

IBM POUGHKEEPSIE
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Diagnostic Engineering Publication

1410/7010

Subject: Diagnostic Program M011 - 1410/7010-1401 CPU Compatibility

Sequence Number 279
Replaces

I. System Control Card 1 card 001

Enclosures: 74 Pages
Card Deck for CARD ONLY SYSTEMS (as punched by UP51)
8 Cards - Card Loader (1-7) and 1 Core Clear
157 Cards No. 001 - 157 Data Cards
1 Card Execute Card

Distribution: X 1410
X 7010
Other

MO11A
RELIABILITY TEST OF
1401 COMPATIBILITY FEATURE
ON
1410/7010 CPU

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2.XX.00 TEST DESCRIPTION

2.XX.00.1 MODIFICATIONS

This is a new program.

2.XX.00.2 Description

This program is designed to test the reliability of the 1410/7010 CPU while operating in 1401 mode. The program assumes that the system is functioning properly while in 1410/7010 operational mode and, therefore, tests only those areas of the CPU affected by 1401 compatibility circuits.

This program is written in a sequential routine format. Two sequences of test routines along with the initial routine to set up post restart and type program ID are located beyond 8K to conserve memory space. The test routines located beyond 8K are executed only on systems having a memory size greater than IOK. See sections 2.XX.06.1 for a general flow diagram of the program and section 2.XX.06.2 for a flow diagram of a typical routine.

Routines 1-10 provide tests of basic instructions used throughout the remainder of the test for the purposes of initialization, control and routine check. An error in these routines should always result in an error halt with no programmed timeouts. They are executed only once during the first program pass.

All remaining test routines communicate with 2 common control routines to test for inquiry and to test TAD locations for looping routines, indicating errors, and halting on error. Errors will be indicated by a 6 character typeout as follows:

ERR XXX*

*XXX indicates the 1401 3 digit representation of the 5 position error address. See section 2.XX.07.0 for address conversion chart.

The program will normally make 100 passes before typing PASS and testing TAD3 for repeat of entire program. If TAD3 is not 1 the program will halt to change mode back to 1410/7010. Pressing start will call in the next program. If TAD3 is a 1 program will execute another 100 passes beginning with routine 11.

2.XX.00.3 Equipment Required
CPU, CONSOLE PRINTER

2.XX.00.4 Card Deck

7 Cards ----- Load Program
1 Card ----- Core Clear Card
157 Cards numbered 001 - 157 Program

Card numbered 001 is Standard System
Control Card
1 Card ----- Execute Card (Branch to 2000)

2.XX.00.5 Machine E.C. Level
250772

2.XX.00.6 Pass Length
1410 8.5 sec.
1410I 7 sec.
7010 2.8 sec.

These times represent the approximate times required to run 100 passes excluding manual tests. 100 passes should provide a satisfactory reliability check of the system CPU in 1401 mode of operation. If it is desired to change the length of the pass make alterations as follows:

Alter locs. 1010 to 1012 to desired number of passes.

2.XX.01 LOADING PROCEDURE

2.XX.01.0 FROM CARDS

A. 7010-1410 without Load Button

1. Clear memory
2. Display memory location 00000
3. Alter to-
 - RL%1100011\$. For channel 1 reader
 - XL%1100011\$. For channel 2 reader
4. Set to RUN, Computer Reset, Start.

B. 7010 with Load Button

1. Clear Memory
2. Computer Reset
3. Depress Load Button

2. XX. 01. 2 FROM TAPE (80 Character Master or Memory Dump Tape)

A. 7010-1410 without Load Button

1. Clear Memory
2. Display memory location 00000
3. Alter to-
 - RL%B000011\$. For channel 1 tape drive
 - XL%B000011\$. For channel 2 tape drive
4. Set to RUN, Computer Reset, Start.

B. 7010 with Load Button

1. Clear Memory
2. Computer Reset
3. Depress Tape Load Button

2. XX. 02. 0 OPERATING PROCEDURE

Load Program

Program will type "MO11A" and instruction message to set compatibility switch to 1401. Set switch to 1401 and press start to begin program execution. Under normal conditions (All TADS 0 and no errors encountered) program will make 100 passes stopping twice during 1st PASS only to test HALT and HALT & BRANCH instructions. Before typing "PASS" Routines 100 and 101 are executed only when TAD4 is a 1. It is recommended, therefore, that at least one pass be made with TAD4 (loc. 1004) containing 1 to execute these routines to test sense switches.

After 100 passes program will type "PASS" and then halt after typing message to return compatibility switch to 1410/7010. Press computer reset and start to return to load routine.

Normal program operations may be altered by using the Console Printer Inquiry routine to set one or several of the following TAD locations to "1".

<u>TAD</u>	<u>ADDRESS</u>	<u>IF NOT 1 (NORMAL)</u>	<u>IF SET TO 1</u>
0	01000 (*00)	Normal Typeouts	Bypass all Typeouts for scoping
1	01001 (*01)	No loops	Loop on present routine
2	01002 (*02)	No halts	Halt on error
3	01003 (*03)	100 passes only	Cycle program indefinitely
4	01004 (*04)	Bypass Manual Routines	Execute Manual Routines

The Console Printer Inquiry routine mentioned above may be used to alter TADS once the main loop of the program has begun (not during execution of first 10 routines to test basic instructions). To alter TADS do the following:

Depress Inquiry Request Key

NOTE: If program is stopped when this key is depressed, it will be necessary to press computer start to branch on inquiry. Machine should type an I, make a space and unlock the keyboard for insertion of characters beginning at loc. 01000.

Key in the 5 numbers (0's and 1's) for desired set-up of TAD0 - TAD4 (loc. 1000 - 1004).

NOTE: The program requires that the five digits always be altered even though it may be desired to change only TAD3 (loc. 1003). If an error is made during the key-in, the inquiry cancel key may be depressed to terminate the inquiry and branch program back to the same read console printer instruction. After the 5th character representing TAD4 has been keyed in, depress inquiry release to resume running.

2. XX. 03. 0 OPERATING HINTS AND COMMENTS

1. Post Restart for routines 11 - 111 comprising the main loop of the program is maintained in locations 0001 - 0004. Any of these routines may be restarted, therefore, by depressing computer Reset and Start.
2. If a routine is causing a machine stop because of an alarm condition and it is desired to loop the routine for scoping do the following:
 - a. Alter TAD1 to a 1 to loop the routine.
 - b. Turn the check control switch to RESET AND RESTART Mode.
 - c. Depress Computer Reset and START.

NOTE: Altering TAD1 to 1 is desired for intermittent alarm failures to insure that the program will stay in the failing routine.

2. XX. 04. 0 PROGRAM STOPS AND RESTARTS

- 1337 Routine Error halt - occurs following Error typeout when TAD2 contains a "1". This halt provides an opportunity to examine the failing routine to help determine the cause of failure. Press start to test TAD1 for loop or depress computer reset and start to try the routine again.
- N 2008 Normal Halt while in 1410/7010 Mode following typeout of program ID and instruction message to set compatibility switch to 1401. Set compatibility switch to 1401 and press start.
- N 2010 Normal Halt to test Halt instruction. Should occur only once during first pass of program. Press start to go to next routine.
- N 2018 Normal Halt to test Halt and Branch instruction. Should occur only once during first pass of program. Press start to go to next routine.
- 2019 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2010 to try again.

- 2028 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2019 to try again.
- 2049 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2028 to try again. NOP instruction at loc. 2049 may be changed to a branch to loop routine.
- 2078 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2053 to try again. NOP instruction at loc. 2078 may be changed to a branch to loop routine.
- 2100 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2082 to try again. NOP instruction at loc. 2100 may be changed to a branch to loop routine.
- 2128 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2104 to try again. NOP instruction at loc. 2128 may be changed to a branch to loop routine.
- 2153 - 2162 Error Halt - Refer to program listing for explanation. Execute
2183 - 2196 a manual branch to loc. 2132 to try again. NOP instruction at loc. 2196 may be changed to a branch to loop routine.
- 2228 Error Halt - Refer to program listing for explanation. Execute a manual branch to loc. 2200 to try again. NOP instruction at loc. 2228 may be changed to a branch to loop routine.
- 2245 Program may halt here once if inquiry latch was on. Pressing start should allow program to continue NOP instruction at loc. 2245 may be changed to a branch to loop routine.
- N 6332 Normal Halt following typeout giving instruction to set all sense switches off. Set all sense switches on and press start.
- N 6480 Normal Halt following typeout giving instruction to set all sense switches on. Set all sense switches off and press start.
- N 7102 Normal Halt following typeout giving instruction to set compatibility switch to 1410/7010 mode. Set compatibility switch to 1410/7010 and press start to call in NEXT program.

2. XX. 05. 0 TYPEOUTS

2. XX. 05. 1 Non Error Typeouts

"MO11A"

Program identity typed after program is loaded while system is still in 1410/7010 mode.

"SET COMPATIBILITY SW TO 1401 PRESS START"

Instruction message typed after program ID while system is still in 1410/7010 mode.

"TURN ON (OFF) ALL SENSE SWS PRESS START"

Instruction messages typed within manual routines to test sense switches.

"SET COMPATIBILITY SWITCH TO 1410/7010 PRESS COMPUTER RESET AND START"

Instruction message typed after program has made 100 passes and TAD3 (loc. 1003) has been found to be NOT 1.

"PASS"

Types after each 100 passes of the program.

2. XX. 05. 2 Error Typeout

"ERR XXX"

This typeout will occur whenever an error is detected in a test routine. The XXX represents the normal 5 digit address within 3 digits.

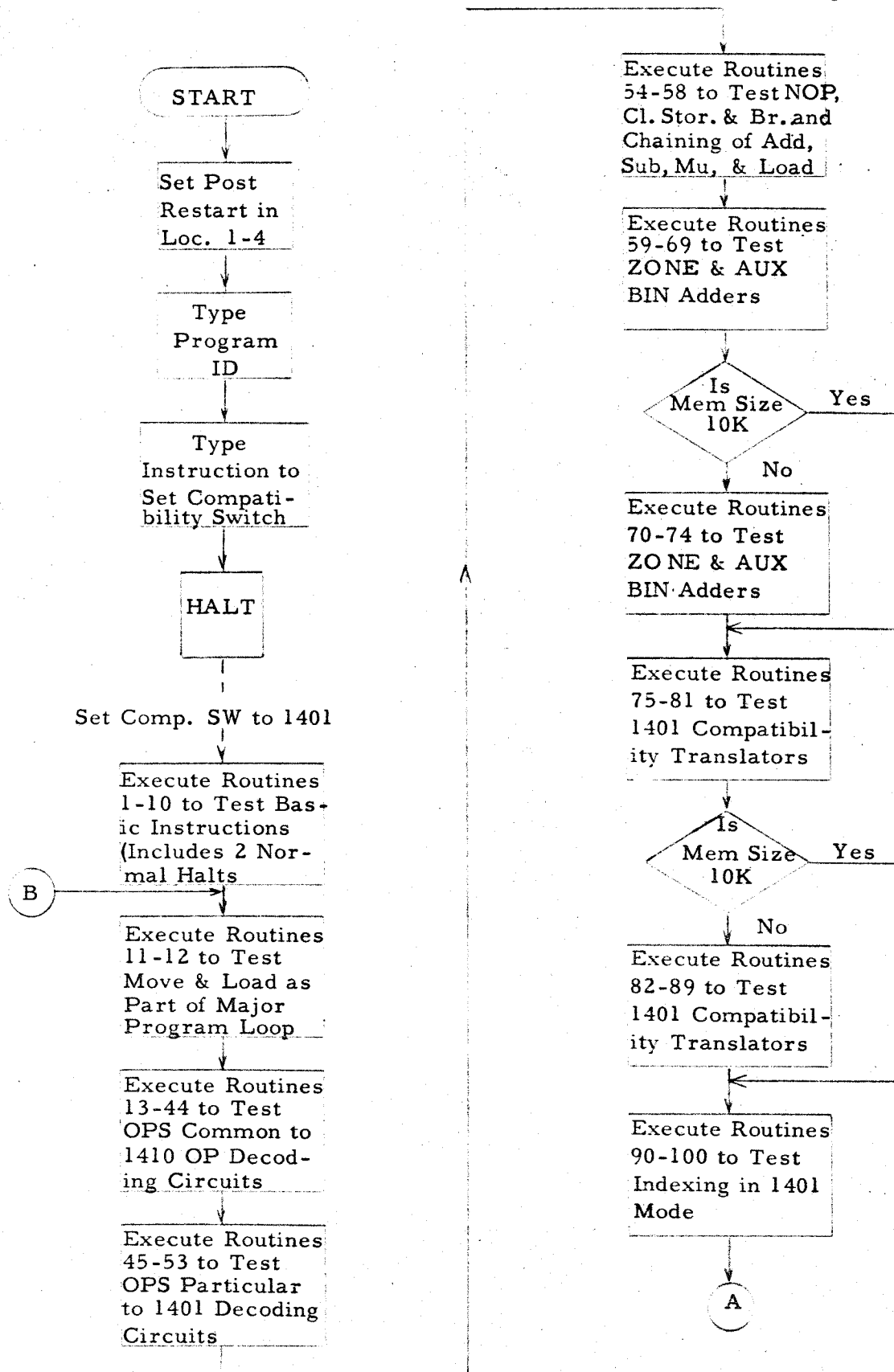
Error Address may be deciphered as follow:

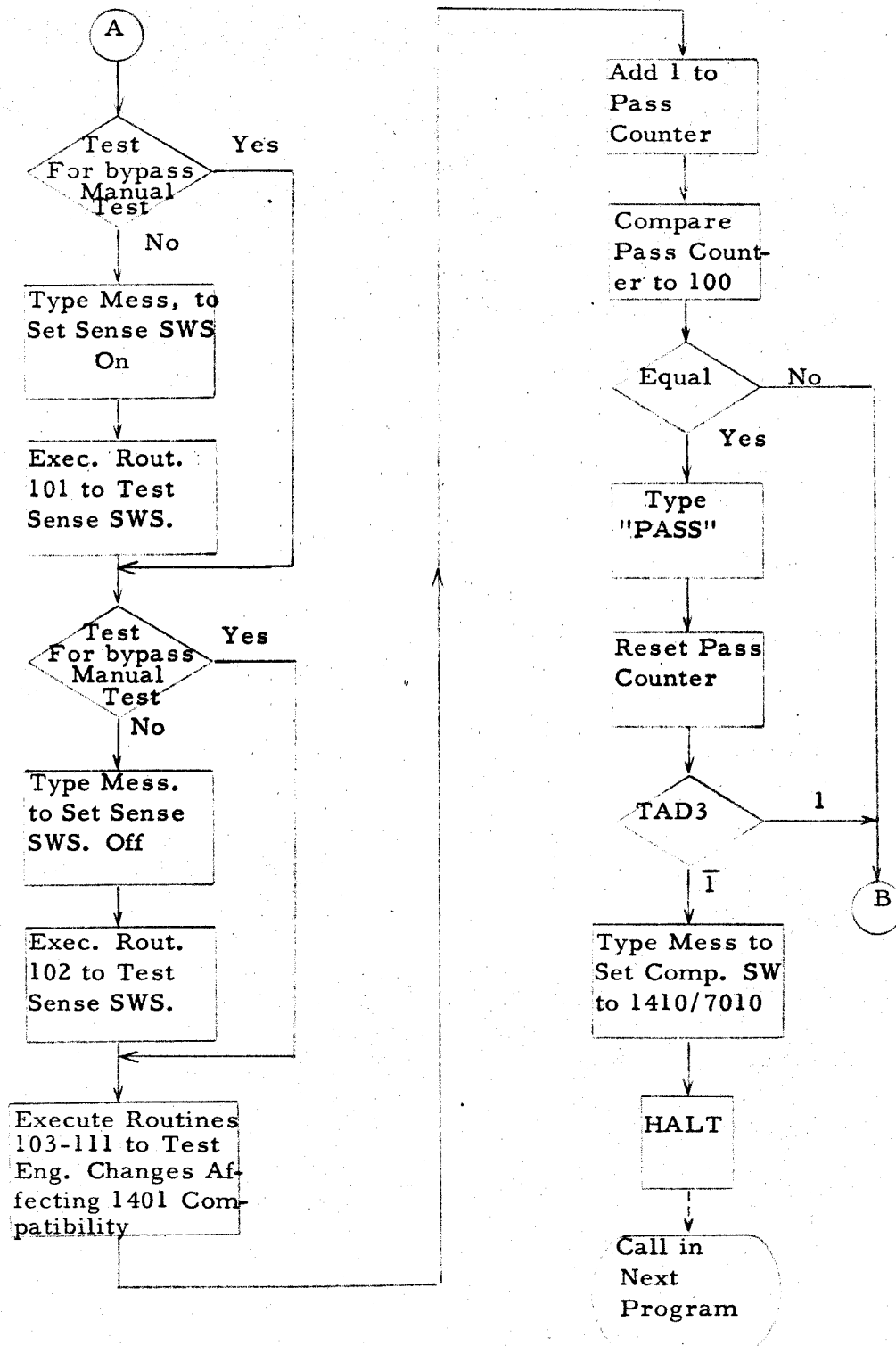
B = 2		B = 8
A = 1		A = 4
0	0	0
Hunds.		Units

Ex. ERR P2S

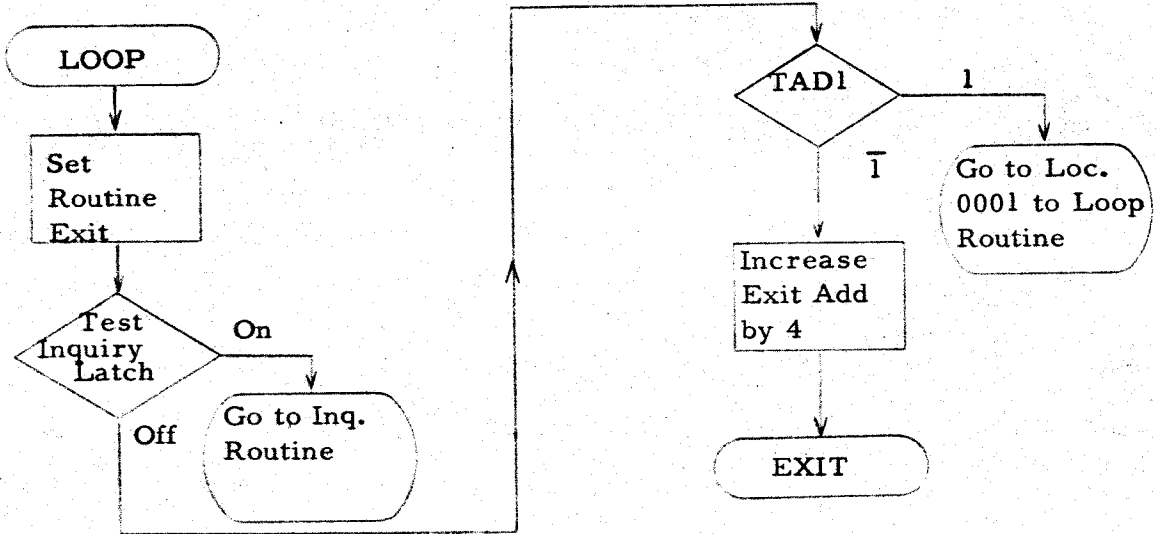
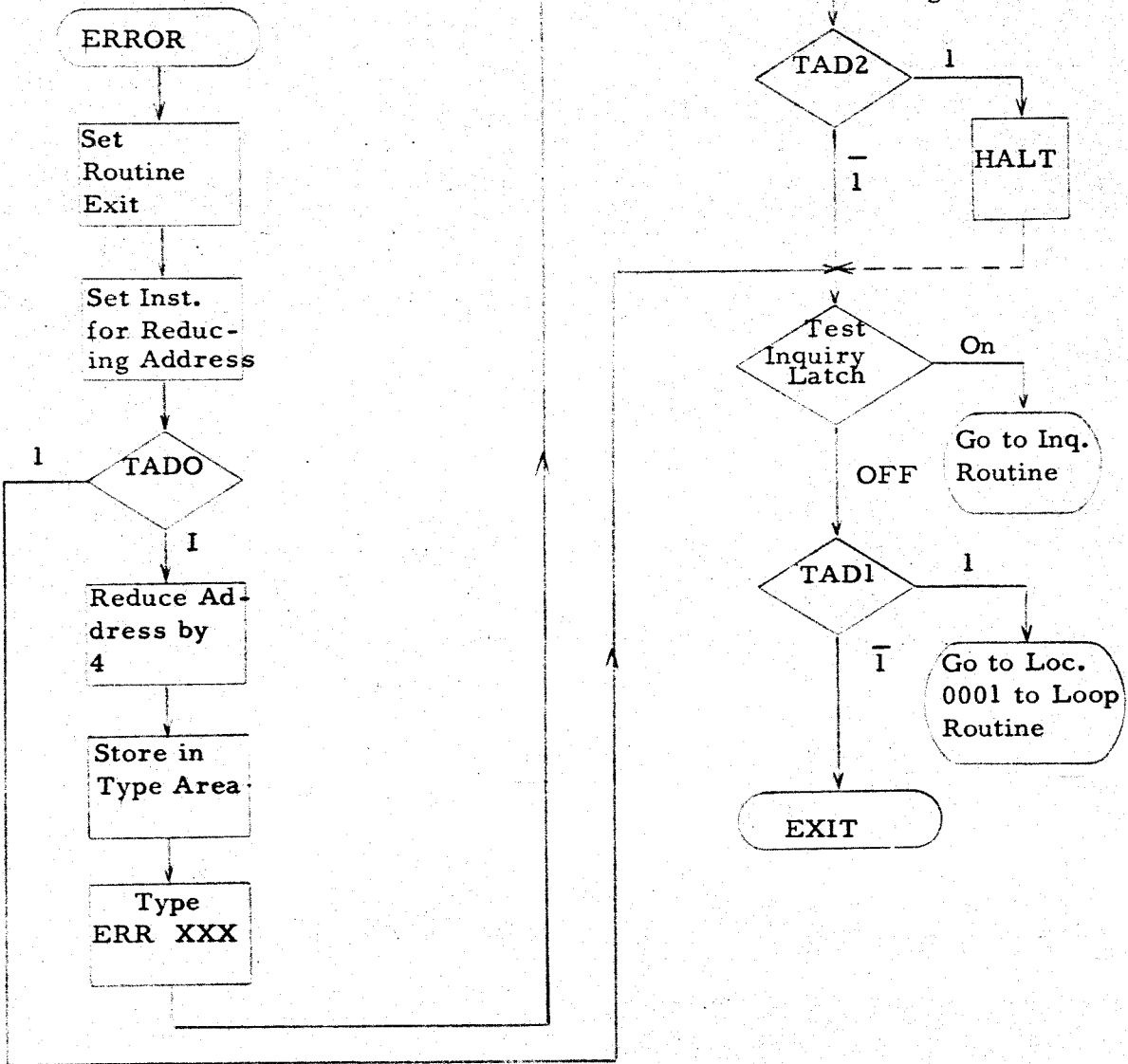
	B A
P2S =	722 = 06722

See section 2. XX. 07. 0 for address conversion chart.





