

IDENTIFICATION

Product Code:       MAINDEC-8/I-D01B-D  
Product Name:        Instruction Test 1  
Date Created:        March 25, 1968  
Maintainer:         Diagnostic Group  
Author:              M. Horowitz



1. ABSTRACT

This is a diagnostic program for testing the AND, TAD, and OPERATE instructions of the PDP-8I ONLY.

2. REQUIREMENTS

2.1 Equipment

A PDP-8I equipped with Teletype.

2.2 Storage

This program uses locations 0000-4354. The Binary Loader must be stored in the last memory page.

2.3 Preliminary Programs

3. LOADING PROCEDURE

3.1 Method

The standard Binary Loader is used.

4. STARTING PROCEDURE

4.1 Control Switch Settings

SR = 7777

4.2 Starting Address

0144

4.3 Operator Action

1. Set SR to 144 and press LOAD ADDRESS.
2. Set SR to 7777 and push START.
3. Program will halt. MA=146

4. If AC  $\neq$  0000 an error has occurred.

5. Push CONTINUE. Program will run until stopped or until an error is encountered.

5. OPERATING PROCEDURE

Same as section 4.

6. ERRORS

6.1 Error Halts and Description

See listing.

6.2 Error Recovery

If it is desired to loop on the test causing the error, replace the operate instruction preceding the HLT with a JMP to the beginning of the test.

7. RESTRICTIONS

7.1 Starting Restrictions (None)

7.2 Operating Restrictions

The interrupt is enabled during program operation. Any device, attached to the machine, which might cause spurious interrupts must be disabled.

8. MISCELLANEOUS

8.1 Execution Time

13 program loops per second.

9. PROGRAM DESCRIPTION

The program consists of many individual tests. In most cases each test checks only one function and uses previously tested functions as a basis for the test. The program counter action is strictly sequential except for SKIPS. The only JMP instructions used are at the end of the program.

The sequence of testing is as follows:

1. Test all operate functions individually except for rotates.
2. Test TAD instruction.
3. Test ROTATE functions.
4. Group I operate instruction test. All possible combinations.

5. Group 2 operate instruction test. All possible combinations.

6. Test AND instruction.

The Teletype bell rings after each 128 program loops.

10. LISTING

/INSTRUCTION TEST - 1  
/TAPE 1

```

0000 0000
0001 0000
0002 5001
0003 0002
0004 0003
0005 0000
0006 7402
0007 7000
0010 0000

```

```

*0
0
JMP 1
0002
0003
0
0000
HALT, HLT
NOOP, NOP
0

```

## /CONSTANTS AND VARIABLES

```

0020 0020
0020 0000
0021 0001
0022 0002
0023 0004
0024 0010
0025 0020
0026 0040
0027 0100
0030 0200
0031 0400
0032 1000
0033 2000
0034 4000
0035 7776
0036 7775
0037 7773
0040 7767
0041 7757
0042 7737
0043 7677
0044 7577
0045 7377
0046 6777
0047 5777
0050 3777
0051 7777
0052 5252
0053 2525
0054 6000
0055 7000
0056 7400
0057 7600
0060 7740
0061 7760
0062 7770
0063 7774
0064 0003

