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43 * 00 00043
44 * 00 00044
45 * THE INSTRUCTION TEST CONSIST OF TWO PARTS, EACH PART IS FREE 00 00045
46 * STANDING AND NOT FUNCTIONALLY DEPENDENT UPON THE OTHER. 00 00046
47 * THIS IS PART 2, NORMALLY PART 1 IS EXECUTED FIRST, 00 00047
48 * PART 2 TESTS THE EXTENDED ADDRESSING INSTRUCTIONS, I/O 00 00048
49 * INSTRUCTIONS AND THE OPTIONAL INSTRUCTIONS. 00 00049
50 * 00 00050
51 * 00 00051
52 * 00 00052
53 * 00 00053
54 * 00 00054
55 * 00 00055
56 * 00 00056
57 * 00 00057
58 * 00 00058
59 * 00 00059
60 * 00 00060
61 * ***** 00 00061
62 * * 00 00062
63 * * AREAS RESERVED BY EXECUTIVE * 00 00063
64 * ***** 00 00064
65 * ORG 0 00 00065
66 * JMP EXECUTIVE 00 00066
67 * ORG 040 00 00067
68 * JMPM POWER DOWN ROUTINE 00 00068
69 * JMP POWER UP ROUTINE 00 00069
70 * NOTE: THE TEST EXECUTIVE ALSO RESERVES LOCATIONS 0400 TO 0477 00 00070
71 * FOR A POINTER TABLE TO STANDARD ROUTINES, AND AS AN AREA 00 00071
72 * FOR EXECUTIVE DATA. ALL TEST PROGRAMS WORKING WITH THE 00 00072
73 * EXECUTIVE MUST PRESERVE THIS BLOCK. 00 00073
74 * STANDARD ROUTINES WILL BE CALLED INDIRECTLY THRU 00 00074
75 * THIS TABLE 00 00075
76 * 00 00076
77 * 00 00077
78 * 00 00078
79 * 00 00079
80 * 00 00080
81 * 00 00081
82 ORG 0400 00 00082
83 OUTA BSS 1 OUTPUT ONE CHAR ROUTINE 00 00083
84 OUTR BSS 1 OUTPUT TWO CHAR ROUTINE 00 00084

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000400
000400
000401

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PAGE	3	03/01/74	INSPT2	VORTEX	DASMR	2148 HOURS			
000402	85	OUTC	BSS	1	OUTPUT CR/LF	ROUTINE	00	00085	
000403	86	OUTD	BSS	1	OUTPUT MESSAGE	ROUTINE	00	00086	
000404	87	OUTE	BSS	1	OUTPUT OCTAL WORD	ROUTINE	00	00087	
000405	88	OUTF	BSS	1	OUTPUT OCTAL ADDR	ROUTINE	00	00088	
000406	89	OUTG	BSS	1	OUTPUT ERROR MSG	ROUTINE	00	00089	
000407	90	OUTH	BSS	1	OUTPUT CONTROL CHAR TO TTY	ROUTINE	00	00090	
000410	91	INPA	BSS	1	INPUT ONE CHAR	ROUTINE	00	00091	
000411	92	INPB	BSS	1	INPUT AND PRINT ONE CHAR	ROUTINE	00	00092	
000412	93	INPC	BSS	1	INPUT ONE CHAR EDITED	ROUTINE	00	00093	
000413	94	INPD	BSS	1	INPUT ONE ALPHA CHAR	ROUTINE	00	00094	
000414	95	INPE	BSS	1	INPUT TWO ALPHA CHAR	ROUTINE	00	00095	
000415	96	INPF	BSS	1	INPUT COMMA/PERIOD TERMINATION	ROUTINE	00	00096	
000416	97	INPG	BSS	1	INPUT OCTAL NUMBER	ROUTINE	00	00097	
000417	98	TOUT	BSS	1	TIME-OUT	ROUTINE	00	00098	
000420	99	TOLY	BSS	1	TIME DELAY	ROUTINE	00	00099	
000421	100	SSWT	BSS	1	STANDARD SENSE SWITCH	ROUTINE	00	00100	
000422	101	SLWE	BSS	1	LOWEST WORD USED BY EXEC		00	00101	
000423	102	ESZC	BSS	1	MEMORY SIZE DETERMINATION	ROUTINE	00	00102	
000424	103	SMSM	BSS	1	MEMORY SIZE MESSAGE		00	00103	
000425	104	INPH	BSS	1	SENSE TTY BUFFER READY		00	00104	
000426	105	INPI	BSS	1	INIT TTY(INPUT CHAR W/D SENSE BUF READY)		00	00105	
	106	*					00	00106	
	107	*					00	00107	
000440	108		ORG	0440			00	00108	
	109	*					00	00109	
	110	*	EXECUTIVE DATA TABLE				00	00110	
	111	*					00	00111	
000440	112	SFLG	BSS	1	LOOP ON ERROR FLAG, 0=DON'T LOOP 1=LOOP		00	00112	
000441	113	SHEM	BSS	1	MEMORY SIZE (HIGHEST AVAIL CORE)		00	00113	
000442	114	SCON	BSS	1	0=CONSOLE MODE 1=TTY MODE		00	00114	
000443	115		BSS	22			00	00115	
000471	116	SDCT	BSS	1	DIGIT COUNTER FOR INPG		00	00116	
	117	*					00	00117	
	118	*****						00	00118
	119	*					*00	00119	
	120	*****						00	00120
	121	*					00	00121	
	122	*					00	00122	
	123	*					00	00123	
007370 A	124	STTY	SET	07370	STTY IS SET BY THE TEST EXECUTIVE AND		00	00124	
	125	*			CONTAINS THE TTY DEVICE ADDRESS		00	00125	
	126	*					00	00126	

Address	Instruction	Op Code	Comments	Line	Page
127 *				00	00127
128 *				00	00128
129 *				00	00129
130 *****				00	00130
131 *				*00	00131
000600 132	ORG	0600	STARTING ADDRESS OF INSTRUCTION TEST	00	00132
133 *				*00	00133
134 *****				00	00134
135 *				00	00135
000600 010442 A 136	IBGN LDA	SCON	TTY/CONSOLE MODE FLAG	00	00136
000601 001010 A 137	JAZ	IBG4	CONSOLE MODE ?,YES	00	00137
000602 000722 A					
000603 006030 A 138	LDXI	MSG1	THIS IS THE 620 INSTRUCTION TEST	00	00138
000604 001102 A					
000605 002000 A 139	CALL*	OUTD		00	00139
000606 100403 A					
000607 006030 A 140	IBG1 LDXI	MSG2	'CPU TYPE='	00	00140
000610 001132 A					
000611 002000 A 141	CALL*	OUTD		00	00141
000612 100403 A					
000613 002000 A 142	CALL*	INPG	INPUT CPU TYPE (1-6).	00	00142
000614 100416 A					
000615 001000 A 143	JMP	IBGN	SS3 EXIT	00	00143
000616 000600 A					
000617 001000 A 144	JMP	IBG1	BACK SLASH EXIT	00	00144
000620 000607 A					
000621 001000 A 145	JMP	**2	, EXIT	00	00145
000622 000623 A					
000623 051161 A 146	STA	STYP		00	00146
000624 006030 A 147	IBG2 LDXI	MSG3	'CYCLES = '	00	00147
000625 001142 A					
000626 002000 A 148	CALL*	OUTD		00	00148
000627 100403 A					
000630 005301 A 149	DECR	01	INPUT #CYCLES (SCYC),AND TERMINATING	00	00149
000631 051162 A 150	STA	SECY	CHARACTER (SECY),SECY PRESET TO ,	00	00150
000632 002000 A 151	CALL*	INPG		00	00151
000633 100416 A					
000634 001000 A 152	JMP	IBGN	SS3 EXIT	00	00152
000635 000600 A					
000636 001000 A 153	JMP	IBG2	BACK SLASH EXIT	00	00153
000637 000624 A					
000640 001000 A 154	JMP	**4	, EXIT	00	00154

000641	000644	A							
			155	*	PERIOD RETURN FROM INPG			00	00155
000642	005002	A	156		TZB			00	00156
000643	061162	A	157		STB	SECY		00	00157
000644	051163	A	158		STA	SCYC		00	00158
000645	011161	A	159	IBG3	LDA	STYP	GET CPU TYPE	00	00159
000646	006140	A	160		SUBI	3		00	00160
000647	000003	A							
000650	051161	A	161		STA	STYP	SET CPU TYPE FOR INTERNAL USE: -2=620/I;	00	00161
000651	006140	A	162		SUBI	2	-1=620/I WITH OPTION INST.; 0=622/F ;	00	00162
000652	000002	A							
			163	*			+1=622/F WITH OPTION INSTRUCTIONS	00	00163
000653	001010	A	164		JAZ	IBGH		00	00164
000654	000667	A							
000655	001002	A	165		JAP	IBGD		00	00165
000656	000703	A							
000657	006130	A	166		ERAI	0100000		00	00166
000658	100000	A							
000661	001002	A	167		JAP	**4		00	00167
000662	000665	A							
000663	001000	A	168		JMP	IBG1	RETURN FOR CORRECT CPU TYPE INPUT	00	00168
000664	000607	A							
000665	001000	A	169		JMP	IBGF		00	00169
000666	000716	A							
000667	005311	A	170	IBGH	DAR		SET STYP=-3 FOR INTERNAL USE. -3 REPRESENTS	00	00170
000670	006140	A	171		SUBI	2	622/I WITHOUT OPTION INSTRUCTIONS	00	00171
000671	000002	A							
000672	051161	A	172		STA	STYP		00	00172
000673	006130	A	173		ERAI	0100000		00	00173
000674	100000	A							
000675	001004	A	174		JAN	**4		00	00174
000676	000701	A							
000677	001000	A	175		JMP	IBG1	RETURN FOR CORRECT CPU TYPE INPUT	00	00175
000700	000607	A							
000701	001000	A	176		JMP	IBGF		00	00176
000702	000716	A							
			177	*				00	00177
000703	006140	A	178	IBGD	SUBI	5	SET STYP=-4 FOR 622/I W/D	00	00178
000704	000005	A							
000705	051161	A	179		STA	STYP		00	00179
000706	006130	A	180		ERAI	0100000		00	00180
000707	100000	A							

000710	001004	A	181	JAN	**4		00	00181
000711	000714	A						
000712	001000	A	182	JMP	IBG1	RETURN FOR CORRECT CPU TYPE INPUT	00	00182
000713	000807	A						
000714	002000	A	183	JMPM	IBGG	PROGRAM OVERLAY FOR 18-BIT 622/I TESTING	00	00183
000715	000730	A						
000716	011163	A	184	LDA	SCYC		00	00184
000717	051164	A	185	STA	CCTR	SET INTERNAL CYCLE COUNTER	00	00185
000720	001000	A	186	JMP	IBGA		00	00186
000721	000771	A						
000722	005003	A	187	ZERO	03	PRESET A&B FOR CPU TYPE= 620F AND	00	00187
000723	000000	A	188	HLT		CYCLES= TO CONTINUOUS	00	00188
000724	051161	A	189	STA	STYP		00	00189
000725	051163	A	190	STB	SCYC		00	00190
000726	001000	A	191	JMP	IBG3		00	00191
000727	000845	A						
			192 *				00	00192
			193 *				00	00193
			194 *				00	00194
			195 *				00	00195
			196 *			THIS ROUTINE OVERLAYS DATA PARAMETERS TO ADAPT THE PROGRAM	00	00196
			197 *			FOR TESTING THE 18-BIT 622/I CPU.	00	00197
			198 *				00	00198
000730	000000	A	199	ENTR	0		00	00199
000731	005002	A	200	TZB			00	00200
000732	005001	A	201	TZA			00	00201
000733	005311	A	202	DAR		A=-1	00	00202
000734	052360	A	203	STA	KMON		00	00203
000735	052015	A	204	STA	K402+2		00	00204
000736	052017	A	205	STA	K402+4		00	00205
000737	052040	A	206	STA	K434+2		00	00206
000740	052042	A	207	STA	K434+4		00	00207
000741	053034	A	208	STA	EXNG	=1	00	00208
000742	006140	A	209	SUBI	4		00	00209
000743	000004	A						
000744	052353	A	210	STA	KMFV	=-5	00	00210
000745	006010	A	211	LDAI	0100000		00	00211
000746	100000	A						
000747	004442	A	212	LLRL	2	A=400000	00	00212
000750	052352	A	213	STA	KMXN	MAX NEGATIVE NUMBER	00	00213
000751	053038	A	214	STA	EMXN	MAX NEG	00	00214
000752	005211	A	215	CPA		A=377777	00	00215

