

.TITLE BD15 CONTROL TEST
.EBREL

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/ APRIL 1, 1971
/ BY ROBERT A, WHITTON
/MODIFIED BY ED HILTON FOR SYSTEM EXERCISER 4/5/71
/

00000 R 604031 A
00001 R 000032 A
00002 R 000000 A
00003 R 000000 A
00004 R 000057 R
00005 R 000034 R
00006 R 020461 A
00007 R 654040 A
00010 R 000010 A
00011 R A

UODSW 604031
000032

/BIT 0 = 1 FOR UDC ONLY

.DSA BDSERV
.DSA BDINIT
.SIXBT 'BD15'

10 /CHAIN MODE SWITCH
.BLOCK 7

00020 R 000000 A
00021 R 000000 A
00022 R 000000 A
00023 R 000000 A
00024 R 000000 A
00025 R 000000 A
00026 R 000000 A
00027 R 000000 A
00030 R 000000 A
00031 R 000000 A

SYSERR 0
ERWC
ERCODE

0
0
0
0
0
0
0
0
0
0

00032 R 777760 A
00033 R 777640 A
00034 R 000000 A
00035 R 707764 A
00036 R 707702 A
00037 R 200034 R
00040 R 040057 R
00041 R 144237 R
00042 R 144241 R
00043 R 144235 R
00044 R 777777 A
00045 R 040032 R
00046 R 200001 R
00047 R 740100 A
00050 R 600053 R
00051 R 777600 A
00052 R 741000 A
00053 R 777640 A
00054 R 040033 R
00055 R 100141 R
00056 R 600246 R

MINCYC -20
MAJCYC -140
BDINIT 0

EBA
EEM
LAC BDINIT
DAC BDSERV
DZM M5IND
DZM FLGCHK
DZM HOLSW
LAW -1
DAC MINCYC
LAC UODSW+1
SMA
JMP +3
LAW -200
SKP
LAW -140
DAC MAJCYC
JMS HOLD
JMP S3

.EJECT

00057	R	000000	A	BDSERV	0		
00060	R	707764	A		EBA		
00061	R	707702	A		EEM		
00062	R	044236	R		DAC	SAVAC	
					/		
00063	R	701012	A		MRS		
00064	R	504241	R		AND	FLGCHK	
00065	R	741200	A		SNA		
00066	R	600071	R		JMP	,+3	
00067	R	144241	R		DZM	FLGCHK	
00070	R	620170	R		JMP*	MONBRK	/FLAG WAS PRESENT
00071	R	705512	A		RPL		
00072	R	740100	A		SMA		
00073	R	600105	R		JMP	CHK.1	
00074	R	140022	R		DZM	ERCODE	/ERROR 0, API ENTRY AND NO FLAG
00075	R	705512	A		RPL		
00076	R	040023	R		DAC	ERCODE+1	
00077	R	777776	A		LAW	=2	
00100	R	040021	R		DAC	ERWC	
00101	R	040020	R		DAC	SYSERR	
00102	R	044237	R		DAC	M5IND	
00103	R	100122	R		JMS	EXIT	
00104	R	620170	R		JMP*	MONBRK	
					/		
00105	R	200020	R	CHK.1	LAC	SYSERR	
00106	R	750201	A		SZA!CLA!CMA		
00107	R	600126	R		JMP	EXIT.1	/EXIT ON PI INTERROGATION
					/		
00110	R	204237	R		LAC	M5IND	
00111	R	741200	A		SNA		
00112	R	600115	R		JMP	,+3	
00113	R	144237	R		DZM	M5IND	
00114	R	620122	R		JMP*	EXIT	/=5 ENTRY
					/		
00115	R	204235	R		LAC	HOLSW	
00116	R	751201	A		SNA!CLA!CMA		
00117	R	600126	R		JMP	EXIT.1	/NEITHER FLAG OR =5 ENTRY
00120	R	144235	R		DZM	HOLSW	
00121	R	620122	R		JMP*	EXIT	/HOLD SWITCH
					,EJECT		

00122	R	000000	A	EXIT	Ø	
00123	R	705512	A		RPL	
00124	R	751100	A		SPA;CLA	
00125	R	204236	R		LAC	SAVAC
00126	R	703344	A	EXIT,1	DBR	
00127	R	620057	R		JMP*	BUSERV
					/	
00130	R	000000	A	M5	Ø	
00131	R	777773	A		LAW	=5
00132	R	044237	R		DAC	M5IND
00133	R	040020	R		DAC	SYSERR
00134	R	140021	R		DZM	ERWC
00135	R	144241	R		DZM	FLGCHK
00136	R	100122	R		JMS	EXIT
00137	R	100141	R		JMS	HOLD
00140	R	620130	R		JMP*	M5
					/	
00141	R	000000	A	HOLD	Ø	
00142	R	750004	A	HOLD,1	LAS	
00143	R	500010	R		AND	UODSW+10
00144	R	741200	A		SNA	
00145	R	620141	R		JMP*	HOLD
00146	R	777773	A		LAW	=5
00147	R	040020	R		DAC	SYSERR
00150	R	044235	R		DAC	HOLSW
00151	R	140021	R		DZM	ERWC
00152	R	100122	R		JMS	EXIT
00153	R	600142	R		JMP	HOLD,1
					/	
00154	R	777774	A	TERMIN	LAW	=4
00155	R	040020	R		DAC	SYSERR
00156	R	140021	R		DZM	ERWC
00157	R	701022	A		MCM	
00160	R	100170	R		JMS	MONBRK
00161	R	740040	A		HLT	
					/	
00162	R	000000	A	TESTFC	Ø	
00163	R	200001	R		LAC	UODSW+1
00164	R	741100	A		SPA	
00165	R	620162	R		JMP*	TESTFC
					/	
00166	R	440162	R		ISZ	TESTFC
00167	R	620162	R		JMP*	TESTFC
					,EJECT	

00170	R	000000	A	MONBRK	Ø	
00171	R	705512	A		RPL	
00172	R	751100	A		SPA!CLA	
00173	R	204236	R		LAC	SAVAC
00174	R	703344	A	MON,1	DBR	
00175	R	620057	R		JMP#	BDSERV
					/	
00176	R	000000	A	ERROR	Ø	
00177	R	220176	R		LAC*	ERROR
00200	R	040022	R		DAC	ERCODE
00201	R	440176	R		ISZ	ERROR
00202	R	701012	A		MRS	
00203	R	040023	R		DAC	ERCODE+1
00204	R	701052	A		URAA	
00205	R	040024	R		DAC	ERCODE+2
00206	R	701072	A		URCG	
00207	R	040025	R		DAC	ERCODE+3
00210	R	701001	A		UMOD	
00211	R	702012	A		URA	
00212	R	040026	R		DAC	ERCODE+4
00213	R	702032	A		URD	
00214	R	040027	R		DAC	ERCODE+5
00215	R	200001	R		LAC	UQDSW+1
00216	R	740100	A		SMA	
00217	R	600222	R		JMP	ERR,1
00220	R	777772	A		LAW	=6
00221	R	600230	R		JMP	ERR,2
00222	R	701021	A	ERR,1	FCMOD	
00223	R	702012	A		FCRA	
00224	R	040030	R		DAC	ERCODE+6
00225	R	702032	A		FCRB	
00226	R	040031	R		DAC	ERCODE+7
00227	R	777770	A		LAW	=10
00230	R	040021	R	ERR,2	DAC	ERWC
00231	R	777776	A		LAW	=2
00232	R	040020	R		DAC	SYSERR
00233	R	044237	R		DAC	M5IND
00234	R	777777	A		LAW	=1
00235	R	044243	R		DAC	TSTCNT
00236	R	100122	R		JMS	EXIT
00237	R	200023	R		LAC	ERCODE+1
00240	R	741100	A		SPA	
00241	R	600244	R		JMP	,+3
00242	R	701001	A		UMOD	
00243	R	620176	R		JMP#	ERROR
					/	
00244	R	701021	A		FCMOD	
00245	R	620176	R		JMP#	ERROR
					.EJECT	

701001 A	UMOD=701001	/SET UDC MODE
701072 A	URCG=701072	/CLEAR AC, READ COS GATES
701064 A	ULD=701064	/LOAD DATA OUT
701044 A	ULPS=701044	/LOAD PREVIOUS STATUS
701041 A	USI=701041	/SKIP ON IMMEDIATE FLAG
701061 A	USD=701061	/SKIP ON DEFERRED FLAG
701052 A	URAA=701052	/CLEAR AC, READ AUTO ADDRESS
702004 A	USINT=702004	/SELECT UDC INT MODE AND ENABLE
702024 A	ULA=702024	/LOAD ADDRESS
702032 A	URD=702032	/CLEAR AC, READ DATA IN
702021 A	USCAN=702021	/START INTERRUPT SCAN
702041 A	USNB=702041	/SKIP IF SCAN NOT BUSY
702012 A	URA=702012	/CLEAR AC, READ ADDRESS
702004 A	FCEI=702004	/ENABLE FC INTERRUPT
702012 A	FCRA=702012	/CLEAR AC, READ FC ADDRESS
702024 A	FCLAG=702024	/LOAD FC ADDRESS AND GAIN
701021 A	FCMOD=701021	/SET FC MOD
702032 A	FCRB=702032	/CLEAR AC, READ A/D BUFF
702021 A	FCCV=702021	/A/D CONVERT
702041 A	FCSD=702041	/SKIP ON A/D DONE
702001 A	FCDI=702001	/DISABLE FC INTERRUPT
701004 A	MSM=701004	/ENABLE MAINT LOGIC
701022 A	MCM=701022	/DISABLE MAINT LOGIC
701024 A	MLS=701024	/LOAD STATUS
701012 A	MRS=701012	/CLEAR AC, READ STATUS
702044 A	MCLK=702044	/MAINT CLOCK PULSE
	/	
707702 A	EEM=707702	
707764 A	EBA=707764	
	,EJECT	

/T3 = PRELIMINARY POWER CLEAR TEST

00246	R	200033	R	S3	/	LAC	MAJCYC	
00247	R	044242	R			DAC	RUNLEN	
00250	R	200032	R			LAC	MINCYC	
00251	R	044243	R			DAC	TSTCNT	
00252	R	701022	A	S3,1		MCM		
00253	R	702041	A			USNB		
00254	R	741000	A			SKP		
00255	R	600260	R			JMP	,+3	
00256	R	100176	R			JMS	ERROR	/MCM NOT CLEARING BUSY FLOP
00257	R	000001	A			1		
00260	R	701041	A			USI		
00261	R	600264	R			JMP	,+3	
00262	R	100176	R			JMS	ERROR	/MCM NOT CLEARING INTERMEDIATE FLAG
00263	R	000002	A			2		
00264	R	701061	A			USD		
00265	R	600270	R			JMP	,+3	
00266	R	100176	R			JMS	ERROR	/MCM NOT CLEARING DEFERRED FLAG
00267	R	000003	A			3		
00270	R	701012	A			MRS		/READ STATUS
00271	R	740100	A			SMA		/CHECK BIT 0
00272	R	600275	R			JMP	,+3	
00273	R	100176	R			JMS	ERROR	/MCM NOT SETTING UDC MODE
00274	R	000004	A			4		
00275	R	504244	R			AND	(200000	
00276	R	741200	A			SNA		
00277	R	600302	R			JMP	,+3	
00300	R	100176	R			JMS	ERROR	/IMM FLAG NOT CLEARING WITH MCM
00301	R	000005	A			5		
						,EJECT		

/T4 = PRELIMINARY POWER CLEAR TEST

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/
S4      MRS                               /READ STATUS WORD
00302 R 701012 A
00303 R 504245 R      AND      (100000)
00304 R 741200 A      SNA
00305 R 600310 R      JMP      ,+3
00306 R 100176 R      JMS      ERROR      /DEFERRED FLAG NOT CLEARING WITH MCM
00307 R 000006 A      6
00310 R 701012 A      MRS
00311 R 504246 R      AND      (40000)
00312 R 741200 A      SNA
00313 R 600316 R      JMP      ,+3
00314 R 100176 R      JMS      ERROR      /BUSY FLAG NOT CLEARING WITH MCM
00315 R 000007 A      7
00316 R 701012 A      MRS
00317 R 504247 R      AND      (20000)
00320 R 741200 A      SNA
00321 R 600324 R      JMP      ,+3
00322 R 100176 R      JMS      ERROR      /DEFERRED ADDRESS FAULT FLOPS NOT CLEAR
00323 R 000010 A      10
00324 R 701012 A      MRS
00325 R 504250 R      AND      (10000)
00326 R 741200 A      SNA
00327 R 600332 R      JMP      ,+3
00330 R 100176 R      JMS      ERROR      /IMMEDIATE ADDRESS FAULT FLOPS NOT CLEAR
00331 R 000011 A      11

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/T5 = PRELIMINARY POWER CLEAR TEST

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/
S5      MRS
00332 R 701012 A
00333 R 504251 R      AND      (2000)
00334 R 741200 A      SNA
00335 R 600340 R      JMP      ,+3
00336 R 100176 R      JMS      ERROR      /A/D DONE FLOP NOT CLEARING WITH MCM
00337 R 000012 A      12
00340 R 701012 A      MRS
00341 R 504252 R      AND      (1000)
00342 R 741200 A      SNA
00343 R 600346 R      JMP      ,+3
00344 R 100176 R      JMS      ERROR      /P=FLOP NOT CLEARING WITH MCM
00345 R 000013 A      13
00346 R 701012 A      MRS
00347 R 504253 R      AND      (400)
00350 R 741200 A      SNA
00351 R 600354 R      JMP      ,+3
00352 R 100176 R      JMS      ERROR      /SAMPLE FLOP NOT CLEARING WITH MCM
00353 R 000014 A      14
00354 R 444243 R      ISZ      TSTCNT
00355 R 741000 A      SKP
00356 R 600361 R      JMP      S6
00357 R 100130 R      JMS      M5
00360 R 600252 R      JMP      S3,1
      ,EJECT

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/T6 = TEST MODE FLOP

00361	R	200032	R	S6	LAC	MINCYC	
00362	R	044243	R		DAC	TSTCNT	
00363	R	701021	A	S6,1	FCMOD		/SET FC MODE
00364	R	701012	A		MRS		
00365	R	741100	A		SPA		
00366	R	600371	R		JMP	,+3	
00367	R	100176	R		JMS	ERROR	/FCMOD NOT SETTING MODE FLOP
00370	R	000015	A		15		
00371	R	701022	A		MCM		
00372	R	701012	A		MRS		
00373	R	740100	A		SMA		
00374	R	600377	R		JMP	,+3	
00375	R	100176	R		JMS	ERROR	/MCM NOT CLEARING MODE FLOP
00376	R	000016	A		16		
00377	R	701021	A		FCMOD		
00400	R	701001	A		UMOD		
00401	R	701012	A		MRS		
00402	R	740100	A		SMA		
00403	R	600406	R		JMP	,+3	
00404	R	100176	R		JMS	ERROR	/UMOD NOT CLEARING MODE FLOP
00405	R	000017	A		17		
00406	R	701021	A		FCMOD		
00407	R	701022	A		MCM		
00410	R	701012	A		MRS		
00411	R	740100	A		SMA		
00412	R	600415	R		JMP	,+3	
00413	R	100176	R		JMS	ERROR	/CLEAR MAINT NOT CLEARING MODE FLOP
00414	R	000020	A		20		
00415	R	204254	R		LAC	(400000)	
00416	R	701024	A		MLS		
00417	R	701012	A		MRS		
00420	R	741100	A		SPA		
00421	R	600424	R		JMP	,+3	
00422	R	100176	R		JMS	ERROR	/CANNOT SET MODE FLOP WITH STATUS BIT
00423	R	000021	A		21		
00424	R	750000	A		CLA		
00425	R	701024	A		MLS		
00426	R	701012	A		MRS		
00427	R	740100	A		SMA		
00430	R	600433	R		JMP	,+3	
00431	R	100176	R		JMS	ERROR	/CANNOT CLEAR MODE FLOP WITH STATUS BIT
00432	R	000022	A		22		
					.EJECT		

