

IDENTIFICATION

PRODUCT CODE:	MAINDEC-8E=DØEB-D
PRODUCT NAME:	RANDOM TAD TEST
DATE CREATED:	JUNE 7, 1974
MAINTAINER:	DIAGNOSTIC GROUP
AUTHOR:	MICHAEL DAVIS

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1. ABSTRACT

THIS PROGRAM TESTS THE TAD INSTRUCTING OF THE PDP-8E, THE TAD INSTRUCTION, INSTRUCTION ADDRESS, OPERAND ADDRESS AND BOTH OPERANDS ARE PRODUCED BY RANDOM NUMBER GENERATORS.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP-8E EQUIPPED WITH AT LEAST 4K OF MEMORY;

TELETYPE.

2.2 STORAGE

THE PROGRAM IS LOADED INTO LOCATIONS 6600 THRU 7577, THE TEST AREA IS 0000-6577, TEMPORARY STORAGE LOCATIONS ARE LOCATED ON PAGE 0.

2.3 PRELIMINARY PROGRAMS

MAINDEC=8E-D0AA, D0BA, D0CA, D0DA

3. LOADING PROCEDURE

THE STANDARD PROCEDURE FOR LOADING BINARY TAPES IS TO BE USED.

4. STARTING PROCEDURE

4.1 STARTING ADDRESS

0200

4.2 CONTROL SWITCH SETTINGS

SR00=1, SUPPRESS HALT ON ERROR
SR03=1, SUPPRESS END OF PASS TYPEOUT
SR09=1, HOLD DATA 1 CONSTANT
SR10=1, HOLD DATA 2 CONSTANT
SR11=1, HOLD INSTRUCTION CONSTANT

4.3 OPERATOR ACTION

4.3.1 SET SR TO 0200

4.3.2 PRESS LOAD ADDRESS SWITCH

4.3.3 SET SR TO 0000

4.3.4 PRESS CLEAR AND CONTINUE SWITCHES

5. OPERATING PROCEDURE

SAME AS 4.

6. ERRORS

6.1 ERROR HALT

IF THE RESULTS OF THE TAD INSTRUCTION ARE INCORRECT,
THAT IS IF THE ACTUAL AND SIMULATED LINKS, OR THE ACTUAL
AND SIMULATED SUMS DO NOT AGREE, THE PROGRAM
WILL HALT AT 7407 WITH DATA1 IN THE AC.

DEPRESS CONTINUE TO DISPLAY DATA2 IN THE AC,
DEPRESS CONTINUE TO DISPLAY TAD INSTRUCTION IN AC,
DEPRESS CONTINUE TO DISPLAY INSTRUCTION ADDRESS IN AC,
DEPRESS CONTINUE TO DISPLAY DATA2 ADDRESS IN AC,
DEPRESS CONTINUE TO DISPLAY INDIRECT POINTER (USED BY INDIRECT
TAD) IN AC,
DEPRESS CONTINUE TO RESUME TEST

6.2 ERROR RECOVERY

SEE 6.1

6.3

LOOPING

SET SR00=1 TO PREVENT HALT AFTER ERROR,
SET SR03=1 TO SUPPRESS END OF PASS TYPEOUT,
SET SR09-SR11=1 TO HOLD INSTRUCTION AND DATA CONSTANT,

7.

RESTRICTIONS

NONE

8.

EXECUTION TIME

THE PROGRAM PERFORMS 4096 RANDOM TESTS IN APPROXIMATELY 5
SECONDS. THE PROGRAM WILL TYPE "T" AFTER
EACH 4096 RANDOM TESTS UNLESS SR03=1.

9.

