

SUE 11/710

\*\*\*  
 MR MASTER RESET, ENTERED BY RECEIPT OF MRES-N FROM BUS.  
 MC MASTER CLEAR ROUTINE (FROM ABOVE) CLEARS ALL OF FILE.  
 QL QUIESCENT LOOP, WHEN STATUS BIT 11 IS ZERO. WAITS FOR INTERRUPT OR REQUEST TO HALT.  
 NR BEGINNING OF INTERRUPT ROUTINE. ACCESS LOGIC MAY BE BUSY.  
 NC INTERRUPT COMMAND, ACCESS LOGIC NOT BUSY.  
 NE INTERRUPT EXECUTION, WRITE DEVICE NUMBER.  
 RS RESEQUENCE, ENTERED BY I5 OR I6 TRAPS.  
 FN FETCH NEW INSTRUCTION.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
000	000000000	MR	0000000000000	*** MASTER RESET ***
001	8 0 78010	MC	40 00 1 80100	EMAX=0;S=MC; F=1
002	2A8F3F7 6		1LA20F03F7 06	T,XR=0000; C,V=0
003	0A40F 4		0LA100 3 04	PC=0000; C=1
004	A 0 1040	QL	50 00 10400	NEXT=1;S=QL
005	A 2 0180		56 02 01800	HBFS=1;S=ST NEXT
006	6 0 F20	NR	30 00 F200	BUS CYCLE (I6)
007	2 0 3 0	NC	10 00 3 00	SELECT INTERRUPT
008	6 0 3 DS		30 00 0 D10	READ DEV#; ENABLE IL#
009	0A0BFC185	NE	0LA00B 301805	A,FB=00180(8*IL)
00A	2A0 C A 2		1LA00 0 A 02	T=R; WRITE
00B	6 0 3 F20	RS	30 00 0 F200	BUS CYCLE (I6)
00C	390B3EA21		1A900B03EA201	A=FB+2; WRITE
00D	6F083 F22		3LF0080 F202	T=SR; BUS CYCLE (I6)
00E	390B3EA41		1A900B03EA401	A=FB+4; WRITE
00F	6F003 F22		3LF0000 F202	T=PC; BUS CYCLE (I6)
010	390BFE961		1A900B 3E9601	A=FB+6; READ
011	6 0 3 F20	ST	30 00 0 F200	BUS CYCLE (I6)
012	2A000 9 5	IS	1LA00000 9 05	A,PC=R; READ
013	0A38F3FB4		0LA038 33F804	SR=F800; SKIP
014	2F00 9 1	FN	1LF000 9 01	A=PC; READ
015	4 3 06B0		20 03 06B00	S=FF NEXT

\*\*\*\*\*

CC CONTROL CLASS, 0X\*\*, DECODE X.

\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
016	0 0 B88	CC	00 00 B810	TABLE B,8 FOR CONTROL OF
017	4 0 30FF0		20 00 0 0FF00	S=(TABLE)
018	0B093CFF2		0LB00903CFF02	T=IR&00FF

\*\*\*  
 CH CONTROL CLASS HALT INSTRUCTION, 00\*\*.  
 ST STOP. HALT HAS BEEN REQUESTED.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
019	6A0B2 F24	CH	3LA00B02 F204	FB=T; BUS CYCLE (I6)
01A	0A890 7		0LA20900 07	E,IR=R; C,V=0
01B	2F09F 1 1	ST	1LF0093 1 01	A=IR; HALT; F=3
01C	6F0FC F26		3LF00F30 F206	T,FF=R; F=3 ***SARC***
01D	0 0 3 0		00 00 0 00	NO-OP
01E	09091 0		0L900901 00	=IR,EQU,A; ONES = SAME IR
01F	0F083 2		0LF0080 02	T=SR
020	CF29 B497		6LF029 B4907	E,IR=IR; T11S=0;S=MK NEXT
021	8F20 46E1		4LF020 46E01	A=PC; ONES=0;S=FD NEXT
022	2 0 9 0		10 00 9 00	READ
023	6 0 3 F20		30 00 0 F200	BUS CYCLE (I6)
024	4A39C06E7		2LA039 006E07	E,IR=R; S=FD NEXT