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000753	052351	A	216	STA	KMXP	MAX POSITIVE NUMBER	00	00216
000754	006130	A	217	ERAI	0777	A=377000	00	00217
000755	000777	A						
000756	052666	A	218	STA	EX76+1		00	00218
000757	006010	A	219	LDAI	052525		00	00219
000760	052525	A						
000761	004443	A	220	LLRL	3		00	00220
000762	006130	A	221	ERAI	2		00	00221
000763	000002	A						
000764	053024	A	222	STA	EXK	#525252	00	00222
000765	005211	A	223	CPA			00	00223
000766	053030	A	224	STA	EXK2	#252525	00	00224
000767	001000	A	225	JMP*	IBGG	RETURN	00	00225
000770	100730	A						
			226	*			00	00226
			227	*****			00	00227
			228	*			00	00228
			229	* SEQUENCE OF INSTRUCTIONS TESTS			022300	00 00229
			230	*			00	00230
			231	*****			00	00231
			232	*			00	00232
000771	011161	A	233	IBGA	LDA	STYP	620/F ?	00 00233
000772	001002	A	234		JAP	IBGC	YES	00 00234
000773	001040	A						
000774	005211	A	235	CPA			00	00235
000775	001010	A	236	JAZ	IBGB	620 WITH OPTION INSTRUCTIONS	00	00236
000776	001005	A						
000777	006130	A	237	ERAI	3		00	00237
001000	000003	A						
001001	001010	A	238	JAZ	IBGB	622 WITH OPTION INSTRUCTIONS	00	00238
001002	001005	A						
001003	001000	A	239	JMP	IOTEST+2	620/622 WITHOUT OPTIONS	*****	
001004	001031	A						
001005	002000	A	240	IBGB	JMPM	EXFN	EXTENDED ADDRESSING TEST	00 00240
001006	002370	A						
001007	002000	A	241	JMPM	KENT	OPTIONAL INSTRUCTIONS TEST	00	00241
001010	001244	A						
001011	002000	A	242	CALL	IBGX	CHECK FOR PRINTING 'END INST #2' MESSAGE	00	00242
001012	001065	A						
001013	001400	A	243	IBG7	JSS3	IOTEST	00	00243
001014	001027	A						
001015	011163	A	244	LDA	%CYC	CONTINUOUS RUN ?	00	00244

001016	001010	A	245	JAZ	IBGB	YES--EXECUTE ANOTHER CYCLE	00	00245
001017	001005	A						
001020	011164	A	246	LDA	CCTR	INTERNAL CYCLE COUNTER	00	00246
001021	005311	A	247	DAR			00	00247
001022	001010	A	248	JAZ	IOTEST	RUN I/O TEST IF NOT IN CONSOLE MODE	00	00248
001023	001027	A						
001024	051164	A	249	STA	CCTR		00	00249
001025	001000	A	250	JMP	IBGB	EXECUTE ANOTHER CYCLE	00	00250
001026	001005	A						
001027	001400	A	251	IOTEST	J883	RESET SS3 TO CONTINUE	00	00251
001030	001087	A						
001031	010442	A	252	LDA	SCON	CONSOLE MODE ?	00	00252
001032	001010	A	253	JAZ	IBG4	YES--RETURN TO CONSOLE MODE STARTING POINT	00	00253
001033	000722	A						
001034	002000	A	254	JMPH	IONT	I/O TEST	00	00254
001035	003042	A						
001036	001000	A	255	JMP	IBG1	RETURN TO TTY MODE STARTING POINT	00	00255
001037	000607	A						
			256	*			00	00256
001040	002000	A	257	IBGC	JMPH	EXTENDED ADDRESSING TEST	00	00257
001041	002370	A						
001042	011161	A	258	LDA	STYP	620/F WITHOUT OPTION INSTRUCTIONS ?	00	00258
001043	001010	A	259	JAZ	**4	YES	00	00259
001044	001047	A						
001045	002000	A	260	JMPH	KENT	OPTIONAL INSTRUCTIONS TEST	00	00260
001046	001244	A						
001047	002000	A	261	CALL	IBGX	CHECK FOR PRINTING 'END INST #2' MESSAGE	00	00261
001050	001055	A						
001051	001400	A	262	J883	IOTEST		00	00262
001052	001027	A						
001053	011163	A	263	LDA	%CYC	CONTINUOUS RUN ?	00	00263
001054	001010	A	264	JAZ	IBGC	YES	00	00264
001055	001040	A						
001056	011164	A	265	LDA	CCTR	INTERNAL CYCLE COUNTER	00	00265
001057	005311	A	266	DAR			00	00266
001060	001010	A	267	JAZ	IOTEST	RUN I/O TEST IF NOT IN CONSOLE MODE	00	00267
001061	001027	A						
001062	051164	A	268	STA	CCTR		00	00268
001063	001000	A	269	JMP	IBGC		00	00269
001064	001040	A						
			270	*			00	00270
001065	000000	A	271	IBGX	ENTR	0	00	00271

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001066	010442	A	272	LDA	SCON	CONSOLE MODE ?		00 00272
001067	001010	A	273	JAZ*	IBGX	YES		00 00273
001070	101065	A						
001071	011162	A	274	LDA	SECY	PRINT 'END INST #2'		00 00274
001072	001010	A	275	JAZ*	IBGX	NO		00 00275
001073	101065	A						
001074	006030	A	276	LDXI	MSG4	MESSAGE: END INST #2		00 00276
001075	001151	A						
001076	002000	A	277	CALL*	OUTD	PRINT MESSAGE		00 00277
001077	100403	A						
001100	001000	A	278	RETU*	IBGX			00 00278
001101	101065	A						
			279 *					00 00279
			280 *					00 00280
001102	106612	A	281	MSG1	DATA	0106612,0106612,'THIS IS THE 620 INSTRUCTION TEST, '		00 00281
001103	106612	A						
001104	152310	A						
001105	144723	A						
001106	120311	A						
001107	151640	A						
001110	152310	A						
001111	142640	A						
001112	133262	A						
001113	130240	A						
001114	144716	A						
001115	151724	A						
001116	151325	A						
001117	141724	A						
001120	144717	A						
001121	147240	A						
001122	152305	A						
001123	151724	A						
001124	126240	A						
001125	150301	A	282		DATA	'PART 2',0106612,0		00 00282
001126	151324	A						
001127	120262	A						
001130	106612	A						
001131	000000	A						
			283 *					00 00283
001132	106612	A	284	MSG2	DATA	0106612,'CPU TYPE = 1,0		00 00284
001133	141720	A						
001134	152640	A						

001135	152331	A							
001136	150305	A							
001137	120275	A							
001140	120240	A							
001141	000000	A							
001142	106612	A	285	MSG3	DATA	0106612,'CYCLES = ',0			00 00285
001143	141731	A							
001144	141714	A							
001145	142723	A							
001146	120275	A							
001147	120240	A							
001150	000000	A							
001151	106612	A	286	MSG4	DATA	0106612,'END INST #2',0			00 00286
001152	142716	A							
001153	142240	A							
001154	144716	A							
001155	151724	A							
001156	120243	A							
001157	131240	A							
001160	000000	A							
			287	*					00 00287
			288	*					00 00288
001161	000000	A	289	STYP	DATA	0	CPU TYPE: 620I,620I W/O,620F,OR 620F W/O.		00 00289
001162			290	SECY	BSS	1	0=SUPPRESS END INST PRINT,-1=ALLOW PRINT		00 00290
001163			291	SCYC	BSS	1	NUMBER OF TEST CYCLES, 0=CONTINUES		00 00291
001164			292	CCTR	BSS	1	INTERNAL CYCLE COUNTER		00 00292
			293	*					00 00293
			294	*					00 00294
			295	*					00 00295
			296	*					00 00296
			297	*	ENTRIES FOR LOOPING/TROUBLESHOOTING				00 00297
001165	006140	A	298	ITRS	SUBI	3			00 00298
001166	000003	A							
001167	051161	A	299		STA	STYP	ESTABLISH CPU TYPE		00 00299
001170	006140	A	300		SUBI	2			00 00300
001171	000002	A							
001172	001010	A	301		JAZ	INS1			00 00301
001173	001205	A							
001174	001002	A	302		JAP	**4			00 00302
001175	001200	A							
001176	001000	A	303		JMP	INS3			00 00303
001177	001213	A							

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001200	006140	A	304		SUBI	5		00 00304
001201	000005	A						
001202	051161	A	305		STA	STYP	=4 FOR 622/I WITH OPTION INSTRUCTIONS	00 00305
001203	001000	A	306		JMP	INS2		00 00306
001204	001211	A						
001205	005311	A	307	INS1	DAR			00 00307
001206	006140	A	308		SUBI	2		00 00308
001207	000002	A						
001210	051161	A	309		STA	STYP	=3 FOR 622/I WITHOUT OPTION INST	00 00309
001211	002000	A	310	INS2	CALL	IBGG	ALTER PROGRAM FOR 622/I TESTING	00 00310
001212	000730	A						
001213	000000	A	311	INS3	HLT			00 00311
001214	000000	A	312		HLT		SELECT DESIRED TEST	00 00312
001215	002000	A	313	IEXA	JMPM	EXEN	TEST EXTENDED ADDR INSTR	00 00313
001216	002370	A						
001217	001200	A	314		JSS2	IEXA		00 00314
001220	001215	A						
001221	000000	A	315		HLT			00 00315
001222	002000	A	316	IARD	JMPM	KENT	TEST OPTIONAL ARITHMETIC INSTR	01359000 00316
001223	001244	A						
001224	001200	A	317		JSS2	IARD		01360000 00317
001225	001222	A						
001226	000000	A	318		HLT			01361000 00318
001227	002000	A	319	IOTS	JMPM	IONT	I/O INSTRUCTION TEST	00 00319
001230	003042	A						
001231	001200	A	320		JSS2	IOTS		00 00320
001232	001227	A						
001233	000000	A	321		HLT			00 00321
001234	002000	A	322	INST	JMPM	EXEN	EXTENDED ADDRESSING TEST	00 00322
001235	002370	A						
001236	002000	A	323		JMPM	KENT	OPTIONAL INSTRUCTIONS TEST	00 00323
001237	001244	A						
001240	001200	A	324		JSS2	INST		00 00324
001241	001234	A						
001242	000000	A	325		HLT			00 00325
001243	000000	A	326		HLT			00 00326
			327	*				00 00327
			328	*				00 00328
			329	*				00 00329
			330	*				00 00330
			331	*				00 00331
			332	*	*****			00 00332

333 * 00 00333
 334 * OPTIONAL INSTRUCTIONS TEST 00 00334
 335 * 00 00335
 336 * 620/622I & 620/F: MUL, DIV, MULI, DIVI, MULE, DIVE. 00 00336
 337 * 620/F ONLY: RT & SRE 00 00337
 338 * 00 00338
 339 * *** NOTE *** 00 00339
 340 * 00 00340
 341 * THE FOLLOWING CONSTANTS AND PARAMETERS ARE ALTERED AT START-UP 00 00341
 342 * IF 622/I TESTING IS SPECIFIED: KMDN, K400+2, K400+4, K434+2, K434+4, 00 00342
 343 * KMFV, KMXN AND KMXP. EACH OCTAL IS SET TO THE 18-BIT EQUIV. 00 00343
 344 * 00 00344
 345 * 00 00345
 346 * 00 00346
 347 ***** 00 00347

001244 000000 A 348 * 00 00348
 349 KENT ENTR TEST ENTRY 00 00349
 350 * 00 00350
 351 * 00 00351
 352 * TEST =MUL= BY ZERO 00 00352
 353 * 00 00353
 001245 008001 A 354 K200 TZA A=0 00 00354
 001246 005302 A 355 DECR 002 B=-1 00 00355
 001247 162356 A 356 MUL KZRD EXECUTE 00 00356
 001250 001010 A 357 JAZ K201 A SHUD=0 00 00357
 001251 001254 A
 001252 002000 A 358 JMPM K09 ERROR 00 00358
 001253 002346 A
 001254 001020 A 359 K201 JBZ K210 B SHUD=0 00 00359
 001255 001260 A
 001256 002000 A 360 JMPM K09 ERROR 00 00360
 001257 002346 A
 001260 005101 A 361 K210 INCR 001 A=+1 00 00361
 001261 005302 A 362 DECR 002 B=-1 00 00362
 001262 162356 A 363 MUL KZRD EXECUTE 00 00363
 001263 001010 A 364 JAZ K211 A SHUD=0 00 00364
 001264 001267 A
 001265 002000 A 365 JMPM K09 ERROR 00 00365
 001266 002346 A
 001267 005322 A 366 K211 DBR B=B-1 00 00366
 001270 001020 A 367 JBZ K220 B SHUD=+1 00 00367
 001271 001274 A

PAGE	13	03/01/74	INSPT2	VORTEX	DASMR	2148 HOURS		
001272	002000	A	368		JMPH	K09	ERROR	00 00368
001273	002346	A						
001274	005303	A	369	K220	DECR	003	A=B=-1	00 00369
001275	162356	A	370		MUL	KZRO	EXECUTE	00 00370
001276	005111	A	371		IAR		A=A+1	00 00371
001277	001010	A	372		JAZ	K221	A SHUD=-1	00 00372
001300	001303	A						
001301	002000	A	373		JMPH	K09	ERROR	00 00373
001302	002346	A						
001303	007400	A	374	K221	ROP		INIT OFLO	00 00374
001304	005122	A	375		IBR		B=B+1	00 00375
001305	001001	A	376		JOF	K230	SHUD OFLO	00 00376
001306	001311	A						
001307	002000	A	377		JMPH	K09	ERROR	00 00377
001310	002346	A						
			378	*				00 00378
			379	* TEST	-MUL-	BY PLUS ONE		00 00379
			380	*				00 00380
001311	005001	A	381	K230	TZA		A=0	00 00381
001312	005302	A	382		DECR	002	B=-1	00 00382
001313	162357	A	383		MUL	KONE	EXECUTE	00 00383
001314	005111	A	384		IAR		A=A+1	00 00384
001315	001010	A	385		JAZ	K231	A SHUD=-1	00 00385
001316	001321	A						
001317	002000	A	386		JMPH	K09	ERROR	00 00386
001320	002346	A						
001321	007400	A	387	K231	ROP		INIT OFLO	00 00387
001322	005122	A	388		IBR		B=B+1	00 00388
001323	001001	A	389		JOF	K240	SHUD OFLO	00 00389
001324	001327	A						
001325	002000	A	390		JMPH	K09	ERROR	00 00390
001326	002346	A						
001327	005301	A	391	K240	DECR	001	A=-1	00 00391
001330	005002	A	392		TZB		B=0	00 00392
001331	162357	A	393		MUL	KONE	EXECUTE	00 00393
001332	005111	A	394		IAR		A=A+1	00 00394
001333	001010	A	395		JAZ	K241	A SHUD=-1	00 00395
001334	001337	A						
001335	002000	A	396		JMPH	K09	ERROR	00 00396
001336	002346	A						
001337	007400	A	397	K241	ROP		INIT OFLO	00 00397
001340	005122	A	398		IBR		B=B+1	00 00398

