001363				.WORD 755
	101456	102654'				.WORD T27TIM
	101460	015374'				.WORD EXPREC
10306	101462		300\$:	CKLOOP		;LOOP IF SELECTED
	101462	104406				TRAP C\$CLP1
10307	101464			ENDSUB		;<<<<<<<<<<<< END SUBTEST >>>>>>>>
	101464					L10127:
	101464	104403				TRAP C\$ESUB
10308	101466	023727	002212' 000017	CMP	FATFLG,#15.	;IS ERROR COUNT AT 25
10309	101474	103402		BLO	999\$	;BR, IF LESS THAN 25
10310	101476	004737	017104'	JSR	PC,CKDROP	;TRY TO DROP THE UNIT
10311	101502		999\$:			
10312			:			
10313			:			
10314			:			
10315	101502	004737	016360'	JSR	PC,TSTLOOP	;DO WE NEED TO ITERATE TEST
10316	101506	103002		BCC	163\$	;BR, IF NO LOOP REQUIRED
10317	101510	000137	075046'	JMP	T27LOOP	;EXECUTE AGAIN
10318	101514		163\$:			
10319	101514			EXIT	TST	;ALL DONE THIS TEST
	101514	104432				TRAP C\$EXIT
	101516	003324				.WORD L10122-
10320						
10321						
10322						
10323						
10325	101520			.BLKW	10-<.-TSV2&7>	
10327	101530			T27PACKET:		;COMMAND PACKET FOR TEST
10328	101530	100004		.WORD	100004	;WRITE CHARACTERISTICS COMMAND, WITH , ACK
10329	101532	101540'		.WORD	T27DATA	;ADDRESS OF CHARACTERISTICS BLOCK
10330	101534	000000		.WORD	0	
10331	101536	000012		.WORD	10.	;STARTING VALUE OF BLOCK SIZE
10332	101540			T27DATA:		;CHARACTERISTICS DATA BLOCK
10333	101540	101552'		.WORD	T27BFR	;ADDRESS OF MESSAGE BUFFER
10334	101542	000000		.WORD	0	
10335	101544	000024		.WORD	20.	;LENGTH OF MESSAGE BUFFER
10336	101546	000000		.WORD	0	
10337	101550	000000		T27DSW:	0	;SELECT DRIVE 0
10338	101552			T27BFR:	.BLKW 25.	;MESSAGE BUFFER
10339						
10340						
10341						
10343	101634			.BLKB	10-<.-TSV2&7>	
10345	101640			T27PK2:		
10346	101640	10000		.WORD	100006	;WRITE SUB SYS MEM COMMAND, AND ACK
10347	101642	101670'		.WORD	T27BF2	;ADDRESS OF SELECT BLOCK DATA
10348	101644	000000		.WORD	0	
10349	101646	000006		.WORD	6.	;SIZE OF DATA PACKET
10350						
10352	101650			.BLKB	10-<.-TSV2&7>	
10354	101660			T27PK3:		
10355	101660	100005		.WORD	100005	;REREAD COMMAND, AND ACK

E7

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 289

10356	101662				T27RB:			
10357	101662	003114'			T27WB:	.WORD	FREE	;ADDRESS OF WRITE BUFFER
10358	101664	000000				.WORD	0	
10359	101666	000000			T27SZ:	.WORD	0	;SIZE OF BUFFER (EXTENT)
10360						.EVEN		
10361								
10362								
10363								
10364	101670				T27BF2:			
10365	101670	010			T27BS0:	.BYTE	10	;BSEL0 AREA
10366	101671	200			T27BS1:	.BYTE	200	;BSEL1 AREA
10367	101672	000000			T27S2:	.WORD	0	;SEL 2 AREA
10368	101674	000000			T27S3:	.WORD	0	;DATA AREA
10369								
10370								
10371						.EVEN		
10372								
10373								;TAPE MOTION PACKET COMMAND VALUES
10374	101676	100205			T27RN:	.WORD	100205	;REREAD DATA (NEXT)
10375	101700	100605			T27WR:	.WORD	100605	;REREAD DATA RETRY
10376	101702	102205			T27CON:	.WORD	102205	;WRITE CONTINUOUS
10377	101704	177777				.WORD	177777	;END OF DATA
10378								
10379								
10380	101706	000000			T27CNT:	.WORD	0	;TAPE TIMER COUNTER STORAGE AREA
10381	101710	000000			T27CNU:	.WORD	0	;TAPE TIMER COUNTER STORAGE AREA
10382	101712	000000			T27DLY:	.WORD	0	;DELAY COUNTER
10383								
10384								
10385								
10386								
10387								
10388								
10389								
10390	101714	124	141	160	T27WNG:	.ASCIZ		'Tape Position Incorrect After REREAD Previous (OPP=1)'
10391	102002	124	123	123	T27RDF:	.ASCIZ		'TSSR Incorrect After READ DATA Command'
10392	102051	122	105	122	T27RRF:	.ASCIZ		'REREAD Previous (Space Reverse, Read Forward) Command Failed'
10393	102146	120	117	123	T27SC:	.ASCIZ		'POSITION (Space Command) Failed, TSSR Not Correct'
10394	102230	122	111	102	T27LOR:	.ASCIZ		'RIB NOT SET AFTER READ REVERSE INTO BOT'
10395	102300	124	123	123	T27WDF:	.ASCIZ		'TSSR Not Correct After Illegal Mode Bits Set'
10396	102355	111	154	154	T27LOQ:	.ASCIZ		'Illegal Mode Bits, Failed To Set ILC Bit In XSTO'
10397	102436	122	105	122	T27SSR:	.ASCIZ		'REREAD COMMAND Not Accepted'
10398	102472	124	123	123	T27WDE:	.ASCIZ		'TSSR Not Correct After WRITE DATA RETRY Command, At BOT'
10399	102561	124	141	160	T27BOT:	.ASCIZ		'Tape Not At BOT After REWIND Command (BOT Not Set In XSTO)'
10400	102654	127	122	111	T27TIM:	.ASCIZ		'WRITE DATA RETRY'S Erase Tape Not Long Enough'
10401	102731	122	105	122	T27EOT:	.ASCIZ		'REREAD DATA OVER EOT GAVE NO TAPE STATUS ALERT'
10402	103010	124	123	123	T27TM:	.ASCIZ		'TSSR Not Correct After REREAD COMMAND Reject'
10403	103065	122	145	167	T27RWN:	.ASCIZ		'Rewind (POSITION) Command Not Accepted'
10404	103134	122	101	115	T27RNC:	.ASCIZ		'RAM Error, Correct Data Pattern Not In Ram'
10405	103207	124	123	123	T27AM3:	.ASCIZ		'TSSR Init. Failed After REREAD COMMAND'
10406	103256	104	162	151	T27OFL:	.ASCIZ		'Drive 7 Select Failed To Set "OFL" In TSSR'
10407	103331	124	123	123	T27WDD:	.ASCIZ		'TSSR Not Correct After REREAD DATA Command, SWS Bit Set'
10408	103421	124	123	123	T27WDC:	.ASCIZ		'TSSR Not Correct After REREAD DATA Command'
10409	103474	103	126	103	T27VCK:	.ASCIZ		'CVC Set, Didn't Reset VCK In Message Buffer'
10410	103547	124	123	102	T27EA:	.ASCIZ		'TS9A Not Correct After REREAD DATA Command'
10411	103622	127	122	111	T27WSS:	.ASCIZ		'WRITE SUBSYSTEM MEMORY Command Not Accepted (RAM Read)'
10412	103711	122	145	141	T27LON:	.ASCIZ		'Reading Long Record Failed To Set RLL Bit In XSTO'