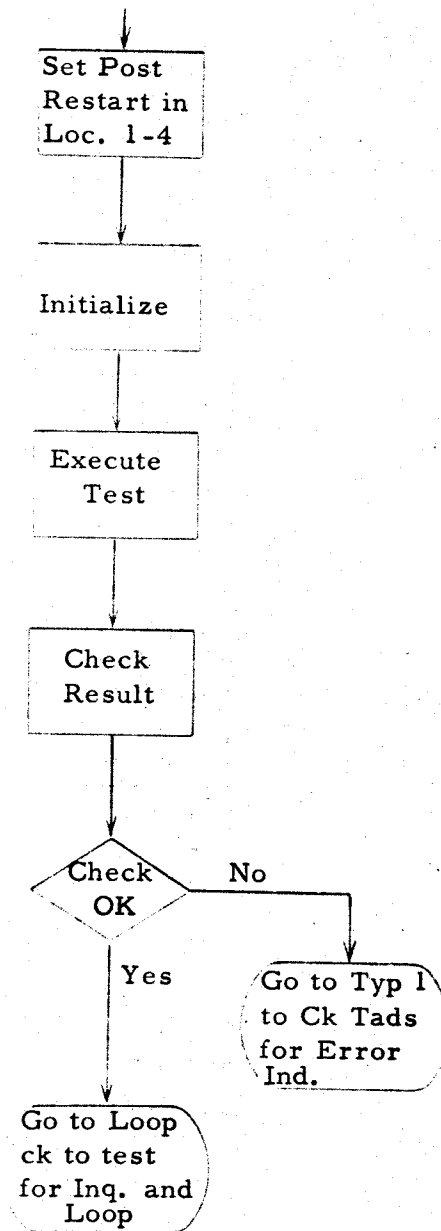
ERROR ROUTINE AND LOOP ROUTINE FLOW



2. XX. 06. 2 TYPICAL ROUTINE FLOW CHART

MO11

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2. XX. 07. 0 ADDRESS CONVERSION CHART

M011

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ACTUAL ADDRESSES	ZONE BITS OVER HUNDREDS POSITION	ZONE BITS OVER UNITS POSITION	3-CHARACTER ADDRESSES
0000 to 0999 1000 to 1999 2000 to 2999 3000 to 3999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	No Zone Bits No Zone Bits No Zone Bits No Zone Bits	000 to 999 †00 to Z99 !00 to R99 ?00 to I99
4000 to 4999 5000 to 5999 6000 to 6999 7000 to 7999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	A-Bit (Zero-Zone) A-Bit (Zero-Zone) A-Bit (Zero-Zone) A-Bit (Zero-Zone)	00† to 99Z †0† to Z9Z !0† to R9Z ?0† to I9Z
8000 to 8999 9000 to 9999 10000 to 10999 11000 to 11999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	B-Bit (11-Zone) B-Bit (11-Zone) B-Bit (11-Zone) B-Bit (11-Zone)	00! to 99R †0! to Z9R !0! to R9R ?0! to I9R
12000 to 12999 13000 to 13999 14000 to 14999 15000 to 15999	No Zone Bits A-Bit (Zero-Zone) B-Bit (11-Zone) AB-Bits (12-Zone)	AB-Bits (12-Zone) AB-Bits (12-Zone) AB-Bits (12-Zone) AB-Bits (12-Zone)	00? to 99I †0? to Z9I !0? to R9I ?0? to I9I

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

101 AA 00 000 JOB 1410/7010-1401 CPU COMPATIBILITY TEST
102 AA 01 CTL 461111
103 AA 03
104 AA 04 *****
105 AA 05 M011
106 AA 06 1410/7010 -1401
107 AA 07 COMPATIBILITY TEST
108 AA 08 *****
109 AA 09 EQU 1000
110 AA 10 EQU 1001
111 AA 11 EQU 1002
112 AA 12 EQU 1003
113 AA 13 EQU 1004
114 AA 14 OMHUND EQU 1012
115 AA 15 PSCNT EQU 1015
116 AA 16 IDENT EQU 1250
117 AA 17 SYSL EQU 1256
118 AA 18 MEMSIZ EQU 1257
119 AA 19 START EQU 2000
120 AA 20
121 AA 21
122 AA 22
123 AA 23
124 AA 24
125 AA 25
126 AA 26
127 AA 27
128 AA 28
129 AA 29
130 AA 30
131 AA 31
132 AA 32
133 AA 33
134 AA 34
135 AA 35
136 AA 36
137 AA 37
138 AA 38
139 AA 39
140 AA 40
141 AA 41
142 AA 42
143 AA 43
144 AA 44
145 AA 45
146 AA 46
147 AA 47
    
```

1256

THE ONLY PSN IN
THE SYSTEM CONT
CD REQUIRED BY
THIS PROGRAM IS
STOR LOC 1257
PROG TESTS THIS
LOC FOR 0 TO
DETERMINE IOK
MEM - IF NOT 0
MEM SIZE GREATER
THAN IOK IS
ASSUMED

```

DC a
DC a
ORG 1239
DCW 21J8X102790Za
DCW 2M011a2
DCW 2a2
ORG 1000
DC 200000a
DCW 2a2
    
```

32 1287
1 1288
11 1249
5 1254
1 1255
5 1004
1 1005

1239

1000

1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

1289

JOB 1410/7010-1401 CPU COMPATIBILITY TEST
 ORG 1289

ERROR ROUTINE
 THIS ROUTINE IS ENTERED WHEN AN ERROR
 IS ENCOUNTERED WITHIN TEST ROUTINE
 TEST TADO
 IF 1 BYPASS ERR IND AND CK INQUIRY & LOOP
 IF 0 TYPE ERROR ADDRESS AND TEST
 TAD2 IF 1 HALT BEFORE INQUIRY AND LP TST
 IF 0 PROCEED TO TEST FOR INQUIRY AND LOOP
 IF TAD1 IS 1 GO TO 00001 TO LOOP
 IF TAD1 IS 0 GO TO NEXT ROUTINE

162 AA 63	TPEXIT&003	SBR	4	1289	H T53
163 AA 65	REDADDE&003	SBR	4	1293	H T08
164 AA 66	LPC,TAD0,1	8CE	8	1297	B T37 #00 1
165 AA 67	0000	REDADD SW	4	1305	, 000
166 AA 68		CW	1	1309	Q
167 AA 69		CW	1	1310	Q
168 AA 70		CW	1	1311	Q
169 AA 71		SAR	4	1312	Q T60
170 AA 72	ERRLOC	MCW	8	1316	M #T0 T54 W
171 AA 73	%TO,ERRLOC-006,W	8CE	8	1324	B T36 #02 1
172 AA 74	ERHALT,TAD2,1	B	4	1332	B T37
173 AA 75	LPC	B	1	1336	, T93 Q
174 AA 76		ERHALT H	5	1337	B T93 Q
175 AA 77	ALTER,Q	BIN	8	1342	B 001 #01 1
176 AA 78	0001,TAD1,1	8CE	4	1350	B 000
177 AA 79	0000	TPEXIT B	7	1360	
178 AA 80	@ERR	ERRLOC DCW	1	1361	
179 AA 81	@T@	DCW			
180 AA 82					
181 AA 83					
182 AA 84					
183 AA 85					
184 AA 86					
185 AA 87					
186 AA 88					
187 AA 89					
188 AA 90					
189 AA 91					
190 AA 92					
191 AA 93					
192 AA 94					
193 AA 95					
194 AA 96					
195 AA 97					
196 AA 98					
197 AA 99					
198 AB 00					
199 AB 01					
200 AB 02					
201 AB 03					
202 AB 04					
203 AB 05					
204 AB 06					
205 AB 07					
206 AB 08					
207 AB 09					
208 AB 10					
209 AB 11					
210 AB 12					
211 AB 13					

LOOP CHECK ROUTINE
 THIS ROUTINE IS ENTERED UPON SUCCESSFUL
 COMPLETION OF TEST ROUTINE TO CK
 FOR INQUIRY AND LOOP

202 AB 04	LPEX&003	SBR	4	1362	H T89
203 AB 05	ALTER,Q	BIN	5	1366	B T93 Q
204 AB 06	0001,TAD1,1	8CE	8	1371	B 001 #01 1
205 AB 07	BUMP,LPEX&003	MA	7	1379	# T92 T89
206 AB 08	0000	LPEX B	4	1386	B 000
207 AB 09	@004@	BUMP DCW	3	1392	
208 AB 10					
209 AB 11					
210 AB 12					
211 AB 13					

CONSOLE PRINTER INQUIRY ROUTINE

1410/7010-1401 CPU COMPATIBILITY TEST

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SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
212	AB	14							
213	AB	15	ALTER	SBR	ALTEX003	4		1393	H U13
214	AB	16		MCM	%TO,1000,R	8		1397	M %TO +00 R
215	AB	17							
216	AB	18		BIN	*-012,*	5		1405	B I97 *
217	AB	19	ALJEX	B	0000	4		1410	B 000

SET ROUTINE EXIT
 READ CONSOLE PRT
 TO MODIFY TADS
 CK FOR ERROR
 ROUTINE EXIT

SEQ	RG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
218	AB	21	ONE	DCW	010	1		1414	
219	AB	23	FLDA	DCW	0AK10	3		1417	
220	AB	24	FLDBEQ	DCW	0AK10	3		1420	
221	AB	25	FLDBHI	DCW	0 AK10	4		1424	
222	AB	26	FLDBLO	DCW	0 K10	3		1427	
223	AB	27	GRPMK	DC	010	1		1428	
224	AB	28	BLANK	DC	0	1		1429	
225	AB	29	TESAD	DCW	0000	3		1432	
226	AB	30	P654	DCW	0654	3		1435	
227	AB	31	P000	DCW	0000	3		1438	
228	AB	32	P321	DCW	0321	3		1441	
229	AB	33	M321	DCW	-321	3		1444	
230	AB	34	P987	DCW	0987	3		1447	
231	AB	35	P666	DCW	0666	3		1450	
232	AB	36	P110	DCW	0110	3		1453	
233	AB	37	P665	DCW	0665	3		1456	
234	AB	38	PCB1	DCW	0CBA0	3		1459	
235	AB	39	ZS8SET	DCW	0ZS8SET	5		1464	
236	AB	40	ZSTEST	DCW	0	5		1469	
237	AB	41	ZSCOMP	DCW	-00765	5		1474	
238	AB	42	NES	DCW	09870	3		1477	
239	AB	43	ABC	DCW	0ABC0	3		1480	
240	AB	44	M123	DCW	-123	3		1483	
241	AB	45	PI1	DCW	011	2		1485	
242	AB	46	P22	DCW	022	2		1487	
243	AB	47	MULAN1	DCW	000242	5		1492	
244	AB	48	PROD	DCW	0	5		1497	
245	AB	49	P87	DCW	087	2		1499	
246	AB	50	P96	DCW	096	2		1501	
247	AB	51	MULAN2	DCW	008352	5		1506	
248	AB	52	A5	DCW	0AAAAA0	5		1511	
249	AB	53	TWFR	DCW	0240	2		1513	
250	AB	54	THRFV	DCW	0350	2		1515	
251	AB	55	MULAN3	DCW	000840	5		1520	
252	AB	56	PRDDA	DCW	0	6		1526	
253	AB	57	P99999	DCW	099999	5		1531	
254	AB	58	JKL	DCW	0JKL0	3		1534	
255	AB	59	P47	DCW	047	2		1536	
256	AB	60	MULAN4	DCW	-005781	2		1544	
257	AB	61	M31	DCW	-31	2		1546	
258	AB	62	M00	DCW	-00	2		1551	
259	AB	63	MULAN5	DCW	000000	5		1553	
260	AB	64	POI	DCW	001	2		1558	
261	AB	65	DVRES	DCW	0	5		1565	
262	AB	66	QUOT	DCW	0	7		1567	
263	AB	67	MULAN5	DCW	000000	5		1551	
264	AB	68	POI	DCW	001	2		1553	
265	AB	69	DVRES	DCW	0	5		1558	
266	AB	70	QUOT	DCW	0	7		1565	
267	AB	71	MULAN5	DCW	000000	5		1551	

P R O G R A M C O N S T A N T S

SFX CT LOCN INSTRUCTION

OPERANDS

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
268	AB	72	DVANI	DC	01A000	5		1572	
269	AB	73	DVRES1	DCW	0	6		1578	
270	AB	74	QUOT1	DCW	0	8		1586	
271	AB	75	M234	DCW	-234	3		1589	
272	AB	76	P56	DCW	056	2		1591	
273	AB	77		DCW	0	3		1594	
274	AB	78	DVAN2	DC	-0M010	5		1599	
275	AB	79	M789	DCW	-789	3		1602	
276	AB	80	M5	DCW	-5	1		1603	
277	AB	81	GMBLN	DCW	0# 0	2		1605	
278	AB	82		DCW	0	2		1607	
279	AB	83	DVAN3	DC	-15G04	5		1612	
280	AB	84	P297	DCW	0297	3		1615	
281	AB	85	PO	DCW	0	1		1616	
282	AB	86		DCW	0	2		1618	
283	AB	87	DVAN4	DC	00297	5		1623	
284	AB	88	NINE6	DCW	0999999a	6		1629	
285	AB	89	ZSUP	DCW	0	8		1637	
286	AB	90	ZS1	DCW	0001.45	6		1643	
287	AB	91	ZSAN1	DCW	0	8		1651	
288	AB	92	ZS2	DCW	-0100.4	6		1657	
289	AB	93	ZSAN2	DCW	0	8		1665	
290	AB	94	PLSMIN	DCW	00-0	2		1667	
291	AB	95	ZNTEST	DCW	0	2		1669	
292	AB	96	AB	DCW	0ABA	2		1671	
293	AB	97	ZNAN1	DCW	00KA	2		1673	
294	AB	98	ZNAN2	DCW	0AKA	2		1675	
295	AB	99		DCW	0AB#0	3		1678	
296	AC	00		DCW	0DEF0	3		1681	
297	AC	01	RCRES	DCW	0GH14	6		1687	
298	AC	02		DCW	0KLMNO0	5		1692	
299	AC	03	REC1	DCW	0PQRS0	5		1697	
300	AC	04		DC	0# 0	2		1699	
301	AC	05	MRCAN1	DCW	0QRS# 0	6		1705	
302	AC	06	MRCAN2	DCW	0NOP0	3		1708	
303	AC	07	MRCAN3	DCW	0KLM0	3		1711	
304	AC	08		DCW	0TUVW0	4		1715	
305	AC	09	REC2	DCW	0XYZ*000	6		1721	
306	AC	10		DCW	0# 0	2		1723	
307	AC	11	MRCAN4	DCW	0Z*00	4		1727	
308	AC	12	MRCAN5	DCW	0WXY0	3		1730	
309	AC	13	MRCAN6	DCW	0TUV0	3		1733	
310	AC	14	MBFLD	DCW	0ABLMZ0	5		1738	
311	AC	15	MAFLD	DCW	0CNX0	3		1741	
312	AC	16	BFLRES	DCW	0ABLMZ0	5		1746	
313	AC	17	MBANI	DCW	0ABLMZ0	5		1751	
314	AC	18	NOZ	DC	0ABCNX0	1		1752	
315	AC	19	MAFLD1	DCW	0	4		1756	
316	AC	20	MAFIRS	DCW	0RSTU0	4		1760	
317	AC	21	MBAN2	DCW	0BLMZ0	4		1764	

SFX CT LDCN INSTRUCTION

OPERANDS

SEQ PG LIN LABEL OP

SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LDCN	INSTRUCTION
318 AC 22		DCW	2ABA	2	1766		
319 AC 23	LBFLD	DCW	2CDA	2	1768		
320 AC 24		DCW	2ABA	2	1770		
321 AC 25	LBRES	DCW	2CDA	2	1772		
322 AC 26	LAFLD	DCW	2QVA	3	1775		
323 AC 27		DCW	2	2	1777		
324 AC 28	STACK	DCW	2	2	1779		
325 AC 29		DCW	2	2	1781		
326 AC 30	STARES	DCW	2	2	1783		
327 AC 31	CKSTA	DSA	2SETA	3	1786	23Z	
328 AC 32	CKSTB	DSA	2ER43	3	1789	31T	
329 AC 33		DCW	212	1	1790		
330 AC 34		DCW	222	1	1791		
331 AC 35		DCW	232	1	1792		
332 AC 36	CHNAS	DCW	242	1	1793		
333 AC 37		DCW	212	1	1794		
334 AC 38		DCW	222	1	1795		
335 AC 39		DCW	232	1	1796		
336 AC 40	CHNASR	DCW	242	1	1797		
337 AC 41		DCW	212	1	1798		
338 AC 42		DCW	222	1	1799		
339 AC 43		DCW	252	1	1800		
340 AC 44		DCW	232	1	1801		
341 AC 45	AFCHN	DCW	2XX2	2	1803		
342 AC 46		DCW	2YYY2	3	1806		
343 AC 47		DCW	222	1	1807		
344 AC 48	LMCHN	DCW	2MMA	2	1809		
345 AC 49		DCW	2XX2	2	1811		
346 AC 50		DCW	2YYY2	3	1814		
347 AC 51		DCW	222	1	1815		
348 AC 52		DCW	2MMA	2	1817		
349 AC 53	LMCHNR	DCW	2MMA	2	1819		
350 AC 54		DCW	2AAA	4	1823		
351 AC 55	LMAFLD	DCW	2B8C0	4	1825		
352 AC 56	MABFLD	DCW	2DD2	2	1829		
353 AC 57	ZER4	DCW	200002	4	1833		
354 AC 58	ONE4	DCW	200002	4	1837		
355 AC 59	MAN1	DCW	211112	4	1841		
356 AC 60	ZRYW0	DCW	201112	4	1845		
357 AC 61	RESB1	DCW	212222	4	1849		
358 AC 62		DCW	21232	4	1853		
359 AC 63		DCW	2OC22	4	1857		
360 AC 64		DCW	2E412	4	1861		
361 AC 65		DCW	2YMT2	4	1865		
362 AC 66		DCW	2ULX2	4	1869		
363 AC 67		DCW	2S3U2	4	1873		
364 AC 68		DCW	2KW32	4	1877		
365 AC 69		DCW	2J462	4	1881		
366 AC 70	AADI	DCW	2A232	4	1885		
367 AC 71		DCW	2U5W2	4	1889		
		DCW	24D22	4			

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ	RG	LN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
368	AC	72		DCM	2 3692		4	1893	
369	AC	73		DCM	2 ZN22		4	1897	
370	AC	74		DCM	2 M232		4	1901	
371	AC	75		DCM	2 F452		4	1905	
372	AC	76		DCM	2 LV22		4	1909	
373	AC	77		DCM	2 H572		4	1913	
374	AC	78		DCM	2 D562		4	1917	
375	AC	79	CKMVA	DSA	EBFLRES-004		3	1920	X42
376	AC	80	CKLDA	DSA	CLAFLD-003		3	1923	X72
377	AC	81	CK004	DSA	ERNDE008		3	1926	-36
378	AC	82	CK007	DSA	ERNGE007		3	1929	J11
379	AC	83	CK008	DCM	20092		3	1932	
380	AC	84	CK009	DCM	20132		3	1935	
381	AC	85	SWIND	DC	20000002		6	1941	
382	AC	86	SWIND1	DC	20000002		6	1947	
383	AC	87	XCK	DCM	2		9	1956	
384	AC	88	XCKAN	DCM	20130140152		9	1965	
385	AC	89	XA	DCM	2E1C2		3	1968	
386	AC	90	INTAB1	DCM	20152		3	1971	
387	AC	91		DCM	20112		3	1974	
388	AC	92		DCM	20062		3	1977	
389	AC	93	LPEND	DCM	20312		3	1980	

1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

```

390 AC 95
391 AC 97
392 AC 98
393 AC 99
394 AD 00
395 AD 01
396 AD 02
397 AD 03
398 AD 04
399 AD 05
400 AD 06
401 AD 07
402 AD 08
403 AD 09
404 AD 10
405 AD 11
406 AD 12
407 AD 13
408 AD 14
409 AD 15
410 AD 16
411 AD 17
412 AD 18
413 AD 19
414 AD 20
415 AD 21
416 AD 22
417 AD 23
418 AD 24
419 AD 25
420 AD 26
421 AD 27
422 AD 28
423 AD 29
424 AD 30
425 AD 31
426 AD 32
427 AD 33
428 AD 34
429 AD 35
430 AD 36
431 AD 37
432 AD 38
433 AD 39
434 AD 40
435 AD 41
436 AD 42
437 AD 43
438 AD 44
439 AD 45

JOB 1410/7010-1401 CPU COMPATIBILITY TEST
*****
CONTROL ROUTINE
1410 MODE
**
TYPE PROGRAM ID
AND HALT TO SET
COMPATABILITY SW TO 1401
*****

ORG 2000
DCW 2J08000 2
DCW 2.2

GO TO 8000 TO
SET RESTART AND
TYPE PROG ID
7 2006

HALT TO SET
COMPATABILITY SW
TO 1401
1 2007

*****
CPU TEST
*****
INSTRUCTION READ-OUT
ZONE AND AUX. BIN ADDERS
COMPATIBILITY TRANSLATORS
INDEXING
SENSE SWITCHES
*****

THE FOLLOWING ROUTINES TITLED
RN001 RN010 ARE EXECUTED ONLY
ONCE DURING THE FIRST PROGRAM PASS
THE PURPOSE OF THESE ROUTINES IS
TO TEST THE BASIC INSTRUCTIONS USED
IN THE REMAINDER OF THE TEST FOR
INITIALIZATION, CONTROL & CHECK

RN001
EXECUTE NOP AND HALT INSTRUCTIONS
EXEC NDP
NORMAL HALT
SHOULD OCCUR
ONLY DURING 1ST
PASS OF PROG
1 2008 N
1 2009 .

