

XDS 901678A

\$8.25

DIAGNOSTIC PROGRAM MANUAL

**SIGMA 5 AND 7
COMPREHENSIVE RAD TEST**

PROGRAM NO. 705730A

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XDS 901678

SECTION I
PROGRAM LISTING

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1								SIGMA 5/7 COMPREHENSIVE RAD TEST 705730-11/51A00
2								TITLE 'SIGMA 5/7 COMPREHENSIVE RAD TEST 705730-11/51A00 DEC 19, 1969'
3								*
4								*
5		C1 00300				SYSTEM	SIG7FDP	
		C1 00300				ARG	X'300'	
6								*
7								* CATALOG NO. 705730 MANUAL NO. 901678
8								*
9								*
10								* PROGRAM OBJECTIVE
11								* ----- THE PROGRAM PROVIDES A COMPREHENSIVE SET OF TESTS
12								* DESIGNED TO DETECT SOLID LOGIC FAILURES AND TO ISOLATE FAILURES
13								* TO A SPECIFIC FUNCTION. THE PROGRAM ALSO EXERCISES THE CONTROLLER
14								* AND STORAGE UNITS UNDER CONDITIONS SIMILAR TO ACTUAL OPERATION
15								* UNDER STANDARD SOFTWARE. A UTILITY TEST PROVIDES ADDITION CAPABILITY
16								* FOR TESTING THE SURFACE OF STORAGE UNITS.
17								*
18								*
19								* PROGRAM MODIFICATIONS
20								* -----NONE
21								*
22								* OPERATING REQUIREMENTS AND SPECIFICATIONS
23								* -----
24								*
25								* REQUIRED EQUIPMENT
26								* SIGMA 5/7 WITH 12K MINIMUM MEMORY.
27								* CARD-READER, PAPER-TAPE READER, OR MAGNETIC TAPE
28								* UNIT FOR PROGRAM INPUT.
29								* A KEYBOARD PRINTER OR LINE PRINTER FOR MESSAGE
30								* OUTPUT.
31								*
32								* OPTIONAL EQUIPMENT
33								* -----NONE
34								*
35								* PROGRAM PREREQUISITES
36								* -----NONE
37								*
38								*
39								*
40								* RUN TIME
41								* FUNCTIONAL TESTS: 4.0 -5.0 MINUTES FOR ONE SUCCESSFUL
42								* PASS ON ONE DEVICE.
43								*
44								* RANDOM EXERCISER: RUN TIME IS A FUNCTION OF THE
45								* NUMBER OF DEVICES, SURFACE AREA
46								* BEING TESTED, MEMORY SIZE, NUMBER OF
47								* I/O CYCLE REQUIRED AND WHETHER THE
48								* COMPUTER IS A SIGMA 5 OR 7.
49								* UTILITY TEST: 0.2 - 0.6 MINUTES PER WRITE OR READ
50								* PASS PER STORAGE UNIT, DEPENDING
51								* ON MODEL NO., MEMORY SIZE,
52								* SURFACE AREA BEING TESTED, AND
53								* WHETHER THE COMPUTER IS A
54								* SIGMA 5 OR 7.
55								*
56								* PROGRAM MEDIA
57								* 80-COLUMN CARDS, 8 LEVEL PAPER TAPE OR MAGNETIC
58								* TAPE.
59								*
60								* SOURCE LANGUAGE
61								*
62								* SIGMA 5/7 METASYMBOL
63								*
64								* LOADING PROCEDURES
65								* -----
66								* LOADING PROCEDURES IS DEFINED IN DIAGNOSTIC
67								* PROGRAM MONITOR MANUAL NO. 901649.
68								* A SUCCESSFUL LOAD OPERATION IS INDICATED BY:
69								* (1). PRINTOUT AN OPTIONAL MESSAGE OUTPUT DEVICE
70								* SIGMA 5/7 COMPREHENSIVE
71								* RAPID ACCESS (RAD) FILE TEST

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
72							PROGRAM 705730	
73					*			
74					*	OPERATING PROCEDURES		
75					*	-----		
76					*			
77					*	CONTROL OPTIONS		
78					*			
79					*		PROGRAM CONTROL OPTIONS ARE SELECTED WITH THE	
80					*		PROCESSOR CONTROL PANEL SENSE SWITCHES 1,3,4	
81					*		(SENSE SWITCH 2 IS UNUSED)	
82					*			
83					*	SSW1	SSW3	
84					*	POSITION	POSITION	OPTION
85					*	0 OR 1	0	THE PROGRAM COMES TO A WAIT AFTER FUNCTIONAL ERROR
86					*			PRINTOUT(S) AND AFTER COMPLETION OF THE SELECTED
87					*			TEST. CLEARING THE WAIT CAUSES PROGRAM LOOPING ON
88					*			THE ERROR OR THE SELECTED TEST.
89					*			INCREMENTING THE PROGRAM ADDRESS (PCP INSTRUCTION
90					*			ADDRESS INCREMENT) BEFORE CLEARING THE WAIT CAUSES
91					*			THE PROGRAM TO CONTINUE WITHOUT LOOPING.
92					*			
93					*	0	1	THE PROGRAM CONTINUES WITHOUT WAIT AND WITHOUT
94					*			FUNCTIONAL ERROR/TEST LOOPING.
95					*			
96					*	1	1	THE PROGRAM PRINTS THE ERROR MESSAGE(S) AND LOOPS
97					*			(WITHOUT WAITING) ON THE FUNCTIONAL ERROR-PRODUCING
98					*			INSTRUCTION SEQUENCE. THE PROGRAM ALSO LOOPS
99					*			(WITHOUT WAIT) ON SELECTED TESTS.
100					*			
101					*			
102					*	SSW4		
103					*	POSITION		
104					*	0		THE PROGRAM PRINTS ALL MESSAGES
105					*			
106					*	1		THE PROGRAM INHIBITS ALL MESSAGE PRINTOUTS.
107					*			DPH MESSAGES CANNOT BE SUPPRESSED.
108					*			
109					*	TABLE OF DIRECTIVES		
110					*			
111					*			THE DATA STATEMENT ASSOCIATED WITH EACH DIRECTIVE NAME PRODUCES A
112					*			MEMORY ADDRESS IN THE MEMORY-CONTENTS-COLUMN WHICH CAN BE USED TO
113					*			LOCATE THE PROGRAM CODING FOR THE DIRECTIVE. THE CODING FOR EACH
114					*			DIRECTIVE IS PRECEDED BY A DESCRIPTION OF THE DIRECTIVES AND ITS
115					*			PARAMETERS.
116					*			
117					*	MNEMONIC	DESCRIPTION	PARAMETER
118					*			FORMAT
119					*			
120					*	SYST	THE DIRECTIVE DESCRIBES SYSTEM ENVIRONMENT.	SYST,D1,
121					*			D2,H3,H4,
122					*			D5,----H27
123					*			
124					*			
125					*			
126					*			
127					*			
128					*			
129					*			
130					*			
131					*			
132					*			
133					*			
134					*			
135					*			
136					*			
137					*			
138					*			
139					*			
140					*			
141					*			
142					*			

TYPE IN

SYST, 7201, 0, 0, 0F0, 7203, 0

545, 7201, 0, 0, 0F0,

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
143				*				<p>PROTECTED BY THE WRITE PROTECT SWITCH ARE PROGRAM PROTECTED. EXAMPLES OF WRITE PROTECTION -----</p> <p>(1). H4 = 0F0 DEV ADDR OF RAD D5 = 7204 MODEL NO. OF RAD STORAGE UNIT H6 = 00030012 THIS INDICATES THAT TRACKS 0 THRU 95 AND TRACKS 352 THRU 511 WILL NOT BE TESTED BECAUSE TO THE PROGRAM THIS AREA IS ASSUMED TO BE WRITE PROTECTED.</p> <p>(2). H7 = 0F4 DEV ADDR OF RAD D8 = 7202 MODEL NO. OF RAD STORAGE UNIT H9 = 00040000 THIS INDICATES THAT ALL TRACKS ARE PROTECTED. SINCE A MODEL 7202 HAS ONLY 128, NO TESTING COULD TAKE PLACE, THEREFORE D9 IS AN INVALID PARAMETER, AND IT WILL BE REPORTED AS SUCH.</p> <p>H7 DEVICE ADDRESS OF SECOND RAD</p> <p>*</p> <p>*</p> <p>*</p> <p>H27 WRITE PROTECT SWITCH SETTINGS OF 8 TH STORAGE UNIT</p> <p>NO ATTEMPT WILL BE MADE TO READ/WRITE INTO WRITE PROTECTED AREA OF THE RAD'S, WHENEVER THE PROTECTED TRACKS ARE SPECIFIED BY H6, H9...H27.</p> <p>THE TEST VARIATION DIRECTIVE (SEEK) CAN ONLY FURTHER LIMIT THE AREA OF THE RAD STORAGE UNIT WHICH IS NOT WRITE PROTECTED.</p>
144				*				
145				*				
146				*				
147				*				
148				*				
149				*				
150				*				
151				*				
152				*				
153				*				
154				*				
155				*				
156				*				
157				*				
158				*				
159				*				
160				*				
161				*				
162				*				
163				*				
164				*				
165				*				
166				*				
167				*				
168				*				
169				*				
170				*				
171				*				
172				*				
173				*				
174				*				
175				*				
176				*				
177				*				
178				*				
179				*				
180				*				
181				*				
182				*				
183				*				
184				*				
185				*				
186	01 00300		00000405	*	TSTOADDR DATA	TSTO		
187				*				THE DIRECTIVE SELECTS THE COMPREHENSIVE TEST
188				*				CONSISTING OF THE FUNCTIONAL TEST (TESTS 0 - 49)
189				*				AND THE RANDOM EXERCISER.
190				*				
191				*				D1 = NUMBER OF ORDER SEQUENCES TO BE EXECUTED
192				*				BY THE RANDOM EXERCISER. (IF D1 = 0, 5000
193				*				ORDER SEQUENCES WILL BE ISSUED).
194				*				
195				*				D2 = RETRY COUNT FOR RANDOM EXERCISER.
196				*				
197				*				EXAMPLE: TSTO,20000,2
198				*				-----
199				*				
200				*				(1) THE FUNCTIONAL TEST WILL RUN
201				*				ON ALL DEVICES IN SEQUENCES
202				*				AS DESCRIBED BY 'SYST' DIRECTIVE.
203				*				
204				*				(2) THE RANDOM EXERCISER WILL DRIVE
205				*				ALL DEVICES CONCURRENTLY UNTIL
206				*				20000 ORDER SEQUENCES HAVE BEEN ISSUED,
207				*				ANY FAILURE WILL BE RETRIED TWICE,
208				*				
209				*				
210	01 00301		00000417	*	TST1ADDR DATA	TST1		
211				*				THE DIRECTIVE SELECTS THE FUNCTIONAL TEST
212				*				TST1,D1,
213				*				D2
				*				D1 = 0 ALL FUNCTIONAL SUB-TESTS ARE EXECUTED

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
214				*			D1 > 0	THE NO. OF THE FIRST SUBTEST TO BE EXECUTED.
215				*				
216				*				
217				*			D2 > 0	THE NO. OF THE LAST SUBTEST TO BE EXECUTED.
218				*				
219				*				
220				*			EXAMPLES: TST1	
221				*			-----	
222				*				RUN ALL FUNCTIONAL SUBTESTS ON ALL DEVICES DESCRIBED BY THE 'ISYST' DIRECTIVE.
223				*				
224				*			TST1,40,45	
225				*				
226				*				RUN FUNCTIONAL SUBTESTS 40 THRU 45 ON ALL DEVICES DESCRIBED BY THE 'ISYST' DIRECTIVE.
227				*				
228				*				
229				*				
230				*				
231	01	00302	000013F3	*	TST2ADDR DATA	TST2		
232				*				THE DIRECTIVE SELECTS THE RANDOM EXERCISER TEST TST2,D1, D2
233				*				
234				*			D1 =	NUMBER OF CYCLES TO BE PERFORMED
235				*			D2 =	NUMBER OF RETRIES ON AN ERROR, BEFORE GOING ON TO NEXT CYCLE.
236				*				
237				*			EXAMPLE: TST2,500,2	
238				*			-----	
239				*				THE RANDOM EXERCISER WILL DO CONCURRENTLY 500 I/O OPERATIONS RANDOM TO THE DEVICES DESCRIBED BY THE 'ISYST' DIRECTIVE. IF ANY I/O OPERATION FAILS IT WILL BE RETRIED UP TO THREE TIMES.
240				*				
241				*				
242				*				
243				*				
244				*				
245				*				
246	01	00303	00001538	*	TST3ADDR DATA	TST3		
247				*				THE DIRECTIVE SELECTS ONE UTILITY PROGRAM TST3,D1, D2,D3
248				*			D1 = 1	SURFACE TEST
249				*				
250				*			D2 = 0	WRITE AND READ (VERIFY DATA)
251				*			D2 = 1	WRITE ONLY
252				*			D2 = 2	READ ONLY (VERIFY DATA)
253				*			D2 = 3	READ ONLY (NO DATA VERIFICATION)
254				*			D2 = 4	CHECKWRITE
255				*			D3 =	NUMBER OF RETRIES ON AN ERROR
256				*				
257				*			EXAMPLE: TST3,1,3,0	
258				*			-----	
259				*				READ ALL THE SURFACE OF ALL UNITS DESCRIBED BY THE 'ISYST' DIRECTIVE, NO RETRY ON ERROR. THIS TEST IS VERY USEFUL IN CHECKING FOR TRANSMISSION ERRORS FROM A RAD THAT HAS CRASHED. BEFORE THE DATA STORED THERE IS DESTROYED BY THE RUNNING OF OTHER DIRECTIVES IN THIS PROGRAM.
260				*				
261				*				
262				*				
263				*				
264				*				
265				*				
266				*				
267				*				
268				*			EXAMPLE: TST3,1,0,3	
269				*			-----	
270				*				TEST THE SURFACE OF ALL UNITS DESCRIBED BY THE 'ISYST' DIRECTIVE, BY FIRST WRITING AND THEN READING A PATTERN FOR THE UNITS. RETRY WRITE OR READ OPERATION OR ERROR UP TO THREE TIMES.
271				*				
272				*				
273				*				
274				*				
275				*				
276	01	00304	00001326	*	DATAADDR DATA	IDATA (DATA)		
277				*				THE DIRECTIVE SELECTS THE PATTERN TYPE USED BY DATA,D1, D2,H3
278				*				THE RAD UTILITY PROGRAM.
279				*				
280				*			D1 = 0	FIXED PATTERN
281				*			D1 = 1	INCREMENTAL PATTERN
282				*			D1 = 2	RANDOM PATTERN
283				*			D1 = 3	CURRENT SEEK ADDRESS
284				*			H2 =	PATTERN SEED (D1 = 0,1,2)