001341	001001	A	399	JOF	K250	SHUD OFLO	00	00399
001342	001345	A						
001343	002000	A	400	JMPM	K09	ERROR	00	00400
001344	002346	A						
			401	*			00	00401
			402	*	TEST -MUL-	BY MINUS ONE	00	00402
			403	*			00	00403
001345	005001	A	404	K250	TZA	A=0	00	00404
001346	005102	A	405		INCR 002	B=B+1	00	00405
001347	162360	A	406		MUL KMON	EXECUTE	00	00406
001350	005111	A	407		IAR	A=A+1	00	00407
001351	001010	A	408		JAZ K251	A SHUD=-1	00	00408
001352	001355	A						
001353	002000	A	409	JMPM	K09	ERROR	00	00409
001354	002346	A						
001355	007400	A	410	K251	ROF	INIT OFLO	00	00410
001356	005122	A	411		IBR	B=B+1	00	00411
001357	001001	A	412		JOF K260	SHUD OFLO	00	00412
001360	001363	A						
001361	002000	A	413	JMPM	K09	ERROR	00	00413
001362	002346	A						
001363	005303	A	414	K260	DECR 003	A=B=-1	00	00414
001364	162360	A	415		MUL KMON	EXECUTE	00	00415
001365	001010	A	416		JAZ K261	A SHUD=0	00	00416
001366	001371	A						
001367	002000	A	417	JMPM	K09	ERROR	00	00417
001370	002346	A						
001371	001020	A	418	K261	JBZ K270	B SHUD=0	00	00418
001372	001375	A						
001373	002000	A	419	JMPM	K09	ERROR	00	00419
001374	002346	A						
			420	*			00	00420
			421	*	TEST -MUL-	BY MAX POSITIVE	00	00421
			422	*			00	00422
001375	005001	A	423	K270	TZA	A=0	00	00423
001376	022351	A	424		LDB KMXP	B=MAX POS	00	00424
001377	162351	A	425		MUL KMXP	EXECUTE	00	00425
001400	007400	A	426		ROF	INIT OFLO	00	00426
001401	005111	A	427		IAR		00	00427
001402	005111	A	428		IAR	A=A+2	00	00428
001403	001001	A	429		JOF K271	SHUD OFLO	00	00429
001404	001407	A						

PAGE	15	03/01/74	INSPT2	VORTEX	DASHR	2148 HOURS		
001405	002000	A	430	JMPM	K09	ERROR	00	00430
001406	002346	A						
001407	005322	A	431	K271	DBR	B=B-1	00	00431
001410	001020	A	432	JBZ	K280	B SHUD=+1	00	00432
001411	001414	A						
001412	002000	A	433	JMPM	K09	ERROR	00	00433
001413	002346	A						
001414	012351	A	434	K280	LDA	KMXP	00	00434
001415	005012	A	435	TAB		A=B=MAX POS	00	00435
001416	162351	A	436	MUL	KMXP	EXECUTE	00	00436
001417	007400	A	437	ROF		INIT OFLO	00	00437
001420	005111	A	438	IAR		A=A+1	00	00438
001421	001001	A	439	JOF	K281	SHUD OFLO	00	00439
001422	001425	A						
001423	002000	A	440	JMPM	K09	ERROR	00	00440
001424	002346	A						
001425	001020	A	441	K281	JBZ	K290	00	00441
001426	001431	A						
001427	002000	A	442	JMPM	K09	ERROR	00	00442
001430	002346	A						
			443	*			00	00443
			444	*	TEST =MUL= BY MAX NEGATIVE		00	00444
			445	*			00	00445
001431	005001	A	446	K290	TZA	A=0	00	00446
001432	005302	A	447	DECR	002	B=-1	00	00447
001433	162352	A	448	MUL	KMXN	EXECUTE	00	00448
001434	005311	A	449	DAR		A=A-1	00	00449
001435	001010	A	450	JAZ	K291	A SHUD=+1	00	00450
001436	001441	A						
001437	002000	A	451	JMPM	K09	ERROR	00	00451
001440	002346	A						
001441	001020	A	452	K291	JBZ	K292	00	00452
001442	001445	A						
001443	002000	A	453	JMPM	K09	ERROR	00	00453
001444	002346	A						
001445	005001	A	454	K292	TZA	A=0	00	00454
001446	005102	A	455	INCR	002	B=+1	00	00455
001447	162352	A	456	MUL	KMXN	EXECUTE	00	00456
001450	005111	A	457	IAR		A=A+1	00	00457
001451	001010	A	458	JAZ	K293	A SHUD=-1	00	00458
001452	001455	A						
001453	002000	A	459	JMPM	K09	ERROR	00	00459

001454	002346	A							
001455	001020	A	460	K293	JBZ	K294	B S+UD=0	00	00460
001456	001461	A							
001457	002000	A	461		JMPM	K09	ERROR	00	00461
001460	002346	A							
001461	005301	A	462	K294	DECR	001	A=-1	00	00462
001462	022352	A	463		LDB	KMXN	B=MAX NEG	00	00463
001463	162352	A	464		MUL	KMXN	EXECUTE	00	00464
001464	007400	A	465		ROF		INIT OFLO	00	00465
001465	005111	A	466		IAR		A=A+1	00	00466
001466	001001	A	467		JOF	K295	SHUD OFLO	00	00467
001467	001472	A							
001470	002000	A	468		JMPM	K09	ERROR	00	00468
001471	002346	A							
001472	005122	A	469	K295	IBR		B=B+1	00	00469
001473	001001	A	470		JOF	K300	SHUD OFLO	00	00470
001474	001477	A							
001475	002000	A	471		JMPM	K09	ERROR	00	00471
001476	002346	A							
			472	*				00	00472
			473	*	TEST =DIV=	FOR OFLO DETECTION		00	00473
001477	007400	A	474	K300	ROF		INIT OFLO	00	00474
001500	005103	A	475		INCR	003	A=B+1	00	00475
001501	172356	A	476		DIV	KZRO	EXECUTE	00	00476
001502	001001	A	477		JOF	K302	OK	00	00477
001503	001508	A							
001504	002000	A	478		JMPM	K09	ERROR	00	00478
001505	002346	A							
001506	005101	A	479	K302	INCR	001	A=1	00	00479
001507	005002	A	480		TZB			00	00480
001510	172357	A	481		DIV	KONE	=+1	00	00481
001511	001001	A	482		JOF	K403	CONTINUE	00	00482
001512	001515	A							
001513	002000	A	483		JMPM	K09	ERROR	00	00483
001514	002346	A							
			484	*				00	00484
			485	*	TEST =DIV=	BY MAX POSITIVE		00	00485
			486	*				00	00486
001515	012351	A	487	K403	LDA	KMXP		00	00487
001516	005311	A	488		DAR			00	00488
001517	005002	A	489		TZB			00	00489
001520	172351	A	490		DIV	KMXP		00	00490

001521	005111	A	491		IAR		00	00491
001522	007400	A	492		ROF		00	00492
001523	005111	A	493		IAR		00	00493
001524	001001	A	494		JOF	K404	00	00494
001525	001530	A						
001526	002000	A	495		JMPM	K09	00	00495
001527	002346	A						
001530	005122	A	496	K404	IBR		00	00496
001531	007400	A	497		ROF		00	00497
001532	005122	A	498		IBR		00	00498
001533	001001	A	499		JOF	K405	00	00499
001534	001537	A						
001535	002000	A	500		JMPM	K09	00	00500
001536	002346	A						
001537	012351	A	501	K405	LDA	KMXP	00	00501
001540	005311	A	502		DAR		00	00502
001541	005211	A	503		CPA		00	00503
001542	005111	A	504		IAR		00	00504
001543	005002	A	505		TZB		00	00505
001544	172351	A	506		DIV	KMXP	00	00506
001545	007400	A	507		ROF		00	00507
001546	005311	A	508		DAR		00	00508
001547	005311	A	509		DAR		00	00509
001550	005311	A	510		DAR		00	00510
001551	001001	A	511		JOF	K406	00	00511
001552	001555	A						
001553	002000	A	512		JMPM	K09	00	00512
001554	002346	A						
001555	005322	A	513	K406	DBR		00	00513
001556	005322	A	514		DBR		00	00514
001557	005322	A	515		DBR		00	00515
001560	001001	A	516		JOF	K407	00	00516
001561	001564	A						
001562	002000	A	517		JMPM	K09	00	00517
001563	002346	A						
			518	*			00	00518
			519	*	TEST =DIV=	+16, -15 BY -5	00	00519
			520	*			00	00520
001564	005001	A	521	K407	TZA		00	00521
001565	022354	A	522		LDB	KSTN	00	00522
001566	172353	A	523		DIV	KMFV	00	00523
001567	005311	A	524		DAR		00	00524

001570	001010	A	525		JAZ	K408		00	00525
001571	001574	A							
001572	002000	A	526		JMPM	K09		00	00526
001573	002346	A							
001574	005122	A	527	K408	IBR			00	00527
001575	005122	A	528		IBR			00	00528
001576	005122	A	529		IBR			00	00529
001577	001020	A	530		JBZ	K411		00	00530
001600	001603	A							
001601	002000	A	531		JMPM	K09		00	00531
001602	002346	A							
001603	011161	A	532	K411	LDA	STYP	620F ?	00	00532
001604	001002	A	533		JAP	K412	YES	00	00533
001605	001635	A							
			534	*				00	00534
			535	*	620/I ONLY			00	00535
001606	005301	A	536	K409	DECR	001		00	00536
001607	022354	A	537		LDB	KSTN		00	00537
001610	005222	A	538		CPS			00	00538
001611	005122	A	539		IBR			00	00539
001612	005122	A	540		IBR			00	00540
001613	172353	A	541		DIV	KMFV		00	00541
001614	005111	A	542		IAR			00	00542
001615	005111	A	543		IAR			00	00543
001616	005111	A	544		IAR			00	00544
001617	005111	A	545		IAR			00	00545
001620	005111	A	546		IAR			00	00546
001621	001010	A	547		JAZ	K410		00	00547
001622	001628	A							
001623	002000	A	548		JMPM	K09		00	00548
001624	002346	A							
001625	005322	A	549	K410	DBR			00	00549
001626	005322	A	550		DBR			00	00550
001627	001020	A	551		JBZ	K310		00	00551
001630	001654	A							
001631	002000	A	552		JMPM	K09		00	00552
001632	002346	A							
001633	001000	A	553		JMP	K310	CONTINUE	00	00553
001634	001654	A							
			554	*				00	00554
			555	*	620/F ONLY			00	00555
001635	005301	A	556	K412	DECR	001	A#-1	00	00556

001636	006020	A	557		LDBI	0177761	B=-15	00	00557
001637	177761	A							
001640	172353	A	558		DIV	KMFV	=-5	00	00558
001641	001010	A	559		JAZ	K414	OK	00	00559
001642	001645	A							
001643	002000	A	560		JMPM	K09	ERROR	00	00560
001644	002346	A							
001645	005322	A	561	K414	DBR			00	00561
001646	005322	A	562		DBR			00	00562
001647	005322	A	563		DBR			00	00563
001650	001020	A	564		JBZ	K310	OK	00	00564
001651	001654	A							
001652	002000	A	565		JMPM	K09	ERROR	00	00565
001653	002346	A							
			566	*				00	00566
			567	*	TEST	=DIV=	BY ONE	00	00567
			568	*				00	00568
001654	005001	A	569	K310	TZA		A=0	00	00569
001655	005102	A	570		INCR	002	B=1	00	00570
001656	172357	A	571		DIV	KONE	EXECUTE	00	00571
001657	001010	A	572		JAZ	K311	A SHUD=0	00	00572
001660	001663	A							
001661	002000	A	573		JMPM	K09	ERROR	00	00573
001662	002346	A							
001663	005322	A	574	K311	DBR		B=B-1	00	00574
001664	001020	A	575		JBZ	K315	CONTINUE	00	00575
001665	001670	A							
001666	002000	A	576		JMPM	K09	ERROR	00	00576
001667	002346	A							
001670	011161	A	577	K315	LDA	STYP	620F ?	00	00577
001671	001002	A	578		JAP	K324	YES	00	00578
001672	001710	A							
			579	*				00	00579
			580	*	620/I	ONLY		00	00580
001673	005303	A	581	K320	DECR	003	A=B=1	00	00581
001674	172357	A	582		DIV	KONE	EXECUTE	00	00582
001675	005111	A	583		IAR		A=A+1	00	00583
001676	001010	A	584		JAZ	K321	A SHUD=-1	00	00584
001677	001702	A							
001700	002000	A	585		JMPM	K09	ERROR	00	00585
001701	002346	A							
001702	001020	A	586	K321	JBZ	K330	B SHUD=0	00	00586

