

**SDS 940 OLDS DIAGNOSTIC  
SYSTEM**

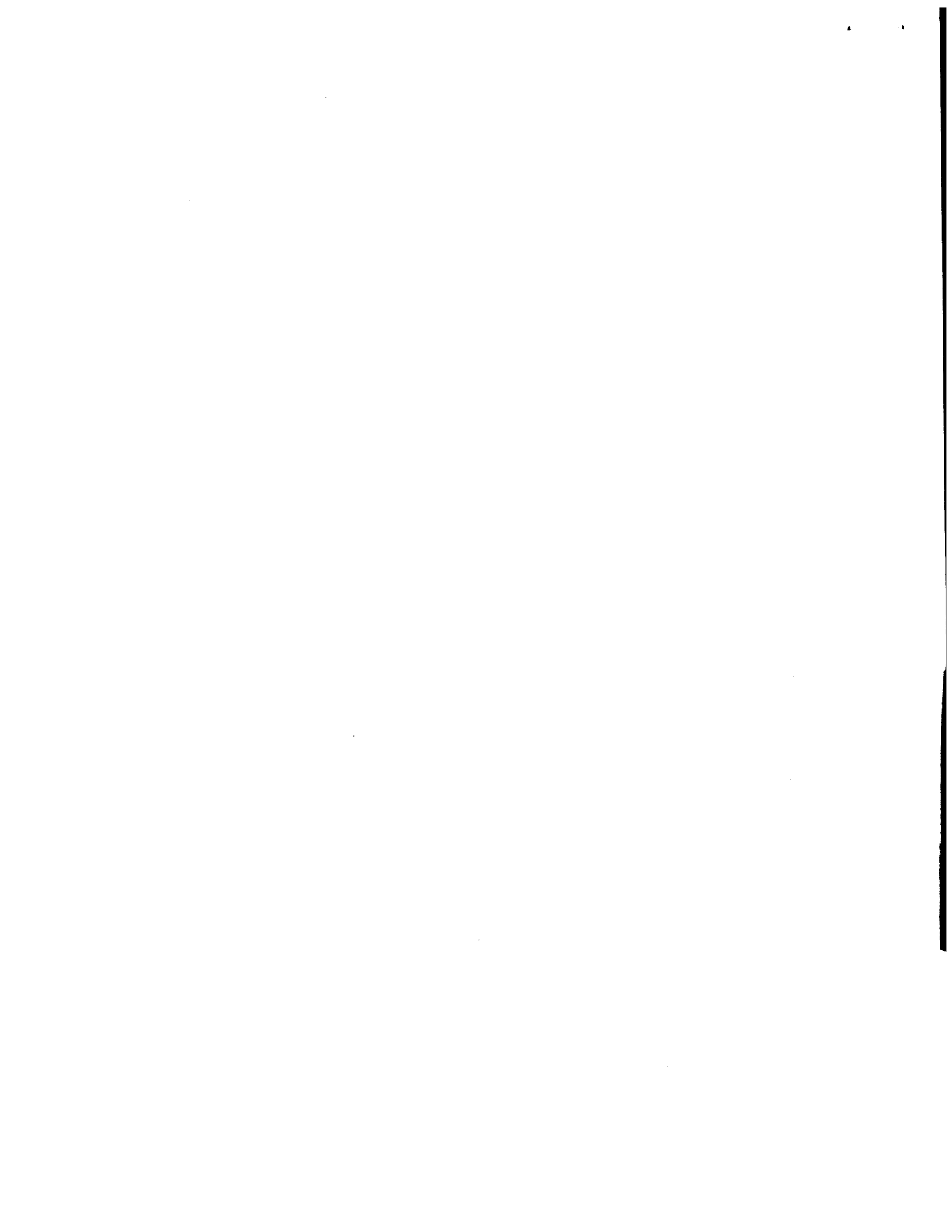
**UNIT 2 FLOATING POINT LISTING**

SDS 870032-51A

February 1969

**SDS**

SCIENTIFIC DATA SYSTEMS • 701 South Aviation Boulevard • El Segundo, Calif., 90245 • 213/772-4511



MEM2 TAP=3,C

PAGE 1

	OCTAL		
0 01 00000	* ONE	0PD	0100000,1
0 02 00000	TWO	0PD	0200000,1
0 03 00000	THREE	0PD	0300000,1
0 04 00000	FOUR	0PD	0400000,1
0 05 00000	FIVE	0PD	0500000,1
0 06 00000	SIX	0PD	0600000,1
0 07 00000	SEVEN	0PD	0700000,1
0 10 00000	EIGHT	0PD	01000000,1
	*		
0000242	INT31	EQU	242
0000243	I31	EQU	243
0000246	INT33	EQU	246
0000247	I33	EQU	247
0000332	FLAGS	EQU	332
0000400	HA*	EQU	400
0000401	STATUS	EQU	401
0000402	LOCKS	EQU	402
0000403	RACSIZ	EQU	403
0000404	RSCSIZ	EQU	404
0000405	SYSIZE	EQU	405
0000406	SEED	EQU	406
0000407	TIME	EQU	407
0000410	AREG	EQU	410
0000411	RRFS	EQU	411
0000412	YREG	EQU	412
0000413	SVRFL0	EQU	413
0000414	FRRORS	EQU	414
0000415	RL1	EQU	415
0000416	RL2	EQU	416
0000417	RL4	EQU	417
0000420	UNIT	EQU	420
0000424	FUNCTN	EQU	424
0000430	OBJECT	EQU	430
0000434	END	EQU	434

MEM2 TAP=3,C

PAGE 2

0000440	RETURN	EQU	440
0000450	DIVERT	EQU	450
0000452	DBNE	EQU	452
0000454	REPRRT	EQU	454
0000456	FDBNE	EQU	456
0000460	FRBR	EQU	460

MEM2 TAP=3.0

PAGE 3

	00010		BCTAL	
1	0000000	POP	EPD	10000000,1
	00000263	T*1	EGU	263
	00000267	T*3	EGU	267
	00000275	I56	EGU	275

MEM2 TAP=3.0

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* MEMORY ACCESS DIAGNOSTIC AND MAXIMUM NOISE TEST 2.0
*
* FUNCTION 1 =940 TRAP AND MAP DIAGNOSTIC-
00000      04000  ZER9  BSS  C4000
04000  0 43 04020  BRM  UNIT
04001  0 20 20000  NBP  LPT
04002  0 76 04001  LDA  STATUS
04003  0 72 26744  SKA  **
04004  0 01 04006  BRJ  **2
04005  0 43 04052  BRM  DONE
04006  0 43 04024  FUNC1 BRM  FUNCTN
04007  0 20 20006  NBP  FRT1

SKIP IF NOT 940
NOT 940, EXIT
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FPAU	TAP=3.0		PAGE 5
04056	0 43 00460	BRM	ERROR
04057	0 20 25214	NOP	CG7
04060	0 72 25574	SKA	#2400
04061	0 43 00460	BRM	ERROR
04062	0 20 25221	NOP	CG8
04063	0 72 25575	SKA	#200
04064	0 43 00460	BRM	ERROR
04065	0 20 25226	NOP	CG9
04066	0 72 25576	SKA	#100
04067	0 43 00460	BRM	ERROR
04070	0 20 25132	NOP	CG10
04071	0 72 25577	SKA	#50
04072	0 43 00460	BRM	ERROR
04073	0 20 25137	NOP	CG11
04074	0 72 25600	SKA	#20
04075	0 43 00460	BRM	ERROR
04076	0 20 25144	NOP	CG12
04077	0 72 25601	SKA	#5
04100	0 43 00460	BRM	ERROR
04101	0 20 25151	NOP	CG13
04102	0 72 25602	SKA	#2
04103	0 43 00460	BRM	ERROR
04104	0 20 25156	NOP	CG14
04105	0 43 00434	BRM	END

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 \* CHECK CABLE DRIVES AND RECIEVERS \*

04106	0 43 00430	BRM	OBJECT	
04107	0 43 16671	BRM	FREADY	CHECK FOR FPAU HANGUP
04110	2 02*30720	EDM*	30720,2	LOAD LEAST SIGNIFICANT PART
04111	0 13 25564	POT	#=1	
04112	2 02*30734	EDM*	30734,2	SINGLE CLOCK MODE
04113	2 02*30721	EDM*	30721,2	LOAD MOST SIGNIFICANT PART
04114	0 13 25564	POT	#=1	
04115	0 43 16716	BRM	PINIT	
04116	2 02*30737	EDM*	30737,2	NORMAL CLOCK MODE
04117	0 76 17161	LDA	PINO	

FPAU	TAP=3.0		PAGE 6
04120	0 16 17142	MFG	PINI
04121	0 72 25603	SKA	#77777000
04122	0 01 04124	BRU	#+2
04123	0 43 00460	BRM	ERROR
04124	0 20 25121	NOP	CG2
04125	0 72 25604	SKA	#63146000
04126	0 01 04130	BRU	#+2
04127	0 43 00460	BRM	ERROR
04130	0 20 25000	NOP	A31
04131	0 70 25562	SKM	#0
04132	0 72 25605	SKA	#14631000
04133	0 01 04135	BRU	#+2
04134	0 43 00460	BRM	ERROR
04135	0 20 25000	NOP	A31
04136	0 17 25564	EDM	#=1
04137	0 72 25565	SKA	#5000000
04140	0 43 00460	BRM	ERROR
04141	0 20 25125	NOP	CG1
04142	0 72 25566	SKA	#24000000
04143	0 43 00460	BRM	ERROR
04144	0 20 25163	NOP	CG2
04145	0 72 25567	SKA	#2400000
04146	0 43 00460	BRM	ERROR
04147	0 20 25170	NOP	CG3
04150	0 72 25570	SKA	#1200000
04151	0 43 00460	BRM	ERROR
04152	0 20 25175	NOP	CG4
04153	0 40 25571	SKS	#120000
04154	0 43 00460	BRM	ERROR
04155	0 20 25202	NOP	CG5
04156	0 72 25572	SKA	#50000
04157	0 43 00460	BRM	ERROR
04160	0 20 25207	NOP	CG6
04161	0 72 25573	SKA	#5000
04162	0 43 00460	BRM	ERROR
04163	0 20 25214	NOP	CG7

FPAU TAP=3.0 PAGE 7

04164	0	72	25574	SKA	#2400
04165	0	43	00460	BRM	ERROR
04166	0	20	25221	NBP	C08
04167	0	72	25575	SKA	#200
04170	0	43	00460	BRM	ERROR
04171	0	20	25226	NBP	C09
04172	0	72	25576	SKA	#100
04173	0	43	00460	BRM	ERROR
04174	0	20	25132	NBP	CG10
04175	0	72	25577	SKA	#50
04176	0	43	00460	BRM	ERROR
04177	0	20	25137	NBP	CG11
04200	0	72	25600	SKA	#20
04201	0	43	00460	BRM	ERROR
04202	0	20	25144	NBP	CG12
04203	0	72	25601	SKA	#5
04204	0	43	00460	BRM	ERROR
04205	0	20	25151	NBP	CG13
04206	0	72	25602	SKA	#2
04207	0	43	00460	BRM	ERROR
04210	0	20	25156	NBP	CG14
04211	0	43	00434	BRM	END

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\* CHECK P01 AND BR #0

04212	0	43	00430	BRM	OBJECT	
04213	0	43	16671	BRM	FREADY	CHECK FOR FPAU HANGUP
04214	2	02	30720	EM*	30720,2	LOAD LEAST SIGNIFICANT PART
04215	0	13	25562	PBT	#0	
04216	0	43	16716	BRM	PINIT	
04217	0	76	17145	LDA	PIN4	
04220	0	72	25606	SKA	#340	
04221	0	43	00460	BRM	ERROR	
04222	4	20	25104	NBP	C26,4	
04223	4	20	25102	NBP	C25,4	
04224	0	20	25121	NBP	C32	
04225	0	43	00434	BRM	END	

FPAU TAP=3.0 PAGE 8

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\* CHECK PHASE F/F

04226	0	43	00430	BRM	OBJECT	
04227	0	43	16671	BRM	FREADY	CHECK FOR FPAU HANGUP
04230	0	43	16716	BRM	PINIT	
04231	0	76	17147	LDA	PIN6	
04232	0	67	00021	LSH	17D	
04233	0	14	25607	ETR	#77400000	
04234	0	35	17314	STA	TEMP	
04235	0	76	17151	LDA	PIN8	
04236	0	67	00011	LSH	9D	
04237	0	14	25610	ETR	#377000	
04240	0	16	17314	MRG	TEMP	
04241	0	72	25611	SKA	#37240000	
04242	0	43	00460	BRM	ERROR	
04243	4	20	25106	NBP	C28,4	
04244	0	20	25110	NBP	C29	
04245	0	72	25612	SKA	#521000	
04246	0	43	00460	BRM	ERROR	
04247	4	20	25115	NBP	C30,4	
04250	0	20	25100	NBP	C24	
04251	0	72	25613	SKA	#12000	
04252	0	43	00460	BRM	ERROR	
04253	4	20	25110	NBP	C29,4	
04254	4	20	25115	NBP	C30,4	
04255	0	20	25117	NBP	C31	
04256	0	72	25614	SKA	#40000	
04257	0	20	25102	NBP	C25	
04260	0	43	00434	BRM	END	

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\* CHECK S\*P # 0

04261	0	43	00430	BRM	OBJECT	
04262	0	43	16671	BRM	FREADY	CHECK FOR FPAU HANGUP
04263	0	43	16716	BRM	PINIT	
04264	0	76	17150	LDA	PIN7	
04265	0	16	17152	MRG	PIN9	

FPAU	TAP#3.C		PAGE 9
04266	0 72 25415	SKA	#6000000
04267	0 43 00460	BRM	ERRRR
04270	0 20 25010	NOP	A3
04271	0 72 25616	SKA	#14000000
04272	0 43 00460	BRM	ERRRR
04273	0 20 25012	NOP	A5
04274	0 72 25617	SKA	#3000000
04275	0 43 00460	BRM	ERRRR
04276	0 20 25013	NOP	A6
04277	0 72 25620	SKA	#6000000
04300	0 43 00460	BRM	ERRRR
04301	0 20 25014	NOP	A7
04302	0 72 25621	SKA	#1400000
04303	0 43 00460	BRM	ERRRR
04304	0 20 25020	NOP	A9
04305	0 72 25422	SKA	#300000
04306	0 43 00460	BRM	ERRRR
04307	0 20 24717	NOP	A10
04310	0 72 25623	SKA	#6000
04311	0 43 00460	BRM	ERRRR
04312	0 20 24721	NOP	A11
04313	0 72 25624	SKA	#1400
04314	0 43 00460	BRM	ERRRR
04315	0 20 24725	NOP	A13
04316	0 72 25625	SKA	#300
04317	0 43 00460	BRM	ERRRR
04320	0 20 24727	NOP	A14
04321	0 72 25626	SKA	#60
04322	0 43 00460	BRM	ERRRR
04323	0 20 24731	NOP	A15
04324	0 72 25627	SKA	#14
04325	0 43 00460	BRM	ERRRR
04326	0 20 24733	NOP	A16
04327	0 72 25630	SKA	#3
04330	0 43 00460	BRM	ERRRR
04331	0 20 24737	NOP	A18

FPAU	TAP#3.C		PAGE 10
04332	0 43 00434	BRM	END
*****			
* CHECK S/P # 0			
04333	0 43 00430	BRM	OBJECT
04334	0 43 16671	BRM	FREADY
04335	0 43 16716	BRM	PINIT
04336	0 76 17147	LDA	PIN6
04337	0 16 17151	MRQ	PIN8
04340	0 72 25615	SKA	#60000000
04341	0 43 00460	BRM	ERRRR
04342	0 20 24741	NOP	A19
04343	0 72 25616	SKA	#14000000
04344	0 43 00460	BRM	ERRRR
04345	0 20 24743	NOP	A20
04346	0 72 25617	SKA	#3000000
04347	0 43 00460	BRM	ERRRR
04350	0 20 24755	NOP	A22
04351	0 72 25620	SKA	#6000000
04352	0 43 00460	BRM	ERRRR
04353	0 20 24757	NOP	A23
04354	0 72 25621	SKA	#1400000
04355	0 43 00460	BRM	ERRRR
04356	0 20 24761	NOP	A24
04357	0 72 25622	SKA	#300000
04360	0 43 00460	BRM	ERRRR
04361	0 20 24770	NOP	A27
04362	0 72 25623	SKA	#6000
04363	0 43 00460	BRM	ERRRR
04364	0 20 24772	NOP	A28
04365	0 72 25431	SKA	#1000
04366	0 43 00460	BRM	ERRRR
04367	0 20 24774	NOP	A29
04370	0 43 00434	BRM	END
*****			
* CHECK AX/L,EX,AL,E			
04371	0 43 00430	BRM	OBJECT

FPAU TAP=3.0

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04372	0	43	16671	BRM	FREADY
04373	2	02	30720	EDM	30720,2
04374	0	13	25564	POT	#=1
04375	2	02	30720	EDM	30720,2
04376	0	13	25562	POT	#0
04377	0	43	16716	BRM	PINIT
04400	0	76	17141	LDA	PINO
04401	0	17	25564	EDR	#=1
04402	0	72	25632	SKA	#777
04403	0	01	04409	BRU	#=2
04404	0	43	00460	BRM	ERRR
04405	4	20	25046	NOP	B26,4
04406	0	20	25052	NOP	B28
04407	0	72	25603	SKA	#77777000
04410	0	01	04412	BRU	#=2
04411	0	43	00460	BRM	ERRR
04412	0	20	25044	NOP	B25
04413	0	17	25564	EDR	#=1
04414	0	72	25633	SKA	#17
04415	0	43	00460	BRM	ERRR
04416	0	20	25021	NOP	B10
04417	0	72	25634	SKA	#360
04420	0	43	00460	BRM	ERRR
04421	0	20	25066	NOP	B7
04422	0	72	25635	SKA	#400
04423	0	43	00460	BRM	ERRR
04424	0	20	25064	NOP	B5
04425	0	72	25636	SKA	#17000
04426	0	43	00460	BRM	ERRR
04427	0	20	25042	NOP	B24
04430	0	72	25637	SKA	#360000
04431	0	43	00460	BRM	ERRR
04432	0	20	25040	NOP	B22
04433	0	72	25640	SKA	#7400000
04434	0	43	00460	BRM	ERRR
04435	0	20	25031	NOP	B20

CHECK FOR FPAU HANGUP  
LOAD LEAST SIGNIFICANT PART  
LOAD LEAST SIGNIFICANT PART

FPAU TAP=3.0

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04436	0	72	25641	SKA	#70000000
04437	0	43	00460	BRM	ERRR
04440	0	20	25027	NOP	B18
04441	0	43	00434	BRM	END

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\* CHECK AXSL, EXCPU, AL, E

04442	0	43	00430	BRM	OBJECT
04443	0	43	16671	BRM	FREADY
04444	2	02	30720	EDM	30720,2
04445	0	13	25564	POT	#=1
04446	0	43	16716	BRM	PINIT
04447	0	76	17141	LDA	PINO
04450	0	72	25632	SKA	#777
04451	0	01	04453	BRU	#=2
04452	0	43	00460	BRM	ERRR
04453	4	20	25044	NOP	B25,4
04454	4	20	25046	NOP	B26,4
04455	4	20	25050	NOP	B27,4
04456	0	20	25052	NOP	B28
04457	0	72	25603	SKA	#77777000
04460	0	01	04462	BRU	#=2
04461	0	43	00460	BRM	ERRR
04462	4	20	25044	NOP	B25,4
04463	4	20	25050	NOP	B27,4
04464	0	20	25052	NOP	B28
04465	0	17	25564	EDR	#=1
04466	0	72	25633	SKA	#17
04467	0	43	00460	BRM	ERRR
04470	0	20	25021	NOP	B10
04471	0	72	25634	SKA	#360
04472	0	43	00460	BRM	ERRR
04473	0	20	25066	NOP	B7
04474	0	72	25635	SKA	#400
04475	0	43	00460	BRM	ERRR
04476	0	20	25064	NOP	B5
04477	0	72	25636	SKA	#17000

CHECK FOR FPAU HANGUP  
LOAD LEAST SIGNIFICANT PART



FPAU TAP=3.0 PAGE 13

04500	0 43 00460	BRM	ERROR
04501	0 20 25042	NOP	B24
04502	0 72 25637	SKA	#360000
04503	0 43 00460	BRM	ERROR
04504	0 20 25040	NOP	B22
04505	0 72 25640	SKA	#7400000
04506	0 43 00460	BRM	ERROR
04507	0 20 25031	NOP	B20
04510	0 72 25641	SKA	#70000000
04511	0 43 00460	BRM	ERROR
04512	0 20 25027	NOP	B18
04513	0 43 00434	BRM	END

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\* CHECK FOR PH 13 AFTER P02

04514	0 43 00430	BRM	OBJECT	
04515	2 02*30720	EDM*	30720,2	LOAD LEAST SIGNIFICANT PART
04516	0 13 25562	PBT	#0	
04517	2 02*30734	EDM*	30734,2	SINGLE CLOCK MODE
04520	2 02*30721	EDM*	30721,2	LOAD MOST SIGNIFICANT PART
04521	0 13 25442	PBT	#20000000	
04522	0 43 16716	BRM	PINIT	
04523	2 02*30737	EDM*	30737,2	NORMAL CLOCK MODE
04524	0 76 17151	LDA	PIN8	
04525	0 72 25402	SKA	#2	
04526	0 01 04530	BRU	#2	
04527	0 43 00460	BRM	ERROR	
04530	4 20 25104	NOP	C26,4	
04531	0 20 25115	NOP	C30	

\* CHECK PHASE 0 RESET

04532	0 76 17147	LDA	PIN6	
04533	0 72 25476	SKA	#100	
04534	0 43 00460	BRM	ERROR	
04535	0 20 25115	NOP	C30	PHO
04536	2 02*30737	EDM*	30737,2	NORMAL CLOCK MODE
04537	0 43 00434	BRM	END	

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FPAU TAP=3.0 PAGE 14

\* CHECK P02 AND BX

04540	0 43 00430	BRM	OBJECT	
04541	0 43 16671	BRM	FREADY	CHECK FOR FPAU HANGUP
04542	2 02*30720	EDM*	30720,2	LOAD LEAST SIGNIFICANT PART
04543	0 13 25564	PBT	#1	
04544	2 02*30734	EDM*	30734,2	SINGLE CLOCK MODE
04545	2 02*30721	EDM*	30721,2	LOAD MOST SIGNIFICANT PART
04546	0 13 25642	PBT	#20000000	
04547	0 43 16716	BRM	PINIT	
04550	2 02*30737	EDM*	30737,2	NORMAL CLOCK MODE
04551	0 76 17144	LDA	PIN3	
04552	0 17 25564	EDR	#1	
04553	0 72 25564	SKA	#1	
04554	0 01 04556	BRU	#2	
04555	0 43 00460	BRM	ERROR	
04556	0 20 25073	NOP	C22	BX\$1
04557	0 17 25564	EDR	#1	
04560	0 72 25641	SKA	#70000000	
04561	0 43 00460	BRM	ERROR	
04562	4 20 25056	NOP	B2,4	
04563	0 20 25046	NOP	B26	
04564	0 72 25640	SKA	#7400000	
04565	0 43 00460	BRM	ERROR	
04566	0 20 25063	NOP	B4	
04567	0 72 25637	SKA	#360000	
04570	0 43 00460	BRM	ERROR	
04571	0 20 25065	NOP	B6	
04572	0 72 25636	SKA	#17000	
04573	0 43 00460	BRM	ERROR	
04574	4 20 25070	NOP	B9,4	
04575	0 20 25046	NOP	B26	
04576	0 72 25643	SKA	#740	
04577	0 43 00460	BRM	ERROR	
04600	0 20 25023	NOP	B12	
04601	0 72 25644	SKA	#36	
04602	0 43 00460	BRM	ERROR	

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FPAU  TAP=3.0          PAGE 15
04603 0 20 25025      NOP      B14
04604 0 72 25645      SKA      #1
04605 0 43 00460      BRM      ERROR
04606 0 20 25027      NOP      B18
04607 2 02*30737     EOM*    30737,2      NORMAL CLOCK MODE
04610 0 43 00434      BRM      END

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\* CHECK AU FOR ZEROS

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04611 0 43 00430      BRM      OBJECT
04612 0 43 16671      BRM      FREADY
04613 2 02*30720     EOM*    30720,2      LOAD LEAST SIGNIFICANT PART
04614 0 13 25564      POT      #=1
04615 2 02*30734     EOM*    30734,2      SINGLE CLOCK MODE
04616 2 02*30721     EOM*    30721,2      LOAD MOST SIGNIFICANT PART
04617 0 13 25562      POT      #0
04620 0 43 16716      BRM      PINIT
04621 0 76 17142      LDA      PIN1
04622 0 17 25564      EOR      #=1
04623 0 72 25564      SKA      #=1
04624 0 01 04626      BRU      #+2
04625 0 43 00460      BRM      ERROR
04626 0 20 25071      NOP      C16
04627 0 17 25564      EOR      #=1
04630 0 72 25645      SKA      #1
04631 0 43 00460      BRM      ERROR
04632 0 20 25027      NOP      B18
04633 0 72 25644      SKA      #36
04634 0 43 00460      BRM      ERROR
04635 0 20 25025      NOP      B14
04636 0 72 25646      SKA      #710
04637 0 43 00460      BRM      ERROR
04640 0 20 25023      NOP      B12
04641 0 72 25636      SKA      #17000
04642 0 43 00460      BRM      ERROR
04643 0 20 25070      NOP      B9
04644 0 72 25637      SKA      #360000

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FPAU  TAP=3.0          PAGE 16
04645 0 43 00460      BRM      ERROR
04646 0 20 25065      NOP      B6
04647 0 72 25647      SKA      #7100000
04650 0 43 00460      BRM      ERROR
04651 0 20 25063      NOP      B4
04652 0 72 25641      SKA      #70000000
04653 0 43 00460      BRM      ERROR
04654 0 20 25056      NOP      B2
04655 2 02*30737     EOM*    30737,2      NORMAL CLOCK MODE
04656 0 43 00434      BRM      END

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04657 0 43 00430      BRM      OBJECT
04660 0 43 16671      BRM      FREADY
04661 2 02*30720     EOM*    30720,2      LOAD LEAST SIGNIFICANT PART
04662 0 13 25562      POT      #0
04663 2 02*30734     EOM*    30734,2      SINGLE CLOCK MODE
04664 2 02*30721     EOM*    30721,2      LOAD MOST SIGNIFICANT PART
04665 0 13 25564      POT      #=1
04666 0 43 16716      BRM      PINIT
04667 0 76 17142      LDA      PIN1      AU
04670 0 72 25564      SKA      #=1
04671 0 01 04673      BRU      #+2
04672 0 43 00460      BRM      ERROR
04673 0 20 25071      NOP      C16
04674 0 17 25564      EOR      #=1
04675 0 72 25645      SKA      #1
04676 0 43 00460      BRM      ERROR
04677 0 20 25027      NOP      B18
04700 0 72 25644      SKA      #36
04701 0 43 00460      BRM      ERROR
04702 0 20 25025      NOP      B14
04703 0 72 25646      SKA      #710
04704 0 43 00460      BRM      ERROR
04705 0 20 25023      NOP      B12
04706 0 72 25636      SKA      #17000
04707 0 43 00460      BRM      ERROR

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FPAU  TAP=3.C          PAGE 17
04710  0 20 25070      NOP      B9
04711  0 72 25637      SKA      #360000
04712  0 43 00460      BRM      ERROR
04713  0 20 25065      NOP      B6
04714  2 02*30737      EDM*    30737,2    NORMAL CLOCK MODE
04715  0 43 00434      BRM      END
04716  0 72 25647      SKA      #7100000
04717  0 43 00460      BRM      ERROR
04720  0 20 25063      NOP      B4
04721  0 72 25641      SKA      #70000000
04722  0 43 00460      BRM      ERROR
04723  0 20 25056      NOP      B2
04724  2 02*30737      EDM*    30737,2    NORMAL CLOCK MODE
04725  0 43 00434      BRM      END

```

\*\*\*\*\*  
\* CHECK ABL1 FOR ZERBS

```

04726  0 43 00430      BRM      SUBJECT
04727  0 43 16671      BRM      PREADY
04730  2 02*30720      EDM*    30720,2    LOAD LEAST SIGNIFICANT PART
04731  0 13 25562      POT      #0
04732  2 02*30734      EDM*    30734,2    SINGLE CLOCK MODE
04733  2 02*30721      EDM*    30721,2    LOAD MOST SIGNIFICANT PART
04734  0 13 25562      POT      #0
04735  0 43 16716      BRM      PINIT
04736  0 76 17143      LDA      PIN2
04737  0 14 25603      ETR      #77777000
04740  0 16 17141      MRG      PIN0
04741  0 16 17142      MRG      PIN1
04742  0 16 17144      MRG      PIN3
04743  0 72 25564      SKA      #=1
04744  0 43 20460      BRM      ERROR
04745  0 20 25303      NOP      IFAIL
*****
04746  0 76 17150      LDA      PIN7
04747  0 16 17152      MRG      PIN9
04750  0 72 25615      SKA      #60000000

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FPAU  TAP=3.C          PAGE 18
04751  0 43 00460      BRM      ERROR
04752  0 20 25004      NOP      A3A4
04753  0 72 25616      SKA      #14000000
04754  0 43 00460      BRM      ERROR
04755  4 20 25011      NOP      A4,4
04756  0 20 25012      NOP      A5
04757  0 72 25617      SKA      #3000000
04760  0 43 00460      BRM      ERROR
04761  4 20 25011      NOP      A4,4
04762  0 20 25013      NOP      A6
04763  0 72 25620      SKA      #600000
04764  0 43 00460      BRM      ERROR
04765  4 20 25014      NOP      A7,4
04766  0 20 25017      NOP      A8
04767  0 72 25621      SKA      #140000
04770  0 43 00460      BRM      ERROR
04771  4 20 25017      NOP      A8,4
04772  0 20 25020      NOP      A9
04773  0 72 25622      SKA      #30000
04774  0 43 00460      BRM      ERROR
04775  4 20 24717      NOP      A10,4
04776  4 20 25017      NOP      A8,4
04777  0 20 24723      NOP      A12
05000  0 72 25623      SKA      #6000
05001  0 43 00460      BRM      ERROR
05002  4 20 24721      NOP      A11,4
05003  0 20 24723      NOP      A12
05004  0 72 25624      SKA      #1400
05005  0 43 00460      BRM      ERROR
05006  4 20 24725      NOP      A13,4
05007  0 20 25015      NOP      ABA12
05010  0 72 25625      SKA      #300
05011  0 43 00460      BRM      ERROR
05012  4 20 24723      NOP      A12,4
05013  0 20 24727      NOP      A14
05014  0 72 25626      SKA      #60

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FPAU TAP=3.0 PAGE 19

05015	0 43 00460	BRM	ERROR
05016	4 20 24731	NOP	A15,4
05017	4 20 25017	NOP	A8,4
05020	0 20 24735	NOP	A17
05021	0 72 25627	SKA	#14
05022	0 43 00460	BRM	ERROR
05023	4 20 24735	NOP	A17,4
05024	0 20 24733	NOP	A16
05025	0 72 25630	SKA	#3
05026	0 43 00460	BRM	ERROR
05027	4 20 24737	NOP	A18,4
05030	4 20 24735	NOP	A17,4
05031	0 20 24745	NOP	A21

05032	0 76 17147	LDA	PIN6	PL
05033	0 16 17151	MRG	PIN8	SL
05034	0 72 25615	SKA	#60000000	
05035	0 43 00460	BRM	ERROR	
05036	4 20 24735	NOP	A17,4	
05037	0 20 24741	NOP	A19	
05040	0 72 25616	SKA	#14000000	
05041	0 43 00460	BRM	ERROR	
05042	4 20 24743	NOP	A20,4	
05043	0 20 24745	NOP	A21	
05044	0 72 25617	SKA	#3000000	
05045	0 43 00460	BRM	ERROR	
05046	0 20 24747	NOP	A21A22	
05047	0 72 25620	SKA	#600000	
05050	0 43 00460	BRM	ERROR	
05051	4 20 24757	NOP	A23,4	
05052	0 20 24752	NOP	A21A26	
05053	0 72 25621	SKA	#140000	
05054	0 43 00460	BRM	ERROR	
05055	0 20 24763	NOP	A24A26	
05056	0 72 25622	SKA	#30000	
05057	0 43 00460	BRM	ERROR	

FPAU TAP=3.0 PAGE 20

05060	4 20 24770	NOP	A27,4
05061	0 20 24752	NOP	A21A26
05062	0 72 25623	SKA	#6000
05063	0 43 00460	BRM	ERROR
05064	4 20 24766	NOP	A26,4
05065	0 20 24772	NOP	A28
05066	0 72 25631	SKA	#1000
05067	0 43 00460	BRM	ERROR
05070	4 20 24774	NOP	A29,4
05071	0 20 24776	NOP	A30

05072	2 02*30734	EQM.	30734,2	SINGLE CLOCK MODE
05073	0 43 16916	BRM	PINIT	
05074	0 76 17144	LDA	PIN3	BU
05075	0 72 25641	SKA	#70000000	
05076	0 43 00460	BRM	ERROR	
05077	0 20 25056	NOP	B2	
05100	0 72 25640	SKA	#7400000	
05101	0 43 00460	BRM	ERROR	
05102	0 20 25063	NOP	B4	
05103	0 72 25637	SKA	#360000	
05104	0 43 00460	BRM	ERROR	
05105	0 20 25065	NOP	B6	
05106	0 72 25636	SKA	#17000	
05107	0 43 00460	BRM	ERROR	
05110	0 20 25070	NOP	B9	
05111	0 72 25643	SKA	#740	
05112	0 43 00460	BRM	ERROR	
05113	0 20 25023	NOP	B12	
05114	0 72 25644	SKA	#36	
05115	0 43 00460	BRM	ERROR	
05116	0 20 25025	NOP	B14	
05117	0 72 25645	SKA	#1	
05120	0 43 00460	BRM	ERROR	
05121	0 20 25027	NOP	B18	

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FPAU  TAP=3.C          PAGE 21
05122  0 76 17143      LDA  PIN2          BL
05123  0 72 25631      SKA  #1000
05124  0 43 00460      BRM  ERROR
05125  4 20 25042      NOP  B24,4
05126  0 20 25011      NOP  A4
05127  0 72 25650      SKA  #16000
05130  0 43 00460      BRM  ERROR
05131  0 20 25042      NOP  B24
05132  0 72 25637      SKA  #360000
05133  0 43 00460      BRM  ERROR
05134  0 20 25040      NOP  B22
05135  0 72 25640      SKA  #7400000
05136  0 43 00460      BRM  ERROR
05137  0 20 25031      NOP  B20
05140  0 72 25641      SKA  #70000000
05141  0 43 00460      BRM  ERROR
05142  0 20 25027      NOP  B18

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*****
05143  0 76 17142      LDA  PIN1          AU
05144  0 72 25641      SKA  #70000000
05145  0 43 00460      BRM  ERROR
05146  0 20 25056      NOP  B2
05147  0 72 25640      SKA  #7400000
05150  0 43 00460      BRM  ERROR
05151  0 20 25063      NOP  B4
05152  0 72 25637      SKA  #360000
05153  0 43 00460      BRM  ERROR
05154  0 20 25065      NOP  B6
05155  0 72 25636      SKA  #17000
05156  0 43 00460      BRM  ERROR
05157  0 20 25070      NOP  B9
05160  0 72 25643      SKA  #740
05161  0 43 00460      BRM  ERROR
05162  0 20 25023      NOP  B12
05163  0 72 25644      SKA  #36
05164  0 43 00460      BRM  ERROR

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FPAU  TAP=3.C          PAGE 22
05165  0 20 25025      NOP  B14
05166  0 72 25645      SKA  #1
05167  0 43 00460      BRM  ERROR
05170  0 20 25027      NOP  B18
*****
05171  0 76 17141      LDA  PIN0          AL
05172  0 72 25636      SKA  #17000
05173  0 43 00460      BRM  ERROR
05174  0 20 25042      NOP  B24
05175  0 72 25637      SKA  #360000
05176  0 43 00460      BRM  ERROR
05177  0 20 25040      NOP  B22
05200  0 72 25640      SKA  #7400000
05201  0 43 00460      BRM  ERROR
05202  0 20 25031      NOP  B20
05203  0 72 25641      SKA  #70000000
05204  0 43 00460      BRM  ERROR
05205  0 20 25027      NOP  B18
05206  2 02*30737      EDM  30737,2      NORMAL CLOCK MODE
05207  0 43 00434      BRM  END

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*****
* CHECK S AND P CAN EQUAL ONES
05210  0 43 00430      BRM  OBJECT
05211  0 43 16471      BRM  FREADY
05212  2 02*30720      EDM  30720,2      LOAD LEAST SIGNIFICANT PART
05213  0 13 25564      PDT  #=1
05214  2 02*30734      EDM  30734,2      SINGLE CLOCK MODE
05215  2 02*30721      EDM  30721,2      LOAD MOST SIGNIFICANT PART
05216  0 13 25564      PDT  #=1
05217  0 43 16716      BRM  PINIT
05220  0 76 17152      LDA  PIN9          SU
05221  0 14 17150      ETR  PIN7          PU
05222  0 17 25564      EBR  #=1
05223  0 72 25615      SKA  #60000000
05224  0 43 00460      BRM  ERROR
05225  4 20 25010      NOP  A3,4

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FPAU	TAP#3.0		PAGE 23	
05226	0 20 25311	NOP	PGR0UP	298,308,318,30A,31A
05227	0 72 25616	SKA	#14000000	
05230	0 43 00460	BRM	ERROR	
05231	4 20 25012	NOP	A5,4	
05232	0 20 25311	NOP	PGR0UP	
05233	0 72 25617	SKA	#3000000	
05234	0 43 00460	BRM	ERROR	
05235	4 20 25013	NOP	A6,4	
05236	0 20 25311	NOP	PGR0UP	
05237	0 72 25620	SKA	#600000	
05240	0 43 00460	BRM	ERROR	
05241	4 20 25014	NOP	A7,4	
05242	0 20 25311	NOP	PGR0UP	
05243	0 72 25621	SKA	#140000	
05244	0 43 00460	BRM	ERROR	
05245	4 20 25020	NOP	A9,4	
05246	0 20 25311	NOP	PGR0UP	
05247	0 72 25622	SKA	#30000	
05250	0 43 00460	BRM	ERROR	
05251	4 20 24717	NOP	A10,4	
05252	0 20 25311	NOP	PGR0UP	
05253	0 72 25623	SKA	#6000	
05254	0 43 00460	BRM	ERROR	
05255	4 20 24721	NOP	A11,4	
05256	0 20 25311	NOP	PGR0UP	
05257	0 72 25624	SKA	#1400	
05260	0 43 00460	BRM	ERROR	
05261	4 20 24725	NOP	A13,4	
05262	0 20 25311	NOP	PGR0UP	
05263	0 72 25625	SKA	#300	
05264	0 43 00460	BRM	ERROR	
05265	4 20 24727	NOP	A14,4	
05266	0 20 25311	NOP	PGR0UP	
05267	0 72 25626	SKA	#60	
05270	0 43 00460	BRM	ERROR	
05271	4 20 24731	NOP	A15,4	

FPAU	TAP#3.0		PAGE 24	
05272	0 20 25311	NOP	PGR0UP	
05273	0 72 25627	SKA	#14	
05274	0 43 00460	BRM	ERROR	
05275	4 20 24733	NOP	A16,4	
05276	0 20 25311	NOP	PGR0UP	
05277	0 72 25630	SKA	#3	
05300	0 43 00460	BRM	ERROR	
05301	4 20 24737	NOP	A18,4	
05302	0 20 25311	NOP	PGR0UP	
05303	0 76 17147	LDA	P1N6	RL
05304	0 76 17151	LDA	P1N8	SL
05305	0 17 25564	EBR	#=1	
05306	0 72 25641	SKA	#70000000	
05307	0 43 00460	BRM	ERROR	
05310	4 20 25027	NOP	B18,4	
05311	0 20 25311	NOP	PGR0UP	
05312	0 72 25640	SKA	#7400000	
05313	0 43 00460	BRM	ERROR	
05314	4 20 25031	NOP	B20,4	
05315	0 20 25311	NOP	PGR0UP	
05316	0 72 25637	SKA	#360000	
05317	0 43 00460	BRM	ERROR	
05320	4 20 25040	NOP	B22,4	
05321	0 20 25311	NOP	PGR0UP	
05322	0 72 25636	SKA	#17000	
05323	0 43 00460	BRM	ERROR	
05324	4 20 25042	NOP	B24,4	
05325	0 20 25311	NOP	PGR0UP	
05326	2 02 30737	EBM	30737,2	NORMAL CLOCK MODE
05327	0 43 00434	BRM	END	
*****				
* CHECK AXSL1				
05330	0 43 00430	BRM	OBJECT	
05331	0 43 16671	BRM	FREADY	
05332	2 02 30720	EBM	30720,2	LOAD LEAST SIGNIFICANT PART
05333	0 13 25651	PBT	#52525000	

FPAU TAP=3.0

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05334	2	02	30734	EDM	30734,2	SINGLE CLOCK MODE
05335	2	02	30721	EDM	30721,2	LOAD MOST SIGNIFICANT PART
05336	0	13	25652	POT	#12525252	
05337	2	02	30734	EDM	30734,2	SINGLE CLOCK MODE
05340	0	43	16716	BRM	PINIT	
05341	0	76	17142	LDA	PIN1	AU
05342	0	72	25653	SKA	#20240501	
05343	0	01	05345	BRU	#+2	
05344	0	43	00460	BRM	ERROR	
05345	0	20	25044	NOP	B25	
05346	0	72	25654	SKA	#05012024	
05347	0	01	05351	BRU	#+2	
05350	0	43	00460	BRM	ERROR	
05351	0	20	25044	NOP	B25	
05352	0	72	25655	SKA	#52525252	
05353	0	43	00460	BRM	ERROR	
05354	4	20	25052	NOP	B28,4	
05355	0	20	25071	NOP	C16	
*****						
05356	0	17	25564	EOR	#+1	
05357	0	72	25642	SKA	#20000000	
05360	0	43	00460	BRM	ERROR	
05361	0	20	25056	NOP	B2	
05362	0	72	25565	SKA	#5000000	
05363	0	43	00460	BRM	ERROR	
05364	0	20	25063	NOP	B4	
05365	0	72	25656	SKA	#240000	
05366	0	43	00460	BRM	ERROR	
05367	0	20	25065	NOP	B6	
05370	0	72	25613	SKA	#12000	
05371	0	43	00460	BRM	ERROR	
05372	0	20	25070	NOP	B9	
05373	0	72	25657	SKA	#500	
05374	0	43	00460	BRM	ERROR	
05375	0	20	25023	NOP	B12	
05376	0	72	25660	SKA	#24	

FPAU TAP=3.0

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05377	0	43	00460	BRM	ERROR	
05400	0	20	25025	NOP	B14	
05401	0	72	25645	SKA	#1	
05402	0	43	00460	BRM	ERROR	
05403	0	20	25027	NOP	B18	
05404	0	76	17141	LDA	PINO	AL
05405	0	17	25564	EOR	#+1	
05406	0	72	25642	SKA	#20000000	
05407	0	43	00460	BRM	ERROR	
05410	0	20	25027	NOP	B18	
05411	0	72	25565	SKA	#5000000	
05412	0	43	00460	BRM	ERROR	
05413	0	20	25031	NOP	B20	
05414	0	72	25656	SKA	#240000	
05415	0	43	00460	BRM	ERROR	
05416	0	20	25040	NOP	B22	
05417	0	72	25613	SKA	#12000	
05420	0	43	00460	BRM	ERROR	
05421	0	20	25042	NOP	B24	
05422	2	02	30737	EDM	30737,2	NORMAL CLOCK MODE
05423	0	43	00434	BRM	END	
*****						
* CHECK AXSL1						
05424	0	43	00430	BRM	OBJECT	
05425	0	43	16671	BRM	FREADY	
05426	2	02	30720	EDM	30720,2	LOAD LEAST SIGNIFICANT PART
05427	0	13	25661	POT	#25252000	
05430	2	02	30734	EDM	30734,2	SINGLE CLOCK MODE
05431	2	02	30721	EDM	30721,2	LOAD MOST SIGNIFICANT PART
05432	0	13	25662	POT	#65252525	
05433	2	02	30734	EDM	30734,2	SINGLE CLOCK MODE
05434	0	43	16716	BRM	PINIT	
*****						
05435	0	76	17142	LDA	PIN1	AU
05436	0	17	25564	EOR	#+1	
05437	0	72	25663	SKA	#80000000	

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FPAU  TAP=3.0                                PAGE 27
05440  0 43 00460      BRM  ERROR
05441  0 20 25056      NOP  B2
05442  0 72 25567      SKA  #2400000
05443  0 43 00460      BRM  ERROR
05444  0 20 25063      NOP  B4
05445  0 72 25571      SKA  #120000
05446  0 43 00460      BRM  ERROR
05447  0 20 25065      NOP  B6
05450  0 72 25573      SKA  #8000
05451  0 43 00460      BRM  ERROR
05452  0 20 25070      NOP  B9
05453  0 72 25664      SKA  #240
05454  0 43 00460      BRM  ERROR
05455  0 20 25023      NOP  B12
05456  0 72 25665      SKA  #12
05457  0 43 00460      BRM  ERROR
05460  0 20 25025      NOP  B14
*****
05461  0 76 17141      LDA  PIND          AL
05462  0 17 25564      EOR  #=1
05463  0 72 25663      SKA  #50000000
05464  0 43 00460      BRM  ERROR
05465  0 20 25027      NOP  B18
05466  0 72 25567      SKA  #2400000
05467  0 43 00460      BRM  ERROR
05470  0 20 25031      NOP  B20
05471  0 72 25571      SKA  #120000
05472  0 43 00460      BRM  ERROR
05473  0 20 25040      NOP  B22
05474  0 72 25666      SKA  #4000
05475  0 43 00460      BRM  ERROR
05476  0 20 25042      NOP  B24
05477  2 02*30737      EDM# 30737,2      NORMAL CLOCK MODE
05500  0 43 00434      BRM  END
*****
* CHECK FE1,FX39,NAN

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FPAU  TAP=3.0                                PAGE 28
05501  0 43 00430      BRM  OBJECT
05502  0 43 16671      BRM  FREADY
05503  2 02*30720      EDM# 30720,2      LOAD LEAST SIGNIFICANT PART
05504  0 13 25562      POT  #0
05505  2 02*30734      EDM# 30734,2      SINGLE CLOCK MODE
05506  2 02*30721      EDM# 30721,2      LOAD MOST SIGNIFICANT PART
05507  0 13 25562      POT  #0
05510  0 43 16716      BRM  PINIT
05511  0 76 17141      LDA  PIND
05512  0 72 25632      SKA  #777
05513  0 43 00460      BRM  ERROR
05514  0 20 25303      NOP  IFAIL
05515  2 02*30734      EDM# 30734,2      SINGLE CLOCK MODE
05516  0 43 16716      BRM  PINIT
05517  0 76 17151      LDA  PIN8
05520  0 72 25602      SKA  #2
05521  0 01 05523      BRU  #+2
05522  0 43 00460      BRM  ERROR
05523  + 20 25300      NOP  P13GRP,4
05524  0 20 25233      NOP  PGR8UP
05525  0 72 25645      SKA  #1
05526  0 43 00460      BRM  ERROR
05527  0 20 25115      NOP  C30
05530  2 02*30737      EDM# 30737,2      NORMAL CLOCK MODE
05531  0 43 00434      BRM  END
*****
* CHECK ECD
05532  0 43 00430      BRM  OBJECT
05533  0 43 16671      BRM  FREADY
05534  2 02*30720      EDM# 30720,2      LOAD LEAST SIGNIFICANT PART
05535  0 13 25562      POT  #0
05536  2 02*30734      EDM# 30734,2      SINGLE CLOCK MODE
05537  2 02*30721      EDM# 30721,2      LOAD MOST SIGNIFICANT PART
05540  0 13 25562      POT  #0
05541  2 02*30734      EDM# 30734,2      SINGLE CLOCK MODE
05542  0 43 16716      BRM  PINIT

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FPAU TAP=3.0 PAGE 29

05543	0	76	17141	LDA	PINO	E
05544	0	72	25632	SKA	#777	
05545	0	01	05547	BRU	#2	
05546	0	43	00460	BRM	ERROR	
05547	0	20	25080	NOP	B27	
05550	0	17	25564	EOR	#1	
05551	0	72	25633	SKA	#17	
05552	0	43	00460	BRM	ERROR	
05553	0	20	25021	NOP	B10	
05554	0	72	25634	SKA	#360	
05555	0	43	00460	BRM	ERROR	
05556	4	20	25066	NOP	B7,4	
05557	0	20	25067	NOP	B8	
05560	0	72	25635	SKA	#400	
05561	0	43	00460	BRM	ERROR	
05562	4	20	25064	NOP	B5,4	
05563	0	20	25067	NOP	B8	
05564	2	02	30737	EOM	30737,2	NORMAL CLOCK MODE
05565	0	43	00434	BRM	END	

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\* CHECK ECD

05566	0	43	00430	BRM	OBJECT	
05567	0	43	16671	BRM	FREADY	
05570	2	02	30720	EOM	30720,2	LOAD LEAST SIGNIFICANT PART
05571	0	13	25645	POT	#1	
05572	2	02	30734	EOM	30734,2	SINGLE CLOCK MODE
05573	2	02	30721	EOM	30721,2	LOAD MOST SIGNIFICANT PART
05574	0	13	25562	POT	#0	
05575	2	02	30734	EOM	30734,2	SINGLE CLOCK MODE
05576	0	43	16716	BRM	PINIT	
05577	0	76	17141	LDA	PINO	E
05600	0	72	25645	SKA	#1	
05601	0	43	00460	BRM	ERROR	
05602	0	20	25021	NOP	B10	
05603	2	02	30737	EOM	30737,2	NORMAL CLOCK MODE
05604	0	43	00434	BRM	END	