\*\*\*\*\*  
 CONTROL CLASS MASK GROUP, 08X\*. DECODE X.  
 \*\*\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
025	0 0 C48	CM	00 00 C410	TABLE C,4 FOR CONTROL MASK
026	4 0 0FF0		20 00 0FF00	S=(TABLE)
027	0 0 3 F08		00 00 0 F010	TABLE F,0 FOR LEFT TRANSFER

\*\*\*\*\*  
 CD CONTROL CLASS DSBL INSTRUCTION, 088\*.  
 CE CONTROL CLASS ENBL INSTRUCTION, 080\*.  
 \*\*\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
028	0E3837F 4	CD	0LE038037F 04	SR=SR#MASK; SKIP
029	0708F7F 4	CE	0L7008 37F 04	SR=SR&/MASK
02A	4 0 06C0		20 00 06C00	S=FB
02B	8 2 1060		40 02 10600	NEXT=0;S=NR NEXT

\*\*\*\*\*  
 CL CONTROL CLASS LKEY INSTRUCTION, 091\*.  
 \*\*\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
02C	4 0 306B0	CL	20 00 0 06B00	S=FF
02D	2F09 2 0		1LF009 2 00	=IR; LOAD P KEY

\*\*\*  
 WD CONTROL CLASS DSBW INSTRUCTION, 08C\*.  
 WE CONTROL CLASS ENBW INSTRUCTION, 084\*.  
 WT WAIT LOOP. HANG UNTIL INTERRUPT OR HALT REQUEST. IF LEVEL FOUR HANDLE THRU XR TO NE BUT RETURN TO THIS INSTRUCTION. IF OTHER LEVEL CONTINUE TO NEXT INSTRUCTION. IF HALT REQUEST THEN COME BACK TO THIS INSTRUCTION AFTERWARDS.

\*\*\*  
 ROM FIELDS  
 ADR 987654321 LB STACDXFYM21ZW COMMENTS

02E	0E3837F 4	WD	0LE038037F 04	SR=SR#MASK; SKIP
02F	070837F 4	WE	0L7008037F 04	SR=SR#/MASK
030	6D18F7F20		3LD018 37F200	=SR#/F000; BUS CYCLE (16)
031	4 3 0FF0		20 03 0FF00	S=NM NEXT
032	A 1 1320	WT	50 01 13200	NEXT=1:S=WT; SKIP IF NO JUMP
033	A 2 0B30		50 02 0B300	HBFS=1:S=WH NEXT
034	2A0 C 3 2		1LA00 0 3 02	T=R; SELECT INTERRUPT
035	6 0 F08		30 00 D10	READ DEV#; ENABLE IL#
036	0A1 30FF0		0LA01 030FF00	=IL&FFFF, SKIP NOT LEVEL 4
037	4 3 0FD0		2L 03 0FD00	S=XR NEXT
038	4A0B00CE4		2LA00B0006E04	FB=R; S=FD
039	AA29201B7		5LA0290201B07	E,IR=T; HBFS=1:S=ST NEXT

\*\*\*\*\*  
 CS CONTROL CLASS STATUS INSTRUCTIONS, 02\*\*.

\*\*\*  
 ROM FIELDS  
 ADR 987654321 LB STACDXFYM21ZW COMMENTS

03A	04093C7F2	CS	0L400903C7F02	T=/(IR&007F)
03B	8B282A6B4		4LB02802A6B04	SR=SR&T; E07S=0:S=FF NEXT
03C	4D38E06B4		2LD038 206B04	SR=SR#/T; S=FF NEXT

\*\*\*\*\*  
 CA CONTROL CLASS ABSOLUTE MEMORY REFERENCE GROUP.  
 COMPUTE ABSOLUTE ADDRESS INTO FILE B. DECODE OP.