PROGRAM DESCRIPTION

THE PROGRAM IS LOADED INTO LOCATIONS 6600-7577,
WITH TEMPORARY STORAGE LOCATIONS ON PAGE 0;

THE PROGRAM USES SEPARATE RANDOM NUMBER GENERATORS TO GENERATE
THE TAD INSTRUCTION, INSTRUCTION AND DATA ADDRESSES, AND THE
TWO ARGUMENTS TO BE "TADDED". THE INSTRUCTIONS AND DATA ARE
STORED IN THEIR PREVIOUSLY GENERATED ADDRESSES. THE PROGRAM
TRANSFERS TO THE LOCATION OF THE INSTRUCTION AND EXECUTES IT.
THE PROGRAM THEN TRANSFERS TO A COMPARISON ROUTINE WHERE THE
ACTUAL RESULT OF THE TAD INSTRUCTION IS COMPARED TO A SIMULATED
TAD. THE SIMULATOR IS SIMILAR TO THE ONE USED IN MAINDEC-
8E-D0CA-D. NO TADS ARE USED IN THE PROGRAM ITSELF.

AFTER 4096 TESTS, THE PROGRAM TYPES "T" AND CONTINUES TESTING.

/RANDOM TAD TEST
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/V 82 07552
/
/
/TEMPORARY STORAGE LOCATIONS
/

0000 0000 RETURN, 0
0001 5001 INSTL, JMP
0002 0002 INADDL, 2
0003 0003 DATADL, 3
0004 0000 PADDL, 0
0005 0000 IFLAGL, 0

7501 MQA=7501
7421 MQL=7421
6007 CAF=6007

0200 *200
0207 START, CAF
0201 JMP I .+1
0202 STARTL

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/GENERATE TEST INSTRUCTION AND DATA
/
6600 6600 CLA CLL
6601 7300 DCA CNTR1
6602 3376 DCA LAS
6603 7604 LAS SR11
6604 0371 SZA CLA
6605 7640 JMP TADATL
6606 5224 JMS I TGENL
6607 4746 DCA TIFLGL
6608 3355 CMA
6609 7040 AND
6610 0001 AND
6611 0001 DCA
6612 3353 CMA
6613 7040 AND
6614 0002 AND
6615 3354 DCA
6616 7040 CMA
6617 0003 AND
6620 3356 DCA
6621 7040 CMA
6622 0004 AND
6623 3357 DCA
6624 7604 TADATL, LAS
6625 0372 SR10

/CLEAR PASS COUNTER
/TEST SR11
/IS SR11=1
/SR11=1, DO NOT GENERATE INSTRUCTION
/GENERATE INSTRUCTION
/SAVE INDIRECT FLA
/GET INSTRUCTION
/SAVE IT
/GET INSTRUCTION ADDRESS
/SAVE IT
/GET DATA ADDRESS
/SAVE IT
/GET INDIRECT TO DATA
/SAVE IT
/TEST SR10

706 0360 /GET /A1
6707 7421 /SAVE IN MQ
6710 7040
6711 0361 /GET DATA2
6712 4751 /DO SIMULATION
6713 3363 /SAVE ANSWER
6714 7010 /SAVE LINK
6715 3362

AND TDA1L
MQL
CMA
AND TDA2L
JMS I TSIMAD
DCA TSIMAC
RAR
DCA TSIML

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/GO TO TEST
DOANDL, CMA
AND
DCA
CMA
AND
IAC
SNA
JMP
DCA
CMA
AND
DCA I
CLL CMA
AND
JMP I
/RETURN HERE AFTER EXECUTION
/GO TO TEST
TRETTL
RETURN
TINADL
TEST1L
TEMP2L
T5400L
TEMP2L
TDA2L
TINADL
/GET RETURN ADDRESS
/SAVE
/GET INSTRUCTION ADDRESS
/INCREMENT
/IS IT 0
/YES, GENERATE NEW INFORMATION
/NO, SAVE
/GET RETURN INSTRUCTION
/PUT IN TEST LOCATION
/GET DATA2
/EXECUTE "TAD"

6716 7040
6717 0347
6720 3000
6721 7040
6722 0354
6723 7001
6724 7450
6725 5202
6726 3345
6727 7040
6730 0366
6731 3745
6732 7140
6733 0361
6734 5754

TRETUL, DCA TAC
RAR
DCA
JMS I
ISZ
JMP
JMS I
JMP
/END OF PASS, 4096 TEST COMPLETE
/SAVE AC
/SAVE LINK
/COMPARE REAL AND SIMULATED ADDITIONS