;;
;LOCAL TEXT MESSAGES FOR TEST
;-

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 290

10413	103773	122	145	141	T27LOP:	.ASCIZ	'Reading Long Record Failed To Set RLS Bit In XST0'
10414	104055	122	145	163	T27PBP:	.ASCIZ	'Residual Byte Count Incorrect After Short Record Read'
10415	104143	122	145	141	T27TRL:	.ASCIZ	'Reading Long Record Failed To Give Tape Status Alert'
10416	104231	127	122	111	T27NEF:	.ASCIZ	'WRITE DATA RETRY. At First Record, Failed To Set RIB Bit XST3'
10417	104327	124	123	123	T27SCF:	.ASCIZ	'TSSR Not Correct After SPACE RECORDS Command'
10418	104404	124	123	123	T27TSA:	.ASCIZ	'TSSR Not Correct After WRITE DATA RETRY. Into BOT'
10419	104466	124	123	123	T27WRF:	.ASCIZ	'TSSR Not Correct After WRITE DATA RETRY Command'
10420	104546	104	141	164	T27DTA:	.ASCIZ	'Data Compare Error, Data Read From Tape Not Equal To Written'
10421	104643	127	162	151	TST27ID:	.ASCIZ	'Write Data Retry'
10422						.EVEN	
10423					;		
10424					;		
10425					;		
10426					ROUTINE TO RESTORE COMMAND PACKET TO START-UP (DEFAULT) VALUES		
10427					WRITE SUBSYSTEM MEMORY COMMAND		
10428					;		
10429					;-		
10430	104664				T27REST:		
10431	104664				SAVREG		SAVE THE REGISTERS
10432	104670	012701	101530'		MOV	#T27PACKET,R1	START OF THE PACKET
10433	104674	012721	100004		MOV	#100004,(R1)+	WRITE SUBSYSTEM MEM. WITH ACK.
10434	104700	012721	101540'		MOV	#T27DATA,(R1)+	ADDRESS OF CHARACTERISTICS DATA BLOCK
10435	104704	005021			CLR	(R1)+	EXTENDED ADDRESS
10436	104706	012721	000012		MOV	#10.,(R1)+	SIZE OF DATA BLOCK IN BYTES
10437	104712	012721	101552'		MOV	#T27BFR,(R1)+	ADDRESS OF MESSAGE BUFFER
10438	104716	005021			CLR	(R1)+	
10439	104720	012721	000024		MOV	#20.,(R1)+	LENGTH OF MESSAGE BUFFER
10440	104724	005021			CLR	(R1)+	
10441	104726	012711	000000		MOV	#0,(R1)	SELECT DRIVE ZERO
10442	104732	012702	000030		MOV	#24.,R2	NUMBER OF LOCATIONS TO BE CLEARED
10443	104736	012762	177777	101552' 64\$:	MOV	#177777,T27BFR(R2)	ALL ONES TO MESSAGE BUFFER
10444	104744	005742			TST	-(R2)	NEXT LOCATION
10445	104746	022702	000000		CMP	#0,R2	AT END OF LOOP YET
10446	104752	001371			BNE	64\$	KEEP GOING UNTIL DONE
10447	104754	000207			RTS	PC	RETURN
10448							
10449							
10450	104756				T27RT2:		
10451	104756				SAVREG		SAVE THE REGISTERS
10452	104762	012701	101640'		MOV	#T27PK2,R1	START OF THE PACKET
10453	104766	012721	100006		MOV	#100006,(R1)+	WRITE SUBSYSTEM MEM. WITH ACK.
10454	104772	012721	101670'		MOV	#T27BF2,(R1)+	ADDRESS OF DATA BLOCK
10455	104776	005021			CLR	(R1)+	EXTENDED ADDRESS
10456	105000	012721	000006		MOV	#6.,(R1)+	SIZE OF DATA BLOCK IN BYTES
10457	105004	005021			CLR	(R1)+	
10458	105006	012701	101670'		MOV	#T27BF2,R1	POINT TO DATA SEL AREA
10459	105012	005021			CLR	(R1)+	
10460	105014	005011			CLR	(R1)	
10461	105016	000207			RTS	PC	RETURN
10462	105020				T27RT3:		
10463	105020				SAVREG		SAVE REGISTERS
10464	105024	012701	101660'		MOV	#T27PK3,R1	SET UP POINTER ADDRESS
10465	105030	005021			CLR	(R1)+	COMMAND SPACE
10466	105032	005021			CLR	(R1)+	ADDRESS OF DATA BLOCK
10467	105034	005021			CLR	(R1)+	EXTENDED ADDRESS
10468	105036	005011			CLR	(R1)	SIZE OF DATA TRANSFER BLOCK
10469	105040	000207			RTS	PC	RETURN

G7

TSV7 - HARDWARE TESTS 1-8
TEST 7: WRITE DATA RETRY

MACRO M1113 01-FEB-84 17:54

SEQ 291

```

10470 105042          ENDTST
      105042
      105042 104401          L10122: TRAP C$ETST
10471
10472          .SBTTL TEST 8: WRITE/READ TAPE MARK
10473          ;+
10474          ;
10475          ; THIS TEST VERIFIES THAT THE WRITE TAPE MARK COMMAND OPERATES
10476          ; PROPERLY. IT IS VERIFIED THAT THE TAPE MARK IS WRITTEN ONTO TAPE
10477          ; BY CHECKING THAT THE READ AND SPACE RECORDS COMMANDS DETECT THE
10478          ; TAPE MARK. IN ADDITION, SINCE WRITE TAPE MARK IS THE FIRST
10479          ; SUBCOMMAND UNDER THE FORMAT COMMAND BEING TESTED, IT IS VERIFIED
10480          ; THAT THE CLEAR VOLUME CHECK (CVC) BIT OPERATES PROPERLY AND THAT
10481          ; FORMAT COMMANDS WITH ILLEGAL MODE CODES ARE REJECTED.
10482          ;
10483          ;
10484          ; THE TEST CONSISTS OF THE FOLLOWING 3 SUBTESTS
10485          ;
10486          ;
10487          ;
10488          ; -
10489          105044          BGNTST
      105044
10490 105044 012737 006256' 002170'      MOV    #EPRT2,EPRTSW      ; SECONDARY ERROR MESSAGE
10491 105052 005037 003124'              CLR    KTENABLE          ; TURN KT11 OFF
10492 105056 004737 017176'              JSR    PC,KTOFF          ; TURN KT11 BACK OFF IF THERE
10493 105062 012700 112301'              MOV    #TST28ID,R0        ; ASCII MESSAGE TO IDENTIFY TEST
10494 105066 004737 016412'              JSR    PC,TSTSETUP        ; DO INITIAL TEST SETUP
10495 105072 012737 000005' 002206'      MOV    #5,LOOPCNT        ; PERFORM 5 ITERATIONS
10500
10501          ;+
10502          ; TEST 8, SUBTEST 1
10503          ;
10504          ;
10505          ; VERIFIES THAT A FORMAT COMMAND (WITH ANY LEGAL MODE
10506          ; CODE) WITH THE CLEAR VOLUME CHECK (CVC) BIT CLEAR IS
10507          ; REJECTED IF THE VOLUME CHECK (VCK) FLAG IS SET. ALL
10508          ; VALID MODE CODES ARE CHECKED.
10509          ;
10510          ;
10511          ; -
10512
10513 105100          T28LOOP:
10514 105100          BGNSUB
      105100
10515 105100 104402
10516 105102 004737 112326'              JSR    PC,T28REST        ; SET COMMAND PACKET
10517 105106 004737 112420'              JSR    PC,T28RT2        ; SET UP OTHER COMMAND PACKET
10518 105112 004737 112462'              JSR    PC,T28RT3        ; SET UP OTHER COMMAND PACKET
10519 105116 004737 015674'              JSR    PC,SOFINIT        ; DO INITIALIZE ON CONTROLLER
10520 105122 103407              BCS     20$                ; BR IF INIT WAS OK
10521 105124 005237 002212'              INC     FATFLG          ; BUMP COUNT
10522 105130 010001              MOV     R0,R1                ; CONTENTS OF TSSR REGISTER
10523 105132          ERRDF    ERRNO,SFIERR,SFIMSG          ; FATAL ERROR TSSR WAS NOT OK
      105132 104455
      105134 001441          TRAP    C$ERRDF
      105136 003642'          .WORD   801
          .WORD   SFIERR

```


Address	Offset	Hex	Label	Operation	Comments
10526	105142	012737	000007	110260' 20\$:	MOV #7,T28DSW ;SET UP DRIVE NUMBER
10527	105150	012704	110240'	MOV #T28PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS	
10528	105154	004737	010562'	JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS	
10529	105160	103407		BCS 24\$;BR, IF COMMAND ISSUED OK	
10530	105162	005237	002212'	INC FATFLG ;BUMP COUNT	
10534	105166	010001		MOV R0,R1 ;SAVE CONTENTS OF TSSR	
10535	105170			ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED	
	105170	104456			TRAP C\$ERHRD
	105172	001442			.WORD 802
	105174	005046'			.WORD WRTMSG
	105176	011734'			.WORD SFIMSG
10536	105200			24\$:	CKLOOP
	105200	104406			TRAP C\$CLP1
10537	105202	005737	002216'	TST EXTFEA ;CHECK FOR EXTENDED FEATURES SW SWITCH	
10538	105206	001044		BNE 50\$;BR IF SWITCH IS ON	
10539					
10540	105210	112737	000200	110401'	MOV8 #2C0,T28BS1 ;WRITE MISCELLANEOUS CONT/READ STATUS
10541	105216	112737	000010	110400'	MOV8 #10,T28BS0 ;FUNCTION SELECTION BIT (TURN ON EXTFEA HW SWITCH)
10542	105224	012704	110350'	MOV #T28PK2,R4 ;WRITE SUBSYS MEM PACKET	
10543	105230	010465	000000		MOV R4,TSD8(R5) ;ISSUE COMMAND
10544	105234	004737	016236'		JSR PC,CHKTSSR ;WAIT FOR SSR
10545	105240	103407			BCS 30\$;BR, IF NO ERROR
10546	105242	010001			MOV R0,R1 ;ERROR, SAVE TSSR
10547	105244	005237	002212'		INC FATFLG ;BUMP COUNT
10551	105250				ERRHRD ERRNO,T28SSR,PKTSSR ;TSSR NOT CORRECT AFTER WRT. MISCELLANEOUS
	105250	104456			TRAP C\$ERHRD
	105252	001443			.WORD 803
	105254	111075'			.WORD T28SSR
	105256	011746'			.WORD PKTSSR
10552	105260			30\$:	CKLOOP
	105260	104406			TRAP C\$CLP1
10553	105262	012704	110240'		MOV #T28PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
10554	105266	012737	000007	110260'	MOV #7,T28DSW ;SELECT DRIVE 7
10555	105274	004737	010562'		JSR PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
10556	105300	103407			BCS 50\$;BR, IF COMMAND ISSUED OK
10557	105302	005237	002212'		INC FATFLG ;BUMP COUNT
10561	105306	010001			MOV R0,R1 ;SAVE CONTENTS OF TSSR
10562	105310				ERRHRD ERRNO,WRTMSG,SFIMSG ;WRITE CHARACTERISTICS FAILED
	105310	104456			TRAP C\$ERHRD
	105312	001444			.WORD 804
	105314	005046'			.WORD WRTMSG
	105316	011734'			.WORD SFIMSG
10563	105320			50\$:	CKLOOP
	105320	104406			TRAP C\$CLP1
10564	105322	016501	000002		MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10565	105326	032701	000100		BIT #0FL,R1 ;CHECK FOR THE OFFLINE BIT SET
10566	105332	001006			BNE 60\$;BR, IF OFFLINE (GOOD)
10567	105334	005237	002212'		INC FATFLG ;BUMP COUNT
10571	105340				ERRDF ERRNO,T28OFL,SFIMSG ;OFF LINE SHOULD HAVE BEEN SET (BAD)
	105340	104455			TRAP C\$ERDF
	105342	001445			.WORD 805
	105344	111430'			.WORD T28OFL
	105346	011734'			.WORD SFIMSG
10572	105350			60\$:	CKLOOP
	105350	104406			TRAP C\$CLP1
10573	105352	012703	110416'		MOV #T28RN,R3 ;POINTER FOR COMMANDS

