

IDENTIFICATION

Product Code: MAINDEC-8/I-D01C-D
Product Name: Instruction Test 1
Date Created: December 10, 1969
Maintainer: Diagnostic Group

MAINDEC-8/I-D01C-D

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 0000-4421. 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 = 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: None

8. MISCELLANEOUS

8.1 Execution Time

256 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 1 operate instruction test. All possible combinations.

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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	*0	0
0001	5001		JMP 1
0002	0002		0002
0003	0003		0003
0004	0000		0
0005	0000		0000
0006	7402	HALT,	HLT
0007	7200	NOOP,	NOP
0010	0000		0

/CONSTANTS AND VARIABLES

0020	0020	*20	
0020	0000	K0000,	0000
0021	0001	K0001,	0001
0022	0002	K0002,	0002
0023	0004	K0004,	0004
0024	0010	K0010,	0010
0025	0020	K0020,	0020
0026	0040	K0040,	0040
0027	0100	K0100,	0100
0030	0200	K0200,	0200
0031	0400	K0400,	0400
0032	1000	K1000,	1000
0033	2000	K2000,	2000
0034	4000	K4000,	4000
0035	7776	K7776,	7776
0036	7775	K7775,	7775
0037	7773	K7773,	7773
0040	7767	K7767,	7767
0041	7757	K7757,	7757
0042	7737	K7737,	7737
0043	7677	K7677,	7677
0044	7577	K7577,	7577
0045	7377	K7377,	7377
0046	6777	K6777,	6777
0047	5777	K5777,	5777
0050	3777	K3777,	3777
0051	7777	K7777,	7777
0052	5252	K5252,	5252
0053	2525	K2525,	2525
0054	6000	K6000,	6000
0055	7000	K7000,	7000
0056	7400	K7400,	7400
0057	7600	K7600,	7600
0060	7740	K7740,	7740
0061	7760	K7760,	7760
0062	7770	K7770,	7770
0063	7774	K7774,	7774
0064	0003	K0003,	0003

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 K1177
0146 7402      CLA
                        /AC SHOULD=0
                        /SET SR TO 7777, CONTINUE
                        HLT

      /SKIP TEST
0147 7410      SKP
0150 7402      HLT
                        /SKP FAILED

      /SZA TEST 1
0151 7200      CLA
0152 7440      SZA
0153 7402      HLT
                        /SZA SHOULD HAVE SKIPPED
                        /AC SHOULD EQUAL ZERO

0154 7450      SNA
0155 7410      SKP
0156 7402      HLT
                        /SNA SHOULD NOT HAVE SKIPPED
                        /AC SHOULD EQUAL ZERO

      /SZA TEST 2
0157 7200      CLA
0160 1034      TAD K4000
0161 7440      SZA
0162 7410      SKP
0163 7402      HLT
                        /SZA SHOULD NOT HAVE SKIPPED
                        /AC SHOULD EQUAL 4000

0164 7450      SNA
0165 7402      HLT
                        /SNA SHOULD HAVE SKIPPED
                        /AC SHOULD EQUAL 4000

      /SZA TEST 3
0166 7200      CLA
0167 1033      TAD K2000
0170 7440      SZA
0171 7410      SKP
0172 7402      HLT
                        /SZA SHOULD NOT HAVE SKIPPED
                        /AC SHOULD EQUAL 2000

0173 7450      SNA
0174 7402      HLT
                        /SNA SHOULD HAVE SKIPPED
0175 7000      NOP
                        /AC SHOULD EQUAL 2000
0176 7000      NOP
0177 7000      NOP

```

```
0200 *200
0200 7200 /SZA TEST 4
0201 1032 CLA
0202 7440 TAD K1000
0203 7410 SZA
0204 7402 SKP
HLT /SZA SHOULD NOT HAVE SKIPPED
/AC SHOULD EQUAL 1000

0205 7 SNA
0206 7402 HLT
/SNA SHOULD HAVE SKIPPED
/AC SHOULD EQUAL 10000

/SZA TEST 5
0207 7200 CLA
0210 1031 TAD K0900
0211 7440 SZA
0212 7410 SKP
0213 7402 HLT
/SZA SHOULD NOT HAVE SKIPPED
/AC SHOULD EQUAL 0400

0214 7450 SNA
0215 7402 HLT
/SNA SHOULD HAVE SKIPPED
/AC SHOULD EQUAL 0400

/SZA TEST 6
0216 7200 CLA
0217 1030 TAD K0200
0220 7440 SZA
0221 7410 SKP
0222 7402 HLT
/SZA SHOULD NOT HAVE SKIPPED
/AC SHOULD EQUAL 0200

0223 7450 SNA
0224 7402 HLT
/SNA SHOULD HAVE SKIPPED
/AC SHOULD EQUAL 0200

/SZA TEST 7
0225 7200 CLA
0226 1027 TAD K0100
0227 7440 SZA
0230 7410 SKP
0231 7402 HLT
/SZA SHOULD NOT HAVE SKIPPED
/AC SHOULD EQUAL 0100

0232 7450 SNA
0233 7402 HLT
/SNA SHOULD HAVE SKIPPED
/AC SHOULD EQUAL 0100
```

```

/SZA TEST 8
0234 7200      CLA
0235 1026      TAD K0040
0236 7440      SZA
0237 7410      SKP
0240 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0040

0241 7450      SNA
0242 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0040

/SZA TEST 9
0243 7200      CLA
0244 1025      TAD K0020
0245 7440      SZA
0246 7410      SKP
0247 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0020

0250 7450      SNA
0251 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0020

/SZA TEST 10
0252 7200      CLA
0253 1024      TAD K0010
0254 7440      SZA
0255 7410      SKP
0256 7402      HLT          /SZA SHOULD NOT HAVE SKIPPED
                               /AC SHOULD EQUAL 0010

0257 7450      SNA
0260 7402      HLT          /SNA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 0010

/SZA TEST 11
0261 7200      CLA
0262 1023      TAD K0004
0263 7440      SZA
0264 7410      SKP
0265 7402      HLT          /SZA 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      TAD 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      TAD 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      TAD K3777
0310 7510      SPA
0311 7402      HLT          /SPA SHOULD HAVE SKIPPED
                                /AC SHOULD EQUAL 3777
```

```

/SPA TEST 2
0312 7200      CLA
0313 1034      TAD 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      TAD K3777
0321 7500      SMA
0322 7410      SKP
0323 7402      HLT          /SMA SHOULD NOT HAVE SKIPPED
                                /AC SHOULD EQUAL 3777
```

```

/SMA TEST 2
0324 7200      CLA
0325 1034      TAD K4000
0326 7500      SMA
0327 7402      HLT          /SMA SHOULD HAVE SKIPPED
                               /AC SHOULD EQUAL 4000

/CMA TEST 1
0330 7200      CLA
0331 1051      TAD K7777
0332 7040      CMA
0333 7440      SZA
0334 7402      HLT          /CMA DID NOT COMPLEMENT AC
                               /AC SHOULD EQUAL 0000

/CMA - TAD TEST 1
0335 7200      CLA
0336 1053      TAD K2525
0337 7040      CMA
0340 7450      SNA
0341 7402      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

/CMA - TAD TEST 2
0346 7200      CLA
0347 1052      TAD K5252
0350 7040      CMA
0351 7450      SNA
0352 7402      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
```



```
0415 7200 /SZL TEST 2
0416 7100 CLA
0417 7020 CLL /CLEAR LINK
0420 1034 CML /COMPLEMENT LINK
0421 7004 TAD K4000
0422 7430 RAL /SET LINK SAFETY
0423 7410 SZL
0424 7402 SKP
HLT /SZL SHOULD NOT HAVE SKIPPED
/LINK SHOULD EQUAL ONE
```

```
0425 7200 /SNL TEST 1
0426 7100 CLA
0427 7004 CLL /CLEAR LINK
0430 7420 RAL /CLEAR LINK SAFETY
0431 7410 SNL
0432 7402 SKP
HLT /SNL SHOULD NOT HAVE SKIPPED
/LINK SHOULD EQUAL ZERO
```

```
0433 7200 /SNL TEST 2
0434 7100 CLA
0435 7020 CLL /CLEAR LINK
0436 1034 CML /COMPLEMENT LINK
0437 7004 TAD K4000
0440 7420 RAL /SET LINK SAFETY
0441 7402 SNL
HLT /SNL SHOULD HAVE SKIPPED
/LINK SHOULD EQUAL ONE
```

```
/CLL TEST 1
0442 7200 CLA
0443 1034 TAD K4000
0444 7004 RAL /SET LINK
0445 7420 SNL
0446 5253 JMP CLL11 /CANNOT SET LINK WITH RAL
                                     /TRY A CML
0447 7100 CLL1, CLL
0450 7430 SZL
0451 7402 HLT /CLL DID NOT CLEAR LINK
                                     /LINK SHOULD EQUAL ONE
0452 5257 JMP ,+5
0453 7020 CLL11, CML /SET LINK
0454 7420 SNL
0455 7402 HLT /CANNOT SET LINK WITH
                                     /RAL OR CML, CANNOT
                                     /PERFORM CLL TEST 1
0456 5247 JMP CLL1

