

## Toggle in Programs

### Group 1 Microinstructions

200/7200 CLA 0000  
 201/7100 CLL 0000  
 202/7040 CMA 0777  
 203/7020 CML 1777  
 204/7020 CML 0777  
 205/7010 RAR 1377  
 206/7004 RAL 0777  
 207/7012 RTR 1577  
 210/7006 RTL 0777  
 211/7001 IAC 10000  
 212/7001 IAC 10001  
 213/7002 BSW 10100  
 214/7402 HLT 10100

Final HLT the AC = 0100  
 LINK = 1

### Operate Instructions

0200/7240 CLA CMA  
 201/7001 IAC by 0202  
 202/7640 SZA, CLA  
 203/7402 ERROR HLT - should not halt  
 204/7120 Set lnk to 1  
 205/7010 RAR AC = 4000  
 206/7510 SKP if AC bit 0 = 0  
 207/7410 SKP  
 210/7402 HLT - should not halt  
 211/7001 IAC + 1  
 212/7002 BSW AC = 0140  
 213/1202 Add 7640 to 0140  
 214/7420 SKP if lnk = 1  
 215/7402 HLT on error  
 216/7402 Good HLT AC = 0000

This program should halt at  
 loc 00216 (addr. should read 0217)  
 AC = 0000

### Group 2 Microinstructions

200/7300 CLA CLL  
 201/7440 SZA  
 202/7402 HLT  
 203/7430 SZL  
 204/7402 HLT  
 205/7020 CML 10000  
 206/7420 SNL  
 207/7402 HLT  
 210/7001 IAC 10001  
 211/7450 SNA  
 212/7402 HLT  
 213/7510 SPA  
 214/7402 HLT  
 215/7410 SKP  
 216/7402 HLT  
 217/7012 RTR 06000  
 220/7500 SMA  
 221/7402 HLT  
 222/7404 CSR 06001  
 223/7402 HLT

LA 200 SR = 0001

### ISZ Instructions - W

200/7500  
 201/3300  
 202/7001  
 203/2300  
 204/5202  
 205/7440  
 206/7402  
 207/7402

This program halts at  
 loc 00207 (addr. read 00210)  
 AC = 0000

## JMS Instruction = w

200/ 7300 Clear AC Clear link  
201/ 3300 Zero pass counter  
202/ 3204 Zero entry  
203/ 4204 JMS  
204/ 0000 Return addr. written here  
205/ 1204 Get return addr.  
206/ 7041 Complement and index AC  
207/ 1215 Add to known good addr.  
210/ 7440 SKP on AC=0  
211/ 7402 Error halt  
212/ 2300 Inc pass counter  
213/ 5202 do again  
214/ 7402 Good HLT  
215/ 0204 constant

This program halts at 00214(addr read 00215) AC=0000

## JMP Instruction

200/ 5210 JMP 210  
201/ 7402 ERROR HLT  
202/ 5206 JMP 206  
203/ 7402 ERROR HLT  
204/ 5212 JMP 212  
205/ 7402 ERROR HLT  
206/ 5204 JMP 204  
207/ 7402 ERROR HLT  
210/ 5204 JMP 202  
211/ 7402 ERROR HLT  
212/ 2300 LOOP TO DO 4096  
213/ 5200 START PROG. AGAIN  
214/ 7402 GOOD HLT AFTER 4096 TIMES

This program tests jump, it halts at 00215

\* Run this test twice

## Increment AC

200/ 7300 200/ 7001 = w  
201/ 7001 201/ 2300  
202/ 2207 202/ ~~5004~~ 5201  
203/ 5202 OR 203/ 5200  
204/ 2210  
205/ 5204  
206/ 5201

Visibly see AC increment

## WRITE ZERO'S - CLEAR MEM

0004/ 1007  
0005/ 3410  
0006/ 5004  
0007/ 0000  
0010/ 0011  
7300  
3410  
5000  
CLEARS 1 FIELD  
@ A TIME

\* Change loc 0007 to any desired loc of contents

## Checker board = w

7777/ 0000 0020/ 7300  
0000/ 7300 0021/ 7020  
0001/ 1007 0022/ 7420  
0002/ 7040 0023/ 5025  
0003/ 3007 0024/ 5027  
0004/ 1007 0025/ 1032  
0005/ 3410 OR 0026/ 7410  
0006/ 5000 0027/ 1033  
0007/ 0000 0030/ 3410  
0010/ 0011 0031/ 5021  
0032/ 5252  
0033/ 2525  
0010/ 0035

The MD reg alternates between 0000 and 7777

The MD reg alternates between 5252 and 2525

## Print Character in Switch Reg (bit 04-11)

0000/ 7604  
6046  
6041  
5002  
5000

## Deposit SR into Corresponding Address

0000/ 7604  
3005  
1005  
3405  
5000

\* Deposit contents of switch register  
into corresponding address.

## 4K Core Transfer (8K or more)

7600/ 6201	Change data field to 0 (specifies source field)
1670	TAD I 7670
6211	Change data field to 1 (specifies destination field)
3670	LCA I 7670
2270	Inc loc 7670
5300	JMP -5
7402	Halt
0000	

### Console Print Test = w

0000/7001  
6046  
6041  
5002  
5000

### LP05 Printer

<u>ECHO</u>	<u>PRINT</u>
200/6031	200/7001
201/5200	201/6666
202/6036	202/6661
203/6666	203/5202
204/5200	204/5200

### Paper Tape - PC04

200/7001	200/7300
6026	201/6016
202/6031	202/6011
203/5202	203/5202
204/5200	204/5200

Punches alternating  
1's and 0's

Reads the  
tape

### Echo Test for : = w

#### 1 terminal

0000/6032  
1/6031  
2/5001  
3/6036  
4/6046  
5/6041  
6/5005  
7/5001

#### 1-4 terminals (KL8A-M8319)

200/7300  
201/1205  
202/6412  
203/6401  
204/5203  
205/0210  
206/6406  
207/5203  
210/7000  
211/7000  
212/7000  
213/5206  
214/7000  
215/7000  
216/7000  
217/6405  
220/6404  
221/5203

### Dec tape - TC01/TC08 Bootstrap

7613/6774	200/7606
7614/1222	6766
7615/6766	6771
7616/6771	5202
7617/5216	5200
7620/1223	7754/7577
7621/5215	7577
7622/0600	LA 200 SR=0600
3/0220	CONT SR=0220
7754/7577	LA 7600 - REBOOT
7577	

### TD8E SR Control Routine

0000/7300 CLA CLL  
0001/7604 LAS  
0002/6774 SDLC (Load TD Comm.)  
0003/5201  
SR 0 = unit  
SR 1 = fwd/rev.  
SR 2 = stop/go  
SR 3 = read/write