Address	Offset	Hex	Label	Operation	Comments
10574	105356	011337	110370'	65\$:	MOV (R3),T28PK3 ;TAPE READ COMMAND IN PLACE
10575	105362	012704	110370'		MOV #T28PK3,R4 ;R4 = POINTER TO PACKET
10576	105366	010465	000000		MOV R4,T28B(R5) ;ISSUE COMMAND
10577	105372	004737	016150'		JSR PC,WAITE ;WAIT FOR SSR TO SET
10578	105376	016501	000002		MOV TSSR(R5),R1 ;GET TSSR CONTENTS
10579	105402	012702	100306		MOV #SSR!SC!OFL!BIT1!BIT2,R2 ;SET UP EXPECTED
10580	105406	020102			CMP R1,R2 ;ARE THEY EQUAL
10581	105410	001406			BEQ 80\$;BR, IF OK ESP. FUNCTION REJECT
10582	105412	005237	002212'		INC FATFLG ;BUMP COUNT
10586	105416			ERRHRD	ERRNO,T28TM,PKTSSR ;TSSR INCORRECT AFTER FORMAT CMD
	105416	104456			TRAP C\$ERHRD
	105420	001446			.WORD 80F
	105422	111304'			.WORD T28TM
	105424	011746'			.WORD PKTSSR
10587	105426			80\$:	CKLOOP ;LOOP IF SELECTED
	105426	104406			TRAP C\$CLP1
10588	105430	005723			TST (R3) ;POINT TO NEXT COMMAND
10589	105432	022713	177777		CMP #177777,(R3) ;END OF THE COMMANDS YET
10590	105436	001401			BEQ 90\$;BR, IF DONE
10591	105440	000746			BR 65\$;MORE COMMAND(S) TO GO
10592	105442			90\$:	
10593	105442				ENDSUB ;>>>>>>>>> END SUBTEST >>>>>>>>>
	105442				L10131:
10594	105444	023727	002212' 000017		CMP FATFLG,#15. ;IS ERROR COUNT AT 25
10595	105452	103402			BLU 999\$;BR, IF LESS THAN 25
10596	105454	004737	017104'		JSR PC,CKDROP ;TRY TO DROP THE UNIT
10597	105460			999\$:	
10598					
10599					
10600					
10601					
10602					
10603					
10604					
10605					
10606					
10607					
10608					
10609					
10610					
10611	105460				
	105460				
	105460	104402			
10612	105462	004737	112326'		JSR PC,T28REST ;SET COMMAND PACKET
10613	105466	004737	112420'		JSR PC,T28RT2 ;SET UP OTHER COMMAND PACKET
10614	105472	004737	112462'		JSR PC,T28RT3 ;SET UP OTHER COMMAND PACKET
10615	105476	004737	015674'		JSR PC,SOFINIT ;DO INITIALIZE ON CONTROLLER
10616	105504	005237	002212'		BCS 20\$;BR IF INIT WAS OK
10617	105510	010001			INC FATFLG ;BUMP COUNT
10621	105512				MOV R0,R1 ;CONTENTS OF TSSR REGISTER
10622	105512				ERRDF ERRNO,SFIERR,SFIMSG ;FATAL ERROR TSSR WAS NOT OK
	105512	104455			TRAP C\$ERDF
	105514	001447			.WORD 807
	105516	003642'			.WORD SFIERR
	105520	011734'			.WORD SFIMSG
10623	105522	013737	002172' 110260' 20\$:		MOV UNITN,T28DSW ;SET UP DRIVE NUMBER

10624	105530	012704	110240'		MOV	T28PACKET,R4	;SUBROUTINE NEEDS PACKET ADDRESS		
10625	105534	004737	010562'		JSR	PC,WRTCHR	;ISSUE WRITE CHARACTERISTICS		
10626	105540	103407			BCS	24\$	;BR, IF COMMAND ISSUED OK		
10627	105542	005237	002212'		INC	FATFLG	;BUMP COUNT		
10631	105546	010001			MOV	R0,R1	;SAVE CONTENTS OF TSSR		
10632	105550				ERRHRD	ERRNO,WRTMSG,SFIMSG	;WRITE CHAPACTERISTISC FAILED		
	105550	104456					TRAP	C\$ERHKO	
	105552	001450					.WORD	808	
	105554	005046'					.WORD	WRTMSG	
	105556	011734'					.WORD	SFIMSG	
10633	105560			24\$:	CKLOOP		;LOOP IF SELECTED		
	105560	104406					TRAP	C\$CLP1	
10634	105562	012703	110406'		MOV	T28IMV,R3	;SET POINTER FOR COMMANDS		
10635	105566	011337	110370'		MOV	(R3),T28PK3	;SET UP NEXT COMMAND		
10636	105572	013737	003114' 110372'		MOV	FREE,T28RB	;STARTING WRITE BUFFER ADDRESS		
10637	105600	012704	110370'		MOV	T28PK3,R4	;SET UP R4 WITH PACKET ADDRESS		
10638	105604	012737	000400 110376'		MOV	#256.,T28SZ	;SET UP RECORD SIZE IN PACKET		
10639	105612	010465	000000		MOV	R4,TSD8(R5)	;ISSUE COMMAND		
10640	105616	004737	016150'		JSR	PC,WAITF	;WAIT FOR SSR!BIT1!BIT2 TO SET		
10641	105622	016501	000002		MOV	TSSR(R5),R1	;GET TSSR CONTENTS		
10642	105626	012702	100206		MOV	#SSR!SC!BIT1!BIT2,R2	;SET UP EXPECTED		
10643	105632	020102			CMP	R1,R2	;ARE THEY EQUAL		
10644	105634	001406			BEQ	75\$	;BR, IF OK		
10645	105636	005237	002212'		INC	FATFLG	;BUMP COUNT		
10649	105642				ERRHRD	ERRNU,T28WDF,PKTSSR	;TSSR INCORRECT AFTER READ DATA		
	105642	104456					TRAP	C\$ERHRD	
	105644	001451					.WORD	809	
	105646	110737'					.WORD	T28WDF	
	105650	011746'					.WORD	PKTSSR	
10650	105652			75\$:	CKLOOP		;LOOP IF SELECTED		
	105652	104406					TRAP	C\$CLP1	
10651	105654	013701	110270'		MOV	T28BFR+6,R1	;GET MESSAGE BUFFER		
10652	105660	010102			MOV	R1,R2	;SET UP EXPECTED		
10653	105662	052702	001000		BIS	#BIT9,R2	;SET THE ILC BIT IN EXPECTED		
10654	105666	020102			CMP	R1,R2	;ARE THEY EQUAL		
10655	105670	001406			BEQ	180\$	;BR, IF EQUAL (ALL IS WELL)		
10656	105672	005237	002212'		INC	FATFLG	;BUMP COUNT		
10660	105676				ERRHRD	ERRNO,T28LOQ,EXPREC	;THE ILC BIT WAS NOT SET IN XSTO		
	105676	104456					TRAP	C\$ERHRD	
	105700	001452					.WORD	810	
	105702	111014'					.WORD	T28LOQ	
	105704	015374'					.WORD	EXPREC	
10661	105706			180\$:	CKLOOP		TRAP	C\$CLP1	
	105706	104406							
10662	105710	005723			TST	(R3),	;BUMP TO NEXT ADDRESS (COMMAND)		
10663	105712	021327	177777		CMP	(R3),#177777	;CHECK FOR END OF COMMAND BUFFER		
10664	105716	001323			BNE	30\$	;BR, IF MORE COMMANDS TO TRY		
10665	105720			190\$:	CKLOOP		;LOOP IF SELECTED		
	105720	104406					TRAP	C\$CLP1	
10666	105722				ENDSUB		;***** END SUBTEST ***** L10132:		
	105722	104403					TRAP	C\$ESUB	
10667	105724	023727	002212' 000017		CMP	FATFLG,#15,	;IS ERROR COUNT AT 25		
10668	105732	103402			BLO	999\$	;BR, IF LESS THAN		

```

10672      ;
10673      ;
10674      ;TEST 8, SUBTEST 3
10675      ;
10676      ;VERIFIES THAT WRITE TAPE MARK COMMANDS OPERATE
10677      ;PROPERLY, AND THAT READ COMMANDS SUBSEQUENTLY ISSUED
10678      ;TO DETECT THE WRITTEN TAPE MARKS TERMINATE WITH TAPE
10679      ;STATUS ALERT WITH THE TAPE MARK DETECTED (TMK) STATUS
10680      ;BIT SET. THE FOLLOWING SEQUENCE IS EXECUTED.
10681      ;
10682      ;1.   THE CONTROLLER IS INITIALIZED AND TAPE REWOUND.
10683      ;      THIS SETS THE VOLUME CHECK (VCK) STATUS BIT.
10684      ;
10685      ;2.   A WRITE TAPE MARK COMMAND WITH CVC=1 IS ISSUED
10686      ;      AND PROPER TERMINATION AND STATUS IS VERIFIED
10687      ;      (I.E. VCK=0 AND TMK=1).
10688      ;
10689      ;3.   SEVERAL MORE WRITE TAPE MARK COMMANDS, THESE WITH
10690      ;      CVC=0 ARE ISSUED AND PROPER TERMINATION (NORMAL)
10691      ;      AND STATUS (TMK) VERIFIED.
10692      ;
10693      ;4.   A READ REVERSE COMMAND IS ISSUED AND PROPER
10694      ;      TERMINATION (TAPE STATUS ALERT) AND STATUS (TMK)
10695      ;      VERIFIED. IT IS ALSO VERIFIED THAT NO DATA IS
10696      ;      TRANSFERRED INTO MEMORY.
10697      ;
10698      ;5.   A SPACE RECORDS REVERSE COMMAND IS ISSUED AND
10699      ;      PROPER TERMINATION (TAPE STATUS ALERT) AND STATUS
10700      ;      (TMK) VERIFIED.
10701      ;
10702      ;6.   THE TAPE IS REWOUND AND A READ FORWARD COMMAND IS
10703      ;      ISSUED AND PROPER TERMINATION (TAPE STATUS ALERT)
10704      ;      AND STATUS (TMK) VERIFIED. IT IS ALSO VERIFIED
10705      ;      THAT NO DATA IS TRANSFERRED INTO MEMORY.
10706      ;
10707      ;7.   A SPACE RECORDS REVERSE COMMAND THAT CONTAINS A
10708      ;      RECORD COUNT GREATER THAN 1 IS ISSUED AND IT IS
10709      ;      VERIFIED THAT TAPE STATUS ALERT TERMINATION
10710      ;      OCCURED, TMK=1 AND THAT RBPCR (RESIDUAL
10711      ;      BYTE/RECORD COUNTER) CONTAINS THE PROPER NONZERO
10712      ;      VALUE. THIS OPERATION VERIFIES THAT DETECTION OF
10713      ;      THE TAPE MARK CAUSES THE SPACE RECORDS OPERATION
10714      ;      TO BE PREMATURELY TERMINATED. THIS SHOULD LEAVE
10715      ;      THE POSITION JUST BEFORE THE FIRST RECORD ON
10716      ;      TAPE.
10717      ;
10718      ;8.   TAPE POSITION IS VERIFIED BY ISSUING ANOTHER
10719      ;      SPACE RECORDS REVERSE COMMAND AND VERIFYING THAT
10720      ;      TAPE STATUS ALERT TERMINATION OCCURS, WITH THE
10721      ;      REVERSE INTO BOT (RIB) STATUS ERROR BIT SET.
10722      ;
10723      ;9.   A SPACE RECORDS FORWARD COMMAND THAT CONTAINS A
10724      ;      RECORD COUNT GREATER THAN 1 IS ISSUED AND IT IS
10725      ;      VERIFIED THAT TAPE STATUS ALERT TERMINATION
10726      ;      OCCURED, TMK=1, AND THAT RBPCR (RESIDUAL
10727      ;      BYTE/RECORD COUNTER) CONTAINS THE PROPER NONZERO
10728      ;      VALUE. THIS OPERATION VERIFIES THAT DETECTION OF