6735 3364
6736 7010
6737 3365
6740 4774
6741 2376
6742 5202
6743 4750
6744 5202

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6745 0000
6746 7000
6747 6735
6750 7442
6751 7200
6752 7430
6753 0000
6754 0000
6755 0000
6756 0000
6757 0000
TEMP2L, 0
TGENL, GENL
TRETTL, TRETUL
TERROR,
TEPASL, EPASL
TSIMAD, RSIMAD
TRANDL, RANDL
TINSTL, 0
TINADL, 0
TIFLGL, 0
TIDATL, 0
TPADDL, 0

6760	0021	TDA1L,	21				
6761	0037	TDA2L,	37				
6762	0000	TSIML,	0				
6763	0000	TSIMAC,	0				
6764	0000	TAC,	0				
6765	0000	TLINK,	0				
6766	5400	T5400L,	5420				
6767	7760	T7760,	7760				
6770	7770	T7770,	7770				
6771	0001	SR11,	1				
6772	0002	SR10,	2				
6773	0004	SR09,	4				
6774	7313	TCOMAD,	COMAD				
6775	0010	K10,	10				
6776	0000	CNTR1,	0				
/							
7000	7000	PAGE		17-JUN-71	7:23	PAGE 6	
7000	0000	GENL,	0				
/							
/GENERATE INSTRUCTIONS AND ADDRESSES							
/							
/GENERATE "AND" INSTRUCTION							
/							
7001	7040	GANDL,					
7002	0350	CMA					
7003	4762	AND R1L					
7004	3350	JMS I SRANDL					/GENERATE RANDOM NUMBER
7005	7040	DCA R1L					/SAVE NUMBER
7006	0350	CMA					
7007	7421	AND R1L					/GENERATE OP CODE
7010	7040	SQL					
7011	0365	CMA					
7012	7501	AND K1000					
7013	0352	MQA					
7014	3001	AND K1777					
7015	7040	DCA INSTL					/SAVE INSTRUCTION
7016	0001	CMA					
7017	0355	AND INSTL					/GET INSTRUCTION
7020	3361	AND K0177L					/EXTRACT PAGE ADDRESS OF INSTRUCTION
		DCA TEMP3L					/SAVE PAGE ADDRESS OF INSTRUCTION
/							
/GENERATE ADDRESS FOR INSTRUCTION							
/							
7021	7040	GANDL,					
7022	0353	CMA					
7023	4762	AND R2L					
7024	3353	JMS I SRANDL					/GENERATE RANDOM NUMBER
7025	7040	DCA R2L					/SAVE NUMBER
7026	0353	CMA					
7027	4777	AND R2L					
7030	5221	JMS LIMIT					/IS ADDRESS WITHIN LIMITS
7031	7040	JMP GANADL					/NO, GENERATE NEW ADDRESS
7032	0353	CMA					
7033	0354	AND R2L					
7034	7640	AND P0L					
7035	5244	SEA CLA PAGADL					/IS ADDRESS ON PAGE 0
		JMP					/NO
		CMA					