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
285				*		H3	INCREMENTING CONSTANT (D1 = 1 ONLY)	
286				*				
287				*		EXAMPLE: DATA,2		
288				*		-----		
289				*		GENERATE RANDOM PATTERN		
290				*				
291				*		DATA,1,00010203,04040404		
292				*				
293				*		GENERATE INCREMENTAL PATTERN		
294				*		OF 100C102030405060708....FCFDFF...		
295				*				
296				*				
297	01 00305	00001339		*	SEEKADD DATA	SEEK		
298				*		THE DIRECTIVE DEFINES THE STARTING TRACK AND	SEFK,D1,	
299				*		SECTOR ADDRESS, THE ENDING TRACK SECTOR ADDRESS.	D2,D3,D4	
300				*				
301				*		D1 =	THE STARTING TRACK ADDRESS	
302				*		D2 =	THE STARTING SECTOR ADDRESS	
303				*		D3 =	THE ENDING TRACK ADDRESS	
304				*		D4 =	THE ENDING SECTOR ADDRESS	
305				*				
306				*		EXAMPLE: SEEK,1,4,7,5		
307				*				
308				*		LIMIT THE USABLE SURFACE AREA, TO		
309				*		BEGAN AT TRACK (BAND) 1 SECTOR 4 AND		
310				*		END INCLUDING TRACK (BAND) 7 SECTOR 5.		
311				*				
312	01 00306	00001372		*	RSETADDR DATA	RSET		
313				*		THE DIRECTIVE INSTRUCTS THE PROGRAM TO ISSUE	RSET	
314				*		AN I/O RESET DURING EACH WATCHDOG TIMER TRAP		
315				*		RECOVERY.		
316				*				
317				*		EXAMPLE: RSET		
318				*		-----		
319				*		INFORMS THE PROGRAM THAT THE I/O RESET		
320				*		JUMPER IS INSTALLED IN THE CPU.		
321				*				
322				*		FIGURE 1		
323				*				
324				*		WRITE PROTECTION		
325				*		MODELS 7202,7203,7204 AND 7232 ONLY		
326				*		PARAMETER FOR SYST DIRECTIVE		
327				*		(H6,H9,H12,H15,H18,H21,H24,H27 = 00D1D200D3D4)		
328				*		-----		
329				*		D 1 D 2	D 3 D 4	
330				*		-----	-----	
331				*		*LOW LIMIT	* THE FOLLOWING*	* TRACK *UPPER LIMIT
332				*		*WRITE PROTECT	* LOW LIMIT	* AVAILABLE*WRITE PROTECT
333				*		*SWITCH SPEC	* TRACKS ARE	* (MODEL) *SWITCH SPEC
334				*		* PROTECTED	* PROTECTED	* TRACKS ARE
335				*		* PROTECTED	* PROTECTED	* PROTECTED
336				*		* 0	* NONE	* 0
337				*		* 1	* 0-31	* 1
338				*		* 2	* 0-63	* 2
339				*		* 3	* 0-95	* 3
340				*		* 4	* 0-127	* 4
341				*		* 5	* 0-159	* 5
342				*		* 6	* 0-191	* 6
343				*		* 7	* 0-223	* 7
344				*		* 8	* 0-255	* 8
345				*		* 9	* 0-287	* 9
346				*		* 10	* 0-319	* 10
347				*		* 11	* 0-351	* 11
348				*		* 12	* 0-383	* 12
349				*		* 13	* 0-415	* 13
350				*		* 14	* 0-447	* 14
351				*		* 15	* 0-479	* 15
352				*		* 16	* 0-511	* 16
353				*		-----	-----	-----
354				*		FIGURE 2		
355				*		WRITE PROTECTION		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
366					*			MODEL 7212 ONLY
367					*			PARAMETER FOR SYST DIRECTIVE
368					*			(H6,H9,H12,H15,H18,H21,H24,H27 = 00D1D200D3D4)
369					*			D 1 D 2 * * D 3 D 4 *
360					*			-----*
361					*			*LOW LIMIT * THE FOLLOWING* BAND *UPPER LIMIT *THE FOLLOWING*
362					*			*WRITE PROTECT * LOW LIMIT *AVAILABLE*WRITE PROTECT *UPPER LIMIT*
363					*			*SWITCH SPEC * BANDS ARE * (MODEL) *SWITCH SPEC *BANDS ARE*
364					*			* * PROTECTED * * *PROTECTED*
365					*			-----*
366					*			* 0 * NONE * 7 * 0 * NONE *
367					*			* 1 * 0-3 * 2 * 1 * ALL *
368					*			* 2 * 0-7 * 1 * 2 * 4-63 *
369					*			* 3 * 0-11 * 2 * 3 * 8-63 *
370					*			* 4 * 0-15 * * 4 * 12-63 *
371					*			* 5 * 0-19 * * 5 * 16-63 *
372					*			* 6 * 0-23 * * 6 * 20-63 *
373					*			* 7 * 0-27 * * 7 * 24-63 *
374					*			* 8 * 0-31 * * 8 * 28-63 *
375					*			* 9 * 0-35 * * 9 * 32-63 *
376					*			* 10 * 0-39 * * 10 * 36-63 *
377					*			* 11 * 0-43 * * 11 * 40-63 *
378					*			* 12 * 0-47 * * 12 * 44-63 *
379					*			* 13 * 0-51 * * 13 * 48-63 *
380					*			* 14 * 0-55 * * 14 * 52-63 *
381					*			* 15 * 0-59 * * 15 * 56-63 *
382					*			* 16 * 0-63 * * 16 * 60-63 *
383					*			-----*
384					*			* OPERATION MODE
385					*			-----*
386					*			* PROGRAM-OPERATOR COMMUNICATION IS ACCOMPLISHED BY
387					*			USING THE INPUT/OUTPUT DEVICE SPECIFIED BY
388					*			THE OPERATOR.
389					*			* DIRECTIVES ARE ENTERED AND TEST INITIATED
390					*			THRU THE MESSAGE INPUT DEVICE (MID).
391					*			* THE PROGRAM OUTPUTS MESSAGES THRU THE MESSAGE
392					*			OUTPUT DEVICE (MOD).
393					*			* (REFER TO DIAGNOSTIC PROGRAM MONITOR MANUAL 901649
394					*			FOR DESCRIPTION OF DIRECTIVES 'MID' AND 'MOD').
395					*			* START-RESTART PROCEDURE
396					*			-----*
397					*			* START AFTER A SUCCESS LOAD, THE PROGRAM TITLE WILL BE
398					*			DISPLAY ON THE MESSAGE OUTPUT DEVICE AND THEN
399					*			CONTROL WILL BE RETURNED TO THE DPM. DIRECTIVES
400					*			MAYBE INITIATED BY ENTERING THEM VIA THE MESSAGE INPUT
401					*			DEVICE (REFER TO DPM MANUAL FOR INITIATING PROCEDURE).
402					*			IF THE SYSTEM IS ANY OTHER CONFIGURATION THEN)
403					*			A MODEL 7201 CONTROLLER WITH A 7202 STORAGE UNIT
404					*			AND AT DEVICE ADDRESS X'0F0' THE 'SYST' DIRECTIVE
405					*			MUST BE ENTERED INITIALLY, TO DESCRIBE THE
406					*			HARDWARE CONFIGURATION TO BE TESTED.
407					*			ONCE ENTERED, THE 'SYST'DIRECTIVE NEED NOT BE REENTERED.
408					*			UNTIL THE SYSTEM CONFIGURATION TO BE TESTED IS ALTERED.
409					*			* RESTART
410					*			-----*
411					*			* RESTART OR RECOVERLY MAY BE ACCOMPLISHED THE FOLLOWING PROCEDURE:
412					*			1. PRESSING THE CTRL' PANEL INTERRUPT SWITCH.
413					*			(EXCEPT IN THE CASE OF A WATCH DOG TIMER TRAP)
414					*			
415					*			
416					*			
417					*			
418					*			
419					*			
420					*			
421					*			
422					*			
423					*			
424					*			
425					*			
426					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
427					*			2. A. PLACING THE COMPUTE SWITCH ON THE PCP TO 'IDLE'
428					*			B. PRESS THE 'SYST RESET' SWITCH ON THE PCP
429					*			C. PLACING THE COMPUTE SWITCH ON THE PCP TO 'RUN'
430					*			
431					*			TERMINATION INDICATION
432					*			
433					*			THE TERMINATION OF A DIRECTIVE IS INDICATED WHEN
434					*			CONTROL IS RETURNED TO THE MESSAGE INPUT DEVICE.
435					*			
436					*			
437					*			
438					*			SUCCESS-FAILURE INDICATIONS
439					*			-----
440					*			
441					*			WAITS THE PROGRAM COMES TO A WAIT CONDITION:
442					*			
443					*			1. AFTER ERROR MESSAGE PRINTOUT DURING THE
444					*			EXECUTION OF FUNCTIONAL TESTS (SSW3 = 0).
445					*			
446					*			2. AFTER THE COMPLETION OF A DIRECTIVE (SSW3 = 0).
447					*			
448					*			3. AFTER WATCHDOG TIMER TRAPS, IF THE I/O RESET
449					*			DIRECTIVE WAS NOT EXECUTED OR THE I/O RESET
450					*			JUMPER WAS NOT INSTALLED.
451					*			
452					*			
453					*			LOOPS THE PROGRAM LOOPS ON AN INSTRUCTION SEQUENCE
454					*			PRODUCED BY AN ERROR DURING FUNCTIONAL TEST
455					*			EXECUTION (SSW1=1,SSW3=1) OR AT THE COMPLETION
456					*			OF A DIRECTIVE (SSW1=1,SSW3=1).
457					*			
458					*			
459					*			
460					*			
461					*			MESSAGE PRINTOUTS
462					*			
463					*			
464					*			1. FUNCTIONAL TEST
465					*			
466					*			THE STANDARD ERROR MESSAGES
467					*			
468					*			ERR NO. DDDD LOC XXXX
469					*			
470					*			ARE DEFINED IN THE FAULT INDEX (DDDD = INDEX).
471					*			
472					*			ALL OTHER MESSAGES PRECEDING OR FOLLOWING THE
473					*			STANDARD ERROR MESSAGE ARE SELF EXPLANATORY.
474					*			
475					*			2. RANDOM EXERCISOR AND UTILITY TESTS.
476					*			
477					*			ALL MESSAGES ARE SELF EXPLANATORY.
478					*			
479					*			3. DPM ERROR MESSAGE ARE DEFINED IN THE
480					*			DPM MANUAL.
481					*			
482					*			
483					*			PROGRAM TEST DESCRIPTION
484					*			-----
485					*			THE FOLLOWING IS A DESCRIPTION OF THE TESTS CONTAINED
486					*			IN THE RAD TEST PROGRAM. OPERATOR INTERVENTION
487					*			(WHERE REQUIRED) IS ALSO DESCRIBED.
488					*			
489					*			COMPREHENSIVE TEST (TST0)
490					*			
491					*			THE COMPREHENSIVE TEST CONSISTS OF THE FUNCTIONAL
492					*			TEST AND THE RANDOM EXERCISER TEST.
493					*			
494					*			FUNCTIONAL TEST (TST1)
495					*			
496					*			THE FUNCTIONAL TEST PERFORMS A SYSTEMATIC TEST OF
497					*			ALL LOGIC FUNCTIONS OF CONTROLLER AND ALL

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
498				*				STORAGE UNITS SPECIFIED BY THE 'SYST' DIRECTIVE.
499				*				THE FUNCTIONAL TEST CONSISTS OF A NUMBER OF
500				*				SUBTESTS WHICH MAY BE SELECTED INDIVIDUALLY OR
501				*				IN GROUPS.
502				*				
503				*				WHEN A FAULT HAS BEEN DETECTED, AUTOMATIC ERROR
504				*				LOOPING THRU SENSE SWITCH CONTROL IS IMPLEMENTED
505				*				WHEN EVER POSSIBLE. ERROR LOOPING WILL NOT BE
506				*				PERFORMED IF THE CAUSE OF THE FAULT IS A FLAW IN
507				*				THE RECORDING MEDIA.
508				*				
509				*				FOR A DESCRIPTION OF THE INDIVIDUAL SUBTESTS REFER
510				*				TO THE FUNCTIONAL TEST SECTION IN THE PROGRAM
511				*				LISTING. EACH SUBTEST IS PRECEDED BY A TEST
512				*				DESCRIPTION.
513				*				
514				*				RANDOM EXERCISER
515				*				
516				*				THIS DIRECTIVE PROVIDES A MEANS OF OPERATING A RAD
517				*				STORAGE SYSTEM WITH PSEUDO RANDOM, STORAGE UNIT
518				*				SELECTION, ORDER SEQUENCE, DATA PATTERN, AND I/O AREAS,
519				*				FOR THE PURPOSE OF DETECTING INTERMITTENT FAILURES.
520				*				THE RECORDING MEDIA IS INITIALIZED WITH A PSEUDO
521				*				RANDOM PATTERN BEFORE THE EXERCISER PORTION OF THE TEST
522				*				IS CALLED. ONCE STARTED, THE EXERCISER WILL EXECUTE FOR A
523				*				SPECIFIED NUMBER OF PASSES OR UNTIL TERMINATED BY
524				*				OPERATOR INTERVENTION. THE RANDOM EXERCISER PROVIDES FOR
525				*				A RETRY ON ERROR, BUT NO CONTINUOUS LOOPING ON ERROR WILL
526				*				BE DONE. THIS DIRECTIVE WILL EXERCISER ALL DEVICES
527				*				DESCRIBED BY THE 'SYST' DIRECTIVE.
528				*				
529				*				
530				*				
531				*				UTILITY TEST
532				*				
533				*				THIS DIRECTIVE PROVIDES THE USER A MEANS OF TESTING
534				*				A DEVICE(S) SURFACE AREA WITH A WRITE/READ, A WRITE,
535				*				A READ WITH DATA VERIFICATION, A READ WITHOUT DATA
536				*				VERIFICATION AND A CHECKWRITE OPERATION.
537				*				
538				*				
539				*				
540				*				*****
541				*				* FAULT INDEX *
542				*				* FAULT INDEX *
543				*				* FAULT INDEX *
544				*				*****
545				*				
546				*				
547				*				* FAULT INDEX DESCRIPTION - FUNCTIONAL SUBTESTS
548				*				-----
549				*				* THE FAULT INDEX CONTAINS A LIST OF ERROR NUMBERS AND A BRIEF
550				*				DESCRIPTION OF EACH ERROR. THE NUMBERS ARE ARRANGED IN AN ASCENDING
551				*				SEQUENCE. ALL NUMBERS LESS THAN 4900 REFER TO ERRORS IN FUNCTIONAL
552				*				SUBTESTS. THE FIRST TWO DIGITS ARE USED TO IDENTIFY THE SUBTEST. THE
553				*				LAST TWO DIGITS REFER TO INDIVIDUAL ERRORS WITHIN A SUBTEST. ALL
554				*				OTHER ERROR NUMBERS (N > 4900) REFER TO ERRORS IN SUBROUTINES USED BY
555				*				THE FUNCTIONAL TESTS. THESE ERROR NUMBERS DO NOT IDENTIFY A FUNC-
556				*				TIONAL SUBTEST.
557				*				
558				*				* FUNCTIONAL SUBTEST DESCRIPTION
559				*				-----
560				*				* EACH ERROR MESSAGE CONSISTS OF TWO PARTS. THE ERROR NUMBER REFERS TO
561				*				AN ENTRY IN THE FAULT INDEX, THE LOCATION NUMBER REFERS TO THE MEMORY
562				*				LOCATION IN THE LISTING (ONLY IF PROGRAM IS NOT RELOCATED) WHERE THE
563				*				ERROR OCCURRED. THE LOCATION NUMBER IS INTENDED TO BE USED TO LOCATE
564				*				A FUNCTIONAL SUBTEST IN THE LISTING. PRECEDING EACH FUNCTIONAL SUB-
565				*				TEST IS A BRIEF DESCRIPTION OF THE TEST. THE DESCRIPTION OF THE
566				*				ERROR NUMBER AND THE DESCRIPTION OF SUBTEST SHOULD BE SUFFICIENT TO
567				*				DEFINE THE CURRENT OPERATION AND NATURE OF THE FAILURE. ADDITIONAL
568				*				INFORMATION ABOUT THE CURRENT TEST CAN BE FOUND IN THE COMMENT FIELD

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
569								* OF THE LISTING.
570								*
571								* DESCRIPTIVE ERROR MESSAGES
572								* -----
573								* ERROR NUMBERS CAN BE SUCCEEDED BY DESCRIPTIVE MESSAGES WHICH WILL AID
574								* IN THE ISOLATION OF FAILURES.
575								*
576								* XX00 WATCH DOG TIMER TRAP (XX INDICATED THE TEST THE TRAP OCCUR
577								* IN).
578								*
579								* XX95 THE 1ST TWO DIG. 'XX' OF ERROR NO. WERE REFERRED TO AS TEST NO.
580								* A 'SEEK' REQUEST WAS NOT ISSUED AFTER EXECUTION OF THE SUBR.
581								*
582								* XX96 THE 1ST TWO DIG. 'XX' OF ERROR NO. WERE REFERRED TO AS TEST NO.
583								* A 'WRITE' REQUEST WAS NOT ISSUED AFTER EXECUTION OF THE SUBR.
584								*
585								* XX97 THE 1ST TWO DIG. 'XX' OF ERROR NO. WERE REFERRED TO AS TEST NO.
586								* A 'SENSE' REQUEST WAS NOT ISSUED AFTER EXECUTION OF THE SUB.
587								*
588								* 0115 HIO DID NOT RESET IP. NO RESET GENERATED.
589								*
590								* 0210 HIO, CC1 WAS '0' S/B '1'.
591								* A. CONDITION CODE ERROR.
592								* B. DEVICE ADDRESS RECOGNITION WHERE ONE SHOULD NOT EXIST.
593								*
594								* 0211 HIO, CC2 WAS A '1'.
595								* A. CONDITION CODE ERROR.
596								* B. CONTROLLER SHOULD INDICATE CONTROLLER ADDRESS RECOGNITION,
597								* BUT NOT DEVICE ADDRESS RECOGNITION.
598								*
599								* 0310 HIO, CC1 WAS A '1'.
600								* A. CONDITION CODE ERROR.
601								* B. I/O ADDRESS NOT RECOGNIZED.
602								*
603								* 0311 HIO, CC2 WAS A '1'.
604								* A. CONDITION CODE ERROR.
605								* B. I/O NOT RECOGNIZED.
606								* C. I/O ADDRESS RECOGNIZED AND THE RAD WAS 'BUSY' WHEN THE
607								* HALT OCCURED.
608								*
609								* 0312 DEVICE STATUS BYTE ERROR DURING EXECUTION OF HIO INSTRUCTION,
610								* ONLY 'DEVICE AUTOMATIC' BIT SHOULD BE SET.
611								*
612								* 0410 TIO, CC1 WAS A '1'.
613								* A. CONDITION CODE ERROR.
614								* B. I/O ADDRESS NOT RECOGNIZED.
615								*
616								*
617								* 0411 TIO, CC2 WAS A '1'.
618								* A. CONDITION CODE ERROR.
619								* B. I/O ADDRESS RECOGNIZED BUT SIO CAN NOT CURRENTLY BE ACCEPTED
620								* C. I/O ADDRESS NOT RECOGNIZED.
621								*
622								*
623								*
624								* 0412 DEVICE STATUS BYTE ERROR DURING EXECUTION OF SIO INSTRUCTION,
625								* ONLY 'DEVICE AUTOMATIC' BIT SHOULD BE SET.
626								*
627								*
628								* 0510 TDV, CC1 WAS A '1'.
629								* A. CONDITION CODE ERROR.
630								* B. I/O ADDRESS NOT RECOGNIZED.
631								*
632								* 0511 TDV, CC2 WAS A '1'.
633								* A. CONDITION CODE ERROR.
634								* B. I/O ADDRESS RECOGNIZED BUT PREVIOUS OPERATION WAS TERMI-
635								* NATED BECAUSE OF A FAULT CONDITION.
636								* C. I/O ADDRESS NOT RECOGNIZED.
637								*
638								* 0512 TDV STATUS BITS WERE NOT RETURNED AS ALL ZEROS.
639								*