001703	001723	A							
001704	002000	A	587	JMPH	K09	ERROR		00	00587
001705	002346	A							
001706	001000	A	588	JMP	K330	CONTINUE		00	00588
001707	001723	A							
			589 *					00	00589
			590 *	620/F ONLY				00	00590
001710	005303	A	591 K324	DECR	003	A=B=-1		00	00591
001711	172357	A	592	DIV	K0NE	+1		00	00592
001712	005122	A	593	IBR				00	00593
001713	001020	A	594	JBZ	*+4	OK		00	00594
001714	001717	A							
001715	002000	A	595	JMPH	K09	ERROR		00	00595
001716	002346	A							
001717	001010	A	596	JAZ	K330	OK		00	00596
001720	001723	A							
001721	002000	A	597	JMPH	K09	ERROR		00	00597
001722	002346	A							
			598 *					00	00598
			599 *	TEST -DIV-	BY MINUS ONE			00	00599
			600 *					00	00600
001723	005001	A	601 K330	TZA		A=0		00	00601
001724	005102	A	602	INCR	002	B=+1		00	00602
001725	172350	A	603	DIV	KMON	EXECUTE		00	00603
001726	001010	A	604	JAZ	K331	A SHUD=0		00	00604
001727	001732	A							
001730	002000	A	605	JMPH	K09	ERROR		00	00605
001731	002346	A							
001732	005122	A	606 K331	IBR		B=B+1		00	00606
001733	001020	A	607	JBZ	K345	CONTINUE		00	00607
001734	001737	A							
001735	002000	A	608	JMPH	K09	ERROR		00	00608
001736	002346	A							
001737	011161	A	609 K345	LDA	STYP	620F ?		00	00609
001740	001002	A	610	JAP	K430	YES		00	00610
001741	001757	A							
			611 *					00	00611
			612 *	620/I ONLY				00	00612
001742	005303	A	613 K340	DECR	003	A=B=-1		00	00613
001743	172350	A	614	DIV	KMON	EXECUTE		00	00614
001744	005111	A	615	IAR		A=A+1		00	00615
001745	001010	A	616	JAZ	K341	A SHUD=-1		00	00616

001746	001751	A							
001747	002000	A	617	JMPH	K09		ERROR		00 00617
001750	002346	A							
001751	001020	A	618	JBZ	K400		B SHUD=0		00 00618
001752	001772	A							
001753	002000	A	619	JMPH	K09		ERROR		00 00619
001754	002346	A							
001755	001000	A	620	JMP	K400		CONTINUE		00 00620
001756	001772	A							
			621	*					00 00621
			622	*	620/F ONLY---TEST DIV BY MINUS ONE				00 00622
			623	*					00 00623
001757	005303	A	624	K430	DECR	003	A=B=-1		00 00624
001760	172360	A	625		DIV	KMON	-1		00 00625
001761	005322	A	626		DBR				00 00626
001762	001020	A	627		JBZ	*+4	OK		00 00627
001763	001766	A							
001764	002000	A	628	JMPH	K09		ERROR		00 00628
001765	002346	A							
001766	001010	A	629	JAZ	K400		CONTINUE		00 00629
001767	001772	A							
001770	002000	A	630	JMPH	K09		ERROR		00 00630
001771	002346	A							
			631	*					00 00631
			632	*	DIVIDE -7 BY +4 : B=-1, A=-3				00 00632
			633	*					00 00633
001772	005301	A	634	K400	DECR	001			00 00634
001773	006020	A	635		LDBI	6			00 00635
001774	000006	A							
001775	005222	A	636		CPB		B=-7		00 00636
001776	172367	A	637		DIV	KFOR	*+4		00 00637
001777	005122	A	638		IBR				00 00638
002000	001020	A	639		JBZ	*+4	OK		00 00639
002001	002004	A							
002002	002000	A	640	JMPH	K09		ERROR		00 00640
002003	002346	A							
002004	005111	A	641		IAR				00 00641
002005	005111	A	642		IAR				00 00642
002006	005111	A	643		IAR				00 00643
002007	001010	A	644	JAZ	K402		CONTINUE		00 00644
002010	002013	A							
002011	002000	A	645	JMPH	K09		ERROR		00 00645

002012	002346	A	646	*					00	00646
			647	*					00	00647
			648	*	TEST DIVI AND MULI IN SEQUENCE (620/I AND 620/F)				00	00648
			649	*					00	00649
			650	*					00	00650
002013	005303	A	651	K402	DECR	003	A=B=-1		00	00651
002014	006170	A	652		DIVI	=1	DIV BY =1		00	00652
002015	177777	A								
002016	006160	A	653		MULI	=1	MUL BY =1		00	00653
002017	177777	A								
002020	005111	A	654		IAR		A=A+1		00	00654
002021	001010	A	655		JAZ	K401	A SHUD=-1		00	00655
002022	002025	A								
002023	002000	A	656		JMPM	K09	ERROR		00	00656
002024	002346	A								
002025	007400	A	657	K401	RDP		INIT OFLO		00	00657
002026	005122	A	658		IBR		B=B+1		00	00658
002027	001001	A	659		JOP	K432	CONTINUE		00	00659
002030	002033	A								
002031	002000	A	660		JMPM	K09	ERROR		00	00660
002032	002346	A								
			661	*					00	00661
002033	011181	A	662	K432	LDA	STYP	620/F ?		00	00662
002034	001004	A	663		JAN	K450	NO		00	00663
002035	002056	A								
			664	*	620/F ONLY: DIVI/MULI				00	00664
002036	005303	A	665	K434	DECR	003	A=B=-1		00	00665
002037	006170	A	666		DIVI	=1	A=0/B=+1		00	00666
002040	177777	A								
002041	006160	A	667		MULI	=1	A=-1/B=0		00	00667
002042	177777	A								
002043	005111	A	668		IAR				00	00668
002044	001010	A	669		JAZ	*+4			00	00669
002045	002050	A								
002046	002000	A	670		JMPM	K09	ERROR		00	00670
002047	002346	A								
002050	005021	A	671		TBA				00	00671
002051	132351	A	672		ERA	KMXP	=077777		00	00672
002052	001010	A	673		JAZ	K450	CONTINUE		00	00673
002053	002056	A								
002054	002000	A	674		JMPM	K09			00	00674

002055	002346	A	675	*				00	00675
			676	*	TEST MULE AND DIVE (EXTENDED ADDRESSING)			00	00676
			677	*				00	00677
			678	*				00	00678
002056	005001	A	679	K450	TZA			00	00679
002057	006020	A	680		LDBI	3		00	00680
002060	000003	A							
002061	006167	A	681		MULE	KTEN	3X10=30	00	00681
002062	002366	A							
002063	006177	A	682		DIVE	KMFV	030 DIV BY =5= -4,R=4	00	00682
002064	002353	A							
002065	006130	A	683		ERAI	4		00	00683
002066	000004	A							
002067	001010	A	684		JAZ	*+4		00	00684
002070	002073	A							
002071	002000	A	685		JMPM	K09	ERROR	00	00685
002072	002346	A							
002073	005021	A	686		TBA			00	00686
002074	005311	A	687		DAR			00	00687
002075	142353	A	688		SUB	KMFV	=5	00	00688
002076	001010	A	689		JAZ	K452		00	00689
002077	002102	A							
002100	002000	A	690		JMPM	K09	ERROR	00	00690
002101	002346	A							
002102	005102	A	691	K452	INCR	002	B=1	00	00691
002103	006166	A	692		MULE	KEYK=1,2	INDEXED BY B	00	00692
002104	002363	A							
002105	001010	A	693		JAZ	*+4		00	00693
002106	002111	A							
002107	002000	A	694		JMPM	K09		00	00694
002110	002346	A							
002111	005021	A	695		TBA			00	00695
002112	132364	A	696		ERA	KEYK		00	00696
002113	001010	A	697		JAZ	K454		00	00697
002114	002117	A							
002115	002000	A	698		JMPM	K09	ERROR	00	00698
002116	002346	A							
002117	005001	A	699	K454	TZA			00	00699
002120	022364	A	700		LDB	KEYK	B=025252	00	00700
002121	006177	A	701		DIVE*	KEYK+1		00	00701
002122	102365	A							

002123	001010	A	702	JAZ	**4		00	00702
002124	002127	A						
002125	002000	A	703	JMPM	K09	ERROR	00	00703
002126	002346	A						
002127	005322	A	704	DBR			00	00704
002130	001020	A	705	JBZ	K677	CONTINUE	00	00705
002131	002134	A						
002132	002000	A	706	JMPM	K09		00	00706
002133	002346	A						
002134	011161	A	707	LDA	STYP	620/F?	00	00707
002135	001002	A	708	JAP	**4		00	00708
002136	002141	A						
002137	001000	A	709	JMP*	KENT	EXIT OPTIONS TEST IF 620/I	00	00709
002140	101244	A						
002141	001010	A	710	JAZ*	KENT	EXIT OPTIONS TEST IF 620/F WITHOUT OPTIONS	00	00710
002142	101244	A						
002143	001000	A	711	JMP	K700	EXECUTE 620/F OPTIONS: BT & SRE	00	00711
002144	002145	A						
			712	*			00	00712
			713	*			00	00713
			714	*			00	00714
			715	*	620/F TEST: BT INSTRUCTION		00	00715
			716	*			00	00716
002145	012362	A	717	LDA	KD01		00	00717
002146	006440	A	718	BT	040,K702	TEST BIT 0 OF A FOR 0	00	00718
002147	002152	A						
002150	001000	A	719	JMP	K726	ERROR JUMP	00	00719
002151	002231	A						
002152	006401	A	720	BT	01,K704	TEST BIT 1 OF A FOR 1	00	00720
002153	002156	A						
002154	001000	A	721	JMP	K726	ERROR JUMP	00	00721
002155	002231	A						
002156	006446	A	722	BT	046,K706	TEST BIT 6 OF A FOR 0	00	00722
002157	002162	A						
002160	001000	A	723	JMP	K726	ERROR JUMP	00	00723
002161	002231	A						
002162	006407	A	724	BT	07,K708	TEST BIT 7 OF A FOR 1	00	00724
002163	002166	A						
002164	001000	A	725	JMP	K726	ERROR JUMP	00	00725
002165	002231	A						
002166	006456	A	726	BT	056,K710	TEST BIT 14 OF A FOR 0	00	00726
002167	002172	A						

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002170	001000	A	727		JMP	K726	ERROR JUMP	00 00727
002171	002231	A						
002172	006417	A	728	K710	BT	017,K712	TEST BIT 15 OF A FOR 1	00 00728
002173	002176	A						
002174	001000	A	729		JMP	K726	ERROR JUMP	00 00729
002175	002231	A						
002176	006442	A	730	K712	BT*	042,KIND	TEST BIT 2 OF A FOR 0, JUMP INDIRECT	00 00730
002177	102361	A						
002200	001000	A	731		JMP	K726	ERROR JUMP	00 00731
002201	002231	A						
002202	022363	A	732	K714	LDB	K002		00 00732
002203	006420	A	733		BT	020,K716	TEST BIT / OF B FOR 1	00 00733
002204	002207	A						
002205	001000	A	734		JMP	K726	ERROR JUMP	00 00734
002206	002231	A						
002207	006421	A	735	K716	BT	021,K718	TEST BIT 1 OF B FOR 1	00 00735
002210	002213	A						
002211	001000	A	736		JMP	K726	ERROR JUMP	00 00736
002212	002231	A						
002213	006466	A	737	K718	BT	066,K720	TEST BIT 6 OF B FOR 0	00 00737
002214	002217	A						
002215	001000	A	738		JMP	K726	ERROR JUMP	00 00738
002216	002231	A						
002217	006467	A	739	K720	BT	067,K722	TEST BIT 7 OF B FOR 0	00 00739
002220	002223	A						
002221	001000	A	740		JMP	K726	ERROR JUMP	00 00740
002222	002231	A						
002223	006435	A	741	K722	BT	035,K724	TEST BIT 13 OF B FOR 1	00 00741
002224	002227	A						
002225	001000	A	742		JMP	K726	ERROR JUMP	00 00742
002226	002231	A						
002227	006476	A	743	K724	BT	076,K730	TEST BIT 14 OF B FOR 0	00 00743
002230	002240	A						
002231	001100	A	744	K726	JSS1	*+6		00 00744
002232	002237	A						
002233	002000	A	745		JMPH	I080	PRINT ERROR DATA	00 00745
002234	003716	A						
002235	001000	A	746		JMP	K730	CONTINUE	00 00746
002236	002240	A						
002237	000000	A	747		HLT		ERROR--BT	00 00747
			748	*				00 00748
			749	*				00 00749