337 0353	AND	R2L	/GET PAGE ADDRESS OF INSTRUCTION
7040 4776	JMS	ABS	/GET DIFFERENCE BETWEEN PAGE ADDRESSES
7041 7700	SMA	CLA	/IS DIFFERENCE >2
7042 5221	JMP	GANADL	/NO
7043 5255	JMP	PAL	
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7044 7040	PAGADL,	CMA	
7045 0001	AND	INSTL	/GET INSTRUCTION
7046 0357	AND	K200L	
7047 7650	SNA	CLA	/IS PAGE BIT SET
7050 5255	JMP	PAL	/NO, USE ADDRESS AS IS
7051 7040	CMA		
7052 0353	AND	R2L	/PAGE BIT SET, EXTRACT PAGE ADDRESS FOR INSTRUCTION
7053 0355	AND	K0177L	
7054 5240	JMP	PAGAL	/TEST FOR INTERFERENCE
7055 7040	CMA		
7056 0361	AND	TEMP3L	/MAKE SURE DATA WILL
7057 7650	SNA	CLA	/NOT BE STORED IN LOCATION 0
7060 5201	JMP	GANDL	/LOCATION ZERO, TRY AGAIN
7061 7040	CMA		/USE ADDRESS AS IS
7062 0353	AND	R2L	
7063 3002	DCA	INADDL	
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/GENERATE ADDRESS FOR DATA			
7064 7040	DAADL,	CMA	
7065 0001	AND	INSTL	/GET INSTRUCTION
7066 0357	AND	K200L	/IS PAGE BIT OF INSTRUCTION SET
7067 7650	SNA	CLA	/NO, USE PAGE ADDRESS BITS OF INSTRUCTION FOR DATA ADDRESS
7070 5307	JMP	P0AL	/EXTRACT PAGE OF INSTRUCTION ADDRESS
7071 7040	CMA		
7072 0002	AND	INADDL	
7073 0354	AND	P0L	
7074 7421	MQL		
7075 7040	CMA		
7076 0361	AND	TEMP3L	
7077 7501	MQA		
7100 3003	DCA	DATADL	
7101 7040	CMA		
7102 0001	AND	INSTL	/OR" TOGETHER TO GET
7103 0356	AND	K400L	/DATA ADDRESS
7104 7640	SZA	CLA	
7105 5313	JMP	PADL	/IS INSTRUCTION INDIRECT
7106 5600	JMP	I	/YES, INSTRUCTION IS INDIRECT
7107 7040	CMA	GENL	/EXIT
7110 0361	AND	TEMP3L	/USE PAGE ADDRESS OF INSTRUCTION
7111 3003	DCA	DATADL	/AS DAT ADDRESS
7112 5301	JMP	INDIRL	
/GENERATE INDIRECT ADDRESS FOR DATA			

7113	7040	PADL,	CMA		/GENERATE RANDOM NUMBER
7114	0360		AND	R3L	
7115	4762		JMS	I SRANDL	
7116	3360		DCA	R3L	
7117	7040		CMA		
7120	0360		AND	R3L	/IS ADDRESS WITHIN LIMITS
7121	4777		JMS	LIMIT	/NO, TRY AGAIN
7122	5313		JMP	PADL	
7123	7040		CMA		
7124	0022		AND	INADDL	/GET INSTRUCTION ADDRESS
7125	4775		JMS	ABSL1	/GENERATE DIFFERENCE BETWEEN ADDRESSES
7126	7700		SMA	CLA	/DO INSTRUCTION AND ADDRESS INTERFERE
7127	5313		JMP	PADL	/YES
7130	7040		CMA		/NO, TEST DATA ADDRESS AS ABOVE
7131	0023		AND	DATADL	
7132	4775		JMS	ABSL1	
7133	7700		SMA	CLA	
7134	5313		JMP	PADL	
7135	7040		CMA		
7136	0360		AND	R3L	/ADDRESSES DO NOT INTERFERE
7137	7041		CIA		/WILL LOCATION BE 0 IF DECREMENTED
7140	7040		CMA		
7141	7650		SNA	CLA	
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7142	5313	JMP	PADL	/YES, GENERATE NEW POINTER
7143	7040	CMA		
7144	0360	AND	R3L	
7145	3004	DCA	PADDL	
7146	7040	CMA		
7147	5600	JMP	I GENL	/EXIT
/				
/				
/				
7150	0001	R1L,		
7151	0003	K3L,		
7152	1777	K1777,		
7153	0005	R2L,		
7154	7600	P0L,		
7155	0177	K0177L,		
7156	0400	K400L,		
7157	0200	K200L,		
7160	0015	R3L,		
7161	0000	TEMP3L,		
7162	7430	SRANDL,		
7163	7200	SRIMAD,		
7164	1201	L1ML,		
7165	1000	K1000,		

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/					
/					
/SIMULATED ADDITION					
/					