/CML TEST 1
0457 7100 CML1, CLL
0460 7430 SZL
0461 7402 HLT /CLL DID NOT CLEAR LINK
0462 7020 CML
0463 7420 SNL
0464 7402 HLT /CML DID NOT SET LINK
0465 7020 CML
0466 7430 SZL
0467 7402 HLT /CML DID NOT RESET LINK

/CLA TEST 1 (OPERATE GROUP 2)
0470 7200 CLA
0471 1051 TAD K7777
0472 7600 7600
0473 7440 SEA
0474 7402 HLT /CLA (7600) DID NOT CLEAR AC
                                     /AC SHOULD EQUAL 0000

/OSR TEST 1
0475 7200 CLA
0476 7404 OSR
0477 7040 CMA
0500 7440 SEA
0501 7402 HLT /OSR DID NOT SET AC TO 7777
                                     /AC SHOULD=0
```

/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	TAD K6777	/OPERAND 1
0534	1032	TAD 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	TAD K7377	/OPERAND 1
0542	1031	TAD 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	TAD K7777	/OPERAND 1

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0550 1030
0551 7040
0552 7440
0553 7402

TAD K0200
CMA
SZA
HLT

/OPERAND 2

/TAD ERROR
/AC SHOULD EQUAL 0000

```

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

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

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

0576 7000      NOP
0577 7000      NOP
0600 0600      *600

0600 7200      /TAD TEST 9
0601 1040      CLA
0602 1024      TAD K7767      /OPERAND 1
0603 7040      TAD K0010      /OPERAND 2
0604 7440      CMA
0605 7402      SZA
                        HLT
                        /TAD ERROR
                        /AC SHOULD EQUAL 0000
```


/TAD TEST 14
0637 7200 CLA
0640 7100 CLL
0641 1054 TAD K6000 /OPERAND 1
0642 1033 TAD K2000 /OPERAND 2
0643 7430 SZL
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 SZL
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 SZL
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 SZL
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 SZL
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

0704	1060	TAD K7740	/OPERAND 1
0705	1026	TAD 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	TAD K7760	/OPERAND 1
0714	1025	TAD 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	TAD K7770	/OPERAND 1
0723	1024	TAD 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	TAD K7774	/OPERAND 1
0732	1023	TAD 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	TAD K7776	/OPERAND 1
0741	1022	TAD 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

```

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/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

```

/TAD TEST 28

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

CLA
 CLL
 TAD K6777
 TAD K0400
 TAD K0400
 CMA
 SNL
 SZA
 HLT

/OPERAND 1
 /OPERAND 2
 /OPERAND 3

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

/TAD TEST 29

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

CLA
 CLL
 TAD K7377
 TAD K0200
 TAD K0200
 CMA
 SNL
 SZA
 HLT

/OPERAND 1
 /OPERAND 2
 /OPERAND 3

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

/TAD TEST 30

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

CLA
 CLL
 TAD K7577
 TAD K0100
 TAD K0100
 CMA
 SNL
 SZA
 HLT

/OPERAND 1
 /OPERAND 2
 /OPERAND 3

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

/TAD TEST 31

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

CLA
 CLL
 TAD K7677
 TAD K0040
 TAD K0040
 CMA
 SNL
 SZA
 HLT

/OPERAND 1
 /OPERAND 2
 /OPERAND 3

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

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1055 7200      /TAD TEST 32      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

1066 7200      /TAD TEST 33      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

1077 7200      /TAD TEST 34      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

1110 7200      /TAD TEST 35      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
```

```

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

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

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

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

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

1163 7200 /RAR TEST 5          CLA
1164 7100          CLL
1165 7020          CML
1166 1051          TAD 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
1200 7200 /RAR TEST 6          CLA
1201 7100          CLL
1202 7020          CML
1203 1020          TAD K0000          /ROTATE PATTERN
1204 7010          RAR
1205 1050          TAD K5777
1206 7040          CMA
1207 7450          SNA
1210 7450          SZL
1211 7402          HLT          /RAR FAILED AC AND LINK
                                   /SHOULD EQUAL 0000

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

```

1223 7200      /RAR TEST 8
1224 7100      CLA
1225 1033      CLL
1226 7010      TAD K2000      /ROTATE PATTERN
1227 1046      RAR
1228 7040      TAD K0777
1229 7040      CMA
1230 7450      SNA
1231 7430      SZL
1232 7402      HLT
1233 7402      /RAR FAILED AC AND LINK SHOULD
                /EQUAL 0000

```

```

1234 7200      /RAR TEST 9
1235 7100      CLA
1236 1032      CLL
1237 1042      TAD K1000      /ROTATE PATTERN
1238 7010      RAR
1239 1045      TAD K7377
1240 7040      CMA
1241 7450      SNA
1242 7430      SZL
1243 7402      HLT
1244 7402      /RAR FAILED AC AND LINK SHOULD
                /EQUAL 0000

```

```

1245 7200      /RAR TEST 10
1246 7100      CLA
1247 1031      CLL
1248 1041      TAD K0400      /ROTATE PATTERN
1249 7010      RAR
1250 1044      TAD K7577
1251 7040      CMA
1252 7450      SNA
1253 7430      SZL
1254 7402      HLT
1255 7402      /RAR FAILED AC AND LINK
                /SHOULD EQUAL 0000

```

```
1256 7200 /RAR TEST 11 CLA
1257 7100 CLL
1260 1030 TAD K0200 /ROTATE PATTERN
1261 7010 RAR
1262 1043 TAD K7677
1263 7040 CMA
1264 7450 SNA
1265 7430 SZL
1266 7402 HLT /RAR FAILED AC AND LINK
/EQUAL 0000
```

```
1267 7200 /RAR TEST 12 CLA
1270 7100 CLL
1271 1027 TAD K0100 /ROTATE PATTERN
1272 7010 RAR
1273 1042 TAD K7737
1274 7040 CMA
1275 7450 SNA
1276 7430 SZL
1277 7402 HLT /RAR FAILED AC AND LINK
/SHOULD EQUAL 0000
```

```
1300 7200 /RAR TEST 13 CLA
1301 7100 CLL
1302 1026 TAD K0040 /ROTATE PATTERN
1303 7010 RAR
1304 1041 TAD K7757
1305 7040 CMA
1306 7450 SNA
1307 7430 SZL
1310 7402 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	TAD K0020	/ROTATE PATTERN
1314	7010	RAR	
1315	1040	TAD 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	TAD K0010	/ROTATE PATTERN
1325	7010	RAR	
1326	1037	TAD 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	TAD K0004	/ROTATE PATTERN
1336	7010	RAR	
1337	1036	TAD 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	TAD K0002	/ROTATE PATTERN
1347	7010	RAR	
1350	1035	TAD K7776	
1351	7040	CMA	
1352	7450	SNA	
1353	7430	SZL	
1354	7402	HLT	/RAR FAILED AC AND LINK

/SHOULD EQUAL 0000

```

/RAR TEST 18
1355 7200      CLA
1356 7100      CLL
1357 1021      TAD K0001      /ROTATE PATTERN
1360 7010      RAR
1361 1051      TAD K7777
1362 7040      CMA
1363 7450      SNA
1364 7420      SNL
1365 7402      HLT

```

```

/RAR FAILED AC AND LINK
/SHOULD EQUAL 0000

```

```

/RTR TEST 1
1366 7200      CLA
1367 7100      CLL
1370 1022      TAD K0002      /ROTATE PATTERN
1371 7012      RTR
1372 7420      SNL
1373 7402      HLT

```

```

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

```

```

1374 7000      NOP
1375 7000      NOP
1376 7000      NOP
1377 7000      NOP
1400

```

*1400

```

/RTR TEST 2
1400 7200      CLA
1401 7100      CLL
1402 1020      TAD K0000      /ROTATE PATTERN
1403 7012      RTR
1404 7440      SZA
1405 7402      HLT

```

```

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

```

```

/RTR TEST 3
1406 7200      CLA
1407 7100      CLL
1410 1020      TAD K0000      /ROTATE PATTERN
1411 7012      RTR
1412 7430      SZL
1413 7402      HLT