/T7 = TEST IMMEDIATE FLAG

00433	R	204244	R	S7	LAC	(200000)	
00434	R	701024	A		MLS		
00435	R	701012	A		MRS		
00436	R	504244	R		AND	(200000)	
00437	R	740200	A		SZA		
00440	R	600443	R		JMP	,+3	
00441	R	100176	R		JMS	ERROR	/CANNOT SET IMM FLAG WITH STATUS
00442	R	000023	A		23		
00443	R	701041	A		USI		
00444	R	741000	A		SKP		
00445	R	600450	R		JMP	,+3	
00446	R	100176	R		JMS	ERROR	/CANNOT SKIP ON IMM FLAG
00447	R	000024	A		24		
00450	R	701061	A		USD		
00451	R	600454	R		JMP	,+3	
00452	R	100176	R		JMS	ERROR	/DEFERRED FLAG SHOULD NOT BE SET
00453	R	000025	A		25		
00454	R	701022	A		MCM		/OR SHOULD NOT SKIP ON DEFERRED
00455	R	701052	A		URAA		
00456	R	701012	A		MRS		
00457	R	504244	R		AND	(200000)	
00460	R	741200	A		SNA		
00461	R	600464	R		JMP	,+3	
00462	R	100176	R		JMS	ERROR	/MCM DID NOT CLEAR IMM FLAG
00463	R	000026	A		26		
00464	R	701041	A		USI		
00465	R	600470	R		JMP	,+3	
00466	R	100176	R		JMS	ERROR	/IMM FLAG CLEARD, SHOULD NOT SKIP
00467	R	000027	A		27		
00470	R	701061	A		USD		
00471	R	600474	R		JMP	,+3	
00472	R	100176	R		JMS	ERROR	/DEFF FLAG CLEARED, SHOULD NOT SKIP
00473	R	000030	A		30		
00474	R	444243	R		ISZ	TSTCNT	
00475	R	741000	A		SKP		
00476	R	600501	R		JMP	S10	
00477	R	100130	R		JMS	M5	
00500	R	600363	R		JMP	S6,1	

,EJECT

/T10 = TEST DEFERRED FLAG

00501	R	200032	R	S10	LAC	MINCYC		
00502	R	044243	R		DAC	TSTCNT		
00503	R	204245	R	S10,1	LAC	(100000)		
00504	R	701024	A		MLS			
00505	R	701012	A		MRS			
00506	R	504245	R		AND	(100000)		
00507	R	740200	A		SZA			
00510	R	600513	R		JMP	,+3		
00511	R	100176	R		JMS	ERROR	/CANNOT SET DEFF FLAG WITH STATUS	
00512	R	000031	A		31			
00513	R	701061	A		USD			
00514	R	741000	A		SKP			
00515	R	600520	R		JMP	,+3		
00516	R	100176	R		JMS	ERROR	/CANNOT SKIP ON DEFER FLAG	
00517	R	000032	A		32			
00520	R	701041	A		USI			
00521	R	600524	R		JMP	,+3		
00522	R	100176	R		JMS	ERROR	/IMM FLAG SHOULD NOT BE SET	
00523	R	000033	A		33			
00524	R	701022	A		MCM			
00525	R	701052	A		URAA			
00526	R	701012	A		MRS			
00527	R	504245	R		AND	(100000)		
00530	R	741200	A		SNA			
00531	R	600534	R		JMP	,+3		
00532	R	100176	R		JMS	ERROR	/MCM DID NOT CLEAR DEFF FLAG	
00533	R	000034	A		34			
00534	R	701061	A		USD			
00535	R	600540	R		JMP	,+3		
00536	R	100176	R		JMS	ERROR	/DEFF FLAG CLEARED, SHOULD NOT SKIP	
00537	R	000035	A		35			
00540	R	701041	A		USI			
00541	R	600544	R		JMP	,+3		
00542	R	100176	R		JMS	ERROR	/IMM FLAG CLEARED, SHOULD NOT SKIP	
00543	R	000036	A		36			

,EJECT

/T11 = TEST MAINT FLOP

00544 R 701012 A
 00545 R 504255 R
 00546 R 741200 A
 00547 R 600552 R
 00550 R 100176 R
 00551 R 000037 A
 00552 R 701004 A
 00553 R 701012 A
 00554 R 504255 R
 00555 R 740200 A
 00556 R 600561 R
 00557 R 100176 R
 00560 R 000040 A
 00561 R 701022 A
 00562 R 701012 A
 00563 R 504255 R
 00564 R 741200 A
 00565 R 600570 R
 00566 R 100176 R
 00567 R 000041 A
 00570 R 701004 A
 00571 R 701022 A
 00572 R 701012 A
 00573 R 504255 R
 00574 R 741200 A
 00575 R 600600 R
 00576 R 100176 R
 00577 R 000042 A
 00600 R 444243 R
 00601 R 741000 A
 00602 R 600605 R
 00603 R 100130 R
 00604 R 600503 R

/S11
 MRS
 AND (200
 SNA
 JMP ,+3
 JMS ERROR
 37
 MSM
 MRS
 AND (200
 SZA
 JMP ,+3
 JMS ERROR
 40
 MCM
 MRS
 AND (200
 SNA
 JMP ,+3
 JMS ERROR
 41
 MSM
 MCM
 MRS
 AND (200
 SNA
 JMP ,+3
 JMS ERROR
 42
 ISZ TSTCNT
 SKP
 JMP S12
 JMS M5
 JMP S10,1
 ,EJECT

/MAINT NOT CLEARING WITH MCM

/SET MAINT FLOP

/MAINT FLOP NOT SETTING WITH MSM

/MAINT FLOP NOT CLEARING WITH MCM

/SET MAINT FLOP
/CLEAR MAINT FLOP PWR CLR

/MAINT FLOP NOT CLEARING WITH MCM

/T12 = TEST IMM+DEFF FLAGS

00605	R	200032	R	S12	LAC	MINCYC	
00606	R	044243	R		DAC	TSTCNT	
00607	R	204256	R	S12.1	LAC	(300000)	/SET IMM+DEF FLAGS
00610	R	701024	A		MLS		
00611	R	701041	A		USI		
00612	R	600615	R		JMP	,+3	
00613	R	100176	R		JMS	ERROR	/SKIPPED WITH I MULT DISABLED
00614	R	000043	A		43		
00615	R	701061	A		USD		
00616	R	600621	R		JMP	,+3	
00617	R	100176	R		JMS	ERROR	/SKIPPED WITH D MULT DISABLED
00620	R	000044	A		44		
00621	R	702012	A		URA		/GENERATE RIF WITH READ ADDRESS
00622	R	701012	A		MRS		
00623	R	504256	R		AND	(300000)	
00624	R	741200	A		SNA		
00625	R	600630	R		JMP	,+3	
00626	R	100176	R		JMS	ERROR	/RIF NOT GENERATED WITH MAINT = 0 BY URA
00627	R	000045	A		45		
00630	R	204256	R		LAC	(300000)	/SET JMM + DEF FLAGS
00631	R	701024	A		MLS		
00632	R	701052	A		URAA		/GENERATE RIF WITH READ AUTO ADDRESS
00633	R	701012	A		MRS		
00634	R	504256	R		AND	(300000)	
00635	R	741200	A		SNA		
00636	R	600641	R		JMP	,+3	
00637	R	100176	R		JMS	ERROR	/RIF NOT GENERATED WITH URAA
00640	R	000046	A		46		
00641	R	204256	R		LAC	(300000)	/SET IMM+DEF FLAGS
00642	R	701024	A		MLS		
00643	R	701004	A		MSM		
00644	R	702012	A		URA		
00645	R	701012	A		MRS		
00646	R	504256	R		AND	(300000)	
00647	R	544256	R		SAD	(300000)	
00650	R	600653	R		JMP	,+3	
00651	R	100176	R		JMS	ERROR	/RIF BEING GENERATED WITH MAIN=1
00652	R	000047	A		47		

,EJECT

/T13=TEST DEF ENABLE FLOP

```

/
S13
00653 R 701022 A MCM
00654 R 701052 A URAA
00655 R 701012 A MRS /READ STATUS
00656 R 504256 R AND (300000)
00657 R 741200 A SNA
00660 R 600663 R JMP ,+3
00661 R 100176 R JMS ERROR /IMM OR DEF FLAG SET WITH MAINT ON A 1
00662 R 000050 A 50
00663 R 701022 A MCM /CLEAR MAINT
00664 R 204257 R LAC (1)
00665 R 702004 A USINT /SET DEF EN FLOP
00666 R 701012 A MRS
00667 R 504256 R AND (300000)
00670 R 741200 A SNA
00671 R 600674 R JMP ,+3
00672 R 100176 R JMS ERROR /IMM OR DEF FLAG SET WITH DEF EN SET
00673 R 000051 A 51
00674 R 701004 A MSM
00675 R 701012 A MRS
00676 R 504256 R AND (300000)
00677 R 544245 R SAD (100000)
00700 R 600703 R JMP ,+3
00701 R 100176 R JMS ERROR /DEF FLAG DID NOT SET OR IMM FLAG SET
00702 R 000052 A 52
00703 R 701022 A MCM
00704 R 702012 A URA /GENERATE RIF TO CLEAR DEF FLAG
00705 R 701012 A MRS
00706 R 504256 R AND (300000)
00707 R 741200 A SNA
00710 R 600713 R JMP ,+3
00711 R 100176 R JMS ERROR /DEF FLAG WAS NOT CLEARED
00712 R 000053 A 53
00713 R 701004 A MSM /SET MAINT, DEF FLAG SHOULD NOT SET
00714 R 701012 A MRS
00715 R 504256 R AND (300000)
00716 R 741200 A SNA
00717 R 600722 R JMP ,+3
00720 R 100176 R JMS ERROR /RIF DID NOT CLEAR DEF FLAG OR WAS
00721 R 000054 A 54
00722 R 701022 A MCM /RESET BY DEF EN
00723 R 444243 R ISZ TSTCNT
00724 R 741000 A SKP
00725 R 600730 R JMP S14
00726 R 100130 R JMS M5
00727 R 600607 R JMP S12,1
      .EJECT

```

/T14 - TEST IMM ENABLE FLOP

00730 R 200032 R
00731 R 044243 R
00732 R 701004 A
00733 R 701012 A
00734 R 504256 R
00735 R 741200 A
00736 R 600741 R
00737 R 100176 R
00740 R 000055 A
00741 R 701022 A
00742 R 204260 R
00743 R 702004 A
00744 R 701012 A
00745 R 504256 R
00746 R 741200 A
00747 R 600752 R
00750 R 100176 R
00751 R 000056 A
00752 R 701004 A
00753 R 701012 A
00754 R 504256 R
00755 R 544244 R
00756 R 600761 R
00757 R 100176 R
00760 R 000057 A
00761 R 701022 A
00762 R 702012 A
00763 R 701012 A
00764 R 504256 R
00765 R 741200 A
00766 R 600771 R
00767 R 100176 R
00770 R 000060 A
00771 R 701004 A
00772 R 701012 A
00773 R 504256 R
00774 R 741200 A
00775 R 601000 R
00776 R 100176 R
00777 R 000061 A
01000 R 701022 A

S14 LAC MINCYC
DAC TSTCNT
S14,1 MSM
MRS
AND (300000
SNA
JMP ,+3
JMS ERROR
55
MCM
LAC (2
USINT
MRS
AND (300000
SNA
JMP ,+3
JMS ERROR
56
MSM
MRS
AND (300000
SAD (200000
JMP ,+3
JMS ERROR
57
MCM
URA
MRS
AND (300000
SNA
JMP ,+3
JMS ERROR
60
MSM
MRS
AND (300000
SNA
JMP ,+3
JMS ERROR
61
MCM
,EJECT

/SET MAINT FLOP
/READ STATUS

/IMM OF DEF FLAG SET WITH MAINT ON A 1

/IMM OR DEF FLAG SET WITH IMM EN SET

/IMM FLAG DID NOT SET OR DEF FLAG SET

/GENERATE RIF TO CLEAR DEF FLAG

/IMM FLAG WAS NOT CLEARED

/RIF DID NOT CLEAR IMM FLAG OR WAS

/WAS RESET BY IMM EN

/T15 = TEST IMM EN AND DEF EN

```

/
S15      LAC      (3
01001 R 204261 R      USINT
01002 R 702004 A      CLA
01003 R 750000 A      USINT
01004 R 702004 A      MSM
01005 R 701004 A      /SET MAINT
01006 R 701012 A      MRS
01007 R 504256 R      AND      (300000
01010 R 741200 A      SNA
01011 R 601014 R      JMP      ,+3
01012 R 100176 R      JMS      ERROR      /EITHER DEF OR IMM EN NOT CLEARED BY MCM
01013 R 000062 A      62
01014 R 204261 R      LAC      (3      /SET IMM + DEF EN
01015 R 702004 A      USINT
01016 R 701012 A      MRS
01017 R 504256 R      AND      (300000
01020 R 544256 R      SAD      (300000
01021 R 601024 R      JMP      ,+3
01022 R 100176 R      JMS      ERROR      /IMM OR DEF FLAG DID NOT SET
01023 R 000063 A      63
01024 R 701022 A      MCM
01025 R 702012 A      URA
01026 R 701012 A      MRS
01027 R 504256 R      AND      (300000
01030 R 741200 A      SNA
01031 R 601034 R      JMP      ,+3
01032 R 100176 R      JMS      ERROR      /IMM+DEF ENABLES DID NOT CLEAR WHEN FLAGS CLEARED
01033 R 000064 A      64
01034 R 444243 R      ISZ      TSTCNT
01035 R 741000 A      SKP
01036 R 601041 R      JMP      S20
01037 R 100130 R      JMS      M5
01040 R 600732 R      JMP      S14,1
      ,EJECT

```

```

01041 R 200032 R    S20    LAC    MINCYC
01042 R 044243 R            DAC    TSTCNT
01043 R 701022 A    S20,2    MCM
                  /T21 = TEST A/D DONE FLOP
                  /
01044 R 701021 A    S21    FCMOD
01045 R 204251 R            LAC    (2000            /SET A/D DONE FLOP
01046 R 701024 A            MLS
01047 R 701012 A            MRS
01050 R 504251 R            AND    (2000
01051 R 740200 A            SZA
01052 R 601055 R            JMP    ,+3
01053 R 100176 R            JMS    ERROR            /A/D DONE FLOP NOT SETTING
01054 R 000065 A            65
01055 R 701021 A            FCMOD            /ENTER FC MODE
01056 R 702041 A            FCSD
01057 R 741000 A            SKP
01060 R 601063 R            JMP    ,+3
01061 R 100176 R            JMS    ERROR            /CANNOT SKIP ON DONE
01062 R 000066 A            66
01063 R 702032 A            FCRB            /READ BUFFER TO CLEAR DONE
01064 R 702041 A            FCSD
01065 R 601070 R            JMP    ,+3
01066 R 100176 R            JMS    ERROR            /DONE DID NOT CLEAR WITH FRB
01067 R 000067 A            67
01070 R 204251 R            LAC    (2000
01071 R 701024 A            MLS
01072 R 701022 A            MCM            /CLEAR MAINT TO GENERATE CLR DONE
01073 R 701012 A            MRS
01074 R 504251 R            AND    (2000
01075 R 741200 A            SNA
01076 R 601101 R            JMP    ,+3
01077 R 100176 R            JMS    ERROR            /CLEAR MAINT NOT CLEARING DONE
01100 R 000070 A            70
01101 R 444243 R            ISZ    TSTCNT
01102 R 741000 A            SKP
01103 R 601106 R            JMP    S22
01104 R 100130 R            JMS    M5
01105 R 601043 R            JMP    S20,2
                  ,EJECT

```


/TEST 22 = TEST A/D DONE FLOP AND CONVERTER

01106 R 200032 R
 01107 R 044243 R
 01110 R 701021 A
 01111 R 204251 R
 01112 R 701024 A
 01113 R 702041 A
 01114 R 741000 A
 01115 R 601120 R
 01116 R 100176 R
 01117 R 000071 A
 01120 R 701022 A
 01121 R 701021 A
 01122 R 702041 A
 01123 R 601126 R
 01124 R 100176 R
 01125 R 000072 A
 01126 R 444243 R
 01127 R 741000 A
 01130 R 601133 R
 01131 R 100130 R
 01132 R 601110 R