\*\*\*  
 ROM FIELDS  
 ADR 987654321 LB STACDXFYM21ZW COMMENTS

03D	2 0 32788	CA	10 00 0 27810	SLLO; TABLE 7,8 FOR ADR OP
03E	4A0BE0FF4		2LA00B 20FF04	FB=T; S=(TABLE)
03F	6 0 3 F20		30 00 0 F200	BUS CYCLE (16)

\*\*\*  
 CW CONTROL CLASS RETN INSTRUCTION, 04\*\*, 0C\*\*.  
 CX CONTROL CLASS MSTs INSTRUCTION, 05\*\*, 0D\*\*.  
 MK MASK TEST. ALLOW IS NOT SET. MASKS ALL SET VERBOTEN!  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
	987654321		STACDXFYM21ZW	
040	390BFE921	CW	1A900B 3E9201	A=FB+2; READ
041	6 0 F20		30 00 F200	BUS CYCLE (I6)
042	2A00C 9 5		1LA000 0 9 05	A,PC=R; READ
043	6 0 3 F20		30 00 0 F200	F=0; BUS CYCLE (I6)
044	2F0B3 9 1	CX	1LF00B0 9 01	A=FB; READ
045	6A090 F22		3LA00900 F202	T=R; BUS CYCLE (I6)
046	0A08C1077		0LA00B 010707	E,SR=R
047	AF003B6E1		5LF0000 B6E01	A=PC; E11S=1;S=FD
048	AA29201B7		5LA0290201B07	E,IR=T; HBFS=1;S=ST NEXT
049	0D28F7F 0	MK	0LD028 37F 00	=SR#/F000, SKIP ALL MASKED
04A	4 3 0040		20 03 00400	S=QL NEXT
04B	4 3 0FF0		20 03 0FF00	S=NM NEXT

\*\*\*\*\*  
 DC DATA TO ACCUMULATOR CLASS, 4\*\*\*.  
 DS DATA SET-UP, DECODE OPERATION, 4X\*\*.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
	987654321		STACDXFYM21ZW	
04C	9BA93B570	DC	4AB22903B5700	=IR&0700-1; E11S=0;S=JC NEXT
04D	AB297E4F2		5LB02913E4F02	T=IR&000F; E07S=1;S=DS NEXT; F=1
04E	AF27 9922		5LF027 99202	T=XR; E03S=1;S=DE NEXT
04F	0 0 3 588	DS	00 00 0 5810	TABLE 5,8 FOR GEN OP 1
050	4ABBE0FF4		2LA20B 20FF04	FB=T; C,V=0; S=(TABLE)
051	6 0 B F20		30 00 2 F200	F=2; BUS CYCLE (I6)

\*\*\*\*\*  
 CR CONTROL CLASS RELATIVE MEMORY REFERENCE GROUP.  
 COMPUTE RELATIVE ADDRESS INTO FILE B. DECODE OP.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
	987654321		STACDXFYM21ZW	
052	06093D8 4	CR	0L600903D8 04	IR=IR,XOR,0080
053	1A093CFF2		0AA0G903CFF02	T=IR#/00FF+IR&00FF
054	190A2 78A		0A900A02 7812	T=FA+T; TABLE 7,8 FOR ADR OP
055	4A0BE0FF4		2LA00B 20FF04	FB=T; S=(TABLE)
056	6 0 3 F20		30 00 0 F200	BUS CYCLE (I6)

\*\*\*  
 JC IS IT JUMP OR JSRR? 40\*\*, ELSE NOT IMPLEMENTED.  
 GX GENERAL CLASS, INDEXING SPECIFIED.  
 GI GENERAL CLASS INDIRECT ADDRESS FETCH.  
 GB INDIRECT BUS TEST AND MULTILEVEL LOOP.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
057	A A 5FF0	JC	50 22 5FF00	CRYS=1;S=NM NEXT
058	A30 398C2		5L300 0 98C02	T=0000; E03S=1;S=GE
059	04297E 70		0L402913E 700	=(IR&0007) SKIP NO INDEX; F=1
05A	0F37 2	GX	0LF037 02	T=XR; SKIP
05B	4 3 0FF0		20 03 0FF00	S=NM NEXT
05C	8A0BEA904		4LA00B 2A9004	FB=T; E07S=0;S=GS
05D	6 0 3 F20		30 00 0 F200	BUS CYCLE (I6)
05E	2A0 E 9 1	GI	1LA00 2 9 01	A=T; READ
05F	A30 BCF3		5L300 BCF03	LC=0; E11S=1;S=GZ
060	6 0 3 F20	GB	30 00 0 F200	BUS CYCLE (I6)
061	8A2BC290D		4LA02B 029015	A,FB=R; R00S=0;S=GS NEXT
062	2A0 3E9F3		1LA00 03E9F03	LC=LC+1; READ
063	8 2 3B600		40 02 0 86000	EMAX=0;S=GB NEXT
064	4F3A 0FA2		2LF03A 0FA02	T=FA; S=IS NEXT