FPAU TAP=3.0 PAGE 30

\*\*\*\*\*

\* CHECK ECD

05605	0	43	00430	BRM	OBJECT	
05606	0	43	16671	BRM	FREADY	
05607	2	02	30720	EOM	30720,2	LOAD LEAST SIGNIFICANT PART
05610	0	13	25602	POT	#2	
05611	2	02	30734	EOM	30734,2	SINGLE CLOCK MODE
05612	2	02	30721	EOM	30721,2	LOAD MOST SIGNIFICANT PART
05613	0	13	25562	POT	#0	
05614	2	02	30734	EOM	30734,2	SINGLE CLOCK MODE
05615	0	43	16716	BRM	PINIT	
05616	0	76	17141	LDA	PINO	E
05617	0	72	25602	SKA	#2	
05620	0	43	00460	BRM	ERROR	
05621	0	20	25021	NOP	B10	
05622	2	02	30737	EOM	30737,2	NORMAL CLOCK MODE
05623	0	43	00434	BRM	END	

\*\*\*\*\*

\* CHECK ECD

05624	0	43	00430	BRM	OBJECT	
05625	0	43	16671	BRM	FREADY	
05626	2	02	30720	EOM	30720,2	LOAD LEAST SIGNIFICANT PART
05627	0	13	25563	POT	#4	
05630	2	02	30734	EOM	30734,2	SINGLE CLOCK MODE
05631	2	02	30721	EOM	30721,2	LOAD MOST SIGNIFICANT PART
05632	0	13	25562	POT	#0	
05633	2	02	30734	EOM	30734,2	SINGLE CLOCK MODE
05634	0	43	16716	BRM	PINIT	
05635	0	76	17141	LDA	PINO	E
05636	0	72	25563	SKA	#4	
05637	0	43	00460	BRM	ERROR	
05640	0	20	25021	NOP	B10	
05641	2	02	30737	EOM	30737,2	NORMAL CLOCK MODE
05642	0	43	00434	BRM	END	

\*\*\*\*\*

\* CHECK ECD

FPAU TAP=3.0 PAGE 31

05643	0 43 00430	BRM	OBJECT	
05644	0 43 16671	BRM	FREADY	
05645	2 02*30720	EDM.	30720,2	LOAD LEAST SIGNIFICANT PART
05646	0 13 25467	PBT	#10	
05647	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05650	2 02*30721	EDM.	30721,2	LOAD MOST SIGNIFICANT PART
05651	0 13 25462	PBT	#0	
05652	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05653	0 43 16716	BRM	PINIT	
05654	0 76 17141	LDA	PINO	E
05655	0 72 25467	SKA	#10	
05656	0 43 00460	BRM	ERROR	
05657	0 20 25021	NBP	B10	
05660	2 02*30737	EDM.	30737,2	NORMAL CLOCK MODE
05661	0 43 00434	BRM	END	

\*\*\*\*\*  
\* CHECK ECD

05662	0 43 00430	BRM	OBJECT	
05663	0 43 16671	BRM	FREADY	
05664	2 02*30720	EDM.	30720,2	LOAD LEAST SIGNIFICANT PART
05665	0 13 25400	PBT	#20	
05666	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05667	2 02*30721	EDM.	30721,2	LOAD MOST SIGNIFICANT PART
05670	0 13 25462	PBT	#0	
05671	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05672	0 43 16716	BRM	PINIT	
05673	0 76 17141	LDA	PINO	E
05674	0 72 25400	SKA	#20	
05675	0 43 00460	BRM	ERROR	
05676	0 20 25066	NBP	B7	
05677	2 02*30737	EDM.	30737,2	NORMAL CLOCK MODE
05700	0 43 00434	BRM	END	

\*\*\*\*\*  
\* CHECK ECD

05701	0 43 00430	BRM	OBJECT	
05702	0 43 16671	BRM	FREADY	

FPAU TAP=3.0 PAGE 32

05703	2 02*30720	EDM.	30720,2	LOAD LEAST SIGNIFICANT PART
05704	0 13 25670	PBT	#40	
05705	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05706	2 02*30721	EDM.	30721,2	LOAD MOST SIGNIFICANT PART
05707	0 13 25462	PBT	#0	
05710	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05711	0 43 16716	BRM	PINIT	
05712	0 76 17141	LDA	PINO	E
05713	0 72 25670	SKA	#40	
05714	0 43 00460	BRM	ERROR	
05715	0 20 25066	NBP	B7	
05716	2 02*30737	EDM.	30737,2	NORMAL CLOCK MODE
05717	0 43 00434	BRM	END	

\*\*\*\*\*  
\* CHECK ECD

05720	0 43 00430	BRM	OBJECT	
05721	0 43 16671	BRM	FREADY	
05722	2 02*30720	EDM.	30720,2	LOAD LEAST SIGNIFICANT PART
05723	0 13 25576	PBT	#100	
05724	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05725	2 02*30721	EDM.	30721,2	LOAD MOST SIGNIFICANT PART
05726	0 13 25562	PBT	#0	
05727	2 02*30734	EDM.	30734,2	SINGLE CLOCK MODE
05730	0 43 16716	BRM	PINIT	
05731	0 76 17141	LDA	PINO	E
05732	0 72 25576	SKA	#100	
05733	0 43 00460	BRM	ERROR	
05734	0 20 25066	NBP	B7	
05735	2 02*30737	EDM.	30737,2	NORMAL CLOCK MODE
05736	0 43 00434	BRM	END	

\*\*\*\*\*  
\* CHECK ECD

05737	0 43 00430	BRM	OBJECT	
05740	0 43 16671	BRM	FREADY	
05741	2 02*30720	EDM.	30720,2	LOAD LEAST SIGNIFICANT PART
05742	0 13 25575	PBT	#200	

```

FPAU  TAP=3.0                PAGE 33
05743  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
05744  2 02*30721            EOM#  30721,2      LOAD MOST SIGNIFICANT PART
05745  0 13 25562            POT   #0
05746  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
05747  0 43 16716            BRM   PINIT
05750  0 76 17141            LDA   PINO          E
05751  0 72 25575            SKA   #200
05752  0 43 00460            BRM   ERROR
05753  0 20 25064            NOP   B7
05754  2 02*30737            EOM#  30737,2      NORMAL CLOCK MODE
05755  0 43 00434            BRM   END

```

\*\*\*\*\*  
\* CHECK ECD

```

05756  0 43 00430            BRM   OBJECT
05757  0 43 16671            BRM   FREADY
05760  2 02*30720            EOM#  30720,2      LOAD LEAST SIGNIFICANT PART
05761  0 13 25635            POT   #400
05762  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
05763  2 02*30721            EOM#  30721,2      LOAD MOST SIGNIFICANT PART
05764  0 13 25562            POT   #0
05765  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
05766  0 43 16716            BRM   PINIT
05767  0 76 17141            LDA   PINO          E
05770  0 72 25635            SKA   #400
05771  0 43 00460            BRM   ERROR
05772  0 20 25064            NOP   B5
05773  2 02*30737            EOM#  30737,2      NORMAL CLOCK MODE
05774  0 43 00434            BRM   END

```

\*\*\*\*\*  
\* CHECK AN

```

05775  0 43 00430            BRM   OBJECT
05776  0 43 16671            BRM   FREADY
05777  2 02*30720            EOM#  30720,2      LOAD LEAST SIGNIFICANT PART
06000  0 13 25562            POT   #0
06001  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
06002  2 02*30721            EOM#  30721,2      LOAD MOST SIGNIFICANT PART

```

```

FPAU  TAP=3.0                PAGE 34
06003  0 13 25642            POT   #20000000
06004  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
06005  0 43 16716            BRM   PINIT
06006  0 76 17151            LDA   PIN8
06007  0 72 25602            SKA   #2           PHASE 13
06010  0 43 00460            BRM   ERROR
06011  4 20 25124            NOP   C9,4
06012  4 20 24723            NOP   A12,4
06013  0 20 25115            NOP   C30
06014  0 72 25645            SKA   #1
06015  0 01 06017            BRU   #*2
06016  0 43 00460            BRM   ERROR
06017  0 20 25100            NOP   C24
06020  2 02*30737            EOM#  30737,2      NORMAL CLOCK MODE
06021  0 43 00434            BRM   END

```

\*\*\*\*\*  
\* CHECK AN

```

06022  0 43 00430            BRM   OBJECT
06023  0 43 16671            BRM   FREADY
06024  2 02*30720            EOM#  30720,2      LOAD LEAST SIGNIFICANT PART
06025  0 13 25562            POT   #0
06026  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
06027  2 02*30721            EOM#  30721,2      LOAD MOST SIGNIFICANT PART
06030  0 13 25671            POT   #40000000
06031  2 02*30734            EOM#  30734,2      SINGLE CLOCK MODE
06032  0 43 16716            BRM   PINIT
06033  0 76 17151            LDA   PIN8
06034  0 72 25602            SKA   #2
06035  0 43 00460            BRM   ERROR
06036  0 20 24723            NOP   A12
06037  2 02*30737            EOM#  30737,2      NORMAL CLOCK MODE
06040  0 43 00434            BRM   END

```

\*\*\*\*\*  
\* CHECK AN

```

06041  0 43 00430            BRM   OBJECT

```

```

FPAU  TAP=3.0                PAGE 35
06042 0 43 16671             BRM  FREADY
06043 2 02*30720             EOM. 30720,2          LOAD LEAST SIGNIFICANT PART
06044 0 13 25862             POT  #0
06045 2 02*30734             EOM. 30734,2          SINGLE CLOCK MODE
06046 2 02*30721             EOM. 30721,2          LOAD MOST SIGNIFICANT PART
06047 0 13 25615             POT  #80000000
06050 2 02*30734             EOM. 30734,2          SINGLE CLOCK MODE
06051 0 43 16716             BRM  PINIT
06052 0 76 17151             LDA  PIN8
06053 0 72 25602             SKA  #2
06054 0 01 06056             BRU  #*2
06055 0 43 00460             BRM  ERROR
06056 0 20 25100             NOP  C24
06057 2 02*30737             EOM. 30737,2          NORMAL CLOCK MODE
06060 0 43 00434             BRM  END

```

```

*****
* CHECK FCD, FX39, PH13 RESET

```

```

06061 0 43 00430             BRM  OBJECT
06062 0 43 16671             BRM  FREADY
06063 2 02*30720             EOM. 30720,2          LOAD LEAST SIGNIFICANT PART
06064 0 13 25862             POT  #0
06065 2 02*30734             EOM. 30734,2          SINGLE CLOCK MODE
06066 2 02*30721             EOM. 30721,2          LOAD MOST SIGNIFICANT PART
06067 0 13 25862             POT  #0
06070 0 71 25672             LDX  #*37D
06071 0 43 16716             FCOLUP BRM  PINIT
06072 0 76 17142             LDA  PIN1          AU
06073 0 72 25864             SKA  #*1
06074 0 43 00460             BRM  ERROR
06075 0 20 25303             NOP  IFAIL
06076 0 76 17151             LDA  PIN8          CHECK PH13
06077 0 72 25602             SKA  #2
06100 0 01 06102             BRU  #*2
06101 0 43 00460             BRM  ERROR
06102 0 20 25303             NOP  IFAIL
06103 0 76 17143             LDA  PIN2

```

```

FPAU  TAP=3.0                PAGE 36
06104 0 72 25630             SKA  #3             CHECK FE1 AND FE2
06105 0 43 00460             BRM  ERROR
06106 0 20 25233             NOP  FGROUP        23C,27C,29C,31C,32C
06107 2 02*30734             EOM. 30734,2          SINGLE CLOCK MODE
06110 0 41 06071             BRX  FCCLUP

```

```

*****

```

```

06111 0 43 16716             BRM  PINIT
06112 0 76 17143             LDA  PIN2
06113 0 17 25645             EOR  #1             CHECK FOR FE2
06114 0 72 25630             SKA  #3
06115 0 43 00460             BRM  ERROR
06116 0 20 25233             NOP  FGROUP
06117 2 02*30734             EOM. 30734,2          SINGLE CLOCK MODE
06120 0 43 16716             BRM  PINIT
06121 0 76 17143             LDA  PIN2
06122 0 17 25602             EOR  #2             CHECK FOR FE1
06123 0 72 25630             SKA  #3
06124 0 43 00460             BRM  ERROR
06125 0 20 25233             NOP  FGROUP
06126 2 02*30734             EOM. 30734,2          SINGLE CLOCK MODE
06127 0 43 16716             BRM  PINIT
06130 0 76 17143             LDA  PIN2
06131 0 72 25630             SKA  #3
06132 0 43 00460             BRM  ERROR
06133 0 20 25233             NOP  FGROUP
06134 0 76 17151             LDA  PIN8
06135 0 17 25645             EOR  #1
06136 0 72 25630             SKA  #3
06137 0 43 00460             BRM  ERROR
06140 0 20 25115             NOP  C30
06141 2 02*30737             EOM. 30737,2          NORMAL CLOCK MODE
06142 0 43 00434             BRM  END

```

```

*****
* CHECK PHASE 14

```

```

06143 0 43 00430             BRM  OBJECT
06144 2 02*30720             EOM. 30720,2          LOAD LEAST SIGNIFICANT PART

```

```

FPAU  TAP=3.0                PAGE 37

06145 0 13 25562             POT      #0
06146 2 02*30734            EOM*    30734,2      SINGLE CLOCK MODE
06147 2 02*30721            EOM*    30721,2      LOAD MOST SIGNIFICANT PART
06150 0 13 25562             POT      #20000000
06151 2 02*30734            EOM*    30734,2      SINGLE CLOCK MODE
06152 0 43 16716            BRM     PINIT
06153 0 76 17151            LDA     PIN8
06154 0 75 25673            LDB     #377
06155 0 70 25645            SKM     #1
06156 0 43 00460            BRM     ERROR
06157 0 20 25303            NOP
06160 0 76 17147            LDA     PIN6      PL
06161 0 14 25603            ETR     #77777000
06162 0 16 17150            MRG     PIN7      PU
06163 0 72 25564            SKA     #=1
06164 0 43 00460            BRM     ERROR
06165 4 20 25261            NOP     PGEN1,4    P AND G GATES
06166 0 20 25124            NOP     C9        SF

*****
06167 2 02*30734            EOM*    30734,2      SINGLE CLOCK MODE
06170 0 43 16716            BRM     PINIT
06171 0 76 17151            LDA     PIN8
06172 0 75 25673            LDB     #377
06173 0 70 25562            SKM     #0        PH13,PH14
06174 0 43 00460            BRM     ERROR
06175 0 20 25115            NOP     C30
06176 0 76 17147            LDA     PIN6
06177 0 75 25674            LDB     #177
06200 0 70 25576            SKM     #100     PH 0
06201 0 43 00460            BRM     ERROR
06202 0 20 25110            NOP     C29
06203 0 76 17141            LDA     PIN0
06204 0 17 25564            EOR     #=1
06205 0 72 25673            SKA     #377     EX377
06206 0 01 06210            BRU     #+2
06207 0 43 00460            BRM     ERROR

```

```

FPAU  TAP=3.0                PAGE 38

06210 0 20 25052            NOP     B28
06211 0 76 17142            LDA     PIN1
06212 0 72 25442            SKA     #20000000  AX8/U
06213 0 01 06215            BRU     #+2
06214 0 43 00460            BRM     ERROR
06215 0 20 25050            NOP     B27
06216 0 72 25671            SKA     #40000000  SET A00
06217 0 43 00460            BRM     ERROR
06220 0 20 25056            NOP     B2
06221 4 40*30721            SKS*    30721,4    SKIP IF FP SIGN NEGATIVE
06222 0 01 06224            BRU     #+2
06223 0 43 00460            BRM     ERROR    A000
06224 0 20 25056            NOP     B2
06225 2 02*30737            EOM*    30737,2    NORMAL CLOCK MODE
06226 0 43 00434            BRM     END

*****
* CHECK PHASE 14
06227 0 43 00430            BRM     OBJECT
06230 0 43 16671            BRM     PREADY
06231 2 02*30720            EOM*    30720,2    LOAD LEAST SIGNIFICANT PART
06232 0 13 25632            POT      #777
06233 2 02*30734            EOM*    30734,2    SINGLE CLOCK MODE
06234 2 02*30721            EOM*    30721,2    LOAD MOST SIGNIFICANT PART
06235 0 13 25562            POT      #0
06236 0 71 25675            LDX     #=39D
06237 2 02*30734            EOM*    30734,2    SINGLE CLOCK MODE
06240 0 43 16726            BRM     TIMER
06241 0 41 06237            BRX     #+2
06242 0 43 16716            BRM     PINIT
06243 0 76 17151            LDA     PIN8
06244 0 75 25673            LDB     #377
06245 0 70 25645            SKM     #1
06246 0 43 00460            BRM     ERROR
06247 0 20 25303            NOP     IFAIL
06250 0 76 17150            LDA     PIN7
06251 0 72 25564            SKA     #=1

```

```

FPAU  TAP=3.0                PAGE 39
06252  0 43 00460            BRM  ERROR
06253  0 20 25124            NOP  C9                      OF
*****
06254  2 02*30734            EDM* 30734,2          SINGLE CLOCK MODE
06255  0 43 16716            BRM  PINIT
06256  0 76 17147            LDA  PIN6
06257  0 75 25674            LDB  #177
06260  0 70 25576            SKM  #100
06261  0 43 00460            BRM  ERROR
06262  0 20 25303            NOP  IFAIL
06263  0 76 17141            LDA  PIN0
06264  0 72 25632            SKA  #777
06265  0 43 00460            BRM  ERROR
06266  4 20 25046            NOP  B26,4
06267  4 20 25050            NOP  B27,4
06270  4 20 24723            NOP  A12,4
06271  0 20 25124            NOP  C9
06272  2 02*30737            EDM* 30737,2          NORMAL CLOCK MODE
06273  0 43 00434            BRM  END
*****
* CHECK PHASE 14
06274  0 43 00430            BRM  OBJECT
06275  0 43 16671            BRM  FREADY
06276  2 02*30720            EDM* 30720,2          LOAD LEAST SIGNIFICANT PART
06277  0 13 25635            PBT  #400
06300  2 02*30734            EDM* 30734,2          SINGLE CLOCK MODE
06301  2 02*30721            EDM* 30721,2          LOAD MOST SIGNIFICANT PART
06302  0 13 25615            PBT  #60000000
06303  2 02*30734            EDM* 30734,2          SINGLE CLOCK MODE
06304  0 43 16726            BRM  TIMER
06305  2 02*30734            EDM* 30734,2          SINGLE CLOCK MODE
06306  0 43 16716            BRM  PINIT
06307  0 76 17151            LDA  PIN8
06310  0 75 25673            LDB  #377
06311  0 70 25645            SKM  #1
06312  0 43 00460            BRM  ERROR

```

```

FPAU  TAP=3.0                PAGE 40
06313  0 20 25303            NOP  IFAIL
06314  2 02*30734            EDM* 30734,2          SINGLE CLOCK MODE
06315  0 43 16716            BRM  PINIT
06316  0 76 17147            LDA  PIN6
06317  0 75 25674            LDB  #177
06320  0 70 25576            SKM  #100
06321  0 43 00460            BRM  ERROR
06322  0 20 25303            NOP  IFAIL
06323  0 76 17141            LDA  PIN0
06324  0 72 25632            SKA  #777
06325  0 43 00460            BRM  ERROR
06326  4 20 25123            NOP  CB,4
06327  0 20 25124            NOP  C9
06330  0 76 17142            LDA  PIN1
06331  0 72 25671            SKA  #40000000
06332  0 43 00460            BRM  ERROR
06333  0 20 25056            NOP  B2
06334  4 40*30721            SKS* 30721,4          SET A00
06335  0 01 06337            BRU  #2                SKIP IF PP SIGN NEGATIVE
06336  0 43 00460            BRM  ERROR            SET A000
06337  0 20 25056            NOP  B2
06340  2 02*30737            EDM* 30737,2          NORMAL CLOCK MODE
06341  0 43 00434            BRM  END
*****
* CHECK BRXHR
06342  0 43 00430            BRM  OBJECT
06343  0 43 16671            BRM  FREADY
06344  2 02*30720            EDM* 30720,2          LOAD LEAST SIGNIFICANT PART
06345  0 13 25603            PBT  #77777000
06346  2 02*30721            EDM* 30721,2          LOAD MOST SIGNIFICANT PART
06347  0 13 25676            PBT  #37777777
06350  0 43 16726            BRM  TIMER            WAIT FOR FPAU
06351  0 43 16716            BRM  PINIT
06352  0 76 17147            LDA  PIN6
06353  0 75 25674            LDB  #177
06354  0 70 25576            SKM  #100

```

FPAU TAP=3.0

PAGE 41

06355 0 43 00460  
 06356 0 20 25303  
 06357 0 76 17141  
 06360 0 17 25409  
 06361 0 72 25564  
 06362 0 43 00460  
 06363 0 20 25303  
 06364 0 76 17142  
 06365 0 17 25476  
 06366 0 72 25564  
 06367 0 43 00460  
 06370 0 20 25303

BRM ERROR PHO  
 NOP IFAIL  
 LDA PIN0  
 EOR #77777000  
 SKA #=1  
 BRM ERROR  
 NOP IFAIL  
 LDA PIN1  
 EOR #37777777  
 SKA #=1  
 BRM ERROR  
 NOP IFAIL

06371 2 02 30734  
 06372 2 02 30722  
 06373 0 13 25562  
 06374 0 43 16716  
 06375 0 76 17145  
 06376 0 75 25606  
 06377 0 70 25476  
 06400 0 43 00460  
 06401 4 20 25102  
 06402 4 20 25073  
 06403 4 20 25121  
 06404 0 20 25104  
 06405 0 76 17144  
 06406 0 72 25677  
 06407 0 01 06411  
 06410 0 43 00460  
 06411 0 20 25046  
 06412 0 72 25700  
 06413 0 01 06415  
 06414 0 43 00460  
 06415 0 20 25046

\*\*\*\*\*  
 EQM 30734,2 SINGLE CLOCK MODE  
 EQM 30722,2 FLOATING POINT ADD  
 PBT #0  
 BRM PINIT  
 LDA PIN4  
 LDB #340  
 SKM #100 BR #2  
 BRM ERROR  
 NOP C25,4  
 NOP C22,4  
 NOP C32,4  
 NOP C26  
 LDA PIN3  
 SKA #70360741  
 BRU #+2  
 BRM ERROR  
 NOP B26  
 SKA #607417036  
 BRU #+2  
 BRM ERROR  
 NOP B26

06416 0 17 25676

\*\*\*\*\*  
 EOR #37777777

FPAU TAP=3.0

PAGE 42

06417 0 72 25641  
 06420 0 43 00460  
 06421 0 20 25256  
 06422 0 72 25640  
 06423 0 43 00460  
 06424 0 20 25063  
 06425 0 72 25637  
 06426 0 43 00460  
 06427 0 20 25065  
 06430 0 72 25636  
 06431 0 43 00460  
 06432 0 20 25070  
 06433 0 72 25443  
 06434 0 43 00460  
 06435 0 20 25023  
 06436 0 72 25644  
 06437 0 43 00460  
 06440 0 20 25025  
 06441 0 72 25645  
 06442 0 43 00460  
 06443 0 20 25027

SKA #70000000  
 BRM ERROR  
 NOP B2  
 SKA #7400000  
 BRM ERROR  
 NOP B4  
 SKA #360000  
 BRM ERROR  
 NOP B6  
 SKA #17000  
 BRM ERROR  
 NOP B9  
 SKA #740  
 BRM ERROR  
 NOP B12  
 SKA #36  
 BRM ERROR  
 NOP B14  
 SKA #1  
 BRM ERROR  
 NOP B18

06444 0 76 17143  
 06445 0 17 25564  
 06446 0 72 25641  
 06447 0 43 00460  
 06450 0 20 25027  
 06451 0 72 25440  
 06452 0 43 00460  
 06453 0 20 25031  
 06454 0 72 25637  
 06455 0 43 00460  
 06456 0 20 25040  
 06457 0 72 25636  
 06460 0 43 00460  
 06461 0 20 25042

\*\*\*\*\*  
 LDA PIN2  
 EOR #=1  
 SKA #70000000  
 BRM ERROR  
 NOP B18  
 SKA #7400000  
 BRM ERROR  
 NOP B20  
 SKA #360000  
 BRM ERROR  
 NOP B22  
 SKA #17000  
 BRM ERROR  
 NOP B24

FPAU TAP=3.0

PAGE 43

06462 0 76 17142  
 06463 0 72 25701  
 06464 0 43 00460  
 06465 0 20 25050  
 06466 0 17 25702  
 06467 0 72 25702  
 06470 0 01 06472  
 06471 0 43 00460  
 06472 0 20 25052  
 06473 0 72 25703  
 06474 0 43 00460  
 06475 0 20 25023  
 06476 0 72 25704  
 06477 0 43 00460  
 06500 0 20 25070  
 06501 0 72 25637  
 06502 0 43 00460  
 06503 4 20 25465  
 06504 0 20 25264  
 06505 2 02\*30737  
 06506 0 43 00434

LDA PIN1  
 SKA #377700  
 BRM ERROR  
 NOP B27  
 EOR #77400077  
 SKA #77400077  
 BRU #2  
 BRM ERROR  
 NOP B28  
 SKA #700  
 BRM ERROR  
 NOP B12  
 SKA #14000  
 BRM ERROR  
 NOP B9  
 SKA #360000  
 BRM ERROR  
 NOP B6,4  
 NOP B5  
 EOM# 30737,2  
 BRM END

NORMAL CLOCK MODE

\*\*\*\*\*  
 \* CHECK BRXHR

06507 0 43 00430  
 06510 0 43 16671  
 06511 2 02\*30720  
 06512 0 13 25632  
 06513 2 02\*30721  
 06514 0 13 25642  
 06515 0 43 16726  
 06516 0 43 16716  
 06517 0 76 17147  
 06520 0 75 25674  
 06521 0 70 25576  
 06522 0 43 00460  
 06523 0 20 25303

BRM OBJECT  
 BRM FREADY  
 EOM# 30720,2  
 POT #777  
 EOM# 30721,2  
 POT #20000000  
 BRM TIMER  
 BRM PINIT  
 LDA PIN6  
 LDB #177  
 SKM #100  
 BRM ERROR  
 NOP IFAIL

LOAD LEAST SIGNIFICANT PART

LOAD MOST SIGNIFICANT PART

WAIT FOR FPAU

FPAU TAP=3.0

PAGE 44

06524 2 02\*30734  
 06525 2 02\*30725  
 06526 0 13 25562  
 06527 0 43 16716  
 06530 0 76 17145  
 06531 0 75 25606  
 06532 0 70 25664  
 06533 0 43 00460  
 06534 4 20 25102  
 06535 4 20 25075  
 06536 0 20 25104  
 06537 0 76 17142  
 06540 0 17 25701  
 06541 0 72 25703  
 06542 0 43 00460  
 06543 0 20 25023  
 06544 0 72 25704  
 06545 0 43 00460  
 06546 0 20 25070  
 06547 0 72 25637  
 06550 0 43 00460  
 06551 4 20 25065  
 06552 0 20 25064

EOM# 30734,2  
 EOM# 30725,2  
 POT #0  
 BRM PINIT  
 LDA PIN6  
 LDB #340  
 SKM #240  
 BRM ERROR  
 NOP C25,4  
 NOP C22C32,4  
 NOP C26  
 LDA PIN1  
 EOR #377700  
 SKA #700  
 BRM ERROR  
 NOP B12  
 SKA #14000  
 BRM ERROR  
 NOP B9  
 SKA #360000  
 BRM ERROR  
 NOP B6,4  
 NOP B5

SINGLE CLOCK MODE  
 FPAU MULTIPLY

\*\*\*\*\*

06553 0 76 17144  
 06554 0 17 25642  
 06555 0 72 25641  
 06556 0 43 00460  
 06557 0 20 25056  
 06560 0 72 25640  
 06561 0 43 00460  
 06562 0 20 25063  
 06563 0 72 25637  
 06564 0 43 00460  
 06565 0 20 25065

LDA PIN3  
 EOR #20000000  
 SKA #70000000  
 BRM ERROR  
 NOP B2  
 SKA #7400000  
 BRM ERROR  
 NOP B4  
 SKA #360000  
 BRM ERROR  
 NOP B6



FPAU TAP=3.0 PAGE 45

06566	0 72 25636	SKA	#17000
06567	0 43 00460	BRM	ERROR
06570	0 20 25070	NOP	B9
06571	0 72 25643	SKA	#700
06572	0 43 00460	BRM	ERROR
06573	0 20 25023	NOP	B12
06574	0 72 25644	SKA	#36
06575	0 43 00460	BRM	ERROR
06576	0 20 25025	NOP	B14
06577	0 72 25645	SKA	#1
06600	0 43 00460	BRM	ERROR
06601	0 20 25027	NOP	B18

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06602	0 76 17143	LDA	PIN2
06603	0 72 25641	SKA	#70000000
06604	0 43 00460	BRM	ERROR
06605	0 20 25027	NOP	B18
06606	0 72 25640	SKA	#7400000
06607	0 43 00460	BRM	ERROR
06610	0 20 25031	NOP	B20
06611	0 72 25637	SKA	#360000
06612	0 43 00460	BRM	ERROR
06613	0 20 25040	NOP	B22
06614	0 72 25636	SKA	#17000
06615	0 43 00460	BRM	ERROR
06616	0 20 25042	NOP	B24
06617	0 43 00434	BRM	END

\* CHECK P03

06620	0 43 00430	BRM	OBJECT
06621	0 43 16471	BRM	FREADY
06622	2 02*30720	EDM*	30720J2      LOAD LEAST SIGNIFICANT PART
06623	0 13 25562	POT	#0
06624	2 02*30721	EDM*	30721J2      LOAD MOST SIGNIFICANT PART
06625	0 13 25442	POT	#20000000
06626	2 02*30734	EDM*	30734J2      SINGLE CLOCK MODE

FPAU TAP=3.0 PAGE 46

06627	2 02*30722	EDM*	30722J2      FLOATING POINT ADD
06630	0 13 25564	POT	#1
06631	0 43 16716	BRM	PINIT
06632	0 76 17147	LDA	PIN6
06633	0 75 25674	LDB	#177
06634	0 70 25670	SKM	#40
06635	0 43 00460	BRM	ERROR
06636	0 20 25106	NOP	C28
06637	0 76 17141	LDA	PIN0
06640	0 72 25632	SKA	#777
06641	0 01 06643	BRU	#2
06642	0 43 00460	BRM	ERROR
06643	0 20 25044	NOP	B25

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06644	0 76 17145	LDA	PIN4
06645	0 72 25603	SKA	#77777000
06646	0 01 06650	BRU	#2
06647	0 43 00460	BRM	ERROR
06650	0 20 25002	NOP	A32
06651	0 17 25564	EDR	#1
06652	0 72 25615	SKA	#60000000
06653	0 43 00460	BRM	ERROR
06654	0 20 24741	NOP	A19
06655	0 72 25616	SKA	#14000000
06656	0 43 00460	BRM	ERROR
06657	0 20 24743	NOP	A20
06660	0 72 25617	SKA	#3000000
06661	0 43 00460	BRM	ERROR
06662	0 20 24755	NOP	A22
06663	0 72 25620	SKA	#600000
06664	0 43 00460	BRM	ERROR
06665	0 20 24757	NOP	A23
06666	0 72 25621	SKA	#140000
06667	0 43 00460	BRM	ERROR
06670	0 20 24761	NOP	A24
06671	0 72 25622	SKA	#30000

FPAU TAP=3.0 PAGE 47

06672	0 43 00460	BRM	ERR0R
06673	0 20 24770	N0P	A27
06674	0 72 25623	SKA	#6000
06675	0 43 00460	BRM	ERR0R
06676	0 20 24772	N0P	A28
06677	0 72 25631	SKA	#1000
06700	0 43 00460	BRM	ERR0R
06701	0 20 24774	N0P	A29
*****			
06702	0 76 17146	LDA	PIN5
06703	0 72 25564	SKA	#*1
06704	0 43 00454	BRM	REPOR
06705	0 20 25002	N0P	A32
06706	0 72 25615	SKA	#6000000
06707	0 43 00460	BRM	ERR0R
06710	0 20 25010	N0P	A3
06711	0 72 25616	SKA	#1400000
06712	0 43 00460	BRM	ERR0R
06713	0 20 25012	N0P	A5
06714	0 72 25617	SKA	#3000000
06715	0 43 00460	BRM	ERR0R
06716	0 20 25013	N0P	A6
06717	0 72 25621	SKA	#140000
06720	0 43 00460	BRM	ERR0R
06721	0 20 25020	N0P	A9
06722	0 72 25622	SKA	#30000
06723	0 43 00460	BRM	ERR0R
06724	0 20 24717	N0P	A10
06725	0 72 25623	SKA	#6000
06726	0 43 00460	BRM	ERR0R
06727	0 20 24721	N0P	A11
06730	0 72 25624	SKA	#1400
06731	0 43 00460	BRM	ERR0R
06732	0 20 24725	N0P	A13
06733	0 72 25625	SKA	#300
06734	0 43 00460	BRM	ERR0R

FPAU TAP=3.0 PAGE 48

06735	0 20 24727	N0P	A14
06736	0 72 25626	SKA	#60
06737	0 43 00460	BRM	ERR0R
06740	0 20 24731	N0P	A15
06741	0 72 25627	SKA	#14
06742	0 43 00460	BRM	ERR0R
06743	0 20 24733	N0P	A16
06744	0 72 25630	SKA	#3
06745	0 43 00460	BRM	ERR0R
06746	0 20 24737	N0P	A18
06747	2 02*30737	EDM*	30737.2
06750	0 43 00434	BRM	END
*****			
* CHECK P03			
06751	0 43 00430	BRM	0BJECT
06752	0 43 16671	BRM	FREADY
06753	2 02*30720	EDM*	30720.2
06754	0 13 25564	P0T	#*1
06755	2 02*30721	EDM*	30721.2
06756	0 13 25676	P0T	#3777777
06757	2 02*30734	EDM*	30734.2
06760	2 02*30722	EDM*	30722.2
06761	0 13 25562	P0T	#0
06762	0 43 16716	BRM	PINIT
06763	0 76 17147	LDA	PIN6
06764	0 75 25674	LDB	#177
06765	0 70 25670	SKM	#40
06766	0 43 00460	BRM	ERR0R
06767	0 20 25303	N0P	IFAIL
*****			
06770	0 76 17145	LDA	PIN4
06771	0 17 25603	EDR	#77777000
06772	0 72 25603	SKA	#77777000
06773	0 01 06775	BRU	#*2
06774	0 43 00460	BRM	ERR0R
06775	0 20 25002	N0P	A32

NORMAL CLOCK MODE

LOAD LEAST SIGNIFICANT PART

LOAD MOST SIGNIFICANT PART

SINGLE CLOCK MODE  
FLOATING POINT ADD

FPAU TAP=3.0 PAGE 49

06776	0 17 25603	EOR	#7777000
06777	0 72 25615	SKA	#60000000
07000	0 43 00460	BRM	ERR0R
07001	0 20 24741	NOP	A19
07002	0 72 25616	SKA	#14000000
07003	0 43 00460	BRM	ERR0R
07004	0 20 24743	NOP	A20
07005	0 72 25617	SKA	#3000000
07006	0 43 00460	BRM	ERR0R
07007	0 20 24755	NOP	A22
07010	0 72 25620	SKA	#600000
07011	0 43 00460	BRM	ERR0R
07012	0 20 24757	NOP	A23
07013	0 72 25621	SKA	#140000
07014	0 43 00460	BRM	ERR0R
07015	0 20 24761	NOP	A24
07016	0 72 25622	SKA	#30000
07017	0 43 00460	BRM	ERR0R
07020	0 20 24770	NOP	A27
07021	0 72 25623	SKA	#6000
07022	0 43 00460	BRM	ERR0R
07023	0 20 24772	NOP	A28
07024	0 72 25631	SKA	#1000
07025	0 43 00460	BRM	ERR0R
07026	0 20 24774	NOP	A29
*****			
07027	0 76 17146	LDA	PIN5
07030	0 72 25701	SKA	#377700
07031	0 01 07033	BRU	#2
07032	0 43 00460	BRM	ERR0R
07033	0 20 25002	NOP	A32
07034	0 17 25701	EOR	#377700
07035	0 72 25705	SKA	#200000
07036	0 43 00460	BRM	ERR0R
07037	0 20 25014	NOP	A7
07040	0 72 25621	SKA	#140000

FPAU TAP=3.0 PAGE 50

07041	0 43 00460	BRM	ERR0R
07042	0 20 25020	NOP	A9
07043	0 72 25622	SKA	#30000
07044	0 43 00460	BRM	ERR0R
07045	0 20 24717	NOP	A10
07046	0 72 25623	SKA	#6000
07047	0 43 00460	BRM	ERR0R
07050	0 20 24721	NOP	A11
07051	0 72 25624	SKA	#1400
07052	0 43 00460	BRM	ERR0R
07053	0 20 24725	NOP	A13
07054	0 72 25625	SKA	#300
07055	0 43 00460	BRM	ERR0R
07056	0 20 24727	NOP	A14
07057	2 02*30737	EDM.	30737,2
07060	0 43 00434	BRM	END
*****			
* CHECK PHASE 2			
07061	0 43 00430	BRM	OBJECT
07062	0 43 16671	BRM	FREADY
07063	2 02*30720	EDM.	30720,2
07064	0 13 25632	PST	#777
07065	2 02*30721	EDM.	30721,2
07066	0 13 25442	PST	#20000000
07067	2 02*30734	EDM.	30734,2
07070	2 02*30722	EDM.	30722,2
07071	0 43 16716	BRM	PINIT
07072	0 76 17147	LDA	PIN6
07073	0 75 25674	LDB	#177
07074	0 70 25670	SKM	#40
07075	0 43 00460	BRM	ERR0R
07076	0 20 25303	NOP	IFAIL
07077	2 02*30734	EDM.	30734,2
07100	0 43 16716	BRM	PINIT
07101	0 76 17147	LDA	PIN6
07102	0 70 25600	SKM	#20

LOAD LEAST SIGNIFICANT PART

LOAD MOST SIGNIFICANT PART

SINGLE CLOCK MODE

FLOATING POINT ADD

NORMAL CLOCK MODE

SINGLE CLOCK MODE

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FPAU  TAP=3.0                PAGE 51
07103  0 43 00460            BRM  ERROR
07104  0 20 25106            NOP  C28
07105  0 76 17143            LDA  PIN2
07106  0 75 25706            LDB  #774
07107  0 70 25707            SKM  #444
07110  0 43 00460            BRM  ERROR
07111  * 20 25311            NOP  PGR0UP,*
07112  * 20 25033            NOP  B21,*
07113  0 20 25057            NOP  B30
07114  0 76 17142            LDA  PIN1
07115  0 72 25701            SKA  #377700
07116  0 43 00460            BRM  ERROR
07117  0 20 25052            NOP  B28
07120  2 02*30737          EDM* 30737,2      NORMAL CLOCK MODE
07121  0 43 00434          BRM  END

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```

* CHECK PHASE 2
07122  0 43 00430            BRM  OBJECT
07123  0 43 16671            BRM  FREADY
07124  2 02*30720          EDM* 30720,2      LOAD LEAST SIGNIFICANT PART
07125  0 13 25562            PBT  #0
07126  2 02*30721          EDM* 30721,2      LOAD MOST SIGNIFICANT PART
07127  0 13 25642            PBT  #200000000
07130  2 02*30734          EDM* 30734,2      SINGLE CLOCK MODE
07131  2 02*30723          EDM* 30723,2      FLOATING POINT SUBTRACT
07132  0 13 25632            PBT  #777
07133  2 02*30734          EDM* 30734,2      SINGLE CLOCK MODE
07134  0 43 16716            BRM  PINIT
07135  0 76 17147            LDA  PIN6
07136  0 75 25674            LDB  #177
07137  0 70 25600            SKM  #20
07140  0 43 00460            BRM  ERROR
07141  0 20 25303            NOP  IFAIL
07142  0 76 17143            LDA  PIN2
07143  0 75 25706            LDB  #774
07144  0 70 25707            SKM  #444

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FPAU  TAP=3.0                PAGE 52
07145  0 43 00460            BRM  ERROR
07146  0 20 25035            NOP  B21B30
*****
07147  0 76 17142            LDA  PIN1
07150  0 72 25701            SKA  #377700
07151  0 01 07153            BRU  **2
07152  0 43 00460            BRM  ERROR
07153  0 20 25050            NOP  B27
07154  0 17 25564            EOR  #=1
07155  0 72 25703            SKA  #700
07156  0 43 00460            BRM  ERROR
07157  0 20 25023            NOP  B12
07160  0 72 25636            SKA  #17000
07161  0 43 00460            BRM  ERROR
07162  0 20 25070            NOP  B9
07163  0 72 25637            SKA  #360000
07164  0 43 00460            BRM  ERROR
07165  0 20 25065            NOP  B6
07166  2 02*30737          EDM* 30737,2      NORMAL CLOCK MODE
07167  0 43 00434          BRM  END

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* CHECK PHASE 2
07170  0 43 00430            BRM  OBJECT
07171  0 43 16671            BRM  FREADY
07172  2 02*30720          EDM* 30720,2      LOAD LEAST SIGNIFICANT PART
07173  0 13 25562            PBT  #0
07174  2 02*30721          EDM* 30721,2      LOAD MOST SIGNIFICANT PART
07175  0 13 25642            PBT  #200000000
07176  2 02*30734          EDM* 30734,2      SINGLE CLOCK MODE
07177  2 02*30724          EDM* 30724,2      FLOATING POINT INVERSE SUBTRACT
07200  0 13 25562            PBT  #0
07201  2 02*30734          EDM* 30734,2      SINGLE CLOCK MODE
07202  0 43 16716            BRM  PINIT
07203  0 76 17147            LDA  PIN6
07204  0 75 25674            LDB  #177
07205  0 70 25600            SKM  #20

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FPAU  TAP=3.0                                PAGE 53
07206 0 43 00460      BRM  ERROR
07207 0 20 25303      NBP  IFAIL
07210 0 76 17143      LDA  PIN2
07211 0 75 25706      LDB  #77*
07212 0 70 25707      SKM  #444
07213 0 43 00460      BRM  ERROR
07214 0 20 25335      NBP  B21830
07215 0 76 17152      LDA  PIN9
07216 0 72 25676      SKA  #100
07217 0 43 00460      BRM  ERROR
07220 4 20 24727      NBP  A14,4
07221 4 20 24723      NBP  A12,4
07222 4 20 25017      NBP  A8,4
07223 0 20 24735      NBP  A17
07224 2 02*30737      EBM* 30737,2      NORMAL CLOCK MODE
07225 0 43 00434      BRM  END

```

\*\*\*\*\*  
\* CHECK PHASE 2

```

07226 0 43 00430      BRM  OBJECT
07227 0 43 16671      BRM  FREADY
07230 2 02*30720      EBM* 30720,2      LOAD LEAST SIGNIFICANT PART
07231 0 13 25662      PBT  #0
07232 2 02*30721      EBM* 30721,2      LOAD MOST SIGNIFICANT PART
07233 0 13 25442      PBT  #20000000
07234 2 02*30734      EBM* 30734,2      SINGLE CLOCK MODE
07235 2 02*30725      EBM* 30725,2      FPAU MULTIPLY
07236 0 13 25662      PBT  #0
07237 2 02*30734      EBM* 30734,2      SINGLE CLOCK MODE
07240 0 43 16716      BRM  PINIT
07241 0 76 17147      LDA  PIN6
07242 0 75 25674      LDB  #177
07243 0 70 25600      SKM  #20
07244 0 43 00460      BRM  ERROR
07245 0 20 25303      NBP  IFAIL
07246 0 76 17143      LDA  PIN2
07247 0 75 25706      LDB  #77*

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FPAU  TAP=3.0                                PAGE 54
07250 0 70 25710      SKM  #320
07251 0 43 00460      BRM  ERROR
07252 4 20 25311      NBP  PGRUP,4
07253 0 20 25035      NBP  B21830
07254 2 02*30737      EBM* 30737,2      NORMAL CLOCK MODE
07255 0 43 00434      BRM  END

```

\*\*\*\*\*  
\* CHECK PHASE 2

```

07256 0 43 00430      BRM  OBJECT
07257 0 43 16671      BRM  FREADY
07260 2 02*30720      EBM* 30720,2      LOAD LEAST SIGNIFICANT PART
07261 0 13 25632      PBT  #777
07262 2 02*30721      EBM* 30721,2      LOAD MOST SIGNIFICANT PART
07263 0 13 25642      PBT  #20000000
07264 2 02*30734      EBM* 30734,2      SINGLE CLOCK MODE
07265 2 02*30726      EBM* 30726,2      FPAU DIVIDE
07266 0 13 25632      PBT  #777
07267 2 02*30734      EBM* 30734,2      SINGLE CLOCK MODE
07270 0 43 16716      BRM  PINIT
07271 0 76 17147      LDA  PIN6
07272 0 75 25674      LDB  #177
07273 0 70 25600      SKM  #20
07274 0 43 00460      BRM  ERROR
07275 0 20 25303      NBP  IFAIL
07276 0 76 17143      LDA  PIN2
07277 0 75 25706      LDB  #77*
07300 0 70 25707      SKM  #444
07301 0 43 00460      BRM  ERROR
07302 0 20 25035      NBP  B21830
07303 0 76 17152      LDA  PIN9
07304 0 72 25664      SKA  #1
07305 0 43 00460      BRM  ERROR
07306 0 20 25267      NBP  QADDR
07307 2 02*30734      EBM* 30734,2      SINGLE CLOCK MODE
07310 0 43 16716      BRM  PINIT
07311 0 76 17141      LDA  PIN0

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FPAU  TAP=3.0                PAGE 55
07312 0 75 25632             LDB      #777
07313 0 70 25562             SKM      #0
07314 0 43 00460             BRM      ERROR
07315 0 20 25052             NOP      B25
07316 2 02*30737           EOM*    30737,2          NORMAL CLOCK MODE
07317 0 43 00434             BRM      END

```

```

*****
* CHECK PHASE 2

```

```

07320 0 43 00430             BRM      OBJECT
07321 0 43 16671             BRM      FREADY
07322 2 02*30720           EOM*    30720,2          LOAD LEAST SIGNIFICANT PART
07323 0 13 25645             PBT      #1
07324 2 02*30721           EOM*    30721,2          LOAD MOST SIGNIFICANT PART
07325 0 13 25642             PBT      #20000000
07326 2 02*30734           EOM*    30734,2          SINGLE CLOCK MODE
07327 2 02*30727           EOM*    30727,2          FPAU INVERSE DIVIDE
07330 0 13 25562             PBT      #0
07331 2 02*30734           EOM*    30734,2          SINGLE CLOCK MODE
07332 0 43 16716             BRM      PINIT
07333 0 76 17147             LDA      PIN6
07334 0 75 25674             LDB      #177
07335 0 70 25600             SKM      #20
07336 0 43 00460             BRM      ERROR
07337 0 20 25303             NOP      IFAIL
07340 0 76 17143             LDA      PIN2
07341 0 75 25706             LDB      #774
07342 0 70 25711             SKM      #450
07343 0 43 00460             BRM      ERROR
07344 4 20 25311             NOP      PGR0UP,4
07345 0 20 25035             NOP      B21B30
07346 0 76 17152             LDA      PIN9
07347 0 75 25564             LDB      #*1
07350 0 70 25712             SKM      #77777700
07351 0 43 00460             BRM      ERROR
07352 0 20 25267             NOP      UADDR
07353 2 02*30734           EOM*    30734,2          SINGLE CLOCK MODE

```

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FPAU  TAP=3.0                PAGE 56
07354 0 43 16716             BRM      PINIT
07355 0 76 17141             LDA      PIN0
07356 0 75 25632             LDB      #777
07357 0 70 25632             SKM      #777
07360 0 43 00460             BRM      ERROR
07361 0 20 25044             NOP      B25
07362 0 17 25632             EOR      #777
07363 0 72 25633             SKA      #17
07364 0 43 00460             BRM      ERROR
07365 0 20 25021             NOP      B10
07366 0 72 25634             SKA      #360
07367 0 43 00460             BRM      ERROR
07370 0 20 25066             NOP      B7
07371 0 72 25635             SKA      #400
07372 0 43 00460             BRM      ERROR
07373 0 20 25064             NOP      B5
07374 2 02*30737           EOM*    30737,2          NORMAL CLOCK MODE
07375 0 43 00434             BRM      END

```

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*****
* CHECK PHASE 3

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```

07376 0 43 00430             BRM      OBJECT
07377 0 43 16671             BRM      FREADY
07400 2 02*30720           EOM*    30720,2          LOAD LEAST SIGNIFICANT PART
07401 0 13 25562             PBT      #0
07402 2 02*30721           EOM*    30721,2          LOAD MOST SIGNIFICANT PART
07403 0 13 25562             PBT      #0
07404 0 43 16726             BRM      TIMER
07405 2 02*30734           EOM*    30734,2          SINGLE CLOCK MODE
07406 2 02*30722           EOM*    30722,2          FLOATING POINT ADD
07407 0 13 25645             PBT      #1
07410 2 02*30734           EOM*    30734,2          SINGLE CLOCK MODE
07411 2 02*30734           EOM*    30734,2          SINGLE CLOCK MODE
07412 0 43 16716             BRM      PINIT
07413 0 76 17147             LDA      PIN6
07414 0 75 25674             LDB      #177
07415 0 70 25667             SKM      #10