```

```

*20
K0000, 0000
K0001, 0001
K0002, 0002
K0004, 0004
K0010, 0010
K0020, 0020
K0040, 0040
K0100, 0100
K0200, 0200
K0400, 0400
K1000, 1000
K2000, 2000
K4000, 4000
K7776, 7776
K7775, 7775
K7773, 7773
K7767, 7767
K7757, 7757
K7737, 7737
K7677, 7677
K7577, 7577
K7377, 7377
K6777, 6777
K5777, 5777
K3777, 3777
K7777, 7777
K5252, 5252
K2525, 2525
K6000, 6000
K7000, 7000
K7400, 7400
K7600, 7600
K7740, 7740
K7760, 7760
K7770, 7770
K7774, 7774
K0003, 0003

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7/17/68 518,36

PAGE 1-1

0065	0007	K0007,	0007
0066	0067	K0067,	0067
0067	0017	K0017,	0017
0070	0037	K0037,	0037
0071	0077	K0077,	0077
0072	0177	K0177,	0177
0073	0377	K0377,	0377
0074	0777	K0777,	0777
0075	1777	K1777,	1777
0076	7700	K7700,	7700



	0144		*144		
	0144	1051	/TAD,CLA,HLT,TEST		
	0145	7200	START, TAD K7777		
	0146	7402	CLA		
			HLT		/AC SHOULD=0
					/SET SR TO 7777, CONTINUE
	0147	7410	/SKIP TEST		
	0150	7402	SKP		
			HLT		/SKP FAILED
	0151	7200	/SZA TEST 1		
	0152	7440	CLA		
	0153	7402	SZA		
			HLT		/SZA SHOULD HAVE SKIPPED
	0154	7450	SNA		/AC SHOULD EQUAL ZERO
	0155	7410	SKP		
	0156	7402	HLT		/SNA SHOULD NOT HAVE SKIPPED
					/AC SHOULD EQUAL ZERO
	0157	7200	/SZA TEST 2		
	0160	1034	CLA		
	0161	7440	TAD K4000		
	0162	7410	SZA		
	0163	7402	SKP		
			HLT		/SZA SHOULD NOT HAVE SKIPPED
	0164	7450	SNA		/AC SHOULD EQUAL 4000
	0165	7402	HLT		/SNA SHOULD HAVE SKIPPED
					/AC SHOULD EQUAL 4000
	0166	7200	/SZA TEST 3		
	0167	1033	CLA		
	0170	7440	TAD K2000		
	0171	7410	SZA		
	0172	7402	SKP		
			HLT		/SZA SHOULD NOT HAVE SKIPPED
	0173	7450	SNA		/AC SHOULD EQUAL 2000
	0174	7402	HLT		/SNA SHOULD HAVE SKIPPED
	0175	7000	NOP		/AC SHOULD EQUAL 2000
	0176	7000	NOP		
	0177	7000	NOP		

0200  
 0200 7200  
 0201 1032  
 0202 7440  
 0203 7410  
 0204 7402  
 0205 7450  
 0206 7402

\*200  
 /SZA TEST 4

CLA  
 TAU K1000  
 SZA  
 SKP  
 HLT

/SZA SHOULD NOT HAVE SKIPPED  
 /AC SHOULD EQUAL 1000

SNA  
 HLT

/SNA SHOULD HAVE SKIPPED  
 /AC SHOULD EQUAL 10000

/SZA TEST 5

0207 7200  
 0210 1031  
 0211 7440  
 0212 7410  
 0213 7402

CLA  
 TAU K0400  
 SZA  
 SKP  
 HLT

/SZA SHOULD NOT HAVE SKIPPED  
 /AC SHOULD EQUAL 0400

SNA  
 HLT

/SNA SHOULD HAVE SKIPPED  
 /AC SHOULD EQUAL 0400

/SZA TEST 6

0216 7200  
 0217 1030  
 0220 7440  
 0221 7410  
 0222 7402

CLA  
 TAU K0200  
 SZA  
 SKP  
 HLT

/SZA SHOULD NOT HAVE SKIPPED  
 /AC SHOULD EQUAL 0200

SNA  
 HLT

/SNA SHOULD HAVE SKIPPED  
 /AC SHOULD EQUAL 0200

/SZA TEST 7

0225 7200  
 0226 1027  
 0227 7440  
 0230 7410  
 0231 7402

CLA  
 TAU K0100  
 SZA  
 SKP  
 HLT

/SZA SHOULD NOT HAVE SKIPPED  
 /AC SHOULD EQUAL 0100

SNA  
 HLT

/SNA SHOULD HAVE SKIPPED  
 /AC SHOULD EQUAL 0100

0232 7450  
 0233 7402

		/SEA TEST 8		
0234	7200	CLA		
0235	1026	TAD	K0040	
0236	7440	SEA		
0237	7410	SKP		
0240	7402	HLT		/SEA SHOULD NOT HAVE SKIPPED
				/AC SHOULD EQUAL 0040
0241	7450	SNA		
0242	7402	HLT		/SNA SHOULD HAVE SKIPPED
				/AC SHOULD EQUAL 0040
		/SEA TEST 9		
0243	7200	CLA		
0244	1025	TAD	K0020	
0245	7440	SEA		
0246	7410	SKP		
0247	7402	HLT		/SEA SHOULD NOT HAVE SKIPPED
				/AC SHOULD EQUAL 0020
0250	7450	SNA		
0251	7402	HLT		/SNA SHOULD HAVE SKIPPED
				/AC SHOULD EQUAL 0020
		/SEA TEST 10		
0252	7200	CLA		
0253	1024	TAD	K0010	
0254	7440	SEA		
0255	7410	SKP		
0256	7402	HLT		/SEA SHOULD NOT HAVE SKIPPED
				/AC SHOULD EQUAL 0010
0257	7450	SNA		
0260	7402	HLT		/SNA SHOULD HAVE SKIPPED
				/AC SHOULD EQUAL 0010
		/SEA TEST 11		
0261	7200	CLA		
0262	1023	TAD	K0004	
0263	7440	SEA		
0264	7410	SKP		
0265	7402	HLT		/SEA SHOULD NOT HAVE SKIPPED
				/AC SHOULD EQUAL 0004
0266	7450	SNA		
0267	7402	HLT		/SNA SHOULD HAVE SKIPPED
				/AC SHOULD EQUAL 0004

		/SZA TEST 12	
0270	7200	CLA	
0271	1022	TAU K0002	
0272	7440	SZA	
0273	7410	SKP	
0274	7402	HLT	/SZA SHOULD NOT HAVE SKIPPED
			/AC SHOULD EQUAL 0002
0275	7450	SNA	
0276	7402	HLT	/SNA SHOULD HAVE SKIPPED
			/AC SHOULD EQUAL 0002
		/SZA TEST 13	
0277	7200	CLA	
0300	1021	TAU K0001	
0301	7440	SZA	
0302	7410	SKP	
0303	7402	HLT	/SZA SHOULD NOT HAVE SKIPPED
			/AC SHOULD EQUAL 0001
0304	7450	SNA	
0305	7402	HLT	/SNA SHOULD HAVE SKIPPED
			/AC SHOULD EQUAL 0001
		/SPA TEST 1	
0306	7200	CLA	
0307	1050	TAU K3777	
0310	7510	SPA	
0311	7402	HLT	/SPA SHOULD HAVE SKIPPED
			/AC SHOULD EQUAL 3777
		/SPA TEST 2	
0312	7200	CLA	
0313	1034	TAU K4000	
0314	7510	SPA	
0315	7410	SKP	
0316	7402	HLT	/SPA SHOULD NOT HAVE SKIPPED
			/AC SHOULD EQUAL 4000
		/SMA TEST 1	
0317	7200	CLA	
0320	1050	TAU K3777	
0321	7500	SMA	
0322	7410	SKP	
0323	7402	HLT	/SMA SHOULD NOT HAVE SKIPPED
			/AC SHOULD EQUAL 3777

0324	7200	/SMA TEST 2		
0325	1034		CLA	
0326	7900		TAU K4000	
0327	7402		SMA	
			HLT	/SMA SHOULD HAVE SKIPPED
				/AC SHOULD EQUAL 4000
0330	7200	/CMA TEST 1		
0331	1051		CLA	
0332	7040		TAD K7777	
0333	7440		CMA	
0334	7402		SZA	
			HLT	/CMA DID NOT COMPLEMENT AC
				/AC SHOULD EQUAL 0000
0338	7200	/CMA = TAD TEST 1		
0339	1053		CLA	
0340	7040		TAU K2525	
0341	7402		CMA	
			SNA	
			HLT	/TAD OR CMA ERROR
				/AC SHOULD EQUAL 5252
0342	1053		TAD K2525	
0343	7040		CMA	
0344	7440		SZA	
0345	7402		HLT	/TAD OR CMA ERROR
				/AC SHOULD EQUAL 0000
0346	7200	/CMA = TAD TEST 2		
0347	1052		CLA	
0350	7040		TAU K5252	
0351	7450		CMA	
0352	7402		SNA	
			HLT	/TAD OR CMA ERROR
				/AC SHOULD EQUAL 2525
0353	1052		TAD K5252	
0354	7040		CMA	
0355	7440		SZA	
0356	7402		HLT	/TAD OR CMA ERROR
				/AC SHOULD EQUAL 0000

0357	7200	/CMA = TAD TEST 3	
0360	1051	CLA	
0361	7040	TAD K7777	
0362	7440	CMA	
0363	7402	SZA	
		HLT	/TAD OR CMA ERROR
			/AC SHOULD EQUAL 0000
		/IAC TEST 1	
0364	7200	CLA	
0365	7001	IAC	
0366	7440	SZA	
0367	7410	SKP	
0370	7402	HLT	/IAC DID NOT INCREMENT
			/AC SHOULD EQUAL 0001
		/IAC TEST 2	
0371	7200	CLA	
0372	1051	TAD K7777	
0373	7001	IAC	
0374	7440	SZA	
0375	7402	HLT	/IAC DID NOT INCREMENT
			/AC SHOULD EQUAL 0000
0376	7000	NOP	
0377	7000	NOP	
	0400		
		*400	
		/IAC TEST 3	
0400	7200	CLA	
0401	1063	TAD K7774	
0402	7001	IAC	
0403	7001	IAC	
0404	7001	IAC	
0405	7001	IAC	
0406	7440	SZA	
0407	7402	HLT	/IAC NOT INCREMENTING
			/AC SHOULD EQUAL 0000
		/SZL TEST 1	
0410	7200	CLA	
0411	7100	CLL	/CLEAR LINK
0412	7004	RAL	/CLEAR LINK SAFETY
0413	7430	SZL	
0414	7402	HLT	/SZL SHOULD HAVE SKIPPED
			/LINK SHOULD EQUAL ZERO

		/SZL TEST 2		
0415	7200	CLA		
0416	7100	CLL		/CLEAR LINK
0417	7020	CML		/COMPLEMENT LINK
0420	1034	TAD	K4000	
0421	7004	RAL		/SET LINK SAFETY
0422	7430	SZL		
0423	7410	SKP		
0424	7402	HLT		/SZL SHOULD NOT HAVE SKIPPED /LINK SHOULD EQUAL ONE
		/SNL TEST 1		
0425	7200	CLA		
0426	7100	CLL		/CLEAR LINK
0427	7004	RAL		/CLEAR LINK SAFETY
0430	7420	SNL		
0431	7410	SKP		
0432	7402	HLT		/SNL SHOULD NOT HAVE SKIPPED /LINK SHOULD EQUAL ZERO
		/SNL TEST 2		
0433	7200	CLA		
0434	7100	CLL		/CLEAR LINK
0435	7020	CML		/COMPLEMENT LINK
0436	1034	TAD	K4000	
0437	7004	RAL		/SET LINK SAFETY
0440	7420	SNL		
0441	7402	HLT		/SNL SHOULD HAVE SKIPPED /LINK SHOULD EQUAL ONE

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0442 7200
0443 1034
0444 7004
0445 7420
0446 5253
0447 7100
0450 7430
0451 7402
0452 5257
0453 7020
0454 7420
0455 7402
0456 5247
0457 7100
0460 7430
0461 7402
0462 7020
0463 7420
0464 7402
0465 7020
0466 7430
0467 7402
0470 7200
0471 1051
0472 7600
0473 7440
0474 7402
0475 7200
0476 7404
0477 7040
0500 7440
0501 7402

/CLL TEST 1
CLA
TAD K4000
RAL /SET LINK
SNL
JMP CLL11 /CANNOT SET LINK WITH RAL
/TRY A CML
CLL1, CLL
SEL
HLT /CLL DID NOT CLEAR LINK
/LINK SHOULD EQUAL ONE
JMP ,+5
CLL11, CML /SET LINK
SNL
HLT /CANNOT SET LINK WITH
/RAL OR CML, CANNOT
/PERFORM CLL TEST 1
JMP CLL1

/CML TEST 1
CMLT1, CLL
SEL
HLT /CLL DID NOT CLEAR LINK
CML
SNL
HLT /CML DID NOT SET LINK
CML
SEL
HLT /CML DID NOT RESET LINK

/CLA TEST 1 (OPERATE GROUP 2)
CLA
TAD K7777
7600
SZA
HLT /CLA (7600) DID NOT CLEAR AC
/AC SHOULD EQUAL 0000

/OSR TEST 1
CLA
OSR
CMA
SZA
HLT /OSR DID NOT SET AC TO 7777
/AC SHOULD=0

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## /NOP TEST 1 (OPERATE GROUP 1)

0502	7200	CLA	
0503	7100	CLL	/AC AND LINK EQUAL ZERO
0504	7000	7000	/TEST INSTRUCTION
0505	7450	SNA	
0506	7430	SZL	
0507	7402	HLT	/NOP FAILURE /AC AND LINK SHOULD BE ZERO

## /NOP TEST 2 (OPERATE GROUP 2)

0510	7200	CLA	
0511	7100	CLL	/AC AND LINK EQUAL ZERO
0512	7400	7400	/TEST INSTRUCTION
0513	7450	SNA	
0514	7430	SZL	
0515	7402	HLT	/NOP FAILURE /AC AND LINK SHOULD BE ZERO

## /TAD TEST 1

0516	7200	CLA	
0517	1050	TAD K3777	/OPERAND 1
0520	1034	TAD K4000	/OPERAND 2
0521	7040	CMA	
0522	7440	SZA	
0523	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

## /TAD TEST 2

0524	7200	CLA	
0525	1047	TAD K5777	/OPERAND 1
0526	1033	TAD K2000	/OPERAND 2
0527	7040	CMA	
0530	7440	SZA	
0531	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

## /TAD TEST 3

0532	7200	CLA	
0533	1046	TAU K6777	/OPERAND 1
0534	1032	TAU K1000	/OPERAND 2
0535	7040	CMA	
0536	7440	SZA	
0537	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

## /TAD TEST 4

0540	7200	CLA	
0541	1045	TAU K7377	/OPERAND 1
0542	1031	TAU K0400	/OPERAND 2
0543	7040	CMA	
0544	7440	SZA	
0545	7402	HLT	/TAD ERROR /AC SHOULD EQUAL 0000

## /TAD TEST 5

0546	7200	CLA	
0547	1044	TAU K7577	/OPERAND 1

0550 1030  
0551 7040  
0552 7440  
0553 7402

TAU K0200  
CMA  
SEA  
HLT

/OPERAND 2

/TAD ERROR  
/AC SHOULD EQUAL 0000

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/TAU TEST 6
0554 7200          CLA
0555 1043         TAU K7677          /OPERAND 1
0556 1027         TAU K0100          /OPERAND 2
0557 7040         CMA
0560 7440         SZA
0561 7402         HLT
/TAU ERROR
/AC SHOULD EQUAL 0000

/TAU TEST 7
0562 7200          CLA
0563 1042         TAU K7737          /OPERAND 1
0564 1026         TAU K0040          /OPERAND 2
0565 7040         CMA
0566 7440         SZA
0567 7402         HLT
/TAU ERROR
/AC SHOULD EQUAL 0000

/TAU TEST 8
0570 7200          CLA
0571 1041         TAU K7757          /OPERAND 1
0572 1025         TAU K0020          /OPERAND 2
0573 7040         CMA
0574 7440         SZA
0575 7402         HLT
/TAU ERROR
/AC SHOULD EQUAL 0000

0576 7000         NOP
0577 7000         NOP
0600 0600
*600
/TAU TEST 9
0600 7200          CLA
0601 1040         TAU K7767          /OPERAND 1
0602 1024         TAU K0010          /OPERAND 2
0603 7040         CMA
0604 7440         SZA
0605 7402         HLT
/TAU ERROR
/AC SHOULD EQUAL 0000

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		/TAD TEST 10	
0606	7200	CLA	
0607	1037	TAD K7773	/OPERAND 1
0610	1023	TAD K0004	/OPERAND 2
0611	7040	GMA	
0612	7440	SZA	
0613	7402	HLT	
		/TAD ERROR	
		/AC SHOULD EQUAL 0000	
		/TAD TEST 11	
0614	7200	CLA	
0615	1036	TAD K7775	/OPERAND 1
0616	1022	TAD K0002	/OPERAND 2
0617	7040	GMA	
0620	7440	SZA	
0621	7402	HLT	
		/TAD ERROR	
		/TAD TEST 12	
0622	7200	CLA	
0623	1035	TAD K7776	/OPERAND 1
0624	1021	TAD K0001	/OPERAND 2
0625	7040	GMA	
0626	7440	SZA	
0627	7402	HLT	
		/TAD ERROR	
		/AC SHOULD EQUAL 0000	
		/TAD TEST 13	
0630	7200	CLA	
0631	7100	CLL	
0632	1034	TAD K4000	/OPERAND 1
0633	1034	TAD K4000	/OPERAND 2
0634	7430	SZL	
0635	7440	SEA	
0636	7402	HLT	
		/TAD ERROR, AC SHOULD EQUAL 0000	
		/LINK SHOULD BE EQUAL ONE,	

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/TAD TEST 14
0637 7200      CLA
0640 7100      CLL
0641 1054      TAD K6000      /OPERAND 1
0642 1033      TAD K2000      /OPERAND 2
0643 7430      SEL
0644 7440      SZA
0645 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/TAD TEST 15
0646 7200      CLA
0647 7100      CLL
0650 1055      TAD K7000      /OPERAND 1
0651 1032      TAD K1000     /OPERAND 2
0652 7430      SEL
0653 7440      SZA
0654 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/TAD TEST 16
0655 7200      CLA
0656 7100      CLL
0657 1056      TAD K7400      /OPERAND 1
0660 1031      TAD K0400     /OPERAND 2
0661 7430      SEL
0662 7440      SZA
0663 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/TAD TEST 17
0664 7200      CLA
0665 7100      CLL
0666 1057      TAD K7600      /OPERAND 1
0667 1030      TAD K0200     /OPERAND 2
0670 7430      SEL
0671 7440      SZA
0672 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/TAD TEST 18
0673 7200      CLA
0674 7100      CLL
0675 1076      TAD K7700      /OPERAND 1
0676 1027      TAD K0100     /OPERAND 2
0677 7430      SEL
0700 7440      SZA
0701 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/TAD TEST 19
0702 7200      CLA
0703 7100      CLL

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0704	1060	TAU K7740	/OPERAND 1
0705	1026	TAU K0040	/OPERAND 2
0706	7430	SZL	
0707	7440	SZA	
0710	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000
			/LINK SHOULD EQUAL ONE
		/TAD TEST 20	
0711	7200	CLA	
0712	7100	CLL	
0713	1061	TAU K7760	/OPERAND 1
0714	1025	TAU K0020	/OPERAND 2
0715	7430	SZL	
0716	7440	SZA	
0717	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000
			/LINK SHOULD EQUAL ONE
		/TAD TEST 21	
0720	7200	CLA	
0721	7100	CLL	
0722	1062	TAU K7770	/OPERAND 1
0723	1024	TAU K0010	/OPERAND 2
0724	7430	SZL	
0725	7440	SZA	
0726	7402	HLT	/TAD ERROR AC SHOULD EQUAL 0000
			/LINK SHOULD EQUAL ONE
		/TAD TEST 22	
0727	7200	CLA	
0730	7100	CLL	
0731	1063	TAU K7774	/OPERAND 1
0732	1023	TAU K0004	/OPERAND 2
0733	7430	SZL	
0734	7440	SZA	
0735	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000
			/LINK SHOULD EQUAL ONE
		/TAD TEST 23	
0736	7200	CLA	
0737	7100	CLL	
0740	1035	TAU K7776	/OPERAND 1
0741	1022	TAU K0002	/OPERAND 2
0742	7430	SZL	
0743	7440	SZA	
0744	7402	HLT	/TAD ERROR, AC SHOULD EQUAL 0000
			/LINK SHOULD EQUAL ONE

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/TAD TEST 24
0745 7200      CLA
0746 7100      CLL
0747 1051      TAD K7777      /OPERAND 1
0750 1021      TAD K0001      /OPERAND 2
0751 7430      SZL
0752 7440      SZA
0753 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/TAD TEST 25
0754 7200      CLA
0755 7100      CLL
0756 7020      CML
0757 1034      TAD K4000      /OPERAND 1
0760 1034      TAD K4000      /OPERAND 2
0761 7420      SNL
0762 7440      SZA
0763 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

/TAD TEST 26
0764 7200      CLA
0765 7100      CLL
0766 1050      TAD K3777      /OPERAND 1
0767 1033      TAD K2000      /OPERAND 2
0770 1033      TAD K2000      /OPERAND 3
0771 7040      CMA
0772 7420      SNL
0773 7440      SZA
0774 7402      HLT
/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

0775 7000      NOP
0776 7000      NOP
0777 7000      NOP
1000

*1000
/TAD TEST 27
1000 7200      CLA
1001 7100      CLL
1002 1047      TAD K5777      /OPERAND 1
1003 1032      TAD K1000      /OPERAND 2
1004 1032      TAD K1000      /OPERAND 3
1005 7040      CMA
1006 7420      SNL
1007 7440      SZA
1010 7402      HLT
/TAD ERROR AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

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```
1011 7200
1012 7100
1013 1046
1014 1031
1015 1031
1016 7040
1017 7420
1020 7440
1021 7402

/TAD TEST 28
CLA
CLL
TAD K6777 /OPERAND 1
TAD K0400 /OPERAND 2
TAD K0400 /OPERAND 3
CMA
SNL
SZA
HLT /TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

1022 7200
1023 7100
1024 1045
1025 1030
1026 1030
1027 7040
1030 7420
1031 7440
1032 7402

/TAD TEST 29
CLA
CLL
TAD K7377 /OPERAND 1
TAD K0200 /OPERAND 2
TAD K0200 /OPERAND 3
CMA
SNL
SZA
HLT /TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

1033 7200
1034 7100
1035 1044
1036 1027
1037 1027
1040 7040
1041 7420
1042 7440
1043 7402

/TAD TEST 30
CLA
CLL
TAD K7577 /OPERAND 1
TAD K0100 /OPERAND 2
TAD K0100 /OPERAND 3
CMA
SNL
SZA
HLT /TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

1044 7200
1045 7100
1046 1043
1047 1026
1050 1026
1051 7040
1052 7420
1053 7440
1054 7402

/TAD TEST 31
CLA
CLL
TAD K7677 /OPERAND 1
TAD K0040 /OPERAND 2
TAD K0040 /OPERAND 3
CMA
SNL
SZA
HLT /TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO
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/TAD TEST J2
1055 7200      CLA
1056 7100      CLL
1057 1042     TAD K7737      /OPERAND 1
1060 1025     TAD K0020     /OPERAND 2
1061 1025     TAD K0020     /OPERAND 3
1062 7040     CMA
1063 7420     SNL
1064 7440     SZA
1065 7402     HLT

/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

/TAD TEST J3
1066 7200      CLA
1067 7100      CLL
1070 1041     TAD K7757      /OPERAND 1
1071 1024     TAD K0010     /OPERAND 2
1072 1024     TAD K0010     /OPERAND 3
1073 7040     CMA
1074 7420     SNL
1075 7440     SZA
1076 7402     HLT

/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

/TAD TEST J4
1077 7200      CLA
1100 7100      CLL
1101 1040     TAD K7767      /OPERAND 1
1102 1023     TAD K0004     /OPERAND 2
1103 1023     TAD K0004     /OPERAND 3
1104 7040     CMA
1105 7420     SNL
1106 7440     SZA
1107 7402     HLT

/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

/TAD TEST J5
1110 7200      CLA
1111 7100      CLL
1112 1037     TAD K7773      /OPERAND 1
1113 1022     TAD K0002     /OPERAND 2
1114 1022     TAD K0002     /OPERAND 3
1115 7040     CMA
1116 7420     SNL
1117 7440     SZA
1120 7402     HLT

/TAD ERROR, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

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1121 7200
1122 7100
1123 1036
1124 1021
1125 1021
1126 7040
1127 7420
1130 7430
1131 7402
      /TAD TEST 36
      CLA
      CLL
      TAD K7775           /OPERAND 1
      TAD K0001         /OPERAND 2
      TAD K0001         /OPERAND 3
      CMA
      SNL
      SZL
      HLT
      /TAD ERROR, AC SHOULD EQUAL 0000
      /LINK SHOULD EQUAL ZERO

1132 7200
1133 7100
1134 1021
1135 7010
1136 7420
1137 7402
      /RAR TEST 1
      CLA
      CLL
      TAD K0001         /ROTATE PATTERN
      RAR
      SNL
      HLT
      /RAR FAILED, LINK DROPPED A BIT
      /LINK SHOULD EQUAL A ONE

1140 7200
1141 7100
1142 1020
1143 7010
1144 7440
1145 7402
      /RAR TEST 2
      CLA
      CLL
      TAD K0000         /ROTATE PATTERN
      RAR
      SZA
      HLT
      /RAR FAILED, AC PICKED UP A BIT
      /A ONE IN AC EQUALS THE PICKED UP BIT

1146 7200
1147 7100
1150 1020
1151 7010
1152 7430
1153 7402
      /RAR TEST 3
      CLA
      CLL
      TAD K0000         /ROTATE PATTERN
      RAR
      SZL
      HLT
      /RAL FAILED, LINK PICKED UP A BIT
      /LINK SHOULD EQUAL ZERO