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1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

OPERANDS

LABEL OP

SEQ PG LIN

SEQ PG LIN	LABEL	OP	OPERANDS	SFX CT	LOCN	INSTRUCTION
540 AE 46						
541 AE 47	RNH	SW	0010	4	2132	0 010
542 AE 48		SAR	STK	4	2136	Q E7#
543 AE 49		C	STK,CK008	7	2140	C E7# Z32
544 AE 50		BE	CKWM	5	2147	B J53 S
545 AE 51		H		1	2152	.
546 AE 52						
547 AE 53		BWZ	WMOK,0010,1	8	2153	V J62 010 1
548 AE 54		H		1	2161	.
549 AE 55						
550 AE 56						
551 AE 57						
552 AE 58	WMOK	CH	0010	4	2162	0 010
553 AE 59		SAR	STK	4	2166	Q E7#
554 AE 60		C	STK,CK008	7	2170	C E7# Z32
555 AE 61		BE	CKWM	5	2177	B J83 S
556 AE 62		H		1	2182	.
557 AE 63						
558 AE 64	CKNWM	BWZ	ERRH,0010,1	8	2183	V J95 010 1
559 AE 65		B		4	2191	B J96
560 AE 66		H		1	2195	.
561 AE 67	ERRH					
562 AE 68						
563 AE 69	ROKH	NOP	RNH	4	2196	V J32
564 AE 70						
565 AE 71						
566 AE 72						
567 AE 73						
568 AE 74						
569 AE 75						
570 AE 76						
571 AE 77						
572 AE 78						
573 AE 79	RNI	CM	0010	4	2200	0 010
574 AE 80		SAR	STK	4	2204	Q E7#
575 AE 81		MA	BUMP,STK	7	2208	# T92 E7#
576 AE 82		C	STK,CK009	7	2215	C E7# Z35
577 AE 83		BE	ROKI	5	2222	B K28 S
578 AE 84		H		1	2227	.
579 AE 85						
580 AE 86		NOP	RNI	4	2228	N K00
581 AE 87	ROKL					
582 AE 88						
583 AE 89						
584 AE 90						
585 AE 91						
586 AE 92						
587 AE 93						
588 AE 94						
589 AE 95						

ZONE INSTR TO CK FOR WM AND NO WM

SET WM IN LOC 10
 STORE A ADDR
 CK STORED ADDR
 CK FOR EQ
 ERR HALT STORED
 ADD IS INCORRECT
 CK FOR WM
 WM FAILED TO SET
 OR BWZ INSTR
 FAILED
 CLR WM IN LOC 10
 STORE A ADDR
 CK STORED ADDR
 CK FOR EQ
 ERR HALT STORED
 ADD IS INCORRECT
 CK FOR WM
 OK-NO WM
 ERR WM FAILED TO
 CLR OR BWZ INSTR
 FAILED
 EX INST FOR LOOP
 MODIFICATION

RN009
 USE CLEAR WM AND SAR INSTRS
 TO SET UP ADDR THEN EXECUTE
 MODIFY ADDR OP TO INCREASE
 ADDR BY 4 CK RESULT FOR 013

CLR WM IN LOC 10
 STORE A ADDR
 EXEC MODIFY ADDR
 CK RESULT
 CK FOR EQUAL
 ERR HALT STORED
 ADD IS INCORRECT
 EX INST FOR LOOP
 MODIFICATION

RN010
 EXECUTE BR ON INQUIRY INSTR
 PROG WILL HALT IF LAT HAD
 BEEN SET PRESSING START
 SHOULD ALLOW PROG TO CONTINUE

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
590	AE	96	RNJ	BIN	STOPJ,Q		5	2232	B K41 Q
591	AE	97		B	R0KJ		4	2237	B K45
592	AE	98	STOPJ	H	RNJ		4	2241	B K32
593	AE	99							
594	AF	00							
595	AF	01							
596	AF	02	R0KJ	NOP	RNJ		4	2245	N K32
597	AF	03							

EXEC BR ON INQ
 OK-LAT IS OFF
 PROG MAY HALT
 HERE ONCE IF INQ
 LAT WAS SET
 PRESS START
 EX INST FOR LOOP
 MODIFICATION

SEQ PG LIN LABEL OP OPERANDS

598 AF 05 JOB 1410/7010-1401 CPU COMPATIBILITY TEST
 599 AF 07 ALL REMAINING ROUTINES IN THIS TEST
 600 AF 08 COMMUNICATE WITH TWO CONTROL ROUTINES
 601 AF 09 LABELED TYP1 AND LOOPCK TO TEST TADS
 602 AF 10 FOR ERR INDICATION, HALT ON ERROR AND
 603 AF 11 LOOPING ROUTINES - TESTS ARE ALSO MADE
 604 AF 12 FOR INQUIRY
 605 AF 13
 606 AF 14
 607 AF 15
 608 AF 16
 609 AF 17
 610 AF 18
 611 AF 19
 612 AF 20
 613 AF 21
 614 AF 22
 615 AF 23
 616 AF 24
 617 AF 25
 618 AF 26
 619 AF 27
 620 AF 28
 621 AF 29
 622 AF 30
 623 AF 31
 624 AF 32
 625 AF 33
 626 AF 34
 627 AF 35
 628 AF 36
 629 AF 37
 630 AF 38
 631 AF 39
 632 AF 40
 633 AF 41
 634 AF 42
 635 AF 43
 636 AF 44
 637 AF 45
 638 AF 46
 639 AF 47
 640 AF 48
 641 AF 49
 642 AF 50
 643 AF 51
 644 AF 52
 645 AF 53
 646 AF 54
 647 AF 55

POST RESTART FOR EACH ROUTINE IS
 MAINTAINED IN LOC 00001-00004
 COMPUTER RESET AND START THEREFORE
 MAY BE USED TO RESTART ANY ROUTINE
 RESET & RESTART CONTROL ALONG WITH
 TAD1 MAY BE USED TO LOOP ROUTINES
 CAUSING SYSTEM CHECK ERRORS

RN011
 EXECUTE MOVE CHAR TO A OR B WM
 STOP WITH B FIELD WM

RN1	NOP	*6005	SET ROUT. START	4	2249	N K57
	SAR	0004	ADDR IN LOC 2-4	4	2253	Q 004
	SBR	MAFLD1	RESET B FIELD	4	2257	H X56
	MCH	BFLRES, MAFLD1	EXEC MOVE	7	2261	M X46 X56
	C	MAFLD1, MBAN2	CK RESULT	7	2268	C X56 X64
	BE	NXC1	OK	5	2275	B K84 S
	B	TDC1	ERROR	4	2280	B K92 X52
NXC1	BCE	LOOPCK, NOZ,	CK FOR BLANK	8	2284	B T62 X52
TDC1	B	TYP1	ERR CK FOR TYPE	4	2292	B S89
			RESULT OF MOVE			
			SHOULD BE			
			BLANK-BLWZ			

RN012
 EXECUTE LOAD CHAR TO A FLD WM

	NOP	*6005	SET ROUT. START	4	2296	N L04
	SAR	0004	ADDR IN LOC 2-4	4	2300	Q 004
	SBR	LBFLD	RESET	4	2304	H X68
	SW	LBFLD-001	B FIELD	4	2308	X67
	LCA	LAFLD, LBFLD	EXEC LOAD	7	2312	L X75 X68
	C	LBFLD, LAFLD	CK RESULT	7	2319	C X68 X75
	BE	NXC2	OK	5	2326	B L35 S
	B	TDC2	ERROR	4	2331	B L43
NXC2	BCE	LOOPCK, LBFLD-003,	CK FOR A	8	2335	B T62 X65 A
TDC2	B	TYP1	ERR CK FOR TYPE	4	2343	B S89
			OUTPUT FIELD			

1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

648 AF 56 SHOULD BE
 649 AF 57 A/WM G/WM QV
 650 AF 58
 651 AF 59
 652 AF 60
 653 AF 61
 654 AF 62
 655 AF 63
 656 AF 64
 657 AF 65
 658 AF 66
 659 AF 67
 660 AF 68
 661 AF 69
 662 AF 70
 663 AF 71
 664 AF 72
 665 AF 73
 666 AF 74
 667 AF 75
 668 AF 76
 669 AF 77
 670 AF 78
 671 AF 79
 672 AF 80
 673 AF 81
 674 AF 82
 675 AF 83
 676 AF 84
 677 AF 85
 678 AF 86
 679 AF 87
 680 AF 88
 681 AF 89
 682 AF 90
 683 AF 91
 684 AF 92
 685 AF 93
 686 AF 94
 687 AF 95
 688 AF 96
 689 AF 97
 690 AF 98
 691 AF 99
 692 AG 00
 693 AG 01
 694 AG 02
 695 AG 03
 696 AG 04
 697 AG 05

RN013
 EXECUTE COMPARE OP WITH FIELDS EQUAL

NOP *E005
 SAR 0004
 C FLDA,FLDBEQ
 BH TADCK3
 BL TADCK3
 BU TADCK3
 BE LOOPCK
 TADCK3 B TYPI
 TADCK3 B
 SET ROUT. START
 ADDR IN LOC 2-4
 COMPARE EQ FLDS
 CK FOR HIGH
 CK FOR LOW
 CK FOR UNEQUAL
 CK FOR EQUAL
 ERR CK FOR TYPE
 COMPARE
 DID NOT CAUSE
 BRANCH ON EQ

4 2347 N L55
 4 2351 Q 004
 7 2355 C U17 U20
 5 2362 B L82 U
 5 2367 B L82 T
 5 2372 B L82 /
 5 2377 B T62 S
 4 2382 B S89

RN014
 EXECUTE COMPARE OP WITH B FIELD HIGH

NOP *E005
 SAR 0004
 C FLDA,FLDBHI
 BE TADCK4
 BL TADCK4
 BH LOOPCK
 TADCK4 B TYPI
 TADCK4 B
 SET ROUT. START
 ADDR IN LOC 2-4
 COMP-B FLD HI
 CK FOR EQUAL
 CK FOR LOW
 CK FOR HIGH
 ERR CK FOR TYPE
 COMPARE
 DID NOT CAUSE
 BRANCH ON HI

4 2386 M L94
 4 2390 Q 004
 7 2394 C U17 U24
 5 2401 B M16 S
 5 2406 B M16 T
 5 2411 B T62 U
 4 2416 B S89

RN015
 EXECUTE COMPARE OP WITH B FIELD LOW

NOP *E005
 SAR 0004
 C FLDA,FLDBLO
 BE TADCK5
 BH TADCK5
 BL LOOPCK
 TADCK5 B TYPI
 TADCK5 B
 SET ROUT. START
 ADDR IN LOC 2-4
 COMP-B FLD LOW
 CK FOR EQUAL
 CK FOR HIGH
 CK FOR LOW
 ERR CK FOR TYPE
 COMPARE
 DID NOT CAUSE
 BRANCH ON LOW

4 2420 N M28
 4 2424 Q 004
 7 2428 C U17 U27
 5 2435 B M50 S
 5 2440 B M50 U
 5 2445 B T62 T
 4 2450 B S89

1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

OPERANDS

SEQ PG LIN LABEL OP

748	AG	56		BWZ	TADCK8,FLDBHI-002,1	CK FOR WM	8	2550	V 014 U22 1
749	AG	57		BWZ	TADCK8,FLDBHI-002,2	CK FOR NO ZONE	8	2558	V 014 U22 2
750	AG	58		BWZ	TADCK8,FLDBHI-002,K	CK FOR 11 ZONE	8	2566	V 014 U22 K
751	AG	59		BWZ	TADCK8,FLDBHI-002,S	CK FOR ZERO ZONE	8	2574	V 014 U22 S
752	AG	60		BWZ	TADCK8,FLDBHI-002,3	CK FOR WM OR NDZ	8	2582	V 014 U22 3
753	AG	61		BWZ	TADCK8,FLDBHI-002,L	CK FOR WM OR 11Z	8	2590	V 014 U22 L
754	AG	62		BWZ	TADCK8,FLDBHI-002,T	CK FOR WM OR ZZ	8	2598	V 014 U22 T
755	AG	63		BWZ	LOOPCK,FLDBHI-002,B	CK FOR 12 ZONE	8	2606	V T62 U22 B
756	AG	64	TADCK8 B		TYPI	ERR CK FOR TYPE	4	2614	B S89
757	AG	65				BWZ INSTRS			
758	AG	66				BRANCHED ON 11Z			
759	AG	67				OR WM OR DID NOT			
760	AG	68				BR ON 12 ZONE			
761	AG	69							
762	AG	70							
763	AG	71							
764	AG	72							
765	AG	73							
766	AG	74							
767	AG	75							
768	AG	76							
769	AG	77							
770	AG	78							
771	AG	79							
772	AG	80							
773	AG	81	TESA	B	TADCK9	TEST FOR A BIT	4	2634	B 094 U17 6
774	AG	82	TES8	B	TADCK9	TEST FOR 8 BIT	4	2646	B 094 U28 8
775	AG	83	TES4	B	TADCK9	TEST FOR 4 BIT	4	2650	B 094 U28 4
776	AG	84	TES2	B	TADCK9	TEST FOR 2 BIT	4	2662	B 094 U28 2
777	AG	85	TES1	B	TADCK9	TEST FOR 1 BIT	4	2674	B 094 U28 1
778	AG	86	TADCK9 B		LOOPCK,GRPK,1	ERR CK FOR TYPE	4	2682	B 094 U28 1
779	AG	87				BIT TEST DID NOT			
780	AG	88				BR ON B,A,8,4,2,			
781	AG	89				OR 1 BITS			
782	AG	90							
783	AG	91							
784	AG	92							
785	AG	93							
786	AG	94							
787	AG	95							
788	AG	96							
789	AG	97							
790	AG	98							
791	AG	99							
792	AH	00							
793	AH	01							
794	AH	02							
795	AH	03							
796	AH	04							
797	AH	05							

RN019
EXECUTE BIT TEST OP ON CHARACTERS
CONTAINING THE FOLLOWING - B BIT,
A BIT, 8 BIT, 4 BIT, 2 BIT, AND
1 BIT TEST FOR BRANCH

798	AG	96	*E005	NOP		SET ROUT. START	4	2618	N 026
799	AG	97	0004	SAR		ADDR IN LOC 2-4	4	2622	Q 004
800	AG	98	TESA,GRPK,-	B	TADCK9	TEST FOR 8 BIT	8	2626	M 038 U28 -
801	AG	99	TES8,FLDA,6	B	TADCK9	ERROR	4	2634	B 094
802	AG	00	TADCK9	B	TADCK9	TEST FOR A BIT	8	2638	M 050 U17 6
803	AG	01	TES4,GRPK,8	B	TADCK9	ERROR	4	2646	B 094
804	AG	02	TADCK9	B	TADCK9	TEST FOR 8 BIT	8	2650	M 062 U28 8
805	AG	03	TES2,GRPK,4	B	TADCK9	ERROR	4	2658	B 094
806	AG	04	TADCK9	B	TADCK9	TEST FOR 4 BIT	8	2662	M 074 U28 4
807	AG	05	TES1,GRPK,2	B	TADCK9	ERROR	4	2670	B 094
808	AG	06	TADCK9	B	TADCK9	TEST FOR 2 BIT	8	2674	M 086 U28 2
809	AG	07	LOOPCK,GRPK,1	B	TADCK9	ERROR	4	2682	B 094
810	AG	08	TYPI	B	TADCK9 B	ERR CK FOR TYPE	4	2686	M T62 U28 1
811	AG	09				BIT TEST DID NOT			
812	AG	10				BR ON B,A,8,4,2,			
813	AG	11				OR 1 BITS			

RN020
EXECUTE BIT TEST OP ON BLANK CHARACTER
FOR B,A,8,4,2 AND 1 BITS TEST FOR NO BR

814	AG	12	*E005	NOP		SET ROUT. START	4	2698	N P06
815	AG	13	0004	SAR		ADDR IN LOC 2-4	4	2702	Q 004
816	AG	14	TDCK10,BLANK,#	B	TADCK10	TEST FOR BA8421	8	2706	M P18 U29#
817	AG	15	LOOPCK	B	LOOPCK	CK FOR LOOP	4	2714	B I62
818	AG	16	TYPI	B	TYPI	ERR CK FOR TYPE	4	2718	B S89
819	AG	17				BBE INSTR			

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

798 AH 06
799 AH 07
800 AH 08
801 AH 09
802 AH 10
803 AH 11
804 AH 12
805 AH 13
806 AH 14
807 AH 15
808 AH 16
809 AH 17
810 AH 18
811 AH 19
812 AH 20
813 AH 21
814 AH 22
815 AH 23
816 AH 24
817 AH 25
818 AH 26
819 AH 27
820 AH 28
821 AH 29
822 AH 30
823 AH 31
824 AH 32
825 AH 33
826 AH 34
827 AH 35
828 AH 36
829 AH 37
830 AH 38
831 AH 39
832 AH 40
833 AH 41
834 AH 42
835 AH 43
836 AH 44
837 AH 45
838 AH 46
839 AH 47
840 AH 48
841 AH 49
842 AH 50
843 AH 51
844 AH 52
845 AH 53
846 AH 54
847 AH 55

BRANCHED ON B,A,
8,4,2 DR 1 BITS

RN021
EXECUTE SET WORD MARK AND CLEAR WORD
MARK INSTRUCTIONS

NOP	*E005	4	2722	N P30
SAR	0004	4	2726	Q 004
SW	TWM, TWM001	7	2730	, P37 P38
DC	0N0	1	2737	
DC	0N0	1	2738	
BCE	RK11A, TWM, N	8	2739	B P51 P37 N
B	TDCK11	4	2747	B P90
BCE	RK11B, TWM001, N	8	2751	B P63 P38 N
B	TDCK11	4	2759	B P90
CW	TWM, TWM001	7	2763	□ P37 P38
BWZ	TDCK11, TWM, 1	8	2770	V P90 P37 1
BWZ	TDCK11, TWM001, 1	8	2778	V P90 P38 1
B	LOOPCK	4	2786	B T62
B	TYPI	4	2790	B S89

RN022
EXECUTE ADD OP TRUE ADD

NOP	*E005	4	2794	N Q02
SAR	0004	4	2798	Q 004
LCA	PA11, TESAD	7	2802	L U53 U32
A	P654, TESAD	7	2809	A U35 U32
C	TESAD, PG65	7	2816	C U32 U56
BE	LOOPCK	5	2823	B T62 S
B	TYPI	4	2828	B S89

RN023
EXECUTE ADD OP COMPLIMENT ADD

NOP	*E005	4	2832	N Q40
SAR	0004	4	2836	Q 004
LCA	PC81, TESAD	7	2840	L U59 U32

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

848 AH 56 A M321, TESAD
 849 AH 57 C TESAD, P000
 850 AH 58 BE LOOPCK
 851 AH 59 B TYPI
 852 AH 60
 853 AH 61
 854 AH 62
 855 AH 63
 856 AH 64
 857 AH 65
 858 AH 66
 859 AH 67
 860 AH 68
 861 AH 69
 862 AH 70
 863 AH 71
 864 AH 72
 865 AH 73
 866 AH 74
 867 AH 75
 868 AH 76
 869 AH 77
 870 AH 78
 871 AH 79
 872 AH 80
 873 AH 81
 874 AH 82
 875 AH 83
 876 AH 84
 877 AH 85
 878 AH 86
 879 AH 87
 880 AH 88
 881 AH 89
 882 AH 90
 883 AH 91
 884 AH 92
 885 AH 93
 886 AH 94
 887 AH 95
 888 AH 96
 889 AH 97
 890 AH 98
 891 AH 99
 892 AI 00
 893 AI 01
 894 AI 02
 895 AI 03
 896 AI 04
 897 AI 05