S22 LAC MINCYC
 DAC TSTCNT
 S22,1 FCMOD
 LAC (2000
 MLS
 FCSD
 SKP
 JMP ,+3
 JMS ERROR
 71
 MCM
 FCMOD
 FCSD
 JMP ,+3
 JMS ERROR
 72
 ISZ TSTCNT
 SKP
 JMP S23
 JMS M5
 JMP S22,1
 ,EJECT

/DONE DID NOT GET SET WITH STATUS BIT

/MCM DID NOT GENERATE CLR DONE

/TEST 23 - TEST FC ENABLE FLOP

01133	R	200032	R	S23	LAC	MINCYC	
01134	R	044243	R		DAC	TSTCNT	
01135	R	701021	A	S23,1	FCMOD		/ENTER AFC MODE
01136	R	702004	A		FCEI		
01137	R	701012	A		MRS		
01140	R	504262	R		AND	(4000	
01141	R	740200	A		SZA		
01142	R	601145	R		JMP	,+3	
01143	R	100176	R		JMS	ERROR	/CANNOT SET FCEN WITH FEI
01144	R	000073	A		73		
01145	R	702001	A		FCDI		
01146	R	701012	A		MRS		
01147	R	504262	R		AND	(4000	
01150	R	741200	A		SNA		
01151	R	601154	R		JMP	,+3	
01152	R	100176	R		JMS	ERROR	/CANNOT DISABLE FCEN WITH FDI
01153	R	000074	A		74		
01154	R	204262	R		LAC	(4000	
01155	R	701024	A		MLS		
01156	R	701012	A		MRS		
01157	R	504262	R		AND	(4000	
01160	R	740200	A		SZA		
01161	R	601164	R		JMP	,+3	
01162	R	100176	R		JMS	ERROR	/CANNOT SET FCEN WITH STATUS
01163	R	000075	A		75		
01164	R	750000	A		CLA		
01165	R	701024	A		MLS		
01166	R	701012	A		MRS		
01167	R	504262	R		AND	(4000	
01170	R	741200	A		SNA		
01171	R	601174	R		JMP	,+3	
01172	R	100176	R		JMS	ERROR	
01173	R	000076	A		76		
					,EJECT		

/TEST 24 - TEST P FLOP

01174	R	204252	R	S24	LAC	(1000
01175	R	701024	A		MLS	
01176	R	701022	A		MCM	
01177	R	701012	A		MRS	
01200	R	504252	R		AND	(1000
01201	R	741200	A		SNA	
01202	R	601205	R		JMP	,+3
01203	R	100176	R		JMS	ERROR
01204	R	000077	A		77	
01205	R	204252	R		LAC	(1000
01206	R	701024	A		MLS	
01207	R	701012	A		MRS	
01210	R	504252	R		AND	(1000
01211	R	740200	A		SZA	
01212	R	601215	R		JMP	,+3
01213	R	100176	R		JMS	ERROR
01214	R	000100	A		100	
01215	R	701022	A		MCM	
01216	R	701012	A		MRS	
01217	R	504252	R		AND	(1000
01220	R	741200	A		SNA	
01221	R	601224	R		JMP	,+3
01222	R	100176	R		JMS	ERROR
01223	R	000101	A		101	
					,EJECT	

/MCM NOT CLEARING P FLOP

/CANNOT SET P FLOP WITH STATUS

/CLEAR MAINT NOT CLEARING P FLOP

/TEST 25 - MORE TESTS OF P FLOP

```

/
S25      LAC      (1000
01224 R 204252 R
01225 R 701024 A
01226 R 701021 A
01227 R 701012 A
01230 R 504252 R
01231 R 740200 A
01232 R 601255 R
01233 R 100176 R
01234 R 000102 A
01235 R 100162 R
01236 R 601255 R
01237 R 702021 A
01240 R 104174 R
01241 R 000144 A
01242 R 702041 A
01243 R 741000 A
01244 R 601247 R
01245 R 100176 R
01246 R 000103 A
01247 R 701012 A
01250 R 504252 R
01251 R 741200 A
01252 R 601255 R
01253 R 100176 R
01254 R 000104 A
01255 R 701022 A
01256 R 444243 R
01257 R 741000 A
01260 R 601263 R
01261 R 100130 R
01262 R 601135 R
S25,1   MCM
        ISZ     TSTCNT
        JMP     S26
        JMS     M5
        JMP     S23,1
        .EJECT

```

/FCMOD CLEARED P FLOP

/WAIT 100 USECS

/NO A/D DONE IN 100 USECS

/A/D DONE DID NOT CLEAR P FLOP

/TEST 26 - TEST SAMPLE FLOP

01263 R 200032 R
 01264 R 044243 R
 01265 R 204253 R
 01266 R 701024 A
 01267 R 701022 A
 01270 R 701012 A
 01271 R 504253 R
 01272 R 741200 A
 01273 R 601276 R
 01274 R 100176 R
 01275 R 000105 A
 01276 R 204253 R
 01277 R 701024 A
 01300 R 701012 A
 01301 R 504253 R
 01302 R 740200 A
 01303 R 601306 R
 01304 R 100176 R
 01305 R 000106 A
 01306 R 701022 A
 01307 R 701012 A
 01310 R 504253 R
 01311 R 741200 A
 01312 R 601315 R
 01313 R 100176 R
 01314 R 000107 A
 01315 R 100162 R
 01316 R 601344 R

S26 LAC MINCYC
 DAC TSTCNT
 S26,1 LAC (400
 MLS
 MCM
 MRS
 AND (400
 SNA
 JMP ,+3
 JMS ERROR
 105
 LAC (400
 MLS
 MRS
 AND (400
 SZA
 JMP ,+3
 JMS ERROR
 106
 MCM
 MRS
 AND (400
 SNA
 JMP ,+3
 JMS ERROR
 107
 JMS TESTFC
 JMP S31,1
 ,EJECT

/MCM NOT CLEARING SAMPLE FLOP

/CANNOT SET SAMPLE FLOP WITH STATUS

/CLEAR MAINT NOT CLEARING SAMPLE FLOP

/TEST 31 - TEST INT DLY

01317 R 701021 A
 01320 R 204260 R
 01321 R 702024 A
 01322 R 702004 A
 01323 R 204251 R
 01324 R 044241 R
 01325 R 100170 R
 01326 R 702001 A
 01327 R 702041 A
 01330 R 741000 A
 01331 R 601334 R
 01332 R 100176 R
 01333 R 000110 A
 01334 R 702021 A
 01335 R 104174 R
 01336 R 000144 A
 01337 R 702041 A
 01340 R 741000 A
 01341 R 601344 R
 01342 R 100176 R
 01343 R 000111 A
 01344 R 701022 A
 01345 R 444243 R
 01346 R 601265 R

S31

FCMOD
 LAC (2
 FC LAG
 FCEI
 LAC (2000)
 DAC FLGCHK
 JMS MONBRK
 FCDI
 FCSD
 SKP
 JMP ,+3
 JMS ERROR
 110
 FCCV
 JMS DELAY
 144
 FCSD
 SKP
 JMP ,+3
 JMS ERROR
 111
 S31,1 MCM
 ISZ TSTCNT
 JMP S26,1
 .EJECT

/A/D NOT DONE YET

/CONVERT; CHECK IF DONE CLEARED
 /INT DELAY
 /WAIT 100 USECS

/A/D BEING HELD UP BY IND DELAY?

/TEST 32 - TEST LOADING AND READING FC ADDRESS BITS

01347	R	200032	R	S32	LAC	MINCYC	
01350	R	044243	R		DAC	TSTCNT	
01351	R	701022	A		MCM		
01352	R	701021	A	S32,1	FCMOD		
01353	R	750000	A		CLA		
01354	R	702024	A		FCLAG		
01355	R	702012	A		FCRA		
01356	R	741200	A		SNA		
01357	R	601362	R		JMP	,+3	
01360	R	100176	R		JMS	ERROR	/CANNOT CLEAR ADDRESS BITS
01361	R	000112	A		112		
01362	R	750001	A		CLA!CMA		
01363	R	702024	A		FCLAG		
01364	R	702012	A		FCRA		
01365	R	544263	R		SAD	(777600	
01366	R	601371	R		JMP	,+3	
01367	R	100176	R		JMS	ERROR	/CANNOT LOAD ADDRESS BITS
01370	R	000113	A		113		
01371	R	750000	A		CLA		
01372	R	702024	A		FCLAG		
01373	R	741200	A		SNA		
01374	R	601377	R		JMP	,+3	
01375	R	100176	R		JMS	ERROR	/CANNOT CLEAR ADDRESS BITS
01376	R	000114	A		114		
					.EJECT		

/TEST 33 - TEST FLOATING A 0 THROUGH FIELD OF 1 IN FC ADDRESS

01377	R	204264	R	LAC	(777400	
01400	R	044240	R	DAC	TEMP	
01401	R	701021	A	S33	FCMOD	
01402	R	204240	R	LAC	TEMP	
01403	R	702024	A	FCLAG		
01404	R	702012	A	FCRA		
01405	R	544240	R	SAD	TEMP	
01406	R	601411	R	JMP	,+3	
01407	R	100176	R	JMS	ERROR	/ADDRESS DID NOT LOAD CORRECTLY
01410	R	000115	A	115		
01411	R	204240	R	LAC	TEMP	/UPDATE PATTERN
01412	R	744000	A	CLL		
01413	R	740010	A	RAL		
01414	R	344255	R	TAD	(200	
01415	R	044240	R	DAC	TEMP	
01416	R	741400	A	SZL		/DONE YET?
01417	R	601401	R	JMP	S33	/NO, LOOP
01420	R	100162	R	JMS	TESTFC	
01421	R	601427	R	JMP	S33,1	
01422	R	204251	R	LAC	(2000)	
01423	R	044241	R	DAC	FLGCHK	
01424	R	702004	A	FCEI		
01425	R	100170	R	JMS	MONBRK	
01426	R	702001	A	FCDI		
01427	R	701022	A	S33,1	MCM	
01430	R	444243	R	ISZ	TSTCNT	
01431	R	601352	R	JMP	S32,1	
				.EJECT		

/TEST 34 = TEST THAT IN UDC MODE LD ADDR WILL NOT GENERATE LD ADR+GAIN

01432 R 200032 R
 01433 R 044243 R
 01434 R 701021 A
 01435 R 750000 A
 01436 R 702024 A
 01437 R 740001 A
 01440 R 701001 A
 01441 R 702024 A
 01442 R 701021 A
 01443 R 702012 A
 01444 R 741200 A
 01445 R 601450 R
 01446 R 100176 R
 01447 R 000116 A
 01450 R 100162 R
 01451 R 601456 R
 01452 R 204251 R
 01453 R 044241 R
 01454 R 702004 A
 01455 R 100170 R

/
 S34 LAC MINCYC
 DAC TSTCNT
 S34,1 FCMOD
 CLA
 FCLAG
 CMA
 UMOD
 ULA
 FCMOD
 FCRA
 SNA
 JMP ,+3
 JMS ERROR
 116
 JMS TESTFC
 JMP S35
 LAC (2000)
 DAC FLGCHK
 FCEI
 JMS MONBRK
 .EJECT

/GO TO FC MODE
 /CLEAR ADDRESS REGISTER

/PUT ALL ONES IN AC
 /GO TO UDC MODE
 /LOAD ADDRESS
 /GO BACK TO FMOD

/IN UDC MODE ULA GENERATES

/TEST 35 - TEST BUSY FLOP

```

/
S35
01456 R 702001 A FCDI
01457 R 701022 A MCM
01460 R 702032 A FCRB
01461 R 701004 A MSM
01462 R 701012 A MRS
01463 R 504246 R AND (40000)
01464 R 741200 A SNA
01465 R 601470 R JMP ,+3
01466 R 100176 R JMS ERROR /MCM NOT CLEARING BUSY FLOP
01467 R 000117 A 117
01470 R 204246 R LAC (40000)
01471 R 701024 A MLS
01472 R 701012 A MRS
01473 R 504246 R AND (40000)
01474 R 740200 A SZA
01475 R 601500 R JMP ,+3
01476 R 100176 R JMS ERROR /CANNOT SET BUSY FLOP WITH STATUS
01477 R 000120 A 120
01500 R 701022 A MCM
01501 R 701012 A MRS
01502 R 504246 R AND (40000)
01503 R 741200 A SNA
01504 R 601507 R JMP ,+3
01505 R 100176 R JMS ERROR /CANNOT CLEAR BUSY FLOP WITH CLEAR STATUS
01506 R 000121 A 121
01507 R 444243 R ISZ TSTCNT
01510 R 601434 R JMP S34,1
      .EJECT

```

/TEST 40 - TEST SKIP ON NOT BUSY + CLEAR BUSY WITH X AFAULT

01511	R	200032	R	S40	LAC	MINCYC	
01512	R	044243	R		DAC	TSTCNT	
01513	R	701022	A	S40,1	MCM		
01514	R	701004	A		MSM		
01515	R	750000	A		CLA		/CLEAR ADDRESS REGISTER
01516	R	702024	A		ULA		
01517	R	702041	A		USNB		
01520	R	741000	A		SKP		
01521	R	601524	R		JMP	,+3	
01522	R	100176	R		JMS	ERROR	/FAILS TO SKIP ON NOT BUSY
01523	R	000122	A		122		
01524	R	204246	R		LAC	(40000)	/SET BUSY FLOP
01525	R	701024	A		MLS		
01526	R	702041	A		USNB		
01527	R	601532	R		JMP	,+3	
01530	R	100176	R		JMS	ERROR	/SKIPS WHEN BUSY FLOP SET
01531	R	000123	A		123		
01532	R	701012	A		MRS		
01533	R	504250	R		AND	(10000)	
01534	R	741200	A		SNA		
01535	R	601540	R		JMP	,+3	
01536	R	100176	R		JMS	ERROR	/A XFAULT NOT CLEARED WITH MCM
01537	R	000124	A		124		
01540	R	204250	R		LAC	(10000)	/SET A XFAULT TO GENERATE RESET BUSY
01541	R	701024	A		MLS		
01542	R	701012	A		MRS		
01543	R	504250	R		AND	(10000)	
01544	R	740200	A		SZA		
01545	R	601550	R		JMP	,+3	
01546	R	100176	R		JMS	ERROR	/CANNOT SET A XFAULT WITH STATUS
01547	R	000125	A		125		
01550	R	702041	A		USNB		
01551	R	741000	A		SKP		
01552	R	601555	R		JMP	,+3	
01553	R	100176	R		JMS	ERROR	/BUSY NOT CLEARING WITH RESET BUSY
01554	R	000126	A		126		
01555	R	701022	A		MCM		
01556	R	701012	A		MRS		
01557	R	504252	R		AND	(1000)	
01560	R	741200	A		SNA		
01561	R	601564	R		JMP	,+3	
01562	R	100176	R		JMS	ERROR	/MCM NOT CLEARING A XFAULT
01563	R	000127	A		127		
					.EJECT		

/TEST 41 = TEST THAT 0 FAULT RESETS BUSY

```

/
S41
01564 R 701022 A MCM
01565 R 701004 A MSM
01566 R 701001 A UMOD
01567 R 204246 R LAC (40000)
01570 R 701024 A MLS
01571 R 702041 A USNB
01572 R 601575 R JMP ,+3
01573 R 100176 R JMS ERROR /BUSY DID NOT SET WITH STATUS
01574 R 000130 A 130
01575 R 701012 A MRS
01576 R 504247 R AND (20000)
01577 R 741200 A SNA
01600 R 601603 R JMP ,+3
01601 R 100176 R JMS ERROR /MCM DID NOT RESET XFAULT
01602 R 000131 A 131
01603 R 204247 R LAC (20000)
01604 R 701024 A MLS
01605 R 701012 A MRS
01606 R 504247 R AND (20000)
01607 R 740200 A SZA
01610 R 601613 R JMP ,+3
01611 R 100176 R JMS ERROR /CANNOT SET XFAULT WITH STATUS
01612 R 000132 A 132
01613 R 702041 A USNB
01614 R 741000 A SKP
01615 R 601620 R JMP ,+3
01616 R 100176 R JMS ERROR /DEFAULT DID NOT GENERATE = RESET BUSY
01617 R 000133 A 133
01620 R 701022 A MCM
01621 R 701012 A MRS
01622 R 504247 R AND (20000)
01623 R 741200 A SNA
01624 R 601627 R JMP ,+3
01625 R 100176 R JMS ERROR /CLEAR STATUS DID NOT CLEAR XFAULT
01626 R 000134 A 134
01627 R 444243 R ISZ TSTCNT
01630 R 741000 A SKP
01631 R 601634 R JMP S42
01632 R 100130 R JMS M5
01633 R 601513 R JMP S40,1
,EJECT