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07416	0 43 00460	BRM	ERRBR
07417	0 20 25106	NBP	C28
07420	0 76 17152	LDA	PIN9
07421	0 72 25615	SKA	#60000000
07422	0 43 00460	BRM	ERRBR
07423	0 20 25110	NBP	A3
07424	0 72 25616	SKA	#14000000
07425	0 43 00460	BRM	ERRBR
07426	0 20 25012	NBP	A5
07427	0 72 25617	SKA	#30000000
07430	0 43 00460	BRM	ERRBR
07431	0 20 07000	NBP	600000
07432	0 72 25621	SKA	#140000
07433	0 43 00460	BRM	ERRBR
07434	0 20 25020	NBP	A9
07435	0 72 25622	SKA	#30000
07436	0 43 00460	BRM	ERRBR
07437	0 20 24717	NBP	A10
07440	0 72 25623	SKA	#6000
07441	0 43 00460	BRM	ERRBR
07442	0 20 24721	NBP	A11
07443	0 72 25624	SKA	#1400
07444	0 43 00460	BRM	ERRBR
07445	0 20 24725	NBP	A13
07446	0 72 25625	SKA	#300
07447	0 43 00460	BRM	ERRBR
07450	0 20 24727	NBP	A14
07451	0 72 25626	SKA	#60
07452	0 43 00460	BRM	ERRBR
07453	0 20 24731	NBP	A15
07454	0 72 25627	SKA	#14
07455	0 43 00460	BRM	ERRBR
07456	0 20 24733	NBP	A16
07457	0 72 25630	SKA	#3
07460	0 43 00460	BRM	ERRBR
07461	0 20 24737	NBP	A18

SU

FFAU TAP=3.C

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07462	0 76 17151	LDA	PIN8
07463	0 72 25615	SKA	#60000000
07464	0 43 00460	BRM	ERRBR
07465	0 20 24741	NBP	A19
07466	0 72 25616	SKA	#14000000
07467	0 43 00460	BRM	ERRBR
07470	0 20 24743	NBP	A20
07471	0 72 25617	SKA	#30000000
07472	0 43 00460	BRM	ERRBR
07473	0 20 24755	NBP	A22
07474	0 72 25620	SKA	#600000
07475	0 43 00460	BRM	ERRBR
07476	0 20 24757	NBP	A23
07477	0 72 25621	SKA	#140000
07500	0 43 00460	BRM	ERRBR
07501	0 20 24761	NBP	A24
07502	0 72 25622	SKA	#30000
07503	0 43 00460	BRM	ERRBR
07504	0 20 24770	NBP	A27
07505	0 72 25623	SKA	#6000
07506	0 43 00460	BRM	ERRBR
07507	0 20 24772	NBP	A28
07510	0 72 25631	SKA	#1000
07511	0 43 00460	BRM	ERRBR
07512	0 20 24774	NBP	A29
07513	2 02*30737	EBM*	30737,2
07514	0 43 00434	BRM	END

NORMAL CLOCK MODE

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\* CHECK PHASE 3

07515	0 43 00430	BRM	SUBJECT
07516	0 43 16671	BRM	READY
07517	2 02*30720	EBM*	30720,2
07520	0 13 25603	PBT	#77777000
07521	2 02*30721	EBM*	30721,2
07522	0 13 25676	PBT	#37777777
07523	2 02*30734	EBM*	30734,2

LOAD LEAST SIGNIFICANT PART

LOAD MOST SIGNIFICANT PART

SINGLE CLOCK MODE

FPAU TAP=3.0

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07524	2	02	30722	EQM	30722/2	FLOATING POINT ADD
07525	0	13	25562	PBT	#0	
07526	2	02	30734	EQM	30734/2	SINGLE CLOCK MODE
07527	2	02	30734	EQM	30734/2	SINGLE CLOCK MODE
07530	0	43	16716	BRM	PINIT	
07531	0	76	17147	LDA	PIN6	
07532	0	75	25674	LDB	#177	
07533	0	70	25667	SKM	#10	
07534	0	43	00460	BRM	ERR0R	
07535	0	20	25303	N0P	IFAIL	
*****						
07536	0	76	17152	LDA	PIN9	
07537	0	75	25713	LDB	#63146314	
07540	0	70	25562	SKM	#0	
07541	0	01	07543	BRU	#2	
07542	0	43	00460	BRM	ERR0R	
07543	0	20	25044	N0P	B25	
07544	0	75	25714	LDB	#14631463	
07545	0	70	25562	SKM	#0	
07546	0	01	07550	BRU	#2	
07547	0	43	00460	BRM	ERR0R	
07550	0	20	25044	N0P	B25	
07551	0	17	25564	E0R	#1	
07552	0	72	25442	SKA	#20000000	
07553	0	43	00460	BRM	ERR0R	
07554	0	20	25010	N0P	A3	
07555	0	72	25616	SKA	#14000000	
07556	0	43	00460	BRM	ERR0R	
07557	0	20	25012	N0P	A5	
07560	0	72	25617	SKA	#3000000	
07561	0	43	00460	BRM	ERR0R	
07562	0	20	25013	N0P	A6	
07563	0	72	25620	SKA	#600000	
07564	0	43	00460	BRM	ERR0R	
07565	0	20	25014	N0P	A7	
07566	0	72	25621	SKA	#140000	

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07567	0	43	00460	BRM	ERR0R	
07570	0	20	25020	N0P	A9	
07571	0	72	25622	SKA	#30000	
07572	0	43	00460	BRM	ERR0R	
07573	0	20	24717	N0P	A10	
07574	0	72	25623	SKA	#6000	
07575	0	43	00460	BRM	ERR0R	
07576	0	20	24721	N0P	A11	
07577	0	72	25624	SKA	#1400	
07600	0	43	00460	BRM	ERR0R	
07601	0	20	24725	N0P	A13	
07602	0	72	25625	SKA	#300	
07603	0	43	00460	BRM	ERR0R	
07604	0	20	24727	N0P	A14	
07605	0	72	25626	SKA	#60	
07606	0	43	00460	BRM	ERR0R	
07607	0	20	24731	N0P	A15	
07610	0	72	25627	SKA	#14	
07611	0	43	00460	BRM	ERR0R	
07612	0	20	24733	N0P	A16	
07613	0	72	25630	SKA	#3	
07614	0	43	00460	BRM	ERR0R	
07615	0	20	24737	N0P	A18	
*****						
07616	0	76	17151	LDA	PIN8	
07617	0	17	25564	E0R	#1	
07620	0	72	25615	SKA	#60000000	
07621	0	43	00460	BRM	ERR0R	
07622	0	20	24741	N0P	A19	
07623	0	72	25616	SKA	#14000000	
07624	0	43	00460	BRM	ERR0R	
07625	0	20	24743	N0P	A20	
07626	0	72	25617	SKA	#3000000	
07627	0	43	00460	BRM	ERR0R	
07630	0	20	24755	N0P	A22	
07631	0	72	25620	SKA	#600000	



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FPAU  TAP.3.0                                PAGE 61
07632  0 43 00460          BRM  ERROR
07633  0 20 24757          NOP  A23
07634  0 72 25621          SKA  #140000
07635  0 43 00460          BRM  ERROR
07636  0 20 24761          NOP  A24
07637  0 72 25622          SKA  #20000
07640  0 43 00460          BRM  ERROR
07641  0 20 24770          NOP  A27
07642  0 72 25623          SKA  #6000
07643  0 43 00460          BRM  ERROR
07644  0 20 24772          NOP  A28
07645  0 72 25631          SKA  #1000
07646  0 43 00460          BRM  ERROR
07647  0 20 24774          NOP  A29
07650  2 02*30737        EOM.  30737,2      NORMAL CLOCK MODE
07651  0 43 00434          BRM  END

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*****
* CHECK PHASE 3
*****

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```

07652  0 43 00430          BRM  OBJECT
07653  0 43 16671          BRM  FREADY
07654  2 02*30720        EOM.  30720,2      LOAD LEAST SIGNIFICANT PART
07655  0 13 25603          PBT  #77777000
07656  2 02*30721        EOM.  30721,2      LOAD MOST SIGNIFICANT PART
07657  0 13 25676          PBT  #37777777
07660  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07661  2 02*30725        EOM.  30725,2      FPAU MULTIPLY
07662  0 13 25662          PBT  #0
07663  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07664  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07665  0 43 16716          BRM  PINIT
07666  0 76 17147          LDA  PIN6
07667  0 75 25674          LDB  #177
07670  0 70 25667          SKM  #10
07671  0 43 00460          BRM  ERROR
07672  0 20 25303          NOP  IFAIL

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FPAU  TAP.3.0                                PAGE 62
07673  0 76 17152          LDA  PIN9
07674  0 75 25713          LDB  #63146314
07675  0 70 25676          SKM  #37777777
07676  0 01 07700          BRU  **2
07677  0 43 00460          BRM  ERROR
07700  0 20 25044          NOP  B25
07701  0 75 25714          LDB  #14631463
07702  0 70 25676          SKM  #37777777
07703  0 01 07705          BRU  **2
07704  0 43 00460          BRM  ERROR
07705  0 20 25044          NOP  B25
07706  2 02*30737        EOM.  30737,2      NORMAL CLOCK MODE
07707  0 43 00434          BRM  END

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*****
* CHECK PHASE 3
*****

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```

07710  0 43 00430          BRM  OBJECT
07711  0 43 16671          BRM  FREADY
07712  2 02*30720        EOM.  30720,2      LOAD LEAST SIGNIFICANT PART
07713  0 13 25662          PBT  #0
07714  2 02*30721        EOM.  30721,2      LOAD MOST SIGNIFICANT PART
07715  0 13 25642          PBT  #20000000
07716  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07717  2 02*30722        EOM.  30722,2      FLOATING POINT ADD
07720  0 13 25632          PBT  #777
07721  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07722  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07723  0 43 16716          BRM  PINIT
07724  0 76 17147          LDA  PIN6
07725  0 75 25674          LDB  #177
07726  0 70 25667          SKM  #10
07727  0 43 00460          BRM  ERROR
07730  0 20 25303          NOP  IFAIL
07731  2 02*30734        EOM.  30734,2      SINGLE CLOCK MODE
07732  0 43 16716          BRM  PINIT
07733  0 76 17147          LDA  PIN6
07734  0 75 25674          LDB  #177

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FPAU TAP=3.0

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07735	0 70 25563	SKM	#4	
07736	0 43 00460	BRM	ERROR	
07737	0 20 25106	NBP	C28	
07740	0 76 17146	LDA	PIN5	
07741	0 75 25564	LDB	#=1	
07742	0 70 25701	SKM	#377700	
07743	0 01 07745	BRU	#+2	
07744	0 43 00460	BRM	ERROR	
07745	4 20 25002	NBP	A32,4	
07746	0 20 25117	NBP	C31	
07747	2 02+30737	EQM	30737,2	NORMAL CLOCK MODE
07750	0 43 00434	BRM	END	

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\* CHECK PHASE 3

07751	0 43 00430	BRM	OBJECT	
07752	0 43 16671	BRM	FREADY	
07753	2 02+30720	EQM	30720,2	LOAD LEAST SIGNIFICANT PART
07754	0 13 25567	PBT	#0	
07755	2 02+30721	EQM	30721,2	LOAD MOST SIGNIFICANT PART
07756	0 13 25471	PBT	#40000000	
07757	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
07760	2 02+30722	EQM	30722,2	FLOATING POINT ADD
07761	0 13 25432	PBT	#777	
07762	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
07763	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
07764	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
07765	0 43 16716	BRM	PINIT	
07766	0 76 17147	LDA	PIN6	
07767	0 75 25474	LDB	#177	
07770	0 70 25563	SKM	#4	
07771	0 43 00460	BRM	ERROR	
07772	0 20 25303	NBP	IFAIL	
07773	0 76 17146	LDA	PIN5	
07774	0 75 25564	LDB	#=1	
07775	0 70 25701	SKM	#00377700	
07776	0 01 10000	BRU	#+2	

FPAU TAP=3.0

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07777	0 43 00460	BRM	ERROR	
10000	0 20 25117	NBP	C31	
10001	2 02+30737	EQM	30737,2	NORMAL CLOCK MODE
10002	0 43 00434	BRM	END	

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\* CHECK PHASE 3

10003	0 43 00430	BRM	OBJECT	
10004	0 43 16671	BRM	FREADY	
10005	2 02+30720	EQM	30720,2	LOAD LEAST SIGNIFICANT PART
10006	0 13 25635	PBT	#400	
10007	2 02+30721	EQM	30721,2	LOAD MOST SIGNIFICANT PART
10010	0 13 25715	PBT	#10000000	
10011	0 43 16726	BRM	TIMER	
10012	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
10013	2 02+30722	EQM	30722,2	FLOATING POINT ADD
10014	0 13 25632	PBT	#777	
10015	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
10016	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
10017	2 02+30734	EQM	30734,2	SINGLE CLOCK MODE
10020	0 43 16716	BRM	PINIT	
10021	0 76 17147	LDA	PIN6	
10022	0 75 25474	LDB	#177	
10023	0 70 25563	SKM	#4	
10024	0 43 00460	BRM	ERROR	
10025	0 20 25303	NBP	IFAIL	
10026	0 76 17146	LDA	PIN5	
10027	0 17 25701	EQM	#00377700	
10030	0 72 25564	SKA	#=1	
10031	0 43 00460	BRM	ERROR	
10032	4 20 25117	NBP	C31,4	
10033	0 20 25002	NBP	A32	
10034	0 72 25705	SKA	#200000	
10035	0 43 00460	BRM	ERROR	
10036	0 20 25014	NBP	A7	
10037	0 72 25621	SKA	#140000	
10040	0 43 00460	BRM	ERROR	

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FPAU  TAP=3.0                PAGE 65

10041 0 20 25020             NOP      A9
10042 0 72 25622             SKA      #30000
10043 0 43 00460             BRM      ERROR
10044 0 20 24717             NOP
10045 0 72 25623             SKA      #6000
10046 0 43 00460             BRM      ERROR
10047 0 20 24721             NOP      A11
10050 0 72 25624             SKA      #1400
10051 0 43 00460             BRM      ERROR
10052 0 20 24725             NOP      A13
10053 0 72 25625             SKA      #300
10054 0 43 00460             BRM      ERROR
10055 0 20 24727             NOP      A14
10056 2 02*30737            EOM*     30737,2      NORMAL CLOCK MODE
10057 0 43 00434             BRM      END

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*****
* CHECK PHASE 3

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```

10060 0 43 00430             BRM      OBJECT
10061 0 43 16671             BRM      FREEDY
10062 2 02*30720            EOM*     30720,2      LOAD LEAST SIGNIFICANT PART
10063 0 13 25632             PBT      #777
10064 2 02*30721            EOM*     30721,2      LOAD MOST SIGNIFICANT PART
10065 0 13 25642             PBT      #20000000
10066 2 02*30734            EOM*     30734,2      SINGLE CLOCK MODE
10067 2 02*30722            EOM*     30722,2      FLOATING POINT ADD
10070 0 13 25662             PBT      #0
10071 2 02*30734            EOM*     30734,2      SINGLE CLOCK MODE
10072 2 02*30734            EOM*     30734,2      SINGLE CLOCK MODE
10073 2 02*30734            EOM*     30734,2      SINGLE CLOCK MODE
10074 0 43 16716             BRM      PINIT
10075 0 76 17147             LDA      PIN6
10076 0 75 25674             LDB      #177
10077 0 70 25663             SKM      #4
10100 0 43 00460             BRM      ERROR
10101 0 20 25303             NOP      IFAIL
10102 0 76 17146             LDA      PINS

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FPAU  TAP=3.0                PAGE 66

10103 0 75 25664             LDB      #1
10104 0 70 25701             SKM      #37700
10105 0 01 10107             BRU      #2
10106 0 43 00460             BRM      ERROR
10107 4 20 25117             NOP      C31,4
10110 0 20 25064             NOP      B5
10111 0 72 25705             SKA      #200000
10112 0 43 00460             BRM      ERROR
10113 0 20 25014             NOP      A7
10114 0 72 25621             SKA      #140000
10115 0 43 00460             BRM      ERROR
10116 0 20 25020             NOP      A9
10117 0 72 25622             SKA      #30000
10120 0 43 00460             BRM      ERROR
10121 0 20 24717             NOP      A10
10122 0 72 25623             SKA      #6000
10123 0 43 00460             BRM      ERROR
10124 0 20 24721             NOP      A11
10125 0 72 25624             SKA      #1400
10126 0 43 00460             BRM      ERROR
10127 0 20 24725             NOP      A13
10130 0 72 25625             SKA      #300
10131 0 43 00460             BRM      ERROR
10132 0 20 24727             NOP      A14
10133 2 02*30737            EOM*     30737,2      NORMAL CLOCK MODE
10134 0 43 00434             BRM      END

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*****
* CHECK PHASE 4

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```

10135 0 43 00430             BRM      OBJECT
10136 0 43 16671             BRM      FREEDY
10137 2 02*30720            EOM*     30720,2      LOAD LEAST SIGNIFICANT PART
10140 0 13 25632             PBT      #777
10141 2 02*30721            EOM*     30721,2      LOAD MOST SIGNIFICANT PART
10142 0 13 25642             PBT      #20000000
10143 2 02*30734            EOM*     30734,2      SINGLE CLOCK MODE
10144 2 02*30722            EOM*     30722,2      FLOATING POINT ADD

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FPAU  TAP=3.C          PAGE 67
10145 0 13 25632      POT      #777
10146 2 02*30734      EOM#    30734.2      SINGLE CLOCK MODE
10147 2 02*30734      EOM#    30734.2      SINGLE CLOCK MODE
10150 2 02*30734      EOM#    30734.2      SINGLE CLOCK MODE
10151 0 43 16716      BRM     PINIT
10152 0 76 17147      LDA     PIN6
10153 0 75 25674      LDB     #177
10154 0 70 25563      SKM     #4
10155 0 43 00460      BRM     ERROR
10156 0 20 25303      NOP     IFAIL
10157 0 76 17143      LDA     PIN2
10160 0 75 25706      LDB     #774
10161 0 70 25657      SKM     #800
10162 0 43 00460      BRM     ERROR
10163 0 20 25311      NOP     GROUP
10164 0 76 17152      LDA     PIN9
10165 0 75 25564      LDB     #=1
10166 0 70 17146      SKM     PIN5      DU
10167 0 43 00460      BRM     ERROR
10170 0 20 25267      NOP     JADDR
10171 0 76 17151      LDA     PIN8
10172 0 75 25603      LDB     #77777000
10173 0 70 17145      SKM     PIN4      DL
10174 0 43 00460      BRM     ERROR
10175 0 20 25273      NOP     LADDR
10176 2 02*30734      EOM#    30734.2      SINGLE CLOCK MODE
10177 0 43 16716      BRM     PINIT
10200 0 76 17147      LDA     PIN6
10201 0 75 25674      LDB     #177
10202 0 70 25576      SKM     #100
10203 0 43 00460      BRM     ERROR
10204 4 20 25112      NOP     C29C30.4
10205 0 20 25106      NOP     C28
10206 2 02*30737      EOM#    30737.2      NORMAL CLOCK MODE
10207 0 43 00434      BRM     END
*****

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FPAU  TAP=3.C          PAGE 68
10210 0 43 00430      * CHECK PHASE 4
10211 0 43 16671      BRM     OBJECT
10212 2 02*30720      BRM     FREEDY
10213 0 13 25716      EOM#    30720.2      LOAD LEAST SIGNIFICANT PART
10214 2 02*30721      POT     #25252377
10215 0 13 25717      EOM#    30721.2      LOAD MOST SIGNIFICANT PART
10216 2 02*30722      POT     #25252525
10217 0 13 25562      EOM#    30722.2      FLOATING POINT ADD
10220 0 43 16726      POT     #0
10221 0 43 16716      BRM     TIMER
10222 0 76 17147      BRM     PINIT
10223 0 75 25674      LDA     PIN6
10224 0 70 25676      LDB     #177
10225 0 43 00460      SKM     #100
10226 0 43 00460      BRM     ERROR
10227 0 20 25303      NOP     IFAIL
10228 0 76 17144      LDA     PIN3
10230 0 75 25713      LDB     #63146314
10231 0 70 25562      SKM     #0
10232 0 01 10234      BRU     #2
10233 0 43 00460      BRM     ERROR
10234 0 20 25046      NOP     B26
10235 0 75 25714      LDB     #14631463
10236 0 70 25562      SKM     #0
10237 0 01 10241      BRU     #2
10240 0 43 00460      BRM     ERROR
10241 0 20 25046      NOP     B26
10242 0 75 25564      LDB     #=1
10243 0 70 25720      SKM     #25277725
10244 0 01 10246      BRU     #2
10245 0 43 00460      BRM     ERROR
10246 0 20 25052      NOP     B28
10247 2 02*30737      EOM#    30737.2      NORMAL CLOCK MODE
10250 0 43 00434      BRM     END
*****
* CHECK PHASE 4

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FPAU TAP=3.0

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10251	0 43 00430	BRM	OBJECT	
10252	0 43 16671	BRM	FREADY	
10253	2 02*30720	EQM*	30720,2	LOAD LEAST SIGNIFICANT PART
10254	0 13 25721	PST	*25252777	
10255	2 02*30721	EQM*	30721,2	LOAD MOST SIGNIFICANT PART
10256	0 13 25717	PST	*25252825	
10257	2 02*30725	EQM*	30725,2	FPAU MULTIPLY
10260	0 13 25562	PST	*0	
10261	0 76 25722	LDA	*40	
10262	0 41 10262	BRX	*	WAIT FOR FPAU
10263	0 43 16716	BRM	PINIT	
10264	0 76 17147	LDA	PIN6	
10265	0 75 25674	LDB	*177	
10266	0 70 25576	SKM	*100	
10267	0 43 00460	BRM	ERROR	
10270	0 20 25303	NOP	IFAIL	
10271	0 76 17144	LDA	PIN3	BU
10272	0 75 25564	LDB	*1	
10273	0 70 25562	SKM	*0	
10274	0 01 10276	BRU	*2	
10275	0 43 00460	BRM	ERROR	
10276	0 20 25052	NOP	B28	
10277	2 02*30737	EQM*	30737,2	NORMAL CLOCK MODE
10300	0 43 00434	BRM	END	

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\* CHECK P0\*

10301	0 43 00430	BRM	OBJECT	
10302	0 43 16671	BRM	FREADY	
10303	2 02*30722	EQM*	30722,2	FLOATING POINT ADD
10304	0 13 25564	PST	*1	
10305	2 02*30734	EQM*	30734,2	SINGLE CLOCK MODE
10306	2 02*30721	EQM*	30721,2	LOAD MOST SIGNIFICANT PART
10307	0 13 25564	PST	*1	
10310	0 43 16716	BRM	PINIT	
10311	0 76 17147	LDA	PIN6	PHASE 0
10312	0 72 25576	SKA	*100	

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10313	0 43 00460	BRM	ERROR	
10314	4 20 25061	NOP	B32,4	
10315	4 20 25100	NOP	C24,4	
10316	0 20 25110	NOP	C29	
10317	0 72 25602	SKA	*2	
10320	0 01 10322	BRU	*2	
10321	0 43 00460	BRM	ERROR	
10322	4 20 25104	NOP	C26,4	
10323	4 20 25106	NOP	C28,4	
10324	0 20 25033	NOP	B21	
10325	0 76 17151	LDA	PIN8	
10326	0 72 25575	SKA	*200	
10327	0 43 00460	BRM	ERROR	
10330	0 20 25106	NOP	C28	
10331	0 72 25670	SKA	*40	
10332	0 43 00460	BRM	ERROR	
10333	4 20 25033	NOP	B21,4	
10334	4 20 25100	NOP	C24,4	
10335	0 20 25106	NOP	C28	
10336	0 76 17146	LDA	PIN5	
10337	0 17 25564	EQM	*1	
10340	0 72 25615	SKA	*60000000	
10341	0 43 00460	BRM	ERROR	
10342	0 20 25010	NOP	A3	
10343	0 72 25616	SKA	*14000000	
10344	0 43 00460	BRM	ERROR	
10345	0 20 25012	NOP	A5	
10346	0 72 25617	SKA	*3000000	
10347	0 43 00460	BRM	ERROR	
10350	0 20 25013	NOP	A6	
10351	0 72 25620	SKA	*600000	
10352	0 43 00460	BRM	ERROR	
10353	0 20 25014	NOP	A7	
10354	0 72 25621	SKA	*140000	
10355	0 43 00460	BRM	ERROR	
10356	0 20 25020	NOP	A9	

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10357	0	72	25622	SKA	#30000
10360	0	43	00460	BRM	ERROR
10361	0	20	24717	NOP	A10
10362	0	72	25623	SKA	#6000
10363	0	43	00460	BRM	ERROR
10364	0	20	24721	NOP	A11
10365	0	72	25624	SKA	#1400
10366	0	43	00460	BRM	ERROR
10367	0	20	24725	NOP	A13
10370	0	72	25625	SKA	#300
10371	0	43	00460	BRM	ERROR
10372	0	20	24727	NOP	A14
10373	0	72	25626	SKA	#60
10374	0	43	00460	BRM	ERROR
10375	0	20	24731	NOP	A15
10376	0	72	25627	SKA	#14
10377	0	43	00460	BRM	ERROR
10400	0	20	24733	NOP	A16
10401	0	72	25630	SKA	#3
10402	0	43	00460	BRM	ERROR
10403	0	20	24737	NOP	A18
10404	0	43	16671	BRM	FREADY
10405	0	43	00434	BRM	END

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\* CHECK PG\*

10406	0	43	00430	BRM	OBJECT
10407	0	43	16671	BRM	FREADY
10410	2	02*	30723	EGM*	30723,2
10411	0	13	25632	POT	#777
10412	2	02*	30734	EGM*	30734,2
10413	2	02*	30721	EGM*	30721,2
10414	0	13	25662	POT	#0
10415	0	43	16716	BRM	PINIT
10416	0	76	17147	LDA	PIN6
10417	0	72	25602	SKA	#2
10420	0	01	10422	BRU	#*2

FLOATING POINT SUBTRACT  
SINGLE CLOCK MODE  
LOAD MOST SIGNIFICANT PART

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10421	0	43	00460	BRM	ERROR
10422	4	20	25104	NOP	C26,4
10423	0	20	25033	NOP	B21
10424	0	76	17151	LDA	PIN8
10425	0	72	25664	SKA	#240
10426	0	43	00460	BRM	ERROR
10427	4	20	25033	NOP	B21,4
10430	0	20	25100	NOP	C24
10431	0	76	17146	LDA	PIN5
10432	0	72	25615	SKA	#60000000
10433	0	43	00460	BRM	ERROR
10434	0	20	25010	NOP	A3
10435	0	72	25616	SKA	#14000000
10436	0	43	00460	BRM	ERROR
10437	0	20	25012	NOP	A5
10440	0	72	25617	SKA	#3000000
10441	0	43	00460	BRM	ERROR
10442	0	20	25013	NOP	A6
10443	0	72	25620	SKA	#600000
10444	0	43	00460	BRM	ERROR
10445	0	20	25014	NOP	A7
10446	0	72	25621	SKA	#140000
10447	0	43	00460	BRM	ERROR
10450	0	20	25020	NOP	A9
10451	0	72	25622	SKA	#30000
10452	0	43	00460	BRM	ERROR
10453	0	20	24717	NOP	A10
10454	0	72	25623	SKA	#6000
10455	0	43	00460	BRM	ERROR
10456	0	20	24721	NOP	A11
10457	0	72	25624	SKA	#1400
10460	0	43	00460	BRM	ERROR
10461	0	20	24725	NOP	A13
10462	0	72	25625	SKA	#300
10463	0	43	00460	BRM	ERROR
10464	0	20	24727	NOP	A14

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10465	0 72 25626	SKA	#60
10466	0 43 00460	BRM	ERROR
10467	0 20 24731	NOP	A15
10470	0 72 25627	SKA	#1*
10471	0 43 00460	BRM	ERROR
10472	0 20 24733	NOP	A16
10473	0 72 25630	SKA	#3
10474	0 43 00460	BRM	ERROR
10475	0 20 24737	NOP	A18
10476	0 43 16671	BRM	FREADY
10477	0 43 00434	BRM	END

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\* CHECK P04

10500	0 43 00430	BRM	OBJECT	
10501	0 43 16671	BRM	FREADY	
10502	2 02*30724	EDM*	30724,2	FLOATING POINT INVERSE SUBTRACT
10503	0 13 25562	PBT	#0	
10504	2 02*30734	EDM*	30734,2	SINGLE CLOCK MODE
10505	2 02*30721	EDM*	30721,2	LOAD MOST SIGNIFICANT PART
10506	0 13 25564	PBT	==1	
10507	0 43 16716	BRM	PINIT	
10510	0 76 17147	LDA	PIN6	
10511	0 72 25602	SKA	#2	
10512	0 01 10514	BRU	==2	
10513	0 43 00460	BRM	ERROR	
10514	4 20 25104	NOP	C26,4	
10515	0 20 25033	NOP	B21	
10516	0 76 17151	LDA	PIN8	
10517	0 72 25664	SKA	#240	
10520	0 43 00460	BRM	ERROR	
10521	4 20 25033	NOP	B21,4	
10522	0 20 25100	NOP	C24	
10523	0 43 16671	BRM	FREADY	
10524	0 43 00434	BRM	END	

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\* CHECK P04

FPAU TAP=3.0 PAGE 74

10525	0 43 00430	BRM	OBJECT	
10526	0 43 16671	BRM	FREADY	
10527	2 02*30725	EDM*	30725,2	FPAU MULTIPLY
10530	0 13 25562	PBT	#0	
10531	2 02*30734	EDM*	30734,2	SINGLE CLOCK MODE
10532	2 02*30721	EDM*	30721,2	LOAD MOST SIGNIFICANT PART
10533	0 13 25562	PBT	#0	
10534	0 43 16716	BRM	PINIT	
10535	0 76 17147	LDA	PIN6	
10536	0 72 25602	SKA	#2	
10537	0 43 00460	BRM	ERROR	
10540	4 20 25104	NOP	C26,4	
10541	4 20 25106	NOP	C28,4	
10542	0 20 25033	NOP	B21	
10543	0 76 17151	LDA	PIN8	
10544	0 72 25575	SKA	#200	PH 7.9
10545	0 01 10547	BRU	==2	
10546	0 43 00460	BRM	ERROR	
10547	4 20 25033	NOP	B21,4	
10550	0 20 25106	NOP	C28	
10551	0 72 25670	SKA	#40	
10552	0 43 00460	BRM	ERROR	
10553	4 20 25033	NOP	B21,4	
10554	0 20 25100	NOP	C24	
10555	0 43 16671	BRM	FREADY	
10556	0 43 00434	BRM	END	

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\* CHECK P04

10557	0 43 00430	BRM	OBJECT	
10560	0 43 16671	BRM	FREADY	
10561	2 02*30726	EDM*	30726,2	FPAU DIVIDE
10562	0 13 25562	PBT	#0	
10563	2 02*30734	EDM*	30734,2	SINGLE CLOCK MODE
10564	2 02*30721	EDM*	30721,2	LOAD MOST SIGNIFICANT PART
10565	0 13 25562	PBT	#0	
10566	0 43 16716	BRM	PINIT	

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FRAU  TAP=3.0                PAGE 75
10567 0 76 17147             LDA  PIN6
10570 0 72 25602             SKA  #2
10571 0 43 00460             BRM  ERROR
10572 0 20 25033             NOP  B21
10573 0 76 17151             LDA  PIN8
10574 0 72 25575             SKA  #200                PH 7.9
10575 0 43 00460             BRM  ERROR
10576 0 20 25033             NOP  B21
10577 0 72 25470             SKA  #40
10600 0 01 10402             BRU  ++2
10601 0 43 00460             BRM  ERROR
10602 4 20 25100             NOP  C24,4
10603 0 20 25106             NOP  C28
10604 0 76 17145             LDA  PIN4                BX
10605 0 72 25467             SKA  #10
10606 0 01 10410             BRU  ++2
10607 0 43 00460             BRM  ERROR
10610 0 20 25054             NOP  B29
10611 0 43 16471             BRM  FREADY
10612 0 43 00434             BRM  END

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* CHECK P84
10613 0 43 00430             BRM  OBJECT
10614 0 43 16471             BRM  FREADY
10615 2 02*30727             EDM. 30727,2            FRAU INVERSE DIVIDE
10616 0 13 25562             PBT  #0
10617 2 02*30734             EDM. 30734,2            SINGLE CLOCK MODE
10620 2 02*30721             EDM. 30721,2            LOAD MOST SIGNIFICANT PART
10621 0 13 25562             PBT  #0
10622 0 43 16716             BRM  PINIT
10623 0 76 17147             LDA  PIN6
10624 0 72 25602             SKA  #2
10625 0 43 00460             BRM  ERROR
10626 0 20 25033             NOP  B21
10627 0 76 17151             LDA  PIN8
10630 0 72 25475             SKA  #200                PH 7.9

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FRAU  TAP=3.0                PAGE 76
10631 0 43 00460             BRM  ERROR
10632 0 20 25033             NOP  B21
10633 0 72 25670             SKA  #40
10634 0 01 10436             BRU  ++2
10635 0 43 00460             BRM  ERROR
10636 4 20 25100             NOP  C24,4
10637 0 20 25106             NOP  C28
10640 0 76 17145             LDA  PIN4                BX
10641 0 72 25467             SKA  #10
10642 0 01 10444             BRU  ++2
10643 0 43 00460             BRM  ERROR
10644 0 20 25054             NOP  B29
10645 0 43 16471             BRM  FREADY
10646 0 43 00434             BRM  END

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* CHECK P85
10647 0 43 00430             BRM  OBJECT
10650 0 43 16471             BRM  FREADY
10651 2 02*30720             EDM. 30720,2            LOAD LEAST SIGNIFICANT PART
10652 0 13 25632             PBT  #777
10653 2 02*30721             EDM. 30721,2            LOAD MOST SIGNIFICANT PART
10654 0 13 25642             PBT  #20000000
10655 2 02*30722             EDM. 30722,2            FLOATING POINT ADD
10656 0 13 25632             PBT  #777
10657 2 02*30734             EDM. 30734,2            SINGLE CLOCK MODE
10660 2 02*30721             EDM. 30721,2            LOAD MOST SIGNIFICANT PART
10661 0 13 25442             PBT  #20000000
10662 0 43 16716             BRM  PINIT
10663 0 76 17147             LDA  PIN6
10664 0 75 25474             LDB  #177
10665 0 70 25602             SKM  #2
10666 0 43 00460             BRM  ERROR
10667 0 20 25103             NOP  IFAIL
10670 0 72 25475             SKA  #200                EEO
10671 0 01 10473             BRU  ++2
10672 0 43 00460             BRM  ERROR

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FPAU  TAP=3.0                PAGE 77
10673  4 20 25067             NOP      B8,4
10674  0 20 25110             NOP      C29
10675  0 76 17143             LDA      PIN2
10676  0 75 25632             LDB      #777
10677  0 70 25723             SKM      #600
10700  0 43 00460             BRM      ERROR
10701  4 20 25311             NOP      PGR0UP,4
10702  4 20 25100             NOP      C24,4
10703  4 20 25110             NOP      C29,4
10704  0 20 25117             NOP      C31
10705  0 76 17152             LDA      PIN9           BU
10706  0 75 25664             LDB      #1
10707  0 70 17142             SKM      PIN1           AU
10710  0 43 00460             BRM      ERROR
10711  0 20 25267             NOP      UADDR
10712  0 76 17151             LDA      PIN8
10713  0 75 25603             LDB      #77777000
10714  0 70 17141             SKM      PIN0           AL
10715  0 43 00460             BRM      ERROR
10716  0 20 25273             NOP      LADDR
10717  2 02*30734             ERM      30734,2       SINGLE CLOCK MODE
10720  0 43 16716             BRM      PINIT
10721  0 76 17147             LDA      PIN6
10722  0 75 25674             LDB      #177
10723  0 70 25645             SKM      #1
10724  0 43 00460             BRM      ERROR
10725  4 20 25100             NOP      C24,4
10726  4 20 25106             NOP      C28,4
10727  4 20 25110             NOP      C29,4
10730  0 20 00330             NOP      30
10731  0 76 17141             LDA      PIN0
10732  0 75 25632             LDB      #777
10733  0 70 25662             SKM      #0
10734  0 01 10736             BRU      #+2
10735  0 43 00460             BRM      ERROR
10736  4 20 25144             NOP      B25,4

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FPAU  TAP=3.0                PAGE 78
10737  0 20 25050             NOP      B27
10740  0 17 25664             EDR      #+1
10741  0 72 25433             SKA      #17
10742  0 43 00460             BRM      ERROR
10743  0 20 25021             NOP      B10
10744  0 72 25634             SKA      #360
10745  0 43 00460             BRM      ERROR
10746  0 20 25066             NOP      B7
10747  0 72 25635             SKA      #400
10750  0 43 00460             BRM      ERROR
10751  0 20 25064             NOP      B5
10752  2 02*30737             ERM      30737,2       NORMAL CLOCK MODE
10753  0 43 00434             BRM      END

*****
* CHECK PHASE 5
10754  0 43 00430             BRM      OBJECT
10755  0 43 16471             BRM      PREADY
10756  2 02*30720             ERM      30720,2       LOAD LEAST SIGNIFICANT PART
10757  0 13 25724             POT      #25252732
10760  2 02*30721             ERM      30721,2       LOAD MOST SIGNIFICANT PART
10761  0 13 25717             POT      #25252525
10762  2 02*30722             ERM      30722,2       FLOATING POINT ADD
10763  0 13 25662             POT      #0
10764  2 02*30734             ERM      30734,2       SINGLE CLOCK MODE
10765  2 02*30721             ERM      30721,2       LOAD MOST SIGNIFICANT PART
10766  0 13 25642             POT      #20000000
10767  0 43 16716             BRM      PINIT
10770  0 76 17147             LDA      PIN6
10771  0 75 25674             LDB      #177
10772  0 70 25602             SKM      #2
10773  0 43 00460             BRM      ERROR
10774  0 20 25903             NOP      IFAIL
10775  0 72 25675             SKA      #200
10776  0 43 00460             BRM      ERROR
10777  4 20 25067             NOP      B8,4
11000  0 20 25110             NOP      C29

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FPAU TAP=3.C

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11001	0	76	17141	LDA	PIN0	
11002	0	75	25432	LDB	#777	
11003	0	70	25725	SKM	#380	
11004	0	43	00460	BRM	ERROR	
11005	0	20	25303	NOP	IFAIL	
11006	0	76	17152	LDA	PIN9	SU
11007	0	75	25464	LDB	#*1	
11010	0	70	17142	SKM	PIN1	AU
11011	0	43	00460	BRM	ERROR	
11012	0	20	25267	NOP	UADDR	
11013	0	76	17151	LDA	PIN8	SL
11014	0	75	25403	LDB	#7777000	
11015	0	70	17141	SKM	PIN0	AL
11016	0	43	00460	BRM	ERROR	
11017	0	20	25273	NOP	LADDR	
11020	2	02	30734,2	EOM.	30734,2	SINGLE CLOCK MODE
11021	0	43	16716	BRM	PINIT	
11022	0	76	17141	LDA	PIN0	
11023	0	75	25603	LDB	#7777000	
11024	0	70	25462	SKM	#0	
11025	0	01	11027	BRU	**2	
11026	0	43	00460	BRM	ERROR	
11027	0	20	25444	NOP	B25	
11030	0	70	25726	SKM	#50120000	AX=2
11031	0	01	11033	BRU	**2	
11032	0	43	00460	BRM	ERROR	
11033	0	20	25444	NOP	B25	
11034	0	70	25727	SKM	#02405000	
11035	0	01	11037	BRU	**2	
11036	0	43	00460	BRM	ERROR	
11037	0	20	25444	NOP	B25	
11040	0	75	25432	LDB	#777	
11041	0	70	25472	SKM	#*370	
11042	0	43	00460	BRM	ERROR	
11043	0	20	25054	NOP	B29	
11044	0	17	25651	EOR	#52525000	

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11045	0	72	25641	SKA	#70000000	
11046	0	43	00460	BRM	ERROR	
11047	0	20	25027	NOP	B18	
11050	0	72	25640	SKA	#7400000	
11051	0	43	00460	BRM	ERROR	
11052	0	20	25031	NOP	B20	
11053	0	72	25437	SKA	#360000	
11054	0	43	00460	BRM	ERROR	
11055	0	20	25040	NOP	B22	
11056	0	72	25636	SKA	#17000	
11057	0	43	00460	BRM	ERROR	
11060	0	20	25042	NOP	B24	
11061	0	76	17142	LDA	PIN1	
11062	0	17	25652	EOR	#12525252	
11063	0	72	25441	SKA	#70000000	
11064	0	43	00460	BRM	ERROR	
11065	0	20	25056	NOP	B2	
11066	0	72	25640	SKA	#7400000	
11067	0	43	00460	BRM	ERROR	
11070	0	20	25063	NOP	B4	
11071	0	72	25437	SKA	#360000	
11072	0	43	00460	BRM	ERROR	
11073	0	20	25065	NOP	B6	
11074	0	72	25636	SKA	#17000	
11075	0	43	00460	BRM	ERROR	
11076	0	20	25070	NOP	B8	
11077	0	72	25643	SKA	#740	
11100	0	43	00460	BRM	ERROR	
11101	0	20	25023	NOP	B12	
11102	0	72	25644	SKA	#36	
11103	0	43	00460	BRM	ERROR	
11104	0	20	25025	NOP	B14	
11105	0	72	25645	SKA	#1	
11106	0	43	00460	BRM	ERROR	
11107	0	20	25027	NOP	B18	
11110	2	02	30734	EOM.	30734,2	SINGLE CLOCK MODE

FPAU	TAP=3.0		PAGE 81
11111	0 43 16716	BRM	PINIT
11112	0 76 17141	LDA	PIN0
11113	0 17 25661	EOR	#25252000
11114	0 72 25641	SKA	#70000000
11115	0 43 00460	BRM	ERR0R
11116	0 20 25031	NOP	B20
11117	0 72 25640	SKA	#7400000
11120	0 43 00460	BRM	ERR0R
11121	0 20 25031	NOP	B20
11122	0 72 25637	SKA	#360000
11123	0 43 00460	BRM	ERR0R
11124	0 20 25040	NOP	B22
11125	0 72 25636	SKA	#17000
11126	0 43 00460	BRM	ERR0R
11127	0 20 25042	NOP	B24
11130	0 76 17142	LDA	PIN1
11131	0 17 25730	EOR	#05252525
11132	0 72 25641	SKA	#70000000
11133	0 43 00460	BRM	ERR0R
11134	0 20 25056	NOP	B2
11135	0 72 25640	SKA	#7400000
11136	0 43 00460	BRM	ERR0R
11137	0 20 25063	NOP	B4
11140	0 72 25637	SKA	#360000
11141	0 43 00460	BRM	ERR0R
11142	0 20 25065	NOP	B6
11143	0 72 25636	SKA	#17000
11144	0 43 00460	BRM	ERR0R
11145	0 20 25070	NOP	B9
11146	0 72 25643	SKA	#740
11147	0 43 00460	BRM	ERR0R
11150	0 20 25023	NOP	B12
11151	0 72 25444	SKA	#36
11152	0 43 00460	BRM	ERR0R
11153	0 20 25025	NOP	B14
11154	0 72 25645	SKA	#1

AU

FPAU	TAP=3.0		PAGE 82
11155	0 43 00460	BRM	ERR0R
11156	0 20 25027	NOP	B18
11157	0 43 00434	BRM	END
*****			
* CHECK PHASE 5			
11160	0 43 00430	BRM	OBJECT
11161	0 43 16671	BRM	FREADY
11162	2 02*30720	EOM*	30720,2
11163	0 13 25562	PBT	#0
11164	2 02*30721	EOM*	30721,2
11165	0 13 25642	PBT	#20000000
11166	2 02*30722	EOM*	30722,2
11167	0 13 25731	PBT	#25252734
11170	2 02*30734	EOM*	30734,2
11171	2 02*30721	EOM*	30721,2
11172	0 13 25717	PBT	#25252525
11173	0 43 16716	BRM	PINIT
11174	0 76 17147	LDA	PIN6
11175	0 75 25674	LDB	#177
11176	0 70 25602	SKM	#2
11177	0 43 00460	BRM	ERR0R
11200	0 20 25303	NOP	IFAIL
11201	0 76 17145	LDA	PIN4
11202	0 75 25732	LDB	#34
11203	0 70 25563	SKM	#4
11204	0 43 00460	BRM	ERR0R
11205	4 20 25050	NOP	B27,4
11206	4 20 25057	NOP	B30,4
11207	0 20 25002	NOP	A32
11210	2 02*30734	EOM*	30734,2
11211	0 43 16716	BRM	PINIT
11212	0 76 17146	LDA	PIN5
11213	0 17 25652	EOR	#12525252
11214	0 72 25615	SKA	#40000000
11215	0 43 00460	BRM	ERR0R
11216	0 20 25010	NOP	A3

LOAD LEAST SIGNIFICANT PART

LOAD MOST SIGNIFICANT PART

FLOATING POINT ADD

SINGLE CLOCK MODE

LOAD MOST SIGNIFICANT PART

SINGLE CLOCK MODE

DU

FPAU TAP=3.C

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11217	0 72 25616	SKA	#14000000
11220	0 43 00460	BRM	ERROR
11221	0 20 25012	NOP	A5
11222	0 72 25617	SKA	#3000000
11223	0 43 00460	BRM	ERROR
11224	0 20 25013	NOP	A6
11225	0 72 25620	SKA	#600000
11226	0 43 00460	BRM	ERROR
11227	0 20 25014	NOP	A7
11230	0 72 25621	SKA	#140000
11231	0 43 00460	BRM	ERROR
11232	0 20 25020	NOP	A9
11233	0 72 25622	SKA	#30000
11234	0 43 00460	BRM	ERROR
11235	0 20 24717	NOP	A10
11236	0 72 25623	SKA	#6000
11237	0 43 00460	BRM	ERROR
11240	0 20 24721	NOP	A11
11241	0 72 25624	SKA	#1400
11242	0 43 00460	BRM	ERROR
11243	0 20 24725	NOP	A13
11244	0 72 25625	SKA	#300
11245	0 43 00460	BRM	ERROR
11246	0 20 24727	NOP	A14
11247	0 72 25626	SKA	#60
11250	0 43 00460	BRM	ERROR
11251	0 20 24731	NOP	A15
11252	0 72 25627	SKA	#14
11253	0 43 00460	BRM	ERROR
11254	0 20 24733	NOP	A16
11255	0 72 25630	SKA	#3
11256	0 43 00460	BRM	ERROR
11257	0 20 24737	NOP	A18
11260	0 76 17145	LDA	PIN4
11261	0 17 25651	EOR	#52525000
11262	0 72 25615	SKA	#60000000

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11263	0 43 00460	BRM	ERROR
11264	0 20 24741	NOP	A19
11265	0 72 25616	SKA	#14000000
11266	0 43 00460	BRM	ERROR
11267	0 20 24743	NOP	A20
11270	0 72 25617	SKA	#3000000
11271	0 43 00460	BRM	ERROR
11272	0 20 24755	NOP	A22
11273	0 72 25620	SKA	#600000
11274	0 43 00460	BRM	ERROR
11275	0 20 24757	NOP	A23
11276	0 72 25621	SKA	#140000
11277	0 43 00460	BRM	ERROR
11300	0 20 24761	NOP	A24
11301	0 72 25622	SKA	#30000
11302	0 43 00460	BRM	ERROR
11303	0 20 24770	NOP	A27
11304	0 72 25623	SKA	#6000
11305	0 43 00460	BRM	ERROR
11306	0 20 24772	NOP	A28
11307	0 72 25624	SKA	#1400
11310	0 43 00460	BRM	ERROR
11311	0 20 24774	NOP	A29
11312	0 76 17141	LDA	PIN0
11313	0 75 25632	LDB	#777
11314	0 70 25733	SKM	#350
11315	0 43 00460	BRM	ERROR
11316	0 20 25050	NOP	B27
11317	2 02 30734	EQM	30734,2
11320	0 43 16716	BRM	PINIT
11321	0 76 17146	LDA	PIN5
11322	0 17 25730	EOR	#05252525
11323	0 72 25615	SKA	#60000000
11324	0 43 00460	BRM	ERROR
11325	0 20 25010	NOP	A3
11326	0 72 25616	SKA	#14000000

SINGLE CLOCK MODE

FPAU	TAP=3.0		PAGE 85
11327	0 43 00460	BRM	ERROR
11330	0 20 25012	NOP	A5
11331	0 72 25617	SKA	#3000000
11332	0 43 00460	BRM	ERROR
11333	0 20 25013	NOP	A6
11334	0 72 25620	SKA	#600000
11335	0 43 00460	BRM	ERROR
11336	0 20 25014	NOP	A7
11337	0 72 25621	SKA	#140000
11340	0 43 00460	BRM	ERROR
11341	0 20 25020	NOP	A9
11342	0 72 25622	SKA	#30000
11343	0 43 00460	BRM	ERROR
11344	0 20 24717	NOP	A10
11345	0 72 25623	SKA	#6000
11346	0 43 00460	BRM	ERROR
11347	0 20 24721	NOP	A11
11350	0 72 25624	SKA	#1400
11351	0 43 00460	BRM	ERROR
11352	0 20 24725	NOP	A13
11353	0 72 25625	SKA	#300
11354	0 43 00460	BRM	ERROR
11355	0 20 24727	NOP	A14
11356	0 72 25624	SKA	#60
11357	0 43 00460	BRM	ERROR
11360	0 20 24731	NOP	A15
11361	0 72 25627	SKA	#14
11362	0 43 00460	BRM	ERROR
11363	0 20 24733	NOP	A16
11364	0 72 25630	SKA	#3
11365	0 43 00460	BRM	ERROR
11366	0 20 24737	NOP	A18
11367	0 76 17145	LDA	PI#4
11370	0 17 25661	EQ	#25252000
11371	0 72 25615	SKA	#60000000
11372	0 43 00460	BRM	ERROR