RN024 EXECUTE ADD OP %COMP ADD WITH RECOMP CYB

NOP *E005
 SAR 0004
 LCA M321, TESAD
 A P987, TESAD
 C TESAD, P666
 BE LOOPCK
 B TYPI
 4 2870 N Q78
 4 2874 Q 004
 7 2878 L U44 U32
 7 2885 A U47 U32
 7 2892 C U32 U50
 5 2899 B T62 S
 4 2904 B S89
 SET ROUT. START
 ADDR IN LOC 2-4
 SET BFLD TO -321
 ADD 6987
 COMP RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF ADD SHOULD BE
 66F

RN025 EXECUTE ADD OP %ZONE FIELD

NOP *E005
 SAR 0004
 LCA P321, TESAD
 A TESAD
 C TESAD, P642
 BE LOOPCK
 B TYPI
 4 2908 N R16
 4 2912 Q 004
 7 2916 L U41 U32
 4 2923 A U32
 7 2927 C U32 B4V
 5 2934 B T62 S
 4 2939 B S89
 SET ROUT. START
 ADDR IN LOC 2-4
 SET BFLD TO 6321
 ADD 6321
 COMP RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF ADD SHOULD BE
 64B

RN026 EXECUTE ADD OP TO CAUSE OVERFLOW CK FOR OVERFLOW WITH BR ON OVFLW INST

NOP *E005
 SAR 0004
 BAV CKOVER
 BAV TDC16A
 B ADD16
 B TYPI
 4 2943 N R51
 4 2947 Q 004
 5 2951 B R56 Z
 5 2956 B R65 Z
 4 2961 B R69
 4 2965 B S89
 SET ROUT. START
 ADDR IN LOC 2-4
 TURN OFF OVFLW
 CK FOR OVFLW IND
 GO TO ADD
 ERR CK FOR TYPE
 OVFLW IND DID

SFX CT LCN INSTRUCTION

OPERANDS

SEQ RG LIN LABEL OP

898 AI 06
 899 AI 07
 900 AI 08
 901 AI 09
 902 AI 10
 903 AI 11
 904 AI 12
 905 AI 13
 906 AI 14
 907 AI 15
 908 AI 16
 909 AI 17
 910 AI 18
 911 AI 19
 912 AI 20
 913 AI 21
 914 AI 22
 915 AI 23
 916 AI 24
 917 AI 25
 918 AI 26
 919 AI 27
 920 AI 28
 921 AI 29
 922 AI 30
 923 AI 31
 924 AI 32
 925 AI 33
 926 AI 34
 927 AI 35
 928 AI 36
 929 AI 37
 930 AI 38
 931 AI 39
 932 AI 40
 933 AI 41
 934 AI 42
 935 AI 43
 936 AI 44
 937 AI 45
 938 AI 46
 939 AI 47
 940 AI 48
 941 AI 49
 942 AI 50
 943 AI 51
 944 AI 52
 945 AI 53
 946 AI 54
 947 AI 55

ADD16 LCA P987, TESAD
 A P321, TESAD
 BAV LOOPCK
 B TYPI

NOT RESET
 SET BFLD TO £987
 ADD £321
 CK FOR OVFLW
 ERR CK FOR TYPE
 FAILED TO SET
 OVERFLOW

7 2969 L U47 U32
 7 2976 A U41 U32
 5 2983 B T62 Z
 4 2988 B S89

RN027 EXECUTE SUBTRACT OP

NOP *£005
 SAR 0004
 LCA P666, TESAD
 S M321, TESAD
 C TESAD, P987
 BE LOOPCK
 B TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 SET BFLD TO £666
 SUB -321
 COMP RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF SUB SHOULD BE
 986

4 2992 N £00
 4 2996 Q 004
 7 3000 L U50 U32
 7 3007 S U44 U32
 7 3014 C U32 U47
 5 3021 B T62 S
 4 3026 B S89

RN028 EXECUTE SUBTRACT OP 30NE FIELD#

NOP *£005
 SAR 0004
 LCA P111, TESAD
 S TESAD
 C TESAD, P000
 BE LOOPCK
 B TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 SET BFLD TO £111
 SUBTRACT
 COMP RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF SUB SHOULD BE
 006

4 3030 N £38
 4 3034 Q 004
 7 3038 L U53 U32
 4 3045 S U32
 7 3049 C U32 U38
 5 3056 B T62 S
 4 3061 B S89

RN029 EXECUTE ZERO AND ADD 32 FIELD#

NOP *£005
 SAR 0004
 LCA P987, TESAD
 ZA PCB1, TESAD
 C TESAD, P321
 BE LOOPCK
 B TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 SET B FLD TO 987
 ZA PCB1
 COMP RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT

4 3065 N £73
 4 3069 Q 004
 7 3073 L U47 U32
 7 3080 E U59 U32
 7 3087 C U32 U41
 5 3094 B T62 S
 4 3099 B S89

SEQ PG LIN LABEL OP OPERANDS

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LDCN	INSTRUCTION
948	AI	56		NOP					
949	AI	57		SAR					
950	AI	58		LCA					
951	AI	59		ZS					
952	AI	60		C					
953	AI	61		BE					
954	AI	62		B					
955	AI	63							
956	AI	64							
957	AI	65							
958	AI	66							
959	AI	67							
960	AI	68							
961	AI	69							
962	AI	70							
963	AI	71							
964	AI	72							
965	AI	73							
966	AI	74							
967	AI	75							
968	AI	76							
969	AI	77							
970	AI	78							
971	AI	79							
972	AI	80							
973	AI	81							
974	AI	82							
975	AI	83							
976	AI	84							
977	AI	85							
978	AI	86							
979	AI	87							
980	AI	88							
981	AI	89							
982	AI	90							
983	AI	91							
984	AI	92							
985	AI	93							
986	AI	94							
987	AI	95							
988	AI	96							
989	AI	97							
990	AI	98							
991	AI	99							
992	AJ	00							
993	AJ	01							
994	AJ	02							
995	AJ	03							
996	AJ	04							
997	AJ	05							

OF ZA SHOULD BE
32A

RN030
EXECUTE ZERO AND SUBTRACT #2 FIELDS
WITH B FLD LONGER THAN A FIELD

*E005	4	3103	N	A11
0004	4	3107	Q	004
ZSSET,ZSTEST	7	3111	L	U64 U69
PG65,ZSTEST	7	3118	-	U56 U69
ZSTEST,ZSCOMP	7	3125	C	U69 U74
LOOPCK	5	3132	B	T62 S
TYPI	4	3137	B	S89

SET ROUT. START
ADDR IN LOC 2-4
SET BFLD ZSSET
ZA EG65
COMP RESULT
CK FOR EQUAL
ERR CK FOR TYPE
RESULT
OF ZS SHOULD BE
0076N

RN031
EXECUTE ZERO AND ADD #1 FIELDS

*E005	4	3141	N	A49
0004	4	3145	Q	004
NES, TESAD	7	3149	L	U77 U32
TESAD	4	3156	&	U32
TESAD,P987	7	3160	C	U32 U47
LOOPCK	5	3167	B	T62 S
TYPI	4	3172	B	S89

SET ROUT. START
ADDR IN LOC 2-4
SET FLD TO E987
EXEC ZA
COMP RESULT
CK FOR EQUAL
ERR CK FOR TYPE
RESULT
OF ZA SHOULD BE
986

RN032
EXECUTE ZERO AND SUBTRACT #1 FIELDS

*E005	4	3176	N	A84
0004	4	3180	Q	004
ABC, TESAD	7	3184	L	U80 U32
TESAD	4	3191	-	U32
TESAD,M123	7	3195	C	U32 U83
LOOPCK	5	3202	B	T62 S
TYPI	4	3207	B	S89

SET ROUT. START
ADDR IN LOC 2-4
SET FLD TO ABC
EXEC ZS
COMP RESULT
CK FOR EQUAL
ERR CK FOR TYPE
RESULT
OF ZS SHOULD BE
12L

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

1098 AK 06
 1099 AK 07
 1100 AK 08
 1101 AK 09
 1102 AK 10
 1103 AK 11
 1104 AK 12
 1105 AK 13
 1106 AK 14
 1107 AK 15
 1108 AK 16
 1109 AK 17
 1110 AK 18
 1111 AK 19
 1112 AK 20
 1113 AK 21
 1114 AK 22
 1115 AK 23
 1116 AK 24
 1117 AK 25
 1118 AK 26
 1119 AK 27
 1120 AK 28
 1121 AK 29
 1122 AK 30
 1123 AK 31
 1124 AK 32
 1125 AK 33
 1126 AK 34
 1127 AK 35
 1128 AK 36
 1129 AK 37
 1130 AK 38
 1131 AK 39
 1132 AK 40
 1133 AK 41
 1134 AK 42
 1136 AK 43
 1136 AK 44
 1137 AK 45
 1138 AK 46
 1139 AK 47
 1140 AK 48
 1141 AK 49
 1142 AK 50
 1143 AK 51
 1144 AK 52
 1145 AK 53
 1146 AK 54
 1147 AK 55

RN039
 EXECUTE DIVIDE INSTR
 DIVIDE M234 BY P56

NOP
 SAR *6005
 MCH 0004
 MCH DVRES1,QUOT1
 D M234,QUOT1
 C P56,QUOT1-002
 BE QUOT1-DVAN2
 B LOOPCK
 TYP1

4 3481 N D89
 4 3485 Q 004
 7 3489 M V78 V86
 7 3496 M V89 V86
 7 3503 Z V91 V84
 7 3510 C V86 V99
 5 3517 B 162 S
 4 3522 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 BLANK OUT DIV FL
 LOAD DIVEDEND
 DIVIDE
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF DIV SHOULD BE
 OM01-

RN040
 EXECUTE DIVIDE INSTR
 DIVIDE M789 BY M5

NOP
 SAR *6005
 MCM 0004
 MCM DVRES,QUOT
 D M789,QUOT
 C M5,QUOT-002
 BE QUOT-DVAN3
 B LOOPCK
 TYP1

4 3526 N E34
 4 3530 Q 004
 7 3534 M V58 V65
 7 3541 M W02 V65
 7 3548 Z W03 V63
 7 3555 C V65 W12
 5 3562 B 162 S
 4 3567 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 BLANK DIV FIELD
 LOAD DIVEDEND
 DIVIDE
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF DIV SHOULD BE
 15G0M

RN041
 EXECUTE DIVIDE INSTR
 DIVIDE BY ZERO TO SET OVFL
 TEST OVFL ON & DIV RESULT

NOP
 SAR *6005
 BAV 0004
 BAV NXC31
 MCM TDC31A
 D DVRES,QUOT
 BAV P297,QUOT
 BAV P0,QUOT-002
 B DVOK
 B TDC31A

4 3571 N E79
 4 3575 Q 004
 5 3579 B E84 Z
 5 3584 B F31 Z
 7 3589 M V58 V65
 7 3596 M W15 V65
 7 3603 Z W16 V63
 5 3610 B F19 Z
 4 3615 B 1

SET ROUT. START
 ADDR IN LOC 2-4
 TURN OFF OVFL
 CK IF ON
 BLANK DIV FLD
 LOAD DIVEDEND
 DIVIDE
 CK FOR OVFL
 ERROR

1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1148	AK	56	OVDK	C	QUOT,DVAN4				
1149	AK	57		BE	LOOPCK			7 3619	C V65 W23
1150	AK	58	TDC31A	B	TYPI			5 3626	B T62 S
1151	AK	59						4 3631	B S89
1152	AK	60							
1153	AK	61							
1154	AK	62							
1155	AK	63							
1156	AK	64							
1157	AK	65							
1158	AK	66							
1159	AK	67							
1160	AK	68							
1161	AK	69							
1162	AK	70							
1163	AK	71							
1164	AK	72							
1165	AK	73							
1166	AK	74							
1167	AK	75							
1168	AK	76							
1169	AK	77							
1170	AK	78							
1171	AK	79							
1172	AK	80							
1173	AK	81							
1174	AK	82							
1175	AK	83							
1176	AK	84							
1177	AK	85							
1178	AK	86							
1179	AK	87							
1180	AK	88							
1181	AK	89							
1182	AK	90							
1183	AK	91							
1184	AK	92							
1185	AK	93							
1186	AK	94							
1187	AK	95							
1188	AK	96							
1189	AK	97							
1190	AK	98							
1191	AK	99							
1192	AL	00							
1193	AL	01							
1194	AL	02							
1195	AL	03							
1196	AL	04							
1197	AL	05							
<p>RN042 EXECUTE MOVE CHAR & SUPPRESS ZERO OP</p>									
			NOP		*E005			4 3635	N F43
			SAR		0004			4 3639	Q 004
			LCA		NINE6,ZSUP			7 3643	L W29 W37
			MCS		ZS1,ZSUP			7 3650	Z W43 W37
			C		ZSUP,ZSAN1			7 3657	C W37 W51
			BE		LOOPCK			5 3664	B T62 S
			B		TYPI			4 3669	B S89
<p>RN043 EXECUTE MOVE CHAR & SUPPRESS ZERO OP</p>									
			NOP		*E005			4 3673	N F81
			SAR		0004			4 3677	Q 004
			LCA		NINE6,ZSUP			7 3681	L W29 W37
			MCS		ZS2,ZSUP			7 3688	Z W57 W37
			BBE		EUEDIT,1261,1			8 3695	W G14 S61 I
			C		ZSUP,ZSAN2			7 3703	C W37 W65
			B		CKQIN			4 3710	B G21
			EUEDIT	C	ZSUP,EURAN1			7 3714	C W37 A1W
			CKQIN	BE	LOOPCK			5 3721	B T62 S
			B		TYPI			4 3726	B S89
<p>RN044 EXECUTE CLEAR INSTR</p>									
			NOP		*E005			4 3730	N G38
			SAR		0004			4 3734	Q 004
			CS		0107			4 3738	/ 107

SEQ PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1198	AL 06		LCA	A5,0102	7	3742	L V11 102	
1199	AL 07		LCA	A5-0107	7	3749	L V11 107	
1200	AL 08		CS	0107	4	3756	/ 107	
1201	AL 09		C	0107,CLK	7	3760	C 107 E9W	
1202	AL 10		BE	LOOPCK	5	3767	B 162 S	
1203	AL 11		B	TYPI	4	3772	B 589	
1204	AL 12							
1205	AL 13							
1206	AL 14							
1207	AL 15							
1208	AL 16							
1209	AL 17							
1210	AL 18							
1211	AL 19							
1212	AL 20		NOP	*E005	4	3776	N 684	
1213	AL 21		SAR	0004	4	3780	Q 004	
1214	AL 22		LCA	PLSMIN,ZNTEST	7	3784	L W67 W69	
1215	AL 23		MN	AB,ZNTEST	7	3791	D W71 W69	
1216	AL 24		C	ZNTEST,ZNANI	7	3798	C W69 W73	
1217	AL 25		BE	LOOPCK	5	3805	B 162 S	
1218	AL 26		B	TYPI	4	3810	B 589	
1219	AL 27							
1220	AL 28							
1221	AL 29							
1222	AL 30							
1223	AL 31							
1224	AL 32							
1225	AL 33							
1226	AL 34							
1227	AL 35		NOP	*E005	4	3814	N W22	
1228	AL 36		SAR	0004	4	3818	Q 004	
1229	AL 37		LCA	AB,ZNTEST	7	3822	L W71 W69	
1230	AL 38		MZ	PLSMIN,ZNTEST	7	3829	V W67 W69	
1231	AL 39		C	ZNTEST,ZNANZ	7	3836	C W69 W75	
1232	AL 40		BE	LOOPCK	5	3843	B 162 S	
1233	AL 41		B	TYPI	4	3848	B 589	
1234	AL 42							
1235	AL 43							
1236	AL 44							
1237	AL 45							
1238	AL 46							
1239	AL 47							
1240	AL 48							
1241	AL 49							
1242	AL 50							
1243	AL 51		NOP	*E005	4	3852	N W60	
1244	AL 52		SAR	0004	4	3856	Q 004	
1245	AL 53		LCA	RCRES,MVREC	7	3860	L W87 F0Y	
1246	AL 54		LCA	RCRES-006,MVREC-006	7	3867	L W81 F0S	
1247	AL 55		LCA	RCRES-009,MVREC-009	7	3874	L W78 E9Z	

RN045
EXECUTE MOVE NUMERIC

SET ROUT. START
ADDR IN LOC 2-4
MV &- TO WK AREA
MOVE NUMERIC
CK RESULT
CK FOR EQUAL
ERR CK FOR TYPE
RESULT
OF MN SHOULD BE
EK

RN046
EXECUTE MOVE ZONE

SET ROUT. START
ADDR IN LOC 2-4
MV AB TO WK AREA
MOVE ZONE
CK RESULT
CK FOR EQUAL
ERR CK FOR TYPE
RESULT
OF MZ SHOULD BE
AK

RN047
EXECUTE MOVE CHAR TO RECORD
OR GROUP MARK USING REC MARK

SET ROUT. START
ADDR IN LOC 2-4
RESTORE
B
FIELD

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

1248 AL 56 MCM RECI-009,MVREC-011
1249 AL 57 C MVREC,MRCAN1
1250 AL 58 BE SCK37
1251 AL 59 B TDCK37
1252 AL 60 SCK37 C MVREC-006,MRCAN2
1253 AL 61 TDCK37
1254 AL 62 B TDCK37
1255 AL 63 C MVREC-009,MRCAN3
1256 AL 64 BE LOOPCK
1257 AL 65 TYP1
1258 AL 66
1259 AL 67
1260 AL 68
1261 AL 69
1262 AL 70
1263 AL 71
1264 AL 72
1265 AL 73
1266 AL 74
1267 AL 75
1268 AL 76
1269 AL 77
1270 AL 78
1271 AL 79
1272 AL 80
1273 AL 81
1274 AL 82
1275 AL 83
1276 AL 84
1277 AL 85
1278 AL 86
1279 AL 87
1280 AL 88
1281 AL 89
1282 AL 90
1283 AL 91
1284 AL 92
1285 AL 93
1286 AL 94
1287 AL 95
1288 AL 96
1289 AL 97
1290 AL 98
1291 AL 99
1292 AM 00
1293 AM 01
1294 AM 02
1295 AM 03
1296 AM 04
1297 AM 05
    
```

RN048
EXECUTE MOVE CHAR TO RECORD
OR GROUP MARK USING GROUP MARK

```

NOP *E005
SAR 0004
LCA RCRES,MVREC
LCA RCRES-006,MVREC-006
LCA RCRES-009,MVREC-009
MCH REC2-009,MVREC-011
C MVREC,GMBLN
BE SCK38
B TDCK38
C MVREC-002,MRCAN4
BE TCK38
B TDCK38
C MVREC-006,MRCAN5
BE FCK38
B TDCK38
C MVREC-009,MRCAN6
BE LOOPCK
B TYP1
    
```

RN049
EXECUTE MOVE CHAR TO A OR B WD MRK
STOP WITH A FLD WORD MARK

```

NOP *E005
SAR 0004
LCA BFLRES,MBFLD
MCH MAFLD,MBFLD
    
```

```

7 3881 P W88 E9X
7 3888 C FOY X05
5 3895 B I04 S
4 3900 B I32
7 3904 C F0S X08
5 3911 B I20 S
4 3916 B I32
7 3920 C E9Z X11
5 3927 B T62 S
4 3932 B S89
    
```

```

4 3936 N I44
4 3940 Q 004
7 3944 L W87 FOY
7 3951 L W81 F0S
7 3958 L W78 E9Z
7 3965 P X12 E9X
7 3972 C FOY W05
5 3979 B I88 S
4 3984 B 03S
7 3988 C F0M X27
5 3995 B 00U S
4 4000 B 03S
7 4004 C F0S X30
5 4011 B 02# S
4 4016 B 03S
7 4020 C E9Z X33
5 4027 B T62 S
4 4032 B S89
    