176 7474
7177 7303
7200 7200
7201 0000
7202 3344
7203 7501
7203 3343

PAGE
RSIMAD, 0

DCA ARG2 /SAVE ARGUMENTS
MQA
DCA ARG1
/
/
/SIMULATE ADDITION BY SIMULATED GENERATEION OF SUM
/AND CARRY BITS
/
/
/FORM OR OF ARG1 WITH ARG2
/
/
CLA CLL CMA
AND ARG1
MQL
CMA
AND ARG2
MQA
DCA A10RA2

7204 7340
7205 0343
7206 7421
7207 7040
7210 0344
7211 7501
7212 3345

SIMAD,

/LOAD AC WITH ARG1
/PLACE IN MQ
/LOAD AC WITH ARG2
/FORM ARG1 OR ARG2
/SAVE ARG1 OR ARG2

7213 7501
7214 7040
7215 0344
7216 7421
7217 7040
7220 0344
7221 7040
7222 0343
7223 7501
7224 3346
7225 3347

/FORM XOR(EXCLUSIVE OR) OF ARG1 WITH ARG2
/BY A XOR B=(A AND NOTB)OR(NOTA AND B)
/
MQA /GET ARG1 FROM MQ
CMA /FORM NOTARG1
AND ARG2 /AND WITH ARG2 TO GET ARG2 AND NOTARG1
MQL /SAVE IN MQ
CMA
AND ARG2 /LOAD AC WITH ARG2
CMA /FORM NOTARG2
AND ARG1 /AND WITH ARG1 TO GET ARG1 AND NOTARG2
MQA /OR WITH ARG2 AND NOTARG1
DCA SIMAC /TO GET ARG1 XOR ARG2
DCA SIMLNK

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/AND ARG1 WITH ARG2
/TEST FOR CARRIES
/IF THERE ARE NO BITS IN COMMON BETWEEN ARG1 AND ARG2
/THERE WILL BE NO CARRIES GENERATED
/
CMA
AND ARG1
AND ARG2
SNA
JMP ENDSIM
/
/GENERATE CARRIES
/
MQL
MQA MQL
AND A10RA2
SNA

7226 7040
7227 0343
7230 0344
7231 7450
7232 5274

/LOAD AC WITH ARG1
/AND WITH ARG2
/ARE THERE ANY CARRIES
/NO, TERMINATE SIMULATION

7233 7421
7234 7521
7235 0345
7236 7450

NXTCAR, MQL
MQA MQL
AND A10RA2
SNA

/SAVE FIRST CARRIES
/GET CARRIES FROM MQ
/AND WITH A10RA2 TO SEE IF MORE CARRIES ARE GENERATED
/ARE THERE ANY MORE CARRIES