```

/TEST 42 - TEST LOADING PATTERNS INTO ADDRESS REGISTER

```

01634 R 200032 R S42 LAC M1NCYC
01635 R 044243 R DAC TSTCNT
01636 R 750000 A S42,1 CLA
01637 R 702024 A ULA
01640 R 702012 A URA
01641 R 741200 A SNA
01642 R 601645 R JMP ,+3
01643 R 100176 R JMS ERROR /CAN SET ADDRESS REGISTER TO ZEROES
01644 R 000135 A 135
01645 R 740001 A CMA
01646 R 702024 A ULA
01647 R 702012 A URA
01650 R 544265 R SAD (776000
01651 R 601654 R JMP ,+3
01652 R 100176 R JMS ERROR /CAN SET ADDRESS REGISTER TO ONES
01653 R 000136 A 136
01654 R 750000 A CLA
01655 R 702024 A ULA
01656 R 702012 A URA
01657 R 741200 A SNA
01660 R 601663 R JMP ,+3
01661 R 100176 R JMS ERROR /ADDRESS REGISTER WILL NOT CLEAR
01662 R 000137 A 137
01663 R 204266 R LAC (525222 /LOAD COMPLIMENT BIT PATTERN
01664 R 702024 A ULA
01665 R 702012 A URA /READ IT
01666 R 544267 R SAD (524000 /DID IT LOAD CORRECTLY
01667 R 601672 R JMP ,+3
01670 R 100176 R JMS ERROR /COMPLIMENT BIT PATTERN DID NOT LOAD
01671 R 000140 A 140
01672 R 740001 A CMA
01673 R 702024 A ULA
01674 R 702012 A URA
01675 R 544270 R SAD (252000
01676 R 601701 R JMP ,+3
01677 R 100176 R JMS ERROR /COMPLIMENT BIT PATTERN DID NOT LOAD
01700 R 000141 A 141
,EJECT

```

/T43 - TEST THAT IN FCMOD ULA IS DISABLED

01701	R	701022	A	S43	MCM	
01702	R	750000	A		CLA	
01703	R	702024	A		ULA	
01704	R	701021	A		FCMOD	
01705	R	740001	A		CMA	
01706	R	702024	A		ULA	
01707	R	701001	A		UMOD	
01710	R	702012	A		URA	
01711	R	741200	A		SNA	
01712	R	601715	R		JMP	,+3
01713	R	100176	R		JMS	ERROR
01714	R	000142	A		142	
					,EJECT	

/T44 - TEST THAT A+D FAULT GENERATES GENERIC CODE 0001

```

S44
01715 R 750000 A CLA
01716 R 702024 A ULA
01717 R 702012 A URA
01720 R 741200 A SNA
01721 R 601724 R JMP ,+3
01722 R 100176 R JMS ERROR /CANNOT CLEAR ADDRESS REGISTER
01723 R 000143 A 143
01724 R 204247 R LAC (020000 /SET D FAULT
01725 R 701024 A MLS
01726 R 702012 A URA
01727 R 544271 R SAD (100
01730 R 601733 R JMP ,+3
01731 R 100176 R JMS ERROR /D FAULT DID NOT SET GENERIC CODE BIT3
01732 R 000144 A 144
01733 R 750000 A CLA
01734 R 702024 A ULA /CLEAR ADDRESS AND FAULT
01735 R 702012 A URA
01736 R 741200 A SNA
01737 R 601742 R JMP ,+3
01740 R 100176 R JMS ERROR
01741 R 000145 A 145
01742 R 204250 R LAC (010000 /SET A FAULT
01743 R 701024 A MLS
01744 R 702012 A URA
01745 R 544271 R SAD (100
01746 R 601751 R JMP ,+3
01747 R 100176 R JMS ERROR /A FAULT DID NOT SET GENERIC CODE BIT3
01750 R 000146 A 146
01751 R 701022 A MCM
01752 R 444243 R ISZ TSTCNT
01753 R 741000 A SKP
01754 R 601757 R JMP S45
01755 R 100130 R JMS M5
01756 R 601636 R JMP S42,1
      EJECT

```

/T45 = FLOAT A ONE THRU ADDRESS REGISTER

01757	R	200032	R	S45	LAC	MINCYC
01760	R	044243	R		DAC	TSTCNT
01761	R	204251	R		LAC	(2000)
01762	R	044240	R		DAC	TEMP
01763	R	204240	R	S45,1	LAC	TEMP
01764	R	702024	A		ULA	
01765	R	702012	A		URA	
01766	R	544240	R		SAD	TEMP
01767	R	601772	R		JMP	,+3
01770	R	100176	R		JMS	ERROR
01771	R	000147	A		147	
01772	R	744000	A		CLL	
01773	R	204240	R		LAC	TEMP
01774	R	740010	A		RAL	
01775	R	740400	A		SNL	
01776	R	601762	R		JMP	S45,1-1
01777	R	444243	R		ISZ	TSTCNT
02000	R	741000	A		SKP	
02001	R	602004	R		JMP	S50
02002	R	100150	R		JMS	M5
02003	R	601763	R		JMP	S45,1
					,EJECT	

/TEST 50 = CLOCK X BITS OF DEF ADDRESS

```

/
02004 R 200032 R S50 LAC MINCYC
02005 R 044243 R DAC TSTCNT
02006 R 701022 A S50,1 MCM
02007 R 750000 A CLA
02010 R 702024 A ULA
02011 R 701004 A MSM
02012 R 144240 R DZM TEMP
02013 R 204240 R L50 LAC TEMP
02014 R 344245 R TAD (100000)
02015 R 044240 R DAC TEMP
02016 R 702044 A MCLK
02017 R 702012 A URA
02020 R 544240 R SAD TEMP
02021 R 602024 R JMP ,+3
02022 R 100176 R JMS ERROR
02023 R 000150 A 150
02024 R 544272 R SAD (700000)
02025 R 741000 A SKP
02026 R 602013 R JMP L50
02027 R 701022 A MCM

```

```

/CLEAR ALL FLAGS
/CLEAR ADDRESS REGISTER; = AUTO
/SCAN SHOULD BE TRUE TO CLOCK DEF
/ADDRESS REGISTER; SET MAINT

```

/DEF X NOT COUNTING CORRECTLY

/T51 = CLOCK TO X FAULT

```

/
02030 R 204272 R S51 LAC (700000)
02031 R 702024 A ULA
02032 R 702044 A MCLK
02033 R 702012 A URA
02034 R 544271 R SAD (100)
02035 R 602040 R JMP ,+3
02036 R 100176 R JMS ERROR
02037 R 000151 A 151
02040 R 701012 A MRS
02041 R 504273 R AND (30000)
02042 R 544247 R SAD (20000)
02043 R 602046 R JMP ,+3
02044 R 100176 R JMS ERROR
02045 R 000152 A 152
,EJECT

```

/SET X TO ALL ONES

/CLOCK TO 0 STATE, SET FAULT

/X DID NOT GO TO 0 OR GEN FAULT NOT GENERATED

/CHECK STATUS

/D FAULT NOT GENERATED

/T52 = CLOCK Y BITS OF DEF ADDRESS

```

/
02046 R 204272 R S52 LAC (700000 /SET X TO ALL ONES
02047 R 702024 A ULA
02050 R 701004 A MSM
02051 R 044240 R DAC TEMP
02052 R 204240 R L52 LAC TEMP /UPDATE SOFTWARE COUNTER
02053 R 344250 R TAD (10000
02054 R 044240 R DAC TEMP
02055 R 702044 A MCLK /GENERATE CLOCK PULSE
02056 R 702012 A URA /READ ADDRESS
02057 R 544240 R SAD TEMP /IS IT SAME AS SOFTWARE REGISTER?
02060 R 602064 R JMP ,+4
02061 R 100176 R JMS ERROR /NO, ERROR DID NOT COUNT CORRECTLY
02062 R 000153 A 153
02063 R 602067 R JMP S53
02064 R 544274 R SAD (770000 /Y'S ALL COUNTED
02065 R 741000 A SKP
02066 R 602052 R JMP L52 /NO, LOOP

```

/T53 = CLOCK WD BITS OF DEF ADDRESS

```

/
02067 R 204274 R S53 LAC (770000 /SET X*Y
02070 R 702024 A ULA
02071 R 701004 A MSM
02072 R 044240 R DAC TEMP
02073 R 204240 R L53 LAC TEMP
02074 R 344251 R TAD (2000
02075 R 044240 R DAC TEMP
02076 R 702044 A MCLK
02077 R 702012 A URA
02100 R 544240 R SAD TEMP
02101 R 602104 R JMP ,+3
02102 R 100176 R JMS ERROR
02103 R 000154 A 154
02104 R 544265 R SAD (776000
02105 R 741000 A SKP
02106 R 602073 R JMP L53
02107 R 444243 R ISZ TSTCNT
02110 R 741000 A SKP
02111 R 602114 R JMP S54
02112 R 100150 R JMS M5
02113 R 602006 R JMP S50,1
,EJECT

```

/T54 = TEST TRANSFER FROM IMM TO DEF ADDRESS REGISTER
 /AND CLEARING OF DEF ADDRESS

02114	R	200032	R	S54	LAC	M _I NCYC	
02115	R	044243	R		DAC	T _I STCNT	
02116	R	701022	A	S54,1	MCM		
02117	R	750001	A		CLA!CMA		/SET DEF ADDRESS TO ALL ONES
02120	R	702024	A		ULA		
02121	R	701004	A		MSM		
02122	R	204244	R		LAC	(200000	/SET IMMEDIATE FLAG
02123	R	701024	A		MLS		
02124	R	702012	A		URA		
02125	R	741200	A		SNA		
02126	R	602131	R		JMP	,+3	
02127	R	100176	R		JMS	ERROR	/IMM ONLY SHOULD HAVE CLEARED DEF ADDRESS
02130	R	000155	A		155		
02131	R	702041	A		USNB		
02132	R	602135	R		JMP	,+3	
02133	R	100176	R		JMS	ERROR	/START SCAN DID NOT SET BUSY
02134	R	000156	A		156		
02135	R	750001	A		CLA!CMA		
02136	R	702024	A		ULA		
02137	R	701052	A		URAA		
02140	R	741200	A		SNA		
02141	R	602144	R		JMP	,+3	
02142	R	100176	R		JMS	ERROR	/IMM ADDRESS DID NOT CLEAR
02143	R	000157	A		157		
02144	R	702044	A		MCLK		/PUT 1 IN IMM ADDRESS
02145	R	750001	A		CLA!CMA		/SET DEF ADDRESS TO ALL ONES
02146	R	702024	A		ULA		
02147	R	701052	A		URAA		
02150	R	544245	R		SAD	(100000	
02151	R	602154	R		JMP	,+3	
02152	R	100176	R		JMS	ERROR	/IMM ADDRESS DID NOT CLOCK
02153	R	000160	A		160		
02154	R	702012	A		URA		
02155	R	544245	R		SAD	(100000	
02156	R	602161	R		JMP	,+3	
02157	R	100176	R		JMS	ERROR	/IMM ADDRESS DID NOT JAM INTO DEF ADD,
02160	R	000161	A		161		
02161	R	701022	A		MCM		
02162	R	701052	A		URAA		
					.EJECT		

/T55 = TEST CLOCK X OF IMMEDIATE ADDRESS REGISTER

02163	R	701004	A	S55	MSM		/SET MAINT+IMMEDIATE FLAG
02164	R	204244	R		LAC	(200000)	
02165	R	701024	A		MLS		
02166	R	144240	R		DZM	TEMP	
02167	R	204240	R	L55	LAC	TEMP	
02170	R	344245	R		TAD	(100000)	
02171	R	044240	R		DAC	TEMP	
02172	R	702044	A		MCLK		
02173	R	701052	A		URAA		
02174	R	544240	R		SAD	TEMP	
02175	R	602200	R		JMP	,+3	
02176	R	100176	R		JMS	ERROR	/IMM X NOT COUNTING CORRECTLY
02177	R	000162	A		162		
02200	R	702012	A		URA		
02201	R	544240	R		SAD	TEMP	
02202	R	602205	R		JMP	,+3	
02203	R	100176	R		JMS	ERROR	/IMM DID NOT TRANSFER TO DEFF CORRECTLY
02204	R	000163	A		163		
02205	R	544272	R		SAD	(700000)	
02206	R	741000	A		SKP		
02207	R	602167	R		JMP	L55	
02210	R	702021	A		USCAN		/TRY TO CLEAR IMM ADDRESS WITH START SCAN
02211	R	701052	A		URAA		/SHOULD BE INHIBITED BY IMM FLAG
02212	R	544272	R		SAD	(700000)	
02213	R	602216	R		JMP	,+3	
02214	R	100176	R		JMS	ERROR	/IMM FLAG DID NOT INHIBIT START SCAN
02215	R	000164	A		164		
02216	R	750000	A		CLA		/CLEAR IMM ENABLE
02217	R	702004	A		USINT		
02220	R	702021	A		USCAN		/TRY TO CLEAR IMM ADD WITH START SCAN
02221	R	701052	A		URAA		
02222	R	544272	R		SAD	(700000)	
02223	R	602226	R		JMP	,+3	
02224	R	100176	R		JMS	ERROR	/IMM FLAG DID NOT INHIBIT START SCAN
02225	R	000165	A		165		
02226	R	701022	A		MCM		
02227	R	702012	A		URA		/GENERATE RIF TO CLEAR IMM FLAG
02230	R	701004	A		MSM		
02231	R	702021	A		USCAN		/TRY TO CLEAR IMM ADD WITH START SCAN
02232	R	701052	A		URAA		
02233	R	741200	A		SNA		/START SCAN DID NOT CLEAR IMM ADD
02234	R	602237	R		JMP	,+3	
02235	R	100176	R		JMS	ERROR	
02236	R	000166	A		166		
02237	R	444243	R		ISZ	TSTCNT	
02240	R	741000	A		SKP		
02241	R	602244	R		JMP	S60	
02242	R	100130	R		JMS	M5	
02243	R	602116	R		JMP	S54,1	
					,EJECT		

/T60 - CLOCK TO X FAULT IN IMMEDIATE ADDRESS REGISTER

02244	R	200032	R	S60	LAC	MINCYC	
02245	R	044243	R		DAC	TSTCNT	
02246	R	701004	A	S60,1	MSM		
02247	R	204244	R		LAC	(200000)	
02250	R	701024	A		MLS		
02251	R	104210	R		JMS	MCLOCK	
02252	R	000007	A		7		
02253	R	701012	A		MRS		
02254	R	504273	R		AND	(30000)	/CHECK FAULT CONDITIONS
02255	R	741200	A		SNA		
02256	R	602261	R		JMP	,+3	
02257	R	100176	R		JMS	ERROR	/FAULT SET IMM ADDRESS=7
02260	R	000167	A		167		
02261	R	702044	A		MCLK		
02262	R	701012	A		MRS		
02263	R	504250	R		AND	(10000)	
02264	R	740200	A		SZA		
02265	R	602270	R		JMP	,+3	
02266	R	100176	R		JMS	ERROR	/A FAULT DID NOT SET
02267	R	000170	A		170		
02270	R	701004	A		MSM		/SET MAINT
02271	R	750000	A		CLA		/CLEAR IMM ENABLE
02272	R	702004	A		USINT		
02273	R	702021	A		USCAN		/TRY TO CLEAR AIX FAULT
02274	R	701012	A		MRS		
02275	R	504250	R		AND	(10000)	
02276	R	544250	R		SAD	(10000)	
02277	R	602302	R		JMP	,+3	
02300	R	100176	R		JMS	ERROR	/IMM FLAG DID NOT INHIBIT USCAN
02301	R	000171	A		171		
02302	R	701022	A		MCM		
02303	R	702012	A		URA		/GENERATE RIF TO CLEAR IMM FLAG
02304	R	701004	A		MSM		
02305	R	702021	A		USCAN		
02306	R	701012	A		MRS		
02307	R	504250	R		AND	(10000)	
02310	R	741200	A		SNA		
02311	R	602314	R		JMP	,+3	
02312	R	100176	R		JMS	ERROR	/START SCAN DID NOT CLEAR FAULT
02313	R	000172	A		172		
					,EJECT		