```

```

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

```

```

/RTR TEST 4
1414 7200      CLA
1415 7100      CLL
1416 7020      CML
1417 1020      TAD K0000      /ROTATE PATTERN
1420 7012      RTR
1421 7430      SZL
1422 7402      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	TAD K7777
1427	7012	RTR
1430	7040	CMA
1431	7440	SZA
1432	7402	HLT

/ROTATE PATTERN

/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	TAD K0000
1437	7012	RTR
1440	1047	TAD K5777
1441	7040	CMA
1442	7450	SNA
1443	7430	SZL
1444	7402	HLT

/ROTATE PATTERN

/RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 7

1445	7200	CLA
1446	7100	CLL
1447	1034	TAD K4000
1450	7012	RTR
1451	1046	TAD K0777
1452	7040	CMA
1453	7450	SNA
1454	7430	SZL
1455	7402	HLT

/ROTATE PATTERN

/RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 8

1456	7200	CLA
1457	7100	CLL
1460	1033	TAD K2000
1461	7012	RTR
1462	1045	TAD K7377
1463	7040	CMA
1464	7450	SNA
1465	7430	SZL
1466	7402	HLT

/ROTATE PATTERN

/RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 9
1467 7202 CLA
1470 7100 CLL
1471 1032 TAD K1000 /ROTATE PATTERN
1472 7012 RTR
1473 1044 TAD K7577
1474 7040 CMA
1475 7450 SNA
1476 7430 SZL
1477 7402 HLT /RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 10
1500 7200 CLA
1501 7100 CLL
1502 1031 TAD K0400 /ROTAATE PATTERN
1503 7012 RTR
1504 1043 TAD K7077
1505 7040 CMA
1506 7450 SNA
1507 7430 SZL
1510 7402 HLT /RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 11
1511 7200 CLA
1512 7100 CLL
1513 1030 TAD K0200 /ROTATE PATTERN
1514 7012 RTR
1515 1042 TAD K7737
1516 7040 CMA
1517 7450 SNA
1520 7430 SZL
1521 7402 HLT /RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 12
1522 7200 CLA
1523 7100 CLL
1524 1027 TAD K0100 /ROTATE PATTERN
1525 7012 RTR
1526 1041 TAD K7757
1527 7040 CMA
1530 7450 SNA
1531 7430 SZL
1532 7402 HLT /RTR FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTR TEST 13

1533	7200	CLA	
1534	7100	CLL	
1535	1026	TAD K0040	/ROTATE PATTERN
1536	7012	RTR	
1537	1040	TAD 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	TAD K0020	/ROTATE PATTERN
1547	7012	RTR	
1550	1037	TAD 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	TAD K0010	/ROTATE PATTERN
1560	7012	RTR	
1561	1036	TAD 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	TAD K0004	/ROTATE PATTERN
1570	7012	RTR	
1571	1035	TAD K7776	
1572	7040	CMA	
1573	7450	SNA	
1574	7430	SZL	
1575	7402	HLT	/RTR FAILED AC AND LINK /SHOULD EQUAL 0000

```

1576 7002      NOP
1577 7002      NOP
      1000      *1000
      /RTR TEST 17
1600 7200      CLA
1601 7100      CLL
1602 1022      TAD K0002      /ROTATE PATTERN
1603 7012      RTR
1604 7450      SNA
1605 7420      SNL
1606 7402      HLT      /RTR FAILED, AC SHOULD EQUAL
                        /0000, LINK SHOULD EQUAL ONE

      /RTR TEST 18
1607 7200      CLA
1610 7100      CLL
1611 1021      TAD K0001      /ROTATE PATTERN
1612 7012      RTR
1613 1050      TAD K3777
1614 7040      CMA
1615 7450      SNA
1616 7430      SZL
1617 7402      HLT      /RTR FAILED, AC AND LINK
                        /SHOULD BE ZERO

      /RAL TEST 1
1620 7200      CLA
1621 7100      CLL
1622 1034      TAD K4000      /ROTATE PATTERN
1623 7004      RAL
1624 7430      SZL
1625 7440      SZA
1626 7402      HLT      /RAL FAILED, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ONE,

      /RAL TEST 2
1627 7200      CLA
1630 7100      CLL
1631 1020      TAD K0000      /ROTATE PATTERN
1632 7004      RAL
1633 7420      SNL
1634 7440      SZA
1635 7402      HLT      /RAL FAILED, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

```

```

/RAL TEST 3
1636 7200      CLA
1637 7100      CLL
1640 7020      CML
1641 1020      TAD K0000      /ROTATE PATTERN, LINK=1
1642 7004      RAL
1643 7430      SZL
1644 7402      HLT
/RAL FAILURE, AC SHOULD EQUAL 0001
/LINK SHOULD EQUAL ZERO

/RAL TEST 4
1645 7200      CLA
1646 7100      CLL
1647 7020      CML
1650 1051      TAD K7777      /ROTATE PATTERN, LINK=1
1651 7004      RAL
1652 7040      CMA
1653 7440      SEA
1654 7402      HLT
/RAL FAILURE, LINK SHOULD EQUAL ONE
/AC SHOULD EQUAL 0000

/RAL TEST 5
1655 7200      CLA
1656 7100      CLL
1657 1033      TAD K2000      /ROTATE PATTERN
1660 7004      RAL
1661 1050      TAD K5777
1662 7040      CMA
1663 7450      SNA
1664 7430      SZL
1665 7402      HLT
/RAL FAILURE, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ONE

/RAL TEST 6
1666 7200      CLA
1667 7100      CLL
1670 1032      TAD K1000      /ROTATE PATTERN
1671 7004      RAL
1672 1047      TAD K5777
1673 7040      CMA
1674 7440      SEA
1675 7402      HLT
/RAL FAILURE, AC SHOULD EQUAL 0000
/LINK SHOULD EQUAL ZERO

```

```

/ RAL TEST 7
1676 7200      CLA
1677 7100      CLL
1700 1031      TAD K0400      /ROTATE PATTERN
1721 7004      RAL
1702 1046      TAD K6777
1723 7040      CMA
1704 7450      SNA
1705 7430      SZL
1726 7402      HLT      /RAL FAILURE, AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/ RAL TEST 8
1707 7200      CLA
1710 7100      CLL
1711 1030      TAD K0200      /ROTATE PATTERN
1712 7004      RAL
1713 1045      TAD K7377
1714 7040      CMA
1715 7450      SNA
1716 7430      SZL      /RAL FAILURE AC SHOULD EQUAL 0000
1717 7402      HLT      /LINK SHOULD EQUAL ZERO

/ RAL TEST 9
1720 7200      CLA
1721 7100      CLL
1722 1027      TAD K0100      /ROTATE PATTERN
1723 7004      RAL
1724 1044      TAD K7577
1725 7040      CMA
1726 7450      SNA
1727 7430      SZL      /RAL FAILURE AC SHOULD EQUAL 0000
1730 7402      HLT      /LINK SHOULD EQUAL ZERO
```

```

/RAL TEST 10
1731 7200      CLA
1732 7100      CLL
1733 1026      TAD K0040      /ROTATE PATTERN
1734 7004      RAL
1735 1043      TAD K7077
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      TAD K0020      /ROTATE PATTERN
1745 7004      RAL
1746 1042      TAD 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      TAD K0010      /ROTATE PATTERN
1756 7004      RAL
1757 1041      TAD K7757
1760 7040      CMA
1761 7450      SNA
1762 7430      SZL      /RAL FAILURE AC SHOULD EQUAL 0000
1763 7402      HLT      /LINK SHOULD EQUAL A ZERO
```

```

1764 7200      CLA
1765 7100      CLL
1766 1023      TAD K0004      /ROTATE PATTERN
1767 7004      RAL
1770 1040      TAD K7767
1771 7040      CMA
1772 7450      SNA
1773 7430      SZL      /RAL FAILED AC SHOULD EQUAL 0000
1774 7402      HLT      /LINK SHOULD EQUAL A ZERO
1775 7000      NOP
1776 7000      NOP
1777 7000      NOP
      *2000
2000 7200      CLA
2001 7100      CLL
2002 1022      TAD K0002      /ROTATE PATTERN
2003 7004      RAL
2004 1037      TAD K7773
2005 7040      CMA
2006 7450      SNA
2007 7430      SZL      /RAL FAILED AC SHOULD EQUAL 0000
2008 7402      HLT      /LINK SHOULD EQUAL A ZERO
      /RAL TEST 15
2011 7200      CLA
2012 7100      CLL
2013 1021      TAD K0001      /ROTATE PATTERN
2014 7004      RAL
2015 1036      TAD K7775
2016 7040      CMA
2017 7450      SNA
2020 7430      SZL      /RAL FAILED AC SHOULD EQUAL 0000
2021 7402      HLT      /LINK SHOULD EQUAL ZERO
      /RAL TEST 16
2222 7200      CLA
2223 7100      CLL
2224 7020      CML
2225 7004      RAL
2226 1035      TAD K7776
2227 7440      CMA
2230 7450      SNA
2231 7430      SZL
2232 7402      HLT      /RAL FAILED AC SHOULD EQUAL 0000
      /LINK SHOULD EQUAL 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 AQ 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 AQ 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 AQ 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 K2777
2132 7040      CMA
2133 7450      SNA
2134 7430      SZL
2135 7402      HLT      /RTL FAILED AQ 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 AQ 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 K7577
2154 7040      CMA
2155 7450      SNA
2156 7430      SZL
2157 7402      HLT      /RTL FAILED AQ 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 AQ 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
2203	7006	RTL
2204	1043	TAD K7677
2205	7040	CMA
2206	7450	SNA
2207	7430	SZL
2210	7402	HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK SHOULD
/EQUAL 0000

/RTL TEST 14

2211	7200	CLA
2212	7100	CLL
2213	1024	TAD K0010
2214	7006	RTL
2215	1042	TAD K7737
2216	7040	CMA
2217	7450	SNA
2220	7430	SZL
2221	7402	HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK SHOULD

/RTL TEST 15

2222	7200	CLA
2223	7100	CLL
2224	1023	TAD K0004
2225	7006	RTL
2226	1041	TAD K7757
2227	7040	CMA
2230	7450	SNA
2231	7430	SZL
2232	7402	HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK SHOULD
/EQUAL 0000