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR G	LABEL	OPERATION	OPERAND	COMMENTS
640				*	0610			SIO, CC1 WAS A '11'.
641				*				A. CONDITION CODE ERROR.
642				*				B. I/O ADDRESS NOT RECOGNIZED.
643				*				
644				*	0611			SIO, CC2 WAS A '11'.
645				*				A. CONDITION CODE ERROR.
646				*				B. I/O ADDRESS RECOGNIZED BUT SIO NOT ACCEPTED (I.E., RAD
647				*				WAS ALREADY BUSY OR A DEVICE INTERRUPT IS PENDING).
648				*				C. I/O ADDRESS NOT RECOGNIZED.
649				*				
650				*	0612			DEVICE STATUS BYTE ERROR DURING EXECUTION OF SIO INSTRUCTION;
651				*				ONLY 'DEVICE AUTOMATIC' BIT SHOULD BE SET.
652				*				
653				*	0613			BYTE COUNT WAS REDUCED DURING EXECUTION OF 'STOP' ORDER.
654				*				
655				*	0615			STATUS BYTES OF TDV WERE NOT RETURNED AS ALL ZEROS AFTER
656				*				THE EXECUTION OF THE SIO.
657				*				
658				*	0616			RAD WAS IN 'BUSY' STATE WHEN IT WAS HALTED.
659				*				
660				*	0617			DEVICE STATUS BYTE ERROR DURING EXECUTION OF HIO INSTRUCTION.
661				*				ONLY 'UNUSUAL END', AND 'DEVICE AUTOMATIC' BITS SHOULD BE SET.
662				*				
663				*	0619			'UNUSUAL END' BIT WAS NOT RESET BY THE EXECUTION OF HIO
664				*				INSTRUCTION.
665				*				
666				*	0710			SIO, CC2 WAS A '11'.
667				*				A. CONDITION CODE ERROR.
668				*				B. I/O ADDRESS NOT RECOGNIZED.
669				*				
670				*	0711			BYTE COUNT WAS REDUCED DURING EXECUTION OF BACK TO BACK
671				*				SIO INSTRUCTIONS.
672				*				
673				*	0712			DEVICE STATUS BYTE ERROR DURING EXECUTION OF SIO INSTRUCTION;
674				*				ONLY 'DEVICE AUTOMATIC' AND 'UNUSUAL END' BITS SHOULD BE SET.
675				*				
676				*	0810			DEVICE STATUS BYTE ERROR DURING EXECUTION OF TIO INSTRUCTION;
677				*				ONLY 'DEVICE AUTOMATIC' AND 'UNUSUAL END' BITS SHOULD BE SET.
678				*				
679				*	0811			TIO STATUS BYTE, INTERRUPT PENDING WAS NOT REPORTED.
680				*				
681				*	0812			TIO, CC2 WAS A '01'.
682				*				A. CONDITION CODE ERROR.
683				*				B. I/O ADDRESS RECOGNIZED AND SIO CAN CURRENTLY BE ACCEPTED
684				*				(I.E., RAD IS IN THE 'READY' CONDITION WITH NO DEVICE
685				*				INTERRUPT PENDING).
686				*				C. I/O ADDRESS NOT RECOGNIZED.
687				*				
688				*	0813			OPERATIONAL STATUS BYTE ERROR DURING EXECUTION OF TIO INSTRU-
689				*				CTION; NO BITS SHOULD BE SET.
690				*				
691				*	0814			NO INTERRUPT OCCURRED ALTHOUGH ONE WAS INDICATED PENDING.
692				*				
693				*	0815			TDV, CC2 WAS A '11'
694				*				A. CONDITION CODE ERROR.
695				*				B. I/O ADDRESS RECOGNIZED OPERATION WAS TERMINATED BECAUSE OF
696				*				A FAULT CONDITION.
697				*				
698				*	0816			TDV STATUS BITS WERE NOT RETURNED AS ALL ZEROS.
699				*				
700				*	0817			'INTERRUPT PENDING' BIT IN THE TIO STATUS WAS NOT RESET BY A
701				*				HIO INSTRUCTION.
702				*				
703				*	0818			INTERRUPT WAS PENDING AFTER IT SHOULD HAVE BEEN CLEAR BY AN HIO
704				*				INSTRUCTION. (ERROR MAY BE CAUSED BY NOT HAVING HIO RESET MOD
705				*				IN IOP).
706				*				
707				*	0910			DEVICE STATUS BYTE ERROR DURING EXECUTION TIO INSTRUCTION;
708				*				ONLY 'DEVICE AUTOMATIC', 'INTERRUPT PENDING' AND 'UNUSUAL
709				*				END' BITS SHOULD BE SET.
710				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
711					* 0911			INTERRUPT PENDING BIT WAS NOT SET DURING EXECUTION OF T10
712					*			INSTRUCTION.
713					*			
714					* 0912			T10, CC2 WAS A '0'.
715					*			A. CONDITION CODE ERROR.
716					*			B. I/O ADDRESS RECOGNIZED AND S10 CAN CURRENTLY BE ACCEPTED
717					*			(I.E., RAD IS IN THE 'READY' CONDITION WITH NO DEVICE
718					*			INTERRUPT PENDING).
719					*			
720					* 0913			NO INTERRUPT OCCURRED ALTHOUGH ONE WAS INDICATED AS PENDING.
721					*			
722					* 0914			THE A10 INSTRUCTION DID NOT CLEAR THE PENDING INTERRUPT.
723					*			
724					* 0915			A10, CC1 WAS A '1' S/B '0'.
725					*			A. CONDITION CODE ERROR.
726					*			B. NO INTERRUPT RECOGNITION.
727					*			INSTRUCTION.
728					*			
729					* 0916			DEVICE ADDRESS RETURNED BY THE A10 INSTRUCTION DOES NOT
730					*			COMPARE WITH EXPECTED DEVICE ADDRESS.
731					*			
732					* 0917			A10, CC1 WAS A '0' S/B '1'.
733					*			A. CONDITION CODE ERROR.
734					*			B. ABNORMAL INTERRUPT NOT DETECTED.
735					*			
736					* 0918			A10 STATUS BYTE ERROR DURING EXECUTION OF A10 INSTRUCTION;
737					*			'UNUSUAL END' INTERRUPT BIT SHOULD BE SET.
738					*			
739					* 0919			'INTERRUPT PENDING' BIT OF T10 WAS NOT RESET BY AN A10.
740					*			
741					* 1010			SEEK ORDER, FLAG HTE, BYTE COUNT EQUALS 2.
742					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
743					*			
744					* 1015			THE DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE SEEK OPERATION
745					*			
746					* 1020			SEEK ORDER, FLAG IUE, BYTE COUNT EQUALS 2.
747					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
748					*			
749					* 1030			SEEK ORDER, FLAG IZC, BYTE COUNT EQUALS 2.
750					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
751					*			
752					* 1040			SEEK ORDER, FLAG ICE, BYTE COUNT EQUALS 2.
753					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
754					*			
755					*			
756					*			*** ERRORS 1110 -1130 DO NOT APPLY TO HIGH SPEED RADS ***
757					*			
758					* 1110			SEEK ORDER, FLAG IUE, BYTE COUNT EQUALS 1.
759					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
760					*			
761					* 1115			THE DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE SEEK OPERATION
762					*			
763					* 1120			SEEK ORDER, FLAG HTE, BYTE COUNT EQUALS 1.
764					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
765					*			
766					* 1130			SEEK ORDER, FLAG ICE, BYTE COUNT EQUALS 1.
767					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
768					*			
769					*			
770					*			*** ERROR 1210 -1240 DO NOT APPLY TO THE HIGH SPEED RADS ***
771					*			
772					*			*** ERRORS 1210 - 1240 WILL BE REPORTED IF A EXTENDED ***
773					*			*** PERFORMANCE OR MEDIUM SPEED RAD IS CONNECTED TO A STOP ***
774					*			
775					* 1210			SEEK ORDER, FLAG ICE, BYTE COUNT EQUALS 3.
776					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
777					*			
778					* 1215			DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE SEEK OPERATION.
779					*			
780					* 1220			SEEK ORDER, FLAG HTE, BYTE COUNT EQUALS 3.
781					*			CHECK ERROR MESSAGE FOR TYPE OF FAILURES.