/T61 = TEST CLOCK Y OF IMMEDIATE ADDRESS REGISTER

```

/
S61   MSM
      LAC      (200000
      MLS
      JMS      MLOCK      /SET MAINT + IMM ENABLE
      7        /PRESET IMM X TO ALL ONES
      LAC      (700000
      ULA      /PRESET DEF X TO ALL ONES
      DAC      TEMP
L61   LAC      TEMP
      TAD      (10000
      DAC      TEMP
      MCLK
      URAA
      SAD      TEMP
      JMP      ,+3
      JMS      ERROR      /IMM Y NOT COUNTING CORRECTLY
      173
      URA
      SAD      TEMP
      JMP      ,+3
      JMS      ERROR      /IMM DID NOT JAM TO DEFF CORRECTLY
      174
      SAD      (770000
      SKP
      JMP      L61      /LOOP AGAIN
      MCM
      URAA
      ISZ      TSTCNT
      SKP
      JMP      S62
      JMS      M5
      JMP      S60,1
      ,EJECT

```

```

02314 R 701004 A
02315 R 204244 R
02316 R 701024 A
02317 R 104210 R
02320 R 000007 A
02321 R 204272 R
02322 R 702024 A
02323 R 044240 R
02324 R 204240 R
02325 R 344250 R
02326 R 044240 R
02327 R 702044 A
02330 R 701052 A
02331 R 544240 R
02332 R 602335 R
02333 R 100176 R
02334 R 000173 A
02335 R 702012 A
02336 R 544240 R
02337 R 602342 R
02340 R 100176 R
02341 R 000174 A
02342 R 544274 R
02343 R 741000 A
02344 R 602324 R
02345 R 701022 A
02346 R 701052 A
02347 R 444243 R
02350 R 741000 A
02351 R 602354 R
02352 R 100130 R
02353 R 602246 R

```

/T62 - CLOCK WD BITS OF DEF ADDRESS

02354	R	200032	R	S62	LAC	MINCYC	
02355	R	044243	R		DAC	TSTCNT	
02356	R	701004	A	S62,1	MSM		
02357	R	204244	R		LAC	(200000	/SET MAINT + IMM ENABLE
02360	R	701024	A		MLS		
02361	R	104210	R		JMS	MCLOCK	/PRESET IMM X TO ONES
02362	R	000007	A		7		
02363	R	204272	R		LAC	(700000	/PRESET DEF X TO ONES
02364	R	702024	A		ULA		
02365	R	104210	R		JMS	MCLOCK	/PRESET IMM Y TO ONES
02366	R	000007	A		7		
02367	R	204274	R		LAC	(770000	/PRESET DEF X*Y TO ONES
02370	R	702024	A		ULA		
02371	R	044240	R		DAC	TEMP	
02372	R	204240	R	L62	LAC	TEMP	
02373	R	344251	R		TAD	(2000	
02374	R	044240	R		DAC	TEMP	
02375	R	702044	A		MCLK		
02376	R	701052	A		URAA		
02377	R	544240	R		SAD	TEMP	
02400	R	602403	R		JMP	,+3	
02401	R	100176	R		JMS	ERROR	/IMM WD NOT COUNTING CORRECTLY
02402	R	000175	A		175		
02403	R	702012	A		URA		
02404	R	544240	R		SAD	TEMP	
02405	R	602410	R		JMP	,+3	
02406	R	100176	R		JMS	ERROR	/IMM DID NOT JAM TO DEFF CORRECTLY
02407	R	000176	A		176		
02410	R	544265	R		SAD	(776000	
02411	R	741000	A		SKP		
02412	R	602372	R		JMP	L62	/LOOP AGAIN
02413	R	701022	A		MCM		
02414	R	701052	A		URAA		
					,EJECT		

/T63 = CLOCK DEF X, Y, WD TO FAULT

02415 R 204265 R
 02416 R 702024 A
 02417 R 702044 A
 02420 R 702012 A
 02421 R 544275 R
 02422 R 602425 R
 02423 R 100176 R
 02424 R 000177 A
 02425 R 701012 A
 02426 R 544247 R
 02427 R 602432 R
 02430 R 100176 R
 02431 R 000200 A
 02432 R 701022 A
 02433 R 701052 A

S63 LAC (776000
 ULA
 MCLK
 URA
 SAD (76100
 ,+3
 JMS ERROR
 177
 MRS
 SAD (20000
 ,+3
 JMS ERROR
 200
 MCM
 URAA
 ,EJECT

/ONE CLOCK PULSE

/GEN CODE FOR FAULT NOT GEN

/DEF ADR FAULT DID NOT SET

/T64 - CLOCK IMM X, Y, WD TO FAULT

02434	R	701004	A	S64	MSM		
02435	R	204244	R		LAC	(200000	/SET MAINT * IMM ENABLE
02436	R	701024	A		MLS		
02437	R	104210	R		JMS	MCLOCK	/CLOCK IMM X TO ONES
02440	R	000007	A		7		
02441	R	204272	R		LAC	(700000	/PRESET DEF X TO ONES
02442	R	702024	A		ULA		
02443	R	104210	R		JMS	MCLOCK	/PRESET IMM Y TO ONES
02444	R	000007	A		7		
02445	R	204274	R		LAC	(770000	/PRESET DEF X+Y TO ONES
02446	R	702024	A		ULA		
02447	R	104210	R		JMS	MCLOCK	/PRESET IMM WD TO ONES
02450	R	000003	A		3		
02451	R	204265	R		LAC	(776000	/SET DEF X,Y,WD TO ONES
02452	R	702024	A		ULA		
02453	R	750000	A		CLA		/CLEAR DEF ADR
02454	R	702024	A		ULA		
02455	R	702044	A		MCLK		/ONE CLOCK PULSE
02456	R	701052	A		URAA		
02457	R	544275	R		SAD	(76100	
02460	R	602463	R		JMP	,+3	
02461	R	100176	R		JMS	ERROR	/GEN CODE FOR FAULT NOT GEN
02462	R	000201	A		201		
02463	R	701012	A		MRS		
02464	R	544276	R		SAD	(200200	
02465	R	602470	R		JMP	,+3	
02466	R	100176	R		JMS	ERROR	/DID NOT CLEAR VIA RESET FAULT OR
02467	R	000202	A		202		
02470	R	701022	A		MCM		
02471	R	701052	A		URAA		
02472	R	444243	R		ISZ	TSTCNT	
02473	R	741000	A		SKP		
02474	R	602477	R		JMP	S65,2	
02475	R	100130	R		JMS	M5	
02476	R	602356	R		JMP	S62,1	
					,EJECT		

/T65 = OPERATION CHECK OF SCAN CLOCK IN DEF SCAN

02477	R	200032	R	S65,2	LAC	MINCYC		
02500	R	044243	R		DAC	TSTCNT		
02501	R	144240	R		DZM	TEMP		/CLEAR TIMER
02502	R	702021	A	S65	USCAN			/START DEF SCAN
02503	R	702041	A		USNB			/SKIP IF NOT BUSY
02504	R	741000	A		SKP			
02505	R	602512	R		JMP	E65		/SCAN DONE, CHECK FOR FAULT
02506	R	444240	R		ISZ	TEMP		/TIME OUT
02507	R	602503	R		JMP	,=4		/LOOP
02510	R	100176	R		JMS	ERROR		/SCAN STARTED AND TIMED OUT
02511	R	000203	A		203			
02512	R	701012	A	E65	MRS			
02513	R	544247	R		SAD	(20000		
02514	R	602517	R		JMP	,+3		
02515	R	100176	R		JMS	ERROR		/DEF ADR FAULT DID NOT SET
02516	R	000204	A		204			
02517	R	701022	A		MCM			
02520	R	701052	A		URAA			

/T70 = OPERATIONAL CHECK SCAN CLOCK IN IMM SCAN

02521	R	144240	R	S70	DZM	TEMP		
02522	R	204244	R		LAC	(200000		/SET IMM FLAG TO START SCAN
02523	R	701024	A		MLS			
02524	R	702041	A		USNB			/SKIP IF NOT BUSY
02525	R	741000	A		SKP			
02526	R	602533	R		JMP	E70		/SCAN DONE, CHECK FOR FAULT
02527	R	444240	R		ISZ	TEMP		
02530	R	602524	R		JMP	,=4		
02531	R	100176	R		JMS	ERROR		/SCAN STARTED AND TIMED OUT
02532	R	000205	A		205			
02533	R	701012	A	E70	MRS			
02534	R	544277	R		SAD	(210000		
02535	R	602540	R		JMP	,+3		
02536	R	100176	R		JMS	ERROR		/IMM ADR FAULT DID NOT SET
02537	R	000206	A		206			
02540	R	701022	A		MCM			
02541	R	701052	A		URAA			
					,EJECT			

/T71 - CHECK THAT DATA IN IS ZEROES

```

/
S71   LAC      (525252
      ULD
      URD
      SNA
      JMP      ,+3
      JMS      ERROR      /DATA IN PICKING UP BITS
      207
      LAC      (252525
      ULPS
      URD
      SNA
      JMP      ,+3
      JMS      ERROR      /DATA IN PICKING UP BITS
      210
      MCM

```

/T72 - CHECK THAT COS GATE IS DISABLED BY OPEN BUS

```

/
S72   LAC      (252525
      ULD
      URCG
      SNA
      JMP      ,+3
      JMS      ERROR
      211
      LAC      (525252
      ULPS
      URCG
      SNA
      JMP      ,+3
      JMS      ERROR
      212
      MCM
      ISZ      TSTCNT
      SKP
      JMP      S73
      JMS      M5
      JMP      S65-1
      ,EJECT

```

```

/T73 = TEST BITS 0 + 8 OF DATA IN AN FC ADR DECODE
02605 R 200032 R S73 LAC MINCYC
02606 R 044243 R DAC TSTCNT
02607 R 701004 A S73,1 MSM
02610 R 701021 A FCMOD
02611 R 750000 A CLA /SET X+Y OF FC ADR TO 0
02612 R 702024 A FCLAG
02613 R 701001 A UMOD
02614 R 702032 A URD
02615 R 544301 R SAD (376774 /BITS 0 + 8 SHOULD BE DESELECTED
02616 R 602621 R JMP ,+3 /BY FC ADDRESS AND MAINT
02617 R 100176 R JMS ERROR
02620 R 000213 A 213

```

```

/T74 = TEST BITS 1 + 9 OF DATA IN AND FC ADR DECODE
02621 R 701004 A S74 MSM
02622 R 701021 A FCMOD
02623 R 204302 R LAC (110000 /SET X+Y OF FC ADR TO 1
02624 R 702024 A FCLAG
02625 R 701001 A UMOD
02626 R 702032 A URD
02627 R 544303 R SAD (577374 /BITS 1 + 9 SHOULD BE DESELECTED
02630 R 602633 R JMP ,+3 /BY FC ADDRESS + MAINT
02631 R 100176 R JMS ERROR
02632 R 000214 A 214

```

```

/T75 = TEST BITS 2 + 10 OF DATA IN AND FC ADR DECODE
02633 R 701004 A S75 MSM
02634 R 701021 A FCMOD
02635 R 204304 R LAC (220000 /SET X+Y OF FC ADR TO 2
02636 R 702024 A FCLAG
02637 R 701001 A UMOD
02640 R 702032 A URD
02641 R 544305 R SAD (677574 /BITS 2 + 10 SHOULD B
02642 R 602645 R JMP ,+3 /DESELECTED BY FC ADR + MAINT
02643 R 100176 R JMS ERROR
02644 R 000215 A 215

```

```

/T100 = TEST BITS 3 + 11 OF DATA IN AND FC ADR DECODE
02645 R 701004 A S100 MSM
02646 R 701021 A FCMOD
02647 R 204306 R LAC (330000 /SET X+Y OF FC ADR TO 3
02650 R 702024 A FCLAG
02651 R 701001 A UMOD
02652 R 702032 A URD
02653 R 544307 R SAD (737674 /BITS 3 + 11 SHOULD BE
02654 R 602657 R JMP ,+3 /DESELECTED BY FC ADR + MAINT
02655 R 100176 R JMS ERROR
02656 R 000216 A 216
,EJECT

```

```

/T101 = TEST BITS 4 + 12 OF DATA IN AND FC ADR DECODE
S101  MSM
      FCMOD
      LAC      (440000)      /SET X+Y OF FC ADR TO 4
      FCLAG
      UMOD
      URD
      SAD      (757734)      /BITS 4 + 12 SHOULD BE
      JMP      ,+3          /DESELECTED BY FC ADR + MAINT
      JMS      ERROR
      217

```

```

/T102 = TEST BITS 5 + 13 OF DATA IN AND FC ADR DECODE
S102  MSM
      FCMOD
      LAC      (550000)      /SET X+Y OF FC ADR TO 5
      FCLAG
      UMOD
      URD
      SAD      (767724)      /BITS 5 + 13 SHOULD BE
      JMP      ,+3          /DESELECTED BY FC ADR + MAINT
      JMS      ERROR
      220

```

```

/T103 = TEST BITS 6 + 14 OF DATA IN AND FC ADR DECODE
S103  MSM
      FCMOD
      LAC      (660000)      /SET X+Y OF FC ADR TO 6
      FCLAG
      UMOD
      URD
      SAD      (773764)      /BITS 6 + 14 SHOULD BE
      JMP      ,+3          /DESELECTED BY FC ADR + MAINT
      JMS      ERROR
      221
      MCM

```

```

/T104 = TEST BITS 7 + 15 OF DATA IN AND FC ADR DECODE
S104  MSM
      FCMOD
      LAC      (770000)      /SET X+Y OF FC ADR TO 7
      FCLAG
      UMOD
      URD
      SAD      (775770)      /BITS 7 + 15 SHOULD BE
      JMP      ,+3          /DESELECTED BY FC ADR + MAINT
      JMS      ERROR
      222
      MCM
      ,EJECT

```

/T105 = TEST THAT MAINT (0) DISABLES FC ADR = DATA IN LINK

02731 R 701021 A
 02732 R 702004 A
 02733 R 750000 A
 02734 R 702024 A
 02735 R 701001 A
 02736 R 702032 A
 02737 R 741200 A
 02740 R 602743 R
 02741 R 100176 R
 02742 R 000223 A
 02743 R 100162 R
 02744 R 602750 R
 02745 R 204251 R
 02746 R 044241 R
 02747 R 100170 R
 02750 R 701021 A
 02751 R 702001 A
 02752 R 100141 R
 02753 R 444243 R
 02754 R 602607 R

/
 S105 FCMOD
 FCEI
 CLA
 FCLAG
 UMOD
 URD
 SNA
 JMP ,+3
 JMS ERROR
 223
 JMS TESTFC
 JMP S105,1
 LAC (2000)
 DAC FLGCHK
 JMS MONBRK
 S105,1 FCMOD
 FCDI
 JMS HOLD
 ISZ TSTCNT
 JMP S73,1
 ,EJECT

/MAINT = 0 NOT INHIBITING FC ADR

/T110 = TEST DB AND COS GATES 0 + 8 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