/RTL TEST 16

2233	7200	CLA
2234	7100	CLL
2235	1022	TAD K0002
2236	7006	RTL
2237	1040	TAD K7767
2240	7040	CMA
2241	7450	SNA
2242	7430	SZL
2243	7402	HLT

/ROTATE PATTERN

/RTL FAILED AC AND LINK
/SHOULD EQUAL 0000

/RTL TEST 17

2244	7200	CLA	
2245	7100	CLL	
2246	1021	TAD K0001	/ROTATE PATTERN
2247	7006	RTL	
2250	1037	TAD K7773	
2251	7040	CMA	
2252	7450	SNA	
2253	7430	SZL	
2254	7402	HLT	/RTL FAILED AC AND LINK /SHOULD EQUAL 0000

/RTL TEST 18

2255	7200	CLA	
2256	7100	CLL	
2257	7020	CML	
2260	7006	RTL	
2261	1036	TAD K7775	
2262	7040	CMA	
2263	7450	SNA	
2264	7430	SZL	
2265	7402	HLT	/RTL FAILED AC AND LINK /SHOULD EQUAL 0000

```

/GROUP 1 OPERATE TEST 1
2266 7200      CLA      /CLEAR AC
2267 7100      CLL      /CLEAR LINK
2270 7040      CMA      /AC EQUALS 7777
2271 7020      CML      /LINK EQUALS ONE
2272 7300      CLA CLL  /TEST COMBINATION
2273 7420      SNL
2274 7440      SZA
2275 7402      HLT      /CLA CLL FAILED, LINK SHOULD BE 0
                          /AC SHOULD EQUAL 0000

/GROUP 1 OPERATE TEST 2
2276 7200      CLA      /AC EQUALS 0000
2277 1053      TAD K2525 /AC EQUALS 2525
2300 7240      CLA CMA  /TEST COMBINATION
2301 7040      CMA
2322 7440      SZA
2303 7402      HLT      /CLA CMA ERROR, AC SHOULD
                          /BE 0000

/GROUP 1 OPERATE TEST 3
2304 7200      CLA
2305 7100      CLL
2306 7040      CMA      /AC=7777 LINK#1
2307 7140      CLL CMA  /TEST COMBINATION
2310 7420      SNL
2311 7440      SZA
2312 7402      HLT      /CLL CMA FAILED, AC AND LINK
                          /SHOULD BE ZERO

/GROUP 1 OPERATE TEST 4
2313 7100      CLL
2314 7020      CML      /LINK#1
2315 7200      CLA
2316 7040      CMA      /AC=7777
2317 7340      CLA CMA CLL /TEST COMBINATION
2320 7040      CMA
2321 7420      SNL
2322 7440      SZA
2323 7402      HLT      /CLA CMA CLL FAILED, AC AND
                          /LINK SHOULD BE ZERO

```

```
/GROUP 1 OPERATE TEST 5
2324 7200      CLA
2325 7100      CLL          /LINK#0
2326 7040      CMA          /AC=7777
2327 7220      CLA CML      /TEST COMBINATION
2330 7450      SZL
2331 7440      SZA
2332 7402      HLT          /CLA CML FAILED, AC SHOULD EQUAL
                          /0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 6
2333 7100      CLL
2334 7020      CML          /LINK#1
2335 7120      CLL CML      /TEST COMBINATION
2336 7420      SNL
2337 7402      HLT          /CLL CML FAILED
                          /LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 7
2340 7100      CLL          /LINK#0
2341 7120      CLL CML      /TEST COMBINATION
2342 7420      SNL
2343 7402      HLT          /CLL CML FAILED,
                          /LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 8
2344 7120      CLL CML      /LINK#1
2345 7240      CLA CMA      /AC=7777
2346 7320      CLA CLL CML  /TEST COMBINATION
2347 7430      SZL
2350 7440      SZA
2351 7402      HLT          /CLA CLL CML FAILED, LINK SHOULD
                          /BE 1, AC SHOULD BE ZERO

/GROUP 1 OPERATE TEST 9
2352 7340      CLA CLL CMA  /LINK#0, AC=7777
2353 7320      CLA CLL CML  /TEST COMBINATION
2354 7430      SZL
2355 7440      SZA
2356 7402      HLT          /CLA CLL CML FAILED, LINK SHOULD
                          /BE 1, AC SHOULD BE ZERO
```


/GROUP 1 OPERATE TEST 14

2417	7300	CLA CLL	
2420	1053	TAD K2525	/AC=2525, LINK=0
2421	7360	CLA CLL CMA CML	/TEST COMBINATION
2422	7040	CMA	
2423	7430	SZL	
2424	7440	SZA	
2425	7402	HLT	/CLA CLL CMA CML FAILED, AC SHOULD /BE 0000 LINK SHOULD EQUAL ONE,

/GROUP 1 OPERATE TEST 15

2426	7320	CLA CLL CML	
2427	1052	TAD K5252	/AC=5252, LINK=1
2430	7360	CLA CLL CMA CML	/TEST COMBINATION
2431	7040	CMA	
2432	7430	SZL	
2433	7440	SZA	
2434	7402	HLT	/CLA CLL CMA CML FAILED, AC SHOULD /BE 000, LINK SHOULD EQUAL ONE

/GROUP 1 OPERATE TEST 16

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

/GROUP 1 OPERATE TEST 17

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

```

/GROUP 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      TAD K7776
2457 7040      CMA
2460 7420      SNL
2461 7440      SZA
2462 7402      HLT      /CLA CLL IAC FAILED, AC AND LINK
                        /SHOULD BE ZERO
/GROUP 1 OPERATE TEST 19
2463 7300      CLA CLL      /AC=0 LINK=0
2464 7041      CMA IAC      /TEST COMBINATION
2465 7430      SZL
2466 7440      SZA
2467 7402      HLT      /CMA IAC FAILED, AC SHOULD EQUAL
                        /0000, LINK SHOULD EQUAL ONE
/GROUP 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      SZL
2474 7440      SZA
2475 7402      HLT      /CLA CMA IAC FAILED, AC SHOULD
                        /EQUAL 0000, LINK SHOULD BE ONE,
/GROUP 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
/GROUP 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      SZL
2511 7440      SZA
2512 7402      HLT      /CLA CLL CMA IAC FAILED, AC SHOULD BE
                        /0000, LINK SHOULD BE ONE

```



```
/GROUP 1 OPERATE TEST 28
2556 7300      CLA CLL
2557 1035      TAD K7776      /AC=7776 LINK=0
2560 7121      CLL CML IAC /TEST COMBINATION
2561 7040      CMA
2562 7430      SZL
2563 7440      SZA
2564 7402      HLT      /CLL CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 29
2565 7300      CLA CLL
2566 1053      TAD K2525      /AC=2525, LINK=0
2567 7321      CLA CLL CML IAC /TEST COMBINATION
2570 1035      TAD K7776
2571 7040      CMA
2572 7430      SZL
2573 7440      SZA
2574 7402      HLT      /CLA CLL CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE

2575 7000      NOP
2576 7000      NOP
2577 7000      NOP
      2600

*2600
/GROUP 1 OPERATE TEST 30
2600 7320      CLA CLL CML
2601 1053      TAD K2525      /AC=2525 LINK=1
2602 7321      CLA CLL CML IAC /TEST COMBINATION
2603 1035      TAD K7776
2604 7040      CMA
2605 7430      SZL
2606 7440      SZA
2607 7402      HLT      /CLA CLL CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE
```

```
/GROUP 1 OPERATE TEST 31
2610 7300      CLA CLL
2611 1021      TAD K0001      /AC=0001 LINK=0
2612 7061      CMA CML IAC /TEST COMBINATION
2613 7040      CMA
2614 7430      SZL
2615 7440      SZA
2616 7402      HLT      /CMA CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 32
2617 7320      CLA CLL CML
2620 1021      TAD K0001      /AC=0001 LINK=1
2621 7061      CMA CML IAC /TEST COMBINATION
2622 7040      CMA
2623 7420      SNL
2624 7440      SZA
2625 7402      HLT      /CMA CML IAC FAILURE, AC SHOULD BE
                        /0000, LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 33
2626 7300      CLA CLL      /AC=0000 LINK=0
2627 1053      TAD K2525      /AC=2525
2630 7261      CLA CMA CML IAC /TEST COMBINATION
2631 7420      SNL
2632 7430      SZL
2633 7402      HLT      /CLA CMA CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 34
2634 7320      CLA CLL CML
2635 1053      TAD K2525      /AC=2525 LINK=1
2636 7261      CLA CMA CML IAC /TEST COMBINATION
2637 7430      SZL
2640 7440      SZA
2641 7402      HLT      /CLA CMA CML IAC FAILED, AC SHOULD
                        /BE 0000, LINK SHOULD BE ONE
```

```
2642 7300 /GROUP 1 OPERATE TEST 35
2643 1021 CLA CLL
2644 7161 TAD K0001 /AC=2021 LINK=0
2645 7040 CLL CMA CML IAC /TEST COMBINATION
2646 7430 CMA
2647 7440 SZL
2650 7402 SZA
HLT /CLL CMA CML IAC FAILED, AC SHOULD BE
/0000, LINK SHOULD BE ONE
```