```

```

/RAR TEST 4
1154 7200      CLA
1155 7100      CLL
1156 7020      CML
1157 1020      TAU K0000      /ROTATE PATTERN
1160 7010      RAR
1161 7430      SZL
1162 7402      HLT      /RAR LINK PICKED UP A BIT
                          /LINK SHOULD EQUAL ZERO

/RAR TEST 5
1163 7200      CLA
1164 7100      CLL
1165 7020      CML
1166 1051      TAU K7777      /ROTATE PATTERN
1167 7010      RAR
1170 7040      CMA
1171 7440      SZA
1172 7402      HLT      /RAR FAILED AC DROPPED A BIT
                          /A ONE IN AC EQUALS THE DROPPED BIT

1173 7000      NOP
1174 7000      NOP
1175 7000      NOP
1176 7000      NOP
1177 7000      NOP
1200      1200

+1200
/RAR TEST 6
1200 7200      CLA
1201 7100      CLL
1202 7020      CML
1203 1020      TAU K0000      /ROTATE PATTERN
1204 7010      RAR
1205 1050      TAU K3777
1206 7040      CMA
1207 7450      SNA
1210 7430      SZL
1211 7402      HLT      /RAR FAILED AC AND LINK
                          /SHOULD EQUAL 0000

/RAR TEST 7
1212 7200      CLA
1213 7100      CLL
1214 1034      TAU K4000      /ROTATE PATTERN
1215 7010      RAR
1216 1047      TAU K5777
1217 7040      CMA
1220 7450      SNA
1221 7430      SZL
1222 7402      HLT      /RAR FAILED AC AND LINK SHOULD
                          /EQUAL 0000

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1223	7200	/RAR TEST 8	
1224	7100	CLA	
1225	1033	CLL	
1226	7010	TAD K2000	/ROTATE PATTERN
1227	1046	RAR	
1230	7040	TAD K6777	
1231	7450	CMA	
1232	7430	SNA	
1233	7402	SZL	
		HLT	/RAR FAILED AC AND LINK SHOULD /EQUAL 0000
1234	7200	/RAR TEST 9	
1235	7100	CLA	
1236	1032	CLL	
1237	7010	TAD K1000	/ROTATE PATTERN
1240	1045	RAR	
1241	7040	TAD K7377	
1242	7450	CMA	
1243	7430	SNA	
1244	7402	SZL	
		HLT	/RAR FAILED AC AND LINK SHOULD /EQUAL 0000
1245	7200	/RAR TEST 10	
1246	7100	CLA	
1247	1031	CLL	
1250	7010	TAD K0400	/ROTATE PATTERN
1251	1044	RAR	
1252	7040	TAD K7577	
1253	7450	CMA	
1254	7430	SNA	
1255	7402	SZL	
		HLT	/RAR FAILED AC AND LINK /SHOULD EQUAL 0000

1256	7200		
1257	7100	CLA	
1260	1030	CLL	
1261	7010	TAD K0200	/ROTATE PATTERN
1262	1043	RAR	
1263	7040	TAD K7677	
1264	7450	CHA	
1265	7430	SNA	
1266	7402	SEL	
		HLT	/RAR FAILED AC AND LINK
			/EQUAL 0000

1267	7200		
1270	7100	CLA	
1271	1027	CLL	
1272	7010	TAD K0100	/ROTATE PATTERN
1273	1042	RAR	
1274	7040	TAD K7737	
1275	7450	CHA	
1276	7430	SNA	
1277	7402	SEL	
		HLT	/RAR FAILED AC AND LINK
			/SHOULD EQUAL 0000

1300	7200		
1301	7100	CLA	
1302	1026	CLL	
1303	7010	TAD K0040	/ROTATE PATTERN
1304	1041	RAR	
1305	7040	TAD K7757	
1306	7450	CHA	
1307	7430	SNA	
1310	7402	SEL	
		HLT	/RAR FAILED AC AND LINK
			/SHOULD EQUAL 0000

PAUSE

## /INSTRUCTION TEST 1

/TAPE 2

## /RAR TEST 14

1311	7200	CLA	
1312	7100	CLL	
1313	1025	TAU K0020	/ROTATE PATTERN
1314	7010	RAR	
1315	1040	TAO K7767	
1316	7040	CMA	
1317	7450	SNA	
1320	7430	SZL	
1321	7402	HLT	/RAR FAILED AC AND LINK /SHOULD EQUAL 0000

## /RAR TEST 15

1322	7200	CLA	
1323	7100	CLL	
1324	1024	TAU K0010	/ROTATE PATTERN
1325	7010	RAR	
1326	1037	TAO K7773	
1327	7040	CMA	
1330	7450	SNA	
1331	7430	SZL	
1332	7402	HLT	/RAR FAILED AC AND LINK /SHOULD EQUAL 0000

## /RAR TEST 16

1333	7200	CLA	
1334	7100	CLL	
1335	1023	TAO K0004	/ROTATE PATTERN
1336	7010	RAR	
1337	1036	TAO K7775	
1340	7040	CMA	
1341	7450	SNA	
1342	7430	SZL	
1343	7402	HLT	/RAR FAILED AC AND LINK /SHOULD EQUAL 0000

## /RAR TEST 17

1344	7200	CLA	
1345	7100	CLL	
1346	1022	TAO K0002	/ROTATE PATTERN
1347	7010	RAR	
1350	1035	TAO K7776	
1351	7040	CMA	
1352	7450	SNA	
1353	7430	SZL	
1354	7402	HLT	/RAR FAILED AC AND LINK /SHOULD EQUAL 0000

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1355 7200
1356 7100
1357 1021
1360 7010
1361 1051
1362 7040
1363 7450
1364 7420
1365 7402

/RAR TEST 18
CLA
CLL
TAU K0001 /ROTATE PATTERN
RAR
TAU K7777
CMA
SNA
SNL
HLT

/RAR FAILED AC AND LINK
/SHOULD EQUAL 0000

1366 7200
1367 7100
1370 1022
1371 7012
1372 7420
1373 7402

/RTR TEST 1
CLA
CLL
TAU K0002 /ROTATE PATTERN
RTR
SNL
HLT

/RTR FAILED LINK DROPPED
/A BIT LINK SHOULD EQUAL A ONE

1374 7000
1375 7000
1376 7000
1377 7000
1400

*1400
/RTR TEST 2
CLA
CLL
TAU K0000 /ROTATE PATTERN
RTR
SZA
HLT

/RTR FAILED AC PICKED UP A BIT
/A ONE IN AC EQUALS THE PICKED UP BIT

1406 7200
1407 7100
1410 1020
1411 7012
1412 7430
1413 7402

/RTR TEST 3
CLA
CLL
TAU K0000 /ROTATE PATTERN
RTR
SZL
HLT

/RTR LINK PICKED UP A BIT
/LINK SHOULD EQUAL ZERO

1414 7200
1415 7100
1416 7020
1417 1020
1420 7012
1421 7430
1422 7402

/RTR TEST 4
CLA
CLL
CML
TAU K0000 /ROTATE PATTERN
RTR
SZL
HLT

/RTR LINK PICKED UP A BIT
/LINK SHOULD EQUAL ZERO

```



		/RTR TEST 5	
1423	7200	CLA	
1424	7100	CLL	
1425	7020	CML	
1426	1051	TAU K7777	/ROTATE PATTERN
1427	7012	RTR	
1430	7040	CMA	
1431	7440	SZA	
1432	7402	HLT	/RTR AC DROPPED A BIT A ONE IN /AC EQUALS THE DROPPED BIT
		/RTR TEST 6	
1433	7200	CLA	
1434	7100	CLL	
1435	7020	CML	
1436	1020	TAU K0000	/ROTATE PATTERN
1437	7012	RTR	
1440	1047	TAU K5777	
1441	7040	CMA	
1442	7450	SNA	
1443	7430	SZL	
1444	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000
		/RTR TEST 7	
1445	7200	CLA	
1446	7100	CLL	
1447	1034	TAU K4000	/ROTATE PATTERN
1450	7012	RTR	
1451	1046	TAU K6777	
1452	7040	CMA	
1453	7450	SNA	
1454	7430	SZL	
1455	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000
		/RTR TEST 8	
1456	7200	CLA	
1457	7100	CLL	
1460	1033	TAU K2000	/ROTATE PATTERN
1461	7012	RTR	
1462	1045	TAU K7377	
1463	7040	CMA	
1464	7450	SNA	
1465	7430	SZL	
1466	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

1467	7200	/RTR TEST 9		
1470	7100	CLA		
1471	1032	CLL		
1472	7012	TAU K1000	/ROTATE PATTERN	
1473	1044	RTR		
1474	7040	TAU K7577		
1475	7450	CMA		
1476	7430	SNA		
1477	7402	SZL		
		HLT		
			/RTR FAILED AC AND LINK	
			/SHOULD EQUAL 0000	
1500	7200	/RTR TEST 10		
1501	7100	CLA		
1502	1031	CLL		
1503	7012	TAU K0400	/ROTAATE PATTERN	
1504	1043	RTR		
1505	7040	TAU K7677		
1506	7450	CMA		
1507	7430	SNA		
1510	7402	SZL		
		HLT		
			/RTR FAILED AC AND LINK	
			/SHOULD EQUAL 0000	
1511	7200	/RTR TEST 11		
1512	7100	CLA		
1513	1030	CLL		
1514	7012	TAU K0200	/ROTATE PATTERN	
1515	1042	RTR		
1516	7040	TAU K7737		
1517	7450	CMA		
1520	7430	SNA		
1521	7402	SZL		
		HLT		
			/RTR FAILED AC AND LINK	
			/SHOULD EQUAL 0000	
1522	7200	/RTR TEST 12		
1523	7100	CLA		
1524	1027	CLL		
1525	7012	TAU K0100	/ROTATE PATTERN	
1526	1041	RTR		
1527	7040	TAU K7757		
1530	7450	CMA		
1531	7430	SNA		
1532	7402	SZL		
		HLT		
			/RTR FAILED AC AND LINK	
			/SHOULD EQUAL 0000	

		/RTR TEST 13	
1533	7200	CLA	
1534	7100	CLL	
1535	1026	TAU K0040	/ROTATE PATTERN
1536	7012	RTR	
1537	1040	TAU K7767	
1540	7040	CMA	
1541	7450	SNA	
1542	7430	SZL	
1543	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000
		/RTR TEST 14	
1544	7200	CLA	
1545	7100	CLL	
1546	1025	TAU K0020	/ROTATE PATTERN
1547	7012	RTR	
1550	1037	TAU K7773	
1551	7040	CMA	
1552	7450	SNA	
1553	7430	SZL	
1554	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000
		/RTR TEST 15	
1555	7200	CLA	
1556	7100	CLL	
1557	1024	TAU K0010	/ROTATE PATTERN
1560	7012	RTR	
1561	1036	TAU K7775	
1562	7040	CMA	
1563	7450	SNA	
1564	7430	SZL	
1565	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000
		/RTR TEST 16	
1566	7300	CLA CLL	
1567	1023	TAU K0004	/ROTATE PATTERN
1570	7012	RTR	
1571	1035	TAU K7776	
1572	7040	CMA	
1573	7450	SNA	
1574	7430	SZL	
1575	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

1576 7000  
1577 7000  
1600

NOP  
NOP  
\*1600  
/RTR TEST 17

1600 7200  
1601 7100  
1602 1022  
1603 7012  
1604 7450  
1605 7420  
1606 7402

CLA  
CLL  
TAD K0002 /ROTATE PATTERN  
RTR  
SNA  
SNL  
HLT

/RTR FAILED, AC SHOULD EQUAL  
/0000, LINK SHOULD EQUAL ONE

/RTR TEST 18

1607 7200  
1610 7100  
1611 1021  
1612 7012  
1613 1050  
1614 7040  
1615 7450  
1616 7430  
1617 7402

CLA  
CLL  
TAD K0001 /ROTATE PATTERN  
RTR  
TAD K3777  
CMA  
SNA  
SZL  
HLT

/RTR FAILED, AC AND LINK  
/SHOULD BE ZERO

/RAL TEST 1

1620 7200  
1621 7100  
1622 1034  
1623 7004  
1624 7430  
1625 7440  
1626 7402

CLA  
CLL  
TAD K4000 /ROTATE PATTERN  
RAL  
SZL  
SZA  
HLT

/RAL FAILED, AC SHOULD EQUAL 0000  
/LINK SHOULD EQUAL ONE,

/RAL TEST 2

1627 7200  
1630 7100  
1631 1020  
1632 7004  
1633 7420  
1634 7440  
1635 7402