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
782				*				
783				*	1240	SEEK ORDER, FLAG IUE, BYTE COUNT EQUALS 3.		
784				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
785				*				
786				*	1240	SEEK ORDER, FLAG IZC, BYTE COUNT EQUALS 3.		
787				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
788				*				
789				*	1310	SENSE TEST, FLAG UE, BYTE COUNT = 3 (MODEL 7201,7231),		
790				*		=4 (MODEL 7211).		
791				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
792				*				
793				*	1310	DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE SENSE OPERATION.		
794				*				
795				*	1320	SENSE TEST, FLAG HTE, BYTE COUNT = 3 OR 4 DEPENDS ON THE MODEL.		
796				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
797				*				
798				*	1330	SENSE TEST, FLAG IZC, BYTE COUNT = 3 OR 4 DEPENDS ON THE MODEL.		
799				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
800				*				
801				*	1340	SENSE TEST, FLAG ICE, BYTE COUNT = 3 OR 4 DEPENDS ON THE MODEL.		
802				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
803				*				
804				*				
805				*		*** ERRORS 1410-1430 DO NOT APPLY TO HIGH SPEED RADS ***		
806				*				
807				*	1410	SENSE TEST, FLAG IUE, BYTE COUNT = 3.		
808				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
809				*				
810				*	1415	DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE SENSE OPERATION.		
811				*				
812				*	1420	SENSE TEST, FLAG HTE, BYTE COUNT = 2.		
813				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
814				*				
815				*	1430	SENSE TEST, FLAG ICE, BYTE COUNT = 2.		
816				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
817				*				
818				*	1510	SENSE TEST, FLAG ICE, BYTE COUNT = 4 OR 5 DEPENDS ON THE MODEL.		
819				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
820				*				
821				*	1515	DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE SENSE OPERATION.		
822				*				
823				*	1520	SENSE TEST, FLAG HTE, BYTE COUNT = 4 OR 5 DEPENDS ON THE MODEL.		
824				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
825				*				
826				*	1530	SENSE TEST, FLAG IUE, BYTE COUNT = 4 OR 5 DEPENDS ON THE MODEL.		
827				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
828				*				
829				*	1540	SENSE TEST, FLAG IZC, BYTE COUNT = 4 OR 5 DEPENDS ON THE MODEL.		
830				*		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
831				*				
832				*	1610	TIO, CC=0 (DEVICE WAS READY) SHOULD BE NOT READY.		
833				*				
834				*	1620	THE RAD STORAGE UNIT AND THE RAD CONTROLLER WERE NOT 'BUSY'		
835				*		AT THE TIME OF TIO INSTRUCTION.		
836				*				
837				*	1630	TIO, CC=1 (DEVICE NOT READY) SHOULD BE READY AFTER SEEK		
838				*		IS ACCEPTED.		
839				*				
840				*	1640	THE RAD STORAGE UNIT OR THE CONTROLLER REMAINED 'BUSY'		
841				*		AFTER THE SEEK WAS ACCEPTED.		
842				*				
843				*	1710	ALL SECTORS OF THE RAD COULD NOT BE SENSED OR EXTRA SECTORS		
844				*		WERE SENSED.		
845				*		(A TABLE WOULD BE OUTPUT SHOWING THE NO. OF TIMES EACH CURRENT		
846				*		SECTOR WAS OBSERVED. EACH SECTOR SHOULD HAVE OBSERVED ONLY		
847				*		ONCE.)		
848				*				
849				*	1810	A SECTOR WAS FOUND OR WAS FOUND MORE THAN ONCE PER TRACK (BAND)		
850				*		(A TABLE WOULD BE OUTPUT SHOWING THE NO. OF TIMES EACH SECTOR		
851				*		WAS SENSED) DURING THE EXECUTION OF SEEK AND SENSE OPERATIONS.		
852				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
853				*	1820			A TRACK (BAND) WAS NOT FOUND OR FOUND MORE THAN ONCE (A TABLE WOULD BE OUTPUT SHOWING THE NO. OF TIMES EACH TRACK (BAND) WAS SENSED) DURING THE EXECUTION OF SEEK AND SENSE OPERATIONS.
854				*				
855				*				
856				*				
857				*				
858				*	1910			TRACK (BAND) WAS NOT AVAILABLE.
859				*				SEE PRINTOUT TO DETERMINE UNAVAILABLE TRACKS (BAND).
860				*				
861				*	1920			THE TRACK (BAND) WAS REPORTED WRITE PROTECTED IN THE TEST DEVICE STATUS (TDV).
862				*				SEE PRINTOUT TO DETERMINE WRITE PROTECTED TRACKS (BAND).
863				*				
864				*				
865				*	1930			THE TRACK (BAND) WAS REPORTED WRITE PROTECTED IN THE RETURNED SENSE WORD.
866				*				SEE PRINTOUT TO DETERMINE WRITE PROTECTED TRACKS (BAND).
867				*				
868				*				
869				*				
870				*				*** ERRORS 2010 DOES APPLY TO MEDIUM SPEED RADS ***
871				*				
872				*	2010			THIS TEST SEEKS UNAVAILABLE SECTOR.
873				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
874				*				
875				*	2020			THIS TEST SEEKS UNAVAILABLE SECTOR.
876				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
877				*				
878				*	2110			COMMAND CHAINING DID NOT OCCUR PROPERLY.
879				*				
880				*	2111			COMMAND CHAINING DID NOT TAKE PLACE AFTER EXECUTION OF H10 INSTRUCTION.
881				*				
882				*				
883				*	2112			DEVICE DID NOT STOP ON STOP ORDER.
884				*				
885				*	2120			COMMAND CHAINING OCCURRED ON A STOP ORDER.
886				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
887				*				
888				*	2121			COMMAND CHAINING TOOK PLACE ON A STOP ORDER.
889				*				
890				*	3110			WRITE TEST, FLAGS HTE AND IVE, BYTE COUNT = (1 SECTOR OF DATA).
891				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
892				*				
893				*	3115			DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE WRITE OPERATION.
894				*				
895				*	3120			WRITE TEST, FLAG IZC, BYTE COUNT = (1 SECTOR OF DATA).
896				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
897				*				
898				*	3130			WRITE TEST, FLAGS HTE AND IVE, BYTE COUNT = (2 SECTORS OF DATA).
899				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
900				*				
901				*	3140			WRITE TEST, FLAGS IZC, BYTE COUNT = (1 SECTOR OF DATA).
902				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
903				*				
904				*	3210			WRITE TEST, FLAGS HTE, IVE AND ICE, BYTE COUNT = (LESS THAN 1 SECTOR OF DATA).
905				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
906				*				
907				*				
908				*	3215			DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE WRITE OPERATION.
909				*				
910				*	3310			WRITE TEST, FLAGS HTE, IVE AND ICE, BYTE COUNT = (GREATER THAN 1 SECTOR OF DATA).
911				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
912				*				
913				*				
914				*	3315			DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE WRITE OPERATION.
915				*				
916				*				
917				*	3410			A SECTOR WAS NOT FOUND OR WAS FOUND MORE THAN ONCE PER TRACK (BAND) (A TABLE WILL BE OUTPUT DISPLAYING THE NO. OF TIMES EACH SECTOR WAS SENSED) DURING THE EXECUTION OF WRITING A SECTOR AND SENSING ALL SECTORS.
918				*				
919				*				
920				*				
921				*				
922				*	3420			A TRACK (BAND) WAS NOT FOUND OR WAS FOUND MORE THAN ONCE (A TABLE WOULD BE THE OUTPUT SHOWING THE NO. OF TIMES EACH TRACK
923				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
924				*				(BAND) WAS SEARCHED DURING THE EXECUTION OF WRITING A SECTOR,
925				*				SENSING ALL TRACKS (BANDS).
926				*	3430			THE RAD DID NOT REPORT SECTOR UNAVAILABLE BY INCREMENTING
927				*				PAST THE END OF THE LOGICAL SURFACE.
928				*				
929				*	3510			NO TRACK (BAND) ANYWHERE ON THE RAD COULD PRODUCE A
930				*				SYNC PATTERN AFTER BEING WRITTEN.
931				*				
932				*	3516			A GOOD TRACK COULD NOT BE LOCATED BY THIS TEST.
933				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
934				*				
935				*	3520			READ (X'02') TEST, FLAG IZC, BYTE COUNT = (1 SECTOR OF DATA).
936				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
937				*				
938				*	3610			THE RAD COULD NOT FIND A GOOD TRACK
939				*				
940				*	3616			A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.
941				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
942				*				
943				*	3620			READ (X'02') TEST, FLAG IZC, BYTE COUNT = (LESS THAN 1 SECTOR
944				*				OF DATA).
945				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
946				*				
947				*	3710			THE RAD COULD NOT FIND A GOOD TRACK.
948				*				
949				*	3716			A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.
950				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
951				*				
952				*	3720			READ (X'02') TEST, FLAG IZC, BYTE COUNT = (GREATER THAN 1
953				*				SECTOR OF DATA).
954				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
955				*				
956				*	3810			THE RAD COULD NOT FIND A GOOD TRACK.
957				*				
958				*	3816			A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.
959				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
960				*				
961				*	3820			THE BYTE COUNT WAS NOT REDUCED TO ZERO BY THE OPERATION.
962				*				
963				*	3825			READ (X'02') TEST, FLAG IZC, BYTE COUNT = (1 SECTOR OF DATA).
964				*				DATA RECEIVED FROM ALL TEN TESTED TRACKS (BANDS) PROVED
965				*				TO BE IN ERROR.
966				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
967				*				
968				*	3910			THE RAD COULD NOT FIND A GOOD TRACK.
969				*				
970				*	3916			A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.
971				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
972				*				
973				*	3920			PARITY TEST; READ (X'02') FLAG ICE, BYTE COUNT = (1 SECTOR OF
974				*				DATA), DATA PATTERN X'55AA55AA',X'AA55AA55',X'55AA55AA', ETC.
975				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
976				*				
977				*	3930			PARITY TEST; READ (X'02') FLAG ICE, BYTE COUNT = (1 SECTOR OF
978				*				DATA), DATA PATTERN X'AA55AAAA',X'AA55AA55',X'55AA55AA', ETC.
979				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
980				*				
981				*	3940			PARITY TEST; READ (X'02') FLAG ICE, BYTE COUNT = (1 SECTOR OF
982				*				DATA), DATA PATTERN X'55AA5555',X'AA55AA55',X'55AA55AA', ETC.
983				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
984				*				
985				*	3950			PARITY TEST; READ (X'02') FLAG ICE, BYTE COUNT = (1 SECTOR OF
986				*				DATA), DATA PATTERN X'00000000',X'00000000',X'00000000', ETC.
987				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
988				*				
989				*	3960			PARITY TEST; READ (X'02') FLAG ICE, BYTE COUNT = (1 SECTOR OF
990				*				DATA), DATA PATTERN X'FFFFFFF',X'FFFFFFF',X'FFFFFFF', ETC.
991				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
992				*				
993				*	4010			THE RAD COULD NOT FIND A GOOD TRACK.
994				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
995					* 4016	A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.		
996					*	CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
997					*			
998					* 4020	WRITE/READ (X'02') TEST, FLAG ICE, BYTE COUNT = (1 SECTOR OF DATA		
999					*	CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
1000					*			
1001					* 4025	THE DATA WRITTEN AS THE SHORTEN SECTOR PATTERN WAS NOT CORRECT.		
1002					*	CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
1003					*			
1004					* 4035	THE ZEROS WERE NOT WRITTEN IN THE REMAINING SECTOR AREA.		
1005					*			
1006					* 4040	PARITY ERROR WAS REPORTED DUE TO THIS OPERATION.		
1007					*			
1008					* 4110	ERROR APPEARED DURING THE EXECUTION OF WRITING A RANDOM PATTERN		
1009					*	ON THE RAD STARTING AT LOWEST AVAILABLE TRACK (BAND).		
1010					*	CHECK ERROR MESSAGE FOR TYPE AND LOCATION OF FAILURE.		
1011					*			
1012					* 4111	ERROR APPEARED DURING THE EXECUTION OF READING A RANDOM PATTERN		
1013					*	FROM THE RAD STARTING AT THE LOWEST AVAILABLE TRACK (BAND).		
1014					*	CHECK ERROR MESSAGE FOR TYPE AND LOCATION OF FAILURE.		
1015					*			
1016					* 4112	SURFACE OR ADDRESSING ERROR, DETECTED DURING THE TESTING OF THE		
1017					*	DISC SURFACE. SEE TABLE PRINTOUTS TO DETERMINE TYPES AND		
1018					*	LOCATIONS OF FAILURES.		
1019					*			
1020					* 4210	ERROR APPEARED DURING THE EXECUTION OF WRITING A RANDOM PATTERN		
1021					*	STARTING AT THE HIGHEST AVAILABLE TRACK (BAND) TO THE LOWEST		
1022					*	AVAILABLE TRACK (BAND).		
1023					*	CHECK ERROR MESSAGE FOR TYPE AND LOCATION OF FAILURE.		
1024					*			
1025					* 4211	ERROR APPEARED DURING THE EXECUTION OF READING A RANDOM PATTERN		
1026					*	FROM THE RAD STARTING AT THE LOWEST AVAILABLE TRACK (BAND) TO		
1027					*	THE HIGHEST AVAILABLE TRACK (BAND).		
1028					*	CHECK ERROR MESSAGE FOR TYPE AND LOCATION OF FAILURE.		
1029					*			
1030					* 4212	SURFACE OR ADDRESSING ERROR, DETECTED DURING THE TESTING OF THE		
1031					*	DISC SURFACE. SEE TABLE PRINTOUTS TO DETERMINE TYPES AND		
1032					*	LOCATIONS OF FAILURES.		
1033					*			
1034					* 4310	THE RAD DID NOT RESPOND AND RECEIVE CORRECTLY TO READ (X'12')		
1035					*	OF A SECTOR.		
1036					*			
1037					* 4320	READ (X'12') TEST, FLAG IZC, BYTE COUNT (GREATER THAN 1		
1038					*	SECTOR OF DATA).		
1039					*	CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
1040					*			
1041					* 4410	THE RAD COULD NOT FIND A GOOD TRACK.		
1042					*			
1043					* 4416	A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.		
1044					*	CHECK ERROR MESSAGE FOR TYPE OF FAILURES.		
1045					*			
1046					* 4420	ERRORS WERE DETECTED WHEN A PATTERN OF ALL ZEROS COMPARED		
1047					*	TO AN IDENTICAL PATTERN BY MEANS OF A CHECK-WRITE.		
1048					*	*** ERRORS 4430 - 4437 APPLY ONLY TO THE HIGH SPEED RADS ***		
1049					*			
1050					* 4430	CHECKWRITE TEST, BIT 0 OF SENSE BYTE 4 (FAILING TRACK) WAS		
1051					*	A '1' SHOULD HAVE BEEN A '0'.		
1052					*			
1053					* 4431	CHECKWRITE TEST, BIT 1 OF SENSE BYTE 4 (FAILING TRACK) WAS		
1054					*	A '1' SHOULD HAVE BEEN A '0'.		
1055					*			
1056					* 4432	CHECKWRITE TEST, BIT 2 OF SENSE BYTE 4 (FAILING TRACK) WAS		
1057					*	A '1' SHOULD HAVE BEEN A '0'.		
1058					*			
1059					* 4433	CHECKWRITE TEST, BIT 3 OF SENSE BYTE 4 (FAILING TRACK) WAS		
1060					*	A '1' SHOULD HAVE BEEN A '0'.		
1061					*			
1062					* 4434	CHECKWRITE TEST, BIT 4 OF SENSE BYTE 4 (FAILING TRACK) WAS		
1063					*	A '1' SHOULD HAVE BEEN A '0'.		
1064					*			
1065					* 4435	CHECKWRITE TEST, BIT 5 OF SENSE BYTE 4 (FAILING TRACK) WAS		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1066				*				A '1' SHOULD HAVE BEEN A '0'.
1067				*				
1068				*	4436	CHECKWRITE TEST, BIT 6 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1069				*				
1070				*				
1071				*	4437	CHECKWRITE TEST, BIT 7 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1072				*				
1073				*				
1074				*	4440	ERRORS WERE DETECTED WHEN A PATTERN OF ALL '1'S DID NOT COMPARE		WITH AN IDENTICAL PATTERN BY MEANS OF A CHECKWRITE.
1075				*				CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
1076				*				
1077				*				
1078				*				
1079				*				*** ERRORS 4450 - 4457 APPLY ONLY TO THE HIGH SPEED RADS ***
1080				*				
1081				*	4450	CHECKWRITE TEST, BIT 0 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1082				*				
1083				*				
1084				*	4451	CHECKWRITE TEST, BIT 1 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1085				*				
1086				*				
1087				*	4452	CHECKWRITE TEST, BIT 2 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1088				*				
1089				*				
1090				*	4453	CHECKWRITE TEST, BIT 3 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1091				*				
1092				*				
1093				*	4454	CHECKWRITE TEST, BIT 4 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1094				*				
1095				*				
1096				*	4455	CHECKWRITE TEST, BIT 5 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1097				*				
1098				*				
1099				*	4456	CHECKWRITE TEST, BIT 6 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1100				*				
1101				*				
1102				*	4457	CHECKWRITE TEST, BIT 7 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '1' SHOULD HAVE BEEN A '0'.
1103				*				
1104				*				
1105				*	4510	THE RAD COULD NOT FIND A GOOD TRACK.		
1106				*				
1107				*	4516	A GOOD TRACK COULD NOT BE LOCATED BY THE OPERATION.		CHECK ERROR MESSAGE FOR TYPE OF FAILURES.
1108				*				
1109				*				
1110				*	4520	CHECKWRITE TEST, BIT 0 FROM THE IOP WAS A '1', BIT 0 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1111				*				
1112				*				
1113				*	4521	CHECKWRITE TEST, BIT 1 FROM THE IOP WAS A '1', BIT 1 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1114				*				
1115				*				
1116				*	4522	CHECKWRITE TEST, BIT 2 FROM THE IOP WAS A '1', BIT 2 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1117				*				
1118				*				
1119				*	4523	CHECKWRITE TEST, BIT 3 FROM THE IOP WAS A '1', BIT 3 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1120				*				
1121				*				
1122				*	4524	CHECKWRITE TEST, BIT 4 FROM THE IOP WAS A '1', BIT 4 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1123				*				
1124				*				
1125				*	4525	CHECKWRITE TEST, BIT 5 FROM THE IOP WAS A '1', BIT 5 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1126				*				
1127				*				
1128				*	4526	CHECKWRITE TEST, BIT 6 FROM THE IOP WAS A '1', BIT 6 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1129				*				
1130				*				
1131				*	4527	CHECKWRITE TEST, BIT 7 FROM THE IOP WAS A '1', BIT 7 FROM THE		RAD WAS A '0', BUT NO TRANSMISSION ERROR WAS DETECTED.
1132				*				
1133				*				
1134				*				*** ERRORS 4530 - 4537 APPLY ONLY TO THE HIGH SPEED RADS ***
1135				*				
1136				*	4530	CHECKWRITE TEST, BIT 0 OF SENSE BYTE 4 (FAILING TRACK) WAS		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1137				*				A '0' SHOULD HAVE BEEN A '1'.
1138				*				
1139				*	4531	CHECKWRITE TEST, BIT 1 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1140				*				
1141				*				
1142				*	4532	CHECKWRITE TEST, BIT 2 OF SENSE RYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1143				*				
1144				*				
1145				*	4533	CHECKWRITE TEST, BIT 3 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1146				*				
1147				*				
1148				*	4534	CHECKWRITE TEST, BIT 4 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1149				*				
1150				*				
1151				*	4535	CHECKWRITE TEST, BIT 5 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1152				*				
1153				*				
1154				*	4536	CHECKWRITE TEST, BIT 6 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1155				*				
1156				*				
1157				*	4537	CHECKWRITE TEST, BIT 7 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1158				*				
1159				*				
1160				*	4540	CHECKWRITE TEST, BIT 0 FROM THE IOP WAS A '0', BIT 0 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1161				*				
1162				*				
1163				*	4541	CHECKWRITE TEST, BIT 1 FROM THE IOP WAS A '0', BIT 1 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1164				*				
1165				*				
1166				*	4542	CHECKWRITE TEST, BIT 2 FROM THE IOP WAS A '0', BIT 2 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1167				*				
1168				*				
1169				*	4543	CHECKWRITE TEST, BIT 3 FROM THE IOP WAS A '0', BIT 3 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1170				*				
1171				*				
1172				*	4544	CHECKWRITE TEST, BIT 4 FROM THE IOP WAS A '0', BIT 4 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1173				*				
1174				*				
1175				*	4545	CHECKWRITE TEST, BIT 5 FROM THE IOP WAS A '0', BIT 5 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1176				*				
1177				*				
1178				*	4546	CHECKWRITE TEST, BIT 6 FROM THE IOP WAS A '0', BIT 6 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1179				*				
1180				*				
1181				*	4547	CHECKWRITE TEST, BIT 7 FROM THE IOP WAS A '0', BIT 7 FROM THE		RAD WAS A '1', BUT NO TRANSMISSION ERROR WAS DETECTED.
1182				*				
1183				*				
1184				*				*** ERRORS 4550 -4557 APPLY ONLY TO THE HIGH SPEED RADS ***
1185				*				
1186				*	4550	CHECKWRITE TEST, BIT 0 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1187				*				
1188				*				
1189				*	4551	CHECKWRITE TEST, BIT 1 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1190				*				
1191				*				
1192				*	4552	CHECKWRITE TEST, BIT 2 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1193				*				
1194				*				
1195				*	4553	CHECKWRITE TEST, BIT 3 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1196				*				
1197				*				
1198				*	4554	CHECKWRITE TEST, BIT 4 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1199				*				
1200				*				
1201				*	4555	CHECKWRITE TEST, BIT 5 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1202				*				
1203				*				
1204				*	4556	CHECKWRITE TEST, BIT 6 OF SENSE BYTE 4 (FAILING TRACK) WAS		A '0' SHOULD HAVE BEEN A '1'.
1205				*				
1206				*				
1207				*	4557	CHECKWRITE TEST, BIT 7 OF SENSE BYTE 4 (FAILING TRACK) WAS		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1208					*	A '0' SHOULD HAVE BEEN A '1'.		
1209					*			
1210					*			
1211					*	4610	HIO, CC2 = 0.	
1212					*		A. CONDITION CODE ERROR.	
1213					*		B. I/O ADDRESS RECOGNIZED AND THE RAD WAS NOT 'BUSY' WHEN THE	
1214					*		HALT OCCURRED, IT SHOULD HAVE BEEN 'BUSY'.	
1215					*			
1216					*	4620	INCORRECT STATUS RETURNED FROM THE HALT OPERATION.	
1217					*		CHECK ERROR MESSAGE FOR TYPE OF FAILURE.	
1218					*			
1219					*	4710	HIO, CC2 = 0.	
1220					*		A. CONDITION CODE ERROR.	
1221					*		B. I/O ADDRESS RECOGNIZED AND THE RAD WAS NOT 'BUSY' WHEN THE	
1222					*		HALT OCCURRED, IT SHOULD HAVE BEEN 'BUSY'.	
1223					*			
1224					*	4720	INCORRECT STATUS RETURNED FROM THE HALT OPERATION.	
1225					*		CHECK ERROR MESSAGE FOR TYPE OF FAILURE.	
1226					*			
1227					*		*** ERROR 4810 - 4820 MAYBE REPORTED IF A EXTENDED	***
1228					*		*** PERFORMANCE RAD WITH THE FOUR BYTE OPTION IS	***
1229					*		*** CONNECTED TO A SIOB.	***
1230					*			
1231					*	4810	DATA OVERRUN DID NOT OCCUR FOR A SERIES OF WRITE SHORT	
1232					*		DATA CHAINED IOP'S.	
1233					*			
1234					*	4820	DATA OVERRUN DID NOT OCCUR FOR A SERIES OF READ SHORT	
1235					*		DATA CHAINED IOP'S.	
1236					*			
1237					*	4910	WRITE PROTECTION WAS DETECTED AS PART OF THE STATUS RETURNED	
1238					*		AFTER A WRITE OPERATION. THIS IS NOT AN ERROR IF THE	
1239					*		WRITE PROTECT SWITCHES WERE SET INTENTIONALLY TO CHECK OUT	
1240					*		WRITE PROTECTION AS SPECIFIED BY THE WRITE PROTECT SWITCHES.	
1241					*			
1242					*	4920	WRITE PROTECTION WAS DETECTED AS PART OF THE SENSE WORD	
1243					*		RETURNED FROM A SENSE OF A DEVICE.	
1244					*		THIS IS NOT AN ERROR IF THE WRITE PROTECT SWITCHES WERE	
1245					*		SET INTENTIONALLY TO CHECK OUT WRITE PROTECTION AS SPECIFIED	
1246					*		BY THE WRITE PROTECT SWITCHES.	
1247					*			
1248					*			
1249					*			
1250					*			
1251					*			
1252					*			
1253					*			
1254					*			
1255					*			
1256					*			
1257					*			
1258					*			
1259					*			
1260					*			
1261					*			
1262					*			
1263					*			
1264					*			
1265					*			
1266					*			
1267					*			
1268					*			
1269					*			
1270					*	A	TRACK (RAND) ADDRESSING ERROR	
1271					*			
1272					*	ADDR	ADDRESS	
1273					*			
1274					*	AR	ADDRESS RECOGNITION	
1275					*			
1276					*			
1277					*	B	BAND ADDRESS	
1278					*			

FIGURE 3

TABLE OF ERROR MESSAGE ABBREVIATIONS

ABBREVIATION	DESCRIPTION OF THE ABBREVIATION
A	TRACK (RAND) ADDRESSING ERROR
ADDR	ADDRESS
AR	ADDRESS RECOGNITION
B	BAND ADDRESS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
1279					* BC		* BYTE COUNT	*
1280					* BFR		* BUFFER	*
1281					* BYT CNT		* BYTE COUNT	*
1282					* CC		* CONDITION CODES	*
1283					* CE INT		* CHANNEL END INTERRUPT	*
1284					* CHECKWRT		* CHECK-WRITE	*
1285					* CNT		* COUNT	*
1286					* COM ADR		* COMMAND ADDRESS	*
1287					* D		* DATA COMPARISON ERROR	*
1288					* DEC		* DECIMAL	*
1289					* DEV		* DEVICE	*
1290					* DEV-BUSY		* THE DEVICE BEING TESTED IS BUSY	*
1291					* E		* UNUSUAL END INTERRUPT	*
1292					* ERR		* ERROR	*
1293					* EXP		* EXPECTED	*
1294					* EXP INTR DID NOT OCCUR		* EXPECTED INTERRUPT DID NOT OCCUR	*
1295					* FLG		* FLAG	*
1296					* HEX		* HEXADECIMAL	*
1297					* INC LEN		* INCORRECT LENGTH	*
1298					* INT PEND		* INTERRUPT PENDING	*
1299					* INTR		* INTERRUPT	*
1300					* IBCD		* I/O CHANNEL DOUBLEWORD	*
1301					* IOP CONT		* IOP CONTROL ERROR	*
1302					* IOP MEM		* IOP MEMORY ERROR	*
1303					* ISB		* INTERRUPT STATUS BYTE	*
1304					* LBC		* LOCATION (MEMORY)	*
1305					* MEM ADR		* MEMORY ADDRESS ERROR	*
1306					* MWA		* MEMORY WORD ADDRESS	*
1307					* NEG		* NEGATIVE	*
1308					* NO.		* NUMBER	*
1309					* NOT OP		* NOT OPERATIONAL	*