\*\*\*\*\*  
 VC ARITHMETIC INSTRUCTIONS UPDATE CARRY AND OVERFLOW.  
 ZR READ NEXT INST. THEN;  
 ZO UPDATE NG, ZE, OD STATUS.  
 FF FINISH FETCH OF INSTRUCTION.  
 FB FETCH BUS TEST.  
 FH FETCH HALT TEST.  
 FD FETCHED INSTRUCTION CLASS DECODE, X\*\*\*.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
065	27083E484	VC	1L700803E4804	SR=SR&/0008; SCH4
066	0E08FE C4		0LE008 3E C04	SR=SR#000C WITH C,V
067	2F00 9 1	ZR	1LF000 9 01	A=PC; READ
068	050 2 0	ZO	0L500 02 00	=/T SIX ONES
069	270839577		1L700803B5707	SR=SR&/0700; SCM5
06A	0E08FB 74		0LE008 3B 704	SR=SR#0700 WITH N,Z,0
06B	8 2 1060	FF	40 02 10600	NEXT=C;S=NR NEXT
06C	6 0 3 F20	FB	30 00 0 F200	BUS CYCLE (I6)
06D	AA29001B7	FH	5LA0290001B07	E,IR=R; HBFS=1;S=ST NEXT
06E	0A0A1 8CC	FD	0LA00A01 8C14	FA=A; TABLE 8,C FOR CLASS
06F	4F89 0FF2		2LF209 0FF02	T=IR; S=(TABLE); C,V=0
070	39003E925		1A900003E9205	A,PC=PC+2; READ

\*\*\*  
 CV CONTROL CLASS REGM INSTRUCTION, 03\*\*, 0B\*\*.  
 CB BUS TEST LOOP POINT FOR ABOVE.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
071	2F0B3 A 1	CV	1LF00B0 A 01	A=FB; WRITE
072	0F01 2		0LF001 02	T=F1
073	0A0 FE A3		0LA00 3E A03	LC=A
074	6 0 3 F20	CB	30 00 0 F200	BUS CYCLE (I6)
075	39087EA25		1A900B13EA205	A,FB=FB+2; WRITE; F=1
076	8F07 8742		4LF007 87402	T=XR; EMAX=0;S=CB
077	2A0 EF7 2		1LA00 2F7 02	T=T; COUNT LC
078	4 0 0A20		20 00 0A200	S=CF
079	8 2 1060		40 02 10600	NEXT=0;S=NR NEXT

\* \* \* \* \*  
 BC BRANCH CLASS 8\*\*\*, 9\*\*\*.  
 BT BRANCH CLASS TEST OF CONDITION.  
 J BRANCH JUMP, COMPUTE ADDRESS.  
 \*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
07A	0D593B C0	BC	0LD11903B C00	=IR#/0C00 SKIP .LT. 12; C=1
07B	FBB93B830		7AB23903B8300	C,V=IR&0300-1; S=BL NEXT
07C	FC68 C7E2		7AC128 C7E02	T=SR+SR+1; T12S=1;S=BT NEXT
07D	050 2 2		0L500 02 02	T=/T
07E	0609FD8BC	BT	0L6009 3D8B14	IR=IR.XOR.0080; B FOR TEST TO M
07F	C 2 3F6B0		60 02 0 F6B00	TBIT=0;S=FF NEXT
080	1A093CFF2	BJ	0AA00903CFF02	T=IR#/00FF+IR&00FF
081	590AE0142		2A900A 201402	T=FA+T; S=FN
082	6A802 F24		3LA20002 F204	PC=T; C,V=0; BUS CYCLE (I6)