			750	*					00	00750
			751	*	620/F TEST: SRE INSTRUCTION				00	00751
			752	*					00	00752
002240	012362	A	753	K730	LDA	KD01			00	00753
002241	006613	A	754		DATA	006613	CODE FOR SRE,COMPARE A,DIRECT,NO SKIP		00	00754
002242	002362	A	755		DATA	KD01			00	00755
002243	001000	A	756		JMP	K746	ERROR JUMP		00	00756
002244	002316	A								
002245	006613	A	757		DATA	006613	CODE FOR SRE,COMPARE WITH A,DIRECT,DKIP DK	00	00757	
002246	002363	A	758		DATA	KD02	ADDRESS FOR CONDANT KD02	00	00758	
002247	001000	A	759		JMP	K732		00	00759	
002250	002253	A								
002251	001000	A	760		JMP	K746	ERROR JUMP	00	00760	
002252	002316	A								
002253	002360	A	761	K732	LDB	KMDN		00	00761	
002254	006630	A	762		LDXI	100		00	00762	
002255	000144	A								
002256	006625	A	763		SRE	KMDN=100,1,020	COMPARE WITH B,INDEXED BY X,SKIP DK	00	00763	
002257	002214	A								
002260	001000	A	764		JMP	K746	ERROR JUMP	00	00764	
002261	002316	A								
002262	006000	A	765		NOP			00	00765	
002263	006004	A	766		TXI			00	00766	
002264	006020	A	767	K734	LDBI	200		00	00767	
002268	000310	A								
002266	006646	A	768		SRE	KZPD=200,2,040	COMPARE WITH X, INDEXED BY B, SKIP DK	00	00768	
002267	002046	A								
002270	001000	A	769		JMP	K746	ERROR JUMP	00	00769	
002271	002316	A								
002272	005000	A	770		NOP			00	00770	
002273	002357	A	771	K742	LDB	KONE		00	00771	
002274	006627	A	772		DATA	006627	CODE FOR SRE,COMPARE WITH B,INDIRECT,SKIP	00	00772	
002278	102330	A	773		MZE	K752	INDIRECT ADDRESS	00	00773	
002276	001000	A	774		JMP	K746	ERROR JUMP	00	00774	
002277	002316	A								
002300	006627	A	775	K738	DATA	006627	SRE=COMPARE WITH B,INDIRECT,NO SKIP	00	00775	
002301	102327	A	776		MZE	K750		00	00776	
002302	001000	A	777		JMP	K748		00	00777	
002303	002306	A								
002304	001000	A	778		JMP	K746	ERROR JUMP	00	00778	
002305	002316	A								
002306	012362	A	779	K748	LDA	KD01	#125252	00	00779	

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002307	006614	A	780		DATA	006614	SRE=COMPARE WITH A,RELATIVE,SKIP	00 00780
002310	000005	A	781		DATA	5	RELATIVE ADDRESS	00 00781
002311	001000	A	782		JMP	K746	ERROR JUMP	00 00782
002312	002316	A						
002313	001000	A	783		JMP*	KENT	EXIT	00 00783
002314	101244	A						
002315	125252	A	784		DATA	0125252		00 00784
002316	001100	A	785	K746	J881	*+6		00 00785
002317	002324	A						
002320	002000	A	786		JMPH	I080	PRINT ERROR DATA	00 00786
002321	003716	A						
002322	001000	A	787		JMP*	KENT	EXIT	00 00787
002323	101244	A						
002324	000000	A	788		HLT		ERROR--SRE	00 00788
002325	001000	A	789		JMP*	KENT	EXIT	00 00789
002326	101244	A						
			790	*				00 00790
002327	002363	A	791	K750	DATA	KD02	INDIRECT ADDRESS FOR K738	00 00791
002330	002357	A	792	K752	DATA	K0NE	INDIRECT ADDRESS FOR K742	00 00792
			793	*				00 00793
			794	*				00 00794
			795	*				00 00795
			796	*	KENT==ERROR CONTROL ROUTINE.			00 00796
			797	*	MAINTAINS CONTENTS OF A AND B AND PLACES			00 00797
			798	*	ERROR ENTRANCE ADDRESS IN X. ORIGINAL			00 00798
			799	*	CONTENTS OF X SAVED AT KSVX.			00 00799
			800	*	CONTINUE CHECKING AFTER ERROR HALT/PRINTOUT.			00 00800
			801	*				00 00801
002331	072355	A	802	K10	STX	KSVX	SAVE X REG	00 00802
002332	032346	A	803		LDX	K09	ERROR ADDR	00 00803
002333	005344	A	804		DXR			00 00804
002334	005344	A	805		DXR			00 00805
002335	001100	A	806		J881	K23		00 00806
002336	002343	A						
002337	002000	A	807		JMPH	I080	PRINT ERROR DATA	00 00807
002340	003716	A						
002341	001000	A	808		JMP	K33	RETURN	00 00808
002342	002344	A						
002343	000300	A	809	K23	HLT	0300		00 00809
002344	032355	A	810	K33	LDX	KSVX	RESTOR X REG	00 00810
002345	001000	A	811		JMP	K09	RETURN	00 00811
002346	002346	A						

002346			812	K09	BES	0			00	00812	
002347	001000	A	813		JMP	K10			00	00813	
002350	002331	A									
			814	*					00	00814	
			815	*					00	00815	
002351	077777	A	816	KMXP	DATA	077777		MAX POS, *ALTERED TO 377777 FOR 622/I TEST	00	00816	
002352	100000	A	817	KMXN	DATA	0100000		MAX NEG, *ALTERED TO 400000 FOR 622/I TEST	00	00817	
002353	177773	A	818	KMFV	DATA	=5			00	00818	
002354	000020	A	819	KSTN	DATA	16			00	00819	
002355	000000	A	820	KSVX	DATA	0		X REG STOR	00	00820	
002356	000000	A	821	KZRD	DATA	0			00	00821	
002357	000001	A	822	KONE	DATA	1			00	00822	
002360	177777	A	823	KMON	DATA	=1			00	00823	
002361	002202	A	824	KIND	DATA	K714		INDIRECT ADDRESS FOR K712	00	00824	
002362	125252	A	825	KD01	DATA	0125252			00	00825	
002363	031463	A	826	KD02	DATA	031463			00	00826	
002364	025252	A	827	KEXK	DATA	025252, (KEXK)			00	00827	
002365	002364	A									
002366	000010	A	828	KTEN	DATA	010			00	00828	
002367	000004	A	829	KFOR	DATA	4			00	00829	
			830	*					00	00830	
			831	*					00	00831	
			832	*					00	00832	
			833	*					00	00833	
			834	*					00	00834	
			835	*					00	00835	
			836	*****						00	00836
			837	*					00	00837	
			838	*	EXTENDED ADDRESSING INSTRUCTIONS TEST					00	00838
			839	*					00	00839	
			840	*	*** NOTE ***					00	00840
			841	*					00	00841	
			842	*	THE FOLLOWING CONSTANTS AND PARAMETERS ARE ALTERED AT START-UP					00	00842
			843	*	IF 622/I TESTING IS SPECIFIED: EXNG, EMXN AND EX76+1.					00	00843
			844	*	EACH OCTAL IS SET TO THE 18-BIT EQUIV.					00	00844
			845	*					00	00845	
			846	*					00	00846	
			847	*					00	00847	
			848	*****						00	00848
			849	*					00	00849	
002370	000000	A	850	EXEN	ENTR	0			00	00850	
002371	006017	A	851		LDAE	EXK	*125252	(DIRECT)	00	00851	

002372	003024	A						
002373	133024	A	852	ERA	EXK			00 00852
002374	001010	A	853	JAZ	*+4	CONTINUE		00 00853
002375	002400	A						
002376	001000	A	854	JMP	EX01	ERROR JUMP		00 00854
002377	002415	A						
002400	006027	A	855	LDSE	EXP0	#0		00 00855
002401	003036	A						
002402	005021	A	856	TBA				00 00856
002403	001010	A	857	JAZ	*+4	CONTINUE		00 00857
002404	002407	A						
002405	001000	A	858	JMP	EX01	ERROR JUMP		00 00858
002406	002415	A						
002407	006037	A	859	LDXE	EXK			00 00859
002410	003024	A						
002411	005041	A	860	TXA				00 00860
002412	133024	A	861	ERA	EXK			00 00861
002413	001010	A	862	JAZ	EX02	CONTINUE		00 00862
002414	002424	A						
002415	001100	A	863	EX01	JSS1	*+6		00 00863
002416	002423	A						
002417	002000	A	864	JMPH	IQ80	PRINT ERROR DATA		00 00864
002420	003716	A						
002421	001000	A	865	JMP	EX02			00 00865
002422	002424	A						
002423	000000	A	866	HLT		ERROR--LDAE/LDBE/LDXE (DIRECT ADDRESSING)		00 00866
			867	*				00 00867
002424	013030	A	868	EX02	LDA	EXK2	#052525	00 00868
002425	006057	A	869		STAE	EXK3	DIRECT	00 00869
002426	003031	A						
002427	013031	A	870	LDA	EXK3			00 00870
002430	133030	A	871	ERA	EXK2			00 00871
002431	001010	A	872	JAZ	*+4	CONTINUE		00 00872
002432	002435	A						
002433	001000	A	873	JMP	EX03	ERROR JUMP		00 00873
002434	002451	A						
002435	006030	A	874	LDXI	100			00 00874
002436	000144	A						
002437	023024	A	875	LDB	EXK			00 00875
002440	006065	A	876	STBE	EXK3-100,1	INDEXED WITH X		00 00876
002441	002665	A						
002442	005021	A	877	TBA				00 00877

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002443	006055	A	878	STAE	EXK3-99,1	INDEXED WITH X, STORE AT EXK3+1	00	00878
002444	002666	A						
002445	013031	A	879	LDA	EXK3		00	00879
002446	143032	A	880	SUB	EXK3+1		00	00880
002447	001010	A	881	JAZ	EX04	CONTINUE	00	00881
002450	002460	A						
002451	001100	A	882	EX03	JSS1	*+6	00	00882
002452	002457	A						
002453	002000	A	883	JMPH	IQ80	PRINT ERROR DATA	00	00883
002454	003716	A						
002455	001000	A	884	JMP	EX04		00	00884
002456	002460	A						
002457	000000	A	885	HLT		ERROR--STAE/STBE/STXE (DIRECT,X-INDEXED)	00	00885
			886	*			00	00886
002460	006020	A	887	EX04	LD8I	EXNG	00	00887
002461	003034	A						
002462	006016	A	888	LD8E	0,2	INDEXED BY B	00	00888
002463	000000	A						
002464	001002	A	889	JAP	EX05	ERROR JUMP	00	00889
002465	002503	A						
002466	006147	A	890	SUBE	EXNG	DIRECT	00	00890
002467	003034	A						
002470	001010	A	891	JAZ	*+4		00	00891
002471	002474	A						
002472	001000	A	892	JMP	EX05	ERROR JUMP	00	00892
002473	002503	A						
002474	005002	A	893	TZB			00	00893
002475	006126	A	894	ADDE	EXK,2	INDEXED BY B	00	00894
002476	003024	A						
002477	006146	A	895	SUBE	EXK,2	INDEXED BY B	00	00895
002500	003024	A						
002501	001010	A	896	JAZ	EX06	CONTINUE	00	00896
002502	002512	A						
002503	001100	A	897	EX05	JSS1	*+6	00	00897
002504	002511	A						
002505	002000	A	898	JMPH	IQ80	PRINT ERROR DATA	00	00898
002506	003716	A						
002507	001000	A	899	JMP	EX06		00	00899
002510	002512	A						
002511	000000	A	900	HLT		ERROR--LD8E/ADDE/SUBE (DIRECT/INDEXED B)	00	00900
			901	*			00	00901
002512	006017	A	902	EX06	LD8E*	EXK+1	00	00902
						INDIRECT		

002513	103025	A						
002514	006147	A	903	SUBE*	EXK+1	INDIRECT		00 00903
002515	103025	A						
002516	001010	A	904	JAZ	**4	CONTINUE		00 00904
002517	002522	A						
002520	001000	A	905	JMP	EX07	ERROR JUMP		00 00905
002521	002540	A						
002522	006126	A	906	ADDE*	EXK+1,2	INDIRECT/PREINDEXING		00 00906
002523	103025	A						
002524	006137	A	907	ERAE	EXK	DIRECT		00 00907
002525	003024	A						
002526	001010	A	908	JAZ	**4	CONTINUE		00 00908
002527	002532	A						
002530	001000	A	909	JMP	EX07	ERROR JUMP		00 00909
002531	002540	A						
002532	006037	A	910	LDXE*	EXKA+2	DOUBLE INDIRECT		00 00910
002533	103041	A						
002534	005041	A	911	TXA				00 00911
002535	133037	A	912	ERA	EXKA	EXKA=123456		00 00912
002536	001010	A	913	JAZ	EX10	CONTINUE		00 00913
002537	002547	A						
002540	001100	A	914	EX07	JBS1	**6		00 00914
002541	002546	A						
002542	002000	A	915	JMPM	IQ80	PRINT ERROR DATA		00 00915
002543	003716	A						
002544	001000	A	916	JMP	EX10			00 00916
002545	002547	A						
002546	000000	A	917	HLT		ERROR--LDAE/ADDE/SUBE/LDXE (INDIRECT)		00 00917
			918	*				00 00918
002547	013034	A	919	EX10	LDA	EXNG	A#+1	00 00919
002550	006117	A	920		ORAE	EXNG	A#-1	00 00920
002551	003034	A						
002552	006157	A	921		ANAE	EXNG	A#-1	00 00921
002553	003034	A						
002554	006137	A	922		ERAE	EXNG	A#0	00 00922
002555	003034	A						
002556	001010	A	923		JAZ	**4	CONTINUE	00 00923
002557	002562	A						
002560	001000	A	924		JMP	EX11	ERROR JUMP	00 00924
002561	002575	A						
002562	006117	A	925		ORAE*	EXK+1	#125252	00 00925
002563	103025	A						