```


Address	Offset	Label	Operation	Comments	Register/Value	Trap	Word
10774	106132	111361'					T28RWN
	106134	011746'					PKTSSR
	106136		30\$:	CKLOOP			
	106138	104406					
10775	106140	013701	110270'	MOV	T28BFR+6,R1		
10776	106144	010102		MOV	R1,R2		
10777	106146	052702	000002	BIS	0BIT1,R2		
10778	106152	020102		CMP	R1,R2		
10779	106154	001406		BEQ	40\$		
10780	106156	005237	002212'	INC	FATFLG		
10784	106162			ERRHRD	ERRNO,T28BOT,EXPREC		
	106162	104456					
	106164	001456					
	106166	111237'					
	106170	015374'					
10785	106172			40\$:	CKLOOP		
	106172	104406					
10786	106174	005737	002216'	42\$:	TST	EXTFEA	
10787	106200	001024			BNE	50\$	
10788	106202	112737	000200	110401'	MOVB	0200,T28BS1	
10789	106210	112737	000010	110400'	MOVB	010,T28BS0	
10790	106216	012704	110350'		MOV	0T28PK2,R4	
10791	106222	013465	000000		MOV	R4,TSD8(R5)	
10792	106226	004737	016236'		JSR	PC,CHKTSSR	
10793	106232	103407			BCS	50\$	
10794	106234	010001			MOV	R0,R1	
10795	106236	005237	002212'		INC	FATFLG	
10799	106242				ERRHRD	ERRNO,T28SSR,PKTSSR	
	106242	104456					
	106244	001457					
	106246	111075'					
	106250	011746'					
10800	106252			50\$:	CKLOOP		
	106252	104406					
10801	106254	012737	000007	110260'	MOV	07,T28DSW	
10802	106262	012704	110240'		MOV	0T28PACKET,R4	
10803	106266	004737	010562'		JSR	PC,WRTCHR	
10804	106272	103407			BCS	60\$	
10805	106274	005237	002212'		INC	FATFLG	
10809	106300	010001			MOV	R0,R1	
10810	106302				ERRHRD	ERRNO,WRTMSG,SFMSG	
	106302	104456					
	106304	001460					
	106306	005046'					
	106310	011734'					
10811	106312			60\$:	CKLOOP		
	106312	104406					
10812	106314	015501	000002		MOV	TSSR(R5),R1	
10813	106320	032701	000100		BIT	00FL,R1	
10814	106324	001006			BNE	65\$	
10815	106326	005237	002212'		INC	FATFLG	
10819	106332				ERRDF	ERRNO,T28OFL,SFMSG	
	106332	104455					
	106334	001461					
	106336	111430'					
	106340	011734'					

Address	Offset	Hex	Label	Instruction	Comment
10821	106342	013737	002172'	MOV	UNITN,T28DSW ;SET UP DRIVE NUMBER
10822	106344	012704	110260'	MOV	#T28PACKET,R4 ;SUBROUTINE NEEDS PACKET ADDRESS
10823	106352	004737	010562'	JSR	PC,WRTCHR ;ISSUE WRITE CHARACTERISTICS
10824	106356	103407		BCS	68\$;BR, IF COMMAND ISSUED OK
10825	106362	005237	002212'	INC	FATFLG ;BUMP COUNT
10829	106364	010001		MOV	R0,R1 ;SAVE CONTENTS OF TSSR
10830	106370			ERRHRD	ERRNO,WRTMSG,SFMSG ;WRITE CHARACTERISTICS FAILED
	106372	104456			TRAP C\$ERHRD
	106374	001462			.WORD 818
	106376	005046'			.WORD WRTMSG
	106400	011734'			.WORD SFMSG
10831	106402		68\$:	CKLOOP	;LOOP IF SELECTED
	106402	104406			TRAP C\$CLP1
10832	106404	012737	140011	MOV	#140011,T28PK3 ;WRITE TAPE MARK,ACK,CVC*1 COMMAND
10833	106412	012704	110370'	MOV	#T28PK3,R4 ;SET UP R4 WITH PACKET ADDRESS
10834	106416	010465	000000	MC /	R4,TSD8(R5) ;ISSUE COMMAND
10835	106422	004737	016150'	JSR	PC,WAITF ;WAIT FOR SSR TO SET
10836	106426	016501	000002	MOV	TSSR(R5),R1 ;GET TSSR CONTENTS
10837	106432	012702	000200	MOV	#SSR,R2 ;SET UP EXPECTED
10838	106436	020102		CMP	R1,R2 ;ARE THEY EQUAL
10839	106440	001406		BEQ	70\$;BR, IF OK
10840	106442	005237	002212'	INC	FATFLG ;BUMP COUNT
10844	106446			ERRHRD	ERRNO,T28WDC,PKTSSR ;TSSR INCORRECT AFTER WRITE TAPE MARK
	106446	104456			TRAP C\$ERHRD
	106450	001463			.WORD 819
	106452	111503'			.WORD T28WDC
	106454	011746'			.WORD PKTSSR
10845	106456		70\$:	CKLOOP	;LOOP IF SELECTED
	106456	104406			TRAP C\$CLP1
10846	106460	013701	110270'	MOV	T28BFR+6,R1 ;PICK UP XSTO (VCK CHECK)
10847	106464	010102		MOV	R1,R2 ;SET UP EXPECTED
10848	106466	042702	000020	BIC	#BIT4,R2 ;VCK SHOULD BE 0
10849	106472	020102		CMP	R1,R2 ;IS VCK SET CORRECTLY
10850	106474	001406		BEQ	80\$;BR, IF VCK IS CLEAR
10851	106476	005237	002212'	INC	FATFLG ;BUMP COUNT
10855	106502			ERRHRD	ERRNO,T28VCK,EXPREC ;VCK WAS NOT CLEAR AFTER CVC*1
	106502	104456			TRAP C\$ERHRD
	106504	001464			.WORD 820
	106506	111562'			.WORD T28VCK
	106510	015374'			.WORD EXPREC
10856	106512		80\$:	CKLOOP	;LOOP IF SELECTED
	106512	104406			TRAP C\$CLP1
10857	106514	013701	110270'	MOV	T28BFR+6,R1 ;PICK UP XSTO (CHECK TMK)
10858	106520	010102		MOV	R1,R2 ;SET UP EXPECTED
10859	106522	052702	100000	BIS	#BIT15,R2 ;TMK SHOULD BE SET
10860	106526	020102		CMP	R1,R2 ;WAS TMK SET
10861	106530	001406		BEQ	90\$;BR, IF TMK WAS SET
10862	106532	005237	002212'	INC	FATFLG ;BUMP COUNT
10866	106536			ERRHRD	ERRNO,T28TMK,EXPREC ;TMK WAS NOT SET AFTER WRT TAPE MARK
	106536	104456			TRAP C\$ERHRD
	106540	001465			.WORD 821
	106542	111635'			.WORD T28TMK
	106544	015374'			.WORD EXPREC
10867	106546		90\$:	CKLOOP	;LOOP IF SELECTED
	106546	104406			TRAP C\$CLP1
10868	106550	004737	010714'	JSR	PC,REWIND ;CALL TAPE REWIND COMMAND