\* \* \* \* \*  
 BL BRANCH LESS THAN, ELSE NOT IMPLEMENTED.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
083	A 2 35FF0	BL	50 02 0 5FF00	CRYS=1;S=NM NEXT
084	0428FE 30		0L4028 3E 300	=/(SR&0003) SKIP LESS THAN
085	E 3 C6B0		70 03 C6B00	T12S=1;S=FF; SKIP
086	C 2 3C6B0		60 02 0 C6B00	T12S=0;S=FF NEXT
087	C639FD804		6L6039 3D8004	IR=IR.XOR.0080; S=BJ NEXT

\*\*\*  
 AD AUTO-DECREMENT CLASSES, 1\*\*\*, 5\*\*\*.  
 GC GENERAL CLASS OTHER THAN FOUR.  
 GE GENERAL-EXTENDED ADDRESS SPECIFIED.  
 GS GENERAL CLASS SETUP, DECODE CLASS FOR OPERAND FETCH.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
088	12C97B 80	AD	0A230913B 800	C,V=IR#/0800+1; F=1
089	1647FE 14		0A6107 3E 104	XR=XR-1-/CRYS
08A	830 395A2	GC	4L300 0 95A02	T=0000; E03S=0;S=GX
08B	04297E 70		0L402913E 700	=(IR&0007) SKIP NO INDEX; F=1
08C	0F07 2	GE	0LF007 02	T=XR
08D	19003E 24		0A900003E 204	PC=PC+2
08E	6A0B2 F24		3LA00B02 F204	FB=T; BUS CYCLE (I6)
08F	B92B0A5E6		5A902B00A5E06	T,FB=FB+R; E07S=1;S=GI NEXT
090	2F0B3 DC9	GS	1LF00B0 DC11	A=FB; READ (ALLOW);TABLE D,C FOR CLASS
091	4F39 0FF7		2LF039 0FF07	E,IR=IR; S=(TABLE) NEXT

\*\*\*\*\*  
 DE DATA TO ACCUMULATOR EXTENDED (TWO WORD)  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
092	0409FE 70	DE	0L4009 3E 700	=(IR&0007) ONES = NO INDEX
093	7900 EF26		3A9000 EF206	PC=PC+2; BUS CYCLE (I6)
094	AA2 444F2		5LA02 1044F02	T=R; ONES=1;S=DS NEXT; F=1
095	5937C04F2		2A9037 004F02	T=XR+R; S=DS NEXT

\*\*\*\*\*  
 AI AUTO-INCREMENT CLASSES, 2\*\*\*, 6\*\*\*.  
 AS AUTO DECREMENT/INCREMENT STATUS UPDATE OF LOOP COMPLETE.  
 GD GENERAL CLASS DECODE OF OPERATION, 5X\*\*\*, 6X\*\*\*, 7X\*\*\*.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
096	12C97B 80	AI	0A230913B 800	C,V=IR#/0800+1; F=1
097	19473E 14		0A910703E 104	XR=XR+1+CRYS
098	07887D8 4	AS	0L720815D8 04	SR=SR&/0080; F=1
099	00173 0		0L00170 00	=/XR SKIP INDEX NOT ZERO
09A	0E0BFD8 4		0LE008 3D8 04	SR=SR#0080
09B	8 2 CB00		40 02 CB000	E1AS=0;S=GM NEXT
09C	0 0 A88	GD	00 00 A810	TABLE A,8 FOR GEN OP 3
09D	4 0 0FF0		20 00 0FF00	S=(TABLE)
09E	6 8 B F20		30 20 2 F200	C,V=0; F=2; BUS CYCLE (I6)

\*\*\*  
 KM MEMORY TO ACCUMULATOR MOVE EXECUTION.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
09F	4A37C0676	KM	2LA037 006706	T,AR=R; S=ZR NEXT

\* \* \* \* \*  
 CT CONTROL CLASS STSM INSTRUCTION, 01\*\*, 09\*\*.  
 CF BUS CYCLE TEST FOR WRITE INSTRUCTIONS TO FETCH DECODE.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321		LS	STACDXFYM21ZW	
0A0	2F0B3 A 1	CT	1LF00B0 A 01	A=FB; WRITE
0A1	8F08 1072		4LF00B 10702	T=SR; NEXT=0; S=NC
0A2	6 0 F20	CF	30 00 F200	BUS CYCLE (I6)
0A3	4FC0306E1		2LF0000 06E01	A=PC; S=FD
0A4	AA29001B7		5LA0290001B07	E,IR=R; HBFS=1; S=ST NEXT