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1350					*		*	*
1351					*		*	*
1352					* B		* DATA OVERRUN ERROR	*
1353					*		*	*
1354					* OBS		* OBSERVED	*
1355					*		*	*
1356					* OSB		* OPERATIONAL STATUS BYTE	*
1357					*		*	*
1358					*		*	*
1359					* P		* SYNC PATTERN MISSED ERROR	*
1360					*		*	*
1361					*		*	*
1362					* RECOG		* RECOGNIZED	*
1363					*		*	*
1364					* REDDCRD		* ORDER SEQUENCE - (READ 12 ORDER DATA	*
1365					*		* CHAINED TO A READ 12 ORDER)	*
1366					*		*	*
1367					* RST		* RESET	*
1368					*		*	*
1369					*		*	*
1370					* S		* SECTOR ADDRESS	*
1371					*		*	*
1372					* SEC UNVL		* SECTOR UNAVAILABLE	*
1373					*		*	*
1374					* SKCCRD12		* ORDER SEQUENCE - (SEEK ORDER COMMAND	*
1375					*		* CHAINED TO A READ 12 ORDER)	*
1376					*		*	*
1377					* SKCCWRT		* ORDER SEQUENCE - (SEEK ORDER COMMAND	*
1378					*		* CHAINED TO A WRITE ORDER)	*
1379					*		*	*
1380					* SYNC MSD		* SYNC PATTERN MISSED ERROR	*
1381					*		*	*
1382					*		*	*
1383					* T		* TRACK ADDRESS	*
1384					*		*	*
1385					* T		* TRANSMISSION DATA ERROR	*
1386					*		*	*
1387					* TRANSM		* TRANSMISSION DATA ERROR	*
1388					*		*	*
1389					* TRANSMEM		* TRANSMISSION MEMORY ERROR	*
1390					*		*	*
1391					*		*	*
1392					* U		* SECTOR UNAVAILABLE	*
1393					*		*	*
1394					* UE		* UNUSUAL END	*
1395					*		*	*
1396					* UE INT		* UNUSUAL END INTERRUPT	*
1397					*		*	*
1398					* UNAVAIL		* UNAVAILABLE	*
1399					*		*	*
1400					* UNEXP INTR OCCURRED		* AN UNEXPECTED INTERRUPT HAS OCCURRED	*
1401					*		*	*
1402					*		*	*
1403					* WD		* WORD	*
1404					*		*	*
1405					* WRT		* WRITE	*
1406					*		*	*
1407					* WRT PV		* WRITE PROTECT VIOLATION	*
1408					*		*	*
1409					* WRTDCWRT		* ORDER SEQUENCE - (WRITE ORDER DATA CHAINED	*
1410					*		* TO A WRITE ORDER)	*
1411					*		*	*
1412					*		*	*
1413					* X		* VALUE IS IN HEXADECIMAL	*
1414					*		*	*
1415					*		*	*
1416					* ZBC INT		* ZERO BYTE COUNT INTERRUPT	*
1417					*		*	*
1418		00000000			R0	EGU	0	
1419		00000001			R1	EGU	1	
1420		00000002			R2	EGU	2	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1421		00000003			R3	EQU	3	
1422		00000004			R4	EQU	4	
1423		00000005			R5	EQU	5	
1424		00000006			R6	EQU	6	
1425		00000007			R7	EQU	7	
1426		00000008			R8	EQU	8	
1427		00000009			R9	EQU	9	
1428		0000000A			R10	EQU	X'A'	
1429		0000000B			R11	EQU	X'B'	
1430		0000000C			R12	EQU	X'C'	
1431		0000000D			R13	EQU	X'D'	
1432		0000000E			R14	EQU	X'E'	
1433		0000000F			R15	EQU	X'F'	
1434	01 00200				ARG		X'200'	
	01 00200							
1435					*			
1436					* PROCEDURE			
1437					*			
1438						OPEN	PAGE	THIS INHIBITS
1439		00000000			PAGE	CNAME		PAGE
1440						PROC		DIRECTIVE
1441						PEND		TO PERMIT MAX.LINAGE/PAGE
1442					*			
1443		00000000			:TSEQ	CNAME		
1444						PROC		
1445					LF	EQU	\$	
1446					I	SET	1	
1447						DB	NUM(AF)/4+1	
1448						GEN	8,8,8,8 AF(I),AF(I+1),AF(I+2),AF(I+3)	
1449					I	SET	I+4	
1450						FIN		
1451						PEND		
1452					*			
1453					*			
1454					* PROCEDURE			
1455					*			
1456		00000000			:TSEGEQU	CNAME		
1457						PROC		
1458					LF(1)	EQU	AF(1)	
1459					LF(2)	EQU	AF(1)+1	
1460					LF(3)	EQU	AF(1)+2	
1461					LF(4)	EQU	AF(1)+3	
1462					LF(5)	EQU	AF(1)+4	
1463					LF(6)	EQU	AF(1)+5	
1464					LF(7)	EQU	AF(1)+6	
1465					LF(8)	EQU	AF(1)+7	
1466						PEND		
1467					*			
1468					* PROCEDURES			
1469					* -----			
1470					*			
1471					* PROCEDURE FOR GENERATING DICTIONARY DOUBLE WORDS			
1472					*			
1473		00000000			:PRCDIC	CNAME		
1474						PROC		
1475					LF	GEN	32,3,3,3,3,4,16 AF(1),ABSVAL(AF(2)),ABSVAL(AF(3)),	
1476							ABSVAL(AF(4)),ABSVAL(AF(5)),	
1477							ABSVAL(AF(6)),ABSVAL(AF(7))	
1478						PEND		
1479					*			
1480					* PAGE			
1481					*			
1482					* MONITOR LINK TABLE			
1483					* -----			
1484					*			THIS TABLE IS LOADED BY THE MONITOR FOR THE
1485					* PURPOSE OF ESTABLISHING COMMUNICATIONS BETWEEN THE TEST PROGRAM AND			
1486					* THE MONITOR (DPM).			
1487					*			
1488	00 00000				ASECTMLT	ASECT		
1489	00 00200				ARG		X'200'	
	00 00200							

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1490					*			
1491		00 00200			:IMLT	EQU	*	ABSOLUTE RECOVERY LOCATION
1492		00 00201			:IP1	EQU	:IMLT+1	DIRECTIVE PARAMETER 1
1493		00 00202			:IP2	EQU	:IMLT+2	DIRECTIVE PARAMETER 2
1494		00 00203			:IP3	EQU	:IMLT+3	DIRECTIVE PARAMETER 3
1495		00 00204			:IP4	EQU	:IMLT+4	DIRECTIVE PARAMETER 4
1496		00 0020F			:IDUMP	EQU	:IMLT+15	ADDR OF MEMORY DUMP ROUTINE
1497		00 00211			:IPSW	EQU	:IMLT+17	PARAMETER STATUS WORD
1498		00 00213			:IBCD	EQU	:IMLT+19	BCD TO BINARY CONVERSION
1499		00 00214			:IMONITOR	EQU	:IMLT+20	DIRECTIVE RETURN ADDRESS
1500		00 00215			:LGFFLAG	EQU	:IMLT+21	LOAD AND GO FLAG; LOAD & GO IF *
1501		00 00216			:IBINC	EQU	:IMLT+22	ADDR OF BINARY FORMAT CONVERSION R
1502		00 00217			:IDEC	EQU	:IMLT+23	ADDR OF DECIMAL FORMAT CONVERSION
1503		00 00218			:HEXC	EQU	:IMLT+24	ADDR OF HEXADEC FORMAT CONVERSION
1504		00 00219			:IBYTEIN	EQU	:IMLT+25	ADDR OF 1 BYTE INPUT ROUTINE
1505		00 0021A			:ICURBCNT	EQU	:IMLT+26	CURRENT BYTE COUNT
1506		00 0021B			:ERROR	EQU	:IMLT+27	ADDR OF ERROR REPORT ROUTINE
1507		00 0021C			:PRINT	EQU	:IMLT+28	ADDR OF MESSAGE PRINT ROUTINE
1508		00 0021D			:ISENSE	EQU	:IMLT+29	ADDR OF SENSE SWITCH 1,3 TESTS
1509		00 0021E			:IMONWAIT	EQU	:IMLT+30	MONITOR WAIT
1510		00 0021F			:IMRECOVR	EQU	:IMLT+31	BRANCH TO ABSOLUTE RECOVERY LOCATION
1511		00 00220			:MSGOUT	EQU	:IMLT+32	MSG OUTPUT DEVICE, TYPE AND ADDR
1512		00 00221			:MSGIN	EQU	:IMLT+33	MSG INPUT DEVICE, TYPE AND ADDR
1513		00 00222			:LOADIN	EQU	:IMLT+34	ADDR OF INITIAL LOADING DEVICE
1514		00 00223			:ERRROR	EQU	:IMLT+35	PROGRAM ERROR COUNT
1515		00 00224			:KSRADR	EQU	:IMLT+36	KEYBOARD/PRINTER DEVICE ADDR X'001
1516		00 00225			:MACHINE	EQU	:IMLT+37	MACHINE TYPE CODE
1517		00 00226			:IRELBIAS	EQU	:IMLT+38	RELOCATION BIAS
1518		00 00227			:IRLOADER	EQU	:IMLT+39	ADDR OF RESIDENT LOADER
1519		00 00228			:IDTLFLAG	EQU	:IMLT+40	DIAGNOSTIC TAPE LIBRARY FLAG
1520		00 00229			:IERPPARM	EQU	:IMLT+41	DIRECTIVE RETURN IF PARAMETER IN ERR
1521		00 0022A			:ISCT	EQU	:IMLT+42	ADDR OF SYSTEM CONTEXT TABLE (SCT)
1522		00 0022B			:ISCTLEN	EQU	:IMLT+43	LENGTH OF SYSTEM CONTEXT TABLE (SC
1523		00 0022C			:IDICINDX	EQU	:IMLT+44	ADDR OF DICTIONARY INDEX
1524		00 0022D			:IDICILEN	EQU	:IMLT+45	LENGTH OF DICTIONARY INDEX
1525		00 0022E			:IMEMSIZE	EQU	:IMLT+46	SYSTEM MEMORY SIZE
1526		00 0022F			:IMEMLAST	EQU	:IMLT+47	ADDR OF LAST USABLE MEMORY LOCATIO
1527		00 00230			:IMONIBF	EQU	:IMLT+48	ADDR OF MONITOR I/O BUFFER
1528		00 00231			:IMONPBF	EQU	:IMLT+49	ADDR OF ABSOLUTE RECOVERY ROUTINE
1529		00 00240			:IMLTEND	EQU	:IMLT+64	LAST LOCATION OF MONITOR LINK TABL
1530					*			
1531					*			
1532					* LOCATIONS			
1533		00 00241			:IMLTEND	EQU	:IMLTEND+1	
1534					* THRU			
1535		000002FF			:IMLTEND1	EQU	X'2FF'	
1536					* ARE AVAILABLE AS A PATCH AREA.			
1537					PAGE			
1538					*			
1539					* PROGRAM INTERFACE TABLE			
1540					-----			
1541					*			THIS TABLE IS LOADED BY THE TEST PROGRAM FOR
1542					* THE PURPOSE OF ESTABLISHING COMMUNICATIONS BETWEEN THE MONITOR (DPM)			
1543					* AND THE USER PROGRAM.			
1544					*			
1545	00	00000			ASECTPIT	ASECT		
1546	00	00300			ARG		X'1300'	
	00	00300						
1547	00	00300	0000034E	C1	:IPIT0	DATA	:ICATALOG	ADDR OF LOC. CONTAINING CATALOG NO.
1548	00	00301	0000034F	C1	:IPIT1	DATA	:IPROGID	ADDR OF PROGRAM ID MESSAGE.
1549	00	00302	00000350	C1	:IPIT2	DATA	:IDIC	ADDR OF DIRECTIVE DICTIONARY
1550	00	00303	0000000E	A	:IPIT3	DATA	:IDICEND=:IDIC	LENGTH OF DIRECTIVE DICTIONARY
1551	00	00304	00000363	C1	:IPIT4	DATA	:IRECOVER	ADDR OF ABSOLUTE RECOVERY ROUTINE
1552	00	00305	0000032E	C1	:IPIT5	DATA	:ICDT	ADDR OF CONTEXT DESCRIPTION TABLE
1553	00	00306	00000002	A	:IPIT6	DATA	:ICDTEND=:ICDT	LENGTH OF CONTEXT DESCRIPTION TABLE
1554	00	00307	00000000	A	:IPIT7	DATA	0	
1555	00	00308	0000038F	C1	:IPIT8	DATA	:INITIAL	ADDR OF INITIALIZER
1556	00	00309	00000000	A	:IPIT9	DATA	0	
1557		00 00309			:DIRNAME	EQU	:IPIT9	NAME OF DIRECTIVE WITH A BAD PAR
1558	00	0030A	00000000	A	:IPIT10	DATA	0	
1559		00 0030A			:ERPARN0	EQU	:IPIT10	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1560	00	0030B	00000000	A	:PIT11	DATA	0	
1561	00	0030C	00000000	A	:PIT12	DATA	0	SYST ENTERED
1562		00 0030D			:PITLAST	EQU	*	
1563		00 00320			:PITEND	EQU	:PITC*32	LAST LOCATION OF PRPG INTERFACE TAB.
1564		00000013				OR	:PITEND=IPITLAST	CLEAR REMAINING LOCATIONS OF PIT
1565	00	0030D	00000000	A		DATA	0	
1566						FIN		
	00	0030E	00000000	A				
	00	0030F	00000000	A				
	00	00310	00000000	A				
	00	00311	00000000	A				
	00	00312	00000000	A				
	00	00313	00000000	A				
	00	00314	00000000	A				
	00	00315	00000000	A				
	00	00316	00000000	A				
	00	00317	00000000	A				
	00	00318	00000000	A				
	00	00319	00000000	A				
	00	0031A	00000000	A				
	00	0031B	00000000	A				
	00	0031C	00000000	A				
	00	0031D	00000000	A				
	00	0031E	00000000	A				
	00	0031F	00000000	A				
1567					*			
1568					*			
1569					* LOCATIONS			
1570		00 0030D			:PITX	EQU	:PITLAST	
1571					* THRU			
1572		00 00320			:PITY	EQU	:PITEND	
1573					* ARE AVAILABLE AS A PATCH AREA.			
1574					*			
1575					PAGE			
1576					*			
1577					* DIRECTIVE DICTIONARY			
1578					* -----			
1579					* THIS TABLE SUPPLIES THE MONITOR WITH			
1580					* INFORMATION ABOUT EACH DIRECTIVE AVAILABLE IN THE TEST PROGRAM.			
1581					* EACH DICTIONARY ENTRY CONSISTS OF 2 WORDS (64 BITS) WHICH ARE			
1582					* DEFINED AS FOLLOWS:			
1583					*			
1584					* BITS 00 THRU 31 4 BYTE MNEMONIC IDENTIFIER IN EBCDIC			
1585					* BITS 32 THRU 34 TYPE OF CONVERSION FOR PARAMETER 1.			
1586					* BITS 35 THRU 37 TYPE OF CONVERSION FOR PARAMETER 2.			
1587					* BITS 38 THRU 40 TYPE OF CONVERSION FOR PARAMETER 3.			
1588					* BITS 41 THRU 43 TYPE OF CONVERSION FOR PARAMETER 4.			
1589					* BITS 44 THRU 47 NOT ASSIGNED; MUST BE EQUAL TO ZERO			
1590					* BITS 48 THRU 63 ROUTINE ADDRESS			
1591					*			
1592					* TYPE OF PARAMETER CONVERSION			
1593					*			
1594					* 000 HEXADECIMAL CONVERSION			
1595					* 001 DECIMAL CONVERSION TO BINARY			
1596					* 002 ALPHANUMERIC			
1597					*			
1598	01	00000			CSECTDIC	CSECT		
1599	01	00320			ARG		X'320'	
	01	00320						
1600		01 00320			:PIC	EQU	*	
1601					*			INSERT DICTIONARY ENTRIES
1602					*			
1603	01	00320	E3E2E3F0 A		:TST0DIR	:PRCDIC	'TST0',1,1,7,0,0,TST0	COMPREHENSIVE TEST
			27800405					
1604	01	00322	E3E2E3F1 A		:TST1DIR	:PRCDIC	'TST1',1,1,7,0,0,TST1	FUNCTIONAL TEST
			27800417					
1605	01	00324	E3F2E3F2 A		:TST2DIR	:PRCDIC	'TST2',1,1,7,0,0,TST2	RANDOM EXERCISER
			278013F3					
1606	01	00326	E3E2E3F3 A		:TST3DIR	:PRCDIC	'TST3',1,1,1,7,0,TST3	UTILITY TEST
			24FC1538					
1607	01	00328	C4C1E3C1 A		:DATADIR	:PRCDIC	'DATA',1,0,0,7,0,DATA	DATA DIRECTIVE