Address	Offset	Label	Instruction	Comment	Trap	Word
10869	106554	103411	BCS	1304	BR, IF NO PROBLEM	
10870	106556	010004	MOV	R0,R4	SAVE PACKET ADDRESS	
10871	106550	016501	MOV	TSSR(R5),R1	GET TSSR STATUS	
10872	106564	005237	INC	FATFLG	BUMP COUNT	
10876	106570		ERRHRD	ERRNO,T28RWN,PKTSSR	REWIND NOT ACCEPTED	
	106570	104456			TRAP	C1ERRHRD
	106572	001466			.WORD	822
	106574	111361			.WORD	T28RWN
	106576	011746			.WORD	PKTSSR
10877	106600		1304:	CKLOOP	LOOP IF SELECTED	
	106600	104406			TRAP	C1CLP1
10878	106602	013701	MOV	T28BFR+6,R1	PICK UP XSTO	
10879	106606	010102	MOV	R1,R2	SET UP EXPECTED	
10880	106610	052702	BIS	#BIT1,R2	SET BOT BIT IN EXPECTED	
10881	106614	020102	CMP	R1,R2	DOES EXP = REC'D	
10882	106616	001406	BEQ	1404	BR, IF EQUAL (OK)	
10883	106620	005237	INC	FATFLG	BUMP COUNT	
10887	106624		ERRHRD	ERRNO,T28BOT,EXPREC	TAPE NOT AT BOT AFTER REWIND	
	106624	104456			TRAP	C1ERRHRD
	106626	001467			.WORD	823
	106630	111237			.WORD	T28BOT
	106632	015374			.WORD	EXPREC
10888	106634		1404:	CKLOOP	LOOP IF SELECTED	
	106634	104406			TRAP	C1CLP1
10889	106636	012703	MOV	#10.,R3	NUMBER OF RECORDS TO WRITE TM	
10890	106642	012737	MOV	#140011,T28PK3	WRITE TAPE MARK,ACK,CVC=1 COMMAND	
10891	106650	012704	MOV	#T28PK3,R4	SET UP R4 WITH PACKET ADDRESS	
10892	106654	010465	MOV	R4,TSD8(R5)	ISSUE COMMAND	
10893	106660	004737	JSR	PC,WAITE	WAIT FOR SSR TO SET	
10894	106664	016501	MOV	TSSR(R5),R1	PICK UP TSSR	
10895	106670	012702	MOV	#SSR,R2	SET UP EXPECTED (SSR ONLY)	
10896	106674	020102	CMP	R1,R2	WAS STATUS GOOD	
10897	106676	001406	BEQ	1654	BR, IF TERMINATION WAS GOOD	
10898	106700	005237	INC	FATFLG	BUMP COUNT	
10902	106704		ERRHRD	ERRNO,T28WUC,PKTSSR	TSSR NOT CORRECT AFTER WRT TAPE M.	
	106704	104456			TRAP	C1ERRHRD
	106706	001470			.WORD	824
	106710	111503			.WORD	T28WUC
	106712	011746			.WORD	PKTSSR
10903	106714		1654:	CKLOOP	LOOP IF SELECTED	
	106714	104406			TRAP	C1CLP1
10904	106716	013701	MOV	T28BFR+6,R1	PICK UP XSTO	
10905	106722	010102	MOV	R1,R2	SET UP EXPECTED	
10906	106724	052702	BIS	#BIT15,R2	SET TMK BIT IN EXPECTED	
10907	106730	020102	CMP	R1,R2	DOES EXP = REC'D	
10908	106732	001406	BEQ	1804	BR, IF EQUAL (OK)	
10909	106734	005237	INC	FATFLG	BUMP COUNT	
10913	106740		ERRHRD	ERRNO,T28TMK,EXPREC	TMK NOT SET AFTER WRT TAPE MARK	
	106740	104456			TRAP	C1ERRHRD
	106742	001471			.WORD	825
	106744	111635			.WORD	T28TMK
	106746	015374			.WORD	EXPREC
10914	106750		1804:	CKLOOP	LOOP IF SELECTED	
	106750	104406			TRAP	C1CLP1
10915	106752	005303	DEC	R3	BUMP COUNTER DOWN	
10916	106754	001337	BNE	1554	BR, IF LESS THAN 10 TAPE MARKS	
10917	106756	012700	MOV			

TSV7 - HARDWARE TESTS 1-8
TEST 8: WRITE/READ TAPE MARK

MACRO M1113 01-FEB-84 17:54

SEQ 300

10918	106762	004737	017324'		JSR	PC,FILLMEM	IFILL MEM WITH ALL ONES	
10919	106766	013737	003114'	110372'	MOV	FREE,T28WB	ISTARTING READ BUFFER ADDRESS	
10920	106774	012737	140401	110370'	MOV	#140401,T28PK3	IREAD REVERSE,ACK, COMMAND	
10921	107002	012704	110370'		MOV	#T28PK3,R4	ISSET UP R4 WITH PACKET ADDRESS	
10922	107006	013737	000024	110376'	MOV	20.,T28SZ	ISSET UP RECORD SIZE IN PACKET	
10923	107014	010465	000000		MOV	R4,TSD8(R5)	ISSUE COMMAND	
10924	107020	004737	016150'		JSR	PC,WAITF	IWAIT FOR SSR TO SET	
10925	107024	016501	000002		MOV	TSSR(R5),R1	IGET TSSR CONTENTS	
10926	107030	012702	100204		MOV	#SSR!SC!BIT2,R2	ISSET UP EXPECTED	
10927	107034	020102			CMP	R1,R2	ARE THEY EQUAL	
10928	107036	001406			BEG	2001	IBR, IF OK	
10929	107040	005237	002212'		INC	FATFLG	IBUMP COUNT	
10933	107044				ERRHRD	ERRNO,T28RDF,PKTSSR	ITSSR INCORRECT AFTER WRITE DATA	
	107044	104456					TRAP	C1ERHRD
	107046	001472					.WORD	826
	107050	110574'					.WORD	T28RDF
	107052	011746'					.WORD	PKTSSR
10934	107054			2001:	CKLOOP		ILoop IF SELECTED	
	107054	104406					TRAP	C1CLP1
10935	107056	013701	110270'		MOV	T28BFR+6,R1	IPICK UP XSTO	
10936	107062	010102			MOV	R1,R2	ISSET UP EXPECTED	
10937	107064	052702	100000		BIS	#BIT15,R2	ITMK SHOULD BE SET	
10938	107070	020102			CMP	R1,R2	IS IS TMK SET	
10939	107072	001406			BEG	2101	IBR, IF TMK WAS SET (GOOD)	
10940	107074	005237	002212'		INC	FATFLG	IBUMP COUNT	
10944	107100				ERRHRD	ERRNO,T28RRM,EXPREC	ITMK NOT SET AFTER READ REV	
	107100	104456					TRAP	C1ERHRD
	107102	001473					.WORD	827
	107104	111707'					.WORD	T28RRM
	107106	015374'					.WORD	EXPREC
10945	107110			2101:	CKLOOP		ILoop IF SELECTED	
	107110	104406					TRAP	C1CLP1
10946	107112	017701	073776		MOV	#FREE,R1	IFIRST LOC IN READ BUFFER	
10947	107116	012702	177777		MOV	#177777,R2	EXPECTED IF NO DATA TRANS.	
10948	107122	020102			CMP	R1,R2	IDID ANY DATA GET TRANSFERRED	
10949	107124	001406			BEG	2201	IBR, IF NO DATA TRANS (GOOD)	
10950	107126	005237	002212'		INC	FATFLG	IBUMP COUNT	
10954	107132				ERRHRD	ERRNO,T28DTR,EXPREC	IDATA TRANSFERRED ON READ TAPE MARK	
	107132	104456					TRAP	C1ERHRD
	107134	001474					.WORD	828
	107136	112122'					.WORD	T28DTR
	107140	015374'					.WORD	EXPREC
10955	107142			2201:	CKLOOP		ILoop IF SELECTED	
	107142	104406					TRAP	C1CLP1
10956	107144	012737	100110	110370	MOV	#100410,T28PK3	ISPACE REVERSE,ACK, COMMAND	
10957	107152	012737	000001	110372'	MOV	#1,T28RB	INUMBER OF RECORDS TO SPACE BACK	
10958	107160	012704	110370'		MOV	#T28PK3,R4	ISSET UP R4 WITH PACKET ADDRESS	
10959	107164	010465	000000		MOV	R4,TSD8(R5)	ISSUE COMMAND	
10960	107170	004737	016150'		JSR	PC,WAITF	IWAIT FOR SSR TO SET	
10961	107174	016501	000002		MOV	TSSR(R5),R1	IGET TSSR CONTENTS	
10962	107200	012702	100204		MOV	#SSR!SC!BIT2,R2	ISSET UP EXPECTED	
10963	107204	020102			CMP	R1,R2	ARE THEY EQUAL	
10964	107206	001406			BEG	2221	IBR, IF OK	
10965	107210	005237	002212'		INC	FATFLG	IBUMP COUNT	
10969	107214				ERRHRD	ERRNO,T28RDG,PKTSSR	ITSSR INCORRECT AFTER SPACE CMD.	
	107214	104456					TRAP	C1ERHRD
	107216	001475					.WORD	829