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

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

```
2666 7360 /GROUP 1 OPERATE TEST 38
2667 7210 CLA CMA CLL CML /AC=7777 LINK=1
2670 1050 CLA RAR /TEST COMBINATION
2671 7040 TAD K5777
2672 7420 CMA
2673 7440 SNL
2674 7402 SZA
HLT /CLA RAR FAILED, LINK AND
/AC SHOULD EQUAL ZERO
```

```
/GROUP 1 OPERATE TEST 39
2675 7360 CLA CMA CLL CML /AC=7777 LINK=1
2676 7204 CLA RAL /TEST COMBINATION
2677 1035 TAD K7776
2700 7040 CMA
2701 7420 SNL
2702 7440 SZA
2703 7402 HLT /CLA RAL FAILED LINK AND
/AC SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 40
2704 7360 CLA CMA CLL CML /AC=7777 LINK =1
2705 7212 CLA RTR /TEST COMBINATION
2706 1047 TAD K5777
2707 7040 CMA
2710 7420 SNL
2711 7440 SZA
2712 7402 HLT /CLA RTR FAILED, AC AND
/LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 41
2713 7360 CLA CMA CLL CML /AC=7777, LINK=1
2714 7206 CLA RTL /TEST COMBINATION
2715 1036 TAD K7775
2716 7040 CMA
2717 7420 SNL
2720 7440 SZA
2721 7402 HLT /CLA RTL FAILED, AC AND LINK
/SHOULDBE ZERO

/GROUP 1 OPERATE TEST 42
2722 7320 CLA CLL CML
2723 1026 TAD K0040 /AC=0040 LINK=1
2724 7110 CLL RAR /TEST COMBINATION
2725 1041 TAD K7757
2726 7040 CMA
2727 7420 SNL
2730 7440 SZA
2731 7402 HLT /CLL RAR FAILED, AC AND LINK
/SHOULD BE ZERO
```

```
/GROUP 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 K7077
2736 7040 CMA
2737 7420 SNL
2740 7440 SZA
2741 7402 HLT /CLL RAL FAILED, AC AND LINK
/SHOULD BE ZERO

/GROUP 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

/GROUP 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

/GROUP 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
```

```
/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 SZL
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 SZA
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 SZA
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 SZA
3020 7402 HLT /CML RAR FAILED, AC AND LINK
/SHOULD BE ZERO
```

```
/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
```

/INSTRUCTION TEST - 1
/GROUP 1 OPERATE TEST 55
/TAPE 3

3056	7300	CLA CLL	
3057	1052	TAD K5252	/AC=5252 LINK=0
3060	7224	CLA CML RAL	/TEST COMBINATION
3061	1035	TAD K7776	
3062	7040	CMA	
3063	7420	SNL	
3064	7440	SZA	
3065	7402	HLT	/CLA CML RAL FAILED, AC AND /LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 56

3066	7300	CLA CLL	
3067	1052	TAD K5252	/AC=5252 LINK=0
3070	7232	CLA CML RTR	/TEST COMBINATION
3071	1047	TAD K9777	
3072	7040	CMA	
3073	7420	SNL	
3074	7440	SZA	
3075	7402	HLT	/CLA CML RTR FAILED, AC AND /LINK SHOULD BE ZERO

/GROUP 1 OPERATE TEST 57

3076	7300	CLA CLL	
3077	1052	TAD K5252	/AC=5252 LINK=0
3100	7226	CLA CML RTL	/TEST COMBINATION
3101	1036	TAD K7775	
3102	7040	CMA	
3103	7420	SNL	
3104	7440	SZA	
3105	7402	HLT	/CLA CML RTL FAILED, AC AND /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 58

3106	7300	CLA CLL	/AC=0000 LINK=0
3107	7130	CLL CML RAR	/TEST COMBINATION
3110	7004	RAL	
3111	7430	SZL	
3112	7440	SZA	
3113	7402	HLT	/CLL CML RAR FAILED, AC SHOULD /BE 0000 LINK SHOULD BE 1

```
3114 7320          /GROUP 1 OPERATE TEST 59
3115 7130          CLA CLL CML      /AC=0000 LINK=1
3116 7004          CLL CML RAR     /TEST COMBINATION
3117 7430          RAL
3120 7440          SZL
3121 7402          SZA
          HLT                /CLL CML RAR FAILED, AC SHOULD BE
          /0000, LINK SHOULD BE A ONE
```

```
3122 7300          /GROUP 1 OPERATE TEST 60
3123 7124          CLA CLL      /AC=0000 LINK=0
3124 7010          CLL CML RAL   /TEST COMBINATION
3125 7430          RAR
3126 7440          SZL
3127 7402          SZA
          HLT                /CLL CML RAL FAILED, AC SHOULD
          /EQUAL 0000, LINK SHOULD BE ONE
```

```
3130 7320          /GROUP 1 OPERATE TEST 61
3131 7124          CLA CLL CML   /AC=0000 LINK=1
3132 7010          CLL CML RAL   /TEST COMBINATION
3133 7430          RAR
3134 7440          SZL
3135 7402          SZA
          HLT                /CLL CML RAL FAILED, AC SHOULD
          /EQUAL 0000, LINK SHOULD BE ONE
```

```
3136 7300          /GROUP 1 OPERATE TEST 62
3137 7132          CLA CLL      /AC=0000 LINK=0
3140 7006          CLL CML RTR   /TEST COMBINATION
3141 7430          RTL
3142 7440          SZL
3143 7402          SZA
          HLT                /CLL CML RTR FAILED, AC SHOULD
          /BE 0000, LINK SHOULD BE ONE
```

```
/GROUP 1 OPERATE TEST 63
3144 7320 CLA CLL CML /AC=0000 LINK=1
3145 7132 CLL CML RTR /TEST COMBINATION
3146 7006 RTL
3147 7430 SZL
3150 7440 SZA
3151 7402 HLT /CLL CML RTR FAILED, AC SHOULD
/BE 0000 LINK SHOULD BE ONE.

/GROUP 1 OPERATE TEST 64
3152 7300 CLA CLL /AC=0000 LINK=0
3153 7126 CLL CML RTR /TEST COMBINATION
3154 7012 RTR
3155 7430 SZL
3156 7440 SZA
3157 7402 HLT /CLL CML RTR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 65
3160 7320 CLA CLL CML /AC=0000 LINK=1
3161 7126 CLL CML RTR /TEST COMBINATION
3162 7012 RTR
3163 7430 SZL
3164 7440 SZA
3165 7402 HLT /CLL CML RTR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE A ONE.

/GROUP 1 OPERATE TEST 66
3166 7300 CLA CLL
3167 1052 TAD K5252 /AC=5252 LINK=0
3170 7330 CLA CLL CML RAR /TEST COMBINATION
3171 7004 RAL
3172 7430 SZL
3173 7440 SZA
3174 7402 HLT /CLA CLL CML RAR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

3175 7000 NOP
3176 7000 NOP
3177 7000 NOP
3200

*3200
/GROUP 1 OPERATE TEST 67
3200 7320 CLA CLL CML
3201 1053 TAD K2525 /AC=2525 LINK=1
3202 7330 CLA CLL CML RAR /TEST COMBINATION
3203 7004 RAL
3204 7430 SZL
3205 7440 SZA
3206 7402 HLT /CLA CLL CML RAR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE
```

/GROUP 1 OPERATE TEST 68
3207 7300 CLA CLL
3210 1053 TAD K2525 /AC=2525 LINK=0
3211 7324 CLA CLL CML RAL /TEST COMBINATION
3212 7410 RAR
3213 7430 SZL
3214 7440 SZA
3215 7402 HLT /CLA CLL CML RAL FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE ONE

/GROUP 1 OPERATE TEST 69
3216 7320 CLA CLL CML
3217 1052 TAD K5252 /AC=5252 LINK=1
3220 7324 CLA CLL CML RAL /TEST COMBINATION
3221 7010 RAR
3222 7430 SZL
3223 7440 SZA
3224 7402 HLT /CLA CLL CML RAL FAILED, AC SHOULD
/BE 0000 LINK SHOULD BE A ONE