CLA  
CLL  
TAD K0000 /ROTATE PATTERN  
RAL  
SNL  
SZA  
HLT

/RAL FAILED, AC SHOULD EQUAL 0000  
/LINK SHOULD EQUAL ZERO

1636	7200	/RAL TEST 3	
1637	7100	CLA	
1640	7020	CLL	
1641	1020	CML	
1642	7004	TAU K0000	/ROTATE PATTERN, LINK#1
1643	7430	RAL	
1644	7402	SZL	/RAL FAILURE, AC SHOULD EQUAL 0001
		MLT	/LINK SHOULD EQUAL ZERO
1645	7200	/RAL TEST 4	
1646	7100	CLA	
1647	7020	CLL	
1650	1051	CML	
1651	7004	TAU K7777	/ROTATE PATTERN, LINK#1
1652	7040	RAL	
1653	7440	CMA	
1654	7402	SZA	/RAL FAILURE, LINK SHOULD EQUAL ONE
		MLT	/AC SHOULD EQUAL 0000
1655	7200	/RAL TEST 5	
1656	7100	CLA	
1657	1033	CLL	
1660	7004	TAU K2000	/ROTATE PATTERN
1661	1050	RAL	
1662	7040	TAU K3777	
1663	7450	CMA	
1664	7430	SNA	
1665	7402	SZL	/RAL FAILURE, AC SHOULD EQUAL 0000
		MLT	/LINK SHOULD EQUAL ONE
1666	7200	/RAL TEST 6	
1667	7100	CLA	
1670	1032	CLL	
1671	7004	TAU K1000	/ROTATE PATTERN
1672	1047	RAL	
1673	7040	TAU K5777	
1674	7440	CMA	
1675	7402	SZA	/RAL FAILURE, AC SHOULD EQUAL 0000
		MLT	/LINK SHOULD EQUAL ZERO

1676	7200	/RAL TEST 7	CLA	
1677	7100		CLL	
1700	1031		TAU K0400	/ROTATE PATTERN
1701	7004		RAL	
1702	1046		TAU K6777	
1703	7040		CMA	
1704	7450		SNA	
1705	7430		SZL	
1706	7402		HLT	/RAL FAILURE, AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO
1707	7200	/RAL TEST 8	CLA	
1710	7100		CLL	
1711	1030		TAU K0200	/ROTATE PATTERN
1712	7004		RAL	
1713	1045		TAU K7377	
1714	7040		CMA	
1715	7450		SNA	
1716	7430		SZL	
1717	7402		HLT	/RAL FAILURE AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO
1720	7200	/RAL TEST 9	CLA	
1721	7100		CLL	
1722	1027		TAU K0100	/ROTATE PATTERN
1723	7004		RAL	
1724	1044		TAU K7577	
1725	7040		CMA	
1726	7450		SNA	
1727	7430		SZL	
1730	7402		HLT	/RAL FAILURE AC SHOULD EQUAL 0000 /LINK SHOULD EQUAL ZERO

		/RAL TEST 10	
1731	7200	CLA	
1732	7100	CLL	
1733	1026	TAU K0040	/ROTATE PATTERN
1734	7004	RAL	
1735	1043	TAU K7677	
1736	7040	CMA	
1737	7450	SNA	
1740	7430	SZL	/RAL FAILURE AC SHOULD EQUAL 0000
1741	7402	HLT	/LINK SHOULD EQUAL A ZERO
		/RAL TEST 11	
1742	7200	CLA	
1743	7100	CLL	
1744	1025	TAU K0020	/ROTATE PATTERN
1745	7004	RAL	
1746	1042	TAU K7737	
1747	7040	CMA	
1750	7450	SNA	
1751	7430	SZL	/RAL FAILURE AC SHOULD EQUAL 0000
1752	7402	HLT	/LINK SHOULD EQUAL A ZERO
		/RAL TEST 12	
1753	7200	CLA	
1754	7100	CLL	
1755	1024	TAU K0010	/ROTATE PATTERN
1756	7004	RAL	
1757	1041	TAU K7757	
1760	7040	CMA	
1761	7450	SNA	
1762	7430	SZL	/RAL FAILURE AC SHOULD EQUAL 0000
1763	7402	HLT	/LINK SHOULD EQUAL A ZERO

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1764 7200
1765 7100
1766 1023
1767 7004
1770 1040
1771 7040
1772 7450
1773 7430
1774 7402
1775 7000
1776 7000
1777 7000
2000 2000

2000 7200
2001 7100
2002 1022
2003 7004
2004 1037
2005 7040
2006 7450
2007 7430
2010 7402

2011 7200
2012 7100
2013 1021
2014 7004
2015 1036
2016 7040
2017 7450
2020 7430
2021 7402

2022 7200
2023 7100
2024 7020
2025 7004
2026 1035
2027 7040
2030 7450
2031 7430
2032 7402

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/RAL TEST 13
CLA
CLL
TAD K0004          /ROTATE PATTERN
RAL
TAD K7767
CMA
SNA
SEL
HLT              /RAL FAILED AC SHOULD EQUAL 0000
NOP              /LINK SHOULD EQUAL A ZERO
NOP
NOP
*2000
/RAL TEST 14
CLA
CLL
TAD K0002          /ROTATE PATTERN
RAL
TAD K7773
CMA
SNA
SEL
HLT              /RAL FAILED AC SHOULD EQUAL 0000
NOP              /LINK SHOULD EQUAL A ZERO
/RAL TEST 15
CLA
CLL
TAD K0001          /ROTATE PATTERN
RAL
TAD K7775
CMA
SNA
SEL
HLT              /RAL FAILED AC SHOULD EQUAL 0000
NOP              /LINK SHOULD EQUAL ZERO
/RAL TEST 16
CLA
CLL
CML
RAL
TAD K7776
CMA
SNA
SEL
HLT              /RAL FAILED AC SHOULD EQUAL 0000
NOP              /LINK SHOULD EQUAL ZERO

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		/RTL TEST 1	
2033	7200	CLA	
2034	7100	CLL	
2035	1033	TAU K2000	
2036	7006	RTL	
2037	7420	SNL	
2040	7402	HLT	/RTL LINK DROPPED A BIT /LINK SHOULD EQUAL A ONE
		/RTL TEST 2	
2041	7200	CLA	
2042	7100	CLL	
2043	1020	TAD K0000	/ROTATE PATTERN
2044	7006	RTL	
2045	7440	SZA	
2046	7402	HLT	/RTL AC PICKED UP A BIT /A ONE IN AC EQUALS THE PICKED UP
		/RTL TEST 3	
2047	7200	CLA	
2050	7100	CLL	
2051	1020	TAD K0000	/ROTATE PATTERN
2052	7006	RTL	
2053	7430	SZL	
2054	7402	HLT	/RTL LINK PICKED UP A BIT /LINK SHOULD EQUAL ZERO
		/RTL TEST 4	
2055	7200	CLA	
2056	7100	CLL	
2057	7020	CML	
2060	1020	TAU K0000	/ROTATE PATTERN
2061	7006	RTL	
2062	7430	SZL	
2063	7402	HLT	/RTL FAILURE, LINK PICKED UP A BIT /LINK SHOULD EQUAL A ZERO

		/RTL TEST 5	
2064	7200	CLA	
2065	7100	CLL	
2066	7020	CML	
2067	1051	TAD K7777	/ROTATE PATTERN
2070	7006	RTL	
2071	7040	CMA	
2072	7440	SZA	
2073	7402	HLT	/RTL FAILURE, DROPPED A BIT
		/RTL TEST 6	
2074	7200	CLA	
2075	7100	CLL	
2076	1034	TAD K4000	/ROTATE PATTERN
2077	7006	RTL	
2100	1035	TAD K7776	
2101	7040	CMA	
2102	7450	SNA	
2103	7430	SZL	
2104	7402	HLT	/RTL FAILED AC AND LINK SHOULD EQUAL 0000
		/RTL TEST 7	
2105	7200	CLA	
2106	7100	CLL	
2107	1033	TAD K2000	/ROTATE PATTERN
2110	7006	RTL	
2111	7450	SNA	
2112	7420	SNL	
2113	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 8	
2114	7200	CLA	
2115	7100	CLL	
2116	1032	TAD K1000	/ROTATE PATTERN
2117	7006	RTL	
2120	1050	TAD K3777	
2121	7040	CMA	
2122	7450	SNA	
2123	7430	SZL	
2124	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000

		/RTL TEST 9	
2125	7200	CLA	
2126	7100	CLL	
2127	1031	TAD K0400	/ROTATE PATTERN
2130	7006	RTL	
2131	1047	TAD K5777	
2132	7040	CMA	
2133	7450	SNA	
2134	7430	SZL	
2135	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL ZERO
		/RTL TEST 10	
2136	7200	CLA	
2137	7100	CLL	
2140	1030	TAD K0200	/ROTATE PATTERN
2141	7006	RTL	
2142	1046	TAD K6777	
2143	7040	CMA	
2144	7450	SNA	
2145	7430	SZL	
2146	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 11	
2147	7200	CLA	
2150	7100	CLL	
2151	1027	TAD K0100	/ROTATE PATTERN
2152	7006	RTL	
2153	1045	TAD K7377	
2154	7040	CMA	
2155	7450	SNA	
2156	7430	SZL	
2157	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 12	
2160	7200	CLA	
2161	7100	CLL	
2162	1026	TAD K0040	/ROTATE PATTERN
2163	7006	RTL	
2164	1044	TAD K7577	
2165	7040	CMA	
2166	7450	SNA	
2167	7430	SZL	
2170	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000

2171	7000	NOP	
2172	7000	NOP	
2173	7000	NOP	
2174	7000	NOP	
2175	7000	NOP	
2176	7000	NOP	
2177	7000	NOP	
	2200		
		*2200	
		/RTL TEST 13	
2200	7200	CLA	
2201	7100	CLL	
2202	1025	TAD K0020	/ROTATE PATTERN
2203	7006	RTL	
2204	1043	TAD K7677	
2205	7040	CMA	
2206	7450	SNA	
2207	7430	SZL	
2210	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 14	
2211	7200	CLA	
2212	7100	CLL	
2213	1024	TAD K0010	/ROTATE PATTERN
2214	7006	RTL	
2215	1042	TAD K7737	
2216	7040	CMA	
2217	7450	SNA	
2220	7430	SZL	
2221	7402	HLT	/RTL FAILED AC AND LINK SHOULD
		/RTL TEST 15	
2222	7200	CLA	
2223	7100	CLL	
2224	1023	TAD K0004	/ROTATE PATTERN
2225	7006	RTL	
2226	1041	TAD K7757	
2227	7040	CMA	
2230	7450	SNA	
2231	7430	SZL	
2232	7402	HLT	/RTL FAILED AC AND LINK SHOULD /EQUAL 0000
		/RTL TEST 16	
2233	7200	CLA	
2234	7100	CLL	
2235	1022	TAD K0002	/ROTATE PATTERN
2236	7006	RTL	
2237	1040	TAD K7767	
2240	7040	CMA	
2241	7450	SNA	
2242	7430	SZL	
2243	7402	HLT	/RTL FAILED AC AND LINK /SHOULD EQUAL 0000

2244 7200  
 2245 7100  
 2246 1021  
 2247 7006  
 2250 1037  
 2251 7040  
 2252 7450  
 2253 7430  
 2254 7402

/RTL TEST 17

CLA  
 CLL  
 TAD K0001  
 RTL  
 TAD K7773  
 CMA  
 SNA  
 SEL  
 HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK  
 /SHOULD EQUAL 0000

2255 7200  
 2256 7100  
 2257 7020  
 2260 7006  
 2261 1036  
 2262 7040  
 2263 7450  
 2264 7430  
 2265 7402

/RTL TEST 18

CLA  
 CLL  
 CML  
 RTL  
 TAD K7775  
 CMA  
 SNA  
 SEL  
 HLT

/RTL FAILED AC AND LINK  
 /SHOULD EQUAL 0000





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2357 7340
2360 7060
2361 7430
2362 7440
2363 7402

/GROUP 1 OPERATE TEST 10
CLA CLL CMA /AC=7777, LINK=0
CMA CML /TEST COMBINATION
SZL
SZA
HLT /CMA CML FAILED, AC SHOULD BE
/0000 LINK SHOULD EQUAL ONE,

/GROUP 1 OPERATE TEST 11
2364 7300
2365 1053
2366 7340
2367 7040
2370 7420
2371 7440
2372 7402
CLA CLL /AC AND LINK=0
TAD K2525 /AC=2525
CLA CMA CLL /TEST COMBINATION
CMA
SNL
SZA
HLT /CLA CMA CML FAILED, AC SHOULD BE
/0000, LINK SHOULD EQUAL ZERO

2373 7000
2374 7000
2375 7000
2376 7000
2377 7000
2400

*2400
/GROUP 1 OPERATE TEST 12
2400 7300
2401 1053
2402 7160
2403 1053
2404 7040
2405 7430
2406 7440
2407 7402
CLL CLA /AC AND LINK=0
TAD K2525 /AC=2525
CLL CMA CML /TEST COMBINATION
TAD K2525
CMA
SZL
SZA
HLT /CLL CMA CML FAILED, AC SHOULD BE
/0000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 13
2410 7300
2411 7020
2412 7160
2413 7040
2414 7430
2415 7440
2416 7402
CLA CLL
CML /AC=0000, LINK=1
CLL CMA CML /TEST COMBINATION
CMA
SZL
SZA
HLT /CLL CMA CML FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

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2417 7300
2420 1053
2421 7360
2422 7040
2423 7430
2424 7440
2425 7402

/ GROUP 1 OPERATE TEST 14
CLA CLL
TAD K2525 /AC=2525, LINK=0
CLA CLL CMA CML /TEST COMBINATION
CMA
SZL
SZA
HLT /CLA CLL CMA CML FAILED, AC SHOULD
/BE 0000 LINK SHOULD EQUAL ONE.