Line	Address	Offset	Label	Operation	Comments	Trap	Word
10970	107220	110655'	222\$:	CKLOOP	;LOOP IF SELECTED		T28R0G
	107222	011746'					PKTSSR
	107224	104406				TRAP	C\$CLP1
10971	107226	013701	110270'	MOV	T28BFR+6,R1		
10972	107232	010102		MOV	R1,R2		
10973	107234	052702	100000	BIS	#BIT15,R2		
10974	107240	020102		CMP	R1,R2		
10975	107242	001406		BEQ	226\$		
10976	107244	005237	002212'	INC	FATFLG		
10980	107250			ERRHRD	ERRNO,T28RRN,EXPREC		
	107250	104456				TRAP	C\$ERHRD
	107252	001476				.WORD	830
	107254	111765'				.WORD	T28ARN
	107256	015374'				.WORD	EXPREC
10981	107260		226\$:	CKLOOP	;LOOP IF SELECTED		
	107260	104406				TRAP	C\$CLP1
10982	107262	004737	010714'	JSR	PC,REWIND		
10983	107266	103411		BCS	230\$		
10984	107270	010004		MOV	R0,R4		
10985	107272	016501	000002	MOV	TSSR(R5),R1		
10986	107276	005237	002212'	INC	FATFLG		
10990	107302			ERRHRD	ERRNO,T28RWN,PKTSSR		
	107302	104456				TRAP	C\$ERHRD
	107304	001477				.WORD	831
	107306	111361'				.WORD	T28RWN
	107310	011746'				.WORD	PKTSSR
10991	107312		230\$:	CKLOOP	;LOOP IF SELECTED		
	107312	104406				TRAP	C\$CLP1
10992	107314	013701	110270'	MOV	T28BFR+6,R1		
10993	107320	010102		MOV	R1,R2		
10994	107322	052702	000002	BIS	#BIT1,R2		
10995	107326	020102		CMP	R1,R2		
10996	107330	001406		BEQ	240\$		
10997	107332	005237	002212'	INC	FATFLG		
11001	107336			ERRHRD	ERRNO,T28BOT,EXPREC		
	107336	104456				TRAP	C\$ERHRD
	107340	001500				.WORD	832
	107342	111237'				.WORD	T28BOT
	107344	015374'				.WORD	EXPREC
11002	107346		240\$:	CKLOOP	;LOOP IF SELECTED		
	107346	104406				TRAP	C\$CLP1
11003	107350	012700	177777	MOV	#177777,R0		
11004	107354	004737	017324'	JSR	PC,FILLMEM		
11005	107360	013737	003114'	MOV	FREE,T28R9		
11006	107366	012737	100001	MOV	#100001,T28PK3		
11007	107374	012704	110370'	MOV	#T28PK3,R4		
11008	107400	013737	000024	MOV	20,T28SZ		
11009	107406	010465	000000	MOV	R4,TSD8(R5)		
11010	107412	004737	016150'	JSR	PC,WAITF		
11011	107416	016501	000002	MOV	TSSR(R5),R1		
11012	107422	012702	100204	MOV	#SSR!SC!BIT2,R2		
11013	107426	020102		CMP	R1,R2		
11014	107430	001406		BEQ	245\$		
11015	107432	005237	002212'	INC	FATFLG		
11019	107436			ERRHRD	ERRNO,T28WDE,PKTSSR		
	107436	104456				TRAP	C\$ERHRD

Address	Label	Operation	Comments	Register/Value	Condition	Trap	Word
107440	001501						833
107442	111146'						T28WDE
107444	011746'						PKTSSR
11020	107446	245\$:	CKLOOP				
	107446						
11021	107450	013701	110270'	MOV	T28BFR+6,R1		
11022	107454	010102		MOV	R1,R2		
11023	107456	052702	100000	BIS	#BIT15,R2		
11024	107462	020102		CMP	R1,R2		
11025	107464	001406		BEQ	247\$		
11026	107466	005237	002212'	INC	FATFLG		
11030	107472			ERRHRD	ERRNO,T28RRP,EXPREC		
	107472	104456					
	107474	001502					
	107476	112044'					
	107500	015374'					
11031	107502	247\$:	CKLOOP				
	107502	104406					
11032	107504	017701	073404	MOV	\$FFEE,R1		
11033	107510	012702	177777	MOV	#177777,R2		
11034	107514	020102		CMP	R1,R2		
11035	107516	001406		BEQ	250\$		
11036	107520	005237	002212'	INC	FATFLG		
11040	107524			ERRHRD	ERRNO,T28DTR,EXPREC		
	107524	104456					
	107526	001503					
	107530	112122'					
	107532	015374'					
11041	107534	250\$:	CKLOOP				
	107534	104406					
11042	107536	012737	100410 110370'	MOV	#100410,T28PK3		
11043	107544	012737	000005 110372'	MOV	#5,T28RB		
11044	107552	012704	110370'	MOV	#T28PK3,R4		
11045	107556	010465	000000	MOV	R4,TSD8(R5)		
11046	107562	004737	016150'	JSR	PC,WAITF		
11047	107566	016501	000002	MOV	TSSR(R5),R1		
11048	107572	012702	100204	MOV	#SSR!SC!BIT2,R2		
11049	107576	020102		CMP	R1,R2		
11050	107600	001406		BEQ	260\$		
11051	107602	005237	002212'	INC	FATFLG		
11055	107606			ERRHRD	ERRNO,T28RDG,PKTSSR		
	107606	104456					
	107610	001504					
	107612	110655'					
	107614	011746'					
11056	107616	260\$:	CKLOOP				
	107616	104406					
11057	107620	013701	110270'	MOV	T28BFR+6,R1		
11058	107624	010102		MOV	R1,R2		
11059	107626	052702	100000	BIS	#BIT15,R2		
11060	107632	020102		CMP	R1,R2		
11061	107634	001406		BEQ	270\$		
11062	107636	005237	002212'	INC	FATFLG		
11066	107642			ERRHRD	ERRNO,T28RRN,EXPREC		
	107642	104456					
	107644	001505					