FPAU	TAP=3.0		PAGE 86
11373	0 20 24741	NOP	A19
11374	0 72 25616	SKA	#14000000
11375	0 43 00460	BRM	ERROR
11376	0 20 24743	NOP	A20
11377	0 72 25617	SKA	#3000000
11400	0 43 00460	BRM	ERROR
11401	0 20 24755	NOP	A22
11402	0 72 25620	SKA	#600000
11403	0 43 00460	BRM	ERROR
11404	0 20 24757	NOP	A23
11405	0 72 25621	SKA	#140000
11406	0 43 00460	BRM	ERROR
11407	0 20 24761	NOP	A24
11410	0 72 25622	SKA	#30000
11411	0 43 00460	BRM	ERROR
11412	0 20 24770	NOP	A27
11413	0 72 25623	SKA	#6000
11414	0 43 00460	BRM	ERROR
11415	0 20 24772	NOP	A28
11416	0 72 25624	SKA	#1400
11417	0 43 00460	BRM	ERROR
11420	0 20 24774	NOP	A29
11421	2 02#30737	EQ#	30737,2
11422	0 43 00434	BRM	END
*****			
* CHECK PHASE A			
11423	0 43 00430	BRM	OBJECT
11424	0 43 16671	BRM	FREADY
11425	2 02#30720	EQ#	30720,2
11426	0 13 25662	POT	#0
11427	2 02#30721	EQ#	30721,2
11430	0 13 25642	POT	#20000000
11431	2 02#30722	EQ#	30722,2
11432	0 13 25662	POT	#0
11433	2 02#30734	EQ#	30734,2
11434	2 02#30721	EQ#	30721,2

NORMAL CLOCK MODE

LOAD LEAST SIGNIFICANT PART

LOAD MOST SIGNIFICANT PART

FLOATING POINT ADD

SINGLE CLOCK MODE

LOAD MOST SIGNIFICANT PART

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FPAU  TAP=3.0          PAGE 87
11435 0 13 25442      POT      #20000000
11436 2 02*30734     ERM#    30734,2      SINGLE CLOCK MODE
11437 0 43 16716     BRM     PINIT
11440 0 76 17147     LDA     PIN6
11441 0 75 25674     LDB     #177
11442 0 70 25645     SKM     #1
11443 0 43 00460     BRM     ERROR
11444 0 20 25303     NOP     IFAIL
11445 0 76 17143     LDA     PIN2
11446 0 75 25432     LDB     #777
11447 0 70 25710     SKM     #320
11450 0 43 00460     BRM     ERROR
11451 0 20 25311     NOP     PGRBUP
11452 0 76 17145     LDA     PIN4
11453 0 75 25732     LDB     #34
11454 0 70 25734     SKM     #30
11455 0 43 00460     BRM     ERROR
11456 0 20 25452     NOP     B28
11457 2 02*30734     ERM#    30734,2      SINGLE CLOCK MODE
11460 0 43 16716     BRM     PINIT
11461 0 76 17142     LDA     PIN1
11462 0 75 25564     LDB     #*1
11463 0 70 25442     SKM     #20000000
11464 0 43 00460     BRM     ERROR
11465 0 20 25267     NOP     UADDR
11466 0 76 17141     LDA     PIN0
11467 0 72 25403     SKA     #77777000
11470 0 43 00460     BRM     ERROR
11471 0 20 25273     NOP     LADDR
11472 0 75 25432     LDB     #777
11473 0 70 25445     SKM     #1
11474 0 43 00460     BRM     ERROR
11475 0 20 25454     NOP     B29
11476 2 02*30737     ERM#    30737,2      NORMAL CLOCK MODE
11477 0 43 00434     BRM     END
*****

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FPAU  TAP=3.0          PAGE 88
11500 0 43 00430     * CHECK PHASE 6
11501 0 43 16471     BRM     OBJECT
11502 2 02*30720     ERM#    30720,2      LOAD LEAST SIGNIFICANT PART
11503 0 13 25432     POT     #777
11504 2 02*30721     ERM#    30721,2      LOAD MOST SIGNIFICANT PART
11505 0 13 25442     POT     #20000000
11506 2 02*30723     ERM#    30723,2      FLOATING POINT SUBTRACT
11507 0 13 25735     POT     #1777
11510 2 02*30734     ERM#    30734,2      SINGLE CLOCK MODE
11511 2 02*30721     ERM#    30721,2      LOAD MOST SIGNIFICANT PART
11512 0 13 25562     POT     #0
11513 2 02*30734     ERM#    30734,2      SINGLE CLOCK MODE
11514 0 43 16716     BRM     PINIT
11515 0 76 17147     LDA     PIN6
11516 0 75 25674     LDB     #177
11517 0 70 25445     SKM     #1
11520 0 43 00460     BRM     ERROR
11521 0 20 25303     NOP     IFAIL
11522 0 76 17143     LDA     PIN2
11523 0 75 25632     LDB     #777
11524 0 70 25711     SKM     #450
11525 0 43 00460     BRM     ERROR
11526 0 20 25311     NOP     PGRBUP
11527 2 02*30734     ERM#    30734,2      SINGLE CLOCK MODE
11530 0 43 16716     BRM     PINIT
11531 0 76 17142     LDA     PIN1
11532 0 75 25564     LDB     #*1
11533 0 70 25736     SKM     #07777777
11534 0 43 00460     BRM     ERROR
11535 0 20 25267     NOP     UADDR
11536 0 76 17141     LDA     PIN0
11537 0 75 25403     LDB     #77777000
11540 0 70 25403     SKM     #77777000
11541 0 43 00460     BRM     ERROR
11542 0 20 25273     NOP     LADDR

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FPAU  TAP=3.0                PAGE 89
11543  2 02*30737            EOM*  30737*2      NORMAL CLOCK MODE
11544  0 43 00434            BRM   END
*****
* CHECK PHASE 6
11545  0 43 00430            BRM   OBJECT
11546  0 43 16671            BRM   FREADY
11547  2 02*30720            EOM*  30720*2      LOAD LEAST SIGNIFICANT PART
11550  0 13 25564            PBT   #=1
11551  2 02*30721            EOM*  30721*2      LOAD MOST SIGNIFICANT PART
11552  0 13 25676            PBT   #37777777
11553  2 02*30724            EOM*  30724*2      FLOATING POINT INVERSE SUBTRACT
11554  0 13 25564            PBT   #=1
11555  2 02*30734            EOM*  30734*2      SINGLE CLOCK MODE
11556  2 02*30721            EOM*  30721*2      LOAD MOST SIGNIFICANT PART
11557  0 13 25676            PBT   #37777777
11560  2 02*30734            EOM*  30734*2      SINGLE CLOCK MODE
11561  0 43 16716            BRM   PINIT
11562  0 76 17147            LDA   PIN6
11563  0 75 25674            LDB   #177
11564  0 70 25445            SKM   #1
11565  0 43 00460            BRM   ERROR
11566  0 20 25303            NSP   IFAIL
11567  0 76 17143            LDA   PIN2
11570  0 75 25632            LDB   #777
11571  0 70 25707            SKM   #444
11572  0 43 00460            BRM   ERROR
11573  0 20 25311            NSP   PGRSJP
11574  2 02*30734            EOM*  30734*2      SINGLE CLOCK MODE
11575  0 43 16716            BRM   PINIT
11576  0 76 17142            LDA   PIN1
11577  0 72 25564            SKA   #=1
11600  0 43 00460            BRM   ERROR
11601  0 40 25267            NSP   UADDR
11602  0 76 17141            LDA   PIN0
11603  0 72 25603            SKA   #77777000
11604  0 43 00460            BRM   ERROR

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FPAU  TAP=3.0                PAGE 90
11605  0 20 25273            NSP   LADDR
11606  2 02*30737            EOM*  30737*2      NORMAL CLOCK MODE
11607  0 43 00434            BRM   END
11610  0 43 00456            BRM   FDBNE
*****
FUNC1
11611  0 43 00424            BRM   FUNCTN
11612  0 20 16752            NSP   FPT1
11613  0 43 00440            BRM   RETURN
11614  0 20 16331            NSP   SPUR
11615  0 02 20002            EIR
11616  0 76 25562            LDA   #0
11617  0 35 17307            STA   OUTFLG      SUPPRESS DISPLAY
11620  0 54 16742            SUB   FIW          ITERATION WORD
11621  0 35 17277            STA   IW
11622  0 71 17277            LDX   IW
11623  0 37 17277            STX   IW
11624  0 76 00406            LDA   SEED
11625  0 43 16643            BRM   RANDOM
11626  0 35 17134            STA   AA1
11627  0 43 16643            BRM   RANDOM
11630  0 35 17135            STA   AA2
11631  0 43 16643            BRM   RANDOM
11632  0 67 10030            NSP   30
11633  0 35 17136            STA   BB1
11634  0 43 16643            BRM   RANDOM
11635  0 35 17137            STA   BB2
11636  0 76 17137            LDA   BB2
11637  0 14 25674            ETR   #177        0 TO 177
11640  0 54 25576            SUB   #100        -100 TO 77
11641  0 55 17135            ADD   AA2         ADD FIRST EXPONENT
11642  0 14 25632            ETR   #777       NEW EXPONENT
11643  0 35 17314            STA   TEMP
11644  0 76 17137            LDA   BB2
11645  0 14 25403            ETR   #77777000  GET 2ED MANTISSA
11646  0 16 17314            MRG   TEMP        PUT ON NEW EXPONENT
11647  0 35 17137            STA   BB2

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*****
11650 0 43 00430 BRM OBJECT
11651 0 43 16471 BRM FREADY
11652 0 76 25562 LDA #0
11653 0 35 17340 STA BFIS
11654 2 02*30720 EOM* 30720,2 LOAD AA2
11655 0 13 17134 PBT AA2
11656 2 02*30721 EOM* 30721,2 LOAD AA1
11657 0 13 17134 PBT AA1
11660 2 02*30722 EOM* 30722,2 LOAD BB2
11661 0 13 17137 PBT BB2
11662 2 02*30721 EOM* 30721,2 LOAD BB1
11663 0 13 17136 PBT BB1
11664 0 76 00406 LDA SEED
11665 0 72 25737 SKA #10000 RANDOM SKIP
11666 0 01 11671 BRU #*3
11667 2 02*30732 EOM* 30732,2 WAIT FOR FPAU TO FINISH
11670 0 33 00000 PIN 0
11671 2 02*30730 EOM* 30730,2 STORE C2
11672 0 33 17337 PIN C2IS
11673 2 02*30731 EOM* 30731,2 STORE C1
11674 0 33 17336 PIN C1IS
11675 0 76 25564 LDA #*1
11676 2 40*30720 SKS* 30720,2 OVERFLOW TEST
11677 0 53 16743 SKN IFLAG SKIP IF NO INTERRUPT INSTALLED
11700 0 01 11702 BRU #*2
11701 0 35 17340 STA BFIS
11702 0 76 25564 LDA #*1
11703 2 40*30721 SKS* 30721,2 SKIP IF SIGN NEGATIVE
11704 0 76 25562 LDA #0
11705 0 35 17341 STA SIGNIS
*****
* SIMULATION
11706 0 43 14244 BRM EOM720
11707 0 20 17135 NOP AA2
11710 0 43 14264 BRM EOM721

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11711 0 20 17134 NOP AA1
11712 0 43 14234 BRM EOM722
11713 0 20 17137 NOP BB2
11714 0 43 14264 BRM EOM721
11715 0 20 17136 NOP BB1
11716 0 43 14406 BRM EOM730
11717 0 20 17343 NOP C2SB
11720 0 43 14420 BRM EOM731
11721 0 20 17342 NOP C1SB
11722 0 76 25562 LDA #0
11723 0 43 14432 BRM SKS720
11724 0 76 25564 LDA #*1
11725 0 35 17344 STA OFSB
11726 0 76 25564 LDA #*1
11727 0 43 14441 BRM SKS721
11730 0 76 25562 LDA #0
11731 0 35 17345 STA SIGNSB
*****
11732 0 75 25564 LDB #*1
11733 0 76 17336 LDA C1IS
11734 0 70 17342 SKM C1SB IS MS PART OK
11735 0 43 16653 BRM ERRBUT
11736 0 20 25427 NOP ADDEX
11737 0 76 17337 LDA C2IS
11740 0 70 17343 SKM C2SB IS LS PART OK
11741 0 43 16653 BRM ERRBUT
11742 0 20 25427 NOP ADDEX
11743 0 76 17340 LDA BFIS
11744 0 70 17344 SKM OFBB
11745 0 43 16653 BRM ERRBUT
11746 0 20 25427 NOP ADDEX
11747 0 43 00434 BRM END
*****
11750 0 76 17134 LDA AA1
11751 0 35 00406 STA SEED UP DATE SEED
11752 0 71 17277 LDX IW ITERATION COUNT

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FPAU  TAP=3.C                PAGE 93
11753 0 41 11423             BRX  AGAIN1
11754 0 43 00456             BRM  F00NE
*****
11755 0 43 00424             FUNC2 BRM  FUNCTN
11756 0 20 16760             NOP  FPT2
11757 0 43 00440             BRM  RETURN
11760 0 20 16331             NOP  SPUR
11761 0 02 20002             EJR
11762 0 76 25562             LDA  #0
11763 0 35 17307             STA  OUTFLG             SUPPRESS DISPLAY
11764 0 54 16742             SUB  FIW                ITERATION WORD
11765 0 35 17277             STA  IW
11766 0 71 17277             LDX  IW
11767 0 37 17277             AGAIN2 STX  IW
11770 0 76 00406             LDA  SEED
11771 0 43 16643             BRM  RANDOM
11772 0 35 17134             STA  AA1
11773 0 43 16643             BRM  RANDOM
11774 0 35 17135             STA  AA2
11775 0 43 16643             BRM  RANDOM
11776 0 67 10030             NOD  30
11777 0 35 17136             STA  BB1
12000 0 43 16643             BRM  RANDOM
12001 0 35 17137             STA  BB2
12002 0 76 17137             LDA  BB2
12003 0 14 25674             ETR  #177              0 TO 177
12004 0 54 25576             SUB  #100             #100 TO 77
12005 0 55 17135             ADD  AA2              ADD FIRST EXPONENT
12006 0 14 25632             ETR  #77              NEW EXPONENT
12007 0 35 17314             STA  TEMP
12010 0 76 17137             LDA  BB2
12011 0 14 25403             ETR  #77777000       GET 2ED MANTISSA
12012 0 14 17214             MGR  TEMP             PUT ON NEW EXPONENT
12013 0 35 17137             STA  BB2
*****
12014 0 43 00430             BRM  OBJECT

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FPAU  TAP=3.C                PAGE 94
12015 0 76 25562             LDA  #0
12016 0 35 17340             STA  OFIS             CLEAR OFIS
12017 0 43 16671             BRM  FREADY
12020 2 02*30720             EDM# 30720,2         LOAD AA2
12021 0 13 17135             PGT  AA2
12022 2 02*30721             EDM# 30721,2         LOAD AA1
12023 0 13 17134             PGT  AA1
12024 2 02*30723             EDM# 30723,2         LOAD BB2
12025 0 13 17137             PGT  BB2
12026 2 02*30721             EDM# 30721,2         LOAD BB1
12027 0 13 17136             PGT  BB1
12030 0 76 00406             LDA  SEED
12031 0 72 25737             SKA  #10000          RANDOM SKIP
12032 0 01 12035             BRU  **3
12033 2 02*30732             EDM# 30732,2         WAIT FOR FPAU TO FINISH
12034 0 33 00000             PIN  0
12035 2 02*30730             EDM# 30730,2         STORE C2
12036 0 33 17337             PIN  C2IS
12037 2 02*30731             EDM# 30731,2         STORE C1
12040 0 33 17336             PIN  C1IS
12041 0 76 25564             LDA  #1
12042 2 40*30720             SKS# 30720,2         OVERFLOW TEST
12043 0 53 16743             SKN  IFLAG           SKIP IF NO INTERRUPT INSTALLED
12044 0 01 12046             BRU  **2
12045 0 35 17340             STA  OFIS
12046 0 76 25564             LDA  #1
12047 2 40*30721             SKS# 30721,2         SKIP IF SIGN NEGATIVE
12050 0 76 25562             LDA  #0
12051 0 35 17341             STA  SIGNIS
*****
* SIMULATION
12052 0 43 14244             BRM  E0M720
12053 0 20 17135             NOP  AA2
12054 0 43 14264             BRM  E0M721
12055 0 20 17134             NOP  AA1
12056 0 43 14343             BRM  E0M723

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FPAU TAP=3.0 PAGE 95

```
12057 0 20 17137      NOP      BB2
12060 0 43 14264      BRM      E0M721
12061 0 20 17136      NOP      BB1
12062 0 43 14406      BRM      E0M730
12063 0 20 17143      NOP      C2S8
12064 0 43 14420      BRM      E0M731
12065 0 20 17142      NOP      C1S8
12066 0 76 25462      LDA      #0
12067 0 43 14432      BRM      SKS720
12070 0 76 25464      LDA      #*1
12071 0 35 17344      STA      0F98
12072 0 76 25464      LDA      #*1
12073 0 43 14441      BRM      SKS721
12074 0 76 25462      LDA      #0
12075 0 35 17345      STA      S10NSB
.....
12076 0 75 25464      LDB      #*1
12077 0 76 17336      LDA      C11S
12100 0 70 17142      SKM      C1S8          IS MS PART 0K
12101 0 43 16653      BRM      ERR0UT
12102 0 20 25433      NOP      SUBEX
12103 0 76 17137      LDA      C21S
12104 0 70 17143      SKM      C2S8          IS LS PART 0K
12105 0 43 16653      BRM      ERR0UT
12106 0 20 25433      NOP      SUBEX
12107 0 76 17140      LDA      0F1S
12110 0 70 17144      SKM      0F98
12111 0 43 16653      BRM      ERR0UT
12112 0 20 25433      NOP      SUBEX
12113 0 43 00434      BRM      END
.....
12114 0 76 17134      LDA      AA1
12115 0 35 00406      STA      SEED          UP DATE SEED
12116 0 71 17277      LDX      1W          ITERATION COUNT
12117 0 41 14767      BRX      AGAIN2
12120 0 43 00456      BRM      DONE
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FPAU TAP=3.0 PAGE 96