```

```

4 4036 N 04U
4 4040 Q 004
7 4044 L X46 X38
7 4051 M X41 X38
    
```

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

1298 AM 06 C MBFLD,MBANI
 1299 AM 07 BE LOOPCK
 1300 AM 08 B TYPI
 1301 AM 09 CK RESULT 7 4058 C X38 X51
 1302 AM 10 CK FOR EQUAL 5 4065 B T62 S
 1303 AM 11 ERR CK FOR TYPE 4 4070 B S89
 1304 AM 12 RESULT
 1305 AM 13 OF MOVE SHOULD
 1306 AM 14 BE ABCNX

RN050
 EXECUTE MOVE CHAR TO A OR B WD MRK
 STOP WITH B FLD WORD MARK
 CHECK CONTENTS OF A & B ADDR
 REGS AT COMPLETION OF OPERATION

1310 AM 18 *E005
 1311 AM 19 NOP
 1312 AM 20 SAR 0004
 1313 AM 21 LCA MAFIRS,MAFLDI
 1314 AM 22 MCH BFLRES,MAFLDI
 1315 AM 23 SAR STK
 1316 AM 24 SBR MAFLDI
 1317 AM 25 C STK,CKMVA
 1318 AM 26 BE NXC40
 1319 AM 27 B TDCK40
 1320 AM 28 C MAFLDI,CKMVA
 1321 AM 29 BE LOOPCK
 1322 AM 30 NXC40
 1323 AM 31 TDCK40 B
 1324 AM 32
 1325 AM 33
 1326 AM 34
 1327 AM 35
 1328 AM 36
 1329 AM 37
 1330 AM 38
 1331 AM 39
 1332 AM 40
 1333 AM 41
 1334 AM 42
 1335 AM 43
 1336 AM 44
 1337 AM 45
 1338 AM 46
 1339 AM 47
 1340 AM 48
 1341 AM 49
 1342 AM 50
 1343 AM 51
 1344 AM 52
 1345 AM 53
 1346 AM 54
 1347 AM 55

4 4074 N 08S
 4 4078 Q 004
 7 4082 L X60 X56
 7 4089 M X46 X56
 4 4096 Q E7#
 4 4100 H X56
 7 4104 C E7# Z20
 5 4111 B 12# S
 4 4116 B 13S
 7 4120 C X56 Z20
 5 4127 B T62 S
 4 4132 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MOVE TO B WD MRK
 STORE A ADDR
 STORE B ADDR
 CK A ADDR REG
 CK FOR EQUAL
 ERROR
 CK B ADDR REG
 CK FOR EQUAL
 ERR CK FOR TYPE
 CONTENTS OF A&B
 REG AFTER MV OP
 ARE INCORRECT

RN051
 EXECUTE LOAD CHAR TO A WORD MARK
 CHECK CONTENTS OF A & B ADDR
 REGS AFTER OPERATION

1333 AM 41 *E005
 1334 AM 42 NOP
 1335 AM 43 SAR 0004
 1336 AM 44 LCA LBRES,LBFLD
 1337 AM 45 LCA LBRES-002,LBFLD-002
 1338 AM 46 LCA LAFLD,LBFLD
 1339 AM 47 SAR STK
 1340 AM 48 SBR MAFLDI
 1341 AM 49 C STK,CKLDA
 1342 AM 50 BE NXC41
 1343 AM 51 B TDCK41
 1344 AM 52 C MAFLDI,CKLDA
 1345 AM 53 BE LOOPCK
 1346 AM 54 B NXC41
 1347 AM 55 B TDCK41 B

4 4136 N 14U
 4 4140 Q 004
 7 4144 L X72 X68
 7 4151 L X70 X66
 7 4158 L X75 X68
 4 4165 Q E7#
 4 4169 H X56
 7 4173 C E7# Z23
 5 4180 B 182 S
 4 4185 B 20/
 7 4189 C X56 Z23
 5 4196 B T62 S
 4 4201 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE
 B FIELDS
 EXEC LOAD
 STORE A ADDR
 STORE B ADDR
 CK A ADDR REG
 CK FOR EQUAL
 ERROR
 CK B ADDR REG
 CK FOR EQUAL
 ERR CK FOR TYPE
 CONTENTS OF A&B

SEQ PG LIN LABEL OP OPERANDS SFX CT LCN INSTRUCTION

1348 AM 56
 1349 AM 57
 1350 AM 58
 1351 AM 59
 1352 AM 60
 1353 AM 61
 1354 AM 62
 1355 AM 63
 1356 AM 64
 1357 AM 65
 1358 AM 66
 1359 AM 67
 1360 AM 68
 1361 AM 69
 1362 AM 70
 1363 AM 71
 1364 AM 72
 1365 AM 73
 1366 AM 74
 1367 AM 75
 1368 AM 76
 1369 AM 77
 1370 AM 78
 1371 AM 79
 1372 AM 80
 1373 AM 81
 1374 AM 82
 1375 AM 83
 1376 AM 84
 1377 AM 85
 1378 AM 86
 1379 AM 87
 1380 AM 88
 1381 AM 89
 1382 AM 90
 1383 AM 91
 1384 AM 92
 1385 AM 93
 1386 AM 94
 1387 AM 95
 1388 AM 96
 1389 AM 97
 1390 AM 98
 1391 AM 99
 1392 AM 00
 1393 AM 01
 1394 AM 02
 1395 AM 03
 1396 AM 04
 1397 AM 05

RN052
 EXECUTE STORE A ADDRESS OP
 USING BR IF CHAR EQ INSTR

*E005
 0004
 STARES,STACK
 STARES-002,STACK-002
 SETA,M5,N
 STACK
 STACK
 CKSTA,STACK
 NXC42
 TDCK42
 STACK-002,CKSTA-002
 NXC42A
 TDCK42
 LOOPCK,STACK-003,
 TYP1

REGS AFTER LD OP
 ARE INCORRECT

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE
 FIELD
 BR IF CHAR EQ
 STORE A ADDRESS
 STORE A ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERROR
 CK HI ORD DIGIT
 CK FOR EQUAL
 ERROR
 CK FOR BLANK
 ERR CK FOR TYPE
 RESULT
 OF STA IS INCOR
 OR BR FAILED

4 4205 N 21T
 4 4209 Q 004
 7 4213 L X83 X79
 7 4220 L X81 X77
 8 4227 B 23Z W03 N
 4 4235 Q X79
 4 4239 Q X79
 7 4243 C X86 X79
 5 4250 B 25Z S
 4 4255 B 28T
 7 4259 C X77 X84
 5 4266 B 27V S
 4 4271 B 28T
 8 4275 B T62 X76
 4 4283 B S89

RN053
 EXECUTE STORE B ADDRESS OP
 USING BRANCH INSTRUCTION

*E005
 0004
 STARES,STACK
 STARES-002,STACK-002
 SETB
 TDCK43
 STACK
 CKSTB,STACK
 NXC43
 TDCK43
 STACK-002,CKSTB-002
 NXC43A
 TDCK43
 LOOPCK,STACK-003,
 TYP1

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE
 FIELD
 BRANCH
 ERR DID NOT BR
 STORE B ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERROR
 CK HI ORD DIG
 CK FOR EQUAL
 ERROR
 CK FOR BLANK
 ERR CK FOR TYPE
 RESULT
 OF STB IS INCOR.
 OR BR FAILED

4 4287 N 29V
 4 4291 Q 004 X79
 7 4295 L X83 X77
 7 4302 L X81 X77
 4 4309 B 31X
 4 4313 B 36/
 4 4317 H X79
 7 4321 C X89 X79
 5 4328 B 33X S
 4 4333 B 36/
 7 4337 C X77 X87
 5 4344 B 35T S
 4 4349 B 36/
 8 4353 B T62 X76
 4 4361 B S89

SEQ PG LIN LABEL OP OPERANDS SFX CT LDCN INSTRUCTION

1398 AN 06
 1399 AN 07
 1400 AN 08
 1401 AN 09
 1402 AN 10
 1403 AN 11
 1404 AN 12
 1405 AN 13
 1406 AN 14
 1407 AN 15
 1408 AN 16
 1409 AN 17
 1410 AN 18
 1411 AN 19
 1412 AN 20
 1413 AN 21
 1414 AN 22
 1415 AN 23
 1416 AN 24
 1417 AN 25
 1418 AN 26
 1419 AN 27
 1420 AN 28
 1421 AN 29
 1422 AN 30
 1423 AN 31
 1424 AN 32
 1425 AN 33
 1426 AN 34
 1427 AN 35
 1428 AN 36
 1429 AN 37
 1430 AN 38
 1431 AN 39
 1432 AN 40
 1433 AN 41
 1434 AN 42
 1435 AN 43
 1436 AN 44
 1437 AN 45
 1438 AN 46
 1439 AN 47
 1440 AN 48
 1441 AN 49
 1442 AN 50
 1443 AN 51
 1444 AN 52
 1445 AN 53
 1446 AN 54
 1447 AN 55

RN054
 EXECUTE NOP AS OP CODE OF
 14 PSN DUMMY INST TO CK I
 RING ADV TO NEXT WM

NOP	*E005	4	4365	N	37T
SAR	0004	4	4369	Q	004
NOP		1	4373	N	
DC	00000000000000000000	13	4386		
B	LOOPCK	4	4387	B	T62
NOP	0000	4	4391	N	000

SET ROUT. START
 ADDR IN LOC 2-4
 EXEC NOP

CK FOR LOOP
 EX INSTR

RN055
 EXECUTE NOP AS OP CODE
 OF DUMMY INST CONTAINING ZONE BITS

NOP	*E005	4	4395	N	40T
SAR	0004	4	4399	Q	004
NOP		1	4403	N	
DC	00000000000000000000	6	4409		
B	LOOPCK	4	4410	B	T62
NOP	0000	4	4414	N	000

SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE NOP

CK FOR LOOP
 EX INSTR

RN056
 EXECUTE CLEAR STORAGE AND BRANCH

NOP	*E005	4	4418	N	42W
SAR	0004	4	4422	Q	004
CS	0107	4	4426	/	107
LCA	A5,0102	7	4430	L	V11 102
LCA	A5,0107	7	4437	L	V11 107
CS	NXC46,0107	7	4444	/	45V 107
B	T0CK46	4	4451	B	46X
C	0107,CLK	7	4455	C	107 E9W
BE	LOOPCK	5	4462	B	T62 S
B	TYP1	4	4467	B	S89

SET ROUT. START
 ADDR IN LOC 2-4
 CLEAR STORAGE

MV A5 TO 98-102
 MV A5 TO 103-107
 CLEAR AND BRANCH
 FAILED TO BR
 CK CLEAR AREA
 CK FOR EQUAL
 ERR BR FAILED
 OR LOC 00098-
 00107 IS NOT
 AA-8 BLANKS

RN057
 EXECUTE CHAIN OF ADD & SUB INSTRS

NOP	*E005	4	4471	N	47Z
SAR	0004	4	4475	Q	004

SET ROUT. START
 ADDR IN LOC 2-4

SEQ PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1448	AN 56		LCA	CHNASR,CHNAS				
1449	AN 57		LCA	CHNASR-001,CHNAS-001			4479	L X97 X93
1450	AN 58		LCA	CHNASR-002,CHNAS-002			4486	L X96 X92
1451	AN 59		LCA	CHNASR-003,CHNAS-003			4493	L X95 X91
1452	AN 60		A	AFCHN,CHNAS			4500	L X94 X90
1453	AN 61		A				4507	A Y01 X93
1454	AN 62		S				4514	A
1455	AN 63		A				4515	S
1456	AN 64		BCE	NXC47,CHNAS,7			4516	A
1457	AN 65		B	TDCK47			4517	B 52Z X93 7
1458	AN 66	NXC47	BCE	NXC47A,CHNAS-001,8			4525	B 56/
1459	AN 67		B	TDCK47			4529	B 54/ X92 8
1460	AN 68	NXC47A	BCE	NXC47B,CHNAS-002,6			4537	B 56/
1461	AN 69		B	TDCK47			4541	B 55T X91 6
1462	AN 70	NXC47B	BCE	LDOPCK,CHNAS-003,2			4549	B 56/
1463	AN 71	TDCK47	B	TYP1			4553	B T62 X90 2
1464	AN 72						4561	B S89
1465	AN 73							
1466	AN 74							
1467	AN 75							
1468	AN 76							
1469	AN 77							
1470	AN 78							
1471	AN 79							
1472	AN 80							
1473	AN 81							
1474	AN 82							
1475	AN 83							
1476	AN 84							
1477	AN 85							
1478	AN 86							
1479	AN 87							
1480	AN 88							
1481	AN 89							
1482	AN 90							
1483	AN 91							
1484	AN 92							
1485	AN 93							
1486	AN 94							
1487	AN 95							
1488	AN 96							
1489	AN 97							
1490	AN 98							
1491	AN 99							
1492	AD 00							
1493	AD 01							
1494	AD 02							
1495	AD 03							
1496	AD 04							
1497	AD 05							

RESTORE
WORK
ARER
TO 1234
ADD
SUB
ADD
CK FOR 7
ERROR
CK FOR 8
ERROR
CK FOR 80
ERROR
CK FOR 2
ERR CK FOR TYPE
RESULT OF CHAIN
ADD & SUB IS
INCORRECT

RN058
EXECUTE CHAIN OF MOVE & LOAD INSTRS

SEQ PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1498	AN 80		NOP	*E005			4565	N 57T
1499	AN 81		SAR	0004			4569	Q 004
1500	AN 82		LCA	LMCHNR,LMCHN			4573	L Y17 Y09
1501	AN 83		LCA	LMCHNR-002,LMCHN-002			4580	L Y15 Y07
1502	AN 84		LCA	LMCHNR-003,LMCHN-003			4587	L Y14 Y06
1503	AN 85		LCA	LMCHNR-006,LMCHN-006			4594	L Y11 Y03
1504	AN 86		MCH	LMAFLD,LMCHN			4601	M Y25 Y09
1505	AN 87		MCH				4608	M
1506	AN 88		LCA				4609	L
1507	AN 89		MCM				4610	M
1508	AN 90		C				4611	C Y25 Y09
1509	AN 91		BE				4618	B 62X S
1510	AN 92		B				4623	B 67Z
1511	AN 93	NXC48	BCE	NXC48A,LMCHN-002,C			4627	B 63Z Y07 C
1512	AN 94		B	TDCK48			4635	B 67Z
1513	AN 95	NXC48A	C	LMAFLD-003,LMCHN-003			4639	C Y22 Y06
1514	AN 96		BE	NXC48B			4646	B 65V S
1515	AN 97		B	TDCK48			4651	B 67Z
1516	AN 98	NXC48B	C	LMAFLD-006,LMCHN-006			4655	C Y19 Y03
1517	AN 99		BE	NXC48C			4662	B 67/ S
1518	AD 00		B	TDCK48			4667	B 67Z
1519	AD 01	NXC48C	BWZ	LDOPCK,LMCHN-002,1			4671	V T62 Y07 1
1520	AD 02	TDCK48	B	TYP1			4679	B S89
1521	AD 03							
1522	AD 04							
1523	AD 05							

SET ROUT. START
ADDR IN LOC 2-4
RESTORE
B
FIELD
AREA
EXECUTE
LOAD
MOVE
CHAIN
CK RESULT
CK FOR EQUAL
ERROR
CK FOR C
ERROR
CK RESULT
CK FOR EQUAL
ERROR
CK RESULT
CK FOR EQUAL
ERROR
CK FOR WM
ERR CK FOR TYPE
RESULT
OF CHAIN SHOULD
BE AAB8BCDD

SEQ PG LIN LABEL OP OPERANDS

1498 AO 06
 1499 AO 07
 1500 AO 08
 1501 AO 09
 1502 AO 10
 1503 AO 11
 1504 AO 12
 1505 AO 13
 1506 AO 14
 1507 AO 15
 1508 AO 16
 1509 AO 17
 1510 AO 18
 1511 AO 19
 1512 AO 20
 1513 AO 21
 1514 AO 22
 1515 AO 23
 1516 AO 24
 1517 AO 25
 1518 AO 26
 1519 AO 27
 1520 AO 28
 1521 AO 29
 1522 AO 30
 1523 AO 31
 1524 AO 32
 1525 AO 33
 1526 AO 34
 1527 AO 35
 1528 AO 36
 1529 AO 37
 1530 AO 38
 1531 AO 39
 1532 AO 40
 1533 AO 41
 1534 AO 42
 1535 AO 43
 1536 AO 44
 1537 AO 45
 1538 AO 46
 1539 AO 47
 1540 AO 48
 1541 AO 49
 1542 AO 50
 1543 AO 51
 1544 AO 52
 1545 AO 53
 1546 AO 54
 1547 AO 55

RN059
 EXECUTE MODIFY ADDRESS OP
 ADD 111 TO 000

NOP *6005
 SAR 0004
 MCH ZER4,MABFLD
 MA ONE4,MABFLD
 C MABFLD,MAN1
 BE LOOPCK
 B TYP1
 SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 EXEC. MOD ADD
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF MA SHOULD BE
 0111

RN060
 EXECUTE MODIFY ADDRESS OP
 SINGLE ADDRESS
 ADD 111 TO 111

NOP *6005
 SAR 0004
 MCH ONE4,MABFLD
 MA MABFLD
 C MABFLD,ZRTMO
 BE LOOPCK
 B TYP1
 SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 EXEC MOD ADD
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF MA SHOULD BE
 1222

RN061
 EXECUTE MODIFY ADDRESS
 MODIFY 123 BY USW
 CK FOR V7Z RESULT

NOP *6005
 SAR 0004
 LCA RESB1,888
 MA AAD1,888
 C BBB,MANN
 BE NXT5I
 B TYP1
 SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF MA SHOULD BE
 V7Z

1410/7010-1401 CPU COMPATIBILITY TEST

SFX CT LOCN INSTRUCTION

OPRERANDS

LABEL OP

SEQ PG LIN

NXT51 LCA AAD1,888
 MA RESB1,888
 C BBB,MANN
 BE LOOPCK
 B TYPI

RN062
 EXECUTE MODIFY ADDRESS
 MODIFY OC2 BY 402
 CK FOR EG4 RESULT

*E005
 0004
 RESB1E004,888
 AAD1E004,888
 BBB,MANNE004
 NXT52
 TYPI

NXT52 LCA AAD1E004,888
 MA RESB1E004,888
 C BBB,MANNE004
 BE LOOPCK
 B TYPI

RN063
 EXECUTE MODIFY ADDRESS
 MODIFY E41 BY 369
 CK FOR I10 RESULT

*E005
 0004
 RESB1E008,888
 AAD1E008,888
 BBB,MANNE008
 NXT53
 TYPI

NXT53 LCA AAD1E008,888
 MA RESB1E008,888

1548 A0 56
 1549 A0 57
 1550 A0 58
 1551 A0 59
 1552 A0 60
 1553 A0 61
 1554 A0 62
 1555 A0 63
 1556 A0 64
 1557 A0 65
 1558 A0 66
 1559 A0 67
 1560 A0 68
 1561 A0 69
 1562 A0 70
 1563 A0 71
 1564 A0 72
 1565 A0 73
 1566 A0 74
 1567 A0 75
 1568 A0 76
 1569 A0 77
 1570 A0 78
 1571 A0 79
 1572 A0 80
 1573 A0 81
 1574 A0 82
 1575 A0 83
 1576 A0 84
 1577 A0 85
 1578 A0 86
 1579 A0 87
 1580 A0 88
 1581 A0 89
 1582 A0 90
 1583 A0 91
 1584 A0 92
 1585 A0 93
 1586 A0 94
 1587 A0 95
 1588 A0 96
 1589 A0 97
 1590 A0 98
 1591 A0 99
 1592 AP 00
 1593 AP 01
 1594 AP 02
 1595 AP 03
 1596 AP 04
 1597 AP 05

SET B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 SHOULD BE V7Z

4 4824 N 83S
 4 4828 Q 004
 7 4832 L Y53 D6M
 7 4839 # Y89 D6M
 7 4846 C D6M B5T
 5 4853 B 86S S
 4 4858 B S89

7 4794 L Y85 D6M
 7 4801 # Y49 D6M
 7 4808 C D6M B4Z
 5 4815 B T62 S
 4 4820 B S89

7 4862 L Y89 D6M
 7 4869 # Y53 D6M
 7 4876 C D6M B5T
 5 4883 B T62 S
 4 4888 B S89

4 4892 N 90#
 4 4896 Q 004
 7 4900 L Y57 D6M
 7 4907 # Y93 D6M
 7 4914 C D6M B5X
 5 4921 B 93# S
 4 4926 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 SHOULD BE EG4

SET B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 SHOULD BE EG4

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 SHOULD BE I10

7 4930 L Y93 D6M
 7 4937 # Y57 D6M

OF MA SHOULD BE

OF MA SHOULD BE

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

1598 AP 06 C BBB,MANNE008
 1599 AP 07 BE LOOPCK
 1600 AP 08 B TYPI
 1601 AP 09
 1602 AP 10
 1603 AP 11
 1604 AP 12
 1605 AP 13
 1606 AP 14
 1607 AP 15
 1608 AP 16
 1609 AP 17
 1610 AP 18
 1611 AP 19
 1612 AP 20
 1613 AP 21
 1614 AP 22
 1615 AP 23
 1616 AP 24
 1617 AP 25
 1618 AP 26
 1619 AP 27
 1620 AP 28
 1621 AP 29
 1622 AP 30
 1623 AP 31
 1624 AP 32
 1625 AP 33
 1626 AP 34
 1627 AP 35
 1628 AP 36
 1629 AP 37
 1630 AP 38
 1631 AP 39
 1632 AP 40
 1633 AP 41
 1634 AP 42
 1635 AP 43
 1636 AP 44
 1637 AP 45
 1638 AP 46
 1639 AP 47
 1640 AP 48
 1641 AP 49
 1642 AP 50
 1643 AP 51
 1644 AP 52
 1645 AP 53
 1646 AP 54
 1647 AP 55

RN064
 EXECUTE MODIFY ADDRESS
 MODIFY YMT BY ZN2
 CK FOR GRV RESULT

*E005
 0004
 RESB1E012,88B
 AAD1E012,88B
 88B,MANNE012
 NXT54
 TYPI

NXT54
 LCA AAD1E012,88B
 MA RESB1E012,88B
 C 88B,MANNE012
 BE LOOPCK
 B TYPI

RN065
 EXECUTE MODIFY ADDRESS
 MODIFY UIX BY M23
 CK FOR H4+ RESULT

*E005
 0004
 RESB1E016,88B
 AAD1E016,88B
 88B,MANNE016
 NXT55
 TYPI

NXT55
 LCA AAD1E016,88B
 MA RESB1E016,88B
 C 88B,MANNE016
 BE LOOPCK

CK RESULT 7 4944 C D6M B5X
 CK FOR EQUAL 5 4951 B T62 S
 ERR CK FOR TYPE 4 4956 B S89
 RESULT
 SHOULD BE I10

SET ROUT. START 4 4960 N 96Y
 ADDR IN LOC 2-4 4 4964 Q 004
 RESTORE B FIELD 7 4968 L Y61 D6M
 MODIFY ADDRESS 7 4975 # Y97 D6M
 CK RESULT 7 4982 C D6M B67
 CK FOR EQUAL 5 4989 B 99Y S
 ERR CK FOR TYPE 4 4994 B S89
 RESULT
 OF MA SHOULD BE
 GRV

SET B FIELD 7 4998 L Y97 D6M
 MODIFY ADDRESS 7 5005 # Y61 D6M
 CK RESULT 7 5012 C D6M B67
 CK FOR EQUAL 5 5019 B T62 S
 ERR CK FOR TYPE 4 5024 B S89
 RESULT
 SHOULD BE GRV

SET ROUT. START 4 5028 N #3W
 ADDR IN LOC 2-4 4 5032 Q 004
 RESTORE B FIELD 7 5036 L Y65 D6M
 MODIFY ADDRESS 7 5043 # Z01 D6M
 CK RESULT 7 5050 C D6M B6V
 CK FOR EQUAL 5 5057 B #6M S
 ERR CK FOR TYPE 4 5062 B S89
 RESULT
 OF MA SHOULD BE
 H4+

SET B FIELD 7 5066 L Z01 D6M
 MODIFY ADDRESS 7 5073 # Y65 D6M
 CK RESULT 7 5080 C D6M B6V
 CK FOR EQUAL 5 5087 B T62 S

SFX CT LOCN INSTRUCTION

OPERANDS

LABEL OP

SEQ PG LIN

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1648	AP	56		B					ERR CK FOR TYPE
1649	AP	57							RESULT
1650	AP	58					4	5092	B S89
1651	AP	59							SHOULD BE H4*
1652	AP	60							
1653	AP	61							
1654	AP	62							
1655	AP	63							
1656	AP	64							
1657	AP	65							
1658	AP	66							
1659	AP	67							
1660	AP	68							
1661	AP	69							
1662	AP	70							
1663	AP	71							
1664	AP	72							
1665	AP	73							
1666	AP	74							
1667	AP	75							
1668	AP	76							
1669	AP	77							
1670	AP	78							
1671	AP	79							
1672	AP	80							
1673	AP	81							
1674	AP	82							
1675	AP	83							
1676	AP	84							
1677	AP	85							
1678	AP	86							
1679	AP	87							
1680	AP	88							
1681	AP	89							
1682	AP	90							
1683	AP	91							
1684	AP	92							
1685	AP	93							
1686	AP	94							
1687	AP	95							
1688	AP	96							
1689	AP	97							
1690	AP	98							
1691	AP	99							
1692	AQ	00							
1693	AQ	01							
1694	AQ	02							
1695	AQ	03							
1696	AQ	04							
1697	AQ	05							

RN066
 EXECUTE MODIFY ADDRESS
 MODIFY S3U BY F45
 CK FOR 87R RESULT

*Z005
 0004
 RESB16020,888
 AAD16020,888
 BBB,MANNE020
 NXT56
 TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF MA SHOULD BE
 87R

4 5096 N /OU
 4 5100 Q 004
 7 5104 L Y69 D6W
 7 5111 # Z05 D6W
 7 5118 C D6W B6Z
 5 5125 B /3U S
 4 5130 B S89

RN067
 EXECUTE MODIFY ADDRESS
 MODIFY KW3 BY LV2
 CK FOR 6/V RESULT

NXT56
 LCA
 MA
 C
 BE
 B

SET B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 SHOULD BE 87R

7 5134 L Z05 D6W
 7 5141 # Y69 D6W
 7 5148 C D6W B6Z
 5 5155 B T62 S
 4 5160 B S89

*Z005
 0004
 RESB16024,888
 AAD16024,888
 BBB,MANNE024
 NXT57
 TYPI

NXT57
 LCA
 MA
 C
 BE
 B

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 OF MA SHOULD BE
 6/V

4 5164 N /TS
 4 5168 Q 004
 7 5172 L Y73 D6W
 7 5179 # Z09 D6W
 7 5186 C D6W B7T
 5 5193 B S05 S
 4 5198 B S89

AAD16024,888
 RESB16024,888
 BBB,MANNE024
 LOOPCK
 TYPI

SET B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT

7 5202 L Z09 D6W
 7 5209 # Y73 D6W
 7 5216 C D6W B7T
 5 5223 B T62 S
 4 5228 B S89

SEQ PG LIN LABEL OP OPERANDS

1698 AQ 06 SHOULD BE 6/V

1699 AQ 07

1700 AQ 08

1701 AQ 09

1702 AQ 10

1703 AQ 11

1704 AQ 12

1705 AQ 13

1706 AQ 14

1707 AQ 15

1708 AQ 16

1709 AQ 17

1710 AQ 18

1711 AQ 19

1712 AQ 20

1713 AQ 21

1714 AQ 22

1715 AQ 23

1716 AQ 24

1717 AQ 25

1718 AQ 26

1719 AQ 27

1720 AQ 28

1721 AQ 29

1722 AQ 30

1723 AQ 31

1724 AQ 32

1725 AQ 33

1726 AQ 34

1727 AQ 35

1728 AQ 36

1729 AQ 37

1730 AQ 38

1731 AQ 39

1732 AQ 40

1733 AQ 41

1734 AQ 42

1735 AQ 43

1736 AQ 44

1737 AQ 45

1738 AQ 46

1739 AQ 47

1740 AQ 48

1741 AQ 49

1742 AQ 50

1743 AQ 51

1744 AQ 52

1745 AQ 53

1746 AQ 54

1747 AQ 55

RN068
EXECUTE MODIFY ADDRESS
MODIFY J46 BY H57
CK FOR -0T RESULT

NOP *E005
SAR 0004
LCA RESB1E028,888
MA AAD1E028,888
C 888,MANNE028
BE NXT58
B TYPI

4 5232 N S4+
4 5236 Q 004
7 5240 L Y77 D6M
7 5247 # Z13 D6M
7 5254 C D6M B7X
5 5261 B S7# S
4 5266 B S89

NXT58 LCA AAD1E028,888
MA RESB1E028,888
C 888,MANNE028
BE LOOPCK
B TYPI

7 5270 L Z13 D6M
7 5277 # Y77 D6M
7 5284 C D6M B7X
5 5291 B T62 S
4 5296 B S89

RN069
EXECUTE MODIFY ADDRESS
MODIFY A23 BY D56
CK FOR N7Z RESULT

NOP *E005
SAR 0004
LCA RESB1E032,888
MA AAD1E032,888
C 888,MANNE032
BE NXT59
B TYPI

4 5300 N T0Y
4 5304 Q 004
7 5308 L Y81 D6M
7 5315 # Z17 D6M
7 5322 C D6M B87
5 5329 B T3Y S
4 5334 B S89

NXT59 LCA AAD1E032,888
MA RESB1E032,888
C 888,MANNE032
BE LOOPCK
B TYPI

7 5338 L Z17 D6M
7 5345 # Y81 D6M
7 5352 C D6M B87
5 5359 B T62 S
4 5364 B S89

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

1798 AR 06
1799 AR 07
1800 AR 08
1801 AR 09
1802 AR 10
1803 AR 11
1804 AR 12
1805 AR 13
1806 AR 14
1807 AR 15
1808 AR 16
1809 AR 17
1810 AR 18
1811 AR 19
1812 AR 20
1813 AR 21
1814 AR 22
1815 AR 23
1816 AR 24
1817 AR 25
1818 AR 26
1819 AR 27
1820 AR 28
1821 AR 29
1822 AR 30
1823 AR 31
1824 AR 32
1825 AR 33
1826 AR 34
1827 AR 35
1828 AR 36
1829 AR 37
1830 AR 38
1831 AR 39
1832 AR 40
1833 AR 41
1834 AR 42
1835 AR 43
1836 AR 44
1837 AR 45
1838 AR 46
1839 AR 47
1840 AR 48
1841 AR 49
1842 AR 50
1843 AR 51
1844 AR 52
1845 AR 53
1846 AR 54
1847 AR 55
    
```