02755	R	200032	R	S110	LAC	MINCYC		
02756	R	044243	R		DAC	TSTCNT		
02757	R	750000	A	S110,1	CLA		/SET DB TO ALL ZEROES	
02760	R	701044	A		ULPS			
02761	R	701022	A		MCM		/MCM SHOULD CLEAR	
02762	R	701004	A		MSM		/SET MAINT	
02763	R	701021	A		FCMOD			
02764	R	204317	R		LAC	(40	/SET X+Y TO 0; PCL = 1, POP = 0	
02765	R	702024	A		FCLAG			
02766	R	701001	A		UMOD			
02767	R	701072	A		URCG			
02770	R	544301	R		SAD	(376774	/ONLY DATA IN 0 + 8 WILL BE	
02771	R	602774	R		JMP	,+3	/FALSE CONDITION	
02772	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR	
02773	R	000224	A		224			
02774	R	204301	R		LAC	(376774	/SET DB TO COMPLEMENT OF BITS UNDER TEST	
02775	R	701044	A		ULPS			
02776	R	701072	A		URCG			
02777	R	741200	A		SNA			
03000	R	603003	R		JMP	,+3		
03001	R	100176	R		JMS	ERROR	/DB ERROR OR POP = 0 DID NOT INHIBIT COS	
03002	R	000225	A		225			
03003	R	701021	A		FCMOD			
03004	R	204320	R		LAC	(0	/SET X+Y TO 0; PCL = 0, POP = 0	
03005	R	702024	A		FCLAG			
03006	R	701001	A		UMOD			
03007	R	701072	A		URCG			
03010	R	741200	A		SNA			
03011	R	603014	R		JMP	,+3		
03012	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES	
03013	R	000226	A		226			
					.EJECT			

/T111 = TEST DB AND COS GATES 0 + 8 USING MAINT LOGIC
 /AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

03014 R 750001 A S111 CLA:OMA /SET DB TO ALL ONES
03015 R 701044 A ULPS
03016 R 701004 A MSM
03017 R 701021 A FCMOD
03020 R 204320 R LAC (0 /SET X+Y TO 0; POP = 0, PCL = 0
03021 R 702024 A FCLAG
03022 R 701001 A UMOD
03023 R 701072 A URCG
03024 R 741200 A SNA
03025 R 603030 R JMP ,+3
03026 R 100176 R JMS ERROR /P OPEN = 0 DID NOT DISABLE COS GATE
03027 R 000227 A 227
03030 R 701021 A FCMOD
03031 R 702004 A FCEI
03032 R 204271 R LAC (100 /SET X+Y TO 0; PCL = 0, POP = 1
03033 R 702024 A FCLAG
03034 R 701001 A UMOD
03035 R 204321 R LAC (401000 /SET DB TO BITS UNDER TEST
03036 R 701044 A ULPS
03037 R 701072 A URCG
03040 R 544321 R SAD (401000 /ONLY 0 + 8 DATA IN TRUE
03041 R 603044 R JMP ,+3
03042 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03043 R 000230 A 230
03044 R 204301 R LAC (376774 /SET COMP TO DB OF BITS UNDER TEST
03045 R 701064 A ULD
03046 R 701072 A URCG
03047 R 741200 A SNA
03050 R 603053 R JMP ,+3
03051 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03052 R 000231 A 231
03053 R 100162 R JMS TESTFC
03054 R 603060 R JMP S111,1
03055 R 204251 R LAC (2000)
03056 R 044241 R DAC FLGCHK
03057 R 100170 R JMS MONBRK
03060 R 701021 A S111,1 FCMOD
03061 R 702001 A FCEI
03062 R 100141 R JMS HOLD
03063 R 444243 R ISZ TSTCNT
03064 R 602757 R JMP S110,1
,EJECT

```


/T112 = TEST DB AND COS GATES 1 + 9 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

03065	R	200032	R	S112	LAC	MINCYC	
03066	R	044243	R		DAC	TSTCNT	
03067	R	750000	A	S112,1	CLA		/SET DB TO ALL ZEROES
03070	R	701044	A		ULPS		
03071	R	701022	A		MCM		/MCM SHOULD CLEAR
03072	R	701004	A		MSM		/SET MAINT
03073	R	701021	A		FCMOD		
03074	R	204322	R		LAC	(110040)	/SET X+Y TO 1; PCL = 1, POP = 0
03075	R	702024	A		FCLAG		
03076	R	701001	A		UMOD		
03077	R	701072	A		URCG		
03100	R	544303	R		SAD	(577374	/ONLY DATA IN 1 + 9 WILL BE
03101	R	603104	R		JMP	,+3	/FALSE
03102	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR
03103	R	000232	A		232		
03104	R	204303	R		LAC	(577374	/SET DB TO COMPLEMENT OF BITS UNDER TEST
03105	R	701044	A		ULPS		
03106	R	701072	A		URCG		
03107	R	741200	A		SNA		
03110	R	603113	R		JMP	,+3	
03111	R	100176	R		JMS	ERROR	/DB ERROR OR POP = 0 DID NOT INHIBIT COS
03112	R	000233	A		233		
03113	R	701021	A		FCMOD		
03114	R	204302	R		LAC	(110000)	/SET X+Y TO 1; P,L = 0, POP = 0
03115	R	702024	A		FCLAG		
03116	R	701001	A		UMOD		
03117	R	701072	A		URCG		
03120	R	741200	A		SNA		
03121	R	603124	R		JMP	,+3	
03122	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES
03123	R	000234	A		234		
03124	R	701022	A		MCM		
					,EJECT		

/T113 = TEST DB AND COS GATES 1 + 9 USING MAINT LOGIC
 /AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

/
03125 R 750001 A S113 CLA:GMA /SET DB TO ALL ONES
03126 R 701044 A ULPS
03127 R 701004 A MSM
03130 R 701021 A FCMOD
03131 R 204302 R LAC (110000) /SET X+Y TO 1; POP = 0, PCL = 0
03132 R 702024 A FCLAG
03133 R 701001 A UMOD
03134 R 701072 A URCG
03135 R 741200 A SNA
03136 R 603141 R JMP ,+3
03137 R 100176 R JMS ERROR /P OPEN = 0 DID NOT DISABLE COS GATE
03140 R 000235 A 235
03141 R 701021 A FCMOD
03142 R 702004 A FCEI
03143 R 204323 R LAC (110100) /SET X+Y TO 1; PCL = 0, POP = 1
03144 R 702024 A FCLAG
03145 R 701001 A UMOD
03146 R 204324 R LAC (200400) /SET DB TO BITS UNDER TEST
03147 R 701044 A ULPS
03150 R 701072 A URCG
03151 R 544324 R SAD (200400) /ONLY 1 + 9 DATA IN TRUE
03152 R 603155 R JMP ,+3
03153 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03154 R 000236 A 236
03155 R 204303 R LAC (577374) /SET COMP TO DB OF BITS UNDER TEST
03156 R 701064 A ULD
03157 R 701072 A URCG
03160 R 741200 A SNA
03161 R 603164 R JMP ,+3
03162 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03163 R 000237 A 237
03164 R 100162 R JMS TESTFC
03165 R 603171 R JMP S113,1
03166 R 204251 R LAC (2000)
03167 R 044241 R DAC FLGCHK
03170 R 100170 R JMS MONBRK
03171 R 701021 A S113,1 FCMOD
03172 R 702001 A FCDI
03173 R 100141 R JMS HOLD
03174 R 444243 R ISZ TSTCNT
03175 R 603067 R JMP S112,1
      ,EJECT
  
```

/T114 = TEST DB AND COS GATES 2 + 10 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

03176	R	200032	R	S114	LAC	MINCYC	
03177	R	044243	R		DAC	TSTCNT	
03200	R	750000	A	S114,1	CLA		/SET DB TO ALL ZEROES
03201	R	701044	A		ULPS		
03202	R	701022	A		MCM		/MCM SHOULD CLEAR
03203	R	701004	A		MSM		/SET MAINT
03204	R	701021	A		FCMOD		
03205	R	204325	R		LAC	(220040	/SET X+Y TO 2; PCL = 1, POP = 0
03206	R	702024	A		FCLAG		
03207	R	701001	A		UMOD		
03210	R	701072	A		URCG		
03211	R	544305	R		SAD	(677574	/ONLY DATA IN 2 + 10 WILL BE
03212	R	603215	R		JMP	,+3	/FALSE
03213	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR
03214	R	000240	A		240		
03215	R	204305	R		LAC	(677574	/SET DB TO COMPLEMENT BITS UNDER TEST
03216	R	701044	A		ULPS		
03217	R	701072	A		URCG		
03220	R	741200	A		SNA		
03221	R	603224	R		JMP	,+3	
03222	R	100176	R		JMS	ERROR	/DB ERROR OR POP = 0 DID NOT INHIBIT COS
03223	R	000241	A		241		
03224	R	701021	A		FCMOD		
03225	R	204304	R		LAC	(220000	/SET X+Y TO 2; PCL = 0, POP = 0
03226	R	702024	A		FCLAG		
03227	R	701001	A		UMOD		
03230	R	701072	A		URCG		
03231	R	741200	A		SNA		
03232	R	603235	R		JMP	,+3	
03233	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES
03234	R	000242	A		242		
					,EJECT		

/T115 = TEST DB AND COS GATES 2 + 10 USING MAINT LOGIC
/AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

S115   CLAICMA           /SET DB TO ALL ONES
03235 R 750001 A        ULPS
03236 R 701044 A        MSM
03237 R 701004 A        FCMOD
03240 R 701021 A        LAC      (220000)   /SET X+Y TO 2; POP = 0, PCL = 0
03241 R 204304 R        FCLAG
03242 R 702024 A        UMOD
03243 R 701001 A        URCG
03244 R 701072 A        SNA
03245 R 741200 A        JMP      ,+3
03246 R 603251 R        JMS      ERROR           /P OPEN = 0 DID NOT DIABLE COS GATE
03247 R 100176 R        243
03250 R 000243 A        FCMOD
03251 R 701021 A        FCEI
03252 R 702004 A        LAC      (220100)   /SET X+Y TO 2; PCL = 0, POP = 1
03253 R 204326 R        FCLAG
03254 R 702024 A        UMOD
03255 R 701001 A        LAC      (100200)   /SET DB TO BITS UNDER TEST
03256 R 204327 R        ULPS
03257 R 701044 A        URCG
03260 R 701072 A        SAD      (100200)   /ONLY 2 + 10 DATA IN TRUE
03261 R 544327 R        JMP      ,+3
03262 R 603265 R        JMS      ERROR           /DB ERROR OR COS GATE ERROR
03263 R 100176 R        244
03264 R 000244 A        LAC      (677574)   /SET COMP TO DB OF BITS UNDER TEST
03265 R 204305 R        ULD
03266 R 701064 A        URCG
03267 R 701072 A        SNA
03270 R 741200 A        JMP      ,+3
03271 R 603274 R        JMS      ERROR           /DB ERROR OR COS GATE ERROR
03272 R 100176 R        245
03273 R 000245 A        JMS      TESTFC
03274 R 100162 R        JMP      S115,1
03275 R 603301 R        LAC      (2000)
03276 R 204251 R        DAC      FLGCHK
03277 R 044241 R        JMS      MONBRK
03300 R 100170 R        S115,1 FCMOD
03301 R 701021 A        FCDI
03302 R 702001 A        JMS      HOLD
03303 R 100141 R        ISZ      TSTCNT
03304 R 444243 R        JMP      S114,1
03305 R 603200 R        ,EJECT

```

/T120 = TEST DB AND COS GATES 3 + 11 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

03306	R	200032	R	S120	LAC	MINCYC	
03307	R	044243	R		DAC	TSTCNT	
03310	R	750000	A	S120,1	CLA		/SET DB TO ALL ZEROES
03311	R	701044	A		ULPS		
03312	R	701022	A		MCM		/MCM SHOULD CLEAR
03313	R	701004	A		MSM		/SET MAINT
03314	R	701021	A		FCMOD		
03315	R	204330	R		LAC	(330040)	/SET X+Y TO 3; PCL = 1, POP = 0
03316	R	702024	A		FCLAG		
03317	R	701001	A		UMOD		
03320	R	701072	A		URCG		
03321	R	544307	R		SAD	(737674	/ONLY DATA IN 3 + 11 WILL BE
03322	R	603325	R		JMP	,+3	/FALSE
03323	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR
03324	R	000246	A		246		
03325	R	204307	R		LAC	(737674	/SET DB TO COMPLEMENT OF BITS UNDER TEST
03326	R	701044	A		ULPS		
03327	R	701072	A		URCG		
03330	R	741200	A		SNA		
03331	R	603334	R		JMP	,+3	
03332	R	100176	R		JMS	ERROR	/DB ERROR OR POP = 0 DID NOT INHIBIT COS
03333	R	000247	A		247		
03334	R	701021	A		FCMOD		
03335	R	204306	R		LAC	(330000)	/SET X+Y TO 3; PCL = 0, POP = 0
03336	R	702024	A		FCLAG		
03337	R	701001	A		UMOD		
03340	R	701072	A		URCG		
03341	R	741200	A		SNA		
03342	R	603345	R		JMP	,+3	
03343	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES
03344	R	000250	A		250		
					.EJECT		

/T121 = TEST DB AND COS GATES 3 + 11 USING MAINT LOGIC
 /AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

03345 R 750001 A S121 CLAICMA /SET DB TO ALL ONES
03346 R 701044 A ULPS
03347 R 701004 A MSM
03350 R 701021 A FCMOD
03351 R 204306 R LAC (330000) /SET X+Y TO 3; POP = 0, PCL = 0
03352 R 702024 A FCLAG
03353 R 701001 A UMOD
03354 R 701072 A URCG
03355 R 741200 A SNA
03356 R 603361 R JMP ,+3
03357 R 100176 R JMS ERROR /P OPEN = 0 DID NOT DISABLE COS GATES
03360 R 000251 A 251
03361 R 701021 A FCMOD
03362 R 702004 A FCEI
03363 R 204331 R LAC (330100) /SET X+Y TO 3; PCL = 0, POP = 1
03364 R 702024 A FCLAG
03365 R 701001 A UMOD
03366 R 204332 R LAC (40100) /SET DB TO BITS UNDER TEST
03367 R 701044 A ULPS
03370 R 701072 A URCG
03371 R 544332 R SAD (40100) /ONLY 3 + 11 DATA IN TRUE
03372 R 603375 R JMP ,+3
03373 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03374 R 000252 A 252
03375 R 204307 R LAC (737674) /SET COMPLIMENT TO DB OF BITS UNDER TEST
03376 R 701064 A ULD
03377 R 701072 A URCG
03400 R 741200 A SNA
03401 R 603404 R JMP ,+3
03402 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03403 R 000253 A 253
03404 R 100162 R JMS TESTFC
03405 R 603411 R JMP S121,1
03406 R 204251 R LAC (2000)
03407 R 044241 R DAC FLGCHK
03410 R 100170 R JMS MONBRK
03411 R 701021 A S121,1 FCMOD
03412 R 702001 A FCDI
03413 R 100141 R JMS HOLD
03414 R 444243 R ISZ TSTCNT
03415 R 603310 R JMP S120,1
      .EJECT
  
```

/T122 = TEST DB AND COS GATES 4 + 12 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

```

03416 R 200032 R S122 LAC M1NCYC
03417 R 044243 R DAC TSTCNT
03420 R 750000 A S122,1 CLA /SET DB TO ALL ZEROES
03421 R 701044 A ULPS
03422 R 701022 A MCM /MCM SHOULD CLEAR
03423 R 701004 A MSM /SET MAINT
03424 R 701021 A FCMOD
03425 R 204333 R LAC (440040) /SET X+Y TO 4; PCL=1, POP = 0
03426 R 702024 A FCLAG
03427 R 701001 A UMOD
03430 R 701072 A URCG
03431 R 544311 R SAD (757734) /ONLY DATA IN 4 + 12 WILL BE
03432 R 603435 R JMP ,+3 /FALSE
03433 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03434 R 000254 A 254
03435 R 204311 R LAC (757734) /SEB DB TO COMPLEMENT OF BITS UNDER TEST
03436 R 701044 A ULPS
03437 R 701072 A URCG
03440 R 741200 A SNA
03441 R 603444 R JMP ,+3
03442 R 100176 R JMS ERROR /DB ERROR OR POP = 0 DID NOT INHIBIT COS
03443 R 000255 A 255
03444 R 701021 A FCMOD
03445 R 204310 R LAC (440000) /SET X+Y TO 4; PCL = 0, POP = 0
03446 R 702024 A FCLAG
03447 R 701001 A UMOD
03450 R 701072 A URCG
03451 R 741200 A SNA
03452 R 603455 R JMP ,+3
03453 R 100176 R JMS ERROR /PCLOSE = 0 DID NOT DISABLE COS GATES
03454 R 000256 A 256
      .EJECT