LOE	040000 G	L\$UNIT	002012RG	002 L10071	055432R	002 MS.RSF	000020	PRASC	014423R	002
LOOPCN	002206RG	002 L10000	002154R	002 L10072	047474R	002 MS.RST	000010	PRBEXP	015370R	002
LOOPCO	013026R	002 L10001	002166R	002 L10073	050074R	002 NBA	002000	PRBMSG	015236R	002
LOOPFL	003152RG	002 L10002	005574R	002 L10074	050550R	002 NEWPAS	021650R	002 PRBREC	015372R	002
LOT	000010 G	L10003	011744R	002 L10075	051214R	002 NODEV	003104RG	002 PRBTOT	015323R	002
L\$ACP	002110RG	002 L10004	011762R	002 L10076	051754R	002 NOINIT	004325R	002 PRBYTE	015022RG	002
L\$APT	002036RG	002 L10005	012000R	002 L10077	052714R	002 NOINTR	004211R	002 PRI	002000 G	
L\$AU	022212RG	002 L10006	012006R	002 L10100	053234R	002 NOITS	002160RG	002 PRIADD	010060R	002
L\$AUT	002070RG	002 L10007	012024R	002 L10101	053636R	002 NOMAN	020444R	002 PRIAO	010130R	002
L\$AUTO	022416RG	002 L10010	012042R	002 L10102	075004R	002 NOMEM	005450R	002 PRIBXO	007512RG	002
L\$CCP	002106RG	002 L10011	012066R	002 L10103	056370R	002 NP.IR	000200	PRIEQU	007760R	002
L\$CLEA	022476RG	002 L10012	012140R	002 L10104	057236R	002 NP.LOO	000040	PRIPKT	007270RG	002
L\$CO	002032RG	002 L10013	012310R	002 L10105	060130R	002 NP.OUT	000100	PRIRAM	007766R	002
L\$DEFO	002011RG	002 L10014	013024R	002 L10106	061056R	002 NP.WP	000020	PRITAD	010174R	002
L\$DESC	003400RG	002 L10015	013652R	002 L10107	061634R	002 NSI	004142R	002 PRITSS	005632R	002
L\$DESP	002076RG	002 L10016	013674R	002 L10110	062476R	002 NSINIT	004377R	002 PRITO	010256R	002
L\$DEVP	002060RG	002 L10017	015400R	002 L10111	063350R	002 NUL	004517R	002 PRIT1	010321R	002
L\$DISP	002124RG	002 L10020	015406R	002 L10112	064220R	002 NULCR	004520R	002 PRIXOR	007642RG	002
L\$DLY	002116RG	002 L10021	015414R	002 L10113	065076R	002 NXM	004000	PRI00	000000 G	
L\$DTP	002040RG	002 L10022	015426R	002 L10114	065752R	002 NXMFLG	003126RG	002 PRI01	000040 G	
L\$DTYP	002034RG	002 L10023	015450R	002 L10115	066622R	002 NXMHI	003132RG	002 PRI02	000100 G	
L\$DU	022310RG	002 L10024	015476R	002 L10116	067554R	002 NXMLO	003130RG	002 PRI03	000140 G	
L\$DUT	002072RG	002 L10025	015636R	002 L10117	070604R	002 NXMTST	021312R	002 PRI04	000200 G	
L\$DVTY	003372RG	002 L10026	016146R	002 L10120	071164R	002 NXR	003730R	002 PRI05	000240 G	
L\$EF	002052RG	002 L10030	022142R	002 L10121	071640R	002 NXRERR	005544RG	002 PRI06	000300 G	
L\$ENVI	002044RG	002 L10031	022306R	002 L10122	105042R	002 NXR	003767R	002 PRI07	000340 G	
L\$ETP	002102RG	002 L10032	022414R	002 L10123	075426R	002 NXTU	021662R	002 PRMESS	014142R	002
L\$EXP1	002046RG	002 L10033	022474R	002 L10124	076210R	002 OFL	000100	PRMNO	002310RG	002
L\$EXP4	002064RG	002 L10034	022522R	002 L10125	077032R	002 ONEFIL	000000	PRMSG	014452RG	002
L\$EXP5	002066RG	002 L10035	022764R	002 L10126	077734R	002 O\$APTS	000000	PRMSG0	014632R	002
L\$HARD	112510RG	002 L10036	024420R	002 L10127	101464R	002 O\$AU	000001	PRMSG1	014677R	002
L\$HIME	002120RG	002 L10037	027100R	002 L10130	112504R	002 O\$BGNR	000001	PRMSG2	014735R	002
L\$HPCP	002016RG	002 L10040	025026R	002 L10131	105442R	002 O\$BGNS	000001	PROASC	014320R	002
L\$HPTP	002022RG	002 L10041	025350R	002 L10132	105722R	002 O\$DU	000001	PR1ASC	014365R	002
L\$HW	002146RG	002 L10042	025730R	002 L10133	110174R	002 O\$ERRT	000000	PST32W	003142RG	002
L\$ICP	002104RG	002 L10043	034250R	002 L10134	112530R	002 O\$GNSW	000001	PUNIT	022144R	002
L\$INIT	021416RG	002 L10044	027502R	002 L10135	112650R	002 O\$POIN	000001	PW.D11	000021	
L\$LADP	002026RG	002 L10045	030352R	002 L10136	112742R	002 O\$SETU	000000	PW.D13	000022	
L\$LAST	112736RG	002 L10046	031172R	002 L10140	112750R	002 PASRPT	021714R	002 PW.D22	000020	
L\$LOAD	002100RG	002 L10047	031406R	002 MEMADD	013654RG	002 PATCH	112730RG	002 PW.NOP	000000	
L\$LUN	002074RG	002 L10050	031754R	002 MEMCK	021116RG	002 PATDAT	020140R	002 PW.NO1	000023	
L\$MREV	002050RG	002 L10051	032320R	002 MENASC	020357R	002 PC.ERA	002400	PW.RDE	000024	
L\$NAME	002000RG	002 L10052	046504R	002 MENERR	020304R	002 PC.IER	002000	PW.RDR	000001	
L\$PRIO	002042RG	002 L10053	034716R	002 MENRES	020406R	002 PC.NOO	001000	PW.RDS	000005	
L\$PROT	021406RG	002 L10054	035476R	002 MMRO	170200	PC.REL	000000	PW.RFI	000003	
L\$PRT	002112RG	002 L10055	036252R	002 MMVEC	000250	PC.REW	000400	PW.WCT	000006	
L\$REPP	002062RG	002 L10056	036754R	002 MSA.FR	000006	PKBCNT	000006	PW.WFI	000004	
L\$REV	002010RG	002 L10057	037420R	002 MSA.NO	000000	PKHI	000004	PW.WFM	000007	
L\$RPT	022524RG	002 L10060	040054R	002 MSA.NR	000004	PKLOW	000002	PW.WMI	000010	
L\$SOFT	112642RG	002 L10061	040510R	002 MSA.VO	000002	PKTADD	007454R	002 PW.WNP	000011	
L\$SPC	002056RG	002 L10062	041102R	002 MSGEXP	012044RG	002 PKTFRM	007416R	002 PW.WTR	000002	
L\$SPCP	002020RG	002 L10063	041604R	002 MSGLOO	012764RG	002 PKTGET	011764RG	002 P.ACK	100000	
L\$STP	002024RG	002 L10064	042050R	002 MSGSTA	012250RG	002 PKTMES	012010RG	002 P.CMD	000037	
L\$STA	002030RG	002 L10065	042322R	002 MSGSUB	013642RG	002 PKTRAM	004735RG	002 P.CONT	000012	
L\$SW	002156RG	002 L10066	042606R	002 MS.ATT	000006	PKTSSR	011746RG	002 P.CVC	040000	
L\$TEST	002114RG	002 L10067	043106R	002 MS.EXT	000200	PNT	001000 G	P.FMT	000140	
L\$TIML	002014RG	002 L10070	043572R	002 MS.RSD	000001	PRAMPK	013676R	002 P.FORM	000011	

TSV6 - PARAMETER CODING MACRO M1113 01-FEB-84 17:54
SYMBOL TABLE

SEQ 312

P.GETS=	000017	SPM4	112700R	002	TSSDEF	006506R	002	T#TSTM=	177777	T22RWJ	026474R	002	
P.IE	= 000200	SR0	= 177572		TSSR	= 000002 G		T#TSTS=	000001	T22SSR	026130R	002	
P.INIT=	000013	SR1	= 177574		TSSRBI	003472RG	002	T#AU	= 010031	T22S2	026112R	002	
P.MODE=	007400	SR2	= 177576		TSSRFO	006315R	002	T#AUT=	010033	T22S3	026114R	002	
P.OPP	= 020000	SR3	= 172516		TSSRH	= 000003 G		T#CLE=	010034	T22TM	026400R	002	
P.POSI=	000010	SSR	= 000200		TSSX	004010R	002	T#DAT=	010140	T22VCK	026547R	002	
P.READ=	000001	STATCO	012312R	002	TSTBLK	002742RG	002	T#DU	= 010032	T22WLK	026622R	002	
P.SWB	= 010000	SVCGBL=	000000		TSTCNT	002204RG	002	T#HAR=	010134	T22WRT	026120R	002	
P.WRIT=	000005	SVCINS=	000000		TSTEND	016622R	002	T#HW	= 010000	T23A	003134RG	002	
P.WRTC=	000004	SVCSUB=	000001		TSTFLA	002304RG	002	T#INI=	010030	T23AM3	033140R	002	
P.WRTS=	000006	SVCTAG=	000000		TSTL00	016360RG	002	T#MSG=	010025	T23B	003136RG	002	
QVP	002174RG	002	SVCTST=	000001	TSTPTR	002306RG	002	T#PC	= 000001	T23BA	033525R	002	
RAMASC	014056R	002	S#LSYM=	010000	TSTSET	016412RG	002	T#PRO=	010027	T23BFR	032402R	002	
RAMDAT	002232RG	002	SO.IDN=	000010	TST21I	024244R	002	T#PTA=	010137	T23BF2	032522R	002	
RAMERR	015410RG	002	SO.IFB=	000002	TST22I	026707R	002	T#RPT=	010035	T23BS0	032522R	002	
RAMEXP	015430RG	002	SO.IFP=	000001	TST23I	033666R	002	T#SOF=	010135	T23BS1	032523R	002	
RAMFOR	010016R	002	SO.ILO=	000020	TST24I	046252R	002	T#SRV=	010026	T23CHK	034062R	002	
RAMSIZ	002272RG	002	SO.ION=	000040	TST25I	055230R	002	T#SUB=	010133	T23CON	032540R	002	
RAMTAD	015416RG	002	SO.IRD=	000100	TST26I	074607R	002	T#SW	= 010001	T23DAT	032370R	002	
RCVHIA	002274RG	002	SO.IRW=	000004	TST27I	104643R	002	T#TES=	010130	T23DSW	032400R	002	
RCVLOA	002276RG	002	SO.ISP=	000200	TST28I	112301R	002	T1	023306RG	002	T23E0T	032664R	002
RDERR	005176R	002	S1.ICE=	002000	TSV2	002000RG	002	T2	024422RG	002	T23ET	032577R	002
RECMSG	002456RG	002	S1.IEC=	010000	TSV3	002166RG	002	T2.1	024452R	002	T23L00	027146R	002
RECV	002224RG	002	S1.IFM=	001000	TSV4	021406RG	002	T2.2	025044R	002	T23OFL	033206R	002
REGSAV	020050R	002	S1.IHE=	000400	TSV6	112506RG	002	T2.3	025366R	002	T23PAC	032360R	002
RETErr	005362R	002	S1.IID=	001000	TSV7	023306RG	002	T21AM3	024123R	002	T23PK2	032470R	002
RETRY	034126R	002	S1.IIR=	020000	TTIBFR=	177562 G		T21BFR	023724R	002	T23PK3	032510R	002
REWIND	010714RG	002	S1.I2R=	040000	TTICSR=	177560 G		T21BF2	024020R	002	T23RES	033702R	002
RMCHBE=	000167		S1.PAR=	100000	TTIVEC=	000060 G		T21BS0	024020R	002	T23RNC	033065R	002
RMCHEN=	000200		S2.ATI=	000110	T#ARGC=	000003		T21BS1	024021R	002	T23RSZ	032520R	002
RMMSGB=	000215		S2.BTI=	000004	T#CODE=	001130		T21DAT	023710R	002	T23RT2	033774R	002
RMMSGC=	000234		S2.DIM=	000200	T#ERRN=	001513		T21DLY	023722R	002	T23RT3	034036R	002
RMPKTB=	000201		S2.ILW=	000100	T#EXCP=	000000		T21DSW	023720R	002	T23RWN	033016R	002
RMPKTE=	000210		S2.INR=	000020	T#FLAG=	000040		T21L00	023336R	002	T23SSR	032544R	002
RMR	= 010000		S2.OUT=	000040	T#FREE=	112750R	002	T21OFL	024223R	002	T23S7	032516R	002
RMPACK	011010R	002	S2.UND=	000003	T#GMAN=	000000		T21PAC	023700R	002	T23S2	032524R	002
SC	= 100000		TBLEND=	003052RG	002	T#HILI=	000776	T21PK2	024010R	002	T23S3	032526R	002
SCE	= 020000		TCOASC	006376R	002	T#LAST=	000001	T21RES	024266R	002	T23TH	032742R	002
SCHERR	005270R	002	TCOCOD	006376R	002	T#LOLI=	000000	T21RT2	024356R	002	T23TMP	032530R	002
SCME	005003R	002	TEMP1	003106RG	002	T#LSYM=	010000	T21SSR	024026R	002	T23VCK	033452R	002
SDELAY	010560R	002	TEMP2	003110RG	002	T#LTNO=	000010	T21S2	024022R	002	T23WB	032512R	002
SELASC	020352R	002	TERCLS=	000016		T#NEST=	177777	T21S3	024024R	002	T23WD	032534R	002
SELDAT=	000004		TESTNO=	000010		T#NS0	= 000000	T22AM3	026225R	002	T23WDC	033350R	002
SEL2	= 000002		TEXASC	006335R	002	T#NS1	= 000005	T22BFR	026012R	002	T23WOD	033261R	002
SETMAP	017220R	002	TFCASC	006437R	002	T#NS2	= 000002	T22BF2	026110R	002	T23WOR	032536R	002
SETU	021746R	002	TIMEXP	015452RG	002	T#PCNT=	000000	T22BS0	026110R	002	T23WRT	032532R	002
SFFMSG	012002RG	002	TIMSGO	015300R	002	T#PTAB=	010137	T22BS1	026111R	002	T23WSS	033577R	002
SFHERR	003675R	002	TINERR	011721R	002	T#PTHV=	000001	T22DAT	026000R	002	T24AM3	045240R	002
SFIERR	003642R	002	TMPBFR	002622RG	002	T#PTNU=	000001	T22FOR	026124R	002	T24BA	045572R	002
SFIMSG	011734RG	002	TNAM	016606R	002	T#SAVL=	177777	T22L00	024452R	002	T24BFR	043652R	002
SFPTBL	002156RG	002	TRANST	002156RG	002	T#SEGL=	177777	T22OFL	026325R	002	T24BF2	043770R	002
SIFLAG	003144RG	002	TSBA	= 000000 G		T#SIZE=	000005	T22PAC	025770R	002	T24BOT	044633R	002
SIMSG	011666R	002	TSBAH	= 000001 G		T#SUBN=	000003	T22PK2	026100R	002	T24BS0	043770R	002
SKIPT	003370R	002	TSDB	= 000000 G		T#TAGL=	177777	T22POS	026122R	002	T24BS1	043771R	002
SOFINI	015674RG	002	TSDBH	= 000001 G		T#TAGN=	010141	T22RD	026116R	002	T24CON	044002R	002
SPACE	010366RG	002	TSFCOD	007136R	002	T#TEMP=	000000	T22RES	026742R	002	T24DAT	043640R	002
SPM1	112650R	002	TSREJ	= 000006		T#TEST=	000010	T22RT2	027034R	002	T24DLY	044006R	002