/ GROUP 1 OPERATE TEST 15
2426 7320
2427 1052
2430 7360
2431 7040
2432 7430
2433 7440
2434 7402
CLA CLL CML
TAD K2525 /AC=2525, LINK=1
CLA CLL CMA CML /TEST COMBINATION
CMA
SZL
SZA
HLT /CLA CLL CMA CML FAILED, AC SHOULD
/BE 000, LINK SHOULD EQUAL ONE

/ GROUP 1 OPERATE TEST 16
2435 7200
2436 1053
2437 7201
2440 1035
2441 7040
2442 7440
2443 7402
CLA
TAD K2525 /AC=2525
CLA IAC /TEST COMBINATION
TAD K7776
CMA
SZA
HLT /CLA IAC FAILED
/AC SHOULD EQUAL 0000

/ GROUP 1 OPERATE TEST 17
2444 7320
2445 1035
2446 7101
2447 7040
2450 7420
2451 7440
2452 7402
CLL CML CLA
TAD K7776 /AC=7776, LINK=1
CLL IAC /TEST COMBINATION
CMA
SNL
SZA
HLT /CLL IAC FAILED, AC AND LINK
/SHOULD EQUAL ZERO

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/GRPUP 1 OPERATE TEST 18
2453 7320      CLA CLL CML
2454 1053     TAD K2525           /AC=2525 LINK=1
2455 7301     CLA CLL IAC           /TEST COMBINATION
2456 1035     TAU K7776
2457 7040     CMA
2460 7420     SNL
2461 7440     SZA
2462 7402     HLT           /CLA CLL IAC FAILED, AC AND LINK
                          /SHOULD BE ZERO

/GRPUP 1 OPERATE TEST 19
2463 7300     CLA CLL           /AC=0 LINK=0
2464 7041     CMA IAC           /TEST COMBINATION
2465 7430     SEL
2466 7440     SZA
2467 7402     HLT           /CMA IAC FAILED, AC SHOULD EQUAL
                          /0000, LINK SHOULD EQUAL ONE

/GRPUP 1 OPERATE TEST 20
2470 7300     CLA CLL
2471 1053     TAD K2525           /AC=2525 LINK=0
2472 7241     CLA CMA IAC       /TEST COMBINATION
2473 7430     SEL
2474 7440     SZA
2475 7402     HLT           /CLA CMA IAC FAILED, AC SHOULD
                          /EQUAL 0000, LINK SHOULD BE ONE,

/GRPUP 1 OPERATE TEST 21
2476 7320     CLL CLA CML       /AC=0000 LINK=1
2477 1021     TAD K0001         /AC=0001
2500 7141     CLL CMA IAC       /TEST COMBINATION
2501 7040     CMA
2502 7420     SNL
2503 7440     SZA
2504 7402     HLT           /CLL CMA IAC FAILED, AC SHOULD BE
                          /0000 LINK SHOULD BE 0

/GRPUP 1 OPERATE TEST 22
2505 7320     CLA CLL CML
2506 1053     TAD K2525           /AC=2525 LINK=1
2507 7341     CLA CLL CMA IAC /TEST COMBINATION
2510 7430     SEL
2511 7440     SZA
2512 7402     HLT           /CLA CLL CMA IAC FAILED, AC SHOULD BE
                          /0000, LINK SHOULD BE ONE

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/GROUP 1 OPERATE TEST 23
2513 7300 CLA CLL
2514 1052 TAD K5252 /AC=5252 LINK=0
2515 7341 CLA CLL CMA IAC /TEST COMBINATION
2516 7430 SZL
2517 7440 SZA
2520 7402 HLT /CLA CLL CMA IAC FAILED AC SHOULD
/BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 24
2521 7300 CLA CLL
2522 1035 TAD K7776 /AC=7776 LINK=0
2523 7021 CML IAC /TEST COMBINATION
2524 7040 CMA
2525 7430 SZL
2526 7440 SZA
2527 7402 HLT /CML IAC FAILED AC SHOULD BE
/0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 25
2530 7320 CLA CLL CML
2531 1035 TAD K7776 /AC =7776 LINK=1
2532 7021 CML IAC /TEST COMBINATION
2533 7040 CMA
2534 7420 SNL
2535 7440 SZA
2536 7402 HLT /CML IAC FAILED, AC SHOULD BE
/0000, LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 26
2537 7300 CLA CLL
2540 1053 TAD K2525 /AC=2525 LINK=0
2541 7221 CLA CML IAC /TEST COMBINATION
2542 1035 TAD K7776
2543 7040 CMA
2544 7430 SZL
2545 7440 SZA
2546 7402 HLT /CLA CML IAC FAILED, AC SHOULD BE
/0000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 27
2547 7320 CLA CLL CML /AC=0000 LINK=1
2550 1035 TAD K7776 /AC=7776
2551 7121 CLL CML IAC /TEST COMBINATION
2552 7040 CMA
2553 7430 SZL
2554 7440 SZA
2555 7402 HLT /CLL CML IAC FAILURE, AC SHOULD BE
/0000, LINK SHOULD EQUAL ONE,

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2610 7300
2611 1021
2612 7061
2613 7040
2614 7430
2615 7440
2616 7402

/GROUP 1 OPERATE TEST 31
CLA CLL
TAD K0001 /AC=0001 LINK=0
CMA CML IAC /TEST COMBINATION
CMA
SEL
SZA
HLT /CMA CML IAC FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

2617 7320
2620 1021
2621 7061
2622 7040
2623 7420
2624 7440
2625 7402

/GROUP 1 OPERATE TEST 32
CLA CLL CML
TAD K0001 /AC=0001 LINK=1
CMA CML IAC /TEST COMBINATION
CMA
SNL
SZA
HLT /CMA CML IAC FAILURE, AC SHOULD BE
/0000, LINK SHOULD BE ZERO

2626 7300
2627 1053
2630 7261
2631 7420
2632 7430
2633 7402

/GROUP 1 OPERATE TEST 33
CLA CLL /AC=0000 LINK=0
TAD K2525 /AC=2525
CLA CMA CML IAC /TEST COMBINATION
SNL
SEL
HLT /CLA CMA CML IAC FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ZERO

2634 7320
2635 1053
2636 7261
2637 7430
2640 7440
2641 7402

/GROUP 1 OPERATE TEST 34
CLA CLL CML
TAD K2525 /AC=2525 LINK=1
CLA CMA CML IAC /TEST COMBINATION
SEL
SZA
HLT /CLA CMA CML IAC FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

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/GROUP 1 OPERATE TEST 35
2642 7300      CLA CLL
2643 1021      TAD K0001      /AC=0001 LINK=0
2644 7161      CLL CMA CML IAC /TEST COMBINATION
2645 7040      CMA
2646 7430      SZL
2647 7440      SZA
2650 7402      HLT
                /CLL CMA CML IAC FAILED, AC SHOULD BE
                /0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 36
2651 7320      CLA CLL CML
2652 1021      TAD K0001      /AC=0001 LINK=1
2653 7161      CLL CMA CML IAC /TEST COMBINATION
2654 7040      CMA
2655 7430      SZL
2656 7440      SZA
2657 7402      HLT
                /CLL CMA CML IAC FAILED, AC SHOULD BE
                /0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 37
2660 7300      CLA CLL
2661 1053      TAD K2525      /AC=2525 LINK=0
2662 7361      CLA CLL CMA CML IAC /TEST COMBINATION
2663 7420      SNL
2664 7440      SZA
2665 7402      HLT
                /CLA CLL CMA CML IAC FAILURE AC AND
                /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 38
2666 7360      CLA CMA CLL CML /AC=7777 LINK=1
2667 7210      CLA RAR      /TEST COMBINATION
2670 1050      TAD K3777
2671 7040      CMA
2672 7420      SNL
2673 7440      SZA
2674 7402      HLT
                /CLA RAR FAILED, LINK AND
                /AC SHOULD EQUAL ZERO

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2675	7360	/GROUP 1 OPERATE TEST 39	
2676	7204	CLA CMA CLL CML	/AC=7777 LINK#1
2677	1035	CLA RAL	/TEST COMBINATION
2700	7040	TAD K7776	
2701	7420	CMA	
2702	7440	SNL	
2703	7402	SZA	
		HLT	/CLA RAL FAILED LINK AND /AC SHOULD EQUAL ZERO
2704	7360	/GROUP 1 OPERATE TEST 40	
2705	7212	CLA CMA CLL CML	/AC=7777 LINK #1
2706	1047	CLA RTR	/TEST COMBINATION
2707	7040	TAD K5777	
2710	7420	CMA	
2711	7440	SNL	
2712	7402	SZA	
		HLT	/CLA RTR FAILED, AC AND /LINK SHOULD BE ZERO
2713	7360	/GROUP 1 OPERATE TEST 41	
2714	7206	CLA CMA CLL CML	/AC=7777, LINK#1
2715	1036	CLA RTL	/TEST COMBINATION
2716	7040	TAD K7775	
2717	7420	CMA	
2720	7440	SNL	
2721	7402	SZA	
		HLT	/CLA RTL FAILED, AC AND LINK /SHOULD BE ZERO
2722	7320	/GROUP 1 OPERATE TEST 42	
2723	1026	CLA CLL CML	
2724	7110	TAD K0040	/AC=0040 LINK#1
2725	1041	CLL RAR	/TEST COMBINATION
2726	7040	TAD K7757	
2727	7420	CMA	
2730	7440	SNL	
2731	7402	SZA	
		HLT	/CLL RAR FAILED, AC AND LINK /SHOULD BE ZERO

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/GRPUP 1 OPERATE TEST 43
2732 7320      CLA CLL CML
2733 1026     TAD K0040      /AC=0040 LINK#1
2734 7104     CLL RAL      /TEST COMBINATION
2735 1043     TAD K7677
2736 7040     CMA
2737 7420     SNL
2740 7440     SZA
2741 7402     HLT      /CLL RAL FAILED, AC AND LINK
                        /SHOULD BE ZERO

/GRPUP 1 OPERATE TEST 44
2742 7320      CLA CLL CML
2743 1026     TAD K0040      /AC=0040 LINK#1
2744 7112     CLL RTR      /TEST COMBINATION
2745 1040     TAD K7767
2746 7040     CMA
2747 7420     SNL
2750 7440     SZA
2751 7402     HLT      /CLL RTR FAILED, AC AND LINK
                        /SHOULD BE ZERO

/GRPUP 1 OPERATE TEST 45
2752 7320      CLA CLL CML
2753 1026     TAD K0040      /AC=0040 LINK#1
2754 7106     CLL RTL      /TEST COMBINATION
2755 1044     TAD K7577
2756 7040     CMA
2757 7420     SNL
2760 7440     SZA
2761 7402     HLT      /CLL RTL FAILED, AC AND LINK
                        /SHOULD BE ZERO

/GRPUP 1 OPERATE TEST 46
2762 7360      CLA CLL CML CMA /AC=7777 LINK#1
2763 7310     CLL CLA RAR /TEST COMBINATION
2764 7420     SNL
2765 7440     SZA
2766 7402     HLT      /CLL CLA RAR FAILED AC AND
                        /LINK SHOULD BE ZERO

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/GROUP 1 OPERATE TEST 47
2767 7360 CLA CMA CLL CML /AC=7777 LINK#1
2770 7304 CLL CLA RAL /TEST COMBINATION
2771 7420 SNL
2772 7430 SEL
2773 7402 HLT /CLL CLA RAL FAILED, AC AND
/LINK SHOULD BE ZERO

2774 7000 NOP
2775 7000 NOP
2776 7000 NOP
2777 7000 NOP
3000

*3000
/GROUP 1 OPERATE TEST 48
3000 7360 CLA CMA CLL CML /AC=7777 LINK#1
3001 7312 CLA CLL RTR /TEST COMBINATION
3002 7420 SNL
3003 7440 SEA
3004 7402 HLT /CLA CLL RTL FAILED, AC AND
/LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 49
3005 7360 CLA CMA CLL CML /AC=7777 LINK#1
3006 7306 CLA CLL RTL /TEST COMBINATION
3007 7420 SNL
3010 7440 SEA
3011 7402 HLT /CLA CLL RTL FAILED, AC AND
/LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 50
3012 7300 CLA CLL /AC=0000 LINK#0
3013 7030 CML RAR /TEST COMBINATION
3014 1050 TAD K3777
3015 7040 CMA
3016 7420 SNL
3017 7440 SEA
3020 7402 HLT /CML RAR FAILED, AC AND LINK
/SHOULD BE ZERO

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/GROUP 1 OPERATE TEST 51
3021 7300      CLA CLL          /AC=0000 LINK=0
3022 7024      CML RAL          /TEST COMBINATION
3023 1035      TAD K7776
3024 7040      CMA
3025 7420      SNL
3026 7440      SZA
3027 7402      HLT          /CML RAL FAILED, AC AND LINK
                          /SHOULD BE ZERO,

/GROUP 1 OPERATE TEST 52
3030 7300      CLA CLL          /AC=0000 LINK=0
3031 7032      CML RTR          /TEST COMBINATION
3032 1047      TAD K5777
3033 7040      CMA
3034 7420      SNL
3035 7440      SZA
3036 7402      HLT          /CML RTR FAILED, AC AND LINK
                          /SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 53
3037 7300      CLA CLL          /AC=0000 LINK=0
3040 7026      CML RTL          /TEST COMBINATION
3041 1036      TAD K7775
3042 7040      CMA
3043 7420      SNL
3044 7440      SZA
3045 7402      HLT          /CML RTL FAILED, AC AND LINK
                          /SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 54
3046 7300      CLA CLL
3047 1052      TAD K5252          /AC=5252 LINK=0
3050 7230      CLA CML RAR      /TEST COMBINATION
3051 1050      TAD K3777
3052 7040      CMA
3053 7420      SNL
3054 7440      SZA
3055 7402      HLT          /CLA CML RAR FAILED, AC AND
PAUSE

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```
0036 7320
0037 7130
0040 7004
0041 7430
0042 7440
0043 7402
/CLL CML RAR FAILED, AC SHOULD BE
/0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 59
CLA CLL CML /AC=0000 LINK=1
CLL CML RAR /TEST COMBINATION
RAL
SZL
SZA
HLT