\* \* \* \* \*  
 CZ CONTROL CLASS MREG INSTRUCTION, 07\*\*, 0F\*\*.  
 CJ BUS TEST LOOP BACK POINT.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
0A5	2F0B3 9 1	CZ	1LF00B0 9 01	A=FB; READ
0A6	0A09C 4		0LA009 0 04	IR=R
0A7	0A0 FE 93		0LA00 3E 903	LC=9
0A8	6 0 3 F20	CJ	30 00 0 F200	BUS CYCLE (I6)
0A9	390B7E925		1A900B13E9205	A,FB=FB+2; READ; F=1
0AA	2A07CF7 4		1LA007 0F7 04	XR=R; COUNT LC
0AB	8 2 38A80		40 02 0 8A800	EMAX=0; S=CJ NEXT
0AC	6F093 F27		3LF0090 F207	E=IR; BUS CYCLE (I6)
0AD	8A27C1074		4LA027 010704	F7=R; NEXT=0; S=NC NEXT
0AE	4F00 06E1		2LF000 06E01	A=PC; S=FD
0AF	A 2 301B0		50 02 0 01B00	HBFS=1; S=ST NEXT

\* \* \* \* \*  
 GM GENERAL CLASS MEMORY TARGET DECODE OF OPERATION, 1X\*\*, 2X\*\*, 3X\*\*.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
0B0	0 0 688	GM	00 00 6810	TABLE 6,8 FOR GEN OP 2
0B1	4 8 0FF0		20 20 0FF00	C,V=0; S=(TABLE)
0B2	6 4 B F20		30 10 2 F200	C=1; F=2; BUS CYCLE (I6)

\*\*\*  
 WH WAIT STATE HALT REQUESTED.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
OB3	4 0 01B0	WH	20 00 01B00	S=ST
OB4	16003E 24		0A600003E 204	PC=PC-2

\*\*\*\*\*

SC SHIFT CLASS, A\*\*\*.  
 SA SKIP POINT FOR INDEXED SHIFT.  
 SB MULTIBIT SHIFT LOOP POINT.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
OB5	E 2 BBFF0	SC	70 02 2 BFF00	T11S=1;S=NM NEXT; F=2
OB6	0F077 2		0LF0071 02	T=AR; F=1
OB7	80273AB93		4L00270 AB903	LC=/XR; E07S=0;S=SA NEXT
OB8	00093 3		0L00090 03	LC=/IR
OB9	0428FE 80	SA	0L4028 3E 800	=(SR&0008) SKIP CBIT ZERO
OBA	0 4 0		00 10 00	CRYS=1
OB8	8 1 8BB8	SB	40 01 8BB10	EMAX=0;S=SB; B FOR OP TO M FIELD
OBC	2 0 F7 0		10 00 F7 00	SHIFT ACCORDING TO E
OBD	27083E484		1L700803E4804	SR=SR&/0008; SCM4
OBE	0E08BE C4		0LE00823E C04	SR=SR#000C WITH C,V
OBF	4A37E0684		2LA037 206804	AR=T; S=Z0 NEXT

\*\*\*\*\*

UM DATA TO ACCUMULATOR MOVE EXECUTION, 48\*\*.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
OC0	4A37E0676	UM	2LA037 206706	T,AR=T; S=ZR NEXT

\*\*\*\*\*

US DATA TO ACCUMULATOR SUBTRACT EXECUTION, 49\*\*.  
 \*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
OC1	454 A0652	US	2L510 2206502	T=/T; C=1; F=2; S=VC
OC2	19C72 6		0A930702 06	T,AR=AR+T+1



\*\*\*  
 UT DATA TO ACCUMULATOR TEST EXECUTION, 4F\*\*\*  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OCE	4B37E0672	UT	2LB037 206702	T=AR&T; S=ZR NEXT