D9

TSV6 - PARAMETER CODING MACRO M1113 01-FEB-84 17:54
SYMBOL TABLE

SEQ 314

UAM = 000200 G	WF.IWF = 000020	XS0BOT = 000002	XXCOMM 003112RG	002 X2.SPA = 035400
UNITN = 002172RG	002 WF.IWR = 000100	XS0EOT = 000001	X1.ALWA = 000000	X2.UNI = 000007
UNREC = 000006	WF.I3R = 000002	XS0IE = 000040	X1.FALS = 000040	X2.WCF = 002000
USI = 004113R	002 WF.I4R = 000001	XS0ILA = 000400	X1.OFFS = 000400	X3.DCK = 000010
WAITF = 016150RG	002 WRTCHR = 010562RG	002 XS0ILC = 001000	X1.TRUE = 000020	X3.MBZ = 000006
WC.IFA = 000200	WRTERR = 005103R	002 XS0LET = 020000	X1.COR = 020000	X3.MOF = 177400
WC.IFE = 000002	WRTMSG = 005046R	002 XS0MOT = 000200	X1.DLT = 100000	X3.OPI = 000100
WC.IGD = 000001	WSMBK = 021110RG	002 XS0NEF = 002000	X1.MBZ = 017375	X3.REV = 000040
WC.IRE = 000010	XFERAS = 015640R	002 XS0ONL = 000100	X1.RBP = 000400	X3.RIB = 000001
WC.IRW = 000004	XNXM = 016276R	002 XS0PED = 000010	X1.SPA = 040000	X3.SPA = 000200
WC.IOT = 000100	XORBFO = 007574R	002 XS0RLL = 010000	X1.UNC = 000002	X3.TRF = 000020
WC.IIT = 000040	XORFOR = 007712R	002 XS0RLS = 040000	X2.BUF = 000100	X4.HSP = 100000
WC.ISR = 000020	XST0 = 000006 G	XS0TMK = 100000	X2.EXT = 000200	X4.MBZ = 017400
WF.IED = 000010	XST1 = 000010 G	XS0VCK = 000020	X2.OPM = 100000	X4.RCE = 040000
WF.IER = 000004	XST2 = 000012 G	XS0WLE = 004000	X2.RCE = 040000	X4.TSM = 020000
WF.IHI = 000200	XST3 = 000014 G	XS0WLK = 000004	X2.REV = 000077	X1.WRC = 000377
WF.IRE = 000040	XST4 = 000016 G			

. ABS. 000000 000
000000 001
ABS 112750 002
ERRORS DETECTED: 0

VIRTUAL MEMORY USED: 31628 WORDS (124 PAGES)
DYNAMIC MEMORY: 20614 WORDS (79 PAGES)
ELAPSED TIME: 01:00:28
CZTSCA.CZTSCA.SEQ/-SP=SVC/ML,TSV1C,TSV22C,TSV3B,TSV4,TSV7A,TSV6

TEST 6: REREADS B1
 TEST 6: REREADS C1
 TEST 6: REREADS D1
 TEST 6: REREADS E1
 TEST 6: REREADS F1
 TEST 6: REREADS G1
 TEST 6: REREADS H1
 TEST 6: REREADS I1
 TEST 6: REREADS J1
 TEST 6: REREADS K1
 TEST 6: REREADS L1
 TEST 6: REREADS M1
 TEST 6: REREADS N1

TEST 6: REREADS B2
 TEST 6: REREADS C2
 TEST 6: REREADS D2
 TEST 6: REREADS E2
 TEST 6: REREADS F2
 TEST 6: REREADS G2
 TEST 6: REREADS H2
 TEST 6: REREADS I2
 TEST 6: REREADS J2
 TEST 6: REREADS K2
 TEST 6: REREADS L2
 TEST 6: REREADS M2
 TEST 6: REREADS N2

TEST 6: REREADS B3
 TEST 6: REREADS C3
 TEST 6: REREADS D3
 TEST 6: REREADS E3
 TEST 6: REREADS F3
 TEST 6: REREADS G3
 TEST 6: REREADS H3
 TEST 6: REREADS I3
 TEST 6: REREADS J3
 TEST 6: REREADS K3
 TEST 6: REREADS L3
 TEST 6: REREADS M3
 TEST 6: REREADS N3

TEST 6: REREADS B4
 TEST 6: REREADS C4
 TEST 6: REREADS D4
 TEST 6: REREADS E4
 TEST 6: REREADS F4
 TEST 6: REREADS G4
 TEST 6: REREADS H4
 TEST 6: REREADS I4
 TEST 6: REREADS J4
 TEST 6: REREADS K4
 TEST 6: REREADS L4
 TEST 6: REREADS M4
 TEST 6: REREADS N4

TEST 6: REREADS B5
 TEST 6: REREADS C5
 TEST 6: REREADS D5
 TEST 6: REREADS E5
 TEST 7: WRITE DATA F5
 TEST 7: WRITE DATA G5
 TEST 7: WRITE DATA H5
 TEST 7: WRITE DATA I5
 TEST 7: WRITE DATA J5
 TEST 7: WRITE DATA K5
 TEST 7: WRITE DATA L5
 TEST 7: WRITE DATA M5
 TEST 7: WRITE DATA N5

TEST 7: WRITE DATA B6
 TEST 7: WRITE DATA C6
 TEST 7: WRITE DATA D6
 TEST 7: WRITE DATA E6
 TEST 7: WRITE DATA F6
 TEST 7: WRITE DATA G6
 TEST 7: WRITE DATA H6
 TEST 7: WRITE DATA I6
 TEST 7: WRITE DATA J6
 TEST 7: WRITE DATA K6
 TEST 7: WRITE DATA L6
 TEST 7: WRITE DATA M6
 TEST 7: WRITE DATA N6

TEST 7: WRITE DATA B7
 TEST 7: WRITE DATA C7
 TEST 7: WRITE DATA D7
 TEST 7: WRITE DATA E7
 TEST 7: WRITE DATA F7
 TEST 7: WRITE DATA G7
 TEST 8: WRITE/READ H7
 TEST 8: WRITE/READ I7
 TEST 8: WRITE/READ J7
 TEST 8: WRITE/READ K7
 TEST 8: WRITE/READ L7
 TEST 8: WRITE/READ M7
 TEST 8: WRITE/READ N7

TEST 8: WRITE/READ B8
 TEST 8: WRITE/READ C8
 TEST 8: WRITE/READ D8
 TEST 8: WRITE/READ E8
 TEST 8: WRITE/READ F8
 TEST 8: WRITE/READ G8
 TEST 8: WRITE/READ H8
 TEST 8: WRITE/READ I8
 TEST 8: WRITE/READ J8
 TEST 8: WRITE/READ K8
 SOFTWARE PARAMETER C L8
 SYMBOL TABLE M8
 SYMBOL TABLE N8

SYMBOL TABLE B9
 SYMBOL TABLE C9
 SYMBOL TABLE D9