```

/T123 = TEST DB AND COS GATES 4 + 12 USING MAINT LOGIC
 /AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

03455	R	750001	A	S123	CLA: CMA	/SET DB TO ALL ONES
03456	R	701044	A		ULPS	
03457	R	701004	A		MSM	
03460	R	701021	A		FCMOD	
03461	R	204310	R		LAC (440000)	/SET X+Y TO 4; POP = 0, PCL = 0
03462	R	702024	A		FCLAG	
03463	R	701001	A		UMOD	
03464	R	701072	A		URCG	
03465	R	741200	A		SNA	
03466	R	603471	R		JMP ,+3	
03467	R	100176	R		JMS ERROR	/P OPEN = 0 DID NOT DISABLE COS GATE
03470	R	000257	A		257	
03471	R	701021	A		FCMOD	
03472	R	702004	A		FCEI	
03473	R	204334	R		LAC (440100)	/SET X+Y TO 4; PCL = 0, POP = 1
03474	R	702024	A		FCLAG	
03475	R	701001	A		UMOD	
03476	R	204335	R		LAC (20040)	/SET DB TO BITS UNDER TEST
03477	R	701044	A		ULPS	
03500	R	701072	A		URCG	
03501	R	544335	R		SAD (20040)	/ONLY 4 + 12 DATA IN TRUE
03502	R	603505	R		JMP ,+3	
03503	R	100176	R		JMS ERROR	/DB ERROR OR COS GATE ERROR
03504	R	000260	A		260	
03505	R	204311	R		LAC (757734)	/SET COMP TO DB OF BITS UNDER TEST
03506	R	701064	A		ULD	
03507	R	701072	A		URCG	
03510	R	741200	A		SNA	
03511	R	603514	R		JMP ,+3	
03512	R	100176	R		JMS ERROR	/DB ERROR OR COS GATE ERROR
03513	R	000261	A		261	
03514	R	100162	R		JMS TESTFC	
03515	R	603521	R		JMP S123,1	
03516	R	204251	R		LAC (2000)	
03517	R	044241	R		DAC FLGCHK	
03520	R	100170	R		JMS MONBRK	
03521	R	701021	A	S123,1	FCMOD	
03522	R	702001	A		FCDI	
03523	R	100141	R		JMS HOLD	
03524	R	444243	R		ISZ TSTCNT	
03525	R	603420	R		JMP S122,1	
					,EJECT	

/T124 = TEST DB AND COS GATES 5 + 13 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

03526	R	200032	R	S124	LAC	MINCYC	
03527	R	044243	R		DAC	TSTCNT	
03530	R	750000	A	S124,1	CLA		/SET DB TO ALL ZEROES
03531	R	701044	A		ULPS		
03532	R	701022	A		MCM		/MCM SHOULD CLEAR
03533	R	701004	A		MSM		/SET MAINT
03534	R	701021	A		FCMOD		
03535	R	204336	R		LAC	(550040)	/SET X+Y TO 5; PCL = 1, POP = 0
03536	R	702024	A		FCLAG		
03537	R	701001	A		UMOD		
03540	R	701072	A		URCG		
03541	R	544313	R		SAD	(767724)	/ONLY DATA IN 5 + 13 WILL BE
03542	R	603545	R		JMP	,+3	/FALSE
03543	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR
03544	R	000262	A		262		
03545	R	204313	R		LAC	(767724)	/SET DB TO COMPLEMENT OF BITS UNDER TEST
03546	R	701044	A		ULPS		
03547	R	701072	A		URCG		
03550	R	741200	A		SNA		
03551	R	603554	R		JMP	,+3	
03552	R	100176	R		JMS	ERROR	/DB ERROR OR POP = 0 DID NOT INHIBIT COS
03553	R	000263	A		263		
03554	R	701021	A		FCMOD		
03555	R	204312	R		LAC	(550000)	/SET X+Y TO 5; PCL = 0, POP = 0
03556	R	702024	A		FCLAG		
03557	R	701001	A		UMOD		
03560	R	701072	A		URCG		
03561	R	741200	A		SNA		
03562	R	603565	R		JMP	,+3	
03563	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES
03564	R	000264	A		264		
					,EJECT		

/T125 = TEST DB AND COS GATES 5 + 13 USING MAINT LOGIC
/AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

/
S125  CLAICMA          /SET DB TO ALL ONES
      ULPS
      MSM
      FCMOD
      LAC      (550000)  /SET X+Y TO 5; POP = 0, PCL = 0
      FCLAG
      UMOD
      URCG
      SNA
      JMP      ,+3
      JMS      ERROR    /P OPEN = 0 DID NOT DISABLE COS GATE
      265
      FCMOD
      FCEI
      LAC      (550100)  /SET X+Y TO 5; PCL = 0, POP = 1
      FCLAG
      UMOD
      LAC      (10020)   /SET DB TO BITS UNDER TEST
      ULPS
      URCG
      SAD      (10020)   /ONLY 5 + 13 DATA IN TRUE
      JMP      ,+3
      JMS      ERROR    /DB ERROR OR COS GATE ERROR
      266
      LAC      (767754)  /SET COMP TO DB OF BITS UNDER TEST
      ULD
      URCG
      SNA
      JMP      ,+3
      JMS      ERROR    /DB ERROR OR COS GATE ERROR
      267
      JMS      TESTFC
      JMP      S125,1
      LAC      (2000)
      DAC      FLGCHK
      JMS      MONBRK
S125,1 FCMOD
      FCDI
      JMS      HOLD
      ISZ      TSTCNT
      JMP      S124,1
      ,EJECT

```

```

03565 R 750001 A
03566 R 701044 A
03567 R 701004 A
03570 R 701021 A
03571 R 204312 R
03572 R 702024 A
03573 R 701001 A
03574 R 701072 A
03575 R 741200 A
03576 R 603601 R
03577 R 100176 R
03600 R 000265 A
03601 R 701021 A
03602 R 702004 A
03603 R 204337 R
03604 R 702024 A
03605 R 701001 A
03606 R 204340 R
03607 R 701044 A
03610 R 701072 A
03611 R 544340 R
03612 R 603615 R
03613 R 100176 R
03614 R 000266 A
03615 R 204313 R
03616 R 701064 A
03617 R 701072 A
03620 R 741200 A
03621 R 603624 R
03622 R 100176 R
03623 R 000267 A
03624 R 100162 R
03625 R 603631 R
03626 R 204251 R
03627 R 044241 R
03630 R 100170 R
03631 R 701021 A
03632 R 702001 A
03633 R 100141 R
03634 R 444243 R
03635 R 603530 R

```

/T130 = TEST DB AND COS GATES 6 + 14 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

03636	R	200032	R	S130	LAC	MINCYC	
03637	R	044243	R		DAC	TSTCNT	
03640	R	750000	A	S130,1	CLA		/SET DB TO ALL ZEROES
03641	R	701044	A		ULPS		
03642	R	701022	A		MCM		/MCM SHOULD CLEAR
03643	R	701004	A		MSM		/SET MAINT
03644	R	701021	A		FCMOD		
03645	R	204341	R		LAC	(660040)	/SET X+Y TO 6; PCL = 1, POP = 0
03646	R	702024	A		FCLAG		
03647	R	701001	A		UMOD		
03650	R	701072	A		URCG		
03651	R	544315	R		SAD	(773704)	/ONLY DATA IN 6 + 14 WILL BE
03652	R	603655	R		JMP	,+3	/FALSE
03653	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR
03654	R	000270	A		270		
03655	R	204315	R		LAC	(773704)	/SET DB TO COMPLEMENT OF BITS UNDER TEST
03656	R	701044	A		ULPS		
03657	R	701072	A		URCG		
03660	R	741200	A		SNA		
03661	R	603664	R		JMP	,+3	
03662	R	100176	R		JMS	ERROR	/DB ERROR OR POP = 0 DID NOT INHIBIT COS
03663	R	000271	A		271		
03664	R	701021	A		FCMOD		
03665	R	204314	R		LAC	(660000)	/SET X+Y TO 6; PCL = 0, POP
03666	R	702024	A		FCLAG		
03667	R	701001	A		UMOD		
03670	R	701072	A		URCG		
03671	R	741200	A		SNA		
03672	R	603675	R		JMP	,+3	
03673	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES
03674	R	000272	A		272		
					.EJECT		

/T131 = TEST DB AND COS GATES 6 + 14 USING MAINT LOGIC
 /AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

03675 R 750001 A S131 CLA: CMA /SET DB TO ALL ONES
03676 R 701044 A ULPS
03677 R 701004 A MSM
03700 R 701021 A FCMOD
03701 R 204314 R LAC (660000) /SET X+Y TO 6; POP = 0, PCL = 0
03702 R 702024 A FCLAG
03703 R 701001 A UMOD
03704 R 701072 A URCG
03705 R 741200 A SNA
03706 R 603711 R JMP ,+3
03707 R 100176 R JMS ERROR /P OPEN = 0 DID NOT DISABLE COS GATE
03710 R 000273 A 273
03711 R 701021 A FCMOD
03712 R 702004 A FCEI
03713 R 204342 R LAC (660100) /SET X+Y TO 6; PCL = 0, POP = 1
03714 R 702024 A FCLAG
03715 R 701001 A UMOD
03716 R 204343 R LAC (4010) /SET DB TO BITS UNDER TEST
03717 R 701044 A ULPS
03720 R 701072 A URCG
03721 R 544343 R SAD (4010) /ONLY 6 + 14 DATA IN TRUE
03722 R 603725 R JMP ,+3
03723 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03724 R 000274 A 274
03725 R 204315 R LAC (773764) /SET COMP TO DB OF BITS UNDER TEST
03726 R 701064 A ULD
03727 R 701072 A URCG
03730 R 741200 A SNA
03731 R 603734 R JMP ,+3
03732 R 100176 R JMS ERROR /DB ERROR OR COS GATE ERROR
03733 R 000275 A 275
03734 R 100162 R JMS TESTFC
03735 R 603741 R JMP S131,1
03736 R 204251 R LAC (2000)
03737 R 044241 R DAC FLGCHK
03740 R 100170 R JMS MONBRK
03741 R 701021 A S131,1 FCMOD
03742 R 702001 A FCDI
03743 R 100141 R JMS HOLD
03744 R 444243 R ISZ TSTCNT
03745 R 603640 R JMP S130,1
,EJECT

```

/T132 = TEST DB AND COS GATES 7 + 15 USING MAINT LOGIC AND
 /FC ADR DECODE TO GENERATE DATA IN (P CLOSE SIDE)

03746	R	200032	R	S132	LAC	MINCYC	
03747	R	044243	R		DAC	TSTCNT	
03750	R	750000	A	S132,1	CLA		/SET DB TO ALL ZEROES
03751	R	701044	A		ULPS		
03752	R	701022	A		MCM		/MCM SHOULD CLEAR
03753	R	701004	A		MSM		/SET MAINT
03754	R	701021	A		FCMOD		
03755	R	204344	R		LAC	(770040)	/SET X+Y TO 7; PCL = 1, POP = 0
03756	R	702024	A		FCLAG		
03757	R	701001	A		UMOD		
03760	R	701072	A		URCG		
03761	R	544316	R		SAD	(775770)	/ONLY DATA IN 7 + 15 WILL BE
03762	R	603765	R		JMP	,+3	/FALSE
03763	R	100176	R		JMS	ERROR	/DB ERROR OR COS GATE ERROR
03764	R	000276	A		276		
03765	R	204316	R		LAC	(775770)	/SET DB TO COMPLEMENT OF BITS UNDER TEST
03766	R	701044	A		ULPS		
03767	R	701072	A		URCG		
03770	R	741200	A		SNA		/DB ERROR OR POP = 0 DID NOT INHIBIT COS
03771	R	603774	R		JMP	,+3	
03772	R	100176	R		JMS	ERROR	
03773	R	000277	A		277		
03774	R	701021	A		FCMOD		
03775	R	204274	R		LAC	(770000)	/SET X+Y TO 7; PCL = 0, POP = 0
03776	R	702024	A		FCLAG		
03777	R	701001	A		UMOD		
04000	R	701072	A		URCG		
04001	R	741200	A		SNA		
04002	R	604005	R		JMP	,+3	
04003	R	100176	R		JMS	ERROR	/PCLOSE = 0 DID NOT DISABLE COS GATES
04004	R	000300	A		300		
					,EJECT		

/T133 = TEST DB AND COS GATES 7 + 15 USING MAINT LOGIC
 /AND FC ADR DECODE TO GENERATE DATA IN (P OPEN SIDE)

```

/
S133   CLA!CMA           /SET DB TO ALL ONES
      ULPS
      MSM
      FCMOD
      LAC   (770000)     /SET X+Y TO 7; POP = 0, PCL = 0
      FCLAG
      UMOD
      URCG
      SNA
      JMP   ,+3
      JMS   ERROR       /P OPEN = 0 DID NOT DISABLE COS GATES
      301
      FCMOD
      FCEI
      LAC   (770100)     /SET X+Y TO 7; PCL = 0, POP = 1
      FCLAG
      UMOD
      LAC   (2004)       /SET DB TO BITS UNDER TEST
      ULPS
      URCG
      SAD   (2004)       /ONLY 7 + 15 DATA IN TRUE
      JMP   ,+3
      JMS   ERROR       /DB ERROR OR COS GATE ERROR
      302
      LAC   (775770)     /SET COMP TO DB OF BITS UNDER TEST
      ULD
      URCG
      SNA
      JMP   ,+3
      JMS   ERROR       /DB ERROR OR COS GATE ERROR
      303
      JMS   TESTFC
      JMP   S133,1
      LAC   (2000)
      DAC   FLGCHK
      JMS   MONBRK
S133,1 FCMOD
      FCDI
      JMS   HOLD
      ISZ   TSTCNT
      JMP   S132,1
      .EJECT
  
```

```

04005 R 750001 A
04006 R 701044 A
04007 R 701004 A
04010 R 701021 A
04011 R 204274 R
04012 R 702024 A
04013 R 701001 A
04014 R 701072 A
04015 R 741200 A
04016 R 604021 R
04017 R 100176 R
04020 R 000301 A
04021 R 701021 A
04022 R 702004 A
04023 R 204345 R
04024 R 702024 A
04025 R 701001 A
04026 R 204346 R
04027 R 701044 A
04030 R 701072 A
04031 R 544346 R
04032 R 604035 R
04033 R 100176 R
04034 R 000302 A
04035 R 204316 R
04036 R 701064 A
04037 R 701072 A
04040 R 741200 A
04041 R 604044 R
04042 R 100176 R
04043 R 000303 A
04044 R 100162 R
04045 R 604051 R
04046 R 204251 R
04047 R 044241 R
04050 R 100170 R
04051 R 701021 A
04052 R 702001 A
04053 R 100141 R
04054 R 444243 R
04055 R 603750 R
  
```

/T135 - TEST THAT DONE AND FC EN CAUSES PI OR API

```

/
04056 R 777700 A          LAW      =100
04057 R 044243 R          DAC      TSTCNT
04060 R 100130 R          JMS      M5
04061 R 444243 R          ISZ      TSTCNT
04062 R 604060 R          JMP      ,=2
04063 R 200032 R          S135     LAC      MINCYC
04064 R 044243 R          DAC      TSTCNT
04065 R 701022 A          S135,1  MCM
04066 R 204347 R          LAC      (402000      /SET A/D DONE; FCMOD
04067 R 701024 A          MLS
04070 R 204251 R          LAC      (2000)
04071 R 044241 R          DAC      FLGCHK
04072 R 702004 A          FCEI
04073 R 100170 R          JMS      MONBRK
04074 R 702001 A          FCDI
04075 R 701022 A          MCM
04076 R 100141 R          JMS      HOLD
04077 R 444243 R          ISZ      TSTCNT
04100 R 604065 R          JMP      S135,1