7237	5244	JMP	ENCAR	/NO, END SIMULATION OF CARRIES
7240	7124	CLL	RAL	/PROPAGATE CARRIES
7241	7521	MQA	QML	/GET PREVIOUS CARRIES FROM MQ, SAVE NEW CARRIES
7242	7501	MQA		/OR NEW CARRIES WITH PREVIOUS CARRIES
7243	5234	JMP	NXTCAR	/CONTINUE
		/		
		/		/TEST FOR CARRY INTO LINK
		/		
7244	7501	ENCAR,	MQA	/GET CARRIES
7245	0345	AND	A10RA2	/AND WITH A10RA2
7246	0350	AND	K4000	/TEST BIT 00
7247	7450	SNA		/IS BIT 00 1
7250	5253	JMP	ENCAR1	/NO, CARRIES DID NOT PROPAGATE INTO LINK
7251	3347	DCA	SIMLNK	/YES, SAVE CARRY INTO LINK
7252	5260	JMP	XORALL	/COMPLETE SIMULATION
7253	7130	ENCAR1,	CLL CML	/SET AC=4000
7254	0343	AND	RAR	/AND WITH ARG1
7255	0344	AND	ARG1	/AND WITH ARG2
7256	7440	SZA		/NUMBERS GENERATED CARRY INTO LINK
7257	3347	DCA	SIMLNK	/SAVE SIMULATED LINK
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				/FORM XOR OF ARG1, ARG2, AND CARRIES
				/TO GET FINAL SIMULATED SUM
7260	7501	XORALL,	MQA	/SAVE SIMULATED CARRIES
7261	3351	DCA	CARRY	
7262	7501	MQA		
7263	7040	CMA		/FORM A10RA2 AND NOTCARRY
7264	0346	AND	SIMAC	/SAVE IN MQ
7265	7421	QML		
7266	7040	CMA		
7267	0346	AND	SIMAC	
7270	7040	CMA		/FORM CARRY AND NOTA10RA2
7271	0351	AND	CARRY	/OR WITH CONTENTS OF MQ
7272	7501	MQA		
7273	3346	DCA	SIMAC	
7274	7340	CLA	CLL CMA	
7275	0347	AND	SIMLNK	
7276	7640	SZA	CLA	
7277	7020	CML		
7300	7040	CMA		/TO GET FINAL SIMULATED SUM
7301	0346	AND	SIMAC	
7302	5600	JMP I	RSIMAD	
		/		
		/		/TEST ADDRESS
		/		
7303	0000	LIMIT,		/SAVE ARGUMENT IN MQ
7304	7421	QML		/LOAD AC WITH LIMIT
7305	7040	CMA		/DO ADDITION
7306	2777	AND	LIML	/LINK SET IF NUMBER TO LARGE
7307	4200	JMS	RSIMAD	/NUMBER OK
7310	7620	SNL	CLA	
7311	2303	ISZ	LIMIT	
7312	5703	JMP I	LIMIT	

```
7313 0020 COMAD, / /COMPARE SIMULATED AND REAL RESULT
7314 7340 CLA CLL CMA /
7315 0776 AND TSIML /GET SIMULATED RESULTANT LINK
7316 7640 SZA CLA
7317 7020 CML
7320 7040 CMA
7321 0775 AND TLINK
7322 7640 SZA CLA /COMPARE TO REAL LINK
7323 7020 CML
7324 7430 SZL
7325 5341 JMP ERROR1 /IF SAME, LINK=0
7326 7340 CLA CLL CMA /NOT THE SAME, ERROR
7327 0774 AND TAC /GET ADDITION RESULT
7330 7040 CMA
7331 0773 AND TSIMAC /COMPARE TO COMPLEMENT OF SIMULATION RESULT

7332 7440 SZA
7333 5341 JMP ERROR1 /NOT 0, ERROR
7334 7040 CMA
7335 0773 AND TSIMAC /GET SIMULATION RESULT
7336 7040 CMA
7337 0774 AND TAC
7340 7640 SZA CLA /COMPARE TO COMPLEMENT OF REAL ADDITION
7341 4752 JMS I ERRORS
7342 5713 JMP I COMAD
7343 0000 ARG1, 0
7344 0000 ARG2, 0
7345 0000 A10RA2, 0
7346 0000 SIMAC, 0
7347 0000 SIMLNK, 0
7350 4000 K4000, 4000
7351 0000 CARRY, 0
7352 7400 ERRORS, ERROR
```

```
/ /ERROR HANDLER
/
```

```
7373 6763
7374 6764
7375 6765
7376 6762
7377 7164
7400 0000 PAGE
7401 7604 ERROR, 0
7402 0267 LAS
7403 7640 AND SR00
7404 5600 SZA CLA
7405 7240 JMP I ERROR
CLA CMA /TEST SR00
/IS SR00=1
/YES, DO NOT HALT
```

7406	0777'	AND	TDA1L	/HALT WITH DATA1 IN AC
7407	7402	HLT		
7410	7240	CLA CMA		
7411	0776'	AND	TDA2L	/HALT WITH DATA2 IN AC
7412	7402	HLT		
7413	7240	CLA CMA		
7414	0775'	AND	TINSTL	/HALT WITH INSTRUCTION IN AC
7415	7402	HLT		
7416	7240	CLA CMA		
7417	0774'	AND	TINADL	/HALT WITH INSTRUCTION ADDRESS IN AC
7420	7402	HLT		
7421	7240	CLA CMA		
7422	0773'	AND	TOTAL	/HALT WITH DATA ADDRESS IN AC
7423	7402	HLT		
7424	7240	CLA CMA		
7425	0772'	AND	TPADDL	/HALT WITH INDIRECT IN AC
7426	7402	HLT		
7427	5600	JMP I	ERROR	