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1608	01	0032A	20701326 E2C5C8D2 A		:SEEKDIR	:PR0CDIC	'SEEK',1,1,1,1,0,SEEK	SEEK DIRECTIVE
1609	01	0032C	24901339 D9E2C5E3 A E0001372		:RSETDIR	:PR0CDIC	'RSET',7,0,0,0,0,RSET	REPLACE HIS WITH I/O RESET
1610					*			
1611		01 0032E			:DICEND	FGU	*	
1612						PAGE		
1613					*			
1614					*	CONTEXT DESCRIPTION TABLE		
1615					*	-----		
1616					*	THE CONTEXT DESCRIPTION TABLE ALLOWS		
1617					*	THE MONITOR TO PASS-ON ENVIRONMENTAL INFORMATION FROM THE 'SYST'		
1618					*	DIRECTIVE TO THE TEST PROGRAM, NORMALLY ONLY ONE ENTRY WILL BE		
1619					*	REQUIRED, EACH CONTEXT DESCRIPTION TABLE ENTRY CONSISTS OF 2 WORDS		
1620					*	(64 BITS) WHICH ARE DEFINED AS FOLLOWS:		
1621					*			
1622					*	BITS 00 THRU 08 LENGTH OF CONTEXT DATA BLOCK		
1623					*	BITS 09 THRU 27 NOT ASSIGNED; MUST BE EQUAL TO ZERO		
1624					*	BITS 28 THRU 31 NUMBER OF DEVICE MODEL NUMBERS		
1625					*	BITS 32 THRU 61 ADDR OF CONTEXT DATA BLOCK		
1626					*			
1627		01 0032E			:CDT	FGU	:DICEND	
1628	01	0032E	0D800003 N 00000333			GEN,9,19,4,32	:ICDBEND=:ICDB,0,:ICDBMEND=:ICDBM,:ICDB	
1629		01 00330			:CDTEND	FGU	*	
1630					*			
1631					*			
1632					*	CONTEXT DATA BLOCK		
1633					*	-----		
1634					*	THE CONTEXT DATA BLOCK CONTAINS ENVIRONMENTAL		
1635					*	INFORMATION FOR THE TEST PROGRAM.		
1636					*			
1637		01 00330			:ICDBM	FGU	*	
1638					*			
1639					*	INSERT ALL MODEL NUMBERS WHICH CAN BE TESTED		
1640					*	WITH THIS TEST PROGRAM.		
1641					***	EXAMPLE OF MODEL NUMBER ENTRY		
1642	01	00330	00001C21 A		DATA	7201		MEDIUM SPEED RAD
1643	01	00331	00001C2B A		DATA	7211		HIGH SPEED
1644	01	00332	00001C3F A		DATA	7231		EXTENDED PERFORMANCE RAD
1645					*			
1646		01 00333			:ICDBMEND	FGU	*	
1647					*			'SYST' DIRECTIVE OR INITIAL VALUE
1648		01 00333			:ICDB	FGU	*	
1649	01	00333	00051C21 A		GEN,16,16,5,7201			NO. OF PARAMETERS & MEDIUM SPEED RAD
1650	01	00334	00000000 A		DATA	0		REVISION NUMBER
1651	01	00335	00000000 A		DATA	0		VALID IOP, INVALID STORAGE ADDRESS
1652	01	00336	000000F0 A		DATA	X'0FC'		DEVICE ADDRESS
1653	01	00337	00007202 A		DATA	X'7202'		MODEL NUMBER OF THE STORAGE UNIT
1654	01	00338	00000000 A		DATA	0		WRITE PROTECT SWITCH SETTING
1655	01	00339			RES	21		
1656		01 0034E			:ICDBEND	FGU	*	
1657					*			
1658					*			
1659					*			
1660		01 0034E			:ICATALOG	FGU	*	PROGRAM CATALOG NUMBER
1661	01	0034E	000AC4C2 A		DATA	705730		
1662					*			
1663		01 0034F			:IPROGID	FGU	*	PROGRAM IDENTIFICATION MESSAGE
1664					TEXTC	'SIGMA 5/7 ';;		
1665						'COMPREHENSIVE RAPID ACCESS DEVICE (RAD) FILE TEST ';;		
1666	01	0034F	4FE2C9C7 A			'PROGRAM 705730-A00 '		
	01	00350	D4C14CF5 A					
	01	00351	61F740C3 A					
	01	00352	D6D4D7D9 A					
	01	00353	C5C8C5D5 A					
	01	00354	E2C9EFC5 A					
	01	00355	40D9C1D7 A					
	01	00356	C9C440C1 A					
	01	00357	C3C3C5E2 A					

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
	01	00358	E240C4C5	A				
	01	00359	E5C9C3C5	A				
	C1	0035A	404DD9C1	A				
	C1	0035B	C45D40C6	A				
	C1	0035C	C9D3C540	A				
	C1	0035D	E3C5E2F3	A				
	C1	0035E	40D7D9D6	A				
	C1	0035F	C7D9C1D4	A				
	C1	00360	40F7F0F5	A				
	C1	00361	F7F3F060	A				
	C1	00362	C1F0FC40	A				
1667						PAGE		
1668					*			
1669					*			
1670					*** A B S O L U T E R E C O V E R Y ***			
1671	C1	00363	35FC13F2		:RECOVER	STW,15	WHDOGRTN	
1672	C1	00364	22000000	A		LI,0	0	REGISTER 0 = 0
1673	C1	00365	22100001	A		LI,1	1	REGISTER 1 = 1
1674	C1	00366	22200002	A		LI,2	2	REGISTER 2 = 2
1675	C1	00367	22300003	A		LI,3	3	REGISTER 3 = 3
1676	C1	00368	350013DF			STW,0	WATCHFLG	ZERO WATCH DOG TIMER FLAG
1677	C1	00369	35001787			STW,0	ENDOPER	ZERO END OF OPERATION FLAG
1678	C1	0036A	327C0375			LW,7	XPSDWD	LOAD AND SAVE
1679	C1	0036B	35700046	A		STW,7	X'46'	WATCH DOG TIMER XPSD
1680	C1	0036C	350013CF			STW,0	WATCHERR	
1681	C1	0036D	227C0020	A		LI,7	X'20'	DISARM I/O INTERRUPT
1682	C1	0036E	6D7C11C0	A		WD,7	X'11C0'	
1683	C1	0036F	330C18D0			MTW,0	:DEVADDR	
1684	C1	00370	683C0373			BEZ	*+3	IF NO DEV SELECTED NO RESET
1685	C1	00371	CF0C18D0			HI0,0	*:DEVADDR	RESET LAST RUN DEVICE
1686	C1	00372	6AFC1FF8			BAL,15	:SAVECLR	
1687	C1	00373	6D7C17C0	A		WD,7	X'17C0'	TRIGGER I/O INTERRUPT
1688	C1	00374	E80C13F2			B	*WHDOGRTN	RETURN
1689	C1	00375	CF0C139A		XPSDWD	XPSD,0	WATCHDOG	WATCH DOG TIMER XPSD
1690						PAGE		
1691					*			
1692					*			
1693					*			*** I N I T I A L I Z E R ***
1694					*			
1695					*			THE MONITOR WILL TRANSFER CONTROL TO THIS ROUTINE
1696					*			UNDER THE FOLLOWING CONDITIONS:
1697					*			1. IMMEDIATELY AFTER A PROGRAM HAS BEEN LOADED
1698					*			AND PRIOR TO PRINTING THE PROGRAM TITLE.
1699					*			2. IF A NEW 'SYST' DIRECTIVE IS ENTERED AND THE
1700					*			TEST PROGRAM IS ALREADY IN CORE.
1701					*			
1702					*			THIS ROUTINE PERFORMS THE FOLLOWING FUNCTIONS:
1703					*			1. INITIALIZES THE I/O, COUNTER 4 AND
1704					*			WATCHDOG TIMER LOCATIONS.
1705					*			2. DISARM AND DISABLES ALL I/O AND COUNTER
1706					*			INTERRUPTS.
1707					*			3. VALIDATES ALL PARAMETERS ENTERED BY THE 'SYST'
1708					*			DIRECTIVES.
1709					*			
1710					*			INPUT PARAMETERS:
1711					*			
1712					*			REG 15 -RETURN ADDRESS
1713					*			
1714					*			REGISTERS DISTURBED:
1715					*			REG 4 THRU 15
1716					*			
1717					*			OUTPUT PARAMETERS:
1718					*			
1719					*			REG 0 -0
1720					*			REG 1 -1
1721					*			REG 2 -2
1722					*			REG 3 -3
1723					*			DEVICE DESCRIPTION TABLE CONTAINS INFORMATION
1724					*			PERTAINING TO TARGET DEVICES.
1725					*			#DDTLGTH= DEVICE DESCRIPTION TABLE LENGTH (NO.
1726					*			OF TARGET DEVICES).

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR RECRIG	LABEL	OPERATION	OPERAND	COMMENTS
1727					*			
1728					*			
1729					*			
1730		01 00376			MODELNO	SET	\$	STORAGE UNIT MODEL NUMBER
1731	01	00376	00007202	A		DATA	X'7202'	
1732	01	00377	00007203	A		DATA	X'7203'	
1733	01	00378	00007204	A		DATA	X'7204'	
1734	01	00379	00007232	A		DATA	X'7232'	
1735	01	0037A	00007212	A		DATA	X'7212'	
1736		01 0037B			MODELNO	SET	\$	
1737					*			
1738		01 0037B			CAPACITY	SET	\$	SECTOR / STORAGE UNIT
1739	01	0037B	00000200	A		DATA	128*14	
1740	01	0037C	00001000	A		DATA	256*14	
1741	01	0037D	00002000	A		DATA	512*16	
1742	01	0037E	00001800	A		DATA	512*12	
1743	01	0037F	00001480	A		DATA	64*82	
1744		01 00380			CAPEND	SET	\$	
1745					*			
1746		01 00380			BYTESTAT	EQ	\$	BYTE / SECTOR
1747	01	00380	00000168	A		DATA	360	
1748	01	00381	00000168	A		DATA	360	
1749	01	00382	00000168	A		DATA	360	
1750	01	00383	00000400	A		DATA	1024	
1751	01	00384	00000400	A		DATA	1024	
1752		01 00385			BYTEND	SET	\$	
1753					*			
1754		01 00385			SECTRACK	SET	\$	
1755	01	00385	00000010	A		DATA	16	
1756	01	00386	00000010	A		DATA	16	
1757	01	00387	00000010	A		DATA	16	
1758	01	00388	00000000	A		DATA	12	
1759	01	00389	00000052	A		DATA	82	
1760		01 0038A			SECTREND	SET	\$	
1761					*			
1762		01 0038A			TCKSFCT1	SET	\$	
1763	01	0038A	00000004	A		DATA	4	TRACK SHIFT
1764	01	0038B	00000004	A		DATA	4	TRACK SHIFT
1765	01	0038C	00000004	A		DATA	4	TRACK SHIFT
1766	01	0038D	00000004	A		DATA	4	TRACK SHIFT
1767	01	0038E	00000007	A		DATA	7	BAND SHIFT
1768		01 0038F			TCKSFCT2	SET	\$	
1769					*			
1770					*			
1771					*			
1772					*			
1773	01	0038F	35F00401		INITIAL	STW,15	INITRIN	SAVE RETURN ADDRESS
1774	01	00390	6AF00363			RAL,15	RECOVER	GO TO ABSOLUTE RECOVERY
1775	01	00391	35100404			STW,1	DONTREAD	SET THE DON'T READ FLAG
1776					*			
1777					*			
1778					*			
1779	01	00392	52700333		LH,7		:CDB	FETCH NO. OF PARAMETERS
1780	01	00393	557203AA		STW,7		INIT4,1	SAVE NO. OF PARAMETERS
1781	01	00394	21700005	A	CI,7		5	IF LESS THAN 5
1782	01	00395	6910038A		RL		INITERR	ERROR, PARAMETER IN ERROR
1783	01	00396	2170001B	A	CI,7		:CDBEND-ICDB	MAXIMUM NO. OF PARAMETERS TO BE USED
1784	01	00397	6920038A		RG		INITERR	IF GREATER THAN ALLOW NO. ERROR
1785					*			
1786					*			
1787					*			
1788	01	00398	32600334		INITO	LW,6	:CDB+1	LOAD AND SAVE
1789	01	00399	35600403			STW,6	REVISION	REVISION LEVEL
1790	01	0039A	32600335			LW,6	:CDB+2	FETCH VALID IOP, INVALID DEV ADDR
1791	01	0039B	683003A2		RFZ		INITO4	IF ZERO, NO INVALID DEV TEST
1792	01	0039C	21600080	A	CI,6		X'10'	IF DEV. ADDR < X'10' ERROR
1793	01	0039D	691003A0		BL		\$+3	GO TO PARAMETER ERROR
1794	01	0039E	216007FF	A	CI,6		X'7FF'	IF DEV. ADDR > X'7FF' ERROR
1795	01	0039F	682003A2		RLE		INITO4	GO TO SAVE DEV ADDR
1796	01	003A0	22700003	A	INITO5	LI,7	3	LOAD PARAMETER IN ERROR = 3
1797	01	003A1	6A00038A			B	INITERR	GO TO PARAMETER ERROR EXIT

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1798					*			
1799					*			
1800					*			SKIP TST1,1.
1801	C1	003A2	35600402		INIT04	STW,6	INVDEV	SAVE INVALID DEV ADDR IF ZERO
1802	01	003A3	35001864			STW,0	#DDTP	INITIALIZE DDT POINTER TO ZERO
1803	C1	003A4	35001866			STW,0	#DDTBIAS	INITIALIZE DDT BIAS POINTER
1804	01	003A5	22600C09	A		LI,6	9	LOAD MAX LENGTH OF TABLE
1805	C1	003A6	35601865			STW,6	#DDTLGTH	SAVE IN DDT LENGTH
1806	C1	003A7	22700001	A		LI,7	1	SET REG = 1
1807	01	003A8	20700002	A	INIT1	AI,7	2	ADD 2 TO CDB POINTER
1808	01	003A9	20700001	A	INIT2	AI,7	1	ADD 1 TO CDB POINTER
1809	C1	003AA	21700000	A	INIT4	CI,7	0	IF > LENGTH OF TABLE,
1810	01	003AB	6810039E			RGE	INITEXIT	EXIT
1811	01	003AC	326E0332			LW,6	:CDB-1,7	FETCH DEV ADDR FROM CDB
1812	C1	003AD	21600080	A		CI,6	X1801	IF DEV. ADDR < X1801
1813	01	003AE	6910039A			RL	INITERR	GO TO PARAMETER ERROR EXIT
1814	C1	003AF	216007FF	A		CI,6	X17FF1	IF DEV. ADDR > X17FF1
1815	C1	00390	6920039A			RG	INITERR	GO TO PARAMETER ERROR EXIT
1816	C1	00391	31600402			CW,6	INVDEV	IF INVALID DEVICE ADDRESS =
1817	C1	00392	683003A0			RE	INIT05	GOOD ADDRESS ERROR
1818					*			
1819					*			
1820	C1	00393	32401866		INIT3	LW,4	#DDTBIAS	LOAD BIAS POINTER TO DDT
1821	C1	00394	35681868			STW,6	TGTDEV,4	SAVE TARGET DEVICE ADDRESS
1822	C1	00395	6AFC03C3			RAL,14	INITPAR	GO TO PARAMETER CHECKING ROUTINE
1823	C1	00396	6800039A			R	INITERR	IF BAD PARAMETER RETURN WAS HERE
1824	C1	00397	6AF01850			RAL,15	#DDTICMT	UPDATE DDT POINTER
1825	C1	00398	6AFC1139			RAL,15	TILT	ERROR SHOULD NOT GET HERE
1826	C1	00399	68000399			R	INIT2	GO TEST NEXT PARAMETER
1827					*			
1828					*			
1829	C1	0039A	3570030A	A	INITERR	STW,7	:EPARNO	SAVE NO. OF THE BAD PARAMETER
1830	C1	0039B	22400000	A		LI,4	0	RESET LENGTH
1831	C1	0039C	3540030C	A		STW,4	:PIT12	RESET 'SYST' DIRECTIVE ENTERED
1832	C1	0039D	680003C1			R	INTEXT1	TAKE RETURN PATH TO MONITOR
1833					*			
1834					*			
1835					*			
1836	C1	0039E	226FFFFFF	A	INITEXIT	LI,6	-1	RESET 'SYST' DIRECTIVE NOT LOADED
1837	C1	0039F	3560030C	A		STW,6	:PIT12	
1838	C1	003C0	32401864			LW,4	#DDTP	FETCH CURRENT LENGTH OF DDT
1839	C1	003C1	35401865		INTEXT1	STW,4	#DDTLGTH	SAVE AS THE LENGTH OF THE DDT
1840	C1	003C2	E8000401			R	*INITRTN	RETURN TO MONITOR
1841					*			
1842					*			
1843					*			
1844	C1	003C3	20700001	A	INITPAR	AI,7	1	INCREMENT CDB POINTER
1845	C1	003C4	326E0332			LW,6	:CDB-1,7	LOAD MODEL NUMBER OF STORAGE UNIT
1846	C1	003C5	225FFFFFF	A		LI,6	MODELNO-MODELEND	LOAD LENGTH OF THE MODEL NO. TABLE
1847	C1	003C6	316AC37B			CW,6	MODELEND,5	COMPARE PARAMETER WITH MODEL NO. TABLE
1848	C1	003C7	683003CA			RE	INITPAR1	IF MATCH NEXT STEP
1849	C1	003C8	655003C6			RIR,5	*-2	IF NO MATCH TRY NEXT ENTRY
1850	C1	003C9	E800000E	A		R	*14	IF NO MATCHES TAKE ERROR EXIT
1851					*			
1852					*			
1853					*			
1854	C1	003CA	35681867		INITPAR1	STW,6	MODEL,4	SAVE THE MODEL NO.
1855	C1	003CB	329A0380			LW,9	CAPEND,5	LOAD MAXIMUM SECTORS AVAILABLE
1856	C1	003CC	32AA0385			LW,10	RYTEND,5	LOAD AND SAVE
1857	C1	003CD	35A8186A			STW,10	RYTESECT,4	NO. OF BYTES/SECTOR
1858					*			
1859	C1	003CE	328A038A			LW,11	SECTREND,5	LOAD AND SAVE
1860	C1	003CF	35B81869			STW,11	SECTORS,4	NO. OF SECTORS/TRACK
1861					*			
1862	C1	003D0	328A038F			LW,11	TCKSFT02,5	LOAD AND SAVE
1863	C1	003D1	35B8186F			STW,11	TCKSHIFT,4	NO. OF SHIFT REQD FOR TRACK ADDR
1864					*			
1865					*			
1866					*			
1867	C1	003D2	20700001	A		AI,7	1	INCREMENT CDB POINTER
1868	C1	003D3	326E0332			LW,6	:CDB-1,7	LOAD WRITE PROTECT SWITCH SETTING