EXECUTE 1 CHAR MOVE OPERATION
STORE A ADDRESS AND
COMPARE STORED ADDRESS TO R99

```

NOP
SAR
MCHW
SAR
C
BE
B
    
```

```

*8005
0004
3000,TS1401
CK1401
CK1401,COMPCK&006
LOOPCK
TYPI
    
```

```

4 5450 V U5Y
4 5454 Q 004
7 5458 M 800 D6X
4 5465 Q D74
7 5469 C D74 D2M
5 5476 B T62 S
4 5481 B S89
    
```

```

SET ROUT. START
ADDR IN LOC 2-4
EXECUTE MOVE
STORE A ADDRESS
CK ADDRESS
CK FOR EQUAL
ERR CK FOR TYPE
STORED
ADD SHOULD BE
R99
    
```

RN078
EXECUTE 1 CHAR MOVE OPERATION
STORE A ADDRESS AND
COMPARE STORED ADDRESS TO I99

```

NOP
SAR
MCHW
SAR
C
BE
B
    
```

```

*8005
0004
4000,TS1401
CK1401
CK1401,COMPCK&009
LOOPCK
TYPI
    
```

```

4 5485 N U9T
4 5489 Q 004
7 5493 M 004 D6X
4 5500 Q D74
7 5504 C D74 D2Z
5 5511 B T62 S
4 5516 B S89
    
```

```

SET ROUT. START
ADDR IN LOC 2-4
EXECUTE MOVE
STORE A ADDRESS
CK ADDRESS
CK FOR EQUAL
ERR CK FOR TYPE
STORED
ADD SHOULD BE
I99
    
```

RN079
EXECUTE 1 CHAR MOVE OPERATION
STORE A ADDRESS AND
COMPARE STORED ADDRESS TO 99Z

```

NOP
SAR
MCHW
SAR
C
BE
B
    
```

```

*8005
0004
5000,TS1401
CK1401
CK1401,COMPCK&012
LOOPCK
TYPI
    
```

```

4 5520 N V2Y
4 5524 Q 004 D6X
7 5528 M 404 D6X
4 5535 Q D74
7 5539 C D74 D3S
5 5546 B T62 S
4 5551 B S89
    
```

```

SET ROUT. START
ADDR IN LOC 2-4
EXECUTE MOVE
STORE A ADDRESS
CK ADDRESS
CK FOR EQUAL
ERR CK FOR TYPE
STORED ADDR
SHOULD BE 99Z
    
```

RN080

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

1848 AR 56 EXECUTE 1 CHAR MOVE OPERATION
 1849 AR 57 STORE A ADDRESS AND
 1850 AR 58 COMPARE STORED ADDRESS TO Z9Z
 1851 AR 59 *E005
 1852 AR 60 0004
 1853 AR 61 6000,TS1401
 1854 AR 62 MCH
 1855 AR 63 SAR
 1856 AR 64 CK1401
 1857 AR 65 CK1401,COMPCK&015
 1858 AR 66 BE LOOPCK
 1859 AR 67 B TYPI
 1860 AR 68
 1861 AR 69
 1862 AR 70
 1863 AR 71
 1864 AR 72
 1865 AR 73
 1866 AR 74
 1867 AR 75
 1868 AR 76
 1869 AR 77
 1870 AR 78
 1871 AR 79
 1872 AR 80
 1873 AR 81
 1874 AR 82
 1875 AR 83
 1876 AR 84
 1877 AR 85
 1878 AR 86
 1879 AR 87
 1880 AR 88
 1881 AR 89
 1882 AR 90
 1883 AR 91
 1884 AR 92
 1885 AR 93
 1886 AR 94
 1887 AR 95
 1888 AR 96
 1889 AR 97
 1890 AR 98
 1891 AR 99
 1892 AS 00
 1893 AS 01
 1894 AS 02
 1895 AS 03
 1896 AS 04
 1897 AS 05

4 5555 N V6T
 4 5559 Q 004
 7 5563 M -0# D6X
 4 5570 Q D7# D3V
 7 5574 C D7# D3V
 5 5581 B T62 S
 4 5586 B S89
 SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 Z9Z

RN081
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO R9Z

NOP *E005
 SAR 0004
 MCH 7000,TS1401
 SAR CK1401
 C CK1401,COMPCK&018
 BE LOOPCK
 B TYPI
 4 5590 N V9Y
 4 5594 Q 004
 7 5598 M 00# D6X
 4 5605 Q D7# D3Y
 7 5609 C D7# D3Y
 5 5616 B T62 S
 4 5621 B S89
 SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 R9Z

TEST SYSTEM CONTROL MEMORY SIZE
 LOC. #1257# FOR A 0 INDICATING
 10K MEMORY IF NOT 0 GREATER THAN
 10K MEM IS ASSUMED AND PROG
 BRANCHES TO LOC 8500 TO EXECUTE
 ROUTINES RN082-RN089

BCE RN90,MEMSIZ,0
 B 8500
 8 5625 B W3X S57 0
 4 5633 B 50-
 CK FOR 10K MEM
 GREATER THAN
 10K MEM GO TO
 8500 TO EXEC
 ROUTES. 82-89

RN090
 TEST INDEX 13
 EXECUTE MOVE INST WITH A ADDRESS

1898 AS D6
 1899 AS 07
 1900 AS 08
 1901 AS 09
 1902 AS 10
 1903 AS 11
 1904 AS 12
 1905 AS 13
 1906 AS 14
 1907 AS 15
 1908 AS 16
 1909 AS 17
 1910 AS 18
 1911 AS 19
 1912 AS 20
 1913 AS 21
 1914 AS 22
 1915 AS 23
 1916 AS 24
 1917 AS 25
 1918 AS 26
 1919 AS 27
 1920 AS 28
 1921 AS 29
 1922 AS 30
 1923 AS 31
 1924 AS 32
 1925 AS 33
 1926 AS 34
 1927 AS 35
 1928 AS 36
 1929 AS 37
 1930 AS 38
 1931 AS 39
 1932 AS 40
 1933 AS 41
 1934 AS 42
 1935 AS 43
 1936 AS 44
 1937 AS 45
 1938 AS 46
 1939 AS 47
 1940 AS 48
 1941 AS 49
 1942 AS 50
 1943 AS 51
 1944 AS 52
 1945 AS 53
 1946 AS 54
 1947 AS 55

OF 1000 INDEXED BY CONTENTS OF
 IXR 13 CONTAINING I11

RN90
 NOP *E005
 SAR 0004
 LCA XISETA,0089
 MCM I000EX1,TS1401
 SAR CK1401
 C CK1401,XAN1
 BE LOOPCK
 B TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 SET IX 13 TO I11
 EXEC INXD MOVE
 STORE A ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 /10

4 5637 N W4V
 4 5641 Q 004
 7 5645 L A3S 089
 7 5652 M #0 D6X
 4 5659 Q D7#
 7 5663 C D7# A5Z
 5 5670 B T62 S
 4 5675 B S89

RN091
 TEST INDEX I3
 EXECUTE CL WD MRK INST WITH B ADDRESS
 OF 2000 INDEXED BY CONTENTS OF
 IXR 13 CONTAINING IJ2

RN091
 NOP *E005
 SAR 0004
 LCA X1SETB,0089
 CW 0250,2000EX1
 SBR CK1401
 C CK1401,XAN2
 BE LOOPCK
 B TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 SET IX 13 TO IJ2
 EXEC INXD CW
 STORE B ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD. SHOULD BE
 J11

4 5679 N W8X
 4 5683 Q 004
 7 5687 L A3V 089
 7 5694 # 250 -#0
 4 5701 H D7#
 7 5705 C D7# A6S
 5 5712 B T62 S
 4 5717 B S89

RN092
 TEST INDEX I3
 EXECUTE MOVE INST WITH A ADDRESS
 OF 3000 INDEXED BY CONTENTS OF
 IXR 13 CONTAINING I/1

RN092
 NOP *E005
 SAR 0004
 LCA X1SETC,0089
 MCM 3000EX1,TS1401
 SAR CK1401
 C CK1401,XAN3
 BE LOOPCK
 B TYPI

SET ROUT. START
 ADDR IN LOC 2-4
 SET IX 13 TO I/1
 EXEC INXD MOVE
 STORE A ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED

4 5721 N X2Z
 4 5725 Q 004
 7 5729 L A3Y 089
 7 5736 M #0 D6X
 4 5743 Q D7#
 7 5747 C D7# A6V
 5 5754 B T62 S
 4 5759 B S89

SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
1998 AT 06		LCA	X2SETC,0094				
1999 AT 07		MCW	3000EX2,TS1401				
2000 AT 08		SAR	CK1401				
2001 AT 09		C	CK1401,XAN6				
2002 AT 10		BE	LOOPCK				
2003 AT 11		B	TYPI				
2004 AT 12							SET IX 14 TO 252
2005 AT 13							EXEC INXD MOVE
2006 AT 14							STORE A ADDRESS
2007 AT 15							CK RESULT
2008 AT 16							CK FOR EQUAL
2009 AT 17							ERR CK FOR TYPE
2010 AT 18							STORED
2011 AT 19							ADD. SHOULD BE
2012 AT 20							B21
2013 AT 21							
2014 AT 22							
2015 AT 23							
2016 AT 24							
2017 AT 25							
2018 AT 26							
2019 AT 27							
2020 AT 28							
2021 AT 29							
2022 AT 30							
2023 AT 31							
2024 AT 32							
2025 AT 33							
2026 AT 34							
2027 AT 35							
2028 AT 36							
2029 AT 37							
2030 AT 38							
2031 AT 39							
2032 AT 40							
2033 AT 41							
2034 AT 42							
2035 AT 43							
2036 AT 44							
2037 AT 45							
2038 AT 46							
2039 AT 47							
2040 AT 48							
2041 AT 49							
2042 AT 50							
2043 AT 51							
2044 AT 52							
2045 AT 53							
2046 AT 54							
2047 AT 55							
<p>RN096 TEST INDEX 15 EXECUTE MOVE INST WITH A ADDRESS OF 1000 INDEXED BY CONTENTS OF IXR 15 CONTAINING 333</p>							
2015 AT 23		NOP	*E005				SET ROUT. START
2016 AT 24		SAR	0004				ADDR IN LOC 2-4
2017 AT 25		LCA	X3SETA,0099				SET IX 15 TO 333
2018 AT 26		MCW	1000EX3,TS1401				EXEC INXD MOVE
2019 AT 27		SAR	CK1401				STORE A ADDRESS
2020 AT 28		C	CK1401,XAN7				CK RESULT
2021 AT 29		BE	LOOPCK				CK FOR EQUAL
2022 AT 30		B	TYPI				ERR CK FOR TYPE
2023 AT 31							STORED
2024 AT 32							ADD. SHOULD BE
2025 AT 33							T32
<p>ERN097 TEST INDEX 15 EXECUTE CL WD MRK INST WITH B ADDRESS OF 2000 INDEXED BY THE CONTENTS OF IXR 15 CONTAINING 3L3</p>							
2034 AT 42		NOP	*E005				SET ROUT. START
2035 AT 43		SAR	0004				ADDR IN LOC 2-4
2036 AT 44		LCA	X3SETB,0099				SET IX 15 TO 3L3
2037 AT 45		CH	0250,2000EX3				EXEC INXD CW
2038 AT 46		SBR	CK1401				STORE B ADDRESS
2039 AT 47		C	CK1401,XAN8				CK RESULT
2040 AT 48		BE	LOOPCK				CK FOR EQUAL
2041 AT 49		B	TYPI				ERR CK FOR TYPE
2042 AT 50							STORED
2043 AT 51							ADD. SHOULD BE
2044 AT 52							L32
2045 AT 53							
2046 AT 54							
2047 AT 55							
<p>RN098</p>							
2034 AT 42							SET ROUT. START
2035 AT 43							ADDR IN LOC 2-4
2036 AT 44							SET IX 15 TO 3L3
2037 AT 45							EXEC INXD CW
2038 AT 46							STORE B ADDRESS
2039 AT 47							CK RESULT
2040 AT 48							CK FOR EQUAL
2041 AT 49							ERR CK FOR TYPE
2042 AT 50							STORED
2043 AT 51							ADD. SHOULD BE
2044 AT 52							L32
2045 AT 53							
2046 AT 54							
2047 AT 55							

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

2048 AT 56
 2049 AT 57
 2050 AT 58
 2051 AT 59
 2052 AT 60
 2053 AT 61
 2054 AT 62
 2055 AT 63
 2056 AT 64
 2057 AT 65
 2058 AT 66
 2059 AT 67
 2060 AT 68
 2061 AT 69
 2062 AT 70
 2063 AT 71
 2064 AT 72
 2065 AT 73
 2066 AT 74
 2067 AT 75
 2068 AT 76
 2069 AT 77
 2070 AT 78
 2071 AT 79
 2072 AT 80
 2073 AT 81
 2074 AT 82
 2075 AT 83
 2076 AT 84
 2077 AT 85
 2078 AT 86
 2079 AT 87
 2080 AT 88
 2081 AT 89
 2082 AT 90
 2083 AT 91
 2084 AT 92
 2085 AT 93
 2086 AT 94
 2087 AT 95
 2088 AT 96
 2089 AT 97
 2090 AT 98
 2091 AT 99
 2092 AU 00
 2093 AU 01
 2094 AU 02
 2095 AU 03
 2096 AU 04
 2097 AU 05