```
.....
12121 0 43 00424      FUNC3 BRM      FUNCTN
12122 0 20 16766      NOP      FPT3
12123 0 43 00440      BRM      RETURN
12124 0 20 16331      NOP      SPUR
12125 0 02 20002      EIR
12126 0 76 25462      LDA      #0
12127 0 35 17307      STA      0UTFLG      SUPPRESS DISPLAY
12130 0 54 16742      SUB      FIW          ITERATION WORD
12131 0 35 17277      STA      1W
12132 0 71 17277      LDX      1W
12133 0 37 17277      AGAIN3 STX      1W
12134 0 76 00406      LDA      SEED
12135 0 43 16643      BRM      RAND0M
12136 0 35 17134      STA      AA1
12137 0 43 16643      BRM      RAND0M
12140 0 35 17135      STA      AA2
12141 0 43 16643      BRM      RAND0M
12142 0 67 10030      NOP      30
12143 0 35 17136      STA      BB1
12144 0 43 16643      BRM      RAND0M
12145 0 35 17137      STA      BB2
12146 0 76 17137      LDA      BB2
12147 0 14 25474      ETR      #177        0 TO 177
12150 0 54 25476      SUB      #100        #100 TO 77
12151 0 55 17135      ADD      AA2        ADD FIRST EXPONENT
12152 0 14 25432      ETR      #777       NEW EXPONENT
12153 0 35 17314      STA      TEMP
12154 0 76 17137      LDA      BB2
12155 0 14 25403      ETR      #7777000   GET 2ED MANTISSA
12156 0 16 17314      MRG      TEMP       PUT ON NEW EXPONENT
12157 0 35 17137      STA      BB2
.....
12160 0 43 00430      BRM      OBJECT
12161 0 76 25462      LDA      #0
12162 0 35 17340      STA      0F1S        CLEAR 0F1S
```

FPAU	TAP=3.0		PAGE 97	
12163	0 43 16471	BRM	FREADY	
12164	2 02*30720	EOM*	30720,2	LOAD AA2
12165	0 13 17135	POT	AA2	
12166	2 02*30721	EOM*	30721,2	LOAD AA1
12167	0 13 17134	POT	AA1	
12170	2 02*30724	EOM*	30724,2	LOAD BB2
12171	0 13 17137	POT	BB2	
12172	2 02*30721	EOM*	30721,2	LOAD BB1
12173	0 13 17136	POT	BB1	
12174	0 76 00406	LDA	SEED	
12175	0 72 25737	SKA	#10000	RANDOM SKIP
12176	0 01 12201	BRU	#*3	
12177	2 02*30732	EOM*	30732,2	WAIT FOR FPAU TO FINISH
12200	0 33 00000	PIN	0	
12201	2 02*30730	EOM*	30730,2	STORE C2
12202	0 33 17337	PIN	C2IS	
12203	2 02*30731	EOM*	30731,2	STORE C1
12204	0 33 17336	PIN	C1IS	
12205	0 76 25564	LDA	#*1	
12206	2 40*30720	SKS*	30720,2	OVERFLOW TEST
12207	0 53 16743	SKN	IFLAG	SKIP IF NO INTERRUPT INSTALLED
12210	0 01 12212	BRU	#*2	
12211	0 35 17340	STA	0FIS	
12212	0 76 25564	LDA	#*1	
12213	2 40*30721	SKS*	30721,2	SKIP IF SIGN NEGATIVE
12214	0 76 25562	LDA	#0	
12215	0 35 17341	STA	SIGNIS	
*****				
* SIMULATION				
12216	0 43 14244	BRM	EOM720	
12217	0 20 17135	NOP	AA2	
12220	0 43 14264	BRM	EOM721	
12221	0 20 17134	NOP	AA1	
12222	0 43 14352	BRM	EOM724	
12223	0 20 17137	NOP	BB2	
12224	0 43 14264	BRM	EOM721	

FPAU	TAP=3.0		PAGE 98	
12225	0 20 17136	NOP	BB1	
12226	0 43 14406	BRM	EOM730	
12227	0 20 17343	NOP	C2SB	
12230	0 43 14420	BRM	EOM731	
12231	0 20 17342	NOP	C1SB	
12232	0 76 25562	LDA	#0	
12233	0 43 14432	BRM	SKS720	
12234	0 76 25564	LDA	#*1	
12235	0 35 17344	STA	0FSB	
12236	0 76 25564	LDA	#*1	
12237	0 43 14441	BRM	SKS721	
12240	0 76 25562	LDA	#0	
12241	0 35 17345	STA	SIGNSB	
*****				
12242	0 75 25564	LDB	#*1	
12243	0 76 17336	LDA	C1IS	
12244	0 70 17342	SKM	C1SB	IS MS PART OK
12245	0 43 16653	BRM	ERRBUT	
12246	0 20 25437	NOP	ISUBEX	
12247	0 76 17337	LDA	C2IS	
12250	0 70 17343	SKM	C2SB	IS LS PART OK
12251	0 43 16653	BRM	ERRBUT	
12252	0 20 25437	NOP	ISUBEX	
12253	0 76 17340	LDA	0FIS	
12254	0 70 17344	SKM	0FSB	
12255	0 43 16653	BRM	ERRBUT	
12256	0 20 25437	NOP	ISUBEX	
12257	0 43 00434	BRM	END	
*****				
12260	0 76 17134	LDA	AA1	
12261	0 35 00406	STA	SEED	UP DATE SEED
12262	0 71 17277	LDX	IW	ITERATION COUNT
12263	0 41 12133	BRX	AGAIN3	
12264	0 43 00456	BRM	FDONE	
*****				
12265	0 43 00424	FUNC4 BRM	FUNCYN	

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FPAU  TAP=3.0          PAGE 99
12266 0 20 16774      NOP    FRT4
12267 0 43 00440      BRM    RETURN
12270 0 20 16331      NOP    SPUR
12271 0 02 20002      EIR
12272 0 76 25562      LDA    #0
12273 0 35 17307      STA    OUTFLG      SUPPRESS DISPLAY
12274 0 54 16742      SUB    FIW          ITERATION WORD
12275 0 35 17277      STA    IW
12276 0 71 17277      LDX    IW
12277 0 37 17277      AGAIN4 STX    IW
12300 0 76 00406      LDA    SEED
12301 0 43 16443      BRM    RANDOM
12302 0 35 17134      STA    AA1
12303 0 43 16443      BRM    RANDOM
12304 0 35 17135      STA    AA2
12305 0 43 16443      BRM    RANDOM
12306 0 67 10030      NOP    30
12307 0 35 17136      STA    BB1
12310 0 43 16443      BRM    RANDOM
12311 0 35 17137      STA    BB2
*****
12312 0 43 00430      BRM    SUBJECT
12313 0 76 25562      LDA    #0
12314 0 35 17340      STA    OFIS        CLEAR OFIS
12315 0 43 16471      BRM    FREADY
12316 2 02*30720      EOM*   30720,2     LOAD AA2
12317 0 13 17135      PBT    AA2
12320 2 02*30721      EOM*   30721,2     LOAD AA1
12321 0 13 17134      PBT    AA1
12322 2 02*30725      EOM*   30725,2     LOAD BB2
12323 0 13 17137      PBT    BB2
12324 2 02*30721      EOM*   30721,2     LOAD BB1
12325 0 13 17136      PBT    BB1
12326 0 76 00406      LDA    SEED
12327 0 72 25737      SKA    #10000     RANDOM SKIP
12330 0 01 12333      BRU    #*3

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FPAU  TAP=3.0          PAGE 100
12331 2 02*30732      EOM*   30732,2     WAIT FOR FPAU TO FINISH
12332 0 33 00000      PIN    0
12333 2 02*30730      EOM*   30730,2     STORE C2
12334 0 33 17337      PIN    C2IS
12335 2 02*30731      EOM*   30731,2     STORE C1
12336 0 33 17336      PIN    C1IS
12337 0 76 25564      LDA    #*1
12340 2 40*30720      SKS*   30720,2     OVERFLOW TEST
12341 0 53 16743      SKN    IFLAG      SKIP IF NO INTERRUPT INSTALLED
12342 0 01 12344      BRU    #*2
12343 0 35 17340      STA    OFIS
12344 0 76 25564      LDA    #*1
12345 2 40*30721      SKS*   30721,2     SKIP IF SIGN NEGATIVE
12346 0 76 25562      LDA    #0
12347 0 35 17341      STA    SIGNIS
*****
* SIMULATION
12350 0 43 14244      BRM    EOM720
12351 0 20 17135      NOP    AA2
12352 0 43 14264      BRM    EOM721
12353 0 20 17134      NOP    AA1
12354 0 43 14261      BRM    EOM725
12355 0 20 17137      NOP    BB2
12356 0 43 14264      BRM    EOM721
12357 0 20 17136      NOP    BB1
12360 0 43 14406      BRM    EOM730
12361 0 20 17143      NOP    C298
12362 0 43 14420      BRM    EOM731
12363 0 20 17142      NOP    C158
12364 0 76 25562      LDA    #0
12365 0 43 14432      BRM    SKS720
12366 0 76 25564      LDA    #*1
12367 0 35 17344      STA    OFS8
12370 0 76 25564      LDA    #*1
12371 0 43 14441      BRM    SKS721
12372 0 76 25562      LDA    #0

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FPAU  TAP=3.C          PAGE 101
12373  0 35 17345      STA  SIGNSB
*****
12374  0 75 25564      LDB  #=1
12375  0 76 17336      LDA  C1IS
12376  0 70 17342      SKM  C1SB      IS MS PART BK
12377  0 43 16653      BRM  ERR0UT
12400  0 20 25445      NOP  MULEX
12401  0 76 17337      LDA  C2IS
12402  0 70 17343      SKM  C2SB      IS LS PART BK
12403  0 43 16653      BRM  ERR0UT
12404  0 20 25445      NOP  MULEX
12405  0 76 17340      LDA  0FIS
12406  0 70 17344      SKM  0FSB
12407  0 43 16653      BRM  ERR0UT
12410  0 20 25445      NOP  MULEX
12411  0 43 00434      BRM  END
*****
12412  0 76 17134      LDA  AA1
12413  0 35 00406      STA  SEED      UP DATE SEED
12414  0 71 17277      LDX  IW      ITERATION COUNT
12415  0 41 12277      BRX  AGAIN4
12416  0 43 00456      BRM  FDB0NE
*****
12417  0 43 00424      FUNC5 BRM  FUNCTN
12420  0 20 17002      NOP  FPTS
12421  0 43 00440      BRM  RETURN
12422  0 20 16331      NOP  SPUR
12423  0 02 20002      EIR
12424  0 76 25562      LDA  #0
12425  0 35 17307      STA  0UTFLG    SUPPRESS DISPLAY
12426  0 54 16742      SUB  FIW      ITERATION WORD
12427  0 35 17277      STA  IW
12430  0 71 17277      LDX  IW
12431  0 37 17277      AGAIN5 STX  IW
12432  0 76 00406      LDA  SEED
12433  0 43 16643      BRM  RAND0M

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FPAU  TAP=3.C          PAGE 102
12434  0 35 17134      STA  AA1
12435  0 43 16643      BRM  RAND0M
12436  0 35 17135      STA  AA2
12437  0 43 16643      BRM  RAND0M
12440  0 67 10730      NOP  30
12441  0 35 17136      STA  BB1
12442  0 43 16643      BRM  RAND0M
12443  0 35 17137      STA  BB2
*****
12444  0 43 00430      BRM  OBJECT
12445  0 76 25562      LDA  #0
12446  0 35 17340      STA  0FIS      CLEAR 0FIS
12447  0 43 16671      BRM  FREADY
12450  2 02*30720      E0M# 30720,2    LOAD AA2
12451  0 13 17135      POT  AA2
12452  2 02*30721      E0M# 30721,2    LOAD AA1
12453  0 13 17134      POT  AA1
12454  2 02*30726      E0M# 30726,2    LOAD BB2
12455  0 13 17137      POT  BB2
12456  2 02*30721      E0M# 30721,2    LOAD BB1
12457  0 13 17136      POT  BB1
12460  0 76 00406      LDA  SEED
12461  0 72 25737      SKA  #10000    RAND0M SKIP
12462  0 01 12465      BRU  #43
12463  2 02*30732      E0M# 30732,2    WAIT FOR FPAU TO FINISH
12464  0 33 20000      PIN  0
12465  2 02*30730      E0M# 30730,2    STORE C2
12466  0 33 17337      PIN  C2IS
12467  2 02*30731      E0M# 30731,2    STORE C1
12470  0 33 17336      PIN  C1IS
12471  0 76 25564      LDA  #=1
12472  2 40*30720      SKS# 30720,2    OVERFLOW TEST
12473  0 53 16743      SKN  IFLAG     SKIP IF NO INTERRUPT INSTALLED
12474  0 01 12476      BRU  #=2
12475  0 35 17340      STA  0FIS
12476  0 76 25564      LDA  #=1

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FPAU  TAP=3.C                PAGE 103
12477  2 40 30721          SKS  30721.2      SKIP IF SIGN NEGATIVE
12500  0 76 25562          LDA  #0
12501  0 35 17341          STA  SIGNIS
*****
* SIMULATION
*****
12502  0 43 14244          BRM  E0M720
12503  0 20 17135          NOP  AA2
12504  0 43 14264          BRM  E0M721
12505  0 20 17134          NOP  AA1
12506  0 43 14370          BRM  E0M726
12507  0 20 17137          NOP  BB2
12510  0 43 14264          BRM  E0M721
12511  0 20 17136          NOP  BB1
12512  0 43 14406          BRM  E0M730
12513  0 20 17343          NOP  C2SB
12514  0 43 14420          BRM  E0M731
12515  0 20 17342          NOP  C1SB
12516  0 76 25562          LDA  #0
12517  0 43 14432          BRM  SKS720
12520  0 76 25564          LDA  #1
12521  0 35 17344          STA  OFSB
12522  0 76 25564          LDA  #1
12523  0 43 14441          BRM  SKS721
12524  0 76 25562          LDA  #0
12525  0 35 17345          STA  SIGNSB
*****
12526  0 76 25564          LDB  #1
12527  0 76 17336          LDA  C1IS
12530  0 70 17342          SKM  C1SB          IS MS PART OK
12531  0 43 16653          BRM  ERR0UT
12532  0 20 25451          NOP  DIVEX
12533  0 76 17337          LDA  C2IS          IS LS PART OK
12534  0 70 17343          SKM  C2SB
12535  0 43 16653          BRM  ERR0UT
12536  0 20 25451          NOP  DIVEX
12537  0 76 17340          LDA  OFIS

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FPAU  TAP=3.C                PAGE 104
12540  0 70 17344          SKM  OFSB
12541  0 43 16653          BRM  ERR0UT
12542  0 20 25451          NOP  DIVEX
12543  0 43 00434          BRM  END
*****
12544  0 76 17134          LDA  AA1
12545  0 35 00406          STA  SEED          UP DATE SEED
12546  0 71 17277          LDX  IW          ITERATION COUNT
12547  0 41 12431          BRX  AGAIN5
12550  0 43 00456          BRM  PDONE
*****
12551  0 43 00424          FUNC6 BRM  FUNCTN
12552  0 20 17210          NOP  FPT6
12553  0 43 00440          BRM  RETURN
12554  0 20 16931          NOP  SPUR
12555  0 02 20002          EIR
12556  0 76 25562          LDA  #0
12557  0 35 17307          STA  BUTFLG      SUPPRESS DISPLAY
12560  0 54 16742          SUB  FIW          ITERATION WORD
12561  0 35 17277          STA  IW
12562  0 71 17277          LDX  IW
12563  0 37 17277          AGAIN6 STX  IW
12564  0 76 00406          LDA  SEED
12565  0 43 16643          BRM  RANDOM
12566  0 35 17134          STA  AA1
12567  0 43 16443          BRM  RANDOM
12570  0 35 17135          STA  AA2
12571  0 43 16643          BRM  RANDOM
12572  0 67 10030          NOP  30
12573  0 35 17136          STA  BB1
12574  0 43 16643          BRM  RANDOM
12575  0 35 17137          STA  BB2
*****
12576  0 43 00430          BRM  OBJECT
12577  0 76 25562          LDA  #0
12600  0 35 17340          STA  OFIS          CLEAR OFIS

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FPAU  TAP=3.0                                PAGE 105
12601  0 43 16671    BRM  FREADY
12602  2 02*30720    EOM* 30720,2    LOAD AA2
12603  0 13 17135    POT  AA2
12604  2 02*30721    EOM* 30721,2    LOAD AA1
12605  0 13 17134    POT  AA1
12606  2 02*30727    EOM* 30727,2    LOAD BB2
12607  0 13 17137    POT  BB2
12610  2 02*30721    EOM* 30721,2    LOAD BB1
12611  0 13 17136    POT  BB1
12612  0 76 00406    LDA  SEED
12613  0 72 25737    SKA  #10000    RANDOM SKIP
12614  0 01 12417    BRU  **3
12615  2 02*30732    EOM* 30732,2    WAIT FOR FPAU TO FINISH
12616  0 33 00000    PIN  0
12617  2 02*30730    EOM* 30730,2    STORE C2
12620  0 33 17337    PIN  C2IS
12621  2 02*30731    EOM* 30731,2    STORE C1
12622  0 33 17336    PIN  C1IS
12623  0 76 25564    LDA  #=1
12624  2 40*30720    SKS* 30720,2    OVERFLOW TEST
12625  0 53 16743    SKN  IFLAG    SKIP IF NO INTERRUPT INSTALLED
12626  0 01 12430    BRU  **2
12627  0 35 17340    STA  #FIS
12630  0 76 25564    LDA  #=1
12631  2 40*30721    SKS* 30721,2    SKIP IF SIGN NEGATIVE
12632  0 76 25562    LDA  #0
12633  0 35 17341    STA  SIGNIS

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* SIMULATION
12634  0 43 14244    BRM  EOM720
12635  0 20 17135    NOP  AA2
12636  0 43 14264    BRM  EOM721
12637  0 20 17134    NOP  AA1
12640  0 43 14277    BRM  EOM727
12641  0 20 17137    NOP  BB2
12642  0 43 14264    BRM  EOM721

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FPAU  TAP=3.0                                PAGE 106
12643  0 20 17136    NOP  BB1
12644  0 43 14406    BRM  EOM730
12645  0 20 17343    NOP  C2SB
12646  0 43 14420    BRM  EOM731
12647  0 20 17342    NOP  C1SB
12650  0 76 25562    LDA  #0
12651  0 43 14432    BRM  SKS720
12652  0 76 25564    LDA  #=1
12653  0 35 17344    STA  #F5B
12654  0 76 25564    LDA  #=1
12655  0 43 14441    BRM  SKS721
12656  0 76 25562    LDA  #0
12657  0 35 17345    STA  SIGNSB
*****
12660  0 75 25564    LDB  #=1
12661  0 76 17336    LDA  C1IS
12662  0 70 17342    SKM  C1SB    IS MS PART OK
12663  0 43 16653    BRM  ERR0UT
12664  0 20 25455    NOP  IDIVEX
12665  0 76 17137    LDA  C2IS
12666  0 70 17343    SKM  C2SB    IS LS PART OK
12667  0 43 16653    BRM  ERR0UT
12670  0 20 25455    NOP  IDIVEX
12671  0 76 17340    LDA  #FIS
12672  0 70 17344    SKM  #F5B
12673  0 43 16653    BRM  ERR0UT
12674  0 20 25455    NOP  IDIVEX
12675  0 43 00434    BRM  END
*****
12676  0 76 17134    LDA  AA1
12677  0 35 00406    STA  SEED    UP DATE SEED
12700  0 71 17277    LDX  IW      ITERATION COUNT
12701  0 41 12563    BRX  AGA1N6
12702  0 43 00456    BRM  PDONE
*****
12703  0 43 00424    FUNC7 BRM  FUNCTN

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FPAU  TAP=3.0                PAGE 107

12704 0 20 17016             NOP    FPT7
12705 0 43 00440             BRM    RETURN
12706 0 20 16331             NOP    SPUR
12707 0 02 20002             EIR
          00000070           EQU    LAST1=FIRST1
12710 0 71 25740             LDX    #2=J           20 ITERATIONS
12711 0 37 17277             STX    IW             ITERATION WORD
12712 0 71 17300             LDX    MODULE        DATA MODULE LOCATION
12713 2 76 00000             LDA    0,2
12714 0 35 14446             STA    OPCODE
12715 0 35 12744             STA    OPTYPE
12716 2 76 00001             LDA    1,2
12717 0 35 17134             STA    AA1
12720 2 76 00002             LDA    2,2
12721 0 35 17135             STA    AA2
12722 2 76 00003             LDA    3,2
12723 0 35 17136             STA    BB1
12724 2 76 00004             LDA    4,2
12725 0 35 17137             STA    BB2
12726 2 76 00005             LDA    5,2
12727 0 35 17342             STA    C1SB
12730 2 76 00006             LDA    6,2
12731 0 35 17343             STA    C2SB
12732 2 76 00007             LDA    7,2
12733 0 35 17344             STA    OFSB
12734 0 76 25562             LDA    #0
12735 0 35 17340             STA    OFIS
          *****
12736 0 43 00430             BRM    OBJECT
12737 0 43 16671             BRM    FREADY
12740 2 02*30720             EBM+  30720,2        LOAD LEAST SIGNIFICANT PART
12741 0 13 17135             PBT   AA2
12742 2 02*30721             EBM+  30721,2        LOAD MOST SIGNIFICANT PART
12743 0 13 17134             PBT   AA1
12744 0 00 00000             PBTYP PZE
12745 0 13 17137             PBT   BB2

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FPAU  TAP=3.0                PAGE 108

12746 2 02*30721             EBM+  30721,2        LOAD MOST SIGNIFICANT PART
12747 0 13 17136             PBT   BB1
12750 2 02*30730             EBM+  30730,2        STORE LEAST SIGNIFICANT PART
12751 0 33 17337             PIN   C2IS
12752 2 02*30731             EBM+  30731,2        STORE MOST SIGNIFICANT PART
12753 0 33 17336             PIN   C1IS
12754 0 76 25564             LDA    #1
12755 2 40*30720             SKG+  30720,2        OVERFLOW TEST
12756 0 53 16743             SKN   IFLAG          SKIP IF NO INTERRUPT INSTALLED
12757 0 01 12761             BRU   #+2
12760 0 35 17340             STA   OFIS
12761 0 75 25564             LDB   #+1
12762 0 76 17336             LDA   C1IS
12763 0 70 17342             SKM   C1SB           IS MS PART OK
12764 0 43 16653             BRM   ERRBUT
12765 0 20 25463             NOP
12766 0 76 17337             LDA   C2IS
12767 0 70 17343             SKM   C2SB           IS LS PART OK
12770 0 43 16653             BRM   ERRBUT
12771 0 20 25463             NOP
12772 0 76 17340             LDA   OFIS
12773 0 70 17344             SKM   OFSB
12774 0 43 16653             BRM   ERRBUT
12775 0 20 25463             NOP
12776 0 43 00434             BRM   END
          *****
12777 0 76 17300             LDA   MODULE
13000 0 55 25667             ADD   #10
13001 0 73 25741             SKG   #LAST1
13002 0 01 13004             BRU   #+2
13003 0 76 25742             LDA   #FIRST1
13004 0 35 17300             STA   MODULE
13005 0 76 17277             LDA   IW
13006 0 #1 12711             BRX   EXLOOP
13007 0 43 00456             BRM   DONE
          *****

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FPAU	TAP=3.0		PAGE 109
13010	0 43 00424	FUNC12 BRM	FUNCTN
13011	0 20 17024	NOP	FPT12
13012	0 43 00430	BRM	OBJECT
13013	0 60 00414	SKR	ERRORS
13014	0 20 00000	NOP	
13015	0 43 00460	BRM	ERROR
13016	0 20 22255	NOP	FIM12
13017	0 43 00430	BRM	OBJECT
13020	0 76 25564	LDA	**1
13021	0 35 17307	STA	OUTFLG
13022	0 76 17140	LDA	FORMAT
13023	0 72 25630	SKA	#3
13024	0 01 13026	BRU	**2
13025	0 01 13040	BRU	N012
13026	0 43 00454	BRM	REPORT
13027	0 20 25317	NOP	TITLE
13030	0 72 25645	SKA	#1
13031	0 01 13033	BRU	**2
13032	0 43 00454	BRM	REPORT
13033	0 20 25357	NOP	EVENCK
13034	0 72 25602	SKA	#2
13035	0 01 13037	BRU	**2
13036	0 43 00454	BRM	REPORT
13037	0 20 25366	NOP	ODDCK
13040	0 76 25562	LDA	#0
13041	0 35 17305	STA	ODDEVN
13042	0 43 16166	BRM	CLRREG
13043	0 43 14244	BRM	EDM720
13044	0 20 17135	NOP	AA2
13045	0 43 14264	BRM	EDM721
13046	0 20 17134	NOP	AA1
13047	0 43 14334	BRM	EDM722
13050	0 20 17137	NOP	BB2
13051	0 43 14264	BRM	EDM721
13052	0 20 17136	NOP	BB1
13053	0 43 14406	BRM	EDM730

OUTPUT ID MESSAGE

SET UP FOR DISPLAY

SKIP IF NO DISPLAY

NO DISPLAY

SKIP IF NO ODD CLOCKS

SKIP IF NO EVEN CLOCKS

START OUT ON ODD CLOCK  
CLEAR FPAU SIMULATOR

FPAU	TAP=3.0		PAGE 110
13054	0 20 17343	NOP	C2SB
13055	0 43 14420	BRM	EDM731
13056	0 20 17342	NOP	C1SB
13057	0 76 25562	LDA	#0
13060	0 43 14432	BRM	SKS720
13061	0 76 25564	LDA	**1
13062	0 35 17344	STA	DFSB
13063	0 76 25564	LDA	**1
13064	0 43 14441	BRM	SKS721
13065	0 76 25562	LDA	#0
13066	0 35 17345	STA	SIGNSB
13067	0 43 00454	BRM	REPORT
13070	0 20 25410	NOP	RESSB,4
13071	0 03 17342	THREE	C1SB
13072	0 43 00434	BRM	END
13073	0 01 13010	BRU	FUNC12
*****			
13074	0 43 00424	FUNC13 BRM	FUNCTN
13075	0 20 17032	NOP	FPT13
13076	0 43 00430	BRM	OBJECT
13077	0 60 00414	SKR	ERRORS
13100	0 20 00000	NOP	
13101	0 43 00460	BRM	ERROR
13102	0 20 22435	NOP	FIM13
13103	0 43 00430	BRM	OBJECT
13104	0 76 25564	LDA	**1
13105	0 35 17307	STA	OUTFLG
13106	0 76 17140	LDA	FORMAT
13107	0 72 25630	SKA	#3
13110	0 01 13112	BRU	**2
13111	0 01 13124	BRU	N013
13112	0 43 00454	BRM	REPORT
13113	0 20 25317	NOP	TITLE
13114	0 72 25645	SKA	#1
13115	0 01 13117	BRU	**2
13116	0 43 00454	BRM	REPORT

OUTPUT ID MESSAGE

SET UP FOR DISPLAY

SKIP IF NO DISPLAY

NO DISPLAY

SKIP IF NO ODD CLOCKS

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FPAU  TAP=3.0                PAGE 111
13117 0 20 25357             NOP    EVENCK
13120 0 72 25402             SKA    #2                SKIP IF NO EVEN CLOCKS
13121 0 01 13123             BRU    **2
13122 0 43 00454             BRM    REPORT
13123 0 20 25366             NOP    ODDCK
13124 0 76 25562             NOB13 LDA    #0
13125 0 35 17305             STA    ODDEVN           START OUT ON ODD CLOCK
13126 0 43 16166             BRM    CLRREG           CLEAR FPAU SIMULATOR
13127 0 43 14244             BRM    EOM720
13130 0 20 17135             NOP    AA2
13131 0 43 14264             BRM    EOM721
13132 0 20 17134             NOP    AA1
13133 0 43 14243             BRM    EOM723
13134 0 20 17137             NOP    BB2
13135 0 43 14264             BRM    EOM721
13136 0 20 17136             NOP    BB1
13137 0 43 14406             BRM    EOM730
13140 0 20 17343             NOP    C258
13141 0 43 14420             BRM    EOM731
13142 0 20 17342             NOP    C158
13143 0 76 25562             LDA    #0
13144 0 43 14432             BRM    SKS720
13145 0 76 25564             LDA    **1
13146 0 35 17344             STA    OFSB
13147 0 76 25564             LDA    **1
13150 0 43 14441             BRM    SKS721
13151 0 76 25562             LDA    #0
13152 0 35 17345             STA    SIGNSB
13153 0 43 00454             BRM    REPORT
13154 0 20 25410             NOP    RESSB,4
13155 0 03 17342             THREE C158
13156 0 43 00434             BRM    END
13157 0 01 13074             BRU    FUNC13
*****
13160 0 43 00424             FUNC14 BRM    FUNCTN
13161 0 20 17240             NOP    FPT14

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FPAU  TAP=3.0                PAGE 112
13162 0 43 00430             BRM    OBJECT
13163 0 60 00414             SKR    ERRORS
13164 0 20 00000             NOP
13165 0 43 00460             BRM    ERROR           OUTPUT ID MESSAGE
13166 0 20 22615             NOP    FIM14
13167 0 43 00430             BRM    OBJECT
13170 0 76 25564             LDA    **1
13171 0 35 17307             STA    BUTFLG           SET UP FOR DISPLAY
13172 0 76 17140             LDA    FORMAT
13173 0 72 25430             SKA    #3                SKIP IF NO DISPLAY
13174 0 01 13176             BRU    **2
13175 0 01 13210             BRU    NOB14           NO DISPLAY
13176 0 43 00454             BRM    REPORT
13177 0 20 25317             NOP    TITLE
13200 0 72 25445             SKA    #1                SKIP IF NO ODD CLOCKS
13201 0 01 13203             BRU    **2
13202 0 43 00454             BRM    REPORT
13203 0 20 25357             NOP    EVENCK
13204 0 72 25402             SKA    #2                SKIP IF NO EVEN CLOCKS
13205 0 01 13207             BRU    **2
13206 0 43 00454             BRM    REPORT
13207 0 20 25366             NOP    ODDCK
13210 0 76 25562             NOB14 LDA    #0
13211 0 35 17305             STA    ODDEVN           START OUT ON ODD CLOCK
13212 0 43 16166             BRM    CLRREG           CLEAR FPAU SIMULATOR
13213 0 43 16166             BRM    CLRREG           CLEAR FPAU SIMULATOR
13214 0 43 14244             BRM    EOM720
13215 0 20 17135             NOP    AA2
13216 0 43 14264             BRM    EOM721
13217 0 20 17134             NOP    AA1
13220 0 43 14252             BRM    EOM724
13221 0 20 17137             NOP    BB2
13222 0 43 14264             BRM    EOM721
13223 0 20 17136             NOP    BB1
13224 0 43 14406             BRM    EOM730
13225 0 20 17343             NOP    C258

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FPAU TAP=3.0 PAGE 113

13226	0 43 14420	BRM	EOM731
13227	0 20 17342	NOP	C1SB
13230	0 76 25562	LDA	#0
13231	0 43 14432	BRM	SKS720
13232	0 76 25564	LDA	#=1
13233	0 35 17344	STA	OF5B
13234	0 76 25564	LDA	#=1
13235	0 43 14441	BRM	SKS721
13236	0 76 25562	LDA	#0
13237	0 35 17345	STA	SIGNSB
13240	0 43 00454	BRM	REPORT
13241	4 20 25410	NOP	RESSB,4
13242	0 03 17342	THREE	C1SB
13243	0 43 00434	BRM	END
13244	0 01 13160	BRU	FUNC14

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13245	0 43 00424	BRM	FUNC15
13246	0 20 17046	NOP	FPT15
13247	0 43 00430	BRM	OBJECT
13250	0 60 00414	SKR	ERRORS
13251	0 20 00000	NOP	
13252	0 43 00460	BRM	ERROR
13253	0 20 22775	NOP	FIM15
13254	0 43 00430	BRM	OBJECT
13255	0 76 25564	LDA	#=1
13256	0 35 17307	STA	OUTFLG
13257	0 76 17140	LDA	FORMAT
13260	0 72 25430	SKA	#3
13261	0 01 13263	BRU	#=2
13262	0 01 13275	BRU	N015
13263	0 43 00454	BRM	REPORT
13264	0 20 25317	NOP	TITLE
13265	0 72 25645	SKA	#1
13266	0 01 13270	BRU	#=2
13267	0 43 00454	BRM	REPORT
13270	0 20 25357	NOP	EVENCK

OUTPUT ID MESSAGE

SET UP FOR DISPLAY

SKIP IF NO DISPLAY

NO DISPLAY

SKIP IF NO ODD CLOCKS

FPAU TAP=3.0 PAGE 114

13271	0 72 25602	SKA	#2
13272	0 01 13274	BRU	#=2
13273	0 43 00454	BRM	REPORT
13274	0 20 25366	NOP	9DDCK
13275	0 76 25562	LDA	#0
13276	0 35 17305	STA	9DDEVN
13277	0 43 16166	BRM	CLRREG
13300	0 43 14244	BRM	EOM720
13301	0 20 17135	NOP	AA2
13302	0 43 14264	BRM	EOM721
13303	0 20 17134	NOP	AA1
13304	0 43 14361	BRM	EOM725
13305	0 20 17137	NOP	BB2
13306	0 43 14264	BRM	EOM721
13307	0 20 17136	NOP	BB1
13310	0 43 14406	BRM	EOM730
13311	0 20 17343	NOP	C29B
13312	0 43 14420	BRM	EOM731
13313	0 20 17342	NOP	C1SB
13314	0 76 25562	LDA	#0
13315	0 43 14432	BRM	SKS720
13316	0 76 25564	LDA	#=1
13317	0 35 17344	STA	OF5B
13320	0 76 25564	LDA	#=1
13321	0 43 14441	BRM	SKS721
13322	0 76 25562	LDA	#0
13323	0 35 17345	STA	SIGNSB
13324	0 43 00454	BRM	REPORT
13325	4 20 25410	NOP	RESSB,4
13326	0 03 17342	THREE	C1SB
13327	0 43 00434	BRM	END
13330	0 01 13245	BRU	FUNC15

SKIP IF NO EVEN CLOCKS

START OUT ON ODD CLOCK  
CLEAR FPAU SIMULATOR

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13331	0 43 00424	BRM	FUNC16
13332	0 20 17054	NOP	FPT16
13333	0 43 00430	BRM	OBJECT

FPAU	TAP=3.C		PAGE 115
13334	0 60 00414	SKR	ERRORS
13335	0 20 00000	NOP	
13336	0 43 00460	BRM	ERRRR OUTPUT ID MESSAGE
13337	0 20 23158	NOP	FIM16
13340	0 43 00430	BRM	OBJECT
13341	0 76 25564	LDA	#1
13342	0 35 17307	STA	OUTFLG SET UP FOR DISPLAY
13343	0 76 17140	LDA	FORMAT
13344	0 72 25430	SKA	#3 SKIP IF NO DISPLAY
13345	0 01 13347	BRU	#42
13346	0 01 13361	BRU	N016 NO DISPLAY
13347	0 43 00454	BRM	REPORT
13350	0 20 25317	NOP	TITLE
13351	0 72 25445	SKA	#1 SKIP IF NO ODD CLOCKS
13352	0 01 13354	BRU	#42
13353	0 43 00454	BRM	REPORT
13354	0 20 25357	NOP	EVENCK
13355	0 72 25602	SKA	#2 SKIP IF NO EVEN CLOCKS
13356	0 01 13360	BRU	#42
13357	0 43 00454	BRM	REPORT
13360	0 20 25366	NOP	ODDCK
13361	0 76 25562	LDA	#0
13362	0 35 17305	STA	ODDEVN START OUT ON ODD CLOCK
13363	0 43 16166	BRM	CLRREG CLEAR FPAU SIMULATOR
13364	0 43 14244	BRM	EDM720
13365	0 20 17135	NOP	AA2
13366	0 43 14264	BRM	EDM721
13367	0 20 17134	NOP	AA1
13370	0 43 14370	BRM	EDM726
13371	0 20 17137	NOP	BB2
13372	0 43 14264	BRM	EDM721
13373	0 20 17136	NOP	BB1
13374	0 43 14406	BRM	EDM730
13375	0 20 17343	NOP	CRSB
13376	0 43 14420	BRM	EDM731
13377	0 20 17342	NOP	C1SB

FPAU	TAP=3.C		PAGE 116
13400	0 76 25562	LDA	#0
13401	0 43 14432	BRM	SKS720
13402	0 76 25564	LDA	#1
13403	0 35 17344	STA	OF5B
13404	0 76 25564	LDA	#1
13405	0 43 14441	BRM	SKS721
13406	0 76 25562	LDA	#0
13407	0 35 17345	STA	SIGNSB
13410	0 43 00454	BRM	REPORT
13411	4 20 25410	NOP	RESSB,4
13412	0 03 17342	THREE	C1SB
13413	0 43 00434	BRM	END
13414	0 01 13331	BRU	FUNC16
*****			
13415	0 43 00424	BRM	FUNC17
13416	0 20 17062	NOP	FPT17
13417	0 43 00430	BRM	OBJECT
13420	0 60 00414	SKR	ERRORS
13421	0 20 00000	NOP	
13422	0 43 00460	BRM	ERROR OUTPUT ID MESSAGE
13423	0 20 23335	NOP	FIM17
13424	0 43 00430	BRM	OBJECT
13425	0 76 25564	LDA	#1
13426	0 35 17307	STA	OUTFLG SET UP FOR DISPLAY
13427	0 76 17140	LDA	FORMAT
13430	0 72 25430	SKA	#3 SKIP IF NO DISPLAY
13431	0 01 13433	BRU	#42
13432	0 01 13445	BRU	N017 NO DISPLAY
13433	0 43 00454	BRM	REPORT
13434	0 20 25317	NOP	TITLE
13435	0 72 25645	SKA	#1 SKIP IF NO ODD CLOCKS
13436	0 01 13440	BRU	#42
13437	0 43 00454	BRM	REPORT
13440	0 20 25357	NOP	EVENCK
13441	0 72 25602	SKA	#2 SKIP IF NO EVEN CLOCKS
13442	0 01 13444	BRU	#42

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FPAU  TAP=3.0                                PAGE 117
13443 0 43 00454      BRM  REPORT
13444 0 20 25366      NOP  0DDCK
13445 0 76 25562      LDA  #0
13446 0 35 17305      STA  0DDEVN          START OUT ON 0DD CLOCK
13447 0 43 16166      BRM  CLRREG          CLEAR FPAU SIMULATOR
13450 0 43 14244      BRM  E0M720
13451 0 20 17135      NOP  AA2
13452 0 43 14264      BRM  E0M721
13453 0 20 17134      NOP  AA1
13454 0 43 14377      BRM  E0M727
13455 0 20 17137      NOP  BB2
13456 0 43 14264      BRM  E0M721
13457 0 20 17136      NOP  BB1
13460 0 43 14406      BRM  E0M730
13461 0 20 17343      NOP  C25B
13462 0 43 14420      BRM  E0M731
13463 0 20 17342      NOP  C15B
13464 0 76 25562      LDA  #0
13465 0 43 14432      BRM  SK9720
13466 0 76 25564      LDA  #+1
13467 0 36 17344      STB  #FSB
13470 0 76 25564      LDA  #+1
13471 0 43 14441      BRM  SK9721
13472 0 76 25562      LDA  #0
13473 0 35 17345      STA  SIGNSB
13474 0 43 00454      BRM  REPORT
13475 * 20 25410      NOP  RESSB,4
13476 0 03 17342      THREE C15B
13477 0 43 00434      BRM  END
13500 0 01 13415      BRU  FUNC17
*****
13501 0 43 00424      FUNC18 BRM  FUNCTN
13502 0 20 17370      NOP  FPT18
13503 0 43 00440      BRM  RETURN
13504 0 20 16931      NOP  SPUR
13505 0 60 00414      SKR  ERRORS

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FPAU  TAP=3.0                                PAGE 118
13506 0 20 00000      NOP  0
13507 0 43 00460      BRM  ERROR
13510 0 20 23515      NOP  FIM18
*****
13511 0 43 00430      ADDU BRM  OBJECT
13512 0 43 16471      BRM  FREADY
13513 0 76 17140      LDA  FORMAT
13514 0 72 25564      SKA  #+1
13515 0 43 00454      BRM  REPORT
13516 0 20 25317      NOP  TITLE
13517 0 73 25602      SKG  #2
13520 0 73 25645      SKG  #1          SKIP IF EQUAL 2
13521 0 01 13523      BRU  #+2
13522 0 43 00454      BRM  REPORT          EVEN CLOCK DISPLAY ONLY
13523 0 20 25357      NOP  EVENCK
13524 0 73 25645      SKG  #1
13525 0 73 25562      SKG  #0          SKIP IF = 1
13526 0 01 13530      BRU  #+2
13527 0 43 00454      BRM  REPORT          0DD CLOCK DISPLAY ONLY
13530 0 20 25366      NOP  0DDCK
13531 0 72 25645      SKA  #1
13532 2 02+30734      E0M+ 30734,2      TO SINGLE CLOCK MODE
13533 0 73 25602      SKG  #2
13534 0 73 25645      SKG  #1          SKIP IF EQUAL 2
13535 0 01 13537      BRU  #+2
13536 2 02+30735      E0M+ 30735,2      TO DOUBLE CLOCK MODE
13537 2 02+30720      E0M+ 30720,2      LOAD FPAU
13540 0 13 17135      PBT  AA2
13541 2 02+30721      E0M+ 30721,2      LOAD FPAU
13542 0 13 17134      PBT  AA1
13543 0 43 16533      BRM  DUMP          DISPLAY SPECIFIED STEPS
13544 2 02+30722      E0M+ 30722,2      FPAU ADD
13545 0 13 17137      PBT  BB2
13546 0 43 16533      BRM  DUMP          DISPLAY SPECIFIED STEPS
13547 2 02+30721      E0M+ 30721,2      LOAD FPAU
13550 0 13 17136      PBT  BB1

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FPAU	TAP-3.C		PAGE 119	
13551	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
13552	2 02*30730	EDM*	30730,2	STORE FPAU
13553	0 33 17337	PIN	C2IS	
13554	2 02*30731	EDM*	30731,2	STORE FPAU
13555	0 33 17336	PIN	C1IS	
13556	0 76 25562	LDA	#0	
13557	2 40*30720	SKS*	30720,2	FPAU OVERFLOW TEST
13560	0 76 25564	LDA	#*1	
13561	0 35 17340	STA	9FIS	
13562	0 76 25564	LDA	#*1	
13563	2 40*30721	SKS*	30721,2	FPAU SIGN TEST
13564	0 76 25562	LDA	#0	
13565	0 35 17341	STA	SIGNIS	
13566	2 02*30737	EDM*	30737,2	TO NORMAL CLOCK MODE
13567	0 43 00454	BRM	REPORT	
13570	4 20 25374	NOP	RESIS,4	
13571	0 03 17336	THREE	C1IS	
13572	0 43 00434	BRM	END	LOOP IF BPI SET
13573	0 01 13501	BRJ	FUNC18	
13574	0 43 00424	FUNC19	BRM	FUNCTN
13575	0 20 17476	NOP	FPT19	
13576	0 43 00440	BRM	RETURN	
13577	0 20 16331	NOP	SPUR	
13600	0 60 00414	SKR	ERRORS	
13601	0 20 00000	NOP	0	
13602	0 43 00460	BRM	ERRRR	
13603	0 20 22670	NOP	FIM19	
13604	0 43 00430	SUBJ	BRM	OBJECT
13605	0 43 16671	BRM	FREADY	
13606	0 76 17140	LDA	FORMAT	
13607	0 72 25564	SKA	#*1	
13610	0 43 00454	BRM	REPORT	
13611	0 20 25317	NOP	TITLE	

FPAU	TAP-3.C		PAGE 120	
13612	0 73 25402	SKG	#2	
13613	0 73 25445	SKG	#1	SKIP IF EQUAL 2
13614	0 01 13616	BRU	#*2	
13615	0 43 00454	BRM	REPORT	EVEN CLOCK DISPLAY ONLY
13616	0 20 25357	NOP	EVENCK	
13617	0 73 25645	SKG	#1	
13620	0 73 25562	SKG	#0	SKIP IF # 1
13621	0 01 13623	BRU	#*2	
13622	0 43 00454	BRM	REPORT	ODD CLOCK DISPLAY ONLY
13623	0 20 25366	NOP	ODDCK	
13624	0 72 25645	SKA	#1	
13625	2 02*30734	EDM*	30734,2	TO SINGLE CLOCK MODE
13626	0 73 25402	SKG	#2	
13627	0 73 25445	SKG	#1	SKIP IF EQUAL 2
13630	0 01 13632	BRU	#*2	
13631	2 02*30735	EDM*	30735,2	TO DOUBLE CLOCK MODE
13632	2 02*30720	EDM*	30720,2	LOAD FPAU
13633	0 13 17135	PBT	AA2	
13634	2 02*30721	EDM*	30721,2	LOAD FPAU
13635	0 13 17134	PBT	AA1	
13636	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
13637	2 02*30723	EDM*	30723,2	FPAU SUB
13640	0 13 17137	PBT	BB2	
13641	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
13642	2 02*30721	EDM*	30721,2	LOAD FPAU
13643	0 13 17136	PBT	BB1	
13644	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
13645	2 02*30730	EDM*	30730,2	STORE FPAU
13646	0 33 17337	PIN	C2IS	
13647	2 02*30731	EDM*	30731,2	STORE FPAU
13650	0 33 17336	PIN	C1IS	
13651	0 76 25562	LDA	#0	
13652	2 40*30720	SKS*	30720,2	FPAU OVERFLOW TEST
13653	0 76 25564	LDA	#*1	
13654	0 35 17340	STA	9FIS	

FPAU	TAP=3.C		PAGE 121	
13655	0 76 25464	LDA	#=1	
13656	2 40 30721	SKS.	30721,2	FPAU SIGN TEST
13657	0 76 25562	LDA	#0	
13660	0 35 17341	STA	SIGNIS	
13661	2 02 30737	EOM.	30737,2	TO NORMAL CLOCK MODE
13662	0 43 00454	BRM	REPORT	
13663	4 20 25374	NOP	RESIS,4	
13664	0 03 17336	THREE	C1IS	
13665	0 43 00434	BRM	END	LOOP IF BPI SET
13666	0 01 13574	BRU	FUNC19	
*****				
13667	0 43 00424	FUNC20	BRM	FUNCTN
13670	0 20 17104	NOP	FPT20	
13671	0 43 00440	BRM	RETURN	
13672	0 20 16731	NOP	SPUR	
13673	0 60 00414	SKR	ERRORS	
13674	0 20 00000	NOP	0	
13675	0 43 00460	BRM	ERROR	
13676	0 20 24743	NOP	FIM20	
*****				
13677	0 43 00430	ISUBU	BRM	OBJECT
13700	0 43 16471	BRM	FREADY	
13701	0 76 17140	LDA	FORMAT	
13702	0 72 25464	SKA	#=1	
13703	0 43 00454	BRM	REPORT	
13704	0 20 25317	NOP	TITLE	
13705	0 73 25402	SKG	#2	
13706	0 73 25445	SKG	#1	SKIP IF EQUAL 2
13707	0 01 13711	BRU	#=2	
13710	0 43 00454	BRM	REPORT	EVEN CLOCK DISPLAY ONLY
13711	0 20 25357	NOP	EVENCK	
13712	0 73 25445	SKG	#1	
13713	0 73 25462	SKG	#0	SKIP IF # 1
13714	0 01 13716	BRU	#=2	
13715	0 43 00454	BRM	REPORT	ODD CLOCK DISPLAY ONLY
13716	0 20 25766	NOP	ODDCK	

FPAU	TAP=3.C		PAGE 122	
13717	0 72 25445	SKA	#1	
13720	2 02 30734	EOM.	30734,2	TO SINGLE CLOCK MODE
13721	0 73 25602	SKG	#2	
13722	0 73 25645	SKG	#1	SKIP IF EQUAL 2
13723	0 01 13725	BRU	#=2	
13724	2 02 30735	EOM.	30735,2	TO DOUBLE CLOCK MODE
13725	2 02 30720	EOM.	30720,2	LOAD FPAU
13726	0 13 17135	PBT	AA2	
13727	2 02 30721	EOM.	30721,2	LOAD FPAU
13730	0 13 17134	PBT	AA1	
13731	0 43 16433	BRM	DUMP	DISPLAY SPECIFIED STEPS
13732	2 02 30724	EOM.	30724,2	FPAU ISUB
13733	0 13 17137	PBT	BB2	
13734	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
13735	2 02 30721	EOM.	30721,2	LOAD FPAU
13736	0 13 17136	PBT	BB1	
13737	0 43 16433	BRM	DUMP	DISPLAY SPECIFIED STEPS
*****				
13740	2 02 30730	EOM.	30730,2	STORE FPAU
13741	0 33 17337	PIN	C2IS	
13742	2 02 30731	EOM.	30731,2	STORE FPAU
13743	0 33 17336	PIN	C1IS	
13744	0 76 25562	LDA	#0	
13745	2 40 30720	SKS.	30720,2	FPAU OVERFLOW TEST
13746	0 76 25564	LDA	#=1	
13747	0 35 17340	STA	SFIS	
13750	0 76 25564	LDA	#=1	
13751	2 40 30721	SKS.	30721,2	FPAU SIGN TEST
13752	0 76 25562	LDA	#0	
13753	0 35 17341	STA	SIGNIS	
13754	2 02 30737	EOM.	30737,2	TO NORMAL CLOCK MODE
13755	0 43 00454	BRM	REPORT	
13756	4 20 25374	NOP	RESIS,4	
13757	0 03 17336	THREE	C1IS	
13760	0 43 00434	BRM	END	LOOP IF BPI SET
13761	0 01 13667	BRU	FUNC20	

FPAU TAP=3.C

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*****
13762 0 43 00424  FUNC21 BRM  FUNCTN
13763 0 20 17112  NBP  FPT21
13764 0 43 00440  BRM  RETURN
13765 0 20 16331  NBP  SPUR
13766 0 60 00414  SKR  ERRORS
13767 0 20 00000  NBP  0
13770 0 43 00460  BRM  ERROR
13771 0 20 24216  NBP  FIM21
*****
13772 0 43 00430  MULU BRM  OBJECT
13773 0 43 16671  BRM  FREADY
13774 0 76 17140  LDA  FORMAT
13775 0 72 25564  SKA  **1
13776 0 43 00454  BRM  REPORT
13777 0 20 25317  NBP  TITLE
14000 0 73 25402  SKG  *2
14001 0 73 25645  SKG  *1          SKIP IF EQUAL 2
14002 0 01 14004  BRU  **2
14003 0 43 00454  BRM  REPORT      EVEN CLOCK DISPLAY ONLY
14004 0 20 25357  NBP  EVENCK
14005 0 73 25645  SKG  *1
14006 0 73 25662  SKG  *0          SKIP IF * 1
14007 0 01 14211  BRU  **2
14010 0 43 00454  BRM  REPORT      ODD CLOCK DISPLAY ONLY
14011 0 20 25366  NBP  ODDCK
14012 0 72 25445  SKA  *1
14013 2 02*30734  EOM* 30734,2    TO SINGLE CLOCK MODE
14014 0 73 25402  SKG  *2
14015 0 73 25445  SKG  *1          SKIP IF EQUAL 2
14016 0 01 14220  BRU  **2
14017 2 02*30735  EOM* 30735,2    TO DOUBLE CLOCK MODE
14020 2 02*30720  EOM* 30720,2    LOAD FPAU
14021 0 13 17135  PBT  AA2
14022 2 02*30721  EOM* 30721,2    LOAD FPAU
14023 0 13 17134  PBT  AA1

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14024 0 43 16533  BRM  DUMP          DISPLAY SPECIFIED STEPS
14025 2 02*30725  EOM* 30725,2    FPAU MUL
14026 0 13 17137  PBT  BB2
14027 0 43 16533  BRM  DUMP          DISPLAY SPECIFIED STEPS
14030 2 02*30721  EOM* 30721,2    LOAD FPAU
14031 0 13 17136  PBT  BB1
14032 0 43 16533  BRM  DUMP          DISPLAY SPECIFIED STEPS
*****
14033 2 02*30730  EOM* 30730,2    STORE FPAU
14034 0 33 17337  PIN  C215
14035 2 02*30731  EOM* 30731,2    STORE FPAU
14036 0 33 17336  PIN  C115
14037 0 76 25562  LDA  *0
14040 2 40*30720  SKS* 30720,2    FPAU OVERFLOW TEST
14041 0 76 25564  LDA  **1
14042 0 35 17340  STA  0F15
14043 0 76 25564  LDA  **1
14044 2 40*30721  SKS* 30721,2    FPAU SIGN TEST
14045 0 76 25562  LDA  *0
14046 0 35 17341  STA  SIGN15
14047 2 02*30737  EOM* 30737,2    TO NORMAL CLOCK MODE
14050 0 43 00454  BRM  REPORT
14051 4 20 25374  NBP  RESIS,4
14052 0 03 17336  THREE C115
14053 0 43 00434  BRM  END          LOOP IF BPI SET
14054 0 01 13762  BRU  FUNC21
*****
14055 0 43 00424  FUNC22 BRM  FUNCTN
14056 0 20 17120  NBP  FPT22
14057 0 43 00440  BRM  RETURN
14060 0 20 16331  NBP  SPUR
14061 0 60 00414  SKR  ERRORS
14062 0 20 00000  NBP  0
14063 0 43 00460  BRM  ERROR
14064 0 20 24371  NBP  FIM22
*****

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FPAU	TAP=3.0		PAGE 125	
14065	0 43 00430	DIVU BRM	OBJECT	
14066	0 43 16471	BRM	FREADY	
14067	0 76 17140	LDA	FORMAT	
14070	0 72 25564	SKA	#=1	
14071	0 43 00454	BRM	REPORT	
14072	0 20 25317	NOP	TITLE	
14073	0 73 25602	SKG	#2	
14074	0 73 25645	SKG	#1	SKIP IF EQUAL 2
14075	0 01 14077	BRU	##2	
14076	0 43 00454	BRM	REPORT	EVEN CLOCK DISPLAY ONLY
14077	0 20 25357	NOP	EVENCK	
14100	0 73 25645	SKG	#1	
14101	0 73 25562	SKG	#0	SKIP IF # 1
14102	0 01 14104	BRU	##2	
14103	0 43 00454	BRM	REPORT	ODD CLOCK DISPLAY ONLY
14104	0 20 25366	NOP	ODDCK	
14105	0 72 25645	SKA	#1	
14106	2 02*30734	EBM*	30734*2	TO SINGLE CLOCK MODE
14107	0 73 25602	SKG	#2	
14110	0 73 25645	SKG	#1	SKIP IF EQUAL 2
14111	0 01 14113	BRU	##2	
14112	2 02*30735	EBM*	30735*2	TO DOUBLE CLOCK MODE
14113	2 02*30720	EBM*	30720*2	LOAD FPAU
14114	0 13 17135	PBT	AA2	
14115	2 02*30721	EBM*	30721*2	LOAD FPAU
14116	0 13 17134	PBT	AA1	
14117	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
14120	2 02*30726	EBM*	30726*2	FPAU DIV
14121	0 13 17137	PBT	BB2	
14122	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
14123	2 02*30721	EBM*	30721*2	LOAD FPAU
14124	0 13 17136	PBT	BB1	
14125	0 43 16533	BRM	DUMP	DISPLAY SPECIFIED STEPS
*****				
14126	2 02*30730	EBM*	30730*2	STORE FPAU
14127	0 33 17337	PIN	C21S	

FPAU	TAP=3.0		PAGE 126	
14130	2 02*30731	EBM*	30731*2	STORE FPAU
14131	0 33 17336	PIN	C11S	
14132	0 76 25562	LDA	#0	
14133	2 40*30720	SKS*	30720*2	FPAU OVERFLOW TEST
14134	0 76 25564	LDA	##1	
14135	0 35 17340	STA	OFIS	
14136	0 76 25564	LDA	##1	
14137	2 40*30721	SKS*	30721*2	FPAU SIGN TEST
14140	0 76 25562	LDA	#0	
14141	0 35 17341	STA	SIGNIS	
14142	2 02*30737	EBM*	30737*2	TO NORMAL CLOCK MODE
14143	0 43 00454	BRM	REPORT	
14144	4 20 25374	NOP	RESIS*4	
14145	0 03 17336	THREE	C11S	
14146	0 43 00434	BRM	END	LOOP IF BP1 SET
14147	0 01 14055	BRU	FUNC22	
*****				
14150	0 43 00424	FUNC23 BRM	FUNCTN	
14151	0 20 17126	NOP	FRT23	
14152	0 43 00440	BRM	RETURN	
14153	0 20 16331	NOP	SPUR	
14154	0 60 00414	SKR	ERRORS	
14155	0 20 00000	NOP	0	
14156	0 43 00460	BRM	ERROR	
14157	0 20 24544	NOP	FIM23	
*****				
14160	0 43 00430	IDIVU BRM	OBJECT	
14161	0 43 16671	BRM	FREADY	
14162	0 76 17140	LDA	FORMAT	
14163	0 72 25564	SKA	##1	
14164	0 43 00454	BRM	REPORT	
14165	0 20 25317	NOP	TITLE	
14166	0 73 25602	SKG	#2	
14167	0 73 25645	SKG	#1	SKIP IF EQUAL 2
14170	0 01 14172	BRU	##2	
14171	0 43 00454	BRM	REPORT	EVEN CLOCK DISPLAY ONLY

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FPAU  TAP=3.0                PAGE 127
14172 0 20 25357             NOP    EVENCK
14173 0 73 25445             SKG    #1
14174 0 73 25562             SKG    #0                SKIP IF # 1
14175 0 01 14177             BRU    **2
14176 0 43 00454             BRM    REPORT           ODD CLOCK DISPLAY ONLY
14177 0 20 25366             NOP    0DDCK
14200 0 72 25645             SKA    #1
14201 2 02*30734             EDM*   30734,2         TO SINGLE CLOCK MODE
14202 0 73 25602             SKG    #2
14203 0 73 25645             SKG    #1                SKIP IF EQUAL 2
14204 0 01 14206             BRU    **2
14205 2 02*30735             EDM*   30735,2         TO DOUBLE CLOCK MODE
14206 2 02*30720             EDM*   30720,2         LOAD FPAU
14207 0 13 17135             PBT    AA2
14210 2 02*30721             EDM*   30721,2         LOAD FPAU
14211 0 13 17134             PBT    AA1
14212 0 43 16533             BRM    DUMP             DISPLAY SPECIFIED STEPS
14213 2 02*30727             EDM*   30727,2         FPAU IDIV
14214 0 13 17137             PBT    BB2
14215 0 43 16533             BRM    DUMP             DISPLAY SPECIFIED STEPS
14216 2 02*30721             EDM*   30721,2         LOAD FPAU
14217 0 13 17136             PBT    BB1
14220 0 43 16533             BRM    DUMP             DISPLAY SPECIFIED STEPS
*****
14221 2 02*30730             EDM*   30730,2         STORE FPAU
14222 0 33 17137             PIN    C2IS
14223 2 02*30731             EDM*   30731,2         STORE FPAU
14224 0 33 17336             PIN    C1IS
14225 0 76 25562             LDA    #0
14226 2 40*30720             SKS*   30720,2         FPAU OVERFLOW TEST
14227 0 76 25564             LDA    **1
14230 0 35 17140             STA    BFIS
14231 0 76 25564             LDA    **1
14232 2 40*30721             SKS*   30721,2         FPAU SIGN TEST
14233 0 76 25562             LDA    #0
14234 0 35 17141             STA    SIGN IS

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FPAU  TAP=3.0                PAGE 128
14235 2 02*30737             EDM*   30737,2         TO NORMAL CLOCK MODE
14236 0 43 00454             BRM    REPORT
14237 4 20 25474             NOP    RESIS,4
14240 0 03 17136             THREE  C1IS
14241 0 43 00434             BRM    END              LOOP IF BP1 SET
14242 0 01 14150             BRU    FUNC23
14243 0 43 00452             LAST  BRM    DONE
*****
14244 0 00 00000             E0M720 PZE
14245 0 43 16243             BRM    SAVE1
14246 0 61 14244             MIN    E0M720
14247 0 77*14244             EAX*   E0M720
14250 2 76*00000             LDA*   0,2
14251 0 35 17263             STA    CPU
14252 0 43 15222             BRM    SXCPU
14253 0 43 15243             BRM    AXSL
14254 0 43 15273             BRM    EXCPU
14255 0 76 25562             LDA    #0
14256 0 35 17273             STA    HR
14257 0 76 17333             LDA    GATES2
14260 0 14 25743             ETR    #77777437
14261 0 35 17333             STA    GATES2
14262 0 43 16250             BRM    GET1
14263 0 51 14244             BRR    E0M720
*****
14264 0 00 00000             E0M721 PZE
14265 0 43 16243             BRM    SAVE1
14266 0 61 14264             MIN    E0M721
14267 0 77*14264             EAX*   E0M721
14270 2 76*00000             LDA*   0,2
14271 0 35 17263             STA    CPU
14272 0 43 15222             BRM    SXCPU
14273 0 76 17133             LDA    GATES2
14274 0 72 25625             SKA    #300
14275 0 01 14307             BRU    P04
14276 0 43 15247             P02  BRM    AXSU

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14277	0 43 15325	BRM	FX39
14300	0 43 15331	BRM	BX
14301	0 76 25645	LDA	#1
14302	0 35 17273	STA	HR
14303	0 43 15141	BRM	NORMAL
14304	0 43 14467	BRM	PH0
14305	0 43 16250	BRM	GET1
14306	0 51 14264	BRR	E0M721
*****			
14307	0 43 15711	BRM	DXSU
14310	0 43 15325	BRM	FX39
14311	0 76 17333	LDA	GATES2
14312	0 66 00005	RSH	5
14313	0 14 25744	ETR	#7
14314	0 73 25601	SKG	#5
14315	0 01 14317	BRU	**2
14316	0 43 15331	BRM	BX
14317	0 43 15777	BRM	OSSGEN
14320	0 76 17333	LDA	GATES2
14321	0 66 00005	RSH	5
14322	0 14 25744	ETR	#7
14323	0 73 25745	SKG	#6
14324	0 01 14326	BRU	**2
14325	0 01 14771	BRU	PH9B
14326	0 73 25601	SKG	#5
14327	0 01 14331	BRU	**2
14330	0 01 14747	BRU	PH9A
14331	0 73 25563	SKG	#4
14332	0 01 14570	BRU	PH5
14333	0 01 14677	BRU	PH7
*****			
14334	0 00 00000	E0M722 PZE	
14335	0 43 16243	BRM	SAVE1
14336	0 61 14334	MIN	E0M722
14337	0 77*14334	EAX*	E0M722
14340	0 76 25602	LDA	#2

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14341	0 43 14446	BRM	OPCODE
14342	0 51 14334	BRR	E0M722
*			
14343	0 00 00000	E0M723 PZE	
14344	0 43 16243	BRM	SAVE1
14345	0 61 14343	MIN	E0M723
14346	0 77*14343	EAX*	E0M723
14347	0 76 25630	LDA	#3
14350	0 43 14446	BRM	OPCODE
14351	0 51 14343	BRR	E0M723
*			
14352	0 00 00000	E0M724 PZE	
14353	0 43 16243	BRM	SAVE1
14354	0 61 14352	MIN	E0M724
14355	0 77*14352	EAX*	E0M724
14356	0 76 25663	LDA	#4
14357	0 43 14446	BRM	OPCODE
14360	0 51 14352	BRR	E0M724
*****			
14361	0 00 00000	E0M725 PZE	
14362	0 43 16243	BRM	SAVE1
14363	0 61 14361	MIN	E0M725
14364	0 77*14361	EAX*	E0M725
14365	0 76 25601	LDA	#5
14366	0 43 14446	BRM	OPCODE
14367	0 51 14361	BRR	E0M725
*			
14370	0 00 00000	E0M726 PZE	
14371	0 43 16243	BRM	SAVE1
14372	0 61 14370	MIN	E0M726
14373	0 77*14370	EAX*	E0M726
14374	0 76 25745	LDA	#6
14375	0 43 14446	BRM	OPCODE
14376	0 51 14370	BRR	E0M726
*			
14377	0 00 00000	E0M727 PZE	

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14400	0 43 16243	BRM	SAVE1
14401	0 61 14377	MIN	E0M727
14402	0 77*14377	EAX*	E0M727
14403	0 76 25744	LDA	#7
14404	0 43 14446	BRM	SPCODE
14405	0 51 14377	BRR	E0M727

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14406	0 00 00000	E0M730	PZE
14407	0 43 16243	BRM	SAVE1
14410	0 61 14406	MIN	E0M730
14411	0 77*14406	EAX*	E0M730
14412	0 76 17327	LDA	E
14413	0 14 25432	ETR	#777
14414	0 14 17322	MRG	AL
14415	2 35*00000	STA*	0,2
14416	0 43 16250	BRM	GET1
14417	0 51 14406	BRR	E0M730

\*

14420	0 00 00000	E0M731	PZE
14421	0 43 16243	BRM	SAVE1
14422	0 61 14420	MIN	E0M731
14423	0 77*14420	EAX*	E0M731
14424	0 76 17321	LDA	AU
14425	2 35*00000	STA*	0,2
14426	0 43 16250	BRM	GET1
14427	0 51 14420	BRR	E0M731

\*

14430	0 00 00000	E0M732	PZE
14431	0 51 14430	BRR	E0M732

\*

14432	0 00 00000	SKS720	PZE
14433	0 53 17306	SKN	9FI
14434	0 61 14432	MIN	SKS720
14435	0 53 17306	SKN	9FI
14436	0 01 14440	BRU	**2
14437	0 61 17306	MIN	9FI

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14440	0 51 14432	BRR	SKS720
*			
14441	0 00 00000	SKS721	PZE
14442	0 53 17261	SKN	A000
14443	0 01 14445	BRU	**2
14444	0 61 14441	MIN	SKS721
14445	0 51 14441	BRR	SKS721

\*\*\*\*\*

14446	0 00 00000	SPCODE	PZE
14447	0 35 17273	STA	HR
14450	2 76*00000	LDA*	0,2
14451	0 35 17263	STA	CPU
14452	0 43 15461	BRM	PXAD
14453	0 43 15403	BRM	PXAND
14454	0 43 15660	BRM	SXADD
14455	0 43 15717	BRM	BRXHR
14456	0 43 16201	BRM	CLRSIG
14457	0 43 15222	PO3	BRM SXCPU
14460	0 43 15705	BRM	DXSL
14461	0 43 16114	BRM	DXCU
14462	0 43 15273	BRM	EXCPJ
14463	0 43 14474	BRM	PH1
14464	0 43 14467	BRM	PH0
14465	0 43 16250	BRM	GET1
14466	0 51 14446	BRR	SPCODE

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14467	0 43 16201	PH0	BRM CLRSIG
14470	0 76 25471	LDA	#00000000
14471	0 35 17320	STA	PHASE
14472	0 43 16260	BRM	DISPLY
14473	0 51 14467	BRR	PH0

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14474	0 00 00000	PH1	PZE
14475	0 43 16201	BRM	CLRSIG
14476	0 76 25442	LDA	#20000000
14477	0 35 17320	STA	PHASE

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FPAU  TAP=3.0                                PAGE 133
14500  0 43 16260                            BRM  DISPLY
14501  0 43 15232                            BRM  AXE
14502  0 76 25715                            PH2  LDA  #10000000
14503  0 35 17320                            STA  PHASE
14504  0 43 16201                            BRM  CLRSIG
14505  0 76 17333                            LDA  GATES2
14506  0 75 25606                            LDB  #340
14507  0 70 25664                            SKM  #240
14510  0 01 14515                            BRU  PH2A      N05
14511  0 43 15403                            BRM  PXAND
14512  0 43 15430                            BRM  PXNAD
14513  0 43 15502                            BRM  GXAD
14514  0 01 14523                            BRU  PH2B
14515  0 43 15455                            PH2A BRM  PXNAND
14516  0 43 15361                            BRM  PXAD
14517  0 76 17333                            LDA  GATES2
14520  0 75 25606                            LDB  #340
14521  0 70 25606                            SKM  #340
14522  0 43 15551                            BRM  GXNAD      N05,N07
14523  0 76 17333                            PH2B LDA  GATES2
14524  0 75 25606                            LDB  #340
14525  0 70 25606                            SKM  #340
14526  0 01 14530                            BRU  #+2
14527  0 43 15524                            BRM  GXAND      07
14530  0 43 15660                            BRM  SXADD
14531  0 43 16260                            BRM  DISPLY
14532  0 43 15717                            BRM  EXS
*****
14533  0 76 25746                            PH3  LDA  #04000000
14534  0 35 17320                            STA  PHASE      TO PHASE 3
14535  0 43 16201                            BRM  CLRSIG
14536  0 76 17333                            LDA  GATES2
14537  0 75 25606                            LDB  #340
14540  0 70 25664                            SKM  #240
14541  0 43 15753                            BRM  SXB
14542  0 43 16260                            BRM  DISPLY

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FPAU  TAP=3.0                                PAGE 134
14543  0 76 17327                            LDA  E
14544  0 72 25747                            SKA  #2000
14545  0 43 16114                            BRM  DXCU
14546  0 76 17323                            LDA  BU
14547  0 72 25615                            SKA  #40000000
14550  0 01 14552                            BRU  #+2
14551  0 43 16114                            BRM  DXCU
14552  0 43 15247                            BRM  AXSU
14553  0 43 15243                            BRM  AXBL
*****
14554  0 76 25750                            PH4  LDA  #02000000
14555  0 35 17320                            STA  PHASE      TO PHASE 4
14556  0 43 16201                            BRM  CLRSIG
14557  0 43 15361                            BRM  PXAD
14560  0 43 15430                            BRM  PXNAD
14561  0 43 15660                            BRM  SXADD
14562  0 43 16260                            BRM  DISPLY
14563  0 76 17333                            LDA  GATES2
14564  0 75 25606                            LDB  #340
14565  0 70 25664                            SKM  #240
14566  0 43 15337                            BRM  BXS
14567  0 51 14474                            BRU  PH1
*****
14570  0 76 25751                            PH5  LDA  #01000000
14571  0 35 17320                            STA  PHASE
14572  0 43 16201                            BRM  CLRSIG
14573  0 43 15361                            BRM  PXAD
14574  0 43 15403                            BRM  PXAND
14575  0 43 15660                            BRM  SXADD
14576  0 43 16260                            BRM  DISPLY
14577  0 76 17327                            LDA  E
14600  0 72 25735                            SKA  #1777
14601  0 01 14605                            BRU  PH5A
14602  0 72 25747                            SKA  #2000
14603  0 01 14631                            BRU  PH5E
14604  0 01 14636                            BRU  PH5B

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14605	0 72	25747	PH5A	SKA	#2000	
14606	0 01	14615		BRU	PH5C	
14607	0 43	16225		BRM	DXDR1	
14610	0 76	17266		LDA	F	
14611	0 75	25564		LDB	#=1	
14612	0 70	25602		SKM	#2	
14613	0 43	16064		BRM	ECU	
14614	0 01	14622		BRU	PH5D	
*****						
14615	0 43	15763	PH5C	BRM	AXSR1	
14616	0 76	17266		LDA	F	
14617	0 75	25564		LDB	#=1	
14620	0 70	25602		SKM	#2	
14621	0 43	16056		BRM	ECU	
14622	0 76	17266	PH5D	LDA	F	
14623	0 75	25564		LDB	#=1	
14624	0 70	25602		SKM	#2	
14625	0 01	14627		BRU	**2	
14626	0 01	14636		BRU	PH5B	
14627	0 43	16072		BRM	FCD	
14630	0 01	14570		BRU	PH5	
14631	0 43	15763	PH5E	BRM	AXSR1	
14632	0 76	17266		LDA	F	
14633	0 75	25564		LDB	#=1	
14634	0 70	25602		SKM	#2	
14635	0 43	16056		BRM	ECU	
14636	0 43	15310	PH5B	BRM	EXB	
*****						
14637	0 76	25752	PH6	LDA	#00400000	
14640	0 35	17320		STA	PHASE	
14641	0 43	16201		BRM	CLRSIG	
14642	0 76	17333		LDA	GATES2	
14643	0 75	25606		LDB	#340	
14644	0 70	25576		SKM	#100	
14645	0 01	14647		BRU	**2	IS B EQUAL 2
14646	0 01	14660		BRU	PH6A	NO

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14647	0 70	25753		SKM	#140	SKIP IF B EQUALS 3
14650	0 01	14652		BRU	**2	
14651	0 01	14664		BRU	PH6B	
14652	0 70	25575		SKM	#200	SKIP IF B EQUALS 4
14653	0 00	00000		HLT		
14654	0 43	15361	PH6C	BRM	PXAD	
14655	0 43	15455		BRM	PXNAND	
14656	0 43	15551		BRM	GXNAD	
14657	0 01	14667		BRU	PH6D	
14660	0 43	15403	PH6A	BRM	PXAND	
14661	0 43	15430		BRM	PXNAD	
14662	0 43	15502		BRM	GXAD	
14663	0 01	14667		BRU	PH6D	
14664	0 43	15361	PH6B	BRM	PXAD	
14665	0 43	15455		BRM	PXNAND	
14666	0 43	15524		BRM	GXAND	
14667	0 43	15660	PH6D	BRM	SXADD	
14670	0 43	16260		BRM	DISPLY	
14671	0 43	16056		BRM	ECU	
14672	0 43	15733		BRM	BXBR1	
14673	0 43	15141		BRM	NORMAL	
14674	0 43	14467		BRM	PHO	
14675	0 43	16250		BRM	GET1	
14676	0 51	14264		BRR	EDM721	
*****						
14677	0 43	16201	PH7	BRM	CLRSIG	
14700	0 76	25705		LDA	#00200000	
14701	0 35	17320		STA	PHASE	
14702	0 43	15403		BRM	PXAND	
14703	0 76	17324		LDA	BL	
14704	0 72	25631		SKA	#1000	838
14705	0 01	14710		BRU	PH7A	
14706	0 43	15361		BRM	PXAD	
14707	0 01	14712		BRU	PH7B	
14710	0 43	15430	PH7A	BRM	PXNAD	
14711	0 43	15502		BRM	GXAD	

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14712	0 43 15660	PH7B	BRM	SXADD
14713	0 43 16260		BRM	DISPLY
14714	0 43 15733		BRM	BXBR1
14715	0 43 16077		BRM	FCD
14716	0 76 17266		LDA	F
14717	0 17 25645		EBR	#1
14720	0 72 25564		\$KA	#-1
14721	0 01 14677		BRU	PH7
14722	0 01 14723		BRU	PH8
*****				
14723	0 43 16201	PH8	BRM	CLRSIG
14724	0 76 25754		LDA	#00100000
14725	0 35 17320		STA	PHASE
14726	0 43 15361		BRM	PXAD
14727	0 43 15455		BRM	PXNAND
14730	0 43 15524		BRM	GXAND
14731	0 43 15660		BRM	SXADD
14732	0 43 16260		BRM	DISPLY
14733	0 76 17324		LDA	BL
14734	0 72 25631		SKA	#1000
14735	0 01 14737		BRU	#-2
14736	0 01 14741		BRU	PH8A
14737	0 43 15733		BRM	BXBR1
14740	0 43 16256		BRM	ECU
14741	0 76 25602	PH8A	LDA	#2
14742	0 35 17266		STA	F
14743	0 43 15141		BRM	NORMAL
14744	0 43 14467		BRM	PH0
14745	0 43 16250		BRM	GET1
14746	0 51 14264		SRR	E04721
*****				
14747	0 43 16201	PH9A	BRM	CLRSIG
14750	0 76 25414		LDA	#00040000
14751	0 35 17320		STA	PHASE
14752	0 53 17321		\$KN	AU
14753	0 01 14757		BRU	PH9AA

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14754	0 43 15430		BRM	PXNAD
14755	0 43 15455		BRM	PXNAND
14756	0 01 14761		BRU	PH9AB
14757	0 43 15361	PH9AA	BRM	PXAD
14760	0 43 15403		BRM	PXAND
14761	0 43 15660	PH9AB	BRM	SXADD
14762	0 43 16260		BRM	DISPLY
14763	0 43 15733		BRM	BXBR1
14764	0 76 25662		LDA	#0
14765	0 53 17330		\$KN	DU
14766	0 76 25564		LDA	#-1
14767	0 35 17313		STA	SUB
14770	0 01 15014		BRU	PH10
*****				
14771	0 43 16201	PH9B	BRM	CLRSIG
14772	0 76 25614		LDA	#00040000
14773	0 35 17320		STA	PHASE
14774	0 53 17330		\$KN	DU
14775	0 01 15001		BRU	PH9BA
14776	0 43 15403		BRM	PXAND
14777	0 43 15455		BRM	PXNAND
15000	0 01 15003		BRU	PH9BB
15001	0 43 15361	PH9BA	BRM	PXAD
15002	0 43 15430		BRM	PXNAD
15003	0 43 15660	PH9BB	BRM	SXADD
15004	0 43 16260		BRM	DISPLY
15005	0 76 25562		LDA	#0
15006	0 53 17321		\$KN	AU
15007	0 76 25564		LDA	#-1
15010	0 35 17313		STA	SUB
15011	0 43 16104		BRM	DXC
15012	0 43 15733		BRM	BXBR1
15013	0 01 15014		BRU	PH10
*****				
15014	0 43 16201	PH10	BRM	CLRSIG
15015	0 76 25755		LDA	#00020000

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15016	0 35	17320	STA	PHASE
15017	0 53	17313	SKN	SUB
15020	0 01	15025	BRU	PH10A
15021	0 43	15361	BRM	PXAD
15022	0 43	15455	BRM	PXNAND
15023	0 43	15524	BRM	GXAND
15024	0 01	15030	BRU	PH10B
15025	0 43	15403	PH10A BRM	PXAND
15026	0 43	15430	BRM	PXNAD
15027	0 43	15502	BRM	GXAD
15030	0 43	15660	PH10B BRM	GXADD
15031	0 43	16260	BRM	DISPLY
15032	0 76	17323	LDA	BU
15033	0 35	17311	STA	P10TMP
15034	0 43	16040	BRM	AXSL1
15035	0 43	16006	BRM	BXSL1
15036	0 76	17274	LDA	K000
15037	0 17	17330	EOR	DU
15040	0 75	25562	LDB	=0
15041	0 72	25671	SKA	=40000000
15042	0 75	25564	LDB	=1
15043	0 36	17313	STB	SUB
15044	0 43	16072	BRM	FCD
.....				
15045	0 76	17266	LDA	F
15046	0 55	25645	ADD	=1
15047	0 14	25756	ETR	=77
15050	0 72	25564	SKA	=1
15051	0 01	15053	BRU	++2
15052	0 01	15072	BRU	PH11
15053	0 54	25645	SUB	=1
15054	0 72	25564	SKA	=1
15055	0 01	15062	BRU	PH10C
15056	0 76	17311	LDA	P10TMP
15057	0 72	25757	SKA	=30000000
15060	0 01	15072	BRU	PH11

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15061	0 01	15014	BRU	PH10
15062	0 54	25645	PH10C SUB	=1
15063	0 72	25564	SKA	=1
15064	0 01	15014	BRU	PH10
15065	0 76	17311	LDA	P10TMP
15066	0 17	25564	EOR	=1
15067	0 72	25616	SKA	=14000000
15070	0 01	15014	BRU	PH10
15071	0 01	15072	BRU	PH11
.....				
15072	0 43	16201	PH11 BRM	CLRSIG
15073	0 76	25737	LDA	=10000
15074	0 35	17320	STA	PHASE
15075	0 43	15753	BRM	SXB
15076	0 43	16260	BRM	DISPLY
15077	0 76	25562	LDA	=0
15100	0 35	17313	STA	SUB
15101	0 43	15247	BRM	AXBU
15102	0 43	15243	BRM	AXBL
15103	0 76	17266	LDA	F
15104	0 72	25564	SKA	=1
15105	0 01	15107	BRU	++2
15106	0 43	16056	BRM	ECU
15107	0 76	17330	LDA	DU
15110	0 72	25615	SKA	=60000000
15111	0 01	15115	BRU	PH12
15112	0 76	25631	LDA	=1000
15113	0 35	17327	STA	E
15114	0 01	15115	BRU	PH12
.....				
15115	0 43	16201	PH12 BRM	CLRSIG
15116	0 76	25666	LDA	=4000
15117	0 35	17320	STA	PHASE
15120	0 53	17301	SKN	SSS
15121	0 01	15125	BRU	PH12A
15122	0 43	15361	BRM	PXAD



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15123  0 43 15403           BRM   PXAND
15124  0 01 15127           BRU   PH12B
15125  0 43 15430           PH12A BRM   PXNAD
15126  0 43 15455           BRM   PXNAND
15127  0 43 15460           PH12B BRM   SXADD
15130  0 43 16260           BRM   DISPLY
15131  0 43 15243           BRM   AXSL
15132  0 43 15247           BRM   AXSU
15133  0 76 25445           LDA   #1
15134  0 35 17266           STA   F
15135  0 43 15141           BRM   NORMAL
15136  0 43 14467           BRM   PH0
15137  0 43 16250           BRM   GET1
15140  0 51 14264           BRR   EOM721
*****
15141  0 00 00000           NORMAL PZE
15142  0 76 25747           LDA   #2000
15143  0 35 17320           STA   PHASE           TO PH13
15144  0 43 16201           BRM   CLRSIG
15145  0 43 15361           BRM   PXAD
15146  0 43 15403           BRM   PXAND
15147  0 43 15660           BRM   SXADD
15150  0 43 16260           BRM   DISPLY
15151  0 43 16072           BRM   FCD
15152  0 76 17321           LDA   AU
15153  0 67 00001           LSH   1
15154  0 17 17321           EBR   AU
15155  0 72 25471           SKA   #40000000       SKIP IF A NOT NORMALIZED
15156  0 01 15165           BRU   PH14
15157  0 43 16040           BRM   AXSL1
15160  0 43 16006           BRM   BXBL1
15161  0 43 16064           BRM   ECD
15162  0 76 17266           LDA   F
15163  0 72 25564           SKA   #1
15164  0 01 15142           BRU   NORMAL+1
*****

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15165  0 43 16201           PH14 BRM   CLRSIG
15166  0 76 25631           LDA   #1000
15167  0 35 17320           STA   PHASE
15170  0 43 16135           BRM   UFGEN
15171  0 43 16122           BRM   OFGEN
15172  0 43 16152           BRM   OLGEN
15173  0 53 17303           SKN   OF
15174  0 01 15204           BRU   PH14A
15175  0 53 17261           SKN   A000
15176  0 01 15200           BRU   #+2
15177  0 01 15204           BRU   PH14A
15200  0 43 15361           BRM   PXAD
15201  0 43 15430           BRM   PXNAD
15202  0 43 15403           BRM   PXAND
15203  0 43 15455           BRM   PXNAND
15204  0 43 15660           PH14A BRM   SXADD
15205  0 43 16260           BRM   DISPLY
15206  0 53 17302           SKN   SL
15207  0 01 15213           BRU   PH14B
15210  0 43 15247           BRM   AXSU
15211  0 43 15243           BRM   AXSL
15212  0 43 16100           BRM   EX
15213  0 76 25473           PH14B LDA   #377
15214  0 53 17303           SKN   OF
15215  0 51 15141           BRR   NORMAL
15216  0 35 17327           STA   E
15217  0 76 25564           LDA   #1
15220  0 35 17206           STA   OFI
15221  0 51 15141           BRR   NORMAL
*****
15222  0 00 00000           SXCPU PZE
15223  0 76 17263           LDA   CPU
15224  0 35 17334           STA   SU
15225  0 14 25403           ETR   #77777000
15226  0 35 17335           STA   SL

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```
15227 0 66 00030 RSH 30
15230 0 35 17312 STA $000
15231 0 51 15222 BRR $XCPU
15232 0 00 00000 AXE PZE
15233 0 76 25562 LDA #0
15234 0 35 17322 STA AL
15235 0 35 17261 STA A000
15236 0 76 17327 LDA E
15237 0 75 25562 LOB #0
15240 0 67 00006 LSH 6
15241 0 35 17321 STA AU
15242 0 51 15232 BRR AXE
*****
15243 0 00 00000 AXSL PZE
15244 0 76 17335 LDA SL
15245 0 35 17322 STA AL
15246 0 51 15243 BRR AXSL
15247 0 00 00000 AXSU PZE
15250 0 76 17320 LDA PHASE
15251 0 72 25631 SKA #1000 SKIP IF NOT PH14
15252 0 01 15254 BRU **2
15253 0 01 15256 BRU **3
15254 0 53 17317 SKN UF
15255 0 01 15263 BRU AXSUA
15256 0 76 17334 LDA SU
15257 0 35 17321 STA AU
15260 0 76 17312 LDA S000
15261 0 35 17261 STA A000
15262 0 51 15247 BRR AXSU
15263 0 76 17321 AXSUA LDA AU
15264 0 14 25671 ETR #40000000
15265 0 16 17334 MRG SU
15266 0 35 17321 STA AU
15267 0 76 17261 LDA A000
15270 0 16 17312 MRG S000
15271 0 35 17261 STA A000
```