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABO OR RET CR I G	LABEL	OPERATION	OPERAND	COMMENTS
1869	01	003D4	517203AA			CH,7	INIT4,1	COMPARE HALFWORD
1870	01	003D5	682003D7			BLE	**2	BRANCH IF LESS OR EQUAL
1871	01	003D6	22600000	A		LI,6	0	FETCH N0
1872					*			
1873					*			
1874	01	003D7	52C00006	A		LH,12	6,0	LOAD D1D2
1875	01	003D8	EAF00213	A		RAL,15	*1BCDC	BRANCH TO BCD TO BINARY CONVERSION
1876	01	003D9	32B0000F	A		LW,11	15	SAVE CONVERTED D1D2
1877					*			
1878					*			
1879	01	003DA	52C20006	A		LH,12	6,1	LOAD D3D4
1880	01	003DB	EAF00213	A		RAL,15	*1BCDC	BRANCH TO BCD TO BINARY CONVERSION
1881	01	003DC	32D0000F	A		LW,13	15	SAVE CONVERTED D3D4
1882					*			
1883					*			
1884	01	003DD	21800010	A		CI,11	16	IF D1D2 > 16
1885	01	003DE	E920000E	A		RG	*14	TAKE PARAMETER ERROR EXIT
1886	01	003DF	21D00010	A		CI,13	16	IF D3D4 > 16
1887	01	003E0	E920000E	A		RG	*14	TAKE PARAMETER ERROR EXIT
1888					*			
1889					*			
1890	01	003E1	3300000D	A		MTW,0	13	IF D3D4 > 0
1891	01	003E2	693003E4			RNEZ	**2	NEXT STEP,
1892	01	003E3	20D00011	A		AI,13	17	OTHERWISE SET D3D4 = 17
1893					*			
1894					*			
1895	01	003E4	20DFFFFFF	A		AI,13	-1	
1896	01	003E5	31B0000D	A		QW,11	13	IF D1D2 = D3D4
1897	01	003E6	E810000E	A		RGE	*14	TAKE PARAMETER ERROR EXIT
1898					*			
1899					*			
1900	01	003E7	22A00000	A		LI,10	0	ZERO MSB OF REG 10-11 DOUBLEWORD
1901	01	003E8	22C00000	A		LI,12	0	ZERO MSB OF REG 12-13 DOUBLEWORD
1902	01	003E9	37A81869			MW,10	SECTORS,4	REG 11 =
1903	01	003EA	23A00020	A		MI,10	32	(D1D2 * SECTORS) * 32
1904	01	003EB	31B00009	A		QW,11	9	IF REG 11 > MAXIMUM SECTORS AVAILABLE
1905	01	003EC	E810000E	A		RGE	*14	TAKE PARAMETER ERROR EXIT
1906					*			IF NOT LOAD
1907	01	003ED	3598186B			STW,11	SLOWER,4	AND SAVE AS SECTOR LOWER LIMIT
1908	01	003EE	35981870			STW,11	SWPROT12,4	AS WRITE PROTECT LOWER LIMIT
1909					*			
1910					*			
1911	01	003EF	37C81869			MW,12	SECTORS,4	REG 13 =
1912	01	003F0	22C00020	A		MI,12	32	(D3D4*32*SECTORS)
1913	01	003F1	31B00009	A		QW,13	9	IF REG 13 > MAXIMUM SECTORS AVAILABLE
1914	01	003F2	692003F4			RG	**2	USE MAXIMUM SECTOR AVAILABLE
1915	01	003F3	379C000D	A		LW,9	13	OTHERWISE USE REG 13
1916	01	003F4	3598186C			STW,9	SUPPER,4	AS SECTOR UPPER LIMIT
1917	01	003F5	35981871			STW,9	SWPROT34,4	AS WRITE PROTECT UPPER LIMIT
1918					*			
1919					*			CALLED BY THE S E F K DIRECTIVE
1920					*			
1921	01	003F6	3B90000B	A	INITSIZE	SW,9	11	CALCULATE MAXIMUM SECTOR AVAILABLE
1922	01	003F7	3598186D			STW,9	SSIZE,4	SAVE SECTOR SIZE
1923					*			
1924	01	003F8	22A00000	A		LI,10	0	ZERO REG 10
1925	01	003F9	3268186F			LW,6	TCKSHIFT,4	FETCH SHIFTING PARAMETER
1926	01	003FA	3300000B	A		MTW,0	11	IF SECTOR LOWER LIMIT = 0
1927	01	003FB	6A3C03FF			REZ	**4	BRANCH AROUND CALCULATION
1928	01	003FC	36A81869			QW,10	SECTORS,4	CALCULATE
1929	01	003FD	A5B00006	A		CLS,11	*6	A STARTING
1930	01	003FE	30B0000A	A		AW,11	10	TRACK SECTOR ADDRESS
1931	01	003FF	3598186E			STW,11	TSSTART,4	SAVE TRACK SECTOR STARTING ADDRESS
1932	01	00400	E920000E	A		R	*14,1	RETURN TO CALLING CODE
1933					*			
1934					*			
1935					*			
1936	01	00401	00000000	A	INITRTN	DATA	0	SAVE RETURN ADDRESS
1937	01	00402	00000000	A	INVDEV	DATA	0	INVALID DEVICE ADDRESS
1938	01	00403	00000000	A	REVISION	DATA	0	REVISION LEVEL OF THE DEVICE
1939	01	00404	00000000	A	DONTREAD	DATA	0	DO NOT READ FLAG

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1940								PAGE
1941				*				
1942				*				*** C O M P R E H E N S I V E T E S T ***
1943				*				*** T S T O ***
1944				*				
1945				*				THIS DIRECTIVE TESTS ALL FUNCTIONS ASSOCIATED
1946				*				WITH A RAD STORAGE SYSTEM. IT PERFORMS A
1947				*				FUNCTIONAL AND A RANDOM EXERCISER TEST ON
1948				*				THE CONTROLLER AND ALL STORAGE UNITS SPECIFIED
1949				*				BY THE 'SYST' DIRECTIVE.
1950				*				P1 = THE NUMBER OF ORDER SEQUENCES TO BE ISSUED
1951				*				DURING THE EXECUTION OF RANDOM EXERCISER.
1952				*				
1953				*				IF P1 = 0, 5000 ORDER SEQUENCES WILL BE ISSUED
1954				*				BY DEFAULT.
1955				*				
1956				*				P1 = 0; ORDER SEQUENCES = 5000
1957				*				
1958				*				OR
1959				*				
1960				*				1 < P1 < 99999999
1961				*				
1962				*				P2 = RETRY COUNT FOR THE RANDOM EXERCISER ON DETECTED
1963				*				ERROR.
1964				*				
1965				*				0 < P2 < 99999999
1966				*				
1967				*				
1968				*				
1969	C1	0C405	228C0000 A		TSTO	LI,8	0	LOAD P1
1970	C1	0C406	229C0000 A			LI,9	0	AND P2 AS ZERO FOR FUNCTIONAL TST
1971	C1	0C407	6AF00420			RAL,15	TST100	GO TO FUNCTIONAL TEST
1972				*				
1973				*				
1974				*				
1975	C1	0C408	32800201 A			LW,8	:P1	LOAD ORDER SEQUENCE COUNT
1976	C1	0C409	69300408			RNEZ	*+?	IF ZERO
1977	C1	0C40A	22801388 A			LI,8	5000	LOAD A SEQUENCE COUNT = 5000
1978	C1	0C40B	358C151D			STW,8	CYCLE	RANDOM CYCLES
1979	C1	0C40C	32800202 A			LW,8	:P2	LOAD RETRY COUNT
1980	C1	0C40D	358C151C			STW,8	TST?PAR+2	ON ERROR
1981	C1	0C40E	22800000 A			LI,8	0	
1982	C1	0C40F	358C1A87			STW,8	#MSGLEVL	REPORT ALL ERRORS
1983	C1	0C410	6AFC1403			RAL,15	TST?LEV?	GO TO RANDOM EXERCISER
1984	C1	0C411	68000412			R	*+1	BRANCH
1985	C1	0C412	35100404			STW,1	DONTREAD	
1986	C1	0C413	EAF0021D A			RAL,15	*ISENSE	GO TEST SENSE SWITCHES
1987	C1	0C414	2F000414			WAIT	*	SS3= OFF SS1 = UNK (HLT AFTER TEST)
1988	C1	0C415	68000405			R	TSTO	SS3= ON SS1 = ON (LOOP ON TEST)
1989	C1	0C416	E8000214 A			R	*:MONITOR	SS3= ON SS1 = OFF (RTN TO MONITOR)
1990								PAGE
1991				*				
1992				*				*** F U N C T I O N A L T E S T ***
1993				*				
1994				*				*** T S T 1 , P 1 , D ?
1995				*				
1996				*				THIS DIRECTIVE PERFORMS A SYSTEMATIC TEST OF ALL
1997				*				LOGIC FUNCTIONS OF THE CONTROLLER AND ALL STORAGE
1998				*				UNITS SPECIFIED BY THE 'SYST' DIRECTIVE.
1999				*				THE FUNCTIONAL TEST CONSISTS OF A NUMBER OF SUBTESTS
2000				*				WHICH MAY BE SELECTED INDIVIDUALLY OR IN GROUPS.
2001				*				
2002				*				WHEN A FAULT HAS BEEN DETECTED, AUTOMATIC ERROR
2003				*				LOOPING WILL BE IMPLEMENTED UNDER SENSE SWITCH
2004				*				CONTROL.
2005				*				
2006				*				ERROR LOOPING WILL NOT BE PERFORMED IF THE CAUSE
2007				*				OF THE FAULT IS A FLAW IN THE RECORDING MEDIA.
2008				*				
2009				*				PARAMETERS:
2010				*				

LINE NO.	MEM PRCT KEY	MEMORY ADDRESS	MEMORY CONTENTS	AE OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2011					*			D1 - THE NUMBER OF THE FIRST SUBTEST TO BE EXECUTED
2012					*			(IF = 0 ALL SUB-TESTS WILL BE EXECUTED).
2013					*			
2014					*			D2 - THE NUMBER OF THE LAST SUBTEST TO BE EXECUTED.
2015					*			
2016					*			
2017					*			
2018	C1	00417	22000000	A	TST1	LI,0	0	ZERO
2019	C1	00418	35000481			STW,0	TSTOFLAG	COMPREHENSIVE TEST FLAG
2020	C1	00419	32800201	A		LW,8	:P1	LOAD NO. OF FIRST SUB-TEST TO BE EXEC
2021	C1	0041A	32900202	A		LW,9	:P2	LOAD NO. OF LAST SUB-TEST TO BE EXEC
2022	C1	0041B	6AF20420			RAL,15	TST100,1	GO TO FUNCTIONAL TEST
2023	C1	0041C	EAF0021D	A		RAL,15	*ISENSE	GO TEST SENSE SWITCHES
2024	C1	0041D	2E00041D			WAIT	*	SS3 = OFF SS1 = UNK (HLT AFTER TST)
2025	C1	0041E	68000417			R	TST1	SS3 = ON SS1 = ON (LOOP ON TEST)
2026	C1	0041F	ER000214	A		R	*IMONITOR	RETURN TO THE MONITOR
2027					*			
2028					*			START FUNCTIONAL TEST
2029					*			
2030	C1	00420	35100481		TST100	STW,1	TSTOFLAG	SET COMPREHENSIVE TEST FLAG
2031	C1	00421	35F004AF			STW,15	TST1RTN	SAVE RETURN ADDR
2032	C1	00422	22F00322			LI,15	:TST1DIR	LOAD AND SAVE ADDR
2033	C1	00423	35F01A99			STW,15	:MSBADDR	
2034	C1	00424	22A00001	A		LI,10	1	LOAD INDEX PRINTER
2035	C1	00425	22400031	A		LI,11	TST1END-TST1START	LOAD MAXIMUM UPPER LIMIT OF F TESTS
2036					*			
2037					*			TEST FOR P1 = 0, IF = 0 DO ALL FUNCTIONAL TESTS
2038					*			
2039	C1	00426	33000008	A		MTW,0	R	TEST P1, IF = 0
2040	C1	00427	68300438			REZ	TST1001	DO ALL FUNC TESTS
2041					*			
2042					*			TEST FOR P1 > UPPER LIMIT, IF SO, P1 IS IN ERROR
2043					*			
2044	C1	00428	3510030A	A		STW,1	:ERRPARN	LOAD PARAMETER ERROR COUNT = 1
2045	C1	00429	32A00008	A		LW,10	8	LOAD NO. OF FIRST FUNCTIONAL TEST
2046	C1	0042A	21800031	A		CI,8	TST1END-TST1START	COMPARE IT WITH UPPER LIMIT
2047	C1	0042B	69200435			RG	TST1PERR	IF GREATER P1 IS IN ERROR
2048					*			
2049					*			TEST FOR P2 = 0, IF = 0, SET P2 = P1
2050					*			
2051	C1	0042C	33000009	A		MTW,0	9	
2052	C1	0042D	6930042F			HNEZ	\$+2	IF NOT BRANCH
2053	C1	0042E	32900008	A		LW,9	8	OTHERWISE SET P2 = P1
2054					*			
2055					*			TEST FOR P2 > UPPER LIMIT, IF SO, P2 IS IN ERROR
2056					*			
2057	C1	0042F	3520030A	A		STW,2	:ERRPARN	LOAD PARAMETER ERROR COUNT = 2
2058	C1	00430	32400009	A		LW,11	9	LOAD NO. OF LAST FUNCTIONAL TEST
2059	C1	00431	21900031	A		CI,9	TST1END-TST1START	COMPARE IT WITH UPPER LIMIT
2060	C1	00432	69200435			RG	TST1PERR	IF GREATER P2 IS IN ERROR
2061					*			
2062					*			TEST FOR P2 + P1 IF SO, P2 IS IN ERROR
2063					*			
2064	C1	00433	3140000A	A		STW,11	10	TEST FOR P2 < P1
2065	C1	00434	68100438			RGE	TST1001	IF NOT BRANCH
2066					*			
2067					*			REPORT PARAMETER ERROR
2068					*			
2069	C1	00435	EAF00229	A	TST1PERR	RAL,15	*:ERRPARN	GO TO PARAMETER ERROR REPORTER
2070	C1	00436	00000322			DATA	:TST1DIR	*** TYPE OF TEST BE EXECUTED ***
2071	C1	00437	ER000214	A		R	*:MONITOR	RETURN TO THE MONITOR
2072					*			
2073	C1	00438	15A00484		TST1001	STD,10	TST1TEST	SAVE LOWER AND UPPER LIMITS
2074					*			
2075					*			THIS CODE SETS UP THE DEVICE DESCRIPTION TABLE PTR
2076					*			
2077					TST102	J		
2078	C1	00439	22AFFFFF	A		LI,8	-1	LOAD AND SAVE A -1
2079	C1	0043A	358C1864			STW,8	#DDTP	TO INITIALIZE DDTP
2080					*			
2081					*			THIS CODE UPDATE THE ACTIVE DEVICE DESCRIPTION TABLE