002564	006117	A	926		DRAE	EXK	=125252		00 00926
002565	003024	A							
002566	006137	A	927		ERAE	EXK2	=177777		00 00927
002567	003030	A							
002570	006157	A	928		ANAE	EXNG	=177777		00 00928
002571	003034	A							
002572	133034	A	929		ERA	EXNG	EXNG=-1		00 00929
002573	001010	A	930		JAZ	EX12			00 00930
002574	002604	A							
002575	001100	A	931	EX11	J881	*+6			00 00931
002576	002603	A							
002577	002000	A	932		JMPH	IQ80	PRINT ERROR DATA		00 00932
002600	003716	A							
002601	001000	A	933		JMP	EX12			00 00933
002602	002604	A							
002603	000000	A	934		HLT		ERROR--ERAE/DRAE/ANAE (DIRECT/INDIRECT)		00 00934
			935	*					00 00935
002604	006014	A	936	EX12	DATA	006014	CODE FOR LDAE--RELATIVE ADDRESSING		00 00936
002605	000007	A	937		DATA	07	RELATIVE ADDRESS FOR LDAE		00 00937
002606	006130	A	938		ERAI	0177777			00 00938
002607	177777	A							
002610	001010	A	939		JAZ	*+5	CONTINUE		00 00939
002611	002615	A							
002612	001000	A	940		JMP	EX13	ERROR JUMP		00 00940
002613	002624	A							
002614	177777	A	941		DATA	0177777	USED WITH RELATIVE LDAE ABOVE		00 00941
002615	006022	A	942		DATA	006022	CODE FOR LDBI,SPECIAL TEST OF X-FIELD		00 00942
002616	003024	A	943		DATA	EXK			00 00943
002617	006021	A	944		TBA				00 00944
002620	006130	A	945		ERAI	EXK			00 00945
002621	003024	A							
002622	001010	A	946		JAZ	EX14	CONTINUE		00 00946
002623	002633	A							
002624	001100	A	947	EX13	J881	*+6			00 00947
002625	002632	A							
002626	002000	A	948		JMPH	IQ80	PRINT ERROR DATA		00 00948
002627	003716	A							
002630	001000	A	949		JMP	EX14	CONTINUE		00 00949
002631	002633	A							
002632	000000	A	950		HLT		ERROR--LDAE/LDBI (RELATIVE/IMMEDIATE)		00 00950
			951	*					00 00951
002633	013034	A	952	EX14	LDA	EXNG	AS=1		00 00952

002634	053031	A	953	STA	EXK3		00	00953
002635	006047	A	954	INRE	EXK3	CHECK INRE FOR -1 TO +1	00	00954
002636	003031	A						
002637	013031	A	955	LDA	EXK3		00	00955
002640	001010	A	956	JAZ	**4	CONTINUE	00	00956
002641	002644	A						
002642	001000	A	957	JMP	EX73	ERROR JUMP	00	00957
002643	002727	A						
002644	005004	A	958	TZX			00	00958
002645	006020	A	959	LDBI	01000		00	00959
002646	001000	A						
002647	006047	A	960	EX70	INRE	EXK3	00	00960
002650	003031	A						
002651	005322	A	961	DBR			00	00961
002652	005144	A	962	IXR			00	00962
002653	001020	A	963	JBZ	**4		00	00963
002654	002657	A						
002655	001000	A	964	JMP	EX70	INCREMENT AGAIN	00	00964
002656	002647	A						
002657	005041	A	965	TXA			00	00965
002660	143031	A	966	SUB	EXK3		00	00966
002661	001010	A	967	JAZ	**4	CONTINUE	00	00967
002662	002665	A						
002663	001000	A	968	JMP	EX73	ERROR JUMP	00	00968
002664	002727	A						
002665	006010	A	969	EX76	LDAI	077000	00	00969
002666	077000	A				ALTERED TO 377000 FOR 622/I TESTING	00	00969
002667	053031	A	970	STA	EXK3		00	00970
002670	005004	A	971	TZX			00	00971
002671	006020	A	972	LDBI	01000		00	00972
002672	001000	A						
002673	007400	A	973	ROF			00	00973
002674	006047	A	974	EX71	INRE	EXK3	00	00974
002675	003031	A				INCR FROM 077000/377000(622I) TO OVFL	00	00974
002676	005322	A	975	DBR			00	00975
002677	005144	A	976	IXR			00	00976
002700	001020	A	977	JBZ	**4		00	00977
002701	002704	A						
002702	001000	A	978	JMP	EX71	INCREMENT AGAIN	00	00978
002703	002674	A						
002704	001001	A	979	JOF	**4		00	00979
002705	002710	A						

002706	001000	A	980		JMP	EX73	ERROR JUMP	00	00980
002707	002727	A							
002710	001001	A	981		JOP	EX73	ERROR JUMP	00	00981
002711	002727	A							
002712	013031	A	982		LDA	EXK3		00	00982
002713	133035	A	983	EX72	ERA	EMXN	MAX NEG	00	00983
002714	001010	A	984		JAZ	*+4		00	00984
002715	002720	A							
002716	001000	A	985		JMP	EX73	ERROR JUMP	00	00985
002717	002727	A							
002720	013034	A	986	EX77	LDA	EXNG	=1	00	00986
002721	053031	A	987		STA	EXK3		00	00987
002722	006047	A	988		INRE	EXK3		00	00988
002723	003031	A							
002724	013031	A	989		LDA	EXK3		00	00989
002725	001010	A	990		JAZ	EX75	CHECK IF POSTINDEXING TO BE TESTED	00	00990
002726	002736	A							
002727	001100	A	991	EX73	JSS1	*+6		00	00991
002730	002735	A							
002731	002000	A	992		JMPH	IQ80	PRINT ERROR DATA	00	00992
002732	003716	A							
002733	001000	A	993		JMP	EX75	CHECK IF POSTINDEXING TO BE TESTED	00	00993
002734	002736	A							
002735	000000	A	994		HLT		ERROR--INRE	00	00994
			995	*				00	00995
002736	011161	A	996	EX75	LDA	STVP	620F ?	00	00996
002737	001002	A	997		JAP	EX15	YES	00	00997
002740	002743	A							
002741	001000	A	998		JMP*	EXEN	RETURN	00	00998
002742	102370	A							
			999	*				00	00999
			1000	*				00	01000
			1001	*	620/F TEST: POSTINDEX EXTENDED ADDRESSING			00	01001
			1002	*				00	01002
002743	009004	A	1003	EX15	TZX			00	01003
002744	006215	A	1004		LDAE	EXK,1,0200	POSTINDEXING WITH X REG	00	01004
002745	003024	A							
002746	133024	A	1005		ERA	EXK		00	01005
002747	001010	A	1006		JAZ	EX16	CONTINUE	00	01006
002750	002753	A							
002751	001000	A	1007		JMP	EX20	ERROR	00	01007
002752	002771	A							

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002753	006020	A	1008	EX16	LDBI	100		00 01008
002754	000144	A						
002755	006216	A	1009		LDAE	EXK=100,2,0200	POSTINDEXING WITH B REG	00 01009
002756	002660	A						
002757	133024	A	1010		ERA	EXK		00 01010
002760	001010	A	1011		JAZ	EX17	CONTINUE	00 01011
002761	002764	A						
002762	001000	A	1012		JMP	EX20	ERROR	00 01012
002763	002771	A						
002764	006215	A	1013	EX17	LDAE*	EXK+1,1,0200	INDIRECT/POSTINDEXING	00 01013
002765	103025	A						
002766	133024	A	1014		ERA	EXK		00 01014
002767	001010	A	1015		JAZ	EX30	CONTINUE	00 01015
002770	003000	A						
002771	001100	A	1016	EX20	JSS1	**6		00 01016
002772	002777	A						
002773	002000	A	1017		JMPM	IQ80	PRINT ERROR	00 01017
002774	003716	A						
002775	001000	A	1018		JMP	EX30	CONTINUE	00 01018
002776	003000	A						
002777	000000	A	1019		HLT		ERROR--LDAE/POSTINDEXING	00 01019
			1020	*				00 01020
003000	013024	A	1021	EX30	LDA	EXK		00 01021
003001	006257	A	1022		DATA	006257	CODE FOR STAE, INDIRECT	00 01022
003002	103027	A	1023		MZE	EXK1+1	INDIRECT ADDRESS	00 01023
003003	013026	A	1024		LDA	EXK1		00 01024
003004	133024	A	1025		ERA	EXK		00 01025
003005	006326	A	1026		ADDE	EXK=100,2,0200	POSTINDEXING WITH B	00 01026
003006	002660	A						
003007	006347	A	1027		DATA	006347	CODE FOR SUBE, DIRECT	00 01027
003010	003024	A	1028		DATA	EXK	ADDRESS FOR SUBE	00 01028
003011	001010	A	1029		JAZ	EX32	CONTINUE	00 01029
003012	003022	A						
003013	001100	A	1030		JSS1	**6		00 01030
003014	003021	A						
003015	002000	A	1031		JMPM	IQ80		00 01031
003016	003716	A						
003017	001000	A	1032		JMP	EX32		00 01032
003020	003022	A						
003021	000000	A	1033		HLT			00 01033
			1034	*				00 01034
003022	001000	A	1035	EX32	JMP*	EXEN	RETURN	00 01035

003023	102370	A	1036	*				00	01036
			1037	*				00	01037
003024	125252	A	1038	EXK	DATA	0125252, (EXK)		00	01038
003025	003024	A							
003026	000000	A	1039	EXK1	DATA	0, (EXK1)		00	01039
003027	003026	A							
003030	052525	A	1040	EXK2	DATA	052525		00	01040
003031			1041	EXK3	BSS	3	STORAGE CELLS	00	01041
003034	177777	A	1042	EXNG	DATA	=1	ALTERED TO 777777 FOR 622/I TESTING	00	01042
003035	100000	A	1043	EMXN	DATA	0100000	MAX NEG, ALTERED TO 0400000 FOR 622/I	00	01043
003036	000000	A	1044	EXRD	DATA	0		00	01044
003037	123456	A	1045	EXKA	DATA	0123456, (EXKA), (EXKA+1)*		00	01045
003040	003037	A							
003041	103040	A							
			1046	*****				00	01046
			1047	*				00	01047
			1048	*	I/O TEST			00	01048
			1049	*				00	01049
			1050	*****				00	01050
003042	000000	A	1051	IDNT	ENTR	0	I/O TEST ENTRY AND EXIT	00	01051
003043	008020	A	1052		LDBI	STTY		00	01052
003044	007370	A							
003045	006030	A	1053		LDXI	ID1	UPDATE I/O INSTRUCTIONS TO CURRENT	00	01053
003046	003514	A							
003047	015000	A	1054		LOA	0,1	* DEVICE ADDR (STTY)	00	01054
003050	001010	A	1055		JAZ	IDN1	* JMP IF DONE	00	01055
003051	003051	A							
003052	004346	A	1056		L8RA	6	*	00	01056
003053	004246	A	1057		L8LA	6	*	00	01057
003054	116000	A	1058		ORA	0,2		00	01058
003055	055000	A	1059		STA	0,1	*	00	01059
003056	005144	A	1060		IXR		*	00	01060
003057	001000	A	1061		JMP	IDNT+5	*****	00	01061
003060	003047	A							
003061	006030	A	1062	IDN1	LDXI	MSG5	OUTPUT 'THIS IS INST TEST' VIA DBR	00	01062
003062	003537	A							
003063	005301	A	1063		DECR	01	* (A)=1 FOR POSSIBLE INTERFERENCE	00	01063
003064	025000	A	1064		LDB	0,1	* WITH (B)	00	01064
003065	001020	A	1065		JBZ	IDN2	* DONE?, YES *** EXIT ***	00	01065
003066	003100	A							
003067	004150	A	1066		L8RB	8	* HIGH ORDER 8 BITS	00	01066