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```
15272 0 51 15247 BRR AXSU
*****
15273 0 00 00000 EXCPU PZE
15274 0 76 17263 LDA CPU
15275 0 67 00017 LSH 17
15276 0 66 00017 RSH 17
15277 0 14 25760 ETR #3777
15300 0 35 17327 STA E
15301 0 14 25635 ETR #400
15302 0 35 17314 STA TEMP
15303 0 76 17333 LDA GATES2
15304 0 14 25761 ETR #77777377
15305 0 16 17314 MRG TEMP
15306 0 35 17333 STA GATES2
15307 0 51 15273 BRR EXCPU
*****
15310 0 00 00000 EXB PZE
15311 0 76 17323 LDA BU
15312 0 66 00006 RSH 6
15313 0 14 25760 ETR #3777
15314 0 35 17327 STA E
15315 0 43 15331 BRM BX
15316 0 51 15310 BRR EXB
*****
15317 0 00 00000 EXS PZE
15320 0 76 17334 LDA SU
15321 0 66 00006 RSH 6
15322 0 14 25760 ETR #3777
15323 0 35 17327 STA E
15324 0 51 15317 BRR EXS
15325 0 00 00000 FX39 PZE
15326 0 76 25762 LDA #39D
15327 0 35 17266 STA F
15330 0 51 15325 BRR FX39
*****
15331 0 00 00000 BX PZE
```

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```
15332 0 76 25562 LDA #0
15333 0 35 17323 STA BU
15334 0 35 17324 STA BL
15335 0 35 17262 STA B000
15336 0 51 15331 BRR BX
*
15337 0 00 00000 *BXS PZE
15340 0 76 17335 LDA SL
15341 0 35 17324 STA BL
15342 0 76 17334 LDA SU
15343 0 35 17323 STA BU
15344 0 76 17312 LDA S000
15345 0 35 17262 STA B000
15346 0 51 15337 BRR BXS
*
15347 0 00 00000 *BXSET PZE
15350 0 76 17333 LDA GATES2
15351 0 16 25467 MRG #10
15352 0 35 17333 STA GATES2
15353 0 51 15347 BRR BXSET
*
15354 0 00 00000 *AXSET PZE
15355 0 76 17333 LDA GATES2
15356 0 16 25400 MRG #20
15357 0 35 17333 STA GATES2
15360 0 51 15354 BRR AXSET
*****
15361 0 00 00000 *PXAD PZE
15362 0 76 17321 LDA AU
15363 0 14 17330 ETR DU
15364 0 16 17325 MRG PU
15365 0 35 17325 STA PU
15366 0 76 17322 LDA AL
15367 0 14 17331 ETR DL
15370 0 16 17326 MRG PL
15371 0 14 25403 ETR #77777000
```

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```
15372 0 35 17326 STA PL
15373 0 76 17261 LDA A000
15374 0 14 17264 ETR D000
15375 0 16 17310 MRG P000
15376 0 35 17310 STA P000
15377 0 76 17332 LDA GATES1
15400 0 16 25435 MRG #400
15401 0 35 17332 STA GATES1
15402 0 51 15361 BRR PXAD
*****
15403 0 00 00000 *PXAND PZE
15404 0 76 17330 LDA DU
15405 0 17 25564 EOR #=1
15406 0 14 17321 ETR AU
15407 0 16 17325 MRG PU
15410 0 35 17325 STA PU
15411 0 76 17331 LDA DL
15412 0 17 25564 EOR #=1
15413 0 14 17322 ETR AL
15414 0 16 17326 MRG PL
15415 0 14 25403 ETR #77777000
15416 0 35 17326 STA PL
15417 0 76 17264 LDA D000
15420 0 17 25564 EOR #=1
15421 0 14 17261 ETR A000
15422 0 16 17310 MRG P000
15423 0 35 17310 STA P000
15424 0 76 17332 LDA GATES1
15425 0 16 25475 MRG #200
15426 0 35 17332 STA GATES1
15427 0 51 15403 BRR PXAND
*****
15430 0 00 00000 *PXAD PZE
15431 0 76 17321 LDA AU
15432 0 17 25564 EOR #=1
15433 0 14 17330 ETR DU
```

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15434	0 16 17325	MRG	PU
15435	0 35 17325	STA	PU
15436	0 76 17322	LDA	AL
15437	0 17 25564	EBR	#=1
15440	0 14 17331	ETR	DL
15441	0 16 17326	MRG	PL
15442	0 14 25403	ETR	#77777000
15443	0 35 17326	STA	PL
15444	0 76 17261	LDA	A00C
15445	0 17 25564	EBR	#=1
15446	0 14 17264	ETR	D00C
15447	0 16 17310	MRG	P000
15450	0 35 17310	STA	P000
15451	0 76 17332	LDA	GATES1
15452	0 16 25576	MRG	#10C
15453	0 35 17332	STA	GATES1
15454	0 51 15430	BRR	PXNAD

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15455	0 00 00000	PXNAND	PZE
15456	0 76 17330	LDA	DU
15457	0 16 17321	MRG	AU
15460	0 17 25564	EBR	#=1
15461	0 16 17325	MRG	PU
15462	0 35 17325	STA	PU
15463	0 76 17331	LDA	DL
15464	0 16 17322	MRG	AL
15465	0 17 25564	EBR	#=1
15466	0 16 17326	MRG	PL
15467	0 14 25403	ETR	#77777000
15470	0 35 17326	STA	PL
15471	0 76 17264	LDA	D00C
15472	0 16 17261	MRG	A00C
15473	0 17 25564	EBR	#=1
15474	0 16 17310	MRG	P000
15475	0 35 17310	STA	P000
15476	0 76 17332	LDA	GATES1

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15477	0 16 25470	MRG	#40
15500	0 35 17332	STA	GATES1
15501	0 51 15455	BRR	PXNAND

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15502	0 00 00000	GXAD	PZE
15503	0 76 17321	LDA	AU
15504	0 14 17330	ETR	DU
15505	0 16 17271	MRG	GU
15506	0 35 17271	STA	GU
15507	0 76 17322	LDA	AL
15510	0 14 17331	ETR	DL
15511	0 16 17272	MRG	GL
15512	0 14 25403	ETR	#77777000
15513	0 35 17272	STA	GL
15514	0 76 17264	LDA	D00C
15515	0 14 17261	ETR	A00C
15516	0 16 17270	MRG	G00C
15517	0 35 17270	STA	G00C
15520	0 76 17332	LDA	GATES1
15521	0 16 25600	MRG	#20
15522	0 35 17332	STA	GATES1
15523	0 51 15502	BRR	GXAD

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15524	0 00 00000	GXAND	PZE
15525	0 76 17330	LDA	DU
15526	0 17 25564	EBR	#=1
15527	0 14 17321	ETR	AU
15530	0 16 17271	MRG	GU
15531	0 35 17271	STA	GU
15532	0 76 17331	LDA	DL
15533	0 17 25564	EBR	#=1
15534	0 14 17322	ETR	AL
15535	0 16 17272	MRG	GL
15536	0 14 25603	ETR	#77777000
15537	0 35 17272	STA	GL
15540	0 76 17264	LDA	D00C

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15541	0 17 25564	EBR	#=1	
15542	0 14 17261	ETR	A000	
15543	0 16 17270	MRG	G000	
15544	0 35 17270	STA	G000	
15545	0 76 17332	LDA	GATES1	
15546	0 16 25667	MRG	#10	
15547	0 35 17332	STA	GATES1	
15550	0 51 15524	BRR	GXAND	
*****				
15551	0 00 00000	OXNAD PZE		
15552	0 76 17321	LDA	AU	
15553	0 17 25564	EBR	#=1	
15554	0 14 17330	ETR	DU	
15555	0 16 17271	MRG	GU	
15556	0 35 17271	STA	GU	
15557	0 76 17322	LDA	AL	
15560	0 17 25564	EBR	#=1	
15561	0 14 17331	ETR	DL	
15562	0 16 17272	MRG	GL	
15563	0 14 25603	ETR	#77777000	
15564	0 35 17272	STA	GL	
15565	0 76 17261	LDA	A000	
15566	0 17 25564	EBR	#=1	
15567	0 14 17264	ETR	D000	
15570	0 16 17270	MRG	G000	
15571	0 35 17270	STA	G000	
15572	0 76 17332	LDA	GATES1	
15573	0 16 25663	MRG	#4	
15574	0 35 17332	STA	GATES1	
15575	0 51 15551	BRR	GXNAD	
*****				
15576	0 00 00000	KGEN PZE		
15577	0 76 17320	LDA	PHASE	
15600	0 72 25631	SKA	#1000	
15601	0 01 15611	BRU	NBK38	
15602	0 76 17332	LDA	GATES1	

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15603	0 72 25670	SKA	#40	PXNAND
15604	0 01 15606	BRU	##2	YES
15605	0 01 15611	BRU	NBK38	NO
15606	0 76 17272	LDA	GL	
15607	0 16 25635	MRG	#400	
15610	0 35 17272	STA	GL	
15611	0 76 17320	NBK38 LDA	PHASE	
15612	0 72 25715	SKA	#10000000	PHASE 2
15613	0 01 15615	BRU	##2	YES
15614	0 01 15625	BRU	NBK18	NO
15615	0 76 17333	LDA	GATES2	
15616	0 75 25606	LDB	#340	
15617	0 70 25664	SKM	#240	05
15620	0 01 15622	BRU	##2	NO
15621	0 01 15625	BRU	NBK18	YES
15622	0 76 17271	LDA	GU	
15623	0 16 25600	MRG	#20	
15624	0 35 17271	STA	GU	
*****				
15625	0 76 17271	NBK18 LDA	GU	
15626	0 75 17272	LDB	GL	
15627	0 71 25763	LDX	#7777730	
15630	0 72 25671	KL00P SKA	#40000000	
15631	0 61 17274	MIN	K000	
15632	0 67 00001	LSH	1	
15633	0 35 17315	STA	TEMPU	
15634	0 36 17316	STB	TEMPL	
15635	0 16 17275	MRG	KU	
15636	0 35 17275	STA	KU	
15637	0 76 25562	LDA	#0	
15640	0 66 20430	RCY	30	
15641	0 16 17276	MRG	KL	
15642	0 35 17276	STA	KL	
15643	0 76 17316	LDA	TEMPL	
15644	0 14 17326	ETR	PL	
15645	0 75 25662	LDB	#0	

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15646	0 66 20030	RCY	30
15647	0 76 17315	LDA	TEMPU
15650	0 14 17325	ETR	PU
15651	0 41 15630	BRX	KL00P
15652	0 76 25864	LDA	#*1
15653	0 72 17274	SKA	K000
15654	0 01 15656	BRU	**2
15655	0 76 25862	LDA	#0
15656	0 35 17274	STA	K000
15657	0 51 15676	BRR	KGEN

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15660	0 00 00000	SXADD	PZE
15661	0 43 15676	BRM	KGEN
15662	0 76 17325	LDA	PU
15663	0 17 17275	EBR	KU
15664	0 35 17334	STA	SU
15665	0 76 17326	LDA	PL
15666	0 17 17276	EBR	KL
15667	0 35 17335	STA	SL
15670	0 76 17310	LDA	P000
15671	0 17 17274	EBR	K000
15672	0 35 17312	STA	S000
15673	0 76 17320	LDA	PHASE
15674	0 72 25431	SKA	#1000
15675	0 01 15677	BRU	**2
15676	0 51 15660	ERR	SXADD
15677	0 76 25862	LDA	#0
15700	0 35 17312	STA	S000
15701	0 76 17334	LDA	SU
15702	0 14 25676	ETR	#37777777
15703	0 35 17334	STA	SU
15704	0 51 15660	BRR	SXADD

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15705	0 00 00000	DXSL	PZE
15706	0 76 17335	LDA	SL
15707	0 35 17331	STA	DL

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15710	0 51 15705	BRR	DXSL
15711	0 00 00000	DXSU	PZE
15712	0 76 17334	LDA	SU
15713	0 35 17330	STA	DU
15714	0 76 17312	LDA	S000
15715	0 35 17264	STA	D000
15716	0 51 15711	BRR	DXSU

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15717	0 00 00000	BRXHR	PZE
15720	0 76 17273	LDA	HR
15721	0 67 00005	LSH	5
15722	0 14 25406	ETR	#340
15723	0 35 17314	STA	TEMP
15724	0 76 17333	LDA	GATES2
15725	0 14 25743	ETR	#77777437
15726	0 16 17314	MRQ	TEMP
15727	0 35 17333	STA	GATES2
15730	0 43 15737	BRM	BXS
15731	0 43 15232	BRM	AXE
15732	0 51 15717	BRR	BRXHR
15733	0 00 00000	BXBR1	PZE
15734	0 43 15763	BRM	AXSR1
15735	0 75 17335	LDB	SL
15736	0 66 20012	RCY	100
15737	0 66 00436	RSH	300
15740	0 75 17262	LDB	B000
15741	0 35 17262	STA	B000
15742	0 76 17323	LDA	BU
15743	0 66 20001	RCY	1
15744	0 35 17323	STA	BU
15745	0 67 20001	LCY	1
15746	0 75 17324	LDB	BL
15747	0 66 20031	RCY	31
15750	0 14 25603	ETR	#77777000
15751	0 35 17324	STA	BL
15752	0 51 15733	BRR	BXBR1

```

*****
15753 0 00 00000  SxB  PZE
15754 0 76 17262  LDA  B000
15755 0 35 17312  STA  S000
15756 0 76 17323  LDA  BU
15757 0 35 17334  STA  SU
15760 0 76 17324  LDA  BL
15761 0 35 17335  STA  SL
15762 0 51 15753  BRR  SxB
*****
15763 0 00 00000  AXSR1 PZE
15764 0 76 17312  LDA  S000
15765 0 75 17334  LDB  SU
15766 0 35 17261  STA  A000
15767 0 66 20001  RCY  1
15770 0 36 17321  STB  AU
15771 0 67 20001  LCY  1
15772 0 76 17335  LDA  SL
15773 0 66 20001  RCY  1
15774 0 14 25A03  ETR  #77777000
15775 0 35 17322  STA  AL
15776 0 51 15763  BRR  AXSR1
*****
15777 0 00 00000  0SSGEN PZE
16000 0 76 17321  LDA  AU
16001 0 17 17263  EBR  CPU
16002 0 17 25E64  EBR  ==1
16003 0 66 00030  RSH  30          EXTEND SIGN BIT
16004 0 35 17301  STA  0SS
16005 0 51 15777  BRR  0SSGEN
*****
16006 0 00 00000  BXBL1 PZE
16007 0 76 17324  LDA  BL
16010 0 75 17323  LDB  BU
16011 0 67 20001  LCY  1
16012 0 14 25A03  ETR  #77777000

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16013 0 35 17324  STA  BL
16014 0 76 17323  LDA  BU
16015 0 36 17323  STB  BU
16016 0 66 00030  RSH  30          EXTEND SIGN BIT
16017 0 35 17262  STA  B000
16020 0 76 17274  LDA  K000
16021 0 14 25A31  ETR  #1000
16022 0 16 17324  MRG  BL
16023 0 35 17324  STA  BL
16024 0 51 16004  BRR  BXBL1
*
16025 0 00 00000  DXDR1 PZE
16026 0 76 17264  LDA  D000
16027 0 75 17330  LDB  DU
16030 0 66 20001  RCY  1
16031 0 36 17330  STB  DU
16032 0 67 20001  LCY  1
16033 0 76 17331  LDA  DL
16034 0 66 20001  RCY  1
16035 0 14 25A03  ETR  #77777000
16036 0 35 17331  STA  DL
16037 0 51 16025  BRR  DXDR1
*****
16040 0 00 00000  AXSL1 PZE
16041 0 76 17334  LDA  SU
16042 0 66 00030  RSH  30
16043 0 35 17261  STA  A000
16044 0 76 17335  LDA  SL
16045 0 67 20001  LCY  1
16046 0 36 17321  STB  AU
16047 0 14 25A03  ETR  #77777000
16050 0 35 17322  STA  AL
16051 0 76 17262  LDA  B000
16052 0 14 25A31  ETR  #1000
16053 0 16 17322  MRG  AL
16054 0 35 17322  STA  AL

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```

16055 0 51 16040 BRR AXSL1
.....
16056 0 00 00000 ECU PZE
16057 0 76 17327 LDA E
16060 0 55 25645 ADD #1
16061 0 14 25760 ETR #3777
16062 0 35 17327 STA E
16063 0 51 16056 BRR ECU
*
16064 0 00 00000 FCD PZE
16065 0 76 17327 LDA E
16066 0 54 25645 SUB #1
16067 0 14 25760 ETR #3777
16070 0 35 17327 STA E
16071 0 51 16064 BRR FCD
*
16072 0 00 00000 FCD PZE
16073 0 76 17266 LDA F
16074 0 54 25645 SUB #1
16075 0 14 25756 ETR #77
16076 0 35 17266 STA F
16077 0 51 16072 BRR FCD
.....
16100 0 00 00000 EX PZE
16101 0 76 25662 LDA #0
16102 0 35 17327 STA E
16103 0 51 16100 BRR EX
*
16104 0 00 00000 DXC PZE
16105 0 76 17261 LDA A000
16106 0 35 17264 STA D000
16107 0 76 17321 LDA AU
16110 0 35 17330 STA DU
16111 0 76 17322 LDA AL
16112 0 35 17331 STA DL
16113 0 51 16104 BRR DXC

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```

16114 0 00 00000 DXCU PZE
16115 0 76 17321 LDA AU
16116 0 35 17330 STA DU
16117 0 76 17261 LDA A000
16120 0 35 17264 STA D000
16121 0 51 16114 BRR DXCU
.....
16122 0 00 00000 UFGEN PZE
16123 0 76 17327 LDA E
16124 0 67 00015 LSH 13D E07
16125 0 66 00030 RSH 30
16126 0 17 25564 EBR #1
16127 0 14 17327 ETR E
16130 0 75 25562 LDB #0
16131 0 72 25624 SKA #1400
16132 0 75 25564 LDB #1
16133 0 36 17303 STB #F
16134 0 51 16122 BRR UFGEN
*
16135 0 00 00000 UFGEN PZE
16136 0 76 17327 LDA E
16137 0 67 00015 LSH 13D EXTEND E07
16140 0 66 00030 RSH 30
16141 0 35 17314 STA TEMP
16142 0 76 17327 LDA E
16143 0 17 25564 EBR #1
16144 0 14 17314 ETR TEMP
16145 0 75 25562 LDB #0
16146 0 72 25624 SKA #1400
16147 0 75 25564 LDB #1
16150 0 36 17317 STB #F
16151 0 51 16135 BRR UFGEN
.....
16152 0 00 00000 UFGEN PZE
16153 0 43 16122 BRM UFGEN

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16154 0 43 16135             BRM  JFGEN
16155 0 76 17321             LDA  AU
16156 0 67 00001             LSH  1
16157 0 17 17321             EDR  AU
16160 0 66 00030             RSH  30
16161 0 17 25564             EDR  #=1
16162 0 16 17303             MRG  0F
16163 0 16 17317             MRG  JF
16164 0 35 17302             STA  0L
16165 0 51 16152             BRR  0LGEN
*****
16166 0 00 00000             CLRREG PZE
16167 0 35 17314             STA  TEMP
16170 0 76 25562             LDA  #0
16171 0 35 17321             STA  AU
16172 0 35 17322             STA  AL
16173 0 35 17323             STA  BU
16174 0 35 17324             STA  BL
16175 0 35 17330             STA  DU
16176 0 35 17331             STA  DL
16177 0 76 17314             LDA  TEMP
16200 0 51 16166             BRR  CLRREG
*****
16201 0 00 00000             CLRREG PZE
16202 0 76 25562             LDA  #0
16203 0 35 17334             STA  SU
16204 0 35 17335             STA  SL
16205 0 35 17312             STA  S000
16206 0 35 17325             STA  PU
16207 0 35 17326             STA  PL
16210 0 35 17310             STA  P000
16211 0 35 17271             STA  GU
16212 0 35 17272             STA  GL
16213 0 35 17270             STA  G000
16214 0 35 17275             STA  XU
16215 0 35 17276             STA  XL

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16216 0 35 17274             STA  K000
16217 0 35 17332             STA  GATES1
16220 0 76 17333             LDA  GATES2
16221 0 14 25406             ETR  #3#0
16222 0 16 25430             MRG  #3
16223 0 35 17333             STA  GATES2
16224 0 76 17266             LDA  F
16225 0 17 25445             EDR  #1
16226 0 72 25564             SKA  #=1
16227 0 01 16234             BRU  NFE1
16230 0 76 17332             LDA  GATES1
16231 0 16 25402             MRG  #2
16232 0 35 17332             STA  GATES1
16233 0 51 16201             BRR  CLRREG
16234 0 17 25430             NFE1 EDR  #3
16235 0 72 25564             SKA  #=1
16236 0 51 16201             BRR  CLRREG
16237 0 76 17332             LDA  GATES1
16240 0 16 25445             MRG  #1
16241 0 35 17332             STA  GATES1
16242 0 51 16201             BRR  CLRREG
*****
* SAVE AND GET SUBROUTINES
16243 0 00 00000             SAVE1 PZE
16244 0 35 16255             STA  AAA1
16245 0 36 16256             STB  BBB1
16246 0 37 16257             STX  XXX1
16247 0 51 16243             BRR  SAVE1
*
16250 0 00 00000             GET1 PZE
16251 0 76 16255             LDA  AAA1
16252 0 75 16256             LDB  BBB1
16253 0 71 16257             LDX  XXX1
16254 0 51 16250             BRR  GET1
16255 0 00 00000             AAA1 PZE
16256 0 00 00000             BBB1 PZE

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16257 0 00 00000 YXX1 PZE
*****
16260 0 00 00000 DISPLY PZE
16261 0 53 17307 SKN OUTFLG SKIP IF OUTPUT
16262 0 51 16260 BRU DISPLY
16263 0 76 17140 LDA FORMAT
16264 0 72 25430 SKA #3
16265 0 01 16267 BRU **2
16266 0 51 16260 BRU DISPLY
16267 0 75 25562 LDB #0
16270 0 72 25445 SKA #1 SKIP IF NO ODD DISPLAY
16271 0 75 25564 LDB #=1
16272 0 36 17304 STB ODD
16273 0 75 25562 LDB #0
16274 0 72 25402 SKA #2 SKIP IF NO EVEN DISPLAY
16275 0 75 25564 LDB #=1
16276 0 36 17265 STB EVEN
*****
16277 0 53 17320 SKN PHASE
16300 0 01 16205 BRU NOTPHO
16301 0 43 16201 BRM CLRSIG
16302 0 76 25562 LDA #0
16303 0 35 17305 STA BDDEVN START UP NEXT ON ODD
16304 0 01 16316 BRU PUTSUT DISPLAY STEP
16305 0 76 17305 NOTPHO LDA BDDEVN
16306 0 17 25564 EBR #=1
16307 0 35 17305 STA BDDEVN SWITCH ODD/EVEN
16310 0 76 17304 LDA #0D
16311 0 53 17305 SKN BDDEVN
16312 0 76 17265 LDA EVEN
16313 0 72 25564 SKA #=1 SKIP IF DISPLAY
16314 0 01 16316 BRU **2
16315 0 51 16260 BRU DISPLY
16316 0 76 17327 PUTSUT LDA E
16317 0 35 17314 STA TEMP
16320 0 14 25632 ETR #777

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16321 0 35 17327 STA E
16322 0 43 00454 BRM REPORT
16323 4 20 25426 NOP CARRET,4
16324 4 07 17320 SEVEN PHASE,4
16325 0 07 17327 SEVEN E
16326 0 76 17314 LDA TEMP
16327 0 35 17327 STA E
16330 0 51 16260 BRU DISPLY
*****
*
* ALL INTERRUPTS AND TRAPS SPURIOUS
*
16331 0 02 20004 SPUR DIR DISABLE INTERRUPTS
16332 0 35 16400 STA AAA2 SAVE A
16333 0 36 16401 STB BBB2 SAVE B
16334 0 76 00450 LDA DIVERT
16335 0 14 25764 ETR #3777
16336 0 73 25765 SKG #133
16337 0 73 25766 SKG #130=1
16340 0 01 16342 BRU **2
16341 0 01 16351 BRU SKINT
16342 0 73 25767 SKG #173
16343 0 73 25625 SKG #160=1
16344 0 01 16346 BRU **2
16345 0 01 16351 BRU SKINT
16346 0 73 25770 SKG #177
16347 0 43 16402 BRM SPURI
16350 0 20 25564 NOP **1
16351 0 75 25564 SKINT LDB #=1
16352 0 36 17340 STB #FIS
16353 2 40*30720 SKS= 30720,2 OVEFLOW TEST AND RESET
16354 0 01 16356 BRU **2
16355 0 43 00460 BRM ERROR
16356 0 20 25504 NOP NOTSET
16357 2 40*30720 SKS= 30720,2 DID IT RESET
16360 0 43 00460 BRM ERROR

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16361	0 20 25516	NOP	NOREST
16362	0 76 00450	LDA	DIVERT
16363	0 73 25770	SKG	#177
16364	0 01 16373	BRU	INTERN
16365	0 76 16400	IEXIT LDA	AAA2
16366	0 75 16401	LDB	BBB2
16367	0 02 20002	EIR	
16370	0 53 17267	SKN	FL0940
16371	0 01*00450	BRU*	DIVERT
16372	0 11 00450	BRJ	DIVERT
16373	0 60 00450	INTERN SKR	DIVERT
16374	0 20 00000	NOP	
16375	0 76*00450	LDA*	DIVERT
16376	0 35 00450	STA	DIVERT
16377	0 01 16365	BRU	IEXIT
16400	0 00 00000	AAA2 PZE	
16401	0 00 00000	BBB2 PZE	

\*\*\*\*\*  
 \*  
 \* PROCESS SPURIOUS POP, INTERRUPT, OR TRAP  
 \*

16402	0 00 00000	SPURJ PZE	0	
16403	0 73 25756	SKG	#77	WAS SPIT LEGAL
16404	0 01 16415	BRU	IEXT	NO
16405	0 73 25674	SKG	#177	WAS IT A POP
16406	0 01 16423	BRU	POP	YES
16407	0 73 25766	SKG	#237	WAS IT LEGAL
16410	0 01 16415	BRU	IEXT	NO
16411	0 73 25771	SKG	#273	WAS IT I30 = T44
16412	0 01 16431	BRU	I30T44	YES
16413	0 73 25673	SKG	#377	WAS IT I56 = I74
16414	0 01 16430	BRU	I56I74	YES

\*  
 \* PROCESS ILLEGAL OR EXTERNAL INTERRUPT  
 \*

16415	0 76 25564	IEXT LDA	##1	
-------	------------	----------	-----	--

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16416	0 35 16470	STA	ITABLE+1	RECEIVED
16417	0 76 00450	LDA	DIVERT	MARK
16420	0 43 00454	BRM	REPORT	
16421	0 20 16473	NOP	ILLEX	
16422	0 01 16441	BRU	COMMON	

\*\*\*\*\*

\*  
 \* PROCESS SPURIOUS POPS  
 \*

16423	0 35 16470	POP STA	ITABLE+1	RECEIVED
16424	0 76 00000	LDA	0	MARK
16425	0 43 00454	BRM	REPORT	
16426	0 20 16406	NOP	POPED	
16427	0 01 16441	BRU	COMMON	

\*  
 \* PROCESS I56 THROUGH I74  
 \*

16430	0 55 25400	I56I74 ADD	#20	
-------	------------	------------	-----	--

\*  
 \* PROCESS I30 THROUGH T44  
 \*

16431	0 54 25772	I30T44 SUB	#161	
16432	0 66 00001	RSH	1	
16433	0 35 16470	STA	ITABLE+1	RECEIVED
16434	0 77*00450	EAX*	DIVERT	
16435	2 77 37777	EAX	#1,2	
16436	2 76 00000	LDA	0,2	
16437	0 43 00454	BRM	REPORT	
16440	0 20 16512	NOP	SPRINT	

\*\*\*\*\*

\*  
 \* COMMON INTERRUPT ROUTINE  
 \*

16441	0 35 16471	COMMON STA	ITABLE+2	MARK
16442	0 76*16471	LDA*	ITABLE+2	
16443	0 35 16472	STA	ITABLE+3	INSTRUCTION

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16444	0 61 16402	MIN	SPUR1	
16445	0 77*16402	EAX*	SPUR1	
16446	2 76*00000	LDA*	0,2	GET EXPECTED VALUE
16447	0 35 16467	STA	ITABLE	EXPECTED
16450	0 43 00454	BRM	REPORT	REPORT ERROR
16451	4 20 16521	NBP	MSG,4	MESSAGE
16452	0 04 16467	FOUR	ITABLE	DATA
16453	0 43 16457	BRM	CLEAR	CLEAR PRESENT INTERRUPT
16454	0 43 00460	BRM	ERROR	GO TO CONTROL
16455	0 20 25426	NBP	CARRET	(NO MESSAGE)
16456	0 01*00430	BRU*	OBJECT	

\*\*\*\*\*  
 \*  
 \* CLEAR PRESENT INTERRUPT  
 \*

16457	0 00 00000	CLEAR	PZE	0	
16460	0 76 00401	LDA	STATUS		
16461	0 72 25563	SKA	**4		SKIP IF NOT 940
16462	0 11 16464	BRI	**2		940
16463	0 01*16464	BRU*	**1		925/930
16464	0 20 16464	NBP	*		
16465	0 02 20007	EIR			ENABLE INTERRUPTS
16466	0 51 16457	BRR	CLEAR		RETURN

\*  
 \* MESSAGES  
 \*

16467	0 00 00000	ITABLE	PZE	0	INTERRUPTS EXPECTED
16470	0 00 00000	PZE	0		INTERRUPT RECEIVED
16471	0 00 00000	PZE	0		LOCATION AT TIME OF INTERRUPT/TRAP
16472	0 00 00000	PZE	0		INSTRUCTION BEING EXECUTED
16473	52526445	ILLEX	BCD	1	UNDEFINED ILLEGAL OR EXTERNAL INTERRUPT!!
16474	24252431				
16475	45252412				
16476	31434325				
16477	27214312				
16500	46511225				

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16501	67632551				
16502	45214312				
16503	31456325				
16504	51516447				
16505	63371212				
16506	52624764	POPED	BCD	1	SPURIOUS POP!!
16507	51314664				
16510	62124746				
16511	47371212				
16512	52624764	SPRINT	BCD	1	SPURIOUS INTERRUPT OR TRAP!!
16513	51314664				
16514	62123145				
16515	63255151				
16516	64476312				
16517	46511263				
16520	51214737				
16521	52256747	MSG	BCD	1	EXPECTED RECEIVED LOCATION CONTENTS !!
16522	25236325				
16523	24125125				
16524	23253165				
16525	25241243				
16526	46232163				
16527	31464512				
16530	23464563				
16531	25456362				
16532	52371212				

\*\*\*\*\*

16533	0 00 00000	DUMP	PZE		
16534	0 73 25562		SKG	#0	
16535	0 51 16533		BRR	DUMP	
16536	0 43 16243		BRM	SAVE1	
16537	0 43 16716	PININ	BRM	PINIT	
16540	0 76 17141		LDA	PINC	
16541	0 14 25603		ETR	#77777000	
16542	0 35 17322		STA	AL	
16543	0 76 17142		LDA	PINI	

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16544	0 35 17321	STA	AU
16545	0 76 17143	LDA	PIN2
16546	0 14 25603	ETR	#77777000
16547	0 35 17324	STA	BL
16550	0 76 17144	LDA	PIN3
16551	0 35 17323	STA	BU
16552	0 76 17145	LDA	PIN4
16553	0 14 25603	ETR	#77777000
16554	0 35 17331	STA	DL
16555	0 76 17146	LDA	PIN5
16556	0 35 17330	STA	DU
16557	0 76 17147	LDA	PIN6
16560	0 14 25603	ETR	#77777000
16561	0 35 17326	STA	PL
16562	0 76 17150	LDA	PIN7
16563	0 35 17325	STA	PU
16564	0 76 17151	LDA	PIN8
16565	0 14 25603	ETR	#77777000
16566	0 35 17335	STA	SL
16567	0 76 17152	LDA	PIN9
16570	0 35 17334	STA	SU

.....

16571	0 76 17141	LDA	PIN0
16572	0 14 25432	ETR	#777
16573	0 35 17327	STA	E
16574	0 76 17147	LDA	PIN6
16575	0 14 25674	ETR	#177
16576	0 75 25762	LDB	#0
16577	0 67 00021	LSH	17D
16600	0 35 17320	STA	PHASE
16601	0 76 17151	LDA	PIN8
16602	0 14 25673	ETR	#377
16603	0 67 00011	LSH	9D
16604	0 16 17320	MRG	PHASE
16605	0 35 17320	STA	PHASE
16606	0 76 17143	LDA	PIN2

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16607	0 14 25632	ETR	#777
16610	0 35 17332	STA	GATES1
16611	0 76 17145	LDA	PIN4
16612	0 14 25773	ETR	#343
16613	0 35 17333	STA	GATES2

.....

16614	0 43 00454	BRM	REPORT
16615	4 20 25426	NOP	CARRET,4
16616	4 07 17320	SEVEN	PHASE,4
16617	0 07 17327	SEVEN	E
16620	0 76 17320	LDA	PHASE
16621	0 72 25671	SKA	#00000000
16622	0 01 16632	BRU	DONDMP
16623	0 76 17140	LDA	FORMAT
16624	0 73 25602	SKG	#2
16625	0 01 16430	BRU	##3
16626	2 02*30734	EQM	30734,2
16627	0 01 16437	BRU	PININ
16630	2 02*30735	EQM	30735,2
16631	0 01 16437	BRU	PININ
16632	0 76 17140	DONDMP LDA	FORMAT
16633	0 72 25645	SKA	#1
16634	2 02*30734	EQM	30734,2
16635	0 73 25602	SKG	#2
16636	0 73 25645	SKG	#1
16637	0 01 16441	BRU	##2
16640	2 02*30735	EQM	30735,2
16641	0 43 16450	BRM	GET1
16642	0 51 16433	BRR	DUMP

.....

16643	0 00 00000	RANDOM PZE	
16644	0 35 17314	STA	TEMP
16645	0 75 25662	LDB	#0
16646	0 66 20030	RCY	30
16647	0 67 00013	LSH	13
16650	0 55 17314	ADD	TEMP

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16651 0 55 25774             ADD    #535770#5
16652 0 51 16643             BRR    RANDOM
*****
16653 0 00 00000             FRRSUT PZE
16654 0 61 16653             MIN    ERRBUT
16655 0 71#16653            LDX#   ERRBUT
16656 0 37 16660            STX    ERMSG
16657 0 43 00454            BRM    REPRRT
16660 0 00 00000             FRRMSG PZE
16661 0 43 00454            BRM    REPRRT
16662 4 20 25374            NOP    RESIS,4
16663 4 03 17336            THREE C1IS,4
16664 4 20 25410            NOP    RESSB,4
16665 0 03 17342            THREE C1SB
16666 0 43 00460            BRM    ERRBR
16667 0 20 25426            NOP    CARRET
16670 0 51 16653             BRR    ERRBUT
*****
16671 0 00 00000             FREADY PZE
16672 0 71 25722             LDX    ##40
16673 2 02#30736            EDM#  30736,2    FLOATING POINT CLEAR
16674 0 41 16673             BRX    ##1        CLEAR FPAU #0 TIMES
16675 0 43 16716             BRM    PINIT
16676 0 74 17147             LDA    PIN6
16677 0 75 25474             LDB    #177
16700 0 70 25576             SKM    #100
16701 0 01 16707             BRU    FSTUCK
16702 0 76 17151             LDA    PIN8
16703 0 75 25673             LDB    #377
16704 0 70 25562             SKM    #0
16705 0 01 16707             BRU    FSTUCK
16706 0 51 16671             BRR    FREADY
16707 0 43 00454             FSTUCK BRM    REPRRT
16710 4 20 25471            NOP    HUNGUP,4
16711 4 05 17141            FIVE  PINO,4
16712 0 05 17146            FIVE  PIN5

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16713 0 43 00460             BRM    ERRBR
16714 0 20 25426             NOP    CARRET
16715 0 01 16672             BRU    FREADY#1
*****
16716 0 00 00000             PINIT  PZE
16717 0 37 17314             STX    TEMP
16720 0 71 25775             LDX    ##20
16721 2 02#30732            EDM#  30732,2    STONE TEST WORD
16722 2 33 17161            PIN   PINO#20,2
16723 0 41 16721             BRX    ##2
16724 0 71 17314             LDX    TEMP
16725 0 51 16716             BRR    PINIT
*****
16726 0 00 00000             TIMER PZE
16727 0 37 17314             STX    TEMP
16730 0 71 25722             LDX    ##40
16731 0 41 16731             BRX    #
16732 0 71 17314             LDX    TEMP
16733 0 51 16726             BRR    TIMER
* PARAMETER TABLES
16734 0 20 17356             UPT   NOP    JTM
16735 0 20 17371             NOP   UAM
16736 0 20 17346             NOP   UVM
16737 0 03 16741             THREE FAW
16740 10000000             DATA 10000000
* UNIT VARIABLES
16741 77600000             FAW   DATA 77600000
16742 00000200             FIW   DATA 200
16743 00000000             IFLAG DATA 0
* FUNCTION TABLES
16744 0 20 20110             FPTO  NOP    FIMC
16745 0 20 20116             NOP   FAMC
16746 0 20 20171             NOP   FVMO
16747 0 01 16751             ONE   FIDC
16750 0 00 11411             PZE   FUNC1
16751 40000000             FIDC  DATA 40000000

```

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```
*
16752 0 20 20174 FPT1 NBP FIM1
16753 0 20 20203 NBP FAM1
16754 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2
16755 0 05 17134 FIVE AA1
16756 0 00 11755 PZE FUNC2
16757 20000000 FID1 DATA 20000000
*
16760 0 20 20436 FPT2 NBP FIM2
16761 0 20 20445 NBP FAM2
16762 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2
16763 0 05 17134 FIVE AA1
16764 0 00 12121 PZE FUNC3
16765 10000000 FID2 DATA 10000000
*
16766 0 20 20700 FPT3 NBP FIM3
16767 0 20 20707 NBP FAM3
16770 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2
16771 0 05 17134 FIVE AA1
16772 0 00 12265 PZE FUNC4
16773 04000000 FID3 DATA 04000000
*
16774 0 20 21143 FPT4 NBP FIM4
16775 0 20 21152 NBP FAM4
16776 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2
16777 0 05 17134 FIVE AA1
17000 0 00 12417 PZE FUNC5
17001 02000000 FID4 DATA 02000000
*
17002 0 20 21405 FPT5 NBP FIM5
17003 0 20 21414 NBP FAM5
17004 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2
17005 0 05 17134 FIVE AA1
17006 0 00 12551 PZE FUNC6
17007 01000000 FID5 DATA 01000000
*
```

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```
*
17010 0 20 21647 FPT6 NBP FIM6
17011 0 20 21656 NBP FAM6
17012 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2
17013 0 05 17134 FIVE AA1
17014 0 00 12703 PZE FUNC7
17015 00400000 FID6 DATA 00400000
*
17016 0 20 22112 FPT7 NBP FIM7
17017 0 20 21656 NBP FAM6
17020 0 20 25532 NBP 0PAABB 0P,AA1,AA2,BB1,BB2
17021 0 05 14446 FIVE 0PC0DE
17022 0 00 13010 PZE FUNC12
17023 00200000 FID7 DATA 00200000
*
17024 0 20 22255 FPT12 NBP FIM12
17025 0 20 22264 NBP FAM12
17026 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2,FORMAT
17027 0 05 17134 FIVE AA1
17030 0 00 13074 PZE FUNC13
17031 00004000 FID12 DATA 4000
*
17032 0 20 22435 FPT13 NBP FIM13
17033 0 20 22444 NBP FAM13
17034 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2,FORMAT
17035 0 05 17134 FIVE AA1
17036 0 00 13160 PZE FUNC14
17037 00002000 FID13 DATA 2000
*
17040 0 20 22415 FPT14 NBP FIM14
17041 0 20 22424 NBP FAM14
17042 0 20 25546 NBP AABBF AA1,AA2,BB1,BB2,FORMAT
17043 0 05 17134 FIVE AA1
17044 0 00 13245 PZE FUNC15
17045 00001000 FID14 DATA 1000
*
17046 0 20 22775 FPT15 NBP FIM15
```

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17047	0 20 23004	NBP	FAM15	
17050	0 20 25546	NBP	AABBF	AA1,AA2,BB1,BB2,FORMAT
17051	0 05 17134	FIVE	AA1	
17052	0 00 13331	PZE	FUNC16	
17053	00000400	FID15 DATA	400	
		*		
17054	0 20 23155	FPT16 NBP	FIM16	
17055	0 20 23164	NBP	FAM16	
17056	0 20 25546	NBP	AABBF	AA1,AA2,BB1,BB2,FORMAT
17057	0 05 17134	FIVE	AA1	
17060	0 00 13415	PZE	FUNC17	
17061	00000200	FID16 DATA	200	
		*		
17062	0 20 23335	FPT17 NBP	FIM17	
17063	0 20 23344	NBP	FAM17	
17064	0 20 25546	NBP	AABBF	AA1,AA2,BB1,BB2,FORMAT
17065	0 05 17134	FIVE	AA1	
17066	0 00 13501	PZE	FUNC18	
17067	00000100	FID17 DATA	100	
17070	0 20 23315	FPT18 NBP	FIM18	
17071	0 20 23324	NBP	FAM18	
17072	0 20 25546	NBP	AABBF	
17073	0 05 17134	FIVE	AA1	
17074	0 00 13574	PZE	FUNC19	
17075	00000040	FID18 DATA	40	
17076	0 20 23470	FPT19 NBP	FIM19	
17077	0 20 23477	NBP	FAM19	
17100	0 20 25546	NBP	AABBF	
17101	0 05 17134	FIVE	AA1	
17102	0 00 13467	PZE	FUNC20	
17103	00000020	FID19 DATA	20	
17104	0 20 24043	FPT20 NBP	FIM20	
17105	0 20 24052	NBP	FAM20	
17106	0 20 25546	NBP	AABBF	
17107	0 05 17134	FIVE	AA1	
17110	0 00 13762	PZE	FUNC21	

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17111	00000010	FID20 DATA	10	
17112	0 20 24216	FPT21 NBP	FIM21	
17113	0 20 24225	NBP	FAM21	
17114	0 20 25546	NBP	AABBF	
17115	0 05 17134	FIVE	AA1	
17116	0 00 14055	PZE	FUNC22	
17117	00000004	FID21 DATA	4	
17120	0 20 24371	FPT22 NBP	FIM22	
17121	0 20 24400	NBP	FAM22	
17122	0 20 25546	NBP	AABBF	
17123	0 05 17134	FIVE	AA1	
17124	0 00 14150	PZE	FUNC23	
17125	00000002	FID22 DATA	2	
17126	0 20 24544	FPT23 NBP	FIM23	
17127	0 20 24553	NBP	FAM23	
17130	0 20 25546	NBP	AABBF	
17131	0 05 17134	FIVE	AA1	
17132	0 00 14243	PZE	LAST	
17133	00000001	FID23 DATA	1	
		* FUNCTION VARIABLES		
17134	0 00 00000	AA1 PZE		
17135	0 00 00000	AA2 PZE		
17136	0 00 00000	BB1 PZE		
17137	0 00 00000	BB2 PZE		
17140	00000003	FORMAT DATA	3	
		* PIN TABLE		
17141	0 00 00000	PIN0 PZE		
17142	0 00 00000	PIN1 PZE		
17143	0 00 00000	PIN2 PZE		
17144	0 00 00000	PIN3 PZE		
17145	0 00 00000	PIN4 PZE		
17146	0 00 00000	PIN5 PZE		
17147	0 00 00000	PIN6 PZE		
17150	0 00 00000	PIN7 PZE		
17151	0 00 00000	PIN8 PZE		
17152	0 00 00000	PIN9 PZE		



```

17153 0 00 00000 PIN10 PZE
17154 0 00 00000 PIN11 PZE
17155 0 00 00000 PIN12 PZE
17156 0 00 00000 PIN13 PZE
17157 0 00 00000 PIN14 PZE
17160 0 00 00000 PIN15 PZE
* FIRST1 START OF FUNC 7 DATA TABLES
* FORMAT AS FOLLOWS:
* INSTRUCTION
* FIRST OPERAND MSP
* FIRST OPERAND LSP
* SECOND OPERAND MSP
* SECOND OPERAND LSP
* RESULT MSP
* RESULT LSP
* OVERFLOW (0 = OFF, =1 = ON)
17161 2 02*30722 EOM* 30722,2 FLOATING POINT ADD
17162 37777777 DATA 37777777
17163 77777000 DATA 77777000
17164 00000000 DATA 0
17165 00001000 DATA 1000
17166 20000000 DATA 20000000
17167 00000001 DATA 1
17170 00000000 DATA 0
*
17171 2 02*30723 EOM* 30723,2 FLOATING POINT SUBTRACT
17172 00000000 DATA 0
17173 00000777 DATA 777
17174 00000000 DATA 0
17175 00001001 DATA 1001
17176 40000000 DATA 40000000
17177 00000000 DATA 0
17200 00000000 DATA 0
*
17201 2 02*30726 EOM* 30726,2 FPAU DIVIDE
17202 40000000 DATA 40000000
    
```

```

17203 00000000 DATA 0
17204 20000000 DATA 20000000
17205 00000000 DATA 0
17206 40000000 DATA 40000000
17207 00000001 DATA 1
17210 00000000 DATA 0
*
17211 2 02*30725 EOM* 30725,2 FPAU MULTIPLY
17212 37777777 DATA 37777777
17213 77777000 DATA 77777000
17214 20000000 DATA 20000000
17215 00000001 DATA 1
17216 37777777 DATA 37777777
17217 77777000 DATA 77777000
17220 00000000 DATA 0
*
17221 2 02*30725 EOM* 30725,2 FPAU MULTIPLY
17222 20000000 DATA 20000000
17223 00000001 DATA 1
17224 37777777 DATA 37777777
17225 77777000 DATA 77777000
17226 37777777 DATA 37777777
17227 77777000 DATA 77777000
17230 00000000 DATA 0
*
17231 2 02*30726 EOM* 30726,2 FPAU DIVIDE
17232 52525252 DATA 52525252
17233 52525252 DATA 52525252
17234 00000000 DATA 0
17235 00000000 DATA 0
17236 40000000 DATA 40000000
17237 00000377 DATA 377
17240 77777777 DATA =1
*
17241 2 02*30726 EOM* 30726,2 FPAU DIVIDE
17242 25252525 DATA 25252525
    