/GROUP 1 OPERATE TEST 60
CLA CLL /AC=0000 LINK=0
CLL CML RAL /TEST COMBINATION
RAR
SZL
SZA
HLT
/CLL CML RAL FAILED, AC SHOULD
/EQUAL 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 61
CLA CLL CML /AC=0000 LINK=1
CLL CML RAL /TEST COMBINATION
RAR
SZL
SZA
HLT
/CLL CML RAL FAILED, AC SHOULD
/EQUAL 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 62
CLA CLL /AC=0000 LINK=0
CLL CML RTR /TEST COMBINATION
RTL
SZL
SZA
HLT
/CLL CML RTR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE
```

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0066 7320
0067 7132
0070 7006
0071 7430
0072 7440
0073 7402
/GROUP 1 OPERATE TEST 63
CLA CLL CML /AC=0000 LINK=1
CLL CML RTR /TEST COMBINATION
RTL
SZL
SZA
HLT /CLL CML RTR FAILED, AC SHOULD
/BE 0000 LINK SHOULD BE ONE,

0074 7300
0075 7126
0076 7012
0077 7430
0100 7440
0101 7402
/GROUP 1 OPERATE TEST 64
CLA CLL /AC=0000 LINK=0
CLL CML RTL /TEST COMBINATION
RTR
SZL
SZA
HLT /CLL CML RTL FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE A ONE

0102 7320
0103 7126
0104 7012
0105 7430
0106 7440
0107 7402
/GROUP 1 OPERATE TEST 65
CLA CLL CML /AC=0000 LINK=1
CLL CML RTL /TEST COMBINATION
RTR
SZL
SZA
HLT /CLL CML RTL FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE A ONE.

0110 7300
0111 1052
0112 7330
0113 7004
0114 7430
0115 7440
0116 7402
/GROUP 1 OPERATE TEST 66
CLA CLL
TAD K5252 /AC=5252 LINK=0
CLA CLL CML RAR /TEST COMBINATION
HAL
SZL
SZA
HLT /CLA CLL CML RAR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

0117 7000
0120 7000
0121 7000
NOP
NOP
NOP
3200
*3200
/GROUP 1 OPERATE TEST 67
CLA CLL CML
TAD K2525 /AC=2525 LINK=1
CLA CLL CML RAR /TEST COMBINATION
RAL
SZL
SZA
HLT /CLA CLL CML RAR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

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/GROUP 1 OPERATE TEST 71
3234 7320      CLA CLL CML
3235 1052      TAU K5252          /AC=5252 LINK=1
3236 7332      CLA CLL CML RTR /TEST COMBINATION
3237 7006      RTR
3240 7430      SZL
3241 7440      SZA
3242 7402      HLT          /CLA CLL CML RTR FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 72
3243 7300      CLL CLA
3244 1053      TAU K2525          /AC=2525 LINK=0
3245 7326      CLA CLL CML RTL /TEST COMBINATION
3246 7012      RTR
3247 7430      SZL
3250 7440      SZA
3251 7402      HLT          /CLA CLL CML RTL FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE A ZERO

/GROUP 1 OPERATE TEST 73
3252 7320      CLL CLA CML
3253 1052      TAU K5252          /AC=5252 LINK=1
3254 7326      CLA CLL CML RTL /TEST COMBINATION
3255 7012      RTR
3256 7430      SZL
3257 7440      SZA
3260 7402      HLT          /CLA CLL CML RTL FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 74
3261 7300      CLA CLL
3262 1051      TAU K7777          /TEST PATTERN
3263 7041      CIA          /AC EQUALS 0001
3264 1035      TAU K7776
3265 7040      CMA
3266 7420      SNL
3267 7440      SZA          /CIA FAILED AC SHOULD EQUAL 0000
3270 7402      HLT          /LINK SHOULD EQUAL A ZERO

/GROUP 1 OPERATE TEST 75
3271 7300      CLA CLL
3272 1035      TAU K7776          /TEST PATTERN
3273 7041      CIA          /AC EQUALS 0002
3274 1036      TAU K7775
3275 7040      CMA
3276 7420      SNL
3277 7440      SZA          /CIA FAILED AC SHOULD EQUAL 0000
3300 7402      HLT          /LINK SHOULD EQUAL A ZERO

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3301 7300
3302 1063
3303 7041
3304 1037
3305 7040
3306 7420
3307 7440
3310 7402
3311 7300
3312 1062
3313 7041
3314 1040
3315 7040
3316 7420
3317 7440
3320 7402
3321 7300
3322 1061
3323 7041
3324 1041
3325 7040
3326 7420
3327 7440
3330 7402
3331 7300
3332 1060
3333 7041
3334 1042
3335 7040
3336 7420
3337 7440
3340 7402

/GROUP 1 OPERATE TEST 76
CLA CLL
TAU K7774 /TEST PATTERN
CIA /AC EQUALS 0004
TAD K7773
CMA
SNL
SZA /CIA FAILED AC SHOULD EQUAL 0000
HLT /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 77
CLA CLL
TAU K7770 /TEST PATTERN
CIA /AC EQUALS 0010
TAD K7767
CMA
SNL
SZA
HLT /CIA FAILED AC SHOULD EQUAL 0000

/GROUP 1 OPERATE TEST 78
CLA CLL
TAU K7760 /TEST PATTERN
CIA /AC EQUALS 0020
TAD K7757
CMA
SNL
SZA
HLT /CIA FAILED AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 79
CLA CLL
TAU K7740 /TEST PATTERN
CIA
TAU K7737 /AC EQUALS 0040
CMA
SNL
SZA
HLT /CIA FAILED AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

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3371 7000      NOP
3372 7000      NOP
3373 7000      NOP
3374 7000      NOP
3375 7000      NOP
3376 7000      NOP
3377 7000      NOP
          3400
*3400
/GROUP 1 OPERATE TEST 83
3400 7300      CLA CLL
3401 1055      TAU K7000      /TEST PATTERN
3402 7041      CIA      /AC EQUALS 1000
3403 1046      TAU K6777
3404 7040      CMA
3405 7420      SNL
3406 7440      SZA
3407 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                          /LINK SHOULD EQUAL ZERO
/GROUP 1 OPERATE TEST 84
3410 7300      CLA CLL
3411 1054      TAU K6000      /TEST PATTERN
3412 7041      CIA      /AC EQUALS 2000
3413 1047      TAU K5777
3414 7040      CMA
3415 7420      SNL
3416 7440      SZA
3417 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                          /LINK SHOULD EQUAL ZERO
/GROUP 1 OPERATE TEST 85
3420 7300      CLA CLL
3421 1034      TAU K4000      /TEST PATTERN
3422 7041      CIA      /AC EQUALS 4000
3423 1050      TAU K3777
3424 7040      CMA
3425 7420      SNL
3426 7440      SZA
3427 7402      HLT      /CIA FAILED AC SHOULD EQUUA 000
                          /LINK SHOULD EQUALL ZERO
/GROUP 1 OPERATE TEST 86
3430 7300      CLA CLL
3431 1020      TAU K0000      /TEST PATTERN
3432 7041      CIA      /AC EQUALS 0000, LINK EQUALS A ONE
3433 7450      SNA
3434 7420      SNL
3435 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                          /LINK SHOULD EQUAL A ONE

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3436 7340 /GROUP OPERATE TEST 87
3437 7311 CLA CMA CLL /AC=7777,L=0
3440 7430 CLA CLL IAC RAR /AC=0,L=1
3441 7440 SZL
3442 7402 SZA
HLT /ERROR: LINC NOT SET OR
/AC NOT 0

3443 7360 /GROUP 1 OPERATE TEST 88
3444 7305 CLA CMA CLL CML /AC=7777,L=1
3445 7430 CLA CLL IAC RAL /AC=2,L=0
3446 7402 SZL
3447 7041 HLT /ERROR: LINC NOT 0
3450 1022 CMA IAC
3451 7440 TAD K0002
3452 7402 SZA
HLT /ERROR AC NOT=2

3453 7320 /GROUP 1 OPERATE TEST 89
3454 7313 CLA CLL CML /AC=0,L=1
3455 7430 CLA CLL IAC RTR /AC=4000,L=0
3456 7402 SZL
3457 7500 HLT /ERROR: LINC NOT 0
3460 7402 SMA
HLT /ERROR; AC NOT 4000

3461 7360 /GROUP 1 OPERATE TEST 90
3462 7307 CLA CMA CLL CML /AC=7777,L=1
3463 7430 CLA CLL IAC RTL /AC=4,LINC=0
3464 7402 SZL
3465 7041 HLT /ERROR: LINC NOT 0
3466 1023 CMA IAC
3467 7440 TAD K0004
3470 7402 SZA
HLT /ERROR: AC NOT 4

3471 7300 /GROUP 1 OPERATE TEST 91
3472 7331 CLA CLL /AC=0, L=0
3473 7520 CLA CLL CML IAC RAR /AC=4000, L=1
3474 7402 SMA SNL
HLT /ERROR: AC NOT 4000 OR
/LINC NOT 1

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/GROUP 1 OPERATE TEST 92
3475 7300      CLA CLL           /AC=0,L=0
3476 7345      CLA CMA CLL IAC RAL /AC=0001,L=0
3477 7430      SZL
3500 7402      HLT
3501 7041      CMA IAC           /LINC NOT=0
3502 1021      TAD K0001
3503 7440      SZA
3504 7402      HLT           /AC NOT 0001
```

```
/GROUP 1 OPERATE TEST 93
3505 7360      CLA CMA CLL CML           /AC=7777,L=1
3506 7373      CLA CMA CLL CML IAC RTR /AC=0,L=0
3507 7440      SZA
3510 7402      HLT           /ERROR:
3511 7430      SZL
3512 7402      HLT           /ERROR:
```

		/GROUP 2 OPERATE TEST 1	
3513	7240	CLA CMA	/AC=7777
3514	7700	CLA SMA	/TEST COMBINATION
3515	7402	HLT	/CLA SMA DID NOT SKIP
			/AC SHOULD BE 0000
3516	7440	SZA	
3517	7402	HLT	/CLA SMA DID NOT CLEAR AC
			/AC SHOULD BE 0000
		/GROUP 2 OPERATE TEST 2	
3520	7240	CLA CMA	/AC=7777
3521	7640	CLA SZA	/TEST COMBINATION
3522	7440	SZA	
3523	7402	HLT	/CLA SZA SKIPPED OR AC NOT
			/CLEARED TO 0000
		/GROUP 2 OPERATE TEST 3	
3524	7240	CLA CMA	/AC=7777
3525	7540	SMA SZA	/TEST COMBINATION
3526	7402	HLT	/SMA SZA SHOULD HAVE SKIPPED
			/AC SHOULD EQUAL 7777
		/GROUP 2 OPERATE TEST 4	
3527	7200	CLA	/AC=0000
3530	7540	SMA SZA	/TEST COMBINATION
3531	7402	HLT	/SMA SZA SHOULD HAVE SKIPPED
			/AC SHOULD EQUAL 0000
		/GROUP 2 OPERATE TEST 5	
3532	7200	CLA	
3533	1050	TAU K3777	/AC=3777
3534	7540	SMA SZA	/TEST COMBINATION
3535	7450	SNA	
3536	7402	HLT	/SMA SZA SHOULD NOT HAVE SKIPPED
			/AC SHOULD EQUAL 3777

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/GROUP 2 OPERATE TEST 6
3537 7240      CLA CMA      /AC=7777
3540 7740      CLA SMA SZA /TEST COMBINATION
3541 7402      HLT          /CLA SMA SZA SHOULD HAVE SKIPPED
              /AC SHOULD BE 0000

3542 7440      SZA
3543 7402      HLT          /AC WAS NOT CLEARED
              /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 7
3544 7200      CLA          /AC=0000
3545 7740      CLA SMA SZA /TEST COMBINATION
3546 7402      HLT          /CLA SMA SZA SHOULD HAVE SKIPPED
              /AC SHOULD BE 0000

3547 7440      SZA
3550 7402      HLT          /AC WAS NOT CLEARED
              /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 8
3551 7200      CLA
3552 1050      TAU K3777    /AC=3777
3553 7740      CLA SMA SZA /TEST COMBINATION
3554 7440      SZA
3555 7402      HLT          /SMA SZA DID NOT SKIP OR AC
              /NOT CLEARED TO 0000

/GROUP 2 OPERATE TEST 9
3556 7300      CLL CLA      /LINK=0
3557 1052      TAU K5252    /AC=5252
3560 7620      CLA SNL     /TEST COMBINATION
3561 7440      SZA
3562 7402      HLT          /SNL SKIPPED OR AC NOT CLEARED
              /AC AND LINK SHOULD EQUAL ZERO

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/GROUP 2 OPERATE TEST 10
3563 7320      CLA CLL CML
3564 1053      TAU K2525      /AC=2525 LINK=1
3565 7620      CLA SNL      /TEST COMBINATION
3566 7402      HLT          /SNL DID NOT SKIP
                          /LINK SHOULD EQUAL ONE
3567 7440      SZA
3570 7402      HLT          /CLA SNL DID NOT CLEAR AC
                          /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 11
3571 7300      CLA CLL      /AC=0000 LINK=0
3572 7520      SMA SNL      /TEST COMBINATION
3573 7440      SZA
3574 7402      HLT          /SMA SNL SKIPPED, AC AND LINK
                          /SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 12
3575 7320      CLA CLL CML      /AC=0000 LINK=1
3576 7520      SMA SNL      /TEST COMBINATION
3577 7402      HLT          /SNL SHOULD HAVE SKIPPED, LINK = 1

/GROUP 2 OPERATE TEST 13
3600 7300      CLA CLL
3601 1034      TAU K4000      /AC=4000 LINK=0
3602 7520      SMA SNL      /TEST COMBINATION
3603 7402      HLT          /SMA SHOULD HAVE SKIPPED
                          /AC=4000

/GROUP 2 OPERATE TEST 14
3604 7320      CLA CLL CML
3605 1034      TAU K4000      /AC=4000 LINK=1
3606 7520      SMA SNL      /TEST COMBINATION
3607 7402      HLT          /SMA SNL SHOULD HAVE SKIPPED
                          /AC=4000 LINK=1

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/GR0UP 2 OPERATE TEST 15
3610 7300      CLA CLL           /AC=0000 LINK=0
3611 7720      CLA SMA SNL        /TEST COMBINATION
3612 7440      SZA
3613 7402      HLT           /SMA SNL SKIPPED, AC AND LINK
                          /SHOULD BE ZERO

/GR0UP 2 OPERATE TEST 16
3614 7320      CLA CLL CML        /AC=0000 LINK=1
3615 7720      CLA SMA SNL        /TEST COMBINATION
3616 7402      HLT           /SNL SHOULD HAVE SKIPPED
                          /LINK=1

3617 7440      SZA
3620 7402      HLT           /CLA SMA SNL DID NOT CLEAR AC
                          /AC SHOULD EQUAL ZERO