/GROUP 1 OPERATE TEST 70
3225 7300 CLA CLL
3226 1053 TAD K2525 /AC=2525 LINK=0
3227 7332 CLA CLL CML RTR /TEST COMBINATION
3230 7006 RTL
3231 7430 SZL
3232 7440 SZA
3233 7402 HLT /CLA CLL CML RTR FAILED, AC SHOULD
/BE 0000, LINK SHOULD BE A ONE

```
/GROUP 1 OPERATE TEST 71
3234 7320 CLA CLL CML
3235 1052 TAD K5252 /AC=5252 LINK=1
3236 7332 CLA CLL CML RTR /TEST COMBINATION
3237 7006 RTL
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 TAD 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 TAD 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 TAD K7777 /TEST PATTERN
3263 7041 CIA /AC EQUALS 0001
3264 1035 TAD 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 TAD K7776 /TEST PATTERN
3273 7041 CIA /AC EQUALS 0002
3274 1036 TAD K7775
3275 7040 CMA
3276 7420 SNL
3277 7440 SZA /CIA FAILED AC SHOULD EQUAL 0000
3300 7402 HLT /LINK SHOULD EQUAL A ZERO
```

```
/GROUP 1 OPERATE TEST 76
3301 7300      CLA CLL
3302 1063      TAD K7774      /TEST PATTERN
3303 7041      CIA      /AC EQUALS 0004
3304 1037      TAD K7773
3305 7040      CMA
3306 7420      SNL
3307 7440      SZA      /CIA FAILED AC SHOULD EQUAL 0000
3310 7402      HLT      /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 77
3311 7300      CLA CLL
3312 1062      TAD K7770      /TEST PATTERN
3313 7041      CIA      /AC EQUALS 0010
3314 1040      TAD K7767
3315 7040      CMA
3316 7420      SNL
3317 7440      SZA
3320 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000

/GROUP 1 OPERATE TEST 78
3321 7300      CLA CLL
3322 1061      TAD K7760      /TEST PATTERN
3323 7041      CIA      /AC EQUALS 0020
3324 1041      TAD K7757
3325 7040      CMA
3326 7420      SNL
3327 7440      SZA
3330 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 79
3331 7300      CLA CLL
3332 1060      TAD K7740      /TEST PATTERN
3333 7041      CIA
3334 1042      TAD K7737      /AC EQUALS 0040
3335 7040      CMA
3336 7420      SNL
3337 7440      SZA
3340 7402      HLT      /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO
```

```
/GROUP 1 OPERATE TEST 80
3341 7300   CLA CLL
3342 1076   TAD K7700   /TEST PATTERN
3343 7041   CIA   /AC EQUALS 0100
3344 1043   TAD K7677
3345 7040   CMA
3346 7420   SNL
3347 7440   SZA
3350 7402   HLT   /CIA FAILED A SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 81
3351 7300   CLA CLL
3352 1057   TAD K7600   /TEST PATTERN
3353 7041   CIA   /AC EQUALS 0200
3354 1044   TAD K7577
3355 7040   CMA
3356 7420   SNL
3357 7440   SZA
3360 7402   HLT   /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO

/GROUP 1 OPERATE TEST 82
3361 7300   CLA CLL
3362 1056   TAD K7400   /TEST PATTERN
3363 7041   CIA   /AC EQUALS 0400
3364 1045   TAD K7377
3365 7040   CMA
3366 7420   SNL
3367 7440   SZA
3370 7402   HLT   /CIA FAILED AC SHOULD EQUAL 0000
                        /LINK SHOULD EQUAL ZERO
```



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

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

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

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

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

/GROUP 1 OPERATE TEST 92

3475	7300	CLA CLL	/AC=0,L=2
3476	7345	CLA CMA CLL IAC RAL	/AC=0001,L=0
3477	7430	SZL	
3500	7402	HLT	/LINC NOT=0
3501	7041	CMA IAC	
3502	1021	TAD K0001	
3523	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 6
3537 7240      CLA CMA      /AC=7777
3542 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      TAD 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      TAD K252      /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
```

```
/GROUP 2 OPERATE TEST 10
3563 7320      CLA CLL CML
3564 1053      TAD 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      TAD 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      TAD K4000          /AC=4000 LINK#1
3606 7520      SMA SNL          /TEST COMBINATION
3607 7402      HLT            /SMA SNL SHOULD HAVE SKIPPED
                               /AC=4000 LINK#1
```

```

/GROUP 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

/GROUP 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

/GROUP 2 OPERATE TEST 17
3621 7300      CLA CLL
3622 1034      TAD K4000          /AC=4000 LINK=0
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

/GROUP 2 OPERATE TEST 18
3627 7320      CLA CLL CML
3630 1034      TAD K4000          /AC=4000 LINK=1
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

/GROUP 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

/GROUP 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

```

```
/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

/GROUP 2 OPERATE TEST 22
3650 7320      CLA CLL CML
3651 1026      TAD K0040      /AC=0040 LINK=1
3652 7460      SZA SNL      /TEST COMBINATION
3653 7402      HLT      /SZA SNL SHOULD HAVE SKIPPED
                        /LINK=1

/GROUP 2 OPERATE TEST 23
3654 7300      CLA CLL      /AC=0000 LINK=0
3655 7660      CLA SZA SNL /TEST COMBINATION
3656 7402      HLT      /CLA SZA SNL SHOULD HAVE SKIPPED
                        /AC AND LINK SHOULD EQUAL ZERO

3657 7440      SZA
3660 7402      HLT      /CLA SZA SNL DID NOT CLEAR AC
                        /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 24
3661 7320      CLA CLL CML /AC=0000 LINK=1
3662 7660      CLA SZA SNL /TEST COMBINATION
3663 7402      HLT      /CLA SZA SNL SHOULD HAVE SKIPPED
                        /AC=0000 LINK=1

3664 7440      SZA
3665 7402      HLT      /CLA SZA SNL DID NOT CLEAR AC
                        /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 25
3666 7320      CLA CLL CML
3667 1030      TAD K0200      /AC=0200 LINK=1
3670 7660      CLA SZA SNL /TEST COMBINATION OR
3671 7402      HLT      /CLA SZA SNL SHOULD HAVE SKIPPED
                        /LINK=1

3672 7440      SZA
3673 7402      HLT      /CLA SZA SNL DID NOT CLEAR AC
                        /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 26
3674 7300      CLA CLL
3675 1033      TAD K2000      /AC=2000 LINK=0
3676 7660      CLA SZA SNL /TEST COMBINATION
3677 7440      SZA
3700 7402      HLT      /CLA SZA SNL FAILED, AC AND
                        /LINK SHOULD EQUAL ZERO
```

```
/GROUP 2 OPERATE TEST 27
3701 7300      CLA CLL      /AC=0000 LINK=0
3702 7560      SMA SZA SNL /TEST COMBINATION
3703 7402      HLT          /SMA SZA SNL SHOULD HAVE SKIPPED
                          /AC=0000 LINK=0

/GROUP 2 OPERATE TEST 28
3704 7320      CLA CLL CML
3705 1050      TAD K3777      /AC=3777 LINK=1
3706 7560      SMA SZA SNL /TEST COMBINATION
3707 7402      HLT          /SMA SZA SNL SHOULD HAVE SKIPPED
                          /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 29
3710 7300      CLA CLL
3711 1034      TAD K4000      /AC=4000 LINK=0
3712 7560      SMA SZA SNL /TEST COMBINATION
3713 7402      HLT          /SMA SZA SNL SHOULD HAVE SKIPPED
                          /AC=4000 LINK=0

/GROUP 2 OPERATE TEST 30
3714 7300      CLA CLL
3715 1050      TAD K3777      /AC=3777 LINK=0
3716 7560      SMA SZA SNL /TEST COMBINATION
3717 7450      SNA
3720 7402      HLT          /SMA SZA SNL SHOULD NOT HAVE
                          /SKIPPED, AC=3777 LINK=0
```

```
/GROUP 2 OPERATE TEST 31
3721 7300 CLA CLL /AC=0000 LINK=0
3722 7760 CLA SMA SZA SNL /TEST COMBINATION
3723 7402 HLT /CLA SMA SZA SNL SHOULD HAVE SKIPPED
/AC SHOULD EQUAL 0000

3724 7440 SZA
3725 7402 HLT /AC NOT ZERO AFTER CLA SMA SZA SNL
/AC SHOULD BE 0000 LINK=0

/GROUP 2 OPERATE TEST 32
3726 7320 CLA CLL CML
3727 1050 TAD K3777 /AC=3777 LINK=1
3730 7760 CLA SMA SZA SNL /TEST COMBINATION
3731 7402 HLT /CLA SMA SZA SNL DID NOT SKIP
/AC SHOULD BE 0000 LINK=1

3732 7440 SZA
3733 7402 HLT /CLA SMA SZA SNL DID NOT CLEAR AC
/AC SHOULD EQUAL 0000 LINK=1

/GROUP 2 OPERATE TEST 33
3734 7300 CLA CLL
3735 1034 TAD K4000 /AC=4000 LINK=0
3736 7760 CLA SMA SZA SNL /TEST COMBINATION
3737 7402 HLT /CLA SMA SZA SNL SHOULD HAVE SKIPPED
/AC SHOULD BE 0000, LINK=0

3740 7440 SZA
3741 7402 HLT /CLA SMA SZA SNL DID NOT CLEAR AC
/AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 34
3742 7300 CLA CLL
3743 1050 TAD K3777 /AC=3777 LINK=0
3744 7760 CLA SMA SZA SNL /TEST COMBINATION
3745 7440 SZA
3746 7402 HLT /CLA SMA SZA SNL FAILED, AC
/SHOULD BE ZERO, LINK=0

/GROUP 2 OPERATE TEST 35
3747 7300 CLA CLL /AC=0000 LINK=0
3750 7410 SKP /TEST INSTRUCTION
3751 7402 HLT /SKIP FAILED
/AC AND LINK EQUAL ZERO

/GROUP 2 OPERATE TEST 36
3752 7320 CLA CLL CML /AC=0000 LINK=1
3753 7410 SKP /TEST INSTRUCTION
3754 7402 HLT /SKIP FAILED
/AC=0000 LINK=1
```

```

/GROUP 2 OPERATE TEST 37
3755 7320      CLA CLL CML
3756 1050      TAD K3777      /AC=3777 LINK=1
3757 7410      SKP          /TEST INSTRUCTION
3760 7402      HLT          /SKIP FAILED
                          /AC=3777 LINK=1