```

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17243 25252525 DATA 25252525  
17244 00000000 DATA 0  
17245 00000000 DATA 0  
17246 37777777 DATA 37777777  
17247 77777377 DATA 77777377  
17250 77777777 DATA #1

17251 2 0P\*30722 EBM# 30722.2 FLDATING POINT ADD  
17252 00000000 DATA 00000000  
17253 00000000 DATA 00000000  
17254 00000000 DATA 00000000  
17255 00000000 DATA 00000000  
17256 00000000 DATA 00000000  
17257 00000000 DATA 00000000  
17260 00000000 DATA 00000000  
17261 0 00 0000 A000 PZE  
17262 0 00 0000 B000 PZE  
17263 0 00 0000 CPU PZE  
17264 0 00 0000 D000 PZE  
17265 0 00 0000 EVEN PZE  
17266 0 00 0000 F PZE  
17267 0 00 0000 FLG940 PZE C #1 940, 0 930,925  
17270 0 00 0000 G000 PZE  
17271 0 00 0000 GU PZE  
17272 0 00 0000 GL PZE  
17273 0 00 0000 HR PZE  
17274 0 00 0000 K000 PZE  
17275 0 00 0000 KU PZE  
17276 0 00 0000 KL PZE  
17277 0 00 0000 TW PZE  
17300 00017161 MODULE DATA FIRST1  
17301 0 00 0000 #SS PZE  
17302 0 00 0000 #L PZE  
17303 0 00 0000 #P PZE  
17304 0 00 0000 #DD PZE  
17305 0 00 0000 #DDEVN PZE

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17306 0 00 0000 #FI PZE  
17307 0 00 0000 #UTPLG PZE  
17310 0 00 0000 #000 PZE  
17311 0 00 0000 #10TMP PZE  
17312 0 00 0000 #000 PZE  
17313 0 00 0000 #SUB PZE  
17314 0 00 0000 #TEMP PZE  
17315 0 00 0000 #TEMPU PZE  
17316 0 00 0000 #TEMPL PZE  
17317 0 00 0000 #UF PZE  
\* DISPLAY VARIABLES  
17320 0 00 0000 #PHASE PZE  
17321 0 00 0000 #AU PZE  
17322 0 00 0000 #AL PZE  
17323 0 00 0000 #RU PZE  
17324 0 00 0000 #RL PZE  
17325 0 00 0000 #PU PZE  
17326 0 00 0000 #PL PZE  
17327 0 00 0000 #E PZE  
17330 0 00 0000 #DU PZE  
17331 0 00 0000 #DL PZE  
17332 0 00 0000 #GATES1 PZE  
17333 0 00 0000 #GATES2 PZE  
17334 0 00 0000 #SU PZE  
17335 0 00 0000 #SL PZE  
\* RESULT TABLE  
17336 0 00 0000 #C1IS PZE  
17337 0 00 0000 #C2IS PZE  
17340 0 00 0000 #FIS PZE  
17341 0 00 0000 #SIGNIS PZE  
\*  
17342 0 00 0000 #C1SB PZE  
17343 0 00 0000 #C2SB PZE  
17344 0 00 0000 #F6B PZE  
17345 0 00 0000 #SIGNSB PZE  
\* MESSAGES

FFAU	TAP-3.C		PAGE 177
17346	52121212	UVM	BCD ' PAW P1W 'FLAG ''
17347	26216612		
17350	12121212		
17351	12263166		
17352	12121212		
17353	12123126		
17354	43212752		
17355	37121212		
17356	52641200	UIM	BCD ' U 02 = FPAU DIAGNOSTICS AND EXERCISERS 3.0''
17357	02124012		
17360	26472164		
17361	12243121		
17362	27454662		
17363	63312362		
17364	12214524		
17365	12256725		
17366	51233162		
17367	25516212		
17370	03330037		
17371	52326445	UAM	BCD ' UNIT=2 FLOATING POINT ARITHMETIC UNIT'
17372	31634002		
17373	12264746		
17374	21633145		
17375	27124746		
17376	31456312		
17377	21513163		
17400	30442563		
17401	31231264		
17402	45316312		
17403	52121212	BCD	' THE DIAGNOSTIC IS SIMILAR TO OTHER'
17404	12126330		
17405	25122431		
17406	21274546		
17407	62633123		
17410	12316212		
17411	62314431		

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17412	43215112		
17413	63461246		
17414	63302551		
17415	52243121	BCD	' DIAGNOSTICS UNDER THE OLDS SYSTEM. IT'
17416	27454662		
17417	63312362		
17420	1264424		
17421	25511263		
17422	30251246		
17423	43246212		
17424	62706263		
17425	25443312		
17426	12316312		
17427	52663143	BCD	' WILL GIVE THE PROBABLE LOCATIONS'
17430	43122731		
17431	65251263		
17432	30251247		
17433	51462221		
17434	22432512		
17435	43462321		
17436	63314645		
17437	62121212	BCD	' OF MODULE FAILURES.'
17440	52462612		
17441	44462464		
17442	43251226		
17443	21314364		
17444	51256233		
17445	52121212	BCD	' THE EXERCISES GENERATE RANDOM TEST '
17446	12126330		
17447	25122567		
17450	25512331		
17451	62255162		
17452	12272545		
17453	25512163		
17454	25125121		
17455	45244644		

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17456	12632562		
17457	63121212		
17460	52232162	BCD	' CASES AND COMPARE THE RESULT OF THE '
17461	25621221		
17462	45241223		
17463	46444721		
17464	51251263		
17465	30251251		
17466	25626443		
17467	63124626		
17470	12633025		
17471	12121212		
17472	52264721	BCD	' FPAU OPERATIONS WITH SIMULATED RESULTS.'
17473	64124447		
17474	25512163		
17475	31464562		
17476	12663163		
17477	30126231		
17500	44644721		
17501	63252412		
17502	51256264		
17503	43630233		
17504	52464512	BCD	' ON ERROR THEY GIVE THE ACTUAL AND EXPECTED'
17505	25515146		
17506	51126330		
17507	25701227		
17510	31652512		
17511	63302512		
17512	21236364		
17513	21431221		
17514	45241225		
17515	67472223		
17516	63252412		
17517	52512562	BCD	' RESULT.'
17520	64436333		
17521	52121212	BCD	' THE SPECIAL CASE EXERCISER CHECKS PARTICULAR'

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17522	12126330		
17523	25126247		
17524	25233121		
17525	43122321		
17526	62251225		
17527	67255123		
17530	31622551		
17531	12233025		
17532	23426212		
17533	47215163		
17534	31236443		
17535	21511212		
17536	52232162	BCD	' CASES SUCH AS DIVIDE BY ZERO.'
17537	25621262		
17540	64233012		
17541	21621224		
17542	31653124		
17543	25122270		
17544	12712551		
17545	46331212		
17546	52121212	BCD	' THE SIMULATORS GIVE THE CORRECT'
17547	12126330		
17550	25126231		
17551	44644721		
17552	63465162		
17553	12273165		
17554	25126330		
17555	25122346		
17556	51512523		
17557	63121212		
17560	52512562	BCD	' RESULT OF ANY SPECIFIED TEST CASE.'
17561	64436312		
17562	46261221		
17563	45701262		
17564	47252331		
17565	26312524		

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17566	12632562		
17567	63122321		
17570	62253312		
17571	52633025	BCD	: THEY CAN ALSO GIVE THE CORRECT STATE :
17572	70122321		
17573	45122143		
17574	62461227		
17575	31652512		
17576	63302512		
17577	23465151		
17600	25236312		
17601	62632163		
17602	25121212		
17603	52462612	BCD	: OF THE FPAU REGISTERS AT ANY CLOCK:
17604	63302512		
17605	26472164		
17606	12512527		
17607	31626325		
17610	51621221		
17611	63122145		
17612	70122343		
17613	46234212		
17614	52633144	BCD	: TIMES, :
17615	25623312		
17616	52121212	BCD	: THE UTILITIES GIVE THE ACTUAL:
17617	12126330		
17620	25126463		
17621	31433163		
17622	31256212		
17623	27316525		
17624	12633025		
17625	12212363		
17626	64214312		
17627	52512562	BCD	: RESULT OF ANY SPECIFIED TEST CASE.:
17630	64436212		
17631	46261221		

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17632	45711262		
17633	47252331		
17634	26312524		
17635	12632562		
17636	63122321		
17637	62253312		
17640	52633025	BCD	: THEY CAN ALSO GIVE THE ACTUAL STATE OF:
17641	70122321		
17642	45122143		
17643	62461227		
17644	31652512		
17645	63302512		
17646	21236364		
17647	21431262		
17650	63216325		
17651	12462612		
17652	52633025	BCD	: THE FPAU REGISTERS AT ANY CLOCK TIMES, :
17653	12264721		
17654	64125125		
17655	27316263		
17656	25516212		
17657	21631221		
17660	45701223		
17661	43462342		
17662	12633144		
17663	25623312		
17664	52121212	BCD	: IF AN ERROR OCCURS IN ANY EXERCISE:
17665	12123126		
17666	12214512		
17667	25515146		
17670	51124623		
17671	23645162		
17672	12314512		
17673	21457012		
17674	25672551		
17675	23316225		

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17676	51121212		
17677	52244412	BCD	' DO A FUNCTION TRANSFER TO THE APPROPRIATE'
17700	21122664		
17701	45236331		
17702	*6451263		
17703	51214562		
17704	26255112		
17705	63461263		
17706	30251221		
17707	47475146		
17710	47513121		
17711	63251212		
17712	52623144	BCD	' SIMULATOR TO GET THE CORRECT RESULT. THE'
17713	64432163		
17714	46511263		
17715	46122725		
17716	63126330		
17717	25122746		
17720	51512*23		
17721	63125125		
17722	62644363		
17723	33121263		
17724	30251212		
17725	52262131	BCD	' FAILING TEST CASE IS ALREADY PRESET IN THE'
17726	43314527		
17727	12632*62		
17730	63122721		
17731	62251231		
17732	62122143		
17733	51252124		
17734	70124751		
17735	25422*63		
17736	12314*12		
17737	63302*12		
17740	52266445	BCD	' FUNCTION VARIABLES.'
17741	23633146		

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17742	45126*21		
17743	51312122		
17744	43256233		
17745	52121212	BCD	' THEN DO A FUNCTION TRANSFER TO THE'
17746	12126330		
17747	25451224		
17750	46122112		
17751	26644*23		
17752	63314445		
17753	12635121		
17754	4*622*25		
17755	51124346		
17756	12633125	BCD	' APPROPRIATE UTILITY TO GET THE ACTUAL'
17757	52214747		
17760	51464751		
17761	3121*325		
17762	12646331		
17763	43316370		
17764	12634412		
17765	27256312		
17766	63302*12		
17767	21236364		
17770	21431212		
17771	52512*62	BCD	' RESULT. THE FAILING CASE IS STILL PRESET'
17772	64436333		
17773	12126330		
17774	25122621		
17775	31433145		
17776	27122321		
17777	62251231		
20000	62126263		
20001	31434312		
20002	47512*62		
20003	25631212		
20004	52314512	BCD	' IN THE FUNCTION VARIABLES.'
20005	63302*12		

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```
20006 26644523
20007 63314445
20010 12652151
20011 31212345
20012 25623312
20013 52121212 BCD ' THEN SET BP1 TO LOOP ON THE ERROR, I
20014 12126330
20015 25451262
20016 25631222
20017 47011263
20020 46124346
20021 46471246
20022 45126330
20023 25122551
20024 51465173
20025 52622563 BCD ' SET BP2 TO CONTINUE ON ERROR, SET BP3 TO I
20026 12224702
20027 12634612
20030 23464563
20031 31456425
20032 12464512
20033 25515144
20034 51731262
20035 25631222
20036 47031263
20037 46121212
20040 52622447 BCD ' SUPPRESS ERROR TYPEOUT, AND DO A FUNCTION I
20041 47512562
20042 62122551
20043 51465112
20044 63724725
20045 46646373
20046 12214524
20047 12244612
20050 21122664
20051 45236231
```