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003070	002000	A	1067	CALL	IONA	* OUTPUT	00	01067
003071	003406	A						
003072	025000	A	1068	LDB	0,1	* LOW ORDER 8 BITS	00	01068
003073	002000	A	1069	CALL	IONA	* OUTPUT	00	01069
003074	003406	A						
003075	005144	A	1070	IXR		*	00	01070
003076	001000	A	1071	JMP	ION1+3	*****	00	01071
003077	003064	A						
003100	006030	A	1072	LDXI	MSG6	OUTPUT 'PLEASE TYPE IN ' VIA OAR	00	01072
003101	003561	A						
003102	005302	A	1073	DECR	02	* (B) = -1 FOR POSSIBLE INTERFERENCE	00	01073
003103	002000	A	1074	CALL	(OUTD)*	***** WITH (A)	00	01074
003104	100403	A						
003105	013520	A	1075	LDA	IO5	OUTPUT 'A LOWER CASE CHAR' VIA OME	00	01075
003106	053123	A	1076	STA	ION3	* UPDATE I/O INSTRUCTION	00	01076
003107	006010	A	1077	LDAI	MSG7-1	* *	00	01077
003110	003572	A						
003111	053124	A	1078	STA	ION3+1	* *	00	01078
003112	006030	A	1079	LDXI	24+1	* SET OUTPUT CTR (24 CHAR)	00	01079
003113	000031	A						
003114	005303	A	1080	DECR	03	* (A)=(B)=-1 FOR POSSIBLE INTERFERENCE	00	01080
003115	043124	A	1081	INR	ION3+1	*	00	01081
003116	005344	A	1082	DXR		* DONE ?	00	01082
003117	001040	A	1083	JXZ	ION4	* YES *** EXIT ***	00	01083
003120	003127	A						
003121	002000	A	1084	CALL	ION8	* NO, SEN BFR RDY	00	01084
003122	003420	A						
003123	103000	A	1085	OME	0	* YES, OUTPUT, CONTINUE	00	01085
003124	000000	A						
003125	001000	A	1086	JMP	*=8	*****	00	01086
003126	003115	A						
003127	013521	A	1087	LDA	IO6	EXECUTE INIT FUNCTION	00	01087
003130	053131	A	1088	STA	*+1	* CLEAR RDR BFR	00	01088
003131	102500	A	1089	CIA		* *	00	01089
003132	002000	A	1090	CALL	IONC	* SEN BFR RDY	00	01090
003133	003442	A						
003134	013514	A	1091	LDA	IO1	* EXC INIT INSTRUCTION	00	01091
003135	053136	A	1092	STA	*+1	* *	00	01092
003136	100000	A	1093	EXC	0	* *	00	01093
003137	013531	A	1094	LDA	IO14	* BFR STILL RDY?	00	01094
003140	053141	A	1095	STA	*+1	* *	00	01095
003141	101000	A	1096	SEN	0,*+4	* * YES = ERROR	00	01096

003142	003145	A							
003143	001000	A	1097	JMP	**6	*	* NO		00 01097
003144	003151	A							
003145	006030	A	1098	LDXI	MSG8	*	'EXC 04XX,01004XX,DOES NOT WORK'		00 01098
003146	003632	A							
003147	001000	A	1099	JMP	**4	*			00 01099
003150	003153	A							
003151	006030	A	1100	LDXI	MSG9	*	'THANKYOU'		00 01100
003152	003624	A							
003153	002000	A	1101	CALL	(OUTD)*	*****	WRITE MSG (X),EXIT *****		00 01101
003154	100403	A							
003155	003000	A	1102	XEC	I01		INITIALIZE TTY		00 01102
003156	003514	A							
003157	006020	A	1103	LDBI	0200		OUTPUT 'NOW TYPE ASDF' VIA DAB		00 01103
003160	000200	A							
003161	006030	A	1104	LDXI	MSG0	*	(B)=0200 , 'A)=CHAR 'X)=0200		00 01104
003162	003651	A							
003163	013518	A	1105	LDA	I03	*	UPDATE DAB INSTRUCTION		00 01105
003164	053174	A	1106	STA	**8	*	*		00 01106
003165	015000	A	1107	LDA	0,1	*	'A)=() (X)		00 01107
003166	001010	A	1108	JAZ	ION5=5	*	DONE?,YES *** EXIT ***		00 01108
003167	003200	A							
003170	006130	A	1109	ERAI	0200	*	REMOVE BIT 0200		00 01109
003171	000200	A							
003172	002000	A	1110	CALL	IONB	*	SEN BFR RDY		00 01110
003173	003420	A							
003174	103300	A	1111	DAB		*	OUTPUT		00 01111
003175	005144	A	1112	IXR		*			00 01112
003176	001000	A	1113	JMP	**9	*****			00 01113
003177	003165	A							
003200	006010	A	1114	LDAI	IOWA		INPUT		00 01114
003201	003352	A							
003202	053536	A	1115	STA	I021	*	'AS' VIA CIA		00 01115
003203	006030	A	1116	LDXI	I06	*	'DF' VIA CIAB		00 01116
003204	003521	A							
003205	005041	A	1117	TXA		*	'AS' VIA INA		00 01117
003206	006140	A	1118	SUBI	I010	*	'DF' VIA INAB		00 01118
003207	003525	A							
003210	001010	A	1119	JAZ	ION6	*			00 01119
003211	003223	A							
003212	002000	A	1120	CALL	IOND,(OUTA)*	*			00 01120
003213	003503	A							

003214	100400	A							
003215	002000	A	1121	CALL	IOND, (OUTA)*	*			00 01121
003216	003503	A							
003217	100400	A							
003220	005144	A	1122	IXR		*			00 01122
003221	001000	A	1123	JMP	ION5	*****			00 01123
003222	003205	A							
003223	002000	A	1124	CALL	IOND, IONE	INPUT			00 01124
003224	003503	A							
003225	003506	A							
003226	002000	A	1125	CALL	IOND, IONE	* 'AS' VIA CIB			00 01125
003227	003503	A							
003230	003506	A							
003231	005144	A	1126	IXR		* 'DF' VIA INB			00 01126
003232	002000	A	1127	CALL	IOND, IONE	*			00 01127
003233	003503	A							
003234	003506	A							
003235	002000	A	1128	CALL	IOND, IONE	*****			00 01128
003236	003503	A							
003237	003506	A							
003240	002000	A	1129	CALL	IONC	INPUT	SEN BFR RDY		00 01129
003241	003442	A							
003242	033536	A	1130	LDX	IO21	* 'AS' VIA IME			00 01130
003243	005301	A	1131	DECR	01	* (X) PTS TO INPUT AREA			00 01131
003244	055000	A	1132	STA	0,1	* INPUT SET TO -1			00 01132
003245	073251	A	1133	STX	ION7+1	* GET UPDATE INSTRUCTION			00 01133
003246	013527	A	1134	LDA	IO12	* *			00 01134
003247	053250	A	1135	STA	ION7	* *			00 01135
003250	102000	A	1136	IME	0	* INPUT			00 01136
003251	000000	A							
003252	015000	A	1137	LDA	0,1	* PRINT CHARACTER			00 01137
003253	002000	A	1138	CALL	(OUTA)*	* *			00 01138
003254	100400	A							
003255	005144	A	1139	IXR		* INC PTR			00 01139
003256	005301	A	1140	DECR	01	* INPUT SET TO -1			00 01140
003257	055000	A	1141	STA	0,1	* *			00 01141
003260	013527	A	1142	LDA	IO12	* GET UPDATED INSTRUCTION			00 01142
003261	053255	A	1143	STA	ION8	* *			00 01143
003262	073255	A	1144	STX	ION8+1	* *			00 01144
003263	002000	A	1145	CALL	IONC	* SEN BFR RDY			00 01145
003264	003442	A							
003265	102000	A	1146	IME	0	* INPUT			00 01146

PAGE	40	03/01/74	INSPT2	VORTEX	DASMR	2148	HOURS
003266	000000	A					
003267	015000	A	1147	LDA	0,1	* PRINT CHARACTER	00 01147
003270	002000	A	1148	CALL	(OUTA)*	*****	00 01148
003271	100400	A					
003272	006030	A	1149	LDXI	IOWE-1	COMPARE ACTUAL INPUT TO EXPECTED	00 01149
003273	003317	A					
003274	005145	A	1150	ION9	INCR	045	* END OF TBL ?
003275	006140	A	1151	SUBI	IOWE+26	* *	00 01151
003276	003352	A					
003277	001010	A	1152	JAZ	(IONT)*	* * YES **** EXIT ****	00 01152
003300	103042	A					
003301	015000	A	1153	LDA	0,1	* ERROR ?	00 01153
003302	135032	A	1154	ERA	26,1	* *	00 01154
003303	001010	A	1155	JAZ	ION9	* * NO	00 01155
003304	003274	A					
003305	015000	A	1156	LDA	0,1	* * YES	00 01156
003306	025032	A	1157	LDB	26,1	* (A)=ACTUAL (B)=EXP	00 01157
003307	001100	A	1158	JSSI	*+6	* PRINT?,NO	00 01158
003310	003315	A					
003311	002000	A	1159	CALL	IQ80	* * YES	00 01159
003312	003716	A					
003313	001000	A	1160	JMP	ION9	* *	00 01160
003314	003274	A					
003315	000200	A	1161	HLT	0200		00 01161
003316	001000	A	1162	JMP	ION9	*****	00 01162
003317	003274	A					
			1163	*		I/O INPUT EXPECTED DATA	00 01163
			1164	*		ENTRIES =(A),(B) AFTER INPUT,BEFORE INPUT (A)=(B)=077600	00 01164
	077600	A	1165	IP	SET	077600	IP=INTERFERENCE PATTERN
003320	000301	A	1166	IOWE	DATA	0301,IP	CIA A
003321	077600	A					
003322	000323	A	1167		DATA	0323,IP	CIA S
003323	077600	A					
003324	000304	A	1168		DATA	0304,0304	CIAB D
003325	000304	A					
003326	000306	A	1169		DATA	0306,0306	CIAB F
003327	000306	A					
003330	077701	A	1170		DATA	077701,IP	INA A
003331	077600	A					
003332	077723	A	1171		DATA	077723,IP	INA S
003333	077600	A					
003334	077704	A	1172		DATA	077704,077704	INAB D

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003335	077704	A				
003336	077706	A	1173	DATA	077706,077706	INAB F 00 01173
003337	077706	A				
003340	077600	A	1174	DATA	IP,0301	CIB A 00 01174
003341	000301	A				
003342	077600	A	1175	DATA	IP,0323	CIB S 00 01175
003343	000323	A				
003344	077600	A	1176	DATA	IP,077704	INB D 00 01176
003345	077704	A				
003346	077600	A	1177	DATA	IP,077706	INB F 00 01177
003347	077706	A				
003350	000301	A	1178	DATA	0301	IME A 00 01178
003351	000323	A	1179	DATA	0323	IME S 00 01179
003352			1180	IOWA	BSS	28
			1181	*	OUTPUT B REG	TABLE OF ACTUAL INPUTS
003406	000000	A	1182	IOWA	ENTR	0
003407	002000	A	1183		CALL	IONB
003410	003420	A				
003411	053535	A	1184	STA	I020	* GET UPDATE INSTRUCTION 00 01184
003412	013517	A	1185	LDA	I04	* * 00 01185
003413	053415	A	1186	STA	**2	* * 00 01186
003414	013535	A	1187	LDA	I020	* * 00 01187
003415	103200	A	1188	OBR		* OUTPUT (B) 00 01188
003416	001000	A	1189	JMP	(IOWA)*	***** 00 01189
003417	103406	A				
			1190	*	SENSE WRITE BFR RDY	00 01190
003420	000000	A	1191	IONB	ENTR	0
003421	073535	A	1192	STX	I020	* SAVE (X) 00 01192
003422	033530	A	1193	LDX	I013	* GET UPDATE INSTRUCTION 00 01193
003423	073425	A	1194	STX	**2	* * 00 01194
003424	033533	A	1195	LDX	I015	* (X) = TIME OUT CONSTANT 077777 00 01195
003425	101000	A	1196	SEN	0,IONC=3	* BFR RDY? 00 01196
003426	003437	A				
003427	002000	A	1197	CALL	(TOUT)*	* NO, TOO MUCH TIME? 00 01197
003430	100417	A				
003431	005304	A	1198	DECR	04	* YES HALT 00 01198
003432	000000	A	1199	HLT		* * 00 01199
003433	001400	A	1200	JSS3	(IONT)*	**** SS3 EXIT **** 00 01200
003434	103042	A				
003435	001000	A	1201	JMP	**8	* * 00 01201
003436	003425	A				
003437	033535	A	1202	LDX	I020	* RESTORE (X) 00 01202

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003440 001000 A 1203 JMP (IONB)* ***** 00 01203
003441 103420 A
1204 *
003442 000000 A 1205 IONC ENTR 0 SENSE READ BFR RDY,NO TIME OUT 00 01204
003443 073535 A 1206 STX I020 SEN READ BFR RDY ENTRY AND EXIT 00 01205
003444 033531 A 1207 LDX I014 * SAVE (X) 00 01206
003445 073447 A 1208 STX **2 * GET UPDATED INSTRUCTION 00 01207
003446 033535 A 1209 LDX I020 * RESTORE (X) 00 01208
003447 101000 A 1210 SEN 0,(IONC)* * BFR RDY? YES=RETURN 00 01210
003450 103442 A
003451 001400 A 1211 JSB3 (IONT)* **** S33 EXIT **** 00 01211
003452 103042 A
003453 001000 A 1212 JMP **4 ***** 00 01212
003454 003447 A
1213 *
003455 002000 A 1214 I01D CALL INPUT VIA INST(X),AND PRINT VIA ROUTINE IN PARAMETER 1 00 01213
003456 003442 A IONC INPUT, SEN READ BFR RDY 00 01214
003457 015000 A 1215 LDA 0,1 * GET UPDATED INSTRUCTION 00 01215
003460 053463 A 1216 STA **3 * 00 01216
003461 013534 A 1217 LDA I016 * (A)=(B)=INTERFERENCE PATTERN 00 01217
003462 005012 A 1218 TAB * 00 01218
003463 102500 A 1219 CIA * INPUT VIA INST(X) 00 01219
003464 073535 A 1220 STX I020 * SAVE (X) 00 01220
003465 033535 A 1221 LDX I021 * (X) PTS TO IDWA 00 01221
003466 055000 A 1222 STA 0,1 * PUT (A),(B) INTO ACTUAL TBL 00 01222
003467 005144 A 1223 IXR * 00 01223
003470 065000 A 1224 STB 0,1 * 00 01224
003471 005144 A 1225 IXR * 00 01225
003472 073535 A 1226 STX I021 * 00 01226
003473 033503 A 1227 LDX IOND * CALL OUTPUT ROUTINE (PARAMETER 1) 00 01227
003474 035000 A 1228 LDX 0,1 * 00 01228
003475 073500 A 1229 STX **3 * 00 01229
003476 033535 A 1230 LDX I020 * 00 01230
003477 002000 A 1231 CALL 0 * 00 01231
003500 000000 A
003501 043503 A 1232 INR IOND * SET RETURN 00 01232
003502 001000 A 1233 JMP 0 * *** EXIT *** 00 01233
003503 000000 A
003504 1234 IOND BES 0 INPUT VIA INSTR()(X) ENTRY AND EXIT 00 01234
003504 001000 A 1235 JMP I01D 00 01235
003505 003455 A
1236 * OUTPUT (B) 00 01236