/GROUP 2 OPERATE TEST 38
3761 7300      CLA CLL
3762 1050      TAD K3777      /AC=3777 LINK=0
3763 7410      SKP          /TEST INSTRUCTION
3764 7402      HLT          /SKIP FAILED
                          /AC=3777 LINK=0

/GROUP 2 OPERATE TEST 39
3765 7200      CLA
3766 1050      TAD K3777      /AC=3777
3767 7710      CLA SPA      /TEST COMBINATION
3770 7402      HLT          /CLA SPA DID NOT SKIP, AC
                          /SHOULD BE ZERO

3771 7440      SZA
3772 7402      HLT          /CLA SPA DID NOT CLEAR AC
                          /AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 40
3773 7200      CLA
3774 1034      TAD K4000      /AC=4000
3775 7710      CLA SPA      /TEST COMBINATION
3776 7440      SZA
3777 7402      HLT          /CLA SPA FAILED, AC SHOULD
                          /EQUAL 0000

4000          *4000

/GROUP 2 OPERATE TEST 41
4000 7240      CLA CMA      /AC=7777
4001 7650      CLA SNA      /TEST COMBINATION
4002 7402      HLT          /CLA SNA DID NOT SKIP
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 42
4003 7200      CLA          /AC=0000
4004 7650      CLA SNA      /TEST COMBINATION
4005 7440      SZA
4006 7402      HLT          /CLA SNA FAILED
                          /AC SHOULD EQUAL 0000

```

```
/GROUP 2 OPERATE TEST 43
4017 7200      CLA          /AC=0000
4018 7550      SPA SNA      /TEST COMBINATION (AND)
4019 7440      SZA
4020 7402      HLT          /SPA SNA SKIPPED
                          /AC=0000

/GROUP 2 OPERATE TEST 44
4023 7200      CLA
4024 1050      TAD K3777          /AC=3777
4025 7550      SPA SNA      /TEST COMBINATION (AND)
4026 7402      HLT          /SPA SNA FAILED TO SKIP
                          /AC=3777

/GROUP 2 OPERATE TEST 45
4027 7200      CLA
4028 1034      TAD K4000          /AC=4000
4029 7550      SPA SNA      /TEST COMBINATION (AND)
4030 7450      SNA
4031 7402      HLT          /SPA SNA SKIPPED.
                          /AC=4000

/GROUP 2 OPERATE TEST 46
4034 7200      CLA          /AC=0000
4035 7750      CLA SPA SNA  /TEST COMBINATION (AND)
4036 7440      SZA
4037 7402      HLT          /CLA SPA SNA FAILED.
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 47
4038 7200      CLA
4039 1050      TAD K3777          /AC=3777
4040 7750      CLA SPA SNA  /TEST COMBINATION (AND)
4041 7402      HLT          /CLA SPA SNA DID NOT SKIP
                          /AC SHOULD BE 0000

4042 7440      SZA
4043 7402      HLT          /CLA SPA SNA DID NOT CLEAR THE AC
                          /AC SHOULD EQUAL 0000

/GROUP 2 OPERATE TEST 48
4044 7200      CLA
4045 1034      TAD K4000          /AC=4000
4046 7750      CLA SPA SNA  /TEST COMBINATION (AND)
4047 7440      SZA
4048 7402      HLT          /CLA SPA SNA FAILED
                          /AC SHOULD EQUAL ZERO
```

PAUSE

/INSTRUCTION TEST - TAPE 4
 /GROUP 2 OPERATE TEST 49

4243	7320	CLA CLL	
4244	1052	TAD K5252	/AC=5252 LINK=0
4245	7530	CLA SZL	/TEST COMBINATION
4246	7402	HLT	/CLA SZL DID NOT SKIP
			/AC AND LINK SHOULD BE 0
4247	7440	SZA	
4250	7402	HLT	/CLA SZL DID NOT CLEAR AC
			/AC SHOULD BE ZERO, LINK=0

/GROUP 2 OPERATE TEST 50

4251	7360	CLA CLL CML CMA	/AC=7777 LINK=1
4252	7530	CLA SZL	/TEST COMBINATION (AND)
4253	7440	SZA	
4254	7402	HLT	/CLA SZL FAILED, AC SHOULD
			/BE 2000, LINK=1

/GROUP 2 OPERATE TEST 51

4255	7320	CLA CLL	
4256	1052	TAD K3777	/AC=3777 LINK=0
4257	7530	SPA SZL	/TEST COMBINATION (AND)
4260	7402	HLT	/SPA SZL DID NOT SKIP
			/AC=3777 LINK=0

/GROUP 2 OPERATE TEST 52

4261	7320	CLA CLL CML	
4262	1052	TAD K3777	/AC=3777 LINK=1
4263	7530	SPA SZL	/TEST COMBINATION (AND)
4264	7450	SNA	
4265	7402	HLT	/SPA SZL SKIPPED
			/AC=3777 LINK=1

/GROUP 2 OPERATE TEST 53

4266	7320	CLA CLL	
4267	1034	TAD K4000	/AC=4000 LINK=0
4270	7530	SPA SZL	/TEST COMBINATION (AND)
4271	7500	SMA	
4272	7402	HLT	/SPA SZL SKIPPED
			/AC=4000 LINK=0

/GROUP 2 OPERATE TEST 54

4273	7300	CLA CLL	
4274	1052	TAD K3777	/AC=3777 LINK=0
4275	7730	CLA SPA SZL	/TEST COMBINATION (AND)
4276	7402	HLT	/CLA SPA SZL SHOULD HAVE SKIPPED
			/AC SHOULD BE 0000, LINK=0
4277	7440	SZA	
4280	7402	HLT	/CLA SPA SZL DID NOT CLEAR THE AC
			/AC SHOULD BE 0000

```
/GROUP 2 OPERATE TEST 55
4101 7320 CLA CLL CML
4102 1050 TAD K3777 /AC=3777 LINK=1
4103 7730 CLA SPA SZL /TEST COMBINATION (AND)
4104 7440 SZA
4105 7402 HLT /CLA SPA SZL FAILED
/AC SHOULD EQUAL 0000 LINK=1

/GROUP 2 OPERATE TEST 56
4106 7300 CLA CLL
4107 1034 TAD K4000 /AC=4000 LINK=0
4110 7730 CLA SPA SZL /TEST COMBINATION (AND)
4111 7440 SZA
4112 7402 HLT /CLA SPA SZL FAILED
/AC SHOULD EQUAL 0000 LINK=0

/GROUP 2 OPERATE TEST 57
4113 7300 CLA CLL
4114 1034 TAD K4000 /AC=4000 LINK=0
4115 7470 SNA SZL /TEST COMBINATION (AND)
4116 7402 HLT /SNA SZL DID NOT SKIP
/AC = 4000 LINK=0

/GROUP 2 OPERATE TEST 58
4117 7320 CLA CLL CML
4120 1034 TAD K4000 /AC=4000 LINK=1
4121 7470 SNA SZL /TEST COMBINATION (AND)
4122 7420 SNL
4123 7402 HLT /SNA SZL SKIPPED
/AC=4000 LINK=1

/GROUP 2 OPERATE TEST 59
4124 7300 CLA CLL /AC=0000 LINK=0
4125 7470 SNA SZL /TEST COMBINATION (AND)
4126 7430 SZL
4127 7402 HLT /SNA SZL SKIPPED
/AC=0000 LINK=0

/GROUP 2 OPERATE TEST 60
4130 7320 CLA CLL CML
4131 1034 TAD K4000 /AC=4000 LINK=1
4132 7670 CLA SNA SZL /TEST COMBINATION (AND)
4133 7440 SZA
4134 7402 HLT /CLA SNA SZL FAILED. AC SHOULD
/BE 0000. LINK=1
```

```

/GROUP 2 OPERATE TEST 61
4135 7300 CLA CLL
4136 1034 TAD K4000 /AC=4000 LINK=0
4137 7670 CLA SNA SZL /TEST COMBINATION (AND)
4140 7402 HLT /CLA SNA SZL DID NOT SKIP
/AC SHOULD BE 0000, LINK=0

4141 7440 SZA
4142 7402 HLT /CLA SNA SZL DID NOT CLEAR AC
/AC AND LINK SHOULD BE ZERO

/GROUP 2 OPERATE TEST 62
4143 7300 CLA CLL /AC=0000 LINK=0
4144 7670 CLA SNA SZL /TEST COMBINATION (AND)
4145 7440 SZA
4146 7402 HLT /CLA SNA SZL FAILED, AC SHOULD
/BE 0000, LINK=0

/GROUP 2 OPERATE TEST 63
4147 7300 CLA CLL
4150 1050 TAD K3777 /AC=3777 LINK=0
4151 7570 SPA SNA SZL /TEST COMBINATION (AND)
4152 7402 HLT /SPA SNA SZL DID NOT SKIP
/AC=3777 LINK=0

/GROUP 2 OPERATE TEST 64
4153 7320 CLA CLL CML
4154 1050 TAD K3777 /AC=3777 LINK=1
4155 7570 SPA SNA SZL /TEST COMBINATION (AND)
4156 7420 SNL
4157 7402 HLT /SPA SNA SZL SKIPPED
/AC=3777 LINK=1