/GR0UP 2 OPERATE TEST 17
3621 7300      CLA CLL           /AC=4000 LINK=0
3622 1034      TAD K4000
3623 7720      CLA SMA SNL        /TEST COMBINATION
3624 7402      HLT           /SMA SHOULD HAVE SKIPPED
                          /AC SHOULD EQUAL 0000 LINK=0

3625 7440      SZA
3626 7402      HLT           /CLA SMA SNL DID NOT CLEAR AC
                          /AC SHOULD EQUAL 0000

/GR0UP 2 OPERATE TEST 18
3627 7320      CLA CLL CML        /AC=4000 LINK=1
3630 1034      TAD K4000
3631 7720      CLA SMA SNL        /TEST COMBINATION
3632 7402      HLT           /CLA SMA SNL SHOULD HAVE SKIPPED
                          /AC SHOULD BE 0000 LINK=1

3633 7440      SZA
3634 7402      HLT           /CLA SMA SNL DID NOT CLEAR AC
                          /AC SHOULD BE 0000 LINK=1

/GR0UP 2 OPERATE TEST 19
3635 7300      CLA CLL           /AC=0000 LINK=0
3636 7460      SZA SNL           /TEST COMBINATION
3637 7402      HLT           /SZA SNL DID NOT SKIP
                          /AC=0000

/GR0UP 2 OPERATE TEST 20
3640 7320      CLL CLA CML        /AC=0000 LINK=1
3641 7460      SZA SNL           /TEST COMBINATION
3642 7402      HLT           /SZA SNL DID NOT SKIP
                          /AC=0000 LINK=1

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/GROUP 2 OPERATE TEST 21
3643 7300      CLA CLL
3644 1031      TAD K0400          /AC=0400 LINK=0
3645 7460      SZA SNL          /TEST COMBINATION
3646 7450      SNA
3647 7402      HLT          /SZA SNL SKIPPED
                          /AC=0400 LINK=0

                          NOP
3650 7000      NOP
3651 7000      NOP
3652 7000      NOP
3653 7000      NOP
3654 7000      NOP
                          *3600
/GROUP 2 OPERATE TEST 22
3600 7320      CLA CLL CML
3601 1026      TAD K0040          /AC=0040 LINK=1
3602 7460      SZA SNL          /TEST COMBINATION
3603 7402      HLT          /SZA SNL SHOULD HAVE SKIPPED
                          /LINK=1

/GROUP 2 OPERATE TEST 23
3604 7300      CLA CLL          /AC=0000 LINK=0
3605 7660      CLA SZA SNL      /TEST COMBINATION
3606 7402      HLT          /CLA SZA SNL SHOULD HAVE SKIPPED
                          /AC AND LINK SHOULD EQUAL ZERO

                          SZA
3607 7440      HLT          /CLA SZA SNL DID NOT CLEAR AC
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 24
3611 7320      CLA CLL CML      /AC=0000 LINK=1
3612 7660      CLA SZA SNL      /TEST COMBINATION
3613 7402      HLT          /CLA SZA SNL SHOULD HAVE SKIPPED
                          /AC=0000 LINK=1

                          SZA
3614 7440      HLT          /CLA SZA SNL DID NOT CLEAR AC
                          /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 25
3616 7320      CLA CLL CML
3617 1030      TAD K0200          /AC=0200 LINK=1
3620 7660      CLA SZA SNL      /TEST COMBINATION OR
3621 7402      HLT          /CLA SZA SNL SHOULD HAVE SKIPPED
                          /LINK=1

                          SZA
3622 7440      HLT          /CLA SZA SNL DID NOT CLEAR AC
                          /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 26
3624 7300      CLA CLL
3625 1033      TAD K2000          /AC=2000 LINK=0
3626 7660      CLA SZA SNL      /TEST COMBINATION
3627 7440      SZA
3630 7402      HLT          /CLA SZA SNL FAILED, AC AND
                          /LINK SHOULD EQUAL ZERO

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3631 7300
3632 7560
3633 7402
/GROUP 2 OPERATE TEST 27
CLA CLL /AC=0000 LINK=0
SMA SZA SNL /TEST COMBINATION
MLT /SMA SZA SNL SHOULD HAVE SKIPPED
/AC=0000 LINK=0

3634 7320
3635 1050
3636 7560
3637 7402
/GROUP 2 OPERATE TEST 28
CLA CLL CML
TAD K3777 /AC=3777 LINK=1
SMA SZA SNL /TEST COMBINATION
MLT /SMA SZA SNL SHOULD HAVE SKIPPED
/AC=3777 LINK=1

3640 7300
3641 1034
3642 7560
3643 7402
/GROUP 2 OPERATE TEST 29
CLA CLL
TAD K4000 /AC=4000 LINK=0
SMA SZA SNL /TEST COMBINATION
MLT /SMA SZA SNL SHOULD HAVE SKIPPED
/AC=4000 LINK=0

3644 7300
3645 1050
3646 7560
3647 7450
3650 7402
/GROUP 2 OPERATE TEST 30
CLA CLL
TAD K3777 /AC=3777 LINK=0
SMA SZA SNL /TEST COMBINATION
SNA
MLT /SMA SZA SNL SHOULD NOT HAVE
/SKIPPED, AC=3777 LINK=0
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/GROUP 2 OPERATE TEST 31
3651 7300   CLA CLL           /AC=0000 LINK=0
3652 7760   CLA SMA SZA SNL /TEST COMBINATION
3653 7402   HLT           /CLA SMA SZA SNL SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0000
3654 7440   SZA
3655 7402   HLT           /AC NOT ZERO AFTER CLA SMA SZA SNL
                               /AC SHOULD BE 0000 LINK=0

/GROUP 2 OPERATE TEST 32
3656 7320   CLA CLL CML
3657 1050   TAD K3777           /AC=3777 LINK=1
3660 7760   CLA SMA SZA SNL /TEST COMBINATION
3661 7402   HLT           /CLA SMA SZA SNL DID NOT SKIP
                               /AC SHOULD BE 0000 LINK=1
3662 7440   SZA
3663 7402   HLT           /CLA SMA SZA SNL DID NOT CLEAR AC
                               /AC SHOULD EQUAL 0000 LINK=1

/GROUP 2 OPERATE TEST 33
3664 7300   CLA CLL
3665 1034   TAD K4000           /AC=4000 LINK=0
3666 7760   CLA SMA SZA SNL /TEST COMBINATION
3667 7402   HLT           /CLA SMA SZA SNL SHOULD HAVE SKIPPED
                               /AC SHOULD BE 0000, LINK=0
3670 7440   SZA
3671 7402   HLT           /CLA SMA SZA SNL DID NOT CLEAR AC
                               /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 34
3672 7300   CLA CLL
3673 1050   TAD K3777           /AC=3777 LINK=0
3674 7760   CLA SMA SZA SNL /TEST COMBINATION
3675 7440   SZA
3676 7402   HLT           /CLA SMA SZA SNL FAILED, AC
                               /SHOULD BE ZERO, LINK=0

/GROUP 2 OPERATE TEST 35
3677 7300   CLA CLL           /AC=0000 LINK=0
3700 7410   SKP           /TEST INSTRUCTION
3701 7402   HLT           /SKIP FAILED
                               /AC AND LINK EQUAL ZERO

/GROUP 2 OPERATE TEST 36
3702 7320   CLA CLL CML       /AC=0000 LINK=1
3703 7410   S_K           /TEST INSTRUCTION
3704 7402   HLT           /SKIP FAILED
                               /AC=0000 LINK=1

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/GROUP 2 OPERATE TEST 37
3705 7320      CLA CLL CML
3706 1050      TAD K3777          /AC=3777 LINK=1
3707 7410      SKP          /TEST INSTRUCTION
3710 7402      HLT          /SKIP FAILED
                          /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 38
3711 7300      CLA CLL
3712 1050      TAD K3777          /AC=3777 LINK=0
3713 7410      SKP          /TEST INSTRUCTION
3714 7402      HLT          /SKIP FAILED
                          /AC=3777 LINK=0

/GROUP 2 OPERATE TEST 39
3715 7200      CLA
3716 1050      TAD K3777          /AC=3777
3717 7710      CLA SPA          /TEST COMBINATION
3720 7402      HLT          /CLA SPA DID NOT SKIP, AC
                          /SHOULD BE ZERO

3721 7440      SZA
3722 7402      HLT          /CLA SPA DID NOT CLEAR AC
                          /AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 40
3723 7200      CLA
3724 1034      TAD K4000          /AC=4000
3725 7710      CLA SPA          /TEST COMBINATION
3726 7440      SZA
3727 7402      HLT          /CLA SPA FAILED, AC SHOULD
                          /EQUAL 0000

/GROUP 2 OPERATE TEST 41
3730 7240      CLA CMA          /AC=7777
3731 7650      CLA SNA          /TEST COMBINATION
3732 7402      HLT          /CLA SNA DID NOT SKIP
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 42
3733 7200      CLA          /AC=0000
3734 7650      CLA SNA          /TEST COMBINATION
3735 7440      SZA
3736 7402      HLT          /CLA SNA FAILED
                          /AC SHOULD EQUAL 0000

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3737 7200
3740 7550
3741 7440
3742 7402
/GROUP 2 OPERATE TEST 43
CLA /AC=0000
SPA SNA /TEST COMBINATION (AND)
SZA
HLT /SPA SNA SKIPPED
/AC=0000

3743 7200
3744 1050
3745 7550
3746 7402
/GROUP 2 OPERATE TEST 44
CLA
TAD K3777 /AC=3777
SPA SNA /TEST COMBINATION (AND)
HLT /SPA SNA FAILED TO SKIP
/AC=3777

3747 7200
3750 1034
3751 7550
3752 7450
3753 7402
/GROUP 2 OPERATE TEST 45
CLA
TAD K4000 /AC=4000
SPA SNA /TEST COMBINATION (AND)
SNA
HLT /SPA SNA SKIPPED,
/AC=4000

3754 7200
3755 7750
3756 7440
3757 7402
/GROUP 2 OPERATE TEST 46
CLA /AC=0000
CLA SPA SNA /TEST COMBINATION (AND)
SZA
HLT /CLA SPA SNA FAILED,
/AC SHOULD BE 0000

3760 7200
3761 1050
3762 7750
3763 7402
/GROUP 2 OPERATE TEST 47
CLA
TAD K3777 /AC=3777
CLA SPA SNA /TEST COMBINATION (AND)
HLT /CLA SPA SNA DID NOT SKIP
/AC SHOULD BE 0000

3764 7440
3765 7402
SZA
HLT /CLA SPA SNA DID NOT CLEAR THE AC
/AC SHOULD EQUAL 0000

3766 7200
3767 1034
3770 7750
3771 7440
3772 7402
/GROUP 2 OPERATE TEST 48
CLA
TAD K4000 /AC=4000
CLA SPA SNA /TEST COMBINATION (AND)
SZA
HLT /CLA SPA SNA FAILED
/AC SHOULD EQUAL ZERO

3773 7000
3774 7000
3775 7000
3776 7000
3777 7000
4000
NOP
NOP
NOP
NOP
NOP
*4000

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PAUSE

UUCG

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0001      0001      E*U*1
              /INSTRUCTION TEST - TAPE 4
              /GROUP 2 OPERATE TEST 49
0001      7300      CLA CLL
0002      1052      TAD K5252          /AC=5252 LINK=0
0003      7630      CLA SZL          /TEST COMBINATION
0004      7402      HLT              /CLA SZL DID NOT SKIP
              /AC AND LINK SHOULD BE 0
0005      7440      SZA
0006      7402      HLT              /CLA SZL DID NOT CLEAR AC
              /AC SHOULD BE ZERO, LINK=0

              /GROUP 2 OPERATE TEST 50
0007      7360      CLA CLL CML CMA /AC=7777 LINK=1
0010      7630      CLA SZL          /TEST COMBINATION (AND)
0011      7440      SZA
0012      7402      HLT              /CLA SZL FAILED, AC SHOULD
              /BE 0000, LINK=1

              /GROUP 2 OPERATE TEST 51
0013      7300      CLA CLL
0014      1050      TAD K3777          /AC=3777 LINK=0
0015      7530      SPA SZL          /TEST COMBINATION (AND)
0016      7402      HLT              /SPA SZL DID NOT SKIP
              /AC=3777 LINK=0

              /GROUP 2 OPERATE TEST 52
0017      7320      CLA CLL CML
0020      1050      TAD K3777          /AC=3777 LINK=1
0021      7530      SPA SZL          /TEST COMBINATION (AND)
0022      7450      SNA
0023      7402      HLT              /SPA SZL SKIPPED
              /AC=3777 LINK=1

              /GROUP 2 OPERATE TEST 53
0024      7300      CLA CLL
0025      1034      TAD K4000          /AC=4000 LINK=0
0026      7530      SPA SZL          /TEST COMBINATION (AND)
0027      7500      SMA
0030      7402      HLT              /SPA SZL SKIPPED
              /AC=4000 LINK=0

              /GROUP 2 OPERATE TEST 54
0031      7300      CLA CLL
0032      1050      TAD K3777          /AC=3777 LINK=0
0033      7730      CLA SPA SZL      /TEST COMBINATION (AND)
0034      7402      HLT              /CLA SPA SZL SHOULD HAVE SKIPPED
              /AC SHOULD BE 0000, LINK=0
0035      7440      SZA
0036      7402      HLT              /CLA SPA SZL DID NOT CLEAR THE AC
              /AC SHOULD BE 0000

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/GROUP 2 OPERATE TEST 55
0037 7320      CLA CLL CML
0040 1034      TAD K3777          /AC=3777 LINK=1
0041 7730      CLA SPA SZL      /TEST COMBINATION (AND)
0042 7440      SZA
0043 7402      HLT          /CLA SPA SZL FAILED
                          /AC SHOULD EQUAL 0000 LINK=1

/GROUP 2 OPERATE TEST 56
0044 7300      CLA CLL
0045 1034      TAD K4000          /AC=4000 LINK=0
0046 7730      CLA SPA SZL      /TEST COMBINATION (AND)
0047 7440      SZA
0050 7402      HLT          /CLA SPA SZL FAILED
                          /AC SHOULD EQUAL 0000 LINK=0