TEST INDEX 15
 EXECUTE MOVE INST WITH A ADDRESS
 OF 3000 INDEXED BY CONTENTS OF
 IXR 15 CONTAINING 3T3

*E005
 0004
 X3SEIC,0099
 3000EX3,TS1401
 CK1401
 CK1401,XAN9
 LDOPCK
 TYP1

NOP
 SAR
 LCA
 MCM
 SAR
 C
 BE
 B

SET ROUT. START
 ADDR IN LOC 2-4
 SET IX 15 TO 3T3
 EXEC INXD MOVE
 STORE A ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD. SHOULD BE
 C32

4 5973 N Z8/
 4 5977 Q 004
 7 5981 L ASW 099
 7 5988 M E60 D6X
 4 5995 Q D7#
 7 5999 C D7# A8T
 5 6006 B T62 S
 4 6011 B S89

RN099
 TEST IXRS 13,14 & 15 FOR DECREASE
 OF A ADDRESS USING 16000S COMPLIMENT
 EXECUTE 3 MOVE & STA INSTRS
 CK STORED AREA FOR 013014015

2071 AT 79
 2072 AT 80
 2073 AT 81
 2074 AT 82
 2075 AT 83
 2076 AT 84
 2077 AT 85
 2078 AT 86
 2079 AT 87
 2080 AT 88
 2081 AT 89
 2082 AT 90
 2083 AT 91
 2084 AT 92
 2085 AT 93
 2086 AT 94
 2087 AT 95
 2088 AT 96
 2089 AT 97
 2090 AT 98
 2091 AT 99
 2092 AU 00
 2093 AU 01
 2094 AU 02
 2095 AU 03
 2096 AU 04
 2097 AU 05

*E005
 0004
 XA,0089
 XA,0094
 XA,0099
 0501EX1,TS1401
 XCK-006
 0502EX2,TS1401
 XCK-003
 0503EX3,TS1401
 XCK
 XCK,XCKAN
 LDOPCK
 TYP1

NOP
 SAR
 LCA
 LCA
 LCA
 MCM
 SAR
 MCM
 SAR
 MCM
 SAR
 C
 BE
 B

SET ROUT. START
 ADDR IN LOC 2-4
 SET IXRS
 TO
 EIC-15513
 EXEC MOVE
 STORE A ADDRESS
 EXEC MOVE
 STORE A ADDRESS
 EXEC MOVE
 STORE A ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT
 SHD BE 013014015

4 6015 N -2I
 4 6019 Q 004
 7 6023 L Z68 089
 7 6030 L Z68 094
 7 6037 L Z68 099
 7 6044 M 5#1 D6X
 4 6051 Q Z50 D6X
 7 6055 M 5-2 D6X
 4 6062 Q Z53 D6X
 7 6066 M 5E3 D6X
 4 6073 Q Z56 D6X
 7 6077 C Z56 Z65
 5 6084 B T62 S
 4 6089 B S89

RN100
 INDEXING TEST
 EXECUTE SEQUENCE OF INDEXED BRANCH
 AND ADD INSTRS USING IXRS 13,14, & 15
 CK CONTENTS OF IXRS AT COMPLETION OF LOOP

*E005
 0004

NOP
 SAR

SET ROUT. START
 ADDR IN LOC 2-4

4 6093 N J0/
 4 6097 Q 004

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

2098	AU	06		LCA	ZER3,0089	7	6101	L	B4S	089
2099	AU	07		LCA	ZER3,0094	7	6108	L	B4S	094
2100	AU	08		LCA	ZER3,0099	7	6115	L	B4S	099
2101	AU	09	G0G	B	G01&X1	4	6122	B	JT*	
2102	AU	10		B	TDCK89	4	6126	B	K9Z	
2103	AU	11	G01	A	INTAB1&X1,0089&X2	7	6130	A	ZX1	0Q9
2104	AU	12	G0A	B	G0Z&X2	4	6137	B	J0Y	
2105	AU	13		B	TDCK89	4	6141	B	K9Z	
2106	AU	14		A	INTAB1-012&X1,0074&X3	7	6145	A	ZV9	0G4
2107	AU	15		B	G0A	4	6152	B	J3X	
2108	AU	16		A	INTAB1-020&X1,0063&X1	7	6156	A	ZV1	0W3
2109	AU	17		NOP		1	6163	N		
2110	AU	18		B	G0A	4	6164	B	J3X	
2111	AU	19	G02	A	INTAB1&X2,0094&X3	7	6168	A	ZP1	014
2112	AU	20	G0B	B	G03&X3	4	6175	B	K&W	
2113	AU	21		B	TDCK89	4	6179	B	K9Z	
2114	AU	22		A	INTAB1-012&X2,0068&X1	7	6183	A	ZN9	0W8
2115	AU	23		B	G0B	4	6190	B	J7V	
2116	AU	24		A	INTAB1-020&X2,0068&X3	7	6194	A	ZN1	0F8
2117	AU	25		NOP		1	6201	N		
2118	AU	26		B	G0B	4	6202	B	J7V	
2119	AU	27	G03	A	INTAB1&X3,0099&X3	7	6206	A	ZG1	019
2120	AU	28		B	G04	4	6213	B	K3Z	
2121	AU	29		NOP	0000	4	6217	N	000	
2122	AU	30		A	INTAB1-012&X3,0073&X2	7	6221	A	ZE9	0P3
2123	AU	31		B	G04	4	6228	B	K3Z	
2124	AU	32		A	INTAB1-020&X3,0067&X1	7	6232	A	ZE1	0W7
2125	AU	33	G04	C	0099,LPEND	7	6239	C	099	Z80
2126	AU	34		BL	CKRES	5	6246	B	K5V	T
2127	AU	35		B	G0G	4	6251	B	J2S	
2128	AU	36	CKRES	C	0089,XXAN	7	6255	C	089	A8W
2129	AU	37		BE	NXC89	5	6262	B	K7/	S
2130	AU	38		B	TDCK89	4	6267	B	K9Z	
2131	AU	39		C	0094,XXAN	7	6271	C	094	A8W
2132	AU	40		BE	NXC89A	5	6278	B	K8X	S
2133	AU	41		B	TDCK89	4	6283	B	K9Z	
2134	AU	42		C	0099,XXAN	7	6287	C	099	A8W
2135	AU	43		BE	LOOPCK	5	6294	B	I62	S
2136	AU	44		BE	TYPI	4	6299	B	S89	
2137	AU	45								
2138	AU	46								
2139	AU	47								
2140	AU	48								
2141	AU	49								
2142	AU	50								
2143	AU	51								
2144	AU	52								
2145	AU	53								
2146	AU	54								
2147	AU	55								

RN101
SENSE SW OFF TEST \$SMS B-G0
SET ROUT. START
ADDR IN LOC 2-4
6303 N L1/
6307 Q 004

*E005
0004
NOP
SAR

SEQ PG LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
2148 AU 56		BCE	RN101, TAD4, 1		8	6311	B L2T #04 1
2149 AU 57		B	RN102		4	6319	B M5/
2150 AU 58	RN101	MCW	%TO, SWOMES-034, W		8	6323	M %TO CIX W
2151 AU 59		H			1	6331	HALT TO SET SWS OFF
2152 AU 60		MCW	SWRES, SWIND		7	6332	M A9S Z41
2153 AU 61		BSS	ERB, B		5	6339	B L4Y B
2154 AU 62		B	SWC		4	6344	B L5V
2155 AU 63		MCW	ONE, SWIND-005		7	6348	M U14 Z36
2156 AU 64	ERB	BSS	ERC, C		5	6355	B L6U C
2157 AU 65	SWC	B	SWD		4	6360	B L7/
2158 AU 66		MCW	ONE, SWIND-004		7	6364	M U14 Z37
2159 AU 67	ERC	BSS	ERD, D		5	6371	B L8# D
2160 AU 68	SWD	B	SWE		4	6376	B L8X
2161 AU 69		MCW	ONE, SWIND-003		7	6380	M U14 Z38
2162 AU 70	ERD	BSS	ERE, E		5	6387	B L9W E
2163 AU 71	SWE	B	SWF		4	6392	B MOT
2164 AU 72	ERE	MCW	ONE, SWIND-002		7	6396	M U14 Z39
2165 AU 73	SWF	BSS	ERF, F		5	6403	B M1S F
2166 AU 74		B	SWG		4	6408	B M1Z
2167 AU 75		MCW	ONE, SWIND-001		7	6412	M U14 Z40
2168 AU 76	ERF	BSS	ERG, G		5	6419	B M2Y G
2169 AU 77	SWG	B	CKSWF		4	6424	B M3V
2170 AU 78		MCW	ONE, SWIND		7	6428	M U14 Z41
2171 AU 79	ERG	C	SWIND, SWRES		7	6435	C Z41 A9S
2172 AU 80	CKSWF	BE	LOOPCK		5	6442	B T62 S
2173 AU 81		B	TYPI		4	6447	B S89
2174 AU 82							
2175 AU 83							
2176 AU 84							
2177 AU 85							
2178 AU 86							
2179 AU 87							
2180 AU 88							
2181 AU 89							
2182 AU 90							
2183 AU 91							
2184 AU 92							
2185 AU 93							
2186 AU 94							
2187 AU 95							
2188 AU 96							
2189 AU 97							
2190 AU 98							
2191 AU 99							
2192 AV 00							
2193 AV 01							
2194 AV 02							
2195 AV 03							
2196 AV 04							
2197 AV 05							

RN102 SENSE SW ON TEST %SWS B-G00

SET ROUT. START
 ADDR IN LOC 2-4
 CK FOR EXECUTE
 BYPASS
 TYPE SW MESSAGE
 HALT TO SET SWS

*E005
 0004
 R102, TAD4, 1
 RN103
 %TO, SWNMES-033, W

NOP
 SAR
 BCE
 B
 MCW
 H

SWRES, SWIND1
 SWTC, B
 ONE, SWIND1-005
 SWTD, C
 ONE, SWIND1-004

M A9S Z47
 B M9Z B
 M U14 Z42
 B N1/ C
 M U14 Z43

SEQ PG LIN LABEL OP OPERANDS SFX CT LCN INSTRUCTION

2298 AM 06
 2299 AM 07
 2300 AM 08
 2301 AM 09
 2302 AM 10
 2303 AM 11
 2304 AM 12
 2305 AM 13
 2306 AM 14
 2307 AM 15
 2308 AM 16
 2309 AM 17
 2310 AM 18
 2311 AM 19
 2312 AM 20
 2313 AM 21
 2314 AM 22
 2315 AM 23
 2316 AM 24
 2317 AM 25
 2318 AM 26
 2319 AM 27
 2320 AM 28
 2321 AM 29
 2322 AM 30
 2323 AM 31
 2324 AM 32
 2325 AM 33
 2326 AM 34
 2327 AM 35
 2328 AM 36
 2329 AM 37
 2330 AM 38
 2331 AM 39
 2332 AM 40
 2333 AM 41
 2334 AM 42
 2335 AM 43
 2336 AM 44
 2337 AM 45
 2338 AM 46
 2339 AM 47
 2340 AM 48
 2341 AM 49
 2342 AM 50
 2343 AM 51
 2344 AM 52
 2345 AM 53
 2346 AM 54
 2347 AM 55

STORED AREA IS INCORRECT

RN107
 EXECUTE CHAIN OF MOVE AND LOAD OPS USING A ADDRS ONLY

*E005
 0004
 ONE, CHNML
 M5
 CHNASR
 REC2-005
 CHNML, CKML
 NXA106
 TDC106
 LOOPCK, CHNML-003, X
 TYP1

NOP
 SAR
 MCM
 MCM
 LCA
 MCM
 C
 BE
 B
 NXA106 BCE
 TDC106 B

4 6785 N P9T
 4 6789 Q 004
 7 6793 M U14 ESS
 4 6800 M W03
 4 6804 L X97
 4 6808 M X16
 7 6812 C ESS E5V
 5 6819 B Q2Y S
 4 6824 B Q3M
 8 6828 B T62 E4Z X
 4 6836 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 EXEC MOVE
 CHAIN
 MV AND
 LD INSTRS
 CK RESULT
 CK FOR EQUAL
 ERROR
 CK FOR X
 ERR CK FOR TYPE
 RESULT SHOULD BE
 X4N1

RN108
 EXECUTE CHAIN OF MZ AND MN OPS
 CK OUTPUT FIELD FOR 2 45

*E005
 0004
 DVRES1, CKMZMN
 CMP&003, CKMZMN

NOP
 SAR
 MCM
 MZ
 MN
 MN
 MZ
 MN
 MZ
 C
 BE
 B

4 6840 N Q4Y
 4 6844 Q 004
 7 6848 M V78 E6/
 7 6855 Y E2U E6/
 1 6862 D
 1 6863 D
 1 6864 Y
 1 6865 D
 1 6866 Y
 7 6867 C E6/ E6X
 5 6874 B T62 S
 4 6879 B S89

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 EXEC
 MZ
 MN
 CHAIN

CKMZMN, MZMNMN
 LOOPCK
 TYP1

CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT SHOULD BE
 2 45

RN109
 TEST 8K OR 16K WRAP AROUND
 EXECUTE CLEAR STORAGE INSTR
 BEGINNING AT LOC. 00000
 STORE B ADDR AND CK STORED ADDR
 FOR 19Z IF 10K SYSTEM
 FOR 19I IF GREATER THAN 10K SYSTEM

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

2348 AM 56
2349 AM 57
2350 AM 58
2351 AM 59
2352 AM 60
2353 AM 61
2354 AM 62
2355 AM 63
2356 AM 64
2357 AM 65
2358 AM 66
2359 AM 67
2360 AM 68
2361 AM 69
2362 AM 70
2363 AM 71
2364 AM 72
2365 AM 73
2366 AM 74
2367 AM 75
2368 AM 76
2369 AM 77
2370 AM 78
2371 AM 79
2372 AM 80
2373 AM 81
2374 AM 82
2375 AM 83
2376 AM 84
2377 AM 85
2378 AM 86
2379 AM 87
2380 AM 88
2381 AM 89
2382 AM 90
2383 AM 91
2384 AM 92
2385 AM 93
2386 AM 94
2387 AM 95
2388 AM 96
2389 AM 97
2390 AM 98
2391 AM 99
2392 AX 00
2393 AX 01
2394 AX 02
2395 AX 03
2396 AX 04
2397 AX 05
    
```

```

NOP *6005 SET ROUT START
SAR 0004 ADDR IN LOC 2-4
CS 0000 EXEC CLEAR STOR.
SBR STK STORE B ADDRESS
BCE CK8, MEMSIZ, 0 CK FOR 10K MEM
C STK, STK16K COMP TO 191
B CKEQ GO TO CK EQ
C STK, STK8K COMP TO 192
BE LOOPCK CK FOR EQUAL
B TYP1 ERR CK FOR TYPE
    
```

```

CK8 CKEQ
STK, STK8K
LOOPCK
TYP1
    
```

```

RN110
EXECUTE CHAIN OF MOVE INSTRS
AND THEN A DIVIDE TO ALLOW 2 OP
WITH WM TO READ OUT AT I RING 3 TIME
CK FOR CORRECT DIVIDE RESULT
    
```

```

NOP *6005 SET ROUT. START
SAR 0004 ADDR IN LOC. 2-4
MCH DVRES, QUOT BLANK FIELD
MCH CKPER&001, QUOT LOAD DIVIDEND
MCM WITH CHAINED MV
D PO1, QUOT-001 DIVIDE
C QUOT, DVANI CK RESULT
BE LOOPCK CK FOR LOOP
B TYP1 ERR CK FOR TYPE
    
```

```

CKEQ
STK, STK8K
LOOPCK
TYP1
    
```

```

RN111
TURN ON OVFLW IND WITH ADD INSTR
EXECUTE BR INSTR WITH UNITS PSM OF
A ADDR CONTAINING Z
TEST FOR OVLW IND STILL ON
    
```

```

NOP *6005 SET ROUT. START
SAR 0004 ADDR IN LOC. 2-4
LCA P987, TESAD SET BFLD TO 6987
A P321, TESAD ADD &321
MCM 7902, SVINST SAVE DATA
LCA BRBK&003, 7902 LOAD BR BK INSTR
B 7899 EXEC BRANCH
MCM SVINST, 7902 RESTORE DATA
    
```

```

BKK
    
```

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

2398 AX 06 BAV LOOPCK
2399 AX 07 B YYP1
2400 AX 08
2401 AX 09
2402 AX 10
2403 AX 11
2404 AX 12
2405 AX 13
2406 AX 14
2407 AX 15
2408 AX 16
2409 AX 17
2410 AX 18
2411 AX 19
2412 AX 20
2413 AX 21
2414 AX 22
2415 AX 23
2416 AX 24
2417 AX 25
2418 AX 26
2419 AX 27
2420 AX 28
2421 AX 29
2422 AX 30
2423 AX 31
2424 AX 32
2425 AX 33
2426 AX 34
2427 AX 35

```

CK FOR OVFLW 5 7027 B T62 Z
 ERR CK FOR TYPE 4 7032 B S89
 BR INST CAUSED
 OVFLW TO RESET

RN112
 TAD EXAMINATION ROUTINE
 TEST TAD3 FOR 13 REPEAT ROUTINE
 AFTER 100 PROGRAM PASSES
 IF 1 TYPE PASS AND REPEAT
 IF NOT 1 CALL IN NEXT PROGRAM

ONE,PSCNT
 PSCNT,ONHUND
 TESTD3
 RNI
 XTO,PAS-003,M
 ZER3,PSCNT
 RNI,TAD3,1
 BBXXQ,0007
 0008
 XTO,BK1410-031,M

A
 C
 BE
 B
 MCH
 LCA
 BCE
 LCA
 SM
 MCH
 H

INC PASS COUNTER
 CK FOR 100 PASS
 CK FOR EQUAL
 NOT 100 PASSES
 TYPE PASS
 RESET PASS CNTR
 TEST FOR REPEAT
 SET
 RESTART
 TYPE MD SW MESS
 HALT TO SET
 COMPATIBILITY SM
 TO 1410 MODE
 PRESS COMPUTER
 RESET & START

7 7036 A U14 #15
 7 7043 C #15 #12
 5 7050 B SZ S
 4 7055 B K49
 8 7059 M XTO #16 M
 7 7067 L B4S #15
 8 7074 B K49 #03 1
 7 7082 L AOY 007
 4 7089 ; 008
 8 7093 M XTO CST M
 1 7101 .