\* \* \* \* \*  
 GZ BYTE MODE INDIRECT COMPLETION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OCE	4A3BC0905	GZ	2LA03B 009005	A,FB=R; S=GS NEXT

\* \* \* \* \*  
 HM ACCUMULATOR TO MEMORY MOVE EXECUTION. NOTE READ THEN WRITE!  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OD0	2F07 E 2	HM	1LF007 E 02	T=AR; WRITE (ALLOW)
OD1	4 3 0E10		20 03 0E100	S=ZB NEXT

\* \* \* \* \*  
 HS ACCUMULATOR TO MEMORY SUBTRACT EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OD2	36C70 E 2	HS	1A630700 E 02	T=AR-R-1; WRITE (ALLOW)
OD3	563FE0DF2		2A603F 20DF02	T=FF-T; S=ZM NEXT

\* \* \* \* \*  
 HA ACCUMULATOR TO MEMORY ADD EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OD4	3987C E 2	HA	1A9207 0 E 02	T=AR+R; WRITE (ALLOW)
OD5	4 3 0DF0		20 03 0DF00	S=ZM NEXT

\* \* \* \* \*  
 HN ACCUMULATOR TO MEMORY AND EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OD6	2B07C E 2	HN	1LB007 0 E 02	T=AR&R; WRITE (ALLOW)
OD7	4 3 0E10		20 03 0E100	S=ZB NEXT

\*\*\*  
 HR ACCUMULATOR TO MEMORY INCLUSIVE OR EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OD8	2E07C E 2	HR	1LE007 0 E 02	T=AR#R; WRITE (ALLOW)
OD9	4 3 0E10		20 03 0E100	S=ZB NEXT

\*\*\*\*\*  
 HX ACCUMULATOR TO MEMORY EXCLUSIVE OR EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
ODA	2607C E 2	HX	1L6007 0 E 02	T=AR.XOR.R; WRITE (ALLOW)
ODB	4 3 0E10		20 03 0E100	S=ZB NEXT

\*\*\*\*\*  
 HC ACCUMULATOR TO MEMORY COMPARE EXECUTION.  
 \*\*\*

	ROM		FIELDS	
R	987654321	LB	STACDXFYM21ZW	COMMENTS
ODC	56C700C82	HC	2A6307000C802	T=AR-R-1; S=UK
ODD	160F2 2		0A600F02 02	T=FF-T

\*\*\*\*\*  
 HT TEST INSTRUCTION EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
ODE	4B37C0672	HT	2LB037 006702	T=AR&R; S=ZR NEXT

\*\*\*\*\*  
 ZM MEMORY TARGET CARRY OVERFLOW UPDATE.  
 ZB BUS TEST FOR MEMORY TARGET.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
ODF	27083E484	ZM	1L700803E4804	SR=SR&/0008; SCM4
OE0	0E08FE C4		0LE008 3E C04	SR=SR#000C WITH C,V
OE1	4 0 0670	ZB	20 00 06700	S=ZR
OE2	6 0 3 F20		30 00 0 F200	BUS CYCLE (I6)

\*\*\*  
 KS MEMORY TO ACCUMULATOR SUBTRACT EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OE3	454 80652	KS	2L510 2006502	T=/R; C=1; F=2; S=VC
OE4	19C72 6		0A930702 06	T,AR=AR+T+1

\* \* \* \* \*  
 KA MEMORY TO ACCUMULATOR ADD EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OE5	59B7C0656	KA	2A9237 006506	T,AR=AR+R; S=VC NEXT

\* \* \* \* \*  
 KN MEMORY TO ACCUMULATOR AND EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OE6	4B37C0676	KN	2LB037 006706	T,AR=AR&R; S=ZR NEXT

\* \* \* \* \*  
 KR MEMORY TO ACCUMULATOR INCLUSIVE OR EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OE7	4E37C0676	KR	2LE037 006706	T,AR=AR#R; S=ZR NEXT

\* \* \* \* \*  
 KX MEMORY TO ACCUMULATOR EXCLUSIVE OR EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OE8	4637C0676	KX	2L6037 006706	T,AR=AR.XOR,R; S=ZR NEXT

\* \* \* \* \*  
 KC MEMORY TO ACCUMULATOR COMPARE EXECUTION.  
 \*\*\*

	ROM		FIELDS	
ADR	987654321	LB	STACDXFYM21ZW	COMMENTS
OE9	56B7C0C92	KC	2A6207 00C902	T=AR-R; S=UL
OE A	2F00 9 1		1LF000 9 01	A=PC; READ

\*\*\*  
UNUSED WORDS RESERVED FOR PAGE BRANCHES.