/GROUP 2 OPERATE TEST 57
0051 7300      CLA CLL
0052 1034      TAD K4000          /AC=4000 LINK=0
0053 7470      SNA SZL        /TEST COMBINATION (AND)
0054 7402      HLT          /SNA SZL DID NOT SKIP
                          /AC = 4000 LINK=0

/GROUP 2 OPERATE TEST 58
0055 7320      CLA CLL CML
0056 1034      TAD K4000          /AC=4000 LINK=1
0057 7470      SNA SZL        /TEST COMBINATION (AND)
0060 7420      SNL
0061 7402      HLT          /SNA SZL SKIPPED
                          /AC=4000 LINK=1

/GROUP 2 OPERATE TEST 59
0062 7300      CLA CLL          /AC=0000 LINK=0
0063 7470      SNA SZL        /TEST COMBINATION (AND)
0064 7430      SZL
0065 7402      HLT          /SNA SZL SKIPPED
                          /AC=0000 LINK=0

/GROUP 2 OPERATE TEST 60
0066 7320      CLA CLL CML
0067 1034      TAD K4000          /AC=4000 LINK=1
0070 7670      CLA SNA SZL      /TEST COMBINATION (AND)
0071 7440      SZA
0072 7402      HLT          /CLA SNA SZL FAILED, AC SHOULD
                          /BE 0000, LINK=1

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/GROUP 2 OPERATE TEST 61
0073 7300      CLA CLL
0074 1034      TAU K4000          /AC=4000 LINK=0
0075 7670      CLA SNA SZL      /TEST COMBINATION (AND)
0076 7402      HLT          /CLA SNA SZL DID NOT SKIP
                                /AC SHOULD BE 0000, LINK=0

0077 7440      SZA
0100 7402      HLT          /CLA SNA SZL DID NOT CLEAR AC
                                /AC AND LINK SHOULD BE ZERO

/GROUP 2 OPERATE TEST 62
0101 7300      CLA CLL          /AC=0000 LINK=0
0102 7670      CLA SNA SZL      /TEST COMBINATION (AND)
0103 7440      SZA
0104 7402      HLT          /CLA SNA SZL FAILED, AC SHOULD
                                /BE 0000, LINK=0

/GROUP 2 OPERATE TEST 63
0105 7300      CLA CLL
0106 1050      TAU K3777          /AC=3777 LINK=0
0107 7570      SPA SNA SZL      /TEST COMBINATION (AND)
0110 7402      HLT          /SPA SNA SZL DID NOT SKIP
                                /AC=3777 LINK=0

/GROUP 2 OPERATE TEST 64
0111 7320      CLA CLL CML
0112 1050      TAU K3777          /AC=3777 LINK=1
0113 7570      SPA SNA SZL      /TEST COMBINATION (AND)
0114 7420      SNL
0115 7402      HLT          /SPA SNA SZL SKIPPED
                                /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 65
0116 7300      CLA CLL          /AC=0000 LINK=0
0117 7570      SPA SNA SZL      /TEST COMBINATION (AND)
0120 7430      SZL
0121 7402      HLT          /SPA SNA SZL SKIPPED
                                /AC=0000 LINK=0

/GROUP 2 OPERATE TEST 66
0122 7300      CLA CLL
0123 1034      TAU K4000          /AC=4000 LINK=0
0124 7570      SPA SNA SZL      /TEST COMBINATION (AND)
0125 7430      SZL
0126 7402      HLT          /SPA SNA SZL SKIPPED
                                /AC=4000 LINK=0

```



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/GRUOP 2 OPERATE TEST 67
0127 7300      CLA CLL
0130 1050      TAD K3777          /AC=3777 LINK=0
0131 7770      CLA SPA SNA SZL /TEST COMBINATION (AND)
0132 7402      HLT          /CLA SPA SNA SZL DID NOT SKIP
                          /AC AND LINK SHOULD BE ZERO

0133 7440      SZA
0134 7402      HLT          /CLA SPA SNA SZL DID NOT CLEAR AC
                          /AC AND LINK SHOULD BE ZERO

```

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/GRUOP 2 OPERATE TEST 68
0135 7320      CLA CLL CML
0136 1050      TAD K3777          /AC=3777 LINK=1
0137 7770      CLA SPA SNA SZL /TEST COMBINATION (AND)
0140 7440      SZA
0141 7402      HLT          /CLA SPA SNA SZL FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD EQUAL ONE

```

```

/GRUOP 2 OPERATE TEST 69
0142 7300      CLA CLL
0143 1034      TAD K4000          /AC=4000 LINK=0
0144 7770      CLA SPA SNA SZL /TEST COMBINATION (AND)
0145 7440      SZA
0146 7402      HLT          /CLA SPA SNA SZL FAILED, AC SHOULD
                          /BE 0000, LINK SHOULD EQUAL ZERO

```

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/GRUOP 2 OPERATE TEST 70
0147 7300      CLA CLL          /AC=0000 LINK=0
0150 7770      CLA SPA SNA SZL /TEST COMBINATION (AND)
0151 7440      SZA
0152 7402      HLT          /CLA SPA SNA SZL FAILED, AC AND
                          /LINK SHOULD BE ZERO,

```

```

/GRUOP 2 OPERATE TEST 71
0153 7200      CLA
0154 1052      TAD K5252          /AC=5252
0155 7604      CLA OSR          /TEST COMBINATION
0156 7040      CMA
0157 7440      SZA
0160 7402      HLT          /CLA OSR FAILED
                          /AC SHOULD BE 0000

```

```

/GROUP 2 OPERATE TEST 72
0161 7200      CLA
0162 1834      TAD K4000      /AC=4000
0163 7504      SMA OSR      /TEST COMBINATION
0164 7402      HLT      /SMA OSR FAILED TO SKIP
                        /AC SHOULD BE 7777

0165 7040      CMA
0166 7440      SZA
0167 7402      HLT      /SMA OSR FAILED
                        /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 73
0170 7200      CLA      /AC=0000
0171 7444      SZA OSR      /TEST COMBINATION
0172 7402      HLT      /SZA OSR FAILED TO SKIP
                        /AC SHOULD BE 0000

0173 7040      CMA
0174 7440      SZA
0175 7402      HLT      /SZA OSR FAILED,
                        /AC SHOULD BE 0000

0176 7000      NOP
0177 7000      NOP
0200 7000      NOP
4200 4200

*4200
/GROUP 2 OPERATE TEST 74
4200 7320      CLL CML CLA      /LINK=1
4201 7424      SNL OSR      /TEST COMBINATION
4202 7402      HLT      /SNL OSR FAILED TO SKIP
                        /AC SHOULD BE 7777

4203 7040      CMA
4204 7440      SZA
4205 7402      HLT      /SNL OSR FAILED,
                        /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 75
4206 7300      CLA CLL
4207 1250      TAD K3777      /AC=3777 LINK=0
4210 7764      CLA SMA SZA SNL OSR      /TEST COMBINATION
4211 7450      SNA
4212 7402      HLT      /CLA SMA SZA SNL OSR FAILED,
                        /AC SHOULD BE 7777, LINK=0

4213 7040      CMA
4214 7440      SZA
4215 7402      HLT      /CLA SMA SZA SNL OSR FAILED
                        /AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 76
4216 7200      CLA      /AC=0000
4217 7414      SKP OSR      /TEST COMBINATION
4220 7402      HLT      /SKP OSR DID NOT SKIP
                        /AC SHOULD BE 7777

4221 7040      CMA
4222 7440      SZA
4223 7402      HLT      /SKP OSR FAILED
                        /AC SHOULD EQUAL ZERO

```

```

/GROUP 2 OPERATE TEST 77
4224 7200      CLA      /AC=0000
4225 7514      SPA OSR   /TEST COMBINATION
4226 7402      HLT      /SPA OSR DID NOT SKIP
                          /AC SHOULD EQUAL 7777

                          CMA
4227 7040      SZA
4230 7440      HLT      /SPA OSR FAILED,
4231 7402      /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 78
4232 7200      CLA
4233 1031      TAD K0400   /AC=0400
4234 7454      SNA OSR   /TEST COMBINATION
4235 7402      HLT      /SNA OSR DID NOT SKIP
                          /AC SHOULD BE 7777

                          CMA
4236 7040      SZA
4237 7440      HLT      /SNA OSR FAILED
4240 7402      /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 79
4241 7300      CLA CLL   /LINK=0 AC=0000
4242 7434      SZL OSR  /TEST COMBINATION
4243 7402      HLT      /SZL OSR DID NOT SKIP
                          /AC SHOULD BE 7777

                          CMA
4244 7040      SZA
4245 7440      HLT      /SZL OSR FAILED
4246 7402      /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 80
4247 7300      CLA CLL
4250 1050      TAD K3777   /AC=3777 LINK=0
4251 7774      CLA SPA SNA SZL OSR /TEST COMBINATION (AND)
4252 7402      HLT      /ABOVE MESS DID NOT SKIP
                          /AC SHOULD BE 7777

                          CMA
4253 7040      SZA
4254 7440      HLT      /CLA SPA SNA SZL OSR FAILED
4255 7402      /AC SHOULD BE 0000

```

4256	7200	/AND TEST 1		
4257	0051	CLA		
4260	7440	AND K7777		
4261	7402	SZA		/AND FAILED AC SHOULD
		HLT		/BE 0000
4262	7240	/AND TEST 2		
4263	0020	CLA CMA		
4264	7440	AND K0000		
4265	7402	SZA		/AND FAILED
		HLT		/AC SHOULD EQUAL 0000
4266	7320	/AND TEST 3		
4267	1051	CLA CLL CML		
4270	0051	TAD K7777		/AC=7777 LINK=1
4271	7040	AND K7777		
4272	7430	CMA		
4273	7440	SZL		
4274	7402	SZA		/AND FAILED, AC SHOULD BE
		HLT		/0000, LINK SHOULD EQUAL ONE
4275	7300	/AND TEST 4		
4276	1053	CLA CLL		
4277	0052	TAD K2525		/AC=2525 LINK=0
4300	7420	AND K5252		
4301	7440	SNL		
4302	7402	SZA		/AND FAILED, AC SHOULD BE
		HLT		/0000, LINK SHOULD BE 0
4303	7300	/AND TEST 5		
4304	1052	CLA CLL		
4305	0053	TAD K5252		/AC=5252 LINK=0
4306	7420	AND K2525		
4307	7440	SNL		
4310	7402	SZA		/AND FAILED, AC SHOULD BE
		HLT		/0000, LINK SHOULD BE 0

```

4311 7300
4312 1035
4313 0052
4314 7041
4315 1052
4316 7430
4317 7440
4320 7402

/AND TEST 6
CLA CLL
TAD K7776 /AC=7776 LINK=0
AND K5252 /TEST INSTRUCTION
CJA /AC=2526
TAU K5252 /AC=0000 LINK=1
SZL
SZA
HLT

/AND FAILURE, AC SHOULD BE
/0000, LINK SHOULD BE ONE

4321 7300
4322 1053
4323 0053
4324 7041
4325 1053
4326 7430
4327 7440
4330 7402

/AND TEST /
CLA CLL
TAD K2525 /AC=2525 LINK=0
AND K2525 /TEST INSTRUCTION
CJA /AC=5253
TAU K2525 /AC=0000 LINK = 1
SZL
SZA
HLT

/AND FAILED, AC SHOULD BE
/0000, LINK SHOULD BE ONE,

4331 7200
4332 1351
4333 7001
4334 3351
4335 1351
4336 7640
4337 5147
4340 1352
4341 3351

/CHECK FOR BELL
CLA
TAD BLCNT
IAC
UGA BLCNT
TAU BLCNT
SZA CLA
JMP START+3
TAU BLCNT
UGA BLCNT

/RING BELL
TAU BEL
TLS
TSF
JMP ,-1
ICF
JMP START+3

4342 1350
4343 6046
4344 6041
4345 5344
4346 6042
4347 5147

4350 0207
4351 7600
4352 7600

BEL, 0207
BLCNT, -200
BLCNT, -200

```

5

THERE ARE 6 ERRORS

## SYMBOL TABLE

BLL	4350
BLCNT	4351
BLCON	4352
CLL1	0447
CLL11	0453
CMLT1	0457
E	4000
HALT	0006
K0000	0020
K0001	0021
K0002	0022
K0003	0064
K0004	0023
K0007	0065
K0010	0024
K0017	0067
K0020	0025
K0037	0070
K0040	0026
K0067	0066
K0077	0071
K0100	0027
K0177	0072
K0200	0030
K0377	0073
K0400	0031
K0777	0074
K1000	0032
K1777	0075
K2000	0033
K2525	0053
K3777	0050
K4000	0034
K2252	0052
K2777	0047
K0000	0054
K0777	0046
K1000	0055
K1377	0045
K1400	0056
K1577	0044
K1600	0057
K1677	0043
K1700	0076
K1737	0042
K1740	0060
K1757	0041
K1760	0061
K1767	0040
K1770	0062
K1773	0037
K1774	0063
K1775	0036

SYMBOL TABLE

K/776	0035
K/777	0051
NOOP	0007
START	0144
U	3056

## SYMBOL TABLE

HALT	0006
NOOP	0007
K0000	0020
K0001	0021
K0002	0022
K0004	0023
K0010	0024
K0020	0025
K0040	0026
K0100	0027
K0200	0030
K0400	0031
K1000	0032
K2000	0033
K4000	0034
K/7/6	0035
K/7/5	0036
K/7/3	0037
K/7/67	0040
K/7/57	0041
K/7/37	0042
K/677	0043
K/577	0044
K/377	0045
K0777	0046
K5777	0047
K3777	0050
K/777	0051
K252	0052
K2525	0053
K0000	0054
K/000	0055
K/400	0056
K/600	0057
K/740	0060
K/760	0061
K/770	0062
K/774	0063
K0003	0064
K0007	0065
K0067	0066
K0017	0067
K0037	0070
K0077	0071
K0177	0072
K0377	0073
K0777	0074
K1777	0075
K/700	0076
START	0144
ULL1	0447
ULL11	0453
UMLT1	0457



SYMBOL TABLE

U	3056
L	4000
BEL	4350
BLCNT	4351
BLCON	4352