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```
20052 46451212
20053 52635121 BCD ' TRANSFER BACK TO THE EXERCISER, THE I
20054 45622425
20055 51122221
20056 23421263
20057 46126330
20060 25122567
20061 25512331
20062 62255133
20063 12126330
20064 25121212 BCD ' EXERCISER WILL LOOP ON THE FAILING TEST I
20065 52256725
20066 51233162
20067 25511266
20070 31434312
20071 43464447
20072 12464512
20073 63322512
20074 26213143
20075 31452712
20076 63256263
20077 52232162 BCD ' CASE AND THE FPAU MAY BE SCOPED I
20100 25122145
20101 24126330
20102 25122447
20103 21641244
20104 21701222
20105 25126223
20106 46472524
20107 52371212 BCD ' ' '
20110 52261200 FIMO BCD ' F 00 = FPAU DIAGNOSTIC I I
20111 00124012
20112 26472164
20113 12243121
20114 27454662
20115 63312337
```

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20116	52322412	FAND	BCD	' F 00 = FPAU DIAGNOSTICS'
20117	00001240			
20120	12264721			
20121	64122431			
20122	01274446			
20123	62633123			
20124	62121212			
20125	52121212	BCD		' THIS FUNCTION DIAGNOSES FAILURES IN THE FPAU'
20126	12126330			
20127	31621226			
20130	64452263			
20131	31464412			
20132	24310127			
20133	44466225			
20134	02122421			
20135	01436451			
20136	25621231			
20137	45122330			
20140	25122447			
20141	21441212			
20142	52214424	BCD		' AND GIVE THE MODULE LOCATIONS OF THE PROBABLE FAULT.'
20143	12273165			
20144	25126330			
20145	25124446			
20146	24644225			
20147	12434223			
20150	21632146			
20151	45621246			
20152	26126330			
20153	25124751			
20154	46222122			
20155	42251226			
20156	21644263			
20157	33121212			
20160	52633225	BCD		' THERE ARE NO FUNCTION VARIABLES.'
20161	51251221			

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20162	51251245			
20163	44122464			
20164	45232331			
20165	44451265			
20166	21513121			
20167	22432262			
20170	03271212			
20171	52121212	FVND	BCD	' FID ''
20172	26312452			
20173	37121212			
20174	52261201	FIM1	BCD	' FC1 = FPAU ADD EXERCISER''
20175	12401226			
20176	47216412			
20177	21242412			
20200	26472251			
20201	23316225			
20202	51371212			
20203	32521212	FAM1	BCD	' THIS FUNCTION GENERATES RANDOM ADD TEST'
20204	12121212			
20205	12633231			
20206	02122464			
20207	45232331			
20210	46451227			
20211	25452251			
20212	21632262			
20213	12512145			
20214	24464412			
20215	21242412			
20216	62256263			
20217	52232162	BCD		' CASES AND COMPARES THE RESULT WITH A SIMULATOR.'
20220	24621221			
20221	45241223			
20222	46444721			
20223	51256212			
20224	43322512			
20225	51252264			



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20226 43631266  
20227 31633012  
20230 21126231  
20231 44644321  
20232 63465133  
20233 52121212  
20234 12121212  
20235 31261221  
20236 12242131  
20237 43645125  
20240 12462323  
20241 64516273  
20242 12633025  
20243 12212363  
20244 64214312  
20245 21452412  
20246 63302512  
20247 25674725  
20250 23632524  
20251 52512562  
20252 64436312  
20253 66314343  
20254 12222512  
20255 27316525  
20256 45331212  
20257 63302512  
20260 31456325  
20261 51442524  
20262 31216325  
20263 12626325  
20264 47621246  
20265 26126330  
20266 25121212  
20267 52264721  
20270 64124421  
20271 70122225

BCD | IF A FAILURE OCCURS, THE ACTUAL AND THE EXPECTED

BCD | RESULT WILL BE GIVEN. THE INTERMEDIATE STEPS OF THE

BCD | FPAU MAY BE DISPLAYED BY DOING A FUNCTION TRANSFER TO

FPAU TAP=3.0

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20272 12243162  
20273 47432170  
20274 25241222  
20275 70122446  
20276 31452712  
20277 21122664  
20300 45236931  
20301 46451263  
20302 51214562  
20303 26255112  
20304 63461212  
20305 52633025  
20306 12212424  
20307 12646331  
20310 43316370  
20311 33121263  
20312 30251223  
20313 46515125  
20314 23631262  
20315 63254762  
20316 12442170  
20317 12222512  
20320 24316247  
20321 43217025  
20322 24121212  
20323 52227012  
20324 24463145  
20325 27122112  
20326 26644523  
20327 63314645  
20330 12635121  
20331 45622625  
20332 51126346  
20333 12633025  
20334 12212424  
20335 12623144

BCD | THE ADD UTILITY. THE CORRECT STEPS MAY BE DISPLAYED

BCD | BY DOING A FUNCTION TRANSFER TO THE ADD SIMULATOR.

FPAU TAP=3.0

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20336	64432163		
20337	46513312		
20340	52121212	BCD	' 1. SPECIFIC TEST CASES MAY BE RUN BY!!
20341	12121212		
20342	62472523		
20343	31263123		
20344	12632562		
20345	63122321		
20346	62256212		
20347	44217012		
20350	22251251		
20351	64451222		
20352	70151212		
20353	52013312	BCD	' 1. TOGGLE BP4 TO REACH CONTROL'
20354	12121212		
20355	63462727		
20356	43251222		
20357	47041263		
20360	46125125		
20361	21233012		
20362	23464563		
20363	51464312		
20364	52023312	BCD	' 2. SET THE FUNCTION VARIABLES TO THE DESIRED VALUES'
20365	12121212		
20366	62256312		
20367	63302512		
20370	26644523		
20371	63314445		
20372	12652151		
20373	31212243		
20374	25621263		
20375	46126330		
20376	25122425		
20377	62315125		
20400	24126521		
20401	43642562		

FPAU TAP=3.0

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20402	52033312	BCD	' 3. SET BP1 TO LOCK THE TEST CASE IN'
20403	12121212		
20404	62256312		
20405	22470112		
20406	63461243		
20407	46234212		
20410	63302512		
20411	63256263		
20412	12232162		
20413	25123145		
20414	52043312	BCD	' 4. TYPE =T(CR)'
20415	12121212		
20416	63704725		
20417	12406374		
20420	23513412		
20421	52121212	BCD	' THE SPECIFIED TEST CASE IS NOW BEING RUN.!!
20422	12121212		
20423	63302512		
20424	62472523		
20425	31263125		
20426	24126325		
20427	62631223		
20430	21622512		
20431	31451245		
20432	46661222		
20433	25314527		
20434	12516445		
20435	33371212		
20436	52260002	FIM2 BCD	' F02 = FPAU SUB EXERCISER!!
20437	12401226		
20440	47216412		
20441	62642212		
20442	25672551		
20443	23316225		
20444	51371212		
20445	32521212	FAN2 BCD	' THIS FUNCTION GENERATES RANDOM SUB TEST'

FPAU TAP=3.0

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20446 12121212  
20447 12633031  
20450 62122664  
20451 45236331  
20452 46451227  
20453 25452551  
20454 21632562  
20455 12512145  
20456 24464412  
20457 62642212  
20460 63256263  
20461 52232162  
20462 25621221  
20463 45241223  
20464 46444721  
20465 51256212  
20466 63302512  
20467 51256264  
20470 43631266  
20471 31633012  
20472 21126231  
20473 44644721  
20474 63465133  
20475 52121212  
20476 12121212  
20477 31261221  
20500 12262131  
20501 43645125  
20502 12462323  
20503 64516273  
20504 12633025  
20505 12212363  
20506 64214312  
20507 21452412  
20510 63302512  
20511 25674725

BCD 1 CASES AND COMPARES THE RESULT WITH A SIMULATOR.1

BCD 1 IF A FAILURE OCCURS, THE ACTUAL AND THE EXPECTED1

FPAU TAP=3.0

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20512 23632524  
20513 52512562  
20514 64436312  
20515 66314343  
20516 12222512  
20517 27316525  
20520 45331212  
20521 63302512  
20522 31456325  
20523 51442524  
20524 31216325  
20525 12626325  
20526 47621246  
20527 26126330  
20530 25121212  
20531 52264721  
20532 64124421  
20533 70122225  
20534 12243162  
20535 47432170  
20536 25241222  
20537 70122446  
20540 31452712  
20541 21122664  
20542 45236331  
20543 46451263  
20544 51214562  
20545 26255112  
20546 63461212  
20547 52633025  
20550 12626422  
20551 12646331  
20552 43316370  
20553 33121263  
20554 30251223  
20555 46515125

BCD 1 RESULT WILL BE GIVEN. THE INTERMEDIATE STEPS OF THE1

BCD 1 FPAU MAY BE DISPLAYED BY DOING A FUNCTION TRANSFER TO1

BCD 1 THE SUB UTILITY. THE CORRECT STEPS MAY BE DISPLAYED1

FPAU TAP=3.0

PAGE 195

20556 23631262  
20557 63254762  
20560 12442170  
20561 12222512  
20562 24316247  
20563 43217025  
20564 24121212  
20565 52227012  
20566 24463145  
20567 27122112  
20570 26644523  
20571 63314445  
20572 12635121  
20573 45622425  
20574 51126746  
20575 12633425  
20576 12626422  
20577 12623144  
20600 64432163  
20601 46513312  
20602 52121212  
20603 12121212  
20604 62472523  
20605 31263123  
20606 12632562  
20607 63122421  
20610 62256212  
20611 44217412  
20612 22251251  
20613 64451222  
20614 70151212  
20615 52013412  
20616 12121212  
20617 63462727  
20620 43251222  
20621 47041263

BCD ' BY DOING A FUNCTION TRANSFER TO THE SUB SIMULATOR.'

BCD ' SPECIFIC TEST CASES MAY BE RUN BY!!

BCD ' 1. TOGGLE BP4 TO REACH CONTROL'

FPAU TAP=3.0

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20622 46125125  
20623 21233412  
20624 23464563  
20625 51464412  
20626 52023412  
20627 12121212  
20630 62256312  
20631 63302512  
20632 26644523  
20633 63314445  
20634 12652151  
20635 31212243  
20636 25621263  
20637 46126730  
20640 25122425  
20641 62315125  
20642 24126521  
20643 43642562  
20644 52033412  
20645 12121212  
20646 62256312  
20647 22470112  
20650 63461243  
20651 46234212  
20652 63302512  
20653 63257263  
20654 12232162  
20655 25123145  
20656 52043412  
20657 12121212  
20660 63704725  
20661 12406374  
20662 23513412  
20663 52121212  
20664 12121212  
20665 63302512

BCD ' 2. SET THE FUNCTION VARIABLES TO THE DESIRED VALUES'

BCD ' 3. SET BP1 TO LOCK THE TEST CASE IN'

BCD ' 4. TYPE \*T(CR)'

BCD ' THE SPECIFIED TEST CASE IS NOW BEING RUN.!!

FPAU TAP=3.0

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20666 62472523  
20667 31263125  
20670 24126325  
20671 62531223  
20672 21622512  
20673 31451245  
20674 46661222  
20675 25314527  
20676 12516445  
20677 33371212  
20700 52260003  
20701 12401226  
20702 47216412  
20703 31626422  
20704 12256725  
20705 51233162  
20706 25513712  
20707 32521212  
20710 12121212  
20711 12633131  
20712 62122464  
20713 45236331  
20714 46451227  
20715 25452551  
20716 21632562  
20717 12512145  
20720 24464412  
20721 31626422  
20722 12632562  
20723 63121212  
20724 52232162  
20725 25621221  
20726 45241223  
20727 46444721  
20730 51256212  
20731 63202512

FIM3 BCD ' F03 = FPAU ISUB EXERCISER!!

FAM3 BCD ' THIS FUNCTION GENERATES RANDOM ISUB TEST!

BCD ' CASES AND COMPARES THE RESULT WITH A SIMULATOR!!

FPAU TAP=3.0

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20732 51256264  
20733 43631266  
20734 31633112  
20735 21126231  
20736 44644721  
20737 63465133  
20740 52121212  
20741 12121212  
20742 31261221  
20743 12262131  
20744 43645125  
20745 12462723  
20746 64516273  
20747 12633125  
20750 12212363  
20751 64214712  
20752 21452412  
20753 63302512  
20754 25674725  
20755 23632524  
20756 52512562  
20757 64436312  
20760 66314343  
20761 12222512  
20762 27316525  
20763 45331212  
20764 63302512  
20765 31456425  
20766 51442524  
20767 31216325  
20770 12626325  
20771 47621246  
20772 26126330  
20773 25121212  
20774 52264721  
20775 64124421

BCD ' IF A FAILURE OCCURS, THE ACTUAL AND THE EXPECTED!

BCD ' RESULT WILL BE GIVEN. THE INTERMEDIATE STEPS OF THE!

BCD ' FPAU MAY BE DISPLAYED BY DOING A FUNCTION TRANSFER TO!

20776 70122225  
 20777 12243162  
 21000 47432170  
 21001 25241222  
 21002 70122446  
 21003 31452712  
 21004 21122464  
 21005 45236331  
 21006 46451263  
 21007 51214562  
 21010 26255112  
 21011 63461212  
 21012 52633228  
 21013 12316264  
 21014 22124463  
 21015 31433163  
 21016 70331212  
 21017 63302512  
 21020 23465151  
 21021 25236312  
 21022 22632247  
 21023 62124421  
 21024 70122225  
 21025 12243162  
 21026 47432170  
 21027 25241212  
 21030 52227212  
 21031 24463145  
 21032 27122112  
 21033 26644523  
 21034 63314445  
 21035 12635121  
 21036 45622625  
 21037 51126346  
 21040 12633225  
 21041 12316264

BCD ' THE ISUB UTILITY. THE CORRECT STEPS MAY BE DISPLAYED'

BCD ' BY DOING A FUNCTION TRANSFER TO THE ISUB SIMULATOR.'

21042 22126231  
 21043 44644321  
 21044 63465133  
 21045 52121212  
 21046 12121212  
 21047 62472523  
 21050 31263122  
 21051 12632662  
 21052 63122321  
 21053 62257212  
 21054 44217112  
 21055 22251251  
 21056 64451222  
 21057 70151212  
 21060 52013312  
 21061 12121212  
 21062 63462727  
 21063 43251222  
 21064 47041263  
 21065 46125125  
 21066 21233112  
 21067 23464563  
 21070 51464312  
 21071 52023312  
 21072 12121212  
 21073 62256312  
 21074 63322512  
 21075 26644523  
 21076 63314445  
 21077 12652151  
 21100 31212243  
 21101 25621263  
 21102 46126330  
 21103 25122425  
 21104 62315125  
 21105 24126521

BCD ' SPECIFIC TEST CASES MAY BE RUN BY!!'

BCD ' 1. TOGGLE BP4 TO REACH CONTROL'

BCD ' 2. SET THE FUNCTION VARIABLES TO THE DESIRED VALUES'

FPAU TAP=3.0

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21106	43642562		
21107	52033312	BCD	' 3. SET BP1 TO LOCK THE TEST CASE IN'
21110	12121212		
21111	62256312		
21112	22470112		
21113	63461243		
21114	46214212		
21115	63302512		
21116	63256263		
21117	12232162		
21120	25123145		
21121	52043312	BCD	' 4. TYPE =T(CR)'
21122	12121212		
21123	63704725		
21124	12406574		
21125	23513412		
21126	52121212	BCD	' THE SPECIFIED TEST CASE IS NOW BEING RUN.!!
21127	12121212		
21130	63302512		
21131	62472523		
21132	31263125		
21133	24126225		
21134	62631223		
21135	21622512		
21136	31451245		
21137	46661222		
21140	25314527		
21141	12516445		
21142	33371212		
21143	52260004	FIM4 BCD	' F04 = FPAU MUL EXERCISER!!
21144	12401226		
21145	47216412		
21146	44644312		
21147	25672551		
21150	23316225		
21151	51371212		

FPAU TAP=3.0

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21152	52521212	FAM4 BCD	' THIS FUNCTION GENERATES RANDOM MUL TEST'
21153	12121212		
21154	12633131		
21155	62122464		
21156	45236331		
21157	46451227		
21160	25452451		
21161	21632562		
21162	12512145		
21163	24464412		
21164	44644312		
21165	63256263		
21166	52232162	BCD	' CASES AND COMPARES THE RESULT WITH A SIMULATOR.'
21167	25621221		
21170	45241223		
21171	46444721		
21172	51256212		
21173	63302512		
21174	51256264		
21175	43631266		
21176	31633112		
21177	21126231		
21200	44644321		
21201	63465133		
21202	52121212	BCD	' IF A FAILURE OCCURS, THE ACTUAL AND THE EXPECTED'
21203	12121212		
21204	31261221		
21205	12262131		
21206	43645125		
21207	12462323		
21210	64516273		
21211	12633025		
21212	12212363		
21213	64214312		
21214	21452412		
21215	63302512		

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21216 25674725  
21217 23637524  
21220 52512567  
21221 64436312  
21222 66314343  
21223 12222512  
21224 27316525  
21225 45331217  
21226 63302517  
21227 31456325  
21230 51442524  
21231 31216325  
21232 12626325  
21233 47621746  
21234 26126330  
21235 25121212  
21236 52264721  
21237 64124421  
21240 70122225  
21241 12243162  
21242 47432170  
21243 25241227  
21244 70122446  
21245 31452712  
21246 21122664  
21247 45276331  
21250 46451263  
21251 51214562  
21252 26255112  
21253 63461212  
21254 52633225  
21255 12446443  
21256 12646331  
21257 43316370  
21260 33121263  
21261 30251223

BCD ' RESULT WILL BE GIVEN. THE INTERMEDIATE STEPS OF THE'

BCD ' FPAU MAY BE DISPLAYED BY DOING A FUNCTION TRANSFER TO'

BCD ' THE MUL UTILITY. THE CORRECT STEPS MAY BE DISPLAYED'

FPAU TAP=3.C

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21262 46515125  
21263 23631262  
21264 63254762  
21265 12442170  
21266 12222512  
21267 24316247  
21270 43217025  
21271 24121212  
21272 52227012  
21273 24463145  
21274 27122112  
21275 26644523  
21276 63314645  
21277 12635121  
21300 45622625  
21301 51126346  
21302 12633225  
21303 12446443  
21304 12623144  
21305 64432163  
21306 46513312  
21307 52121212  
21310 12121212  
21311 62472523  
21312 31263123  
21313 12632562  
21314 63122321  
21315 62256212  
21316 44217012  
21317 22251251  
21320 64451222  
21321 70151212  
21322 52013312  
21323 12121212  
21324 63462727  
21325 43251222

BCD ' BY DOING A FUNCTION TRANSFER TO THE MUL SIMULATOR.'

BCD ' SPECIFIC TEST CASES MAY BE RUN BY'

BCD ' 1. TOGGLE BP4 TO REACH CONTROL'



FPAU TAP=3.0

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21326	47041763			
21327	46125125			
21330	21233012			
21331	23464863			
21332	51464912			
21333	52023312	BCD	' 2.	SET THE FUNCTION VARIABLES TO THE DESIRED VALUES!
21334	12121212			
21335	62256712			
21336	63302512			
21337	26644523			
21340	63314645			
21341	12652151			
21342	31212743			
21343	25621763			
21344	46126330			
21345	25122425			
21346	62315125			
21347	24126521			
21350	43642562			
21351	52033312	BCD	' 3.	SET BP1 TO LOCK THE TEST CASE IN!
21352	12121212			
21353	62256712			
21354	22470112			
21355	63461243			
21356	46234212			
21357	63302512			
21360	63256263			
21361	12232162			
21362	25123145			
21363	52043312	BCD	' 4.	TYPE =T(CR)!
21364	12121212			
21365	63704725			
21366	12406374			
21367	23513412			
21370	52121212	BCD	'	THE SPECIFIED TEST CASE IS NOW BEING RUN.!!
21371	12121212			

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21372	63302512			
21373	62472523			
21374	31263125			
21375	24126325			
21376	62631223			
21377	21622512			
21400	31451245			
21401	46661222			
21402	25314527			
21403	12516445			
21404	33371212			
21405	52260005	FMS BCD	' F05 = FPAU DIV EXERCISER!!	
21406	12401226			
21407	47216412			
21410	24316512			
21411	25672551			
21412	23316225			
21413	51371212			
21414	32521212	FMS BCD	'	THIS FUNCTION GENERATES RANDOM DIV TEST!
21415	12121212			
21416	12633031			
21417	62122664			
21420	45236331			
21421	46451227			
21422	25452551			
21423	21632552			
21424	12512145			
21425	24464412			
21426	24316512			
21427	63256263			
21430	52232162	BCD	'	CASES AND COMPARES THE RESULT WITH A SIMULATOR.!
21431	25621221			
21432	45241223			
21433	46444721			
21434	51256212			
21435	63302512			

FPAU TAP=3.0

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21436 51256264  
21437 43631266  
21440 31633012  
21441 21126231  
21442 44644321  
21443 63465133  
21444 52121212  
21445 12121212  
21446 31261221  
21447 12262131  
21450 43645125  
21451 12462323  
21452 64516273  
21453 12633025  
21454 12212363  
21455 64214312  
21456 21452412  
21457 63302512  
21460 25674725  
21461 23632524  
21462 52512562  
21463 64436312  
21464 66314303  
21465 12222512  
21466 27316525  
21467 45331212  
21470 63302512  
21471 31456325  
21472 51442524  
21473 31216325  
21474 12626325  
21475 47621246  
21476 26126330  
21477 25121212  
21500 52264721  
21501 64124421

BCD : IF A FAILURE OCCURS, THE ACTUAL AND THE EXPECTED

BCD : RESULT WILL BE GIVEN. THE INTERMEDIATE STEPS OF THE

BCD : FPAU MAY BE DISPLAYED BY DOING A FUNCTION TRANSFER TO:

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21502 70122225  
21503 12243162  
21504 47432170  
21505 25241222  
21506 70122446  
21507 31452712  
21510 21122464  
21511 45236331  
21512 46451263  
21513 51214562  
21514 26255112  
21515 63461212  
21516 52633025  
21517 12243165  
21520 12646331  
21521 43316370  
21522 33121263  
21523 30251223  
21524 46515125  
21525 23631262  
21526 63254762  
21527 12442170  
21530 12222512  
21531 24316247  
21532 43217225  
21533 24121212  
21534 52227012  
21535 24463145  
21536 27122112  
21537 26644523  
21540 63314645  
21541 12635121  
21542 45622625  
21543 51126346  
21544 12633025  
21545 12243165

BCD : THE DIV UTILITY. THE CORRECT STEPS MAY BE DISPLAYED:

BCD : BY DOING A FUNCTION TRANSFER TO THE DIV SIMULATOR.:

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21546	12623144		
21547	64432163		
21550	46513312		
21551	52121212	BCD	'
21552	12121212		SPECIFIC TEST CASES MAY BE RUN BY!!
21553	62472523		
21554	31263123		
21555	12632562		
21556	63122321		
21557	62256212		
21560	44217012		
21561	22251251		
21562	64451222		
21563	70151212		
21564	52013312	BCD	' 1.
21565	12121212		TOGGLE BP4 TO REACH CONTROL!
21566	63462727		
21567	43251222		
21570	47041263		
21571	46125125		
21572	21233012		
21573	23444563		
21574	51444312		
21575	52023312	BCD	' 2.
21576	12121212		SET THE FUNCTION VARIABLES TO THE DESIRED VALUES!
21577	62256312		
21600	63302512		
21601	26644523		
21602	63314445		
21603	12657151		
21604	31212243		
21605	25621263		
21606	46126330		
21607	25122425		
21610	62315125		
21611	24126521		

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21612	43642562		
21613	52033312	BCD	' 3.
21614	12121212		SET BP1 TO LOCK THE TEST CASE IN!
21615	62256312		
21616	22470112		
21617	63461243		
21620	46234212		
21621	63302512		
21622	63256263		
21623	12232162		
21624	25123145		
21625	52043312	BCD	' 4.
21626	12121212		TYPE =T(CR)!
21627	63704725		
21630	12406374		
21631	23513412		
21632	52121212	BCD	'
21633	12121212		THE SPECIFIED TEST CASE IS NOW BEING RUN!!
21634	63302512		
21635	62472523		
21636	31263125		
21637	24126325		
21640	62631223		
21641	21622512		
21642	31451245		
21643	46651222		
21644	25314527		
21645	12516445		
21646	33371212		
21647	52260006	FIM6 BCD	' F06 = FPAU IDIV EXERCISER!!
21650	12401226		
21651	47216412		
21652	31243165		
21653	12256725		
21654	51233162		
21655	25513712		

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21656	32521212	FAM6	BCD	'	THIS FUNCTION GENERATES RANDOM IDIV TEST'
21657	12121212				
21660	12633031				
21661	62122664				
21662	45236331				
21663	46451227				
21664	25452551				
21665	21632562				
21666	12512145				
21667	24464412				
21670	31243165				
21671	12632562				
21672	63121212				
21673	52232162	BCD		'	CASES AND COMPARES THE RESULT WITH A SIMULATOR.'
21674	25621221				
21675	45241223				
21676	46444721				
21677	51256212				
21700	63302512				
21701	51256264				
21702	43631266				
21703	31633112				
21704	21126231				
21705	44644321				
21706	63465133				
21707	52121212	BCD		'	IF A FAILURE OCCURS, THE ACTUAL AND THE EXPECTED'
21710	12121212				
21711	31261221				
21712	12262131				
21713	43645125				
21714	12462323				
21715	64516273				
21716	12633025				
21717	12212363				
21720	64214312				
21721	21452412				

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21722	63302512				
21723	25674725				
21724	23632524				
21725	52512562	BCD		'	RESULT WILL BE GIVEN, THE INTERMEDIATE STEPS OF THE'
21726	64436312				
21727	66314343				
21730	12222512				
21731	27316525				
21732	45331212				
21733	63302512				
21734	31456325				
21735	51442524				
21736	31216325				
21737	12626325				
21740	47621246				
21741	26126330				
21742	25121212				
21743	52264721	BCD		'	FPAU MAY BE DISPLAYED BY DOING A FUNCTION TRANSFER TO'
21744	64124421				
21745	70122225				
21746	12243162				
21747	47432170				
21750	25241222				
21751	70122446				
21752	31452712				
21753	21122664				
21754	45236331				
21755	46451263				
21756	51214562				
21757	26255112				
21760	63461212				
21761	52633025	BCD		'	THE IDIV UTILITY. THE CORRECT STEPS MAY BE DISPLAYED'
21762	12312431				
21763	65126463				
21764	31433163				
21765	70331212				

21766	63302512		
21767	23465151		
21770	25236312		
21771	62432447		
21772	62124421		
21773	70122225		
21774	12243162		
21775	47432170		
21776	25241212		
21777	52227112	BCD	' BY DOING A FUNCTION TRANSFER TO THE IDIV SIMULATOR.'
22000	24463145		
22001	27122112		
22002	26644523		
22003	62314445		
22004	12635121		
22005	45622425		
22006	51126746		
22007	12633225		
22010	12312431		
22011	65126231		
22012	44644721		
22013	63465133		
22014	52121212	BCD	' SPECIFIC TEST CASES MAY BE RUN BY:'
22015	12121212		
22016	62472523		
22017	51263123		
22020	12632562		
22021	63122221		
22022	62256212		
22023	44217212		
22024	22251251		
22025	64451222		
22026	70151212		
22027	52013212	BCD	' 1. TOGGLE BP4 TO REACH CONTROL'
22030	12121212		
22031	63462727		

22032	43251222		
22033	47041263		
22034	46125125		
22035	21233212		
22036	23464563		
22037	51464312		
22040	52023312	BCD	' 2. SET THE FUNCTION VARIABLES TO THE DESIRED VALUES'
22041	12121212		
22042	62256312		
22043	63302512		
22044	26644523		
22045	63314445		
22046	12652151		
22047	31212243		
22050	25621263		
22051	46126330		
22052	25122425		
22053	62315125		
22054	24124521		
22055	43642562		
22056	52033312	BCD	' 3. SET BP1 TO LOCK THE TEST CASE IN'
22057	12121212		
22060	62256312		
22061	22470112		
22062	63461243		
22063	46274212		
22064	63302512		
22065	63254263		
22066	12232162		
22067	25123145		
22070	52043312	BCD	' 4. TYPE =T(CR)'
22071	12121212		
22072	63704725		
22073	12406374		
22074	23513412		
22075	52121212	BCD	' THE SPECIFIED TEST CASE IS NOW BEING RUN.'

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22076 12121212  
22077 63302512  
22100 62472523  
22101 31263125  
22102 24126425  
22103 62631223  
22104 21622512  
22105 31451765  
22106 46661222  
22107 25314527  
22110 12516445  
22111 33371212  
22112 52261200  
22113 07124712  
22114 62472523  
22115 31214312  
22116 21513163  
22117 30442563  
22120 31231223  
22121 21622512  
22122 25672551  
22123 23316225  
22124 51333712  
22125 52121212  
22126 12126330  
22127 31621226  
22130 64452363  
22131 31464812  
22132 23302523  
22133 42621262  
22134 47252331  
22135 21431221  
22136 51316330  
22137 44256731  
22140 23122321  
22141 62256212

FIM7 BCD ' F 07 = SPECIAL ARITHMETIC CASE EXERCISER.11

FAM7 BCD ' THIS FUNCTION CHECKS SPECIAL ARITHMETIC CASES1

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22142 52626423  
22143 30122162  
22144 12243165  
22145 31623146  
22146 45122270  
22147 12003312  
22150 12316312  
22151 46472551  
22152 21632562  
22153 12464512  
22154 24716721  
22155 12224346  
22156 23426212  
22157 52314512  
22160 63302512  
22161 62214425  
22162 12662170  
22163 12633225  
22164 12234764  
22165 12314562  
22166 63645123  
22167 63314645  
22170 12256721  
22171 44314525  
22172 51122446  
22173 25623312  
22174 52121212  
22175 12126330  
22176 25122664  
22177 45236731  
22200 46451765  
22201 21513121  
22202 22432562  
22203 12273165  
22204 25126330  
22205 25124647

BCD ' SUCH AS DIVISION BY 0. IT OPERATES ON DATA BLOCKS1

BCD ' IN THE SAME WAY THE CPU INSTRUCTION EXAMINER DOES.1

BCD ' THE FUNCTION VARIABLES GIVE THE OP CODE AND1

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22206 12234624  
22207 25122145  
22210 24121212  
22211 52633025  
22212 12464725  
22213 51214524  
22214 62331712  
22215 52121712  
22216 12126330  
22217 31621226  
22220 64452763  
22221 31464512  
22222 44217012  
22223 22251264  
22224 62252412  
22225 66316330  
22226 12633025  
22227 12646331  
22230 43316370  
22231 52214524  
22232 12623144  
22233 64432163  
22234 46511226  
22235 64452763  
22236 31464562  
22237 12314512  
22240 63302512  
22241 62214425  
22242 12662170  
22243 12216212  
22244 52633725  
22245 12466730  
22246 25511225  
22247 67255123  
22250 31622551  
22251 62331274

BCD : THE OPERANDS. :

BCD : THIS FUNCTION MAY BE USED WITH THE UTILITY!

BCD : AND SIMULATOR FUNCTIONS IN THE SAME WAY AS :

BCD : THE OTHER EXERCISERS. (SEE THE UA)!!

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22252 62252512  
22253 63302512  
22254 64213437  
22255 52261201  
22256 02124012  
22257 26472164  
22260 12212424  
22261 12623144  
22262 64432163  
22263 46513712  
22264 32521212  
22265 12121712  
22266 12633731  
22267 62122664  
22270 45236731  
22271 46451221  
22272 43434666  
22273 62122124  
22274 24122321  
22275 62256712  
22276 63461222  
22277 25126231  
22300 44644321  
22301 63252412  
22302 52214524  
22303 12633725  
22304 12314563  
22305 25514425  
22306 24312163  
22307 25126263  
22310 25476712  
22311 24316747  
22312 43217025  
22313 24331212  
22314 52633025  
22315 12266445

FIM12 BCD : F 12 = FPAU ADD SIMULATOR!!

FAM12 BCD : THIS FUNCTION ALLOWS ADD CASES TO BE SIMULATED!

BCD : AND THE INTERMEDIATE STEPS DISPLAYED.!

BCD : THE FUNCTION VARIABLE FORMAT CONTROLS THE!

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22316	23633146		
22317	45126521		
22320	51317122		
22321	43251226		
22322	46514421		
22323	63122346		
22324	45635146		
22325	43621263		
22326	30251212		
22327	52243162	BCD	' DISPLAY!'
22330	47432170		
22331	15121212		
22332	52001213	BCD	' 0 = DISPLAY ONLY RESULT!'
22333	12243162		
22334	47432170		
22335	12464543		
22336	70125125		
22337	62644763		
22340	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES ONLY!'
22341	12243162		
22342	47432170		
22343	12462424		
22344	12234346		
22345	23421263		
22346	31442562		
22347	12464543		
22350	70121212		
22351	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES ONLY!'
22352	12243162		
22353	47432170		
22354	12256525		
22355	45122343		
22356	46234212		
22357	63314425		
22360	62124645		
22361	43701212		

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22362	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES!'
22363	12243162		
22364	47432170		
22365	12214343		
22366	12234346		
22367	23421263		
22370	31442562		
22371	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT!'
22372	12224703		
22373	12634612		
22374	62644747		
22375	51256262		
22376	12466463		
22377	47646712		
22400	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE!'
22401	12224701		
22402	12634612		
22403	43464447		
22404	12464512		
22405	63256763		
22406	12232162		
22407	25121212		
22410	52121212	BCD	' REFER TO THE UNIT ABSTRACT FOR USE OF THIS!'
22411	12121212		
22412	51257625		
22413	51126346		
22414	12633025		
22415	12644531		
22416	63122122		
22417	62635121		
22420	23631226		
22421	46511264		
22422	62251246		
22423	26126330		
22424	31621212		
22425	52266445	BCD	' FUNCTION WITH THE EXERCISER!'



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22426	23633146		
22427	45126431		
22430	63301263		
22431	30251225		
22432	67255123		
22433	31622551		
22434	33371212		
22435	52261201	FIM13 BCD	' F 13 = FPAU SUB SIMULATOR'
22436	03124012		
22437	26472164		
22440	12626422		
22441	12623144		
22442	64432163		
22443	46513712		
22444	32521212	FAM13 BCD	' THIS FUNCTION ALLOWS SUB CASES TO BE SIMULATED'
22445	12121212		
22446	12633031		
22447	62122464		
22450	45236331		
22451	46431221		
22452	43434466		
22453	62126264		
22454	22122321		
22455	62256212		
22456	63461222		
22457	25126231		
22460	44644321		
22461	63252412		
22462	52214424	BCD	' AND THE INTERMEDIATE STEPS DISPLAYED.'
22463	12633025		
22464	12314563		
22465	25514425		
22466	24312163		
22467	25126263		
22470	25476212		
22471	24316247		

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22472	43217025		
22473	24331212		
22474	52633025	BCD	' THE FUNCTION VARIABLE FORMAT CONTROLS THE'
22475	12266445		
22476	23633146		
22477	45126521		
22500	51312122		
22501	43251226		
22502	46514421		
22503	63122346		
22504	45635146		
22505	43621263		
22506	30251212		
22507	52243162	BCD	' DISPLAY'
22510	47432170		
22511	15121212		
22512	52001213	BCD	' 0 = DISPLAY ONLY RESULTS'
22513	12243162		
22514	47432170		
22515	12464543		
22516	70125125		
22517	62644363		
22520	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES ONLY'
22521	12243162		
22522	47432170		
22523	12462424		
22524	12234346		
22525	23421263		
22526	31442562		
22527	12464543		
22530	70121212		
22531	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES ONLY'
22532	12243162		
22533	47432170		
22534	12256525		
22535	45122343		

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22536	46234212		
22537	63314425		
22540	62124445		
22541	43701212		
22542	52031213	BCD	' 3 - DISPLAY ALL CLOCK TIMES'
22543	12243162		
22544	47432170		
22545	12214343		
22546	12234346		
22547	23421263		
22550	31442562		
22551	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
22552	12224703		
22553	12634612		
22554	62644747		
22555	51256262		
22556	12466463		
22557	47644312		
22560	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
22561	12224701		
22562	12634612		
22563	43464447		
22564	12464512		
22565	63256263		
22566	12232162		
22567	25121212		
22570	52121212	BCD	' REFER TO THE UNIT ABSTRACT FOR USE OF THIS'
22571	12121212		
22572	51252425		
22573	51126346		
22574	12633225		
22575	12644431		
22576	63122122		
22577	62635121		
22600	23631226		
22601	46511264		

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22602	62251246		
22603	26126330		
22604	31621212		
22605	52266445	BCD	' FUNCTION WITH THE EXERCISER.!!'
22606	23633146		
22607	45126431		
22610	63301263		
22611	30251225		
22612	67255123		
22613	31622551		
22614	33371212		
22615	52261201	FIM14 BCD	' F 14 - FPAU ISUB SIMULATOR!!'
22616	04124012		
22617	26472164		
22620	12316264		
22621	22126231		
22622	44644721		
22623	63465137		
22624	32521212	FAM14 BCD	' THIS FUNCTION ALLOWS ISUB CASES TO BE SIMULATED!!'
22625	12121212		
22626	12633031		
22627	62122664		
22630	45236331		
22631	46451221		
22632	43434666		
22633	62123162		
22634	64221223		
22635	21622562		
22636	12634612		
22637	22251262		
22640	31446443		
22641	21632524		
22642	52214524	BCD	' AND THE INTERMEDIATE STEPS DISPLAYED.!!'
22643	12633025		
22644	12314563		
22645	25514425		

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22646	24312163		
22647	25126263		
22650	25476212		
22651	24316247		
22652	43217025		
22653	24331212		
22654	52633025	BCD	' THE FUNCTION VARIABLE FORMAT CONTROLS THE'
22655	12266445		
22656	23633146		
22657	45126521		
22660	51312122		
22661	43251226		
22662	46514421		
22663	63122346		
22664	45635146		
22665	43621263		
22666	30251212		
22667	52243162	BCD	' DISPLAY!'
22670	47432170		
22671	15121212		
22672	52001213	BCD	' 0 = DISPLAY ONLY RESULT'
22673	12243162		
22674	47432170		
22675	12464543		
22676	70125125		
22677	62644363		
22700	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES ONLY'
22701	12243162		
22702	47432170		
22703	12462424		
22704	12234346		
22705	23421263		
22706	31442562		
22707	12464543		
22710	70121212		
22711	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES ONLY'

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22712	12243162		
22713	47432170		
22714	12256525		
22715	45122343		
22716	46234212		
22717	63314425		
22720	62124445		
22721	43701212		
22722	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
22723	12243162		
22724	47432170		
22725	12214343		
22726	12234346		
22727	23421263		
22730	31442562		
22731	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
22732	12224703		
22733	12634612		
22734	62644747		
22735	51256262		
22736	12466463		
22737	47646312		
22740	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
22741	12224701		
22742	12634612		
22743	43464447		
22744	12464512		
22745	63256263		
22746	12232162		
22747	25121212		
22750	52121212	BCD	' REFER TO THE UNIT ABSTRACT FOR USE OF THIS'
22751	12121212		
22752	51252625		
22753	51126346		
22754	12633225		
22755	12644531		

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22756	63122122		
22757	62635121		
22760	23631226		
22761	46511264		
22762	62251246		
22763	26126330		
22764	31621212		
22765	52266445	BCD	' FUNCTION WITH THE EXERCISER.!!
22766	23633146		
22767	45126631		
22770	63301263		
22771	30251225		
22772	67255123		
22773	31622551		
22774	33371212		
22775	52261201	FIM15 BCD	' F 15 = FPAU MUL SIMULATOR!!
22776	05124012		
22777	24472164		
23000	12446443		
23001	12623144		
23002	64432163		
23003	46513712		
23004	32521212	FAM15 BCD	' THIS FUNCTION ALLOWS MUL CASES TO BE SIMULATED!
23005	12121212		
23006	12633031		
23007	62122464		
23010	45226331		
23011	46451221		
23012	43434666		
23013	62124464		
23014	43122321		
23015	62256212		
23016	63461222		
23017	25126031		
23020	44644321		
23021	63252412		

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23022	52214524	BCD	' AND THE INTERMEDIATE STEPS DISPLAYED.!
23023	12633025		
23024	12314563		
23025	25514425		
23026	24312163		
23027	25126263		
23030	25476212		
23031	24316247		
23032	43217025		
23033	24331212		
23034	52633025	BCD	' THE FUNCTION VARIABLE FORMAT CONTROLS THE!
23035	12266445		
23036	23633146		
23037	45126321		
23040	51312122		
23041	43251226		
23042	46514421		
23043	63122346		
23044	45635146		
23045	43621263		
23046	30251212		
23047	52243162	BCD	' DISPLAY!'
23050	47432170		
23051	15121212		
23052	52001213	BCD	' 0 = DISPLAY ONLY RESULT!
23053	12243162		
23054	47432170		
23055	12464543		
23056	70125125		
23057	62644363		
23060	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES ONLY!
23061	12243162		
23062	47432170		
23063	12462424		
23064	12234346		
23065	23421263		

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23066	31442562		
23067	12464543		
23070	70121212		
23071	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES ONLY'
23072	12243162		
23073	47432170		
23074	12256525		
23075	45122343		
23076	46234212		
23077	63314425		
23100	62124445		
23101	43701212		
23102	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
23103	12243162		
23104	47432170		
23105	12214343		
23106	12234344		
23107	23421263		
23110	31442562		
23111	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
23112	12224703		
23113	12634612		
23114	62644747		
23115	51256262		
23116	12466463		
23117	47646312		
23120	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
23121	12224701		
23122	12634612		
23123	43464647		
23124	12464512		
23125	63256263		
23126	12232162		
23127	25121212		
23130	52121212	BCD	' REFER TO THE UNIT ABSTRACT FOR USE OF THIS'
23131	12121212		

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23132	51252625		
23133	51126346		
23134	12633225		
23135	12644531		
23136	63122122		
23137	62635121		
23140	23631226		
23141	46511264		
23142	62251246		
23143	26126330		
23144	31621212		
23145	52266445	BCD	' FUNCTION WITH THE EXERCISER''
23146	23633146		
23147	45126631		
23150	63301263		
23151	30251225		
23152	67255123		
23153	31622551		
23154	33371212		
23155	52261201	FIM16 BCD	' F 16 = FPAU DIV SIMULATOR''
23156	06124012		
23157	26472164		
23160	12743165		
23161	12623144		
23162	64432163		
23163	46513712		
23164	32521212	FAM16 BCD	' THIS FUNCTION ALLOWS DIV CASES TO BE SIMULATED'
23165	12121212		
23166	12633031		
23167	62122664		
23170	45236331		
23171	46451221		
23172	43434666		
23173	62122431		
23174	65122321		
23175	62256212		

23176	63461722		
23177	25126231		
23200	44644321		
23201	63252412		
23202	52214524	BCD	' AND THE INTERMEDIATE STEPS DISPLAYED.'
23203	12633025		
23204	12314463		
23205	25514425		
23206	24312163		
23207	25126263		
23210	25476212		
23211	24316247		
23212	43217225		
23213	24331212		
23214	52633225	BCD	' THE FUNCTION VARIABLE FORMAT CONTROLS THE'
23215	12266445		
23216	23633446		
23217	45126521		
23220	51312122		
23221	43251226		
23222	46514421		
23223	62122746		
23224	45635446		
23225	43621263		
23226	32251212		
23227	52243162	BCD	' DISPLAY.'
23230	47432170		
23231	15121212		
23232	52001213	BCD	' 0 = DISPLAY ONLY RESULT'
23233	12243162		
23234	47432170		
23235	12464543		
23236	70125125		
23237	62644363		
23240	52011213	BCD	' 1 = DISPLAY BDD CLOCK TIMES ONLY'
23241	12243162		

23242	47432170		
23243	12462424		
23244	12234346		
23245	23421263		
23246	31442562		
23247	12464543		
23250	70121212		
23251	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES ONLY'
23252	12243162		
23253	47432170		
23254	12256625		
23255	45122743		
23256	46234212		
23257	63314425		
23260	62124445		
23261	43701212		
23262	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
23263	12243162		
23264	47432170		
23265	12214343		
23266	12234346		
23267	23421263		
23270	31442562		
23271	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
23272	12224703		
23273	12634412		
23274	62644747		
23275	51256262		
23276	12466463		
23277	47646312		
23300	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
23301	12224701		
23302	12634412		
23303	47464447		
23304	12464512		
23305	63256263		

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23306	12232162		
23307	25121212		
23310	52121212	BCD	' REFER TO THE UNIT ABSTRACT FOR USE OF THIS'
23311	12121212		
23312	51252425		
23313	51126346		
23314	12633025		
23315	12644431		
23316	63122122		
23317	62435121		
23320	23431226		
23321	46511264		
23322	62251246		
23323	26126230		
23324	31621212		
23325	52266445	BCD	' FUNCTION WITH THE EXERCISER.!!'
23326	23633146		
23327	45126431		
23330	63301263		
23331	30251225		
23332	67255123		
23333	31422251		
23334	33371212		
23335	52261201	FIM17 BCD	' F 17 = FPAU IDIV SIMULATOR!!'
23336	07124012		
23337	26472164		
23340	12312431		
23341	65126231		
23342	44644221		
23343	63465137		
23344	32521212	FAM17 BCD	' THIS FUNCTION ALLOWS IDIV CASES TO BE SIMULATED!'
23345	12121212		
23346	12633031		
23347	62122464		
23350	45236731		
23351	46451221		

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23352	43434666		
23353	62123124		
23354	31651223		
23355	21622562		
23356	12634612		
23357	22251262		
23360	31446443		
23361	21632224		
23362	52214524	BCD	' AND THE INTERMEDIATE STEPS DISPLAYED.!
23363	12633025		
23364	12314563		
23365	25514425		
23366	24312163		
23367	25124263		
23370	25476212		
23371	24316247		
23372	43217025		
23373	24331212		
23374	52633025	BCD	' THE FUNCTION VARIABLE FORMAT CONTROLS THE!
23375	12266445		
23376	23633146		
23377	45126521		
23400	51312122		
23401	43281226		
23402	46514421		
23403	63122746		
23404	45635146		
23405	43621263		
23406	30251212		
23407	52243162	BCD	' DISPLAY!'
23410	47432170		
23411	15121212		
23412	52001213	BCD	' 0 = DISPLAY ONLY RESULT!
23413	12243162		
23414	47432170		
23415	12464443		

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23416	70125125		
23417	62644363		
23420	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES ONLY'
23421	12243162		
23422	47432170		
23423	12462424		
23424	12234344		
23425	23421263		
23426	31442562		
23427	12464543		
23430	70121212		
23431	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES ONLY'
23432	12243162		
23433	47432170		
23434	12256525		
23435	45122343		
23436	46234212		
23437	63314425		
23440	62124445		
23441	47701212		
23442	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
23443	12243162		
23444	47432170		
23445	12214343		
23446	12234346		
23447	23421263		
23450	31442562		
23451	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
23452	12224703		
23453	12634612		
23454	62644747		
23455	51256262		
23456	12464463		
23457	47644312		
23460	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
23461	12224701		

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23462	12634612		
23463	43464647		
23464	12464512		
23465	63256263		
23466	12232162		
23467	25121212		
23470	52121212	BCD	' REFER TO THE UNIT ABSTRACT FOR USE OF THIS'
23471	12121212		
23472	51252625		
23473	51126346		
23474	12633225		
23475	12644531		
23476	63122122		
23477	62635121		
23500	23631226		
23501	46511264		
23502	62251246		
23503	26126330		
23504	31621212		
23505	52266445	BCD	' FUNCTION WITH THE EXERCISER,!!'
23506	23633146		
23507	45126631		
23510	63301263		
23511	30251225		
23512	67255123		
23513	31622551		
23514	33371212		
23515	52261201	FIM18 BCD	' F 18 = FPAU ADD UTILITY!!'
23516	10124012		
23517	26472164		
23520	12212424		
23521	12646331		
23522	43316370		
23523	37121212		
23524	52326445	FAM18 BCD	' UNIT=2 FUNCTION=18 FPAU ADD UTILITY'
23525	31634002		



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23526	12266445		
23527	23633146		
23530	45400110		
23531	12264721		
23532	64122124		
23533	24126463		
23534	31433163		
23535	70121212		
23536	52121212	BCD	' THIS FUNCTION ALLOWS ADD '
23537	12126330		
23540	31621226		
23541	64452363		
23542	31464512		
23543	21434344		
23544	66621221		
23545	24241212		
23546	52232162	BCD	' CASES TO BE PRESENTED TO THE FPAU'
23547	25621263		
23550	46122225		
23551	12475125		
23552	62254563		
23553	25241263		
23554	46126330		
23555	25122647		
23556	21641212		
23557	52264651	BCD	' FORMAT IS THE DISPLAY CONTROL WORD.'
23560	44216312		
23561	31621263		
23562	30251224		
23563	31624743		
23564	21701223		
23565	46456351		
23566	46431266		
23567	46512433		
23570	52001213	BCD	' 0 = DISPLAY RESULT ONLY'
23571	12243162		

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23572	47432170		
23573	12512562		
23574	64436312		
23575	46454370		
23576	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES'
23577	12243162		
23600	47432170		
23601	12462424		
23602	12234346		
23603	23421263		
23604	31442562		
23605	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES'
23606	12243162		
23607	47432170		
23610	12256525		
23611	45122343		
23612	46234212		
23613	63314425		
23614	62121212		
23615	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
23616	12243162		
23617	47432170		
23620	12214343		
23621	12234346		
23622	23421263		
23623	31442562		
23624	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
23625	12224703		
23626	12634612		
23627	62644747		
23630	51256262		
23631	12466463		
23632	47646312		
23633	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
23634	12224701		
23635	12634612		

23636	43464647		
23637	12464512		
23640	63236263		
23641	12232162		
23642	25121212		
23643	52121212	BCD	' REFER TO UNIT ABSTRACT FOR THE USE OF'
23644	12125125		
23645	26255112		
23646	63461264		
23647	45316312		
23650	21226263		
23651	51212363		
23652	12264451		
23653	12633025		
23654	12646225		
23655	12462412		
23656	52613031	BCD	' THIS FUNCTION WITH THE ADD EXERCISER''
23657	62122664		
23660	45236331		
23661	46451266		
23662	31633012		
23663	63302512		
23664	21242412		
23665	25672551		
23666	23316225		
23667	51371212		
23670	52261201	FIM19 BCD	' F 19 = FPAU SUB UTILITY''
23671	11124012		
23672	26472164		
23673	12626422		
23674	12646331		
23675	43316370		
23676	37121212		
23677	52326445	FAM19 BCD	' UNIT=2 FUNCTION=19 FPAU SUB UTILITY'
23700	31634002		
23701	12266445		

23702	23633146		
23703	45400111		
23704	12264721		
23705	64126264		
23706	22126463		
23707	31433163		
23710	70121212		
23711	52121212	BCD	' THIS FUNCTION ALLOWS SUB '
23712	12126330		
23713	31621226		
23714	64452263		
23715	31464512		
23716	21434346		
23717	66621262		
23720	64221212		
23721	52232162	BCD	' CASES TO BE PRESENTED TO THE FPAU'
23722	25621263		
23723	46122225		
23724	12475125		
23725	62254563		
23726	25241263		
23727	46126330		
23730	25122447		
23731	21641212		
23732	52264651	BCD	' FORMAT IS THE DISPLAY CONTROL WORD.'
23733	44216312		
23734	31621263		
23735	30251224		
23736	31624743		
23737	21701223		
23740	46456351		
23741	46431266		
23742	46512433		
23743	52001213	BCD	' 0 = DISPLAY RESULT ONLY'
23744	12243162		
23745	47432170		

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23746	12512562		
23747	64436312		
23750	46454370		
23751	52011213	BCD	' 1 * DISPLAY ODD CLOCK TIMES'
23752	12243162		
23753	47432170		
23754	12462424		
23755	12234346		
23756	23421263		
23757	31442562		
23760	52021213	BCD	' 2 * DISPLAY EVEN CLOCK TIMES'
23761	12243162		
23762	47432170		
23763	12256525		
23764	45122343		
23765	46234212		
23766	63314425		
23767	62121212		
23770	52031213	BCD	' 3 * DISPLAY ALL CLOCK TIMES'
23771	12243162		
23772	47432170		
23773	12214343		
23774	12234346		
23775	23421263		
23776	31442562		
23777	52622863	BCD	' SET BP3 TO SUPPRESS OUTPUT'
24000	12224703		
24001	12634612		
24002	62644747		
24003	51256262		
24004	12466463		
24005	47646312		
24006	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
24007	12224701		
24010	12634612		
24011	43464447		

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24012	12464512		
24013	63256263		
24014	12232162		
24015	25121212		
24016	52121212	BCD	' REFER TO UNIT ABSTRACT FOR THE USE OF'
24017	17125125		
24020	26255112		
24021	63461264		
24022	45316312		
24023	21226263		
24024	51212363		
24025	12264651		
24026	12633025		
24027	12646225		
24030	12462612		
24031	52633031	BCD	' THIS FUNCTION WITH THE SUB EXERCISER'
24032	62122664		
24033	45236331		
24034	46451266		
24035	31633012		
24036	63302512		
24037	62642212		
24040	25672551		
24041	23316225		
24042	51371212		
24043	52261202	FIM20 BCD	' F 20 * FPAU ISUB UTILITY'
24044	00124012		
24045	26472164		
24046	12316264		
24047	22126463		
24050	31433163		
24051	70371212		
24052	52326445	FAMPO BCD	' UNIT=2 FUNCTION=20 FPAU ISUB UTILITY'
24053	31634002		
24054	12266445		
24055	23633146		

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24056 45400P00  
24057 12264771  
24060 64123162  
24061 64221264  
24062 63314731  
24063 63701212  
24064 52121212  
24065 12126330  
24066 31621226  
24067 64452763  
24070 31464512  
24071 21434746  
24072 66621231  
24073 62642712  
24074 52232162  
24075 25621263  
24076 46122225  
24077 12475125  
24100 62254563  
24101 25241263  
24102 44126330  
24103 25122647  
24104 21641212  
24105 52264651  
24106 44216312  
24107 31621263  
24110 50251224  
24111 31624743  
24112 21701223  
24113 46456351  
24114 46431266  
24115 46512433  
24116 52001213  
24117 12243162  
24120 47432170  
24121 12512462

BCD ' THIS FUNCTION ALLOWS ISUB '

BCD ' CASES TO BE PRESENTED TO THE FPAU '

BCD ' FORMAT IS THE DISPLAY CONTROL WORD. '

BCD ' 0 = DISPLAY RESULT ONLY '

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24122 64436712  
24123 44454770  
24124 52011213  
24125 12243162  
24126 47432170  
24127 12462424  
24130 12234746  
24131 23421263  
24132 31442762  
24133 52021213  
24134 12243162  
24135 47432170  
24136 12256525  
24137 45122343  
24140 46234212  
24141 63314425  
24142 62121212  
24143 52031213  
24144 12243162  
24145 47432170  
24146 12214343  
24147 12234346  
24150 23421263  
24151 31442762  
24152 52622563  
24153 12224703  
24154 12634412  
24155 62644747  
24156 51256262  
24157 12466463  
24160 47646312  
24161 52622563  
24162 12224701  
24163 12634412  
24164 43464647  
24165 12464512

BCD ' 1 = DISPLAY ODD CLOCK TIMES '

BCD ' 2 = DISPLAY EVEN CLOCK TIMES '

BCD ' 3 = DISPLAY ALL CLOCK TIMES '

BCD ' SET BP3 TO SUPPRESS OUTPUT '

BCD ' SET BP1 TO LOOP ON TEST CASE '

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24166	63256263		
24167	12232162		
24170	25121212		
24171	52121212	BCD	' REFER TO UNIT ABSTRACT FOR THE USE OF'
24172	12125125		
24173	26255112		
24174	63461264		
24175	45316312		
24176	21226263		
24177	51212263		
24200	12264651		
24201	12633025		
24202	12646225		
24203	12462212		
24204	52633031	BCD	' THIS FUNCTION WITH THE ISUB EXERCISER'
24205	62122664		
24206	45236331		
24207	46451266		
24210	31633012		
24211	63302512		
24212	31626422		
24213	12256725		
24214	51233162		
24215	25513712		
24216	52261002	FIM21 BCD	' F 21 = FPAU MULT UTILITY'
24217	01124012		
24220	26472164		
24221	12446443		
24222	63126463		
24223	31433163		
24224	70371212		
24225	52326445	FAM21 BCD	' UNIT=2 FUNCTION=21 FPAU MULT UTILITY'
24226	31634002		
24227	12266445		
24230	23633146		
24231	45400001		

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24232	12264721		
24233	64124464		
24234	43631264		
24235	63314331		
24236	63701212		
24237	52121212	BCD	' THIS FUNCTION ALLOWS MULT '
24240	12126330		
24241	31621226		
24242	64452263		
24243	31464512		
24244	21434346		
24245	66621244		
24246	64436312		
24247	52232162	BCD	' CASES TO BE PRESENTED TO THE FPAU'
24250	25621263		
24251	46122225		
24252	12475125		
24253	62254563		
24254	25241263		
24255	46126330		
24256	25122647		
24257	21641212		
24260	52264651	BCD	' FORMAT IS THE DISPLAY CONTROL WORD.'
24261	44216312		
24262	31621263		
24263	30251224		
24264	31624743		
24265	21701223		
24266	46456351		
24267	46431266		
24270	46512433		
24271	52001213	BCD	' 0 = DISPLAY RESULT ONLY'
24272	12243162		
24273	47432170		
24274	12512562		
24275	64436312		

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24276	46454370		
24277	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES'
24300	12243162		
24301	47432170		
24302	12462424		
24303	12234346		
24304	23421263		
24305	31442562		
24306	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES'
24307	12243162		
24310	47432170		
24311	12256525		
24312	45122343		
24313	46274212		
24314	63314425		
24315	62121212		
24316	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
24317	12243162		
24320	47432170		
24321	12214343		
24322	12234346		
24323	22421263		
24324	31442562		
24325	52222563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
24326	12224703		
24327	12674412		
24330	62644747		
24331	51256262		
24332	12466463		
24333	47646312		
24334	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
24335	12224701		
24336	12674412		
24337	43464447		
24340	12464512		
24341	63256263		

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24342	12232162		
24343	25121212		
24344	52121212	BCD	' REFER TO UNIT ABSTRACT FOR THE USE OF'
24345	12125125		
24346	26255112		
24347	63461264		
24350	45316312		
24351	21226263		
24352	51212363		
24353	12264451		
24354	12633225		
24355	12646225		
24356	12462412		
24357	52633231	BCD	' THIS FUNCTION WITH THE MULT EXERCISER'
24360	62122464		
24361	45236331		
24362	46451266		
24363	31633212		
24364	63302412		
24365	44644363		
24366	12256725		
24367	51233162		
24370	25513712		
24371	52261202	F1M22 BCD	' F 22 = FPAU DIV UTILITY'
24372	02124212		
24373	26472164		
24374	12243165		
24375	12646331		
24376	43316370		
24377	37121212		
24400	52326445	F4M22 BCD	' UNIT=2 FUNCTION=22 FPAU DIV UTILITY'
24401	31634702		
24402	12266445		
24403	23633146		
24404	45400202		
24405	12264721		

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24406	64122431		
24407	65126463		
24410	31433163		
24411	70121212		
24412	52121212	BCD	' THIS FUNCTION ALLOWS DIV '
24413	12126330		
24414	31621226		
24415	64452363		
24416	31464512		
24417	21434346		
24420	66621224		
24421	31651212		
24422	52232162	BCD	' CASES TO BE PRESENTED TO THE FPAU'
24423	25621263		
24424	46122225		
24425	12475125		
24426	62254563		
24427	25241263		
24430	46126330		
24431	25122447		
24432	21641212		
24433	52264651	BCD	' FORMAT IS THE DISPLAY CONTROL WORD.'
24434	44214312		
24435	31621263		
24436	30251224		
24437	31624743		
24440	21701223		
24441	46456351		
24442	46431266		
24443	46512433		
24444	52001213	BCD	' 0 = DISPLAY RESULT ONLY'
24445	12243162		
24446	47432170		
24447	12512562		
24450	64436312		
24451	46454370		

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24452	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES'
24453	12243162		
24454	47432170		
24455	12462424		
24456	12234346		
24457	23421263		
24460	31442562		
24461	52021213	BCD	' 2 = DISPLAY EVEN CLOCK TIMES'
24462	12243162		
24463	47432170		
24464	12256525		
24465	45122343		
24466	46234212		
24467	63314425		
24470	62121212		
24471	52031213	BCD	' 3 = DISPLAY ALL CLOCK TIMES'
24472	12243162		
24473	47432170		
24474	12214343		
24475	12234346		
24476	23421263		
24477	31442562		
24500	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
24501	12224703		
24502	12634612		
24503	62644747		
24504	51256262		
24505	12466463		
24506	47646312		
24507	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
24510	12224701		
24511	12634612		
24512	43464447		
24513	12464512		
24514	63256263		
24515	12232162		

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24516	25121212		
24517	52121212	BCD	' REFER TO UNIT ABSTRACT FOR THE USE OF'
24520	12125125		
24521	26255112		
24522	63461264		
24523	45316312		
24524	21226263		
24525	51212363		
24526	12264451		
24527	12633025		
24530	12646225		
24531	12462612		
24532	52633031	BCD	' THIS FUNCTION WITH THE DIV EXERCISER!'
24533	62122664		
24534	45236231		
24535	46451266		
24536	31633012		
24537	63302512		
24540	24316512		
24541	25672551		
24542	23316225		
24543	51371212		
24544	52261202	FIM23 BCD	' F 23 = FPAU IDIV UTILITY!'
24545	43124012		
24546	26472164		
24547	12312431		
24550	65126463		
24551	31433163		
24552	70371212		
24553	52326445	FAM23 BCD	' UNIT=2 FUNCTION=23 FPAU IDIV UTILITY!'
24554	31634002		
24555	12266445		
24556	23633146		
24557	45400203		
24560	12264421		
24561	64123124		

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24562	31651264		
24563	63314331		
24564	63701212		
24565	52121212	BCD	' THIS FUNCTION ALLOWS IDIV '
24566	12126330		
24567	31621226		
24570	64452363		
24571	31464512		
24572	21434246		
24573	66621231		
24574	24316512		
24575	52232162	BCD	' CASES TO BE PRESENTED TO THE FPAU'
24576	25621263		
24577	46122225		
24600	12475125		
24601	62254563		
24602	25241263		
24603	46126330		
24604	25122447		
24605	21641212		
24606	52264451	BCD	' FORMAT IS THE DISPLAY CONTROL WORD.'
24607	44216312		
24610	31621263		
24611	30251224		
24612	31624743		
24613	21701223		
24614	46456351		
24615	46431266		
24616	46512433		
24617	52001213	BCD	' 0 = DISPLAY RESULT ONLY'
24620	12243162		
24621	47432170		
24622	12512562		
24623	64436312		
24624	46454370		
24625	52011213	BCD	' 1 = DISPLAY ODD CLOCK TIMES'



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24626	12243162		
24627	47432170		
24630	12462424		
24631	12274244		
24632	23421263		
24633	31442562		
24634	52021213	BCD	' 2 * DISPLAY EVEN CLOCK TIMES'
24635	12243162		
24636	47432170		
24637	12256525		
24640	45122343		
24641	46234212		
24642	63314425		
24643	62121212		
24644	52031213	BCD	' 3 * DISPLAY ALL CLOCK TIMES'
24645	12243162		
24646	47432170		
24647	12214343		
24650	12234744		
24651	23421263		
24652	31442562		
24653	52622563	BCD	' SET BP3 TO SUPPRESS OUTPUT'
24654	12224703		
24655	12634612		
24656	62644747		
24657	51256262		
24660	12446463		
24661	47646312		
24662	52622563	BCD	' SET BP1 TO LOOP ON TEST CASE'
24663	12224701		
24664	12634612		
24665	43444647		
24666	12444512		
24667	63256263		
24670	12232162		
24671	25121212		

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24672	52121212	BCD	' REFER TO UNIT ABSTRACT FOR THE USE OF'
24673	12125125		
24674	26255112		
24675	63441264		
24676	45316312		
24677	21226263		
24700	51212363		
24701	12264651		
24702	12633225		
24703	12646225		
24704	12462612		
24705	52633231	BCD	' THIS FUNCTION WITH THE IDIV EXERCISER'
24706	62122464		
24707	45236331		
24710	46451266		
24711	31633212		
24712	63302512		
24713	31243165		
24714	12256725		
24715	51233162		
24716	25513712		
24717	52010021	A10 BCD	' 10A''
24720	37121212		
24721	52010121	A11 BCD	' 11A''
24722	37121212		
24723	52010221	A12 BCD	' 12A''
24724	37121212		
24725	52010321	A13 BCD	' 13A''
24726	37121212		
24727	52010421	A14 BCD	' 14A''
24730	37121212		
24731	52010521	A15 BCD	' 15A''
24732	37121212		
24733	52010621	A16 BCD	' 16A''
24734	37121212		
24735	52010721	A17 BCD	' 17A''

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24736	37121212			
24737	52011021	A18	BCD	' 18A''
24740	37121212			
24741	52011121	A19	BCD	' 19A''
24742	37121212			
24743	52020021	A20	BCD	' 20A''
24744	37121212			
24745	52020121	A21	BCD	' 21A''
24746	37121212			
24747	52020121	A21A22	BCD	' 21A,22A''
24750	73020221			
24751	37121212			
24752	52020121	A21A26	BCD	' 21A,26A''
24753	73020621			
24754	37121212			
24755	52020221	A22	BCD	' 22A''
24756	37121212			
24757	52020321	A23	BCD	' 23A''
24760	37121212			
24761	52020421	A24	BCD	' 24A''
24762	37121212			
24763	52020421	A24A26	BCD	' 24A,26A''
24764	73020621			
24765	37121212			
24766	52020421	A26	BCD	' 26A''
24767	37121212			
24770	52020721	A27	BCD	' 27A''
24771	37121212			
24772	52021021	A28	BCD	' 28A''
24773	37121212			
24774	52021121	A29	BCD	' 29A''
24775	37121212			
24776	52030021	A30	BCD	' 30A''
24777	37121212			
25000	52030121	A31	BCD	' 31A''
25001	37121212			

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25002	52030221	A32	BCD	' 32A''
25003	37121212			
25004	52210073	A3A4	BCD	' A3,A4''
25005	21043712			
25006	52012137	A1	BCD	' 1A''
25007	52022137	A2	BCD	' 2A''
25010	52210337	A3	BCD	' A3''
25011	52042137	A4	BCD	' 4A''
25012	52052137	A5	BCD	' 5A''
25013	52062137	A6	BCD	' 6A''
25014	52072137	A7	BCD	' 7A''
25015	52102173	A8A12	BCD	' 8A,12A''
25016	01022137			
25017	52102137	A8	BCD	' 8A''
25020	52112137	A9	BCD	' 9A''
25021	52010022	B10	BCD	' 10B''
25022	37121212			
25023	52010022	B12	BCD	' 12B''
25024	37121212			
25025	52010422	B14	BCD	' 14B''
25026	37121212			
25027	52011022	B18	BCD	' 18B''
25030	37121212			
25031	52020022	B20	BCD	' 20B''
25032	37121212			
25033	52020122	B21	BCD	' 21B''
25034	37121212			
25035	52020122	B21B30	BCD	' 21B,30B''
25036	73030022			
25037	37121212			
25040	52020222	B22	BCD	' 22B''
25041	37121212			
25042	52020422	B24	BCD	' 24B''
25043	37121212			
25044	52020022	B25	BCD	' 25B''
25045	37121212			

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25046	52020622	R26	BCD	' 268''
25047	37121212			
25050	52020722	R27	BCD	' 278''
25051	37121212			
25052	52021022	R28	BCD	' 288''
25053	37121212			
25054	52021122	R29	BCD	' 298''
25055	37121212			
25056	52022237	R2	BCD	' 28''
25057	52030022	R30	BCD	' 308''
25060	37121212			
25061	52030222	R32	BCD	' 328''
25062	37121212			
25063	52042237	R4	BCD	' 48''
25064	52052237	R5	BCD	' 58''
25065	52062237	R6	BCD	' 68''
25066	52072237	R7	BCD	' 78''
25067	52102237	R8	BCD	' 88''
25070	52112237	R9	BCD	' 98''
25071	52010423	C16	BCD	' 16C''
25072	37121212			
25073	52020223	C22	BCD	' 22C''
25074	37121212			
25075	52020223	C22C32	BCD	' 22C,32C''
25076	73030223			
25077	37121212			
25100	52020423	C24	BCD	' 24C''
25101	37121212			
25102	52020423	C25	BCD	' 25C''
25103	37121212			
25104	52020423	C26	BCD	' 26C''
25105	37121212			
25106	52021023	C28	BCD	' 28C''
25107	37121212			
25110	52021123	C29	BCD	' 29C''
25111	37121212			

FPAU	TAP=3.0			PAGE 258
25112	52021123	C29C30	BCD	' 29C,30C''
25113	73030023			
25114	37121212			
25115	52030023	C30	BCD	' 30C''
25116	37121212			
25117	52030123	C31	BCD	' 31C''
25120	37121212			
25121	52030223	C32	BCD	' 32C''
25122	37121212			
25123	52102337	C8	BCD	' 8C''
25124	52112337	C9	BCD	' 9C''
25125	52010322	CG1	BCD	' 13B,10C,16C,18C''
25126	73010023			
25127	73010623			
25130	73011023			
25131	37121212			
25132	52020322	CG10	BCD	' 23B,10C,17C,19C''
25133	73010023			
25134	73010723			
25135	73011123			
25136	37121212			
25137	52020322	CG11	BCD	' 23B,11C,17C,18C''
25140	73010123			
25141	73010723			
25142	73011023			
25143	37121212			
25144	52020322	CG12	BCD	' 23B,11C,17C,19C''
25145	73010123			
25146	73010723			
25147	73011123			
25150	37121212			
25151	52020322	CG13	BCD	' 23B,14C,17C,19C''
25152	73010423			
25153	73010723			
25154	73011123			
25155	37121212			

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25156	52020322	CG14	BCD	' 23B,14C,17C,18C''
25157	73010423			
25160	73010723			
25161	73011023			
25162	37121212			
25163	52010322	CG2	BCD	' 13B,10C,16C,19C''
25164	73010423			
25165	73010423			
25166	73011123			
25167	37121212			
25170	52010322	CG3	BCD	' 13B,11C,16C,18C''
25171	73010423			
25172	73010423			
25173	73011023			
25174	37121212			
25175	52010322	CG4	BCD	' 13B,11C,16C,19C''
25176	73010423			
25177	73010423			
25200	73011123			
25201	37121212			
25202	52011122	CG5	BCD	' 19B,14C,17C,18C''
25203	73010423			
25204	73010723			
25205	73011023			
25206	37121212			
25207	52011122	CG6	BCD	' 19B,14C,17C,19C''
25210	73010423			
25211	73010723			
25212	73011123			
25213	37121212			
25214	52011122	CG7	BCD	' 19B,15C,17C,18C''
25215	73010423			
25216	73010723			
25217	73011023			
25220	37121212			
25221	52011122	CG8	BCD	' 19B,15C,17C,19C''

FPAU	TAP=3.C			PAGE 260
25222	73010423			
25223	73010723			
25224	73011123			
25225	37121212			
25226	52020322	CG9	BCD	' 23B,10C,17C,18C''
25227	73010423			
25230	73010723			
25231	73011023			
25232	37121212			
25233	52020322	FGR5UP	BCD	' 23C,27C,29C,31C,32C''
25234	73020723			
25235	73021123			
25236	73030123			
25237	73030223			
25240	37121212			
25241	52233~25	NSFPAU	BCD	' CHECK FPAU POWER AND CABLES, ALSO CHECK 7C,8C,9C,15C,18C,21C''
25242	23421226			
25243	47216412			
25244	47466425			
25245	51122145			
25246	24122421			
25247	22432462			
25250	73122143			
25251	62461223			
25252	30252342			
25253	12072373			
25254	10237311			
25255	23730105			
25256	23730110			
25257	23730201			
25260	23371212			
25261	52030221	PGEN1	BCD	' 30A,31A,29B,30B,31B''
25262	73030421			
25263	73021122			
25264	73030222			
25265	73030122			



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25376	64436312				
25377	31621512				
25400	52121212	BCD	'	C1	C2 OVERFLOW !!
25401	23011212				
25402	12121212				
25403	12231212				
25404	12121246				
25405	65255126				
25406	43466652				
25407	37121212				
25410	52633125	REGSE BCD	'		THE RESULT SHOULD BE !!
25411	12512562				
25412	64436312				
25413	62304664				
25414	43241222				
25415	25151212				
25416	52121212	BCD	'	C1	C2 OVERFLOW !!
25417	23011212				
25420	12121212				
25421	12231212				
25422	12121246				
25423	65255126				
25424	43466652				
25425	37121212				
25426	52523712	CARRET BCD	'	!!	
25427	52212424	ADDEX BCD	'		ADD FAILURE !!
25430	12262131				
25431	43645125				
25432	37121212				
25433	52626422	SUBFX BCD	'		SUB FAILURE !!
25434	12262131				
25435	43645125				
25436	37121212				
25437	52314565	ISUREX BCD	'		INVERSE SUB FAILURE !!
25440	25516225				
25441	12626422				

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25442	12262131				
25443	43645125				
25444	37121212				
25445	52446443	MULEX BCD	'		MUL FAILURE !!
25446	12262131				
25447	43645125				
25450	37121212				
25451	52243165	DIVEX BCD	'		DIV FAILURE !!
25452	12262131				
25453	43645125				
25454	37121212				
25455	52314565	IDIVEX BCD	'		INVERSE DIV FAILURE !!
25456	25516225				
25457	12243165				
25460	12262131				
25461	43645125				
25462	37121212				
25463	52624725	EXERC BCD	'		SPECIAL CASE FAILURE !!
25464	23312143				
25465	12232162				
25466	25122421				
25467	31436451				
25470	25371212				
25471	52264721	HUNGUP BCD	'		FFAU FAILED TO CLEAR, THE TEST WORDS ARE !!
25472	64122621				
25473	31432524				
25474	12634412				
25475	23432521				
25476	51731263				
25477	30251263				
25500	25626312				
25501	66465124				
25502	62122151				
25503	25155237				
25504	52466525	NOTSET BCD	'		OVERFLOW INTERRUPT, BUT OF TESTS OFF !!
25505	51264346				

25506	66123145						
25507	63255151						
25510	64476373						
25511	12226463						
25512	12462412						
25513	63256263						
25514	62124426						
25515	26371212						
25516	52466525	NOREST BCD					' OVERFLOW INTERRUPT NOT RESET BY OVERFLOW TEST !!
25517	51264446						
25520	66123145						
25521	63255151						
25522	64476312						
25523	45466312						
25524	51256225						
25525	63122270						
25526	12466525						
25527	51264346						
25530	66126325						
25531	62633712						
25532	52124447	MPAABB BCD	'	OPCODE	A1	A2	B1 B2 !!
25533	23462425						
25534	12121212						
25535	12122101						
25536	12121212						
25537	12121221						
25540	02121212						
25541	12121212						
25542	22011212						
25543	12121212						
25544	12220252						
25545	37121212						
25546	52121212	AABBF BCD	'	A1	A2	B1	B2 FORMAT !!
25547	12210112						
25550	12121212						
25551	12122102						

25552	12121212
25553	12121222
25554	0121212
25555	12121212
25556	22021212
25557	12121226
25560	46514421
25561	63523712

END

LITERALS USED:	
25562	00000000
25563	00000004
25564	77777777
25565	05000000
25566	24000000
25567	02400000
25570	01200000
25571	00120000
25572	00050000
25573	00005000
25574	00002400
25575	00000200
25576	00000100
25577	00000050
25600	00000020
25601	00000005
25602	00000002
25603	77777000
25604	63146000
25605	14631000
25606	00000340
25607	77400000
25610	00377000
25611	37240000
25612	00521000
25613	00012000

25614 0004000  
 25615 0000000  
 25616 1400000  
 25617 0000000  
 25620 0000000  
 25621 0014000  
 25622 0003000  
 25623 0000000  
 25624 0000100  
 25625 0000000  
 25626 0000000  
 25627 0000014  
 25630 0000003  
 25631 0000000  
 25632 0000777  
 25633 0000017  
 25634 0000000  
 25635 0000000  
 25636 0001000  
 25637 0000000  
 25640 0000000  
 25641 0000000  
 25642 0000000  
 25643 0000000  
 25644 0000000  
 25645 0000001  
 25646 0000001  
 25647 0000000  
 25650 0000000  
 25651 0000000  
 25652 0000000  
 25653 0000001  
 25654 0000000  
 25655 0000000  
 25656 0000000  
 25657 0000000

25660 0000000  
 25661 0000000  
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 25720 0000000  
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 25723 0000000



25724 25252732  
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 25727 02405000  
 25730 05252525  
 25731 25252734  
 25732 00000034  
 25733 00000043  
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 25737 00010000  
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 25742 00017161  
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 25761 77777377  
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 25766 00000237  
 25767 00000327

25770 00000337  
 25771 00000273  
 25772 00000161  
 25773 00000343  
 25774 53577045  
 25775 77777760

25776 CELLS USED BY PROGRAM

LOCAL SYMBOLS USED -

A000	17261+	A10	24717+	A11	24721+
A12	24723+	A13	24725+	A14	24727+
A15	24731+	A16	24733+	A17	24735+
A18	24737+	A19	24741+	A1	25006+
A20	24743+	A21	24745+	A21A22	24747+
A21A26	24752+	A22	24755+	A23	24757+
A24	24761+	A24A26	24763+	A26	24766+
A27	24770+	A28	24772+	A29	24774+
A2	25007+	A30	24776+	A31	25000+
A32	25002+	A3A4	25004+	A3	25010+
A4	25011+	A5	25012+	A6	25013+
A7	25014+	A8A12	25015+	A8	25017+
A9	25020+	AA1	17134+	AA2	17135+
AAA1	16255+	AAA2	16400+	AABBF	25546+
ADDEX	25427+	ADDU	13511+	AGAIN1	11623+
AGAIN2	11767+	AGAIN3	12133+	AGAIN4	12277+
AGAIN5	12431+	AGAIN6	12563+	AL	17322+
AREG	410	AU	17321+	AXE	15232+
AXSET	15354+	AXSL	15243+	AXSL1	16040+
AXSR1	15763+	AXSU	15247+	AXSUA	15263+
B000	17262+	B10	25021+	B12	25023+

B14	25025+	B18	25027+	B20	25031+
B21	25033+	B21330	25035+	B22	25040+
B24	25042+	B25	25044+	B26	25046+
B27	25050+	B28	25052+	B29	25054+
B2	25056+	B30	25057+	B32	25061+
B4	25063+	B5	25064+	B6	25065+
B7	25066+	B8	25067+	B9	25070+
BB1	17136+	BB2	17137+	BBB1	16256+
BBB2	17401+	BL	17324+	BKEG	411
BU	17323+	BXBL1	16706+	BXBR1	15733+
BXS	15337+	BXSET	15347+	BX	15331+
C14	25071+	C11S	17336+	C1SB	17342+
C22	25073+	C22C32	25075+	C24	25100+
C25	25102+	C26	25104+	C28	25106+
C29	25110+	C29C30	25112+	C21S	17337+
C23R	17343+	C30	25113+	C31	25117+
C32	25121+	C3	25123+	C9	25124+
CARRET	25426+	C31	25125+	C310	25132+
C411	25137+	C312	25144+	C313	25151+
C414	25156+	C32	25163+	C33	25170+
C44	25175+	C35	25202+	C36	25207+
C37	25214+	C3R	25221+	C39	25226+
CLEAR	14457+	CLREFS	16166+	CLRS1G	16201+
CSMMX	14441+	CPJ	17263+	DCDD	17264+
DISPLY	14260+	DIVERT	450	DIVEX	25451+
DIVU	14265+	DL	17331+	DANDMP	16632+
DME	452	DSCSIZ	404	DUMP	16533+
DU	17330+	LXC	16104+	DXCU	16114+
DXR1	17330+	DXSL	15705+	DXSU	15711+
ECD	14264+	ECU	16056+	END	434
EM720	14244+	EM721	14264+	EM722	14334+
EM723	14343+	EM724	14352+	EM725	14361+
EM726	14370+	EM727	14377+	EM730	14406+
EM731	14420+	EM732	14430+	EMSS	16660+
EM8R	460	ERRORS	414	EMAJT	16653+
EMEA	17265+	EMENCA	25357+	FXB	15310+

EXCPU	15273+	EXERC	25463+	EXLOOP	12711+
EAS	15317+	EX	16100+	E	17327+
FAM0	20116+	FAM1	20203+	FAM12	22264+
FAM13	22444+	FAM14	22624+	FAM15	23004+
FAM16	23164+	FAM17	23344+	FAM18	23524+
FAM19	23677+	FAM20	20445+	FAM20	24052+
FAM21	24220+	FAM22	24400+	FAM23	24553+
FAM3	20707+	FAM4	21152+	FAM5	21414+
FAM6	21684+	FAM7	22125+	FAM	16741+
FC2	14272+	FCOLP	6071+	FDENE	456
FCR50	20233+	FID0	16751+	FID1	16757+
FID12	17031+	FID13	17037+	FID14	17045+
FID15	17053+	FID16	17061+	FID17	17067+
FID18	17075+	FID19	17103+	FID2	16765+
FID20	17111+	FID21	17117+	FID22	17125+
FID23	17133+	FID3	16773+	FID4	17001+
FID5	17007+	FID6	17015+	FID7	17023+
FID9	20110+	FIM1	20174+	FIM12	22255+
FIM13	22435+	FIM14	22615+	FIM15	22775+
FIM16	23155+	FIM17	23335+	FIM18	23515+
FIM19	23670+	FIM2	20436+	FIM20	24043+
FIM21	24216+	FIM22	24371+	FIM23	24544+
FIM3	20700+	FIM4	21143+	FIM5	21405+
FIM6	21647+	FIM7	22112+	FIRST1	17161+
FI	14742+	FLASS	332	FL3940	17267+
FIMAT	17140+	FPT0	16744+	FPT1	16752+
FPT12	17024+	FPT13	17032+	FPT14	17040+
FPT15	17046+	FPT16	17054+	FPT17	17062+
FPT18	17070+	FPT19	17076+	FPT2	16760+
FPT20	17104+	FPT21	17112+	FPT22	17120+
FPT23	17126+	FPT3	16766+	FPT4	16774+
FPT5	17002+	FPT6	17010+	FPT7	17016+
FREFDY	14671+	FSTJCK	16707+	FUNCTN	424
FCO	4007+	FUNG1	11611+	FUNG12	13010+
FCO13	13074+	FUNG14	13160+	FUNG15	13245+
FCO16	13231+	FUNG17	13415+	FUNG16	13501+

FUNC19	17574+	FUNC2	11755+	FUNC20	13667+
FUNC21	13762+	FUNC22	14055+	FUNC23	14180+
FUNC3	12121+	FUNC4	12265+	FUNC5	12417+
FUNC6	12551+	FUNC7	12703+	FVMO	20171+
FX39	15325+	F	17266+	G000	17270+
GATES1	17332+	GATES2	17333+	GET1	16250+
GL	17272+	GU	17271+	GXAD	15502+
GXAND	15524+	GXNAD	15551+	HR	17273+
HUGUP	25471+	I30	240	I30T44	16431+
I31	243	I33	247	I56174	16430+
I60	301	I73	327	I77	337
IDIVU	14160+	IDIVEX	25455+	IEXIT	16365+
IEXT	14415+	IFAIL	25303+	IFLAG	16743+
ILLEX	16473+	IMSG	16521+	INT31	242
INT33	246	INTERN	16373+	ISUBU	N 13677+
ISUBEX	25437+	ITABLE	16467+	IK	17277+
K000	17274+	KGEN	15576+	KLOOP	15630+
KL	17276+	KU	17275+	LADDR	25273+
LAST	14243+	LAST1	17251+	LCKCS	N 402
MODULE	17300+	MULEX	25445+	MULJ	N 13772+
NFE1	16234+	N012	13040+	N013	13124+
N014	13210+	N015	13275+	N016	13361+
N017	13445+	N0FPAU	25241+	N0K18	15625+
N0K38	15611+	N0REST	25516+	N0RMAL	15141+
N0TPHO	14305+	N0TSET	25504+	0BJECT	430
0DD	17304+	0DDCK	25366+	0DDEVN	17305+
0FGEN	14122+	0FI	17306+	0FIS	17340+
0FSS	17344+	0F	17303+	0KINT	16351+
0LGEN	16152+	0L	17302+	0PAABB	25532+
0PCBDE	14446+	0PTYPE	12744+	0RXHR	15717+
0SS	17301+	0SSGEN	15777+	0UTLG	17307+
0VRFLB	N 413	P000	17310+	P02	N 14276+
P03	N 14447+	P04	14307+	P10TMP	17311+
P13GRP	25300+	PGEN1	25261+	PGR0UP	25311+
PH0	14467+	PH1	14474+	PH10	15014+
PH10A	15025+	PH10B	15030+	PH10C	15062+

PH11	15072+	PH12	15115+	PH12A	15125+
PH12B	15127+	PH14	15165+	PH14A	15204+
PH14B	15213+	PH2	N 14502+	PH2A	14515+
PH2B	14523+	PH3	N 14533+	PH4	N 14554+
PH5	14570+	PH5A	14605+	PH5B	14636+
PH5C	14615+	PH5D	14622+	PH5E	14631+
PH6	14637+	PH6A	14660+	PH6B	14664+
PH6C	14654+	PH6D	14667+	PH7	14677+
PH7A	14710+	PH7B	14712+	PH8	14723+
PH8A	14741+	PH9A	14747+	PH9AA	14757+
PH9AB	14761+	PH9B	14771+	PH9BA	15001+
PH9BB	15003+	PHASE	17320+	PINO	17141+
PIN1	17142+	PIN10	N 17153+	PIN11	N 17154+
PIN12	17155+	PIN13	N 17156+	PIN14	N 17157+
PIN15	17160+	PIN2	17143+	PIN3	17144+
PIN4	17145+	PIN5	17146+	PIN6	17147+
PIN7	17150+	PIN8	17151+	PIN9	17152+
PINIT	16716+	PININ	16537+	PL	17326+
P0P	16423+	P0PED	16506+	PUT0UT	16316+
PU	17325+	PXAD	15361+	PXAND	15403+
PXNAD	15430+	PXNAND	15455+	RADSIZ	N 403
RAND0M	16443+	REP0RT	454	RESIS	N 25374+
RESSB	25410+	RETURN	440	RL1	N 415
RL2	N 416	RL4	N 417	S000	17312+
SAVE1	16243+	SEED	406	SIGNSB	17345+
SIGNIS	17341+	SKS720	14432+	SKS721	14441+
SL	17335+	SPRINT	16512+	SPUR	16331+
SPUR1	14402+	STATUS	401	SUB	17313+
SUBEX	25433+	SUBU	N 13604+	SU	17334+
SXADD	15660+	SXB	15753+	SXCPU	15222+
SYSIZE	N 405	TEMPU	17315+	TEMP	17314+
TEMPL	17316+	TIMER	16726+	TIME	N 407
TITLE	25317+	JADDR	25267+	UAM	17371+
UAM	N 400	UFGEN	16135+	UF	17317+
UIM	17356+	UNIT	420	UNIT2	N 4000+
UPT	16734+	UVM	17346+	XREG	N 412

FPAU TAP-3.C

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