\*\*\*  
OEB  
OEC  
OED  
OEE

\*\*\*\*\*  
JS JUMP AND JSBR EXECUTION, 40\*\*.  
\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
0EF	0F00B 2	JS	0LF0002 02	T=PC; F=2
0FG	4A07E06B4		2LA007 206B04	AR=T; S=FF
0F1	0A001 4		0LA00001 04	PC=A

\*\*\*\*\*  
I6 ABORT TRAP ROUTINE.  
IG TRAP CONTINUATION FOR LEVELS FIVE AND SIX.

\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
0F2	2F0A 8 2	I6	1LF00A 8 02	T=FA; RESET BAES
0F3	0A002 4		0LA00002 04	PC=T
0F4	0A0B3D52C		0LA00B03D5214	FB=0050; ENABLE CPU#
0F5	190BFD6 2	IG	0A900B 3D6 02	T=FB+0060 WITH CPU#
0F6	2 0 367 0		10 00 0 67 00	SRL0
0F7	0A0BE 4		0LA00B 2 04	FB=T
0F8	4A0 100B2		2LA00 0100B02	T=A; S=RS
0F9	2F0B A 1		1LF00B A 01	A=FB; WRITE

\*\*\*\*\*  
I5 INSTRUCTION TRAP ROUTINE.  
\*\*\*

ADR	ROM	LB	FIELDS	COMMENTS
987654321			STACDXFYM21ZW	
0FA	6A0020F24	I5	3LA000020F204	PC=T; BUS CYCLE (I5)
0FB	4F0930F51		2LF0090 0F501	A=IR; S=IG
0FC	0A0B3D42C		0LA00B03D4214	FB=0040; ENABLE CPU#

\*\*\*  
 XR LEVEL FOUR INTERRUPT REQUEST FROM WAIT.  
 \*\*\*

	ROM		FIELDS		COMMENTS
ADR	987654321	LB	STACDXFYM21ZW		
OFD	4F0A 0092	XR	2LF00A 00902	T=FA; S=NE	
OFF	0A002 4		0LA00002 04	PC=T	

\*\*\*\*\*  
 NM NOT IMPLEMENTED OR ILLEGAL TRAP!  
 \*\*\*

	ROM		FIELDS		COMMENTS
ADR	987654321	LB	STACDXFYM21ZW		
OFF	4F3A 0FA2	NM	2LF03A 0FA02	T=FA; S=I5 NEXT	

TABLE ROMS

ADR	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
1	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
2	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
3	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
4	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
5	C0	C1	C3	C4	C5	C6	C7	CE	C0	C1	C3	C4	C5	C6	C7	CE
6	D0	D2	D4	D6	D8	DA	DC	DE	D0	D2	D4	D6	D8	DA	DC	DE
7	FF	A0	FF	71	40	44	FF	A5	FF	A0	FF	71	40	44	FF	A5
8	16	88	8A	8A	4C	88	8A	8A	7A	7A	B5	FF	FF	FF	FF	FF
9	F1	F2	F3	F4	F5	F6	F7	F8	F9	FA	FB	FC	FD	FE	FF	FF
A	9F	E3	E5	E6	E7	E8	E9	DE	9F	E3	E5	E6	E7	E8	E9	DE
B	19	3D	3A	3D	3D	3D	FF	3D	25	52	FF	52	52	52	FF	52
C	29	2C	FF	FF	2F	FF	FF	FF	28	FF	FF	FF	2E	FF	FF	FF
D	FF	98	96	B0	EF	98	96	9C	FF	FF	FF	FF	FF	FF	FF	FF
E	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
F	0F	1F	2F	3F	4F	5F	6F	7F	8F	9F	AF	BF	CF	DF	EF	FF

END