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003506	000000	A	1237	IONE	ENTR	0	OUTPUT (B) ENTRY AND EXIT	00 01237
003507	005021	A	1238		TBA		* (A) = (B)	00 01238
003510	002000	A	1239		CALL	(OUTA)*	* OUTPUT (A)	00 01239
003511	100400	A						
003512	001000	A	1240		JMP	(IONE)*	*****	00 01240
003513	103508	A						
			1241	*		DATA FOR IONT		00 01241
003514	100400	A	1242	I01	DATA	0100400	EXC INIT TTY	00 01242
003515	103100	A	1243	I02	DATA	0103100	DAR	00 01243
003516	103300	A	1244	I03	DATA	0103300	DAB	00 01244
003517	103200	A	1245	I04	DATA	0103200	DBR	00 01245
003520	103000	A	1246	I05	DATA	0103000	OME	00 01246
003521	102500	A	1247	I06	DATA	0102500	CIA	00 01247
003522	102700	A	1248	I07	DATA	0102700	CIAB	00 01248
003523	102100	A	1249	I08	DATA	0102100	INA	00 01249
003524	102300	A	1250	I09	DATA	0102300	INAB	00 01250
003525	102600	A	1251	I010	DATA	0102600	CIB	00 01251
003526	102200	A	1252	I011	DATA	0102200	INB	00 01252
003527	102000	A	1253	I012	DATA	0102000	IME	00 01253
003530	101100	A	1254	I013	DATA	0101100	SEN WRITE BFR RDY	00 01254
003531	101200	A	1255	I014	DATA	0101200	SEN READ BFR RDY	00 01255
003532	000000	A	1256		DATA	0	END OF IO INSTR TABLE *****	00 01256
003533	077777	A	1257	I015	DATA	077777	TIME OUT CONSTANT	00 01257
003534	077600	A	1258	I016	DATA	077600	INTERFERENCE PATTERN	00 01258
003535			1259	I020	BSS	1	TEMP	00 01259
003536			1260	I021	BSS	1	TEMP	00 01260
			1261	*			MESSAGES	00 01261
003537	106612	A	1262	MSG5	DATA	0106612, 'THIS IS THE I/O INSTRUCTION TEST', 0		00 01262
003540	152310	A						
003541	144723	A						
003542	120311	A						
003543	151640	A						
003544	152310	A						
003545	142640	A						
003546	144657	A						
003547	147640	A						
003550	144716	A						
003551	151724	A						
003552	151325	A						
003553	141724	A						
003554	144717	A						
003555	147240	A						

003556	152305	A					
003557	151724	A					
003560	000000	A					
003561	106612	A	1263	MSG6	DATA	0106612, 'PLEASE TYPE IN ',0	00 01263
003562	150314	A					
003563	142701	A					
003564	151705	A					
003565	120324	A					
003566	154720	A					
003567	142640	A					
003570	144716	A					
003571	120240	A					
003572	000000	A					
003573	120301	A	1264	MSG7	DATA	' A LOWER CASE CHARACTER',0215,0212	00 01264
003574	120240	A					
003575	120314	A					
003576	120317	A					
003577	120327	A					
003600	120305	A					
003601	120322	A					
003602	120240	A					
003603	120303	A					
003604	120301	A					
003605	120323	A					
003606	120305	A					
003607	120240	A					
003610	120303	A					
003611	120310	A					
003612	120301	A					
003613	120322	A					
003614	120301	A					
003615	120303	A					
003616	120324	A					
003617	120305	A					
003620	120322	A					
003621	000215	A					
003622	000212	A					
003623	000000	A	1265		DATA	0	00 01265
003624	152310	A	1266	MSG9	DATA	'THANK YOU',0	00 01266
003625	140716	A					
003626	145640	A					
003627	154717	A					

003630 152640 A
003631 000000 A
003632 142730 A 1267 MSG8 DATA 'EXEC (1004XX) DOES NOT WORK',0 00 01267
003633 142703 A
003634 120250 A
003635 130660 A
003636 130264 A
003637 154330 A
003640 124640 A
003641 142317 A
003642 142723 A
003643 120316 A
003644 147724 A
003645 120327 A
003646 147722 A
003647 145640 A
003650 000000 A
003651 000215 A 1268 MSG0 DATA 0215,0212,' N D W T Y P E A S D F A S D F A S D F' 00 01268
003652 000212 A
003653 120316 A
003654 120317 A
003655 120327 A
003656 120240 A
003657 120324 A
003660 120331 A
003661 120320 A
003662 120305 A
003663 120240 A
003664 120301 A
003665 120323 A
003666 120304 A
003667 120306 A
003670 120301 A
003671 120323 A
003672 120304 A
003673 120306 A
003674 120301 A
003675 120323 A
003676 120304 A
003677 120306 A
003700 120301 A 1269 DATA ' A S',0215,0212,0240,0240,0240,0240,0240,0240 00 01269
003701 120323 A

003702	000215	A							
003703	000212	A							
003704	000240	A							
003705	000240	A							
003706	000240	A							
003707	000240	A							
003710	000240	A							
003711	000240	A							
003712	000240	A							
003713	000240	A	1270	DATA	0240,0240,0			00	01270
003714	000240	A							
003715	000000	A							
			1271	*				00	01271
			1272	*				00	01272
			1273	*				00	01273
			1274	*	ERROR PRINT ROUTINE			00	01274
003716	000000	A	1275	IQ80	ENTR	0		00	01275
003717	053752	A	1276		STA	ITMP+1	01999000		01276
003720	063753	A	1277		STB	ITMP+2	02000000		01277
003721	073754	A	1278		STX	ITMP+3	02001000		01278
003722	002000	A	1279		CALL*	OUTC		00	01279
							DO CARRIAGE RETURN AND LINE FEED		
003723	100402	A							
003724	006020	A	1280		LDBI	(IQ80)	02006000		01280
003725	003716	A							
003726	016000	A	1281		LDA	0,2		00	01281
003727	005311	A	1282		DAR			00	01282
003730	005311	A	1283		DAR			00	01283
003731	002000	A	1284		CALL*	OUTF		00	01284
							PRINT ERROR REFERENCE ADDRESS		
003732	100405	A							
003733	013752	A	1285		LDA	ITMP+1		00	01285
003734	002000	A	1286		CALL*	OUTE		00	01286
							PRINT A REG CONTENTS		
003735	100404	A							
003736	013753	A	1287		LDA	ITMP+2		00	01287
003737	002000	A	1288		CALL*	OUTE		00	01288
							PRINT B REG CONTENTS		
003740	100404	A							
003741	013754	A	1289		LDA	ITMP+3		00	01289
003742	002000	A	1290		CALL*	OUTE		00	01290
							PRINT X REG CONTENTS		
003743	100404	A							
003744	013752	A	1291		LDA	ITMP+1		00	01291
							RESTORE STATUS		
003745	023753	A	1292		LDB	ITMP+2		00	01292
003746	033754	A	1293		LDX	ITMP+3		00	01293
003747	001000	A	1294		JMP*	IQ80	02016000		01294

003750 103716 A

003751 1295 *
 1296 ITMP BSS 4
 1297 *
 000600 A 1298 END IBGN

00 01295
 02065000 01296
 00 01297
 00 01298

ENTRY NAMES
 EXTERNAL NAMES
 SYMBOLS

000442	A	SCON	001163	A	SCYC	000471	A	SDCT	001162	A	SECY
000440	A	SFLG	000422	A	SLWE	000441	A	SMEM	000424	A	SMSM
007370	A	STTY	001161	A	STYP	001164	A	CCTR	003035	A	EMXN
000423	A	ESZC	002415	A	EX01	002424	A	EX02	002451	A	EX03
002460	A	EX04	002503	A	EX05	002512	A	EX06	002540	A	EX07
002547	A	EX10	002575	A	EX11	002604	A	EX12	002624	A	EX13
002633	A	EX14	002743	A	EX15	002753	A	EX16	002764	A	EX17
002771	A	EX20	003000	A	EX30	003022	A	EX32	002647	A	EX70
002674	A	EX71	002713	A	EX72	002727	A	EX73	002736	A	EX75
002665	A	EX76	002720	A	EX77	002370	A	EXEN	003024	A	EXK
003026	A	EXK1	003030	A	EXK2	003031	A	EXK3	003037	A	EXKA
003034	A	EXNG	003036	A	EXRD	001222	A	IARD	000607	A	IBG1
000624	A	IBG2	000645	A	IBG3	000722	A	IBG4	001013	A	IBG7
000771	A	IBGA	001005	A	IBGB	001040	A	IBGC	000703	A	IBGD
000714	A	IBGE	000716	A	IBGF	000730	A	IBGG	000667	A	IBGH
000600	A	IBGN	001065	A	IBGX	001215	A	IEXA	000410	A	INPA
000411	A	INPB	000412	A	INPC	000413	A	INPD	000414	A	INPE
000415	A	INPF	000416	A	INPG	000425	A	INPH	000426	A	INPI
001205	A	INS1	001211	A	INS2	001213	A	INS3	001234	A	INST
003514	A	I01	003525	A	I010	003526	A	I011	003527	A	I012
003530	A	I013	003531	A	I014	003533	A	I015	003534	A	I016
003455	A	I01D	003515	A	I02	003535	A	I020	003536	A	I021
003516	A	I03	003517	A	I04	003520	A	I05	003521	A	I06
003522	A	I07	003523	A	I08	003524	A	I09	003061	A	ION1
003100	A	ION2	003123	A	ION3	003127	A	ION4	003205	A	ION5
003223	A	ION6	003250	A	ION7	003265	A	ION8	003274	A	ION9
003406	A	IONA	003420	A	IONB	003442	A	IONC	003503	A	IOND
003506	A	IONE	003042	A	IONT	001027	A	IOTEST	001227	A	IOTS
003352	A	IOWA	003320	A	IOWE	077600	A	IP	003716	A	IQ80
003751	A	ITMP	001165	A	ITRS	002346	A	K09	002331	A	K10
001245	A	K200	001254	A	K201	001260	A	K210	001267	A	K211
001274	A	K220	001303	A	K221	002343	A	K23	001311	A	K230
001321	A	K231	001327	A	K240	001337	A	K241	001345	A	K250
001355	A	K251	001363	A	K260	001371	A	K261	001375	A	K270

001407	A	K271	001414	A	K280	001425	A	K281	001431	A	K290
001441	A	K291	001445	A	K292	001455	A	K293	001461	A	K294
001472	A	K295	001477	A	K300	001506	A	K302	001654	A	K310
001663	A	K311	001670	A	K315	001673	A	K320	001702	A	K321
001710	A	K324	002344	A	K33	001723	A	K330	001732	A	K331
001742	A	K340	001751	A	K341	001737	A	K345	001772	A	K400
002025	A	K401	002013	A	K402	001515	A	K403	001530	A	K404
001537	A	K405	001555	A	K405	001564	A	K407	001574	A	K408
001606	A	K409	001625	A	K410	001603	A	K411	001635	A	K412
001645	A	K414	001757	A	K430	002033	A	K432	002036	A	K434
002056	A	K450	002102	A	K452	002117	A	K454	002134	A	K677
002145	A	K700	002152	A	K702	002156	A	K704	002162	A	K706
002166	A	K708	002172	A	K710	002176	A	K712	002202	A	K714
002207	A	K716	002213	A	K718	002217	A	K720	002223	A	K722
002227	A	K724	002231	A	K726	002240	A	K730	002253	A	K732
002264	A	K734	002300	A	K738	002273	A	K742	002316	A	K746
002306	A	K748	002327	A	K750	002330	A	K752	002362	A	KD01
002363	A	KD02	001244	A	KENT	002364	A	KEXK	002367	A	KFOR
002361	A	KIND	002353	A	KMFV	002360	A	KMON	002352	A	KMXN
002351	A	KMXP	002357	A	KONE	002354	A	KSTN	002355	A	KSVX
002366	A	KTEN	002356	A	KZRO	003651	A	MSG0	001102	A	MSG1
001132	A	MSG2	001142	A	MSG3	001151	A	MSG4	003537	A	MSG5
003561	A	MSG6	003573	A	MSG7	003632	A	MSG8	003624	A	MSG9
000400	A	OUTA	000401	A	OUTB	000402	A	OUTC	000403	A	OUTD
000404	A	OUTE	000405	A	OUTF	000406	A	OUTG	000407	A	OUTH
000421	A	SSWT	000420	A	TDLY	000417	A	TOUT			

0 ERRORS ASSEMBLY COMPLETE