BBXXQ DCW 2J00400 @
 IN NEXT PROG 7 7108

OPERANDS

SEQ PG LIN LABEL OP

2428 AX 37 JOB 1410/7010-1401 CPU COMPATIBILITY TEST
2429 AX 39
2430 AX 40
2431 AX 41
2432 AX 42
2433 AX 43
2434 AX 44
2435 AX 45
2436 AX 46
2437 AX 47
2438 AX 48
2439 AX 49
2440 AX 50
2441 AX 51
2442 AX 52
2443 AX 53
2444 AX 54
2445 AX 55
2446 AX 56
2447 AX 57
2448 AX 58
2449 AX 59
2450 AX 60
2451 AX 61
2452 AX 62
2453 AX 63
2454 AX 64
2455 AX 65
2456 AX 66
2457 AX 67
2458 AX 68
2459 AX 69
2460 AX 70
2461 AX 71
2462 AX 72
2463 AX 73
2464 AX 74
2465 AX 75
2466 AX 76
2467 AX 77
2468 AX 78
2469 AX 79
2470 AX 80
2471 AX 81
2472 AX 82
2473 AX 83
2474 AX 84
2475 AX 85
2476 AX 86
2477 AX 87

OPERANDS	SFX	CT	LOCN	INSTRUCTION
EURAN1 DCH	0	10	42	
EURAN2 DCM	0	13	7129	
X1SETA DCM	0	3	7132	
X1SETB DCM	0	3	7135	
X1SETC DCM	0	3	7138	
X2SETA DCM	0	3	7141	
X2SETB DCM	0	3	7144	
X2SETC DCM	0	3	7147	
X3SETA DCM	0	3	7150	
X3SETB DCM	0	3	7153	
X3SETC DCM	0	3	7156	
XAN1 DCM	0	3	7159	
XAN2 DCM	0	3	7162	
XAN3 DCM	0	3	7165	
XAN4 DCM	0	3	7168	
XAN5 DCM	0	3	7171	
XAN6 DCM	0	3	7174	
XAN7 DCM	0	3	7177	
XAN8 DCM	0	3	7180	
XAN9 DCM	0	3	7183	
XXAN DCM	0	3	7186	
SHRES DCM	0	6	7192	
EDCN1 DCM	0	13	7205	
EDBF1 DCM	0	8	7213	
EDANI DCM	0	13	7226	
EDFLD DCM	0	13	7239	
ZER3 DCM	0	3	7242	
P642 DCM	0	3	7245	
MANN DCM	0	4	7249	
V720 DCM	0	4	7253	
G640 DCM	0	4	7257	
I100 DCM	0	4	7261	
GRV0 DCM	0	4	7265	
H400 DCM	0	4	7269	
8700 DCM	0	4	7273	
6/V0 DCM	0	4	7277	
-010 DCM	0	4	7281	
N720 DCM	0	4	7281	
TURN ON ALL SENSE SMS PRESS STA0	0	32	7313	
RT0	0	2	7315	
000	0	1	7316	
TURN OFF ALL SENSE SMS PRESS STA0	0	32	7348	
RT0	0	3	7351	
000	0	1	7352	
SET COMPATIBILITY SW TO 1410/7010	0	32	7384	
00 PRESS COMPUTER RESET AND START0	0	32	7416	
000	0	1	7417	

P R O G R A M C O N S T A N T S

0CR .003.450

0CR .50.0
000003400
0CR \$3.450

TURN ON ALL SENSE SMS PRESS STA0
TURN OFF ALL SENSE SMS PRESS STA0
SET COMPATIBILITY SW TO 1410/7010
PRESS COMPUTER RESET AND START0

SFX CT LOCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
2478	AX	88	COMPCK	DCW	@999@	3		7420	
2479	AX	89		DCW	@Z99@	3		7423	
2480	AX	90		DCW	@R99@	3		7426	
2481	AX	91		DCW	@I99@	3		7429	
2482	AX	92		DCW	@99Z@	3		7432	
2483	AX	93		DCW	@Z9Z@	3		7435	
2484	AX	94		DCW	@R9Z@	3		7438	
2485	AX	95		DCW	@I9Z@	3		7441	
2486	AX	96		DCW	@99R@	3		7444	
2487	AX	97		DCW	@Z9R@	3		7447	
2488	AX	98		DCW	@R9R@	3		7450	
2489	AX	99		DCW	@I9R@	3		7453	
2490	AY	00		DCW	@99I@	3		7456	
2491	AY	01		DCW	@Z9I@	3		7459	
2492	AY	02		DCW	@R9I@	3		7462	
2493	AY	03	B88	DCW	@	4		7466	
2494	AY	04	TS1401	DCW	@	1		7467	
2495	AY	05	CK1401	DCW	@	3		7470	
2496	AY	06	MACNAR	DCW	@	12		7482	
2497	AY	07	RSNACN	DCW	@554C21S21234@	12		7494	
2498	AY	08	MODCN	DCW	@123D56K35765@	12		7506	
2499	AY	09	MACNAN	DCW	@556-0XD56999@	12		7518	
2500	AY	10	CMP	DCW	@123@	3		7521	
2501	AY	11		DCW	@D56K3@	5		7526	
2502	AY	12		DCW	@5765@	4		7530	
2503	AY	13	CKSTAB	DCW	@	12		7542	
2504	AY	14	CKKS	DSA	@CKSTAB-003	3		7545	E3Z
2505	AY	15	STABAN	DCW	@549@	3		7548	
2506	AY	16	CHNML	DCW	@	4		7552	
2507	AY	17	CKML	DCW	@4N1@	3		7555	
2508	AY	18	CKMZMN	DCW	@ 2 45 @	6		7561	
2509	AY	19	MZMNAN	DCW	@	6		7567	
2510	AY	20	STK	DCW	@	3		7570	
2511	AY	21	STK8K	DCW	@I9Z@	3		7573	
2512	AY	22	STK16K	DCW	@I9I@	3		7576	
2513	AY	23	CKPER	DCW	@I@	1		7577	
2514	AY	24		DCW	@A@	1		7578	
2515	AY	25	BRBK	B	BKK	4		7579	B E2*
2516	AY	26	SVINST	DCW	@	4		7586	
2517	AY	27	CLCK	DCW	@AA	10		7596	
2518	AY	28		DCW	@A@	3		7599	
2519	AY	29		DCW	@DEF@	3		7602	
2520	AY	30	MVREC	DCW	@GHIJ	6		7608	

2521 AY 32 JOB 1410/7010-1401 CPU COMPATIBILITY TEST
 2522 AY 34 ORG 8000

1410 ROUTINE TO SET UP POST
 RESTART AND TYPE PROG ID

DCW	2D0802800004X2	12	8011
DCW	2000052	6	8017
DCW	2J08029 2	7	8024
DCW	2B-082	4	8028
DCW	2M2T001250M2	10	8038
DCW	2R0802922	7	8045
DCW	2M2T008070M2	10	8055
DCW	2R0804622	7	8062
DCW	2J08112 2	7	8069
DCW	2SET COMPATIBILITY SW TO 1401 PR2	32	8101
DC	2ESS START2	9	8110
DCW	222	1	8111
DCW	2J02007 2	7	8118
DCW	2 2	1	8119

8120

RN070
 EXECUTE MODIFY ADDRESS
 MODIFY A56 BY 54K
 CK FOR F9Q RESULT

NOP	26005	4	8120	N 12Q
SAR	0004	4	8124	Q 004
LCA	EXRESP,88B	7	8128	L 78P D6M
MA	EXAAD,88B	7	8135	# 80P D6M
C	BBB,EXMANN	7	8142	C D6W 82P
BE	NX160A	5	8149	B 15Q S
B	TYP1	4	8154	B S89

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT OF MA
 SHOULD BE F9Q
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT SHOULD BE
 F9Q

NX160A LCA	EXAAD,88B	7	8158	L 80P D6M
MA	EXRESP,88B	7	8165	# 78P D6M
C	BBB,EXMANN	7	8172	C D6W 82P
BE	LODPCK	5	8179	B T62 S
B	TYP1	4	8184	B S89

RN071
 EXECUTE MODIFY ADDRESS
 MODIFY Z53 BY T5D

2523 AY 35
 2524 AY 36
 2525 AY 37
 2526 AY 38
 2527 AY 39
 2528 AY 40
 2529 AY 41
 2530 AY 42
 2531 AY 43
 2532 AY 44
 2533 AY 45
 2534 AY 46
 2535 AY 47
 2536 AY 48
 2537 AY 49
 2538 AY 50
 2539 AY 51
 2540 AY 52
 2541 AY 53
 2542 AY 54
 2543 AY 55
 2544 AY 56
 2545 AY 57
 2546 AY 58
 2547 AY 59
 2548 AY 60
 2549 AY 61
 2550 AY 62
 2551 AY 63
 2552 AY 64
 2553 AY 65
 2554 AY 66
 2555 AY 67
 2556 AY 68
 2557 AY 69
 2558 AY 70
 2559 AY 71
 2560 AY 72
 2561 AY 73
 2562 AY 74
 2563 AY 75
 2564 AY 76
 2565 AY 77
 2566 AY 78
 2567 AY 79
 2568 AY 80
 2569 AY 81
 2570 AY 82

SFX CT LCN INSTRUCTION

SEQ PG LIN LABEL OP OPERANDS

2571 AY 83 CK FOR COG RESULT
 2572 AY 84 *6005
 2573 AY 85 0004
 2574 AY 86 EXRESP&004,888
 2575 AY 87 EXAAD&004,888
 2576 AY 88 888,EXMANNE004
 2577 AY 89 NX260A
 2578 AY 90 TYPI
 2579 AY 91 B
 2580 AY 92
 2581 AY 93
 2582 AY 94
 2583 AY 95
 2584 AY 96
 2585 AY 97
 2586 AY 98
 2587 AY 99
 2588 AZ 00
 2589 AZ 01
 2590 AZ 02
 2591 AZ 03
 2592 AZ 04
 2593 AZ 05
 2594 AZ 06
 2595 AZ 07
 2596 AZ 08
 2597 AZ 09
 2598 AZ 10
 2599 AZ 11
 2600 AZ 12
 2601 AZ 13
 2602 AZ 14
 2603 AZ 15
 2604 AZ 16
 2605 AZ 17
 2606 AZ 18
 2607 AZ 19
 2608 AZ 20
 2609 AZ 21
 2610 AZ 22
 2611 AZ 23
 2612 AZ 24
 2613 AZ 25
 2614 AZ 26
 2615 AZ 27
 2616 AZ 28
 2617 AZ 29
 2618 AZ 30
 2619 AZ 31
 2620 AZ 32

SET ROUT. START
 ADDR IN LOC 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT OF MA
 SHOULD BE COG
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT SHOULD BE
 COG

4 8188 N 190
 4 8192 Q 004
 7 8196 L 79J D6M
 7 8203 # 81J D6M
 7 8210 C D6M 83J
 5 8217 B 220 S
 4 8222 B S89
 7 8226 L 81J D6M
 7 8233 # 79J D6M
 7 8240 C D6M 83J
 5 8247 B T62 S
 4 8252 B S89

RN072
 EXECUTE MODIFY ADDRESS
 MODIFY 3DX BY 6EM
 CK FOR #&L RESULT

2604 AZ 16
 2605 AZ 17
 2606 AZ 18
 2607 AZ 19
 2608 AZ 20
 2609 AZ 21
 2610 AZ 22
 2611 AZ 23
 2612 AZ 24
 2613 AZ 25
 2614 AZ 26
 2615 AZ 27
 2616 AZ 28
 2617 AZ 29
 2618 AZ 30
 2619 AZ 31
 2620 AZ 32

SET ROUT. START
 ADDR IN LOC. 2-4
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT OF MA
 SHOULD BE #&L
 RESTORE B FIELD
 MODIFY ADDRESS
 CK RESULT
 CK FOR EQUAL
 ERR CK FOR TYPE
 RESULT SHOULD BE
 #&L

4 8256 N 26M
 4 8260 Q 004
 7 8264 L 79N D6M
 7 8271 # 81M D6M
 7 8278 C D6M 83N
 5 8285 B 29M S
 4 8290 B S89
 7 8294 L 81N D6M
 7 8301 # 79N D6M
 7 8308 C D6M 83N
 5 8315 B T62 S
 4 8320 B S89

RN073
 EXECUTE MODIFY ADDRESS
 MODIFY 33N BY 41Y
 CK FOR W5C RESULT

4 8324 N 33K
 4 8328 Q 004

SET ROUT. START
 ADDR IN LOC. 2-4

NOP *6005
 SAR 0004

NOP *6005
 SAR 0004

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

```

2621 AZ 33 LCA EXRESPE012,888 RESTORE B FIELD
2622 AZ 34 MA EXAAD012,888 MODIFY ADDRESS
2623 AZ 35 C 888,EXMANN012 CK RESULT
2624 AZ 36 BE NX460A CK FOR EQUAL
2625 AZ 37 B TYP1 ERR CK FOR TYPE
2626 AZ 38 RESULT OF MA
2627 AZ 39 SHOULD BE W5C
2628 AZ 40 NX460A LCA EXAAD012,888 RESTORE B FIELD
2629 AZ 41 MA EXRESPE012,888 MODIFY ADDRESS
2630 AZ 42 C 888,EXMANN012 CK RESULT
2631 AZ 43 BE LOOPCK CK FOR EQUAL
2632 AZ 44 B TYP1 ERR CK FOR TYPE
2633 AZ 45 RESULT SHOULD BE
2634 AZ 46 W5C
2635 AZ 47
2636 AZ 48
2637 AZ 49
2638 AZ 50
2639 AZ 51
2640 AZ 52
2641 AZ 53
2642 AZ 54
2643 AZ 55
2644 AZ 56
2645 AZ 57
2646 AZ 58
2647 AZ 59
2648 AZ 60
2649 AZ 61
2650 AZ 62
2651 AZ 63
2652 AZ 64
2653 AZ 65
2654 AZ 66
2655 AZ 67
2656 AZ 68
2657 AZ 69
2658 AZ 70
2659 AZ 71
2660 AZ 72
2661 AZ 73
    
```

RN074
EXECUTE MODIFY ADDRESS
MODIFY A2C BY S45
CK FOR 368 RESULT

```

2641 AZ 53 NOP *005 SET ROUT. START
2642 AZ 54 SAR 0004 ADDR IN LOC. 2-4
2643 AZ 55 LCA EXRESPE016,888 RESTORE B FIELD
2644 AZ 56 MA EXAAD016,888 MODIFY ADDRESS
2645 AZ 57 C 888,EXMANN016 CK RESULT
2646 AZ 58 BE NX560A CK FOR EQUAL
2647 AZ 59 B TYP1 ERR CK FOR TYPE
2648 AZ 60 RESULT OF MA
2649 AZ 61 SHOULD BE 368
2650 AZ 62 NX560A LCA EXAAD016,888 RESTORE B FIELD
2651 AZ 63 MA EXRESPE016,888 MODIFY ADDRESS
2652 AZ 64 C 888,EXMANN016 CK RESULT
2653 AZ 65 BE LOOPCK CK FOR LOOP
2654 AZ 66 B TYP1 ERR CK FOR TYPE
2655 AZ 67 RESULT SHOULD BE
2656 AZ 68
2657 AZ 69
2658 AZ 70
2659 AZ 71
2660 AZ 72
2661 AZ 73
    
```

GO TO ROUTINE 75

4 8460 B T8+
1 8464 .

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

2662 AZ 75 JOB 1410/7010-1401 CPU COMPATIBILITY TEST 8500

2663 AZ 77
 2664 AZ 78
 2665 AZ 79
 2666 AZ 80
 2667 AZ 81
 2668 AZ 82
 2669 AZ 83
 2670 AZ 84
 2671 AZ 85
 2672 AZ 86
 2673 AZ 87
 2674 AZ 88
 2675 AZ 89
 2676 AZ 90
 2677 AZ 91
 2678 AZ 92
 2679 AZ 93
 2680 AZ 94
 2681 AZ 95
 2682 AZ 96
 2683 AZ 97
 2684 AZ 98
 2685 AZ 99
 2686 BA 00
 2687 BA 01
 2688 BA 02
 2689 BA 03
 2690 BA 04
 2691 BA 05
 2692 BA 06
 2693 BA 07
 2694 BA 08
 2695 BA 09
 2696 BA 10
 2697 BA 11
 2698 BA 12
 2699 BA 13
 2700 BA 14
 2701 BA 15
 2702 BA 16
 2703 BA 17
 2704 BA 18
 2705 BA 19
 2706 BA 20
 2707 BA 21
 2708 BA 22
 2709 BA 23
 2710 BA 24
 2711 BA 25

ORG
 *E005
 0004
 8000,TS1401
 CK1401
 CK1401,COMPCKE021
 LOOPCK
 TYPI
 NOP
 SAR
 MCH
 SAR
 C
 BE
 B

EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO 19Z
 SET ROUT. START
 ADDR IN LOC. 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 19Z

4 8500 N 50Q
 4 8504 Q 004
 7 8508 M 00- D6X
 4 8515 Q D7#
 7 8519 C D7# D4/
 5 8526 B T62 S
 4 8531 B S89

RN082
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO 99R

*E005
 0004
 9000,TS1401
 CK1401
 CK1401,COMPCKE024
 LOOPCK
 TYPI
 NOP
 SAR
 MCH
 SAR
 C
 BE
 B

EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO 99R
 SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 99R

4 8535 N 54L
 4 8539 Q 004
 7 8543 M #0- D6X
 4 8550 Q D7#
 7 8554 C D7# D4U
 5 8561 B T62 S
 4 8566 B S89

RN084
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO Z9R

*E005
 0004
 10000,TS1401
 CK1401
 CK1401,COMPCKE027
 LOOPCK
 TYPI
 NOP
 SAR
 MCH
 SAR
 C
 BE
 B

EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO Z9R
 SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 Z9R

4 8570 N 57Q
 4 8574 Q 004
 7 8578 M -0- D6X
 4 8585 Q D7#
 7 8589 C D7# D4X
 5 8596 B T62 S
 4 8601 B S89

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

2712 BA 26
 2713 BA 27
 2714 BA 28
 2715 BA 29
 2716 BA 30
 2717 BA 31
 2718 BA 32
 2719 BA 33
 2720 BA 34
 2721 BA 35
 2722 BA 36
 2723 BA 37
 2724 BA 38
 2725 BA 39
 2726 BA 40
 2727 BA 41
 2728 BA 42
 2729 BA 43
 2730 BA 44
 2731 BA 45
 2732 BA 46
 2733 BA 47
 2734 BA 48
 2735 BA 49
 2736 BA 50
 2737 BA 51
 2738 BA 52
 2739 BA 53
 2740 BA 54
 2741 BA 55
 2742 BA 56
 2743 BA 57
 2744 BA 58
 2745 BA 59
 2746 BA 60
 2747 BA 61
 2748 BA 62
 2749 BA 63
 2750 BA 64
 2751 BA 65
 2752 BA 66
 2753 BA 67
 2754 BA 68
 2755 BA 69
 2756 BA 70
 2757 BA 71
 2758 BA 72
 2759 BA 73
 2760 BA 74
 2761 BA 75

STORED
 ADD SHOULD BE
 Z9R

RN085
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO R9R

*E005
 0004
 11000,TS1401
 CK1401
 CK1401,COMPCK&030
 LOOPCK
 TYPI

NOP
 SAR
 MCW
 SAR
 C
 BE
 B

4 8605 N 61L
 4 8609 Q 004
 7 8613 M E0- D6X
 4 8620 Q D7# D5#
 7 8624 C D7# D5#
 5 8631 B T62 S
 4 8636 B 589

SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 R9R

2738 BA 52
 2739 BA 53
 2740 BA 54
 2741 BA 55
 2742 BA 56
 2743 BA 57
 2744 BA 58
 2745 BA 59
 2746 BA 60
 2747 BA 61
 2748 BA 62
 2749 BA 63
 2750 BA 64
 2751 BA 65
 2752 BA 66
 2753 BA 67
 2754 BA 68
 2755 BA 69
 2756 BA 70
 2757 BA 71
 2758 BA 72
 2759 BA 73
 2760 BA 74
 2761 BA 75

STORED
 ADD SHOULD BE
 Z9R

RN086
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO I9R

*E005
 0004
 12000,TS1401
 CK1401
 CK1401,COMPCK&033
 LOOPCK
 TYPI

NOP
 SAR
 MCW
 SAR
 C
 BE
 B

4 8640 N 64Q
 4 8644 Q 004
 7 8648 M 00E D6X
 4 8655 Q D7# D5T
 7 8659 C D7# D5T
 5 8666 B T62 S
 4 8671 B 589

SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL
 ERR CK FOR TYPE
 STORED
 ADD SHOULD BE
 I9R

2754 BA 68
 2755 BA 69
 2756 BA 70
 2757 BA 71
 2758 BA 72
 2759 BA 73
 2760 BA 74
 2761 BA 75

STORED
 ADD SHOULD BE
 Z9R

RN087
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO 99I

*E005
 0004
 13000,TS1401
 CK1401
 CK1401,COMPCK&036
 LOOPCK

NOP
 SAR
 MCW
 SAR
 C
 BE

4 8675 N 68L
 4 8679 Q 004
 7 8683 M #0E D6X
 4 8690 Q D7# D5M
 7 8694 C D7# D5M
 5 8701 B T62 S

SET ROUT. START
 ADDR IN LOC 2-4
 EXECUTE MOVE
 STORE A ADDRESS
 CK ADDRESS
 CK FOR EQUAL

SEQ PG LFN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

2762 BA 76 B TYP1 ERR CK FOR TYPE 4 8706 B S89
 2763 BA 77 STORED
 2764 BA 78 ADD SHOULD BE
 2765 BA 79 991

RN088
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO Z91

NOP *E005 SET ROUT. START N 710
 SAR 0004 ADDR IN LOC 2-4 Q 004
 MCH 14000,TS1401 EXECUTE MOVE M 0E D6X
 SAR CK1401 STORE A ADDRESS Q D7# D5Z
 C CK1401,COMPCKE039 CK ADDRESS C D7# D6S
 BE LOOPCK CK FOR EQUAL B T62 S
 B TYP1 ERR CK FOR TYPE B S89
 STORED
 ADD SHOULD BE
 Z91

RN089
 EXECUTE 1 CHAR MOVE OPERATION
 STORE A ADDRESS AND
 COMPARE STORED ADDRESS TO R91

NOP *E005 SET ROUT. START N 75L
 SAR 0004 ADDR IN LOC 2-4 Q 004
 MCH 15000,TS1401 EXECUTE MOVE M 0E D6X
 SAR CK1401 STORE A ADDRESS Q D7#
 C CK1401,COMPCKE042 CK ADDRESS C D7# D6S
 BE LOOPCK CK FOR EQUAL B T62 S
 B TYP1 ERR CK FOR TYPE B S89
 STORED
 ADD SHOULD BE
 R91

GO TO ROUT 90 4 8780 B W3X

PROGRAM CONSTANTS

EXRESP DCM 2 A56B 4 8787
 DCM 2 Z532 4 8791
 DCM 2 3DX2 4 8795
 DCM 2 S3N2 4 8799
 DCM 2 AZC2 4 8803
 EXAAD DCM 2 54KB 4 8807

1410/7010-1401 CPU COMPATIBILITY TEST

SEQ PG LIN LABEL OP OPERANDS SFX CT LOCN INSTRUCTION

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION
2812	88	26		DCW	3 T5D3	4		8811	
2813	88	27		DCW	3 6EW3	4		8815	
2814	88	28		DCW	3 41Y3	4		8819	
2815	88	29		DCW	3 S453	4		8823	
2816	88	30		DCW	3 F9Q3	4		8827	
2817	88	31	EXMANN	DCW	3 C0G3	4		8831	
2818	88	32		DCW	3 +EL3	4		8835	
2819	88	33		DCW	3 W5C3	4		8839	
2820	88	34		DCW	3 3683	4		8843	
2821	88	35		END	START				

/ -00 080