/RANDOM NUMBER GENERATOR

7430	0000	RANDL,		
7431	7104	CLL RAL		
7432	7420	SNL		
7433	5240	JMP	ENRAN	
7434	7421	MQL		
7435	7040	CMA		
7436	0241	AND	K3	
7437	4771'	JMS	RSIMAD	
7440	5630	JMP I	RANDL	
7441	0003	K3,		
		ENRAN,		
		K3,		
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/END OF PASS

7442	0000	EPASL,		
7443	7604	LAS		
7444	0270	AND	SR03	
7445	7640	SZA CLA		
7446	5642	JMP I	EPASL	
7447	7040	CMA		
7450	0271	AND	C215	
7451	4261	JMS	TYPE	
7452	7040	CMA		
7453	0272	AND	C212	
7454	4261	JMS	TYPE	
7455	7040	CMA		
7456	0273	AND	C324	
7457	4261	JMS	TYPE	
7460	5642	JMP I	EPASL	

7461	0000	TYPE,		
7462	6046	TLS		
7463	6041	TSF		

464 5263
7465 7200
7466 5661

JMP .-1
CLA
JMP I TYPE

7467 4000
7470 0400
7471 0215
7472 0212
7473 0324

SR00,
SR03,
C215,
C212,
C324,

/TEST FOR PROPER DIFFERENCE

7474 0000
7475 7041
7476 7421
7477 7040
7500 0770
7501 4771
7502 7500
7503 7041
7504 7001
7505 7001
7506 5674

ABSL.
CIA
MQL
CMA
AND
JMS
SMA
CIA
IAC
IAC
JMP I ABSL

TEMP3L
RSIMAD

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7507 0000
7510 7041
7511 7421
7512 7040
7513 0767
7514 4771
7515 7500
7516 7041
7517 7001
7520 7001
7521 5707

ABSL1.
CIA
MQL
CMA
AND
JMS
SMA
CIA
IAC
IAC
JMP I ABSL1

R3L
RSIMAD

7567 7160
7570 7161
7571 7200
7572 6757
7573 6756
7574 6754
7575 6753
7576 6761
7577 6760

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[illegible]

0400
0500

0600
0700

1000
1100

1200
1300

1400
1500

1600
1700

2000
2100

2200
2300

2400
2500

2600
2700

3000 3100

3200
3300

3400
3500

3600
3700

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4000 4100

4200 4300

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7:23

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4000 4100

4200 4300

DATADL	0023	7470
DIRL	6702	6773
DOANDL	6716	6772
DOTSTL	6705	6771
ENCAR	7244	7162
ENCAR1	7253	7163
ENDSIM	7274	0200
ENRAN	7440	6600
EPASL	7442	6766
ERROR	7400	6767
ERROR1	7341	6770
ERRORS	7352	6764
GANADL	7021	6774
GANDL	7001	6760
GENL	7000	6761
IFLAGL	0005	6624
INADDL	0002	6634
INDIRL	7101	6756
INSTL	0001	6745
K0177L	7155	7161
K10	6775	6750
K1000	7165	6750
K1777	7152	6602
K200L	7157	6746
K3	7441	6755
K3L	7151	6754
K4000	7350	6753
K400L	7156	6765
LIMIT	7303	6757
LIML	7164	6752
MQA	7501	6747
SQL	7421	6735
NOTAUT	6676	6763
NXTCAR	7234	6751
P0AL	7107	6762
P0L	7154	7461
PADDL	0004	XORALL
PADL	7113	7260
PAGADL	7044	

ERRORS DETECTED: 0

LINKS GENERATED: 23

RUN-TIME: 5 SECONDS

2K CORE USED