/GROUP 2 OPERATE TEST 65
4160 7300 CLA CLL /AC=0000 LINK=0
4161 7570 SPA SNA SZL /TEST COMBINATION (AND)
4162 7430 SZL
4163 7402 HLT /SPA SNA SZL SKIPPED
/AC=0000 LINK=0

/GROUP 2 OPERATE TEST 66
4164 7300 CLA CLL
4165 1034 TAD K4000 /AC=4000 LINK=0
4166 7570 SPA SNA SZL /TEST COMBINATION (AND)
4167 7430 SZL
4170 7402 HLT /SPA SNA SZL SKIPPED
/AC=4000 LINK=0

```

/GROUP 2 OPERATE TEST 67

4171 7300 CLA CLL
4172 1050 TAD K3777 /AC=3777 LINK=0
4173 7770 CLA SPA SNA SZL /TEST COMBINATION (AND)
4174 7402 HLT /CLA SPA SNA SZL DID NOT SKIP
/AC AND LINK SHOULD BE ZERO
4175 7440 SZA
4176 7402 HLT /CLA SPA SNA SZL DID NOT CLEAR AC
/AC AND LINK SHOULD BE ZERO
4177 7000 NOP
4200 *4200

/GROUP 2 OPERATE TEST 68

4200 7320 CLA CLL CML
4201 1050 TAD K3777 /AC=3777 LINK=1
4202 7770 CLA SPA SNA SZL /TEST COMBINATION (AND)
4203 7440 SZA
4204 7402 HLT /CLA SPA SNA SZL FAILED, AC SHOULD
/BE 0000, LINK SHOULD EQUAL ONE

/GROUP 2 OPERATE TEST 69

4205 7300 CLA CLL
4206 1034 TAD K4000 /AC=4000 LINK=0
4207 7770 CLA SPA SNA SZL /TEST COMBINATION (AND)
4210 7440 SZA
4211 7402 HLT /CLA SPA SNA SZL FAILED, AC SHOULD
/BE 0000, LINK SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 70

4212 7300 CLA CLL /AC=0000 LINK=0
4213 7770 CLA SPA SNA SZL /TEST COMBINATION (AND)
4214 7440 SZA
4215 7402 HLT /CLA SPA SNA SZL FAILED, AC AND
/LINK SHOULD BE ZERO.

/GROUP 2 OPERATE TEST 71

4216 7200 CLA
4217 1052 TAD K5252 /AC=5252
4220 7604 CLA OSR /TEST COMBINATION
4221 7040 CMA
4222 7440 SZA
4223 7402 HLT /CLA OSR FAILED
/AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 72

4224	7200	CLA	
4225	1034	TAD K4000	/AC=4000
4226	7504	SMA OSR	/TEST COMBINATION
4227	7402	HLT	/SMA OSR FAILED TO SKIP
			/AC SHOULD BE 7777

4230	7040	CMA	
4231	7440	SZA	
4232	7402	HLT	/SMA OSR FAILED
			/AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 73

4233	7200	CLA	/AC=0000
4234	7444	SZA OSR	/TEST COMBINATION
4235	7402	HLT	/SZA OSR FAILED TO SKIP
			/AC SHOULD BE 0000

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

/GROUP 2 OPERATE TEST 74

4241	7320	CLL CML CLA	/LINK=1
4242	7424	SNL OSR	/TEST COMBINATION
4243	7402	HLT	/SNL OSR FAILED TO SKIP
			/AC SHOULD BE 7777

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

/GROUP 2 OPERATE TEST 75

4247	7300	CLA CLL	
4250	1050	TAD K3777	/AC=3777 LINK=0
4251	7764	CLA SMA SZA SNL OSR	/TEST COMBINATION
4252	7450	SMA	
4253	7402	HLT	/CLA SMA SZA SNL OSR FAILED,
			/AC SHOULD BE 7777. LINK=0

4254	7040	CMA	
4255	7440	SZA	
4256	7402	HLT	/CLA SMA SZA SNL OSR FAILED
			/AC SHOULD EQUAL ZERO

/GROUP 2 OPERATE TEST 76

4257	7200	CLA	/AC=0000
4260	7414	SKP OSR	/TEST COMBINATION
4261	7402	HLT	/SKP OSR DID NOT SKIP
			/AC SHOULD BE 7777

4262	7040	CMA	
4263	7440	SZA	
4264	7402	HLT	/SKP OSR FAILED
			/AC SHOULD EQUAL ZERO

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/GROUP 2 OPERATE TEST 77
4265 7200      CLA          /AC=0000
4266 7514      SPA OSR      /TEST COMBINATION
4267 7402      HLT          /SPA OSR DID NOT SKIP
                          /AC SHOULD EQUAL 7777

4270 7040      CMA
4271 7440      SZA
4272 7402      HLT          /SPA OSR FAILED,
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 78
4273 7200      CLA
4274 1031      TAD K0400      /AC=0400
4275 7454      SNA OSR      /TEST COMBINATION
4276 7402      HLT          /SNA OSR DID NOT SKIP
                          /AC SHOULD BE 7777

4277 7040      CMA
4300 7440      SZA
4301 7402      HLT          /SNA OSR FAILED
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 79
4302 7300      CLA CLL      /LINK=0 AC=0000
4303 7434      SZL OSR      /TEST COMBINATION
4304 7402      HLT          /SZL OSR DID NOT SKIP
                          /AC SHOULD BE 7777

4305 7040      CMA
4306 7440      SZA
4307 7402      HLT          /SZL OSR FAILED
                          /AC SHOULD BE 0000

/GROUP 2 OPERATE TEST 80
4310 7300      CLA CLL
4311 1050      TAD K3777      /AC=3777 LINK=0
4312 7774      CLA SPA SNA SZL OSR /TEST COMBINATION (AND)
4313 7402      HLT          /ABOVE MESS DID NOT SKIP
                          /AC SHOULD BE 7777

4314 7040      CMA
4315 7440      SZA
4316 7402      HLT          /CLA SPA SNA SZL OSR FAILED
                          /AC SHOULD BE 0000
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/AND TEST 6
4352 7300      CLA CLL
4353 1035      TAD K7776      /AC=7776 LINK=0
4354 0052      AND K5252      /TEST INSTRUCTION
4355 7041      CIA          /AC=2526
4356 1052      TAD K5252      /AC=0000 LINK=1
4357 7430      SZL
4360 7440      SZA
4361 7402      HLT          /AND FAILURE, AC SHOULD BE
                               /0000, LINK SHOULD BE ONE

/AND TEST 7
4362 7300      CLA CLL
4363 1053      TAD K2525      /AC=2525 LINK=0
4364 0053      AND K2525      /TEST INSTRUCTION
4365 7041      CIA          /AC=5253
4366 1053      TAD K2525      /AC=0000 LINK = 1
4367 7430      SZL
4370 7440      SZA
4371 7402      HLT          /AND FAILED, AC SHOULD BE
                               /0000, LINK SHOULD BE ONE,

4372 7000      NOP
4373 7000      NOP
4374 7000      NOP
4375 7000      NOP
4376 7000      NOP
4377 7000      NOP
4400          *4400

/CHECK FOR BELL
4400 7200      CLA
4401 1220      TAD BLCNT
4402 7001      IAC
4403 3220      DCA BLCNT
4404 1220      TAD BLCNT
4405 7640      SZA CLA
4406 5147      JMP START*3
4407 1221      TAD BLCOM
4410 3220      DCA BLCNT

/RING BELL
4411 1217      TAD BEL
4412 6046      TFS
4413 6041      TSF
4414 5213      JMP ,=1
4415 6042      TCF
4416 5147      JMP START*3

4417 0207      BEL,      0207
4420 7600      BLCNT,   -200
4421 7600      BLCOM,   -200

```

MAINDEC EVALUATION REQUEST

After sufficient familiarization with the operation and documentation of this MAINDEC, please indicate your assessment of the following areas and return this form to Digital Equipment Corporation.

IDENTIFICATION: MAINDEC NO. _____ Program Title _____

USAGE: Used by: Field Service Production Other _____

Frequency of Usage: Daily Weekly Monthly

SUGGESTIONS FOR IMPROVEMENT

1. Are the program loading and operating instructions: clear? , incomplete? , difficult to follow?

2. Do the error reports and program documentation provide sufficient diagnostic information: in all cases? , in most cases? , in very few cases? . Suggestions for improvement:

3. Is the program effective in isolating malfunctions: in all cases? , in most cases? , in very few cases? . Would additional Scope loops or Switch Register control be helpful? _____
Suggestions for improvement:

4. Does the program ever fail to detect malfunctions exposed by other software? _____
Were Margins used? _____ Please describe malfunction in detail:

5. Does the program ever report non-existent malfunctions? _____
Please indicate erroneous report and any pertinent operating conditions:

6. Does this MAINDEC ever expose malfunctions in the Central Processor or other peripheral units not detected by the appropriate MAINDEC? _____
Please describe malfunction and MAINDEC(S) used:

7. Does the document provide a general understanding of the functional programming requirements of the system? Good , Fair , None . Would a general description of programming requirements increase the effectiveness of this MAINDEC? _____

Remarks:

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