```

/T140 - TEST THAT DEF ONLY CAUSES PI OR API

```

/
04101 R 200032 R          S140     LAC      MINCYC
04102 R 044243 R          DAC      TSTCNT
04103 R 701022 A          S140,1  MCM
04104 R 701004 A          MSM
04105 R 204245 R          LAC      (100000      /SET DEF FLAG
04106 R 044241 R          DAC      FLGCHK
04107 R 701024 A          MLS
04110 R 100170 R          JMS      MONBRK
04111 R 701022 A          MCM
04112 R 701052 A          URAA
04113 R 100141 R          JMS      HOLD
04114 R 444243 R          ISZ      TSTCNT
04115 R 604103 R          JMP      S140,1

```

/T141 - TEST THAT A FAULT CAUSES PI OR API

```

/
04116 R 200032 R          S141     LAC      MINCYC
04117 R 044243 R          DAC      TSTCNT
04120 R 701022 A          S141,1  MCM
04121 R 204250 R          LAC      (10000
04122 R 044241 R          DAC      FLGCHK
04123 R 701024 A          MLS
04124 R 100170 R          JMS      MONBRK
04125 R 701022 A          MCM
04126 R 100141 R          JMS      HOLD
04127 R 444243 R          ISZ      TSTCNT
04130 R 604120 R          JMP      S141,1
          ,EJECT

```

/T143 - TEST THAT A/D DONE CAUSES PI OR API BREAK

04131 R 200032 R
 04132 R 044243 R
 04133 R 701022 A
 04134 R 204251 R
 04135 R 044241 R
 04136 R 701024 A
 04137 R 701021 A
 04140 R 702004 A
 04141 R 100170 R
 04142 R 702001 A
 04143 R 701022 A
 04144 R 100141 R
 04145 R 444243 R
 04146 R 604153 R

S143 LAC MINCYC
 DAC TSTCNT
 S143,1 MCM
 LAC (2000 /SET A/D DONE
 DAC FLGCHK
 MLS
 FCMOD
 FCEI
 JMS MONBRK
 FCDI
 MCM
 JMS HOLD
 ISZ TSTCNT
 JMP S143,1

/T144 - TEST THAT UDC A FAULT CAUSES PI OR API BREAK

04147 R 200032 R
 04150 R 044243 R
 04151 R 701022 A
 04152 R 204250 R
 04153 R 044241 R
 04154 R 701024 A
 04155 R 100170 R
 04156 R 701022 A
 04157 R 100141 R
 04160 R 444243 R
 04161 R 604151 R
 04162 R 200001 R
 04163 R 740100 A
 04164 R 604167 R
 04165 R 777400 A
 04166 R 741000 A
 04167 R 777760 A
 04170 R 040032 R
 04171 R 444242 R
 04172 R 600250 R
 04173 R 600154 R

S144 LAC MINCYC
 DAC TSTCNT
 S144,1 MCM
 LAC (10000
 DAC FLGCHK
 MLS
 JMS MONBRK
 MCM
 JMS HOLD
 ISZ TSTCNT
 JMP S144,1
 LAC UODSW+1
 SMA
 JMP +3
 LAW -400
 SKP
 LAW -20
 DAC MINCYC
 ISZ RUNLEN
 JMP S3,1-2
 JMP TERMIN
 .EJECT

/DELAY - ENTER WITH POINTER TO DELAY TIME WANTED IN USEC(OCTAL)

04174	R	000000	A	DELAY	0		
04175	R	224174	R	LAC*	DELAY	/GET TIMER	
04176	R	444174	R	ISZ	DELAY	/SET FOR RETURN	
04177	R	744020	A	CLL!RAR		/DIVIDE BY FOUR	
04200	R	744020	A	CLL!RAR			
04201	R	741200	A	SNA			
04202	R	624174	R	JMP*	DELAY	/AC=0, EXIT	
04203	R	740001	A	CMA			
04204	R	344257	R	TAD	(1)		
04205	R	740200	A	SZA			
04206	R	604204	R	JMP	,=2	/4US LOOP	
04207	R	624174	R	JMP*	DELAY		

/MCLOCK - CLOCK MAINT CLOCK SPECIFIED NUMBER OF TIMES

04210	R	000000	A	MCLOCK	0		
04211	R	224210	R	LAC*	MCLOCK		
04212	R	740001	A	CMA			
04213	R	344257	R	TAD	(1)		
04214	R	044240	R	DAC	TEMP		
04215	R	702044	A	MCLK			
04216	R	444240	R	ISZ	TEMP		
04217	R	604215	R	JMP	,=2		
04220	R	444210	R	ISZ	MCLOCK		
04221	R	624210	R	JMP*	MCLOCK		

/RANDOM NUMBER GENERATOR - EXIT WITH NUMBER IN AC + RANB

04222	R	000000	A	RANDOM	0		
04223	R	204233	R	LAC	RANA		
04224	R	344234	R	TAD	RANB		
04225	R	044233	R	DAC	RANA		
04226	R	750010	A	GLK			
04227	R	344233	R	TAD	RANA		
04230	R	344234	R	TAD	RANB		
04231	R	044234	R	DAC	RANB		
04232	R	624222	R	JMP*	RANDOM		
04233	R	731420	A	RANA	731420		
04234	R	015610	A	RANB	015610		
04235	R	000000	A	HOLSW	0		
04236	R	000000	A	SAVAC	0		
04237	R	000000	A	M5IND	0		
04240	R	000000	A	TEMP	0		
04241	R	000000	A	FLGCHK	0		
04242	R	000000	A	RUNLEN	0		
04243	R	000000	A	TSTCNT	0		

,EJECT

,END UQDSW

000000 R
04244 R 200000 A #L
04245 R 100000 A #L
04246 R 040000 A #L
04247 R 020000 A #L
04250 R 010000 A #L
04251 R 002000 A #L
04252 R 001000 A #L
04253 R 000400 A #L
04254 R 400000 A #L
04255 R 000200 A #L
04256 R 300000 A #L
04257 R 000001 A #L
04260 R 000002 A #L
04261 R 000003 A #L
04262 R 004000 A #L
04263 R 777600 A #L
04264 R 777400 A #L
04265 R 776000 A #L
04266 R 525252 A #L
04267 R 524000 A #L
04270 R 252000 A #L
04271 R 000100 A #L
04272 R 700000 A #L
04273 R 030000 A #L
04274 R 770000 A #L
04275 R 076100 A #L
04276 R 200200 A #L
04277 R 210000 A #L
04300 R 252525 A #L
04301 R 376774 A #L
04302 R 110000 A #L
04303 R 577374 A #L
04304 R 220000 A #L
04305 R 677574 A #L
04306 R 330000 A #L
04307 R 737674 A #L
04310 R 440000 A #L
04311 R 757734 A #L
04312 R 550000 A #L
04313 R 767754 A #L
04314 R 660000 A #L
04315 R 773764 A #L
04316 R 775770 A #L
04317 R 000040 A #L
04320 R 000000 A #L
04321 R 401000 A #L
04322 R 110040 A #L
04323 R 110100 A #L
04324 R 200400 A #L
04325 R 220040 A #L
04326 R 220100 A #L
04327 R 100200 A #L

04330 R 330040 A #L
04331 R 330100 A #L
04332 R 040100 A #L
04333 R 440040 A #L
04334 R 440100 A #L
04335 R 020040 A #L
04336 R 550040 A #L
04337 R 550100 A #L
04340 R 010020 A #L
04341 R 660040 A #L
04342 R 660100 A #L
04343 R 004010 A #L
04344 R 770040 A #L
04345 R 770100 A #L
04346 R 002004 A #L
04347 R 402000 A #L

SIZE=04350

NO ERROR LINES

BDINIT	00034	R	BDSERV	00057	R	CHK,1	00105	R	DELAY	04174	R
EBA	707764	A	EEM	707702	A	ERCODE	00022	R	ERROR	00176	R
ERR,1	00222	R	ERR,2	00230	R	ERWC	00021	R	EXIT	00122	R
EXIT,1	00126	R	E65	02512	R	E70	02533	R	FCCV	702021	A
FCDI	702001	A	FCEI	702004	A	FCLAG	702024	A	FCMOD	701021	A
FCRA	702012	A	FCRB	702032	A	FCSO	702041	A	FLGCHK	04241	R
HOLD	00141	R	HOLD,1	00142	R	HOLSW	04235	R	L50	02013	R
L52	02052	R	L53	02073	R	L55	02167	R	L61	02324	R
L62	02372	R	MAJCYC	00033	R	MCLK	702044	A	MCLOCK	04210	R
MCM	701022	A	MINCYC	00032	R	MLS	701024	A	MONBRK	00170	R
MON,1	00174	R	MRS	701012	A	MSM	701004	A	M5	00130	R
M5IND	04237	R	RANA	04233	R	RANB	04234	R	RANDOM	04222	R
RUNLEN	04242	R	SAVAC	04236	R	SYSERR	00020	R	S10	00501	R
S10,1	00503	R	S100	02645	R	S101	02657	R	S102	02671	R
S103	02703	R	S104	02716	R	S105	02731	R	S105,1	02750	R
S11	00544	R	S110	02755	R	S110,1	02757	R	S111	03014	R
S111,1	03060	R	S112	03065	R	S112,1	03067	R	S113	03125	R
S113,1	03171	R	S114	03176	R	S114,1	03200	R	S115	03235	R
S115,1	03301	R	S12	00605	R	S12,1	00607	R	S120	03306	R
S120,1	03310	R	S121	03345	R	S121,1	03411	R	S122	03416	R
S122,1	03420	R	S123	03455	R	S123,1	03521	R	S124	03526	R
S124,1	03530	R	S125	03565	R	S125,1	03631	R	S13	00653	R
S130	03636	R	S130,1	03640	R	S131	03675	R	S131,1	03741	R
S132	03746	R	S132,1	03750	R	S133	04005	R	S133,1	04051	R
S135	04063	R	S135,1	04065	R	S14	00730	R	S14,1	00732	R
S140	04101	R	S140,1	04103	R	S141	04116	R	S141,1	04120	R
S143	04131	R	S143,1	04133	R	S144	04147	R	S144,1	04151	R
S15	01001	R	S20	01041	R	S20,2	01043	R	S21	01044	R
S22	01106	R	S22,1	01110	R	S23	01133	R	S23,1	01135	R
S24	01174	R	S25	01224	R	S25,1	01255	R	S26	01263	R
S26,1	01265	R	S3	00246	R	S3,1	00252	R	S31	01317	R
S31,1	01344	R	S32	01347	R	S32,1	01352	R	S33	01401	R
S33,1	01427	R	S34	01432	R	S34,1	01434	R	S35	01456	R
S4	00302	R	S40	01511	R	S40,1	01513	R	S41	01564	R
S42	01634	R	S42,1	01636	R	S43	01701	R	S44	01715	R
S45	01757	R	S45,1	01763	R	S5	00332	R	S50	02004	R
S50,1	02006	R	S51	02030	R	S52	02046	R	S53	02067	R
S54	02114	R	S54,1	02116	R	S55	02163	R	S6	00361	R
S6,1	00363	R	S60	02244	R	S60,1	02246	R	S61	02314	R
S62	02354	R	S62,1	02356	R	S63	02415	R	S64	02434	R
S65	02502	R	S65,2	02477	R	S7	00433	R	S70	02521	R
S71	02542	R	S72	02561	R	S73	02605	R	S73,1	02607	R
S74	02621	R	S75	02633	R	TEMP	04240	R	TERMIN	00154	R
TESTFC	00162	R	TSTCNT	04243	R	ULA	702024	A	ULD	701064	A
ULPS	701044	A	UMOD	701001	A	UODSW	00000	R	URA	702012	A
URAA	701052	A	URCG	701072	A	URD	702032	A	USCAN	702021	A
USD	701061	A	USI	701041	A	USINT	702004	A	USNB	702041	A

UODSW	00000	R	SYSERR	00020	R	ERWC	00021	R	ERCODE	00022	R
MINCYC	00032	R	MAJCYC	00033	R	BDINIT	00034	R	BDSERV	00057	R
CHK,1	00105	R	EXIT	00122	R	EXIT,1	00126	R	M5	00130	R
HOLD	00141	R	HOLD,1	00142	R	TERMIN	00154	R	TESTFC	00162	R
MONBRK	00170	R	MON,1	00174	R	ERROR	00176	R	ERR,1	00222	R
ERR,2	00230	R	S3	00246	R	S3,1	00252	R	S4	00302	R
S5	00332	R	S6	00361	R	S6,1	00363	R	S7	00433	R
S10	00501	R	S10,1	00503	R	S11	00544	R	S12	00605	R
S12,1	00607	R	S13	00653	R	S14	00730	R	S14,1	00732	R
S15	01001	R	S20	01041	R	S20,2	01043	R	S21	01044	R
S22	01106	R	S22,1	01110	R	S23	01133	R	S23,1	01135	R
S24	01174	R	S25	01224	R	S25,1	01255	R	S26	01263	R
S26,1	01265	R	S31	01317	R	S31,1	01344	R	S32	01347	R
S32,1	01352	R	S33	01401	R	S33,1	01427	R	S34	01432	R
S34,1	01434	R	S35	01456	R	S40	01511	R	S40,1	01513	R
S41	01564	R	S42	01634	R	S42,1	01636	R	S43	01701	R
S44	01715	R	S45	01757	R	S45,1	01763	R	S50	02004	R
S50,1	02006	R	L50	02013	R	S51	02030	R	S52	02046	R
L52	02052	R	S53	02067	R	L53	02073	R	S54	02114	R
S54,1	02116	R	S55	02163	R	L55	02167	R	S60	02244	R
S60,1	02246	R	S61	02314	R	L61	02324	R	S62	02354	R
S62,1	02356	R	L62	02372	R	S63	02415	R	S64	02434	R
S65,2	02477	R	S65	02502	R	E65	02512	R	S70	02521	R
E70	02533	R	S71	02542	R	S72	02561	R	S73	02605	R
S73,1	02607	R	S74	02621	R	S75	02633	R	S100	02645	R
S101	02657	R	S102	02671	R	S103	02703	R	S104	02716	R
S105	02731	R	S105,1	02750	R	S110	02755	R	S110,1	02757	R
S111	03014	R	S111,1	03060	R	S112	03065	R	S112,1	03067	R
S113	03125	R	S113,1	03171	R	S114	03176	R	S114,1	03200	R
S115	03235	R	S115,1	03301	R	S120	03306	R	S120,1	03310	R
S121	03345	R	S121,1	03411	R	S122	03416	R	S122,1	03420	R
S123	03455	R	S123,1	03521	R	S124	03526	R	S124,1	03530	R
S125	03565	R	S125,1	03631	R	S130	03636	R	S130,1	03640	R
S131	03675	R	S131,1	03741	R	S132	03746	R	S132,1	03750	R
S133	04005	R	S133,1	04051	R	S135	04063	R	S135,1	04065	R
S140	04101	R	S140,1	04103	R	S141	04116	R	S141,1	04120	R
S143	04131	R	S143,1	04133	R	S144	04147	R	S144,1	04151	R
DELAY	04174	R	MCLOCK	04210	R	RANDOM	04222	R	RANA	04233	R
RANB	04234	R	HOLSW	04235	R	SAVAC	04236	R	M5IND	04237	R
TEMP	04240	R	FLGCHK	04241	R	RUNLEN	04242	R	TSTCNT	04243	R
UMOD	701001	A	MSM	701004	A	MRS	701012	A	FCMOD	701021	A
MCM	701022	A	MLS	701024	A	USI	701041	A	ULPS	701044	A
URAA	701052	A	USD	701061	A	ULD	701064	A	URCG	701072	A
FCDI	702001	A	FCEI	702004	A	USINT	702004	A	FCRA	702012	A
URA	702012	A	FCCV	702021	A	USCAN	702021	A	FCLAG	702024	A
ULA	702024	A	FCRB	702032	A	URD	702032	A	FCSD	702041	A
USNB	702041	A	MCLK	702044	A	EEM	707702	A	EBA	707764	A