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
2082					*			
2083					TST103 ;			
2084	C1	00438	CF001800			HIB,0	*DEVADDR	CLEAR LAST TESTED PAD
2085	C1	0043C	64FC1850			RAL,15	#DDTICMT	GO TO THE DDT TABLE INCREMENT ROUTIN
2086	C1	0043D	E80004AF			R	*TST1RTN	RTNS HERE IF NO MORE DEVICES
2087	C1	0043E	22000000	A		LI,0	0	FETCH ZERO
2088	C1	0043F	35001A87			STW,0	#MSGLEVL	STORE ZERO
2089	C1	00440	64FC17F0			RAL,15	MEMORY	BRANCH TO MEMORY SUBR.
2090	C1	00441	E80004AF			R	*TST1RTN	
2091					*			
2092					*			
2093					*			
2094					*			
2095	C1	00442	22AC0000	A		LI,10	0	ZERO REG 10
2096	C1	00443	22AC0350	A		LI,11	50000	
2097	C1	00444	36A018D1			DW,10	SECTCURR	DIVIDE BY NO. OF SECT/REV
2098	C1	00445	35H004AC			STW,11	SECTDLAY	SAVE AS SECTOR DELAY CONSTANT
2099					*			
2100					*			
2101					*			
2102					*			
2103					TST104 ;			
2104	C1	00446	32400484			LW,4	TST1TEST	LOAD AND SAVE THE
2105	C1	00447	35400480			STW,4	TST1P8NT	NO. OF THE 1 ST FUNCTIONAL SUB-T
2106	C1	00448	35100482			STW,1	TST1DVFG	SET PRINT 'TST1 DEV XXX' FLAG
2107					*			
2108					*			
2109					*			
2110					TST105 ;			
2111	C1	00449	22800020	A		LI,8	X'20'	FETCH 20
2112	C1	0044A	6D8C1100	A		WD,8	X'1100'	WRITE DIRECT
2113	C1	0044B	6D801700	A		WD,8	X'1700'	WRITE DIRECT
2114	C1	0044C	32501866			LW,5	#DDTB1AS	
2115	C1	0044D	02200090	A		LCI	#DDTADR3-#DDTADR1	
2116	C1	0044E	2A6A1867			LM,6	MODEL,5	
2117	C1	0044F	2B6C18CF			STM,6	MODEL,6	
2118	C1	00450	32501803			LW,5	CURRSEEK	
2119	C1	00451	6AC017CE			RAL,12	RUILDSK	BUILD CUR. DEV. SFEK ADDR.
2120	C1	00452	328C1F40			LW,8	L(X'19FFFFFF')	LOAD NORMAL T10 MASK
2121	C1	00453	358C10AD			STW,8	IFT10MSK	
2122	C1	00454	228FFFFFFF	A		LI,8	-1	
2123	C1	00455	358010AE			STW,8	IFAIPMSK	
2124	C1	00456	22800000	A		LI,8	0	
2125	C1	00457	35801135			STW,8	LOCATION	STORE WORD
2126	C1	00458	358004AE			STW,8	T1ERFLAG	RESET TST1 ERROR FLAG
2127	C1	00459	358004AD			STW,8	CDELAY	
2128	C1	0045A	35801787			STW,8	ENDOPER	SET UP
2129	C1	0045B	32901517			LW,9	TST2DATA+1	SET UP A FIXED PAT OF PT
2130	C1	0045C	15801D0A			STD,8	IPATIO	
2131	C1	0045D	32900004	A		LW,9	4	THE NUMBER
2132	C1	0045E	23800064	A		MI,8	100	OF THE TEST
2133	C1	0045F	359013CF			STW,9	WATCHERR	TO BE EXECUTED
2134	C1	00460	35101CA9			STW,1	:COMPFLAG	SET PRINT INHIBIT BY COMPARE ERROR
2135	C1	00461	22FC0472			LI,15	FUCTEXIT+1	SET UP
2136	C1	00462	35F013F2			STW,15	WHDRGRIN	
2137	C1	00463	328018D2			LW,8	RYTCURR	
2138	C1	00464	2580007E	A		SLS,8	-2	
2139	C1	00465	35801CA8			STW,8	:PATWC	
2140	C1	00466	22801F7E			LI,8	RUFIL0	
2141	C1	00467	35801CA3			STW,8	:PATBR	
2142	C1	00468	330018D6			MTW,0	TSSTARTC	MAKE SURE WE
2143	C1	00469	6930046B			RNEZ	\$+2	ARE NOT
2144	C1	0046A	331018D6			MTW,1	TSSTARTC	AT SECTOR=0 IPACK =0
2145	C1	0046B	64F01CED			RAL,15	:PATTERN	
2146					*			
2147					*			
2148	C1	0046C	325004R1			LW,5	TSTOFLAG	LOAD TSTO FLAG, IF TSTC FLAG =1
2149	C1	0046D	3280047A			MTW,0	TST1START-1,4	TEST FOR NO SUB TEST OR COMP BIT=1
2150	C1	0046E	67CA04R6			FXU	TSTOBCB,5	BRANCH ACCORDINGLY
2151					*			
2152					*			
								THIS CODE HANDLE THE CALLING OF AND RETURN FROM

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2153					*		A FUNCTIONAL SUP-TEST	
2154	C1	0046F	32FR047A			LW,15	TST1START-1,4	
2155	C1	00470	EAF0000F A			RAL,15	*15	
2156					*			
2157	C1	00471	68000476		FUCTEXIT R		TST106	THIS THE NORMAL EXIT FROM A SUP-TEST
2158					*			
2159	C1	00472	324004B0			LW,4	TST1PONT	THIS THE ERROR EXIT FROM A SUP-TEST
2160	C1	00473	EAF0021D A			RAL,15	*1SENSE	GO TEST SENSE SWITCHCES
2161	C1	00474	2E000474			WAIT	S	SS3=0FF SS1=UNK(HLT AFTER TEST)
2162	C1	00475	68000449			R	TST105	SS3= 0N SS1 = 0N (LOOP 0N TFST)
2163					*			SS3= 0N SS1 = 0FF (GO TO NEXT TEST)
2164					*			
2165					*			THIS CODE UPDATES THE FUNCTIONAL TEST POINTER
2166					*			
2167	C1	00476	331004R0		TST106	MTW,1	TST1PONT	INCREMENT FUNCTIONAL TEST POINTER
2168	C1	00477	324004B0			LW,4	TST1PONT	FETCH POINTER
2169	C1	00478	314004R5			CW,4	TST1TEST+1	COMPARE LAST TEST REQD
2170	C1	00479	6920043B			RG	TST103	IF GREATER EXIT
2171	C1	0047A	6F000449			R	TST105	OTHER GO DO NEXT TEST
2172					TST1START J			
2173		C1 0047B			EQU		*	
2174	C1	0047B	000004B8			DATA	T1ST01	
2175	C1	0047C	000004E2			DATA	T1ST02	
2176	C1	0047D	000004F2			DATA	T1ST03	
2177	C1	0047E	0000050D			DATA	T1ST04	
2178	C1	0047F	0000052C			DATA	T1ST05	
2179	C1	00480	00000546			DATA	T1ST06	
2180	C1	00481	000005A6			DATA	T1ST07	
2181	C1	00482	000005D0			DATA	T1ST08	
2182	C1	00483	00000644			DATA	T1ST09	
2183	C1	00484	00000685			DATA	T1ST10	
2184	C1	00485	000006F7			DATA	T1ST11	
2185	C1	00486	00000730			DATA	T1ST12	
2186	C1	00487	00000776			DATA	T1ST13	
2187	C1	00488	000007BE			DATA	T1ST14	
2188	C1	00489	000007FA			DATA	T1ST15	
2189	C1	0048A	00000842			DATA	T1ST16	
2190	C1	0048B	0000087A			DATA	T1ST17	
2191	C1	0048C	000008AB			DATA	T1ST18	
2192	C1	0048D	0000090E			DATA	T1ST19	
2193	C1	0048E	0000096C			DATA	T1ST20	
2194	C1	0048F	0000098E			DATA	T1ST21	
2195	C1	00490	00000C00 A			DATA	T1ST22	
2196	C1	00491	00000000 A			DATA	T1ST23	
2197	C1	00492	00000000 A			DATA	T1ST24	
2198	C1	00493	00000000 A			DATA	T1ST25	
2199	C1	00494	00000000 A			DATA	T1ST26	
2200	C1	00495	00000000 A			DATA	T1ST27	
2201	C1	00496	00000000 A			DATA	T1ST28	
2202	C1	00497	00000000 A			DATA	T1ST29	
2203	C1	00498	00000000 A			DATA	T1ST30	
2204	C1	00499	000009BC			DATA	T1ST31	
2205	C1	0049A	000009FC			DATA	T1ST32	
2206	C1	0049B	00000A1C			DATA	T1ST33	
2207	C1	0049C	00000A3E			DATA	T1ST34	
2208	C1	0049D	00000ADE			DATA	T1ST35	
2209	C1	0049E	00000H1F			DATA	T1ST36	
2210	C1	0049F	00000B3A			DATA	T1ST37	
2211	C1	004A0	00000E58			DATA	T1ST38	
2212	C1	004A1	00000H96			DATA	T1ST39	
2213	C1	004A2	00000BF1			DATA	T1ST40	
2214	C1	004A3	00000C4E			DATA	T1ST41	
2215	C1	004A4	00000C7C			DATA	T1ST42	
2216	C1	004A5	00000CC1			DATA	T1ST43	
2217	C1	004A6	00000CE0			DATA	T1ST44	
2218	C1	004A7	00000D37			DATA	T1ST45	
2219	C1	004A8	00000DA9			DATA	T1ST46	
2220	C1	004A9	00000DCE			DATA	T1ST47	
2221	C1	004AA	00000DF3			DATA	T1ST48	
2222	C1	004AB	00000E36			DATA	T1ST49	
2223					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2224					*			
2225		01 004AC			TST1END	EQU	0	
2226						BOUND	8	
2227	01	004AC	00000000	A	SECTDLAY	DATA	0	SECTOR DALAY CONSTANT
2228	01	004AD	00000000	A	CDELAY	DATA	0	CONTR TO DEV DELAY
2229	01	004AE	00000000	A	T1ERFLAG	DATA	0	TST1 ERROR IN SUBTEST FLAG
2230	01	004AF	00000000	A	TST1RTN	DATA	0	RETURN ADDRESS
2231	01	004B0	00000000	A	TST1PNT	DATA	0	POINTER TO CURRENT FUNCTIONAL TEST
2232	01	004B1	00000000	A	TSTOFLAG	DATA	0	IF = 1 COMPREFHENSIVE TEST FLAG
2233	01	004B2	00000000	A	TST1DVFG	DATA	0	IF = 1 PRINT 'TST1 DEV XXX' FLAG
2234						BOUND	8	
2235	01	004B4	00000000	A	TST1TEST	DATA	0	POINTER TO FIRST FUNT TEST TO BE EXC
2236	01	004B5	00000000	A		DATA	0	POINTER TO LAST FUNT TEST TO BE EXC
2237	01	004B6	68300471		TST0BCH	BEZ	FUCTEXIT	SKIP FUNCTIONAL TEST
2238	01	004B7	68200471			BEZ	FUCTEXIT	SKIP FUNCTIONAL TEST
2239						PAGE		
2240					*			
2241					*		*** T S T 1 , 0 1 ***	
2242					*			
2243					*		*** I N T E R R U P T P E N D I N G T E S T ***	
2244					*			
2245					*		THIS TEST IS DESIGNED TO CHECK THE INTERRUPT LINE,	
2246					*		IF AN INTERRUPT IS PENDING IT WILL ATTEMPT TO	
2247					*		RESET DEVICES WITH A 'HI0' UNTIL THE PENDING	
2248					*		INTERRUPT IS RESET OR UNTIL ALL DEVICES HAVE	
2249					*		BEEN TRIED.	
2250					*			
2251					*			
2252					T1ST01			
2253	01	004B8	326004E0			LW,6	T1STXPSD	SET UP XPSD
2254	01	004B9	35600C5C	A		STW,6	X'5C'	INTERRUPT LOCATION
2255					*			
2256					*			
2257	01	004BA	226007FF	A		LI,6	X'7FF'	LOAD MAXIMUM DEVICE COUNT
2258	01	004BB	356018D0			STW,6	:DEVADDR	SAVE MAXIMUM DEVICE COUNT
2259					*			
2260	01	004BC	226004DB			LI,6	T1ST0115	LOAD AND SAVE A
2261	01	004BD	356013F2			STW,6	WH00GRTN	RETURN FROM WATCHDOG TIMER
2262					*			
2263	01	004BE	226FD8F0	A		LI,6	-10000	LOAD AND SAVE
2264	01	004BF	356004E1			STW,6	T1STDYLP	A DELAY LOOP COUNT
2265	01	004C0	22400020	A	T1ST0105	LI,4	X'20'	ARM AND ENABLE
2266	01	004C1	6D401200	A		WD,4	X'1200'	I/O INTERRUPT
2267					*			
2268	01	004C2	331004E1			MTW,1	T1STDYLP	UPDATE DELAY LOOP
2269	01	004C3	691004C0			RLZ	T1ST0105	IF LESS THAN ZERO CONTINUE LOOPING
2270	01	004C4	6AF004C6			RAL,15	T1ST0119	
2271	01	004C5	68000471			R	FUCTEXIT	GO TO FUNCTIONAL DISPATCHER
2272	01	004C6	22400020	A	T1ST0119	LI,4	X'20'	DISARM AND DISABLE
2273	01	004C7	6D401500	A		WD,4	X'1500'	I/O INTERRUPTS
2274	01	004C8	32401866			LW,4	#DDTBIAS	LOAD BIAS TO CURRENT ACTIVE DDT
2275	01	004C9	32581868			LW,5	TSTDEV,4	RESTORE
2276	01	004CA	355018D0			STW,5	:DEVADDR	CURRENT DEVICE ADDRESS
2277	01	004CB	6D000022	A		WD,0	X'22'	ALLOW INTERRUPTS
2278	01	004CC	ER00000F	A		R	*15	RETURN
2279					*			
2280					*			
2281						BOUND	8	
2282	01	004CE	00000000	A	T1STINTR	DATA	0,0	
	01	004CF	00000000	A				
2283	01	004D0	000004D2			DATA	#+2,7**24	
	01	004D1	07000000	A				
2284					*			
2285	01	004D2	CF0018D0			HI0,0	*:DEVADDR	HALT DEVICE
2286	01	004D3	33F018D0		T1ST0120	MTW,-1	:DEVADDR	DECREMENT DEV ADDR
2287	01	004D4	330018D0			MTW,0	:DEVADDR	
2288	01	004D5	691004D7			RLZ	T1ST0117	IF ALL DEV'S HALTED EXIT
2289	01	004D6	CF3004CE			LPSC,3	T1STINTR	RETURN
2290					*			
2291					*		*** 0 1 1 5 ***	
2292					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	AS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2293				*				THIS TEST VERIFIES THAT THERE WAS NOT AN INTERRUPT
2294				*				LEFT PENDING AFTER ALL DEVICES WERE CLEARED.
2295				*				
2296	01	004D7	6AF004C6		T1ST0117	RAL,15	T1ST0119	GO RESTORE DEV ADDR
2297	01	004D8	6AF0110C			RAL,15	TST1ERM0	GO REPORT ERROR
2298	01	004D9	00000073 A			DATA	0115	*** ERROR 0115 ***
2299	01	004DA	68000472			R	FUCTEXIT+1	GO TEST SENSE SWITCHES
2300				*				
2301				*				WATCHDOG TIMER RECOVERY
2302				*				
2303				*	T1ST0115	J		
2304	01	004DB	35100482			STW,1	TST1DVP0	FUNCTIONAL FLAG
2305	01	004DC	EAF0021D A			RAL,15	+1SENSE	TEST SENSE SWITCHES
2306	01	004DD	2E0004DD			WAIT	S	
2307	01	004DE	680004D4			R	T1ST0120+1	LOOP ON ERROR
2308	01	004DF	680004D3			R	T1ST0120	GO TEST NEXT DEVICE
2309	01	004E0	CF3004CE		T1STXPSD	XPSD,3	T1STINTR	
2310	01	004E1	00000000 A		T1STDYLP	DATA	0	
2311				*		PAGE		
2312				*				
2313				*				*** T S T 1 , 0 2 ***
2314				*				
2315				*				*** VALID CONTROLLER ADDRESS
2316				*				
2317				*				INVALID STORAGE UNIT ADDR ***
2318				*				
2319				*				THIS SURTEST TESTS THE ABILITY OF A RAD TO
2320				*				HANDLE CORRECTLY AN I/O OPERATION BY THE
2321				*				CONTROLLER, WHEN THERE IS CONTROLLER ADDRESS
2322				*				RECOGNIZATION, BUT THERE IS NO DEVICE ADDRESS
2323				*				RECOGNIZATION. THIS TEST IS BYPASSED, IF
2324				*				PARAMETER (W3) OF THE 'ISYST' DIRECTIVE IS ZERO.
2325				*				
2326	01	004E2	3P600402		T1ST02	LW,6	INVDEV	LOAD INVALID DEVICE ADDRESS
2327	01	004E3	68300471			REZ	FUCTEXIT	IF ZERO, SKIP THIS TEST
2328	01	004E4	356018D0			STW,6	IDEVADDR	SET UP DEV ADDR LOCATION IN CASE
2329				*				OF A WATCHDOG TIMER TRAP
2330	01	004E5	CF0018D0			HI0,0	+IDFVADDR	ISSUE A RESET TO AN NON-EXISTANCE DV
2331	01	004E6	740604ED			STCF	T1ST0211,3	SAVE CONDITION CODES
2332				*				
2333				*				*** 0 2 1 0 ***
2334				*				
2335				*				THIS TEST VERIFIES THAT CC1 WAS RETURNED
2336				*				AS A '1'.
2337				*				
2338	01	004E7	698004ED			RCS,8	T1ST0211	IF CC1=1 NEXT TEST
2339	01	004E8	6AF0110C			RAL,15	TST1ERM0	GO REPORT ERROR
2340	01	004E9	000000D2 A			DATA	0210	*** ERROR 0210 ***
2341	01	004EA	EAF0021D A			RAL,15	+1SENSE	TEST SENSE SWITCHES
2342	01	004EB	2E0004EB			WAIT	S	
2343	01	004EC	680004F2			R	T1ST02	GO LOOP ON ERROR
2344				*				
2345				*				*** 0 2 1 1 ***
2346				*				
2347				*				THIS TEST VERIFIES CC2 WAS RETURNED
2348				*				AS A '0'.
2349				*				
2350				*				
2351	01	004ED	02200000 A		T1ST0211	LCI	0	RESTORE CONDITION CODES
2352	01	004EE	68400471			RCR,4	FUCTEXIT	RETURN TO FUNCTIONAL TEST MONITOR
2353	01	004EF	6AF0110C			RAL,15	TST1ERM0	GO REPORT ERROR
2354	01	004F0	000000D3 A			DATA	0211	*** ERROR 0211 ***
2355	01	004F1	68000472			R	FUCTEXIT+1	GO TEST SENSE SWITCHES
2356				*		PAGE		
2357				*				
2358				*				*** T S T 1 , 0 3 ***
2359				*				
2360				*				*** H I 0 I N S T R U C T I O N
2361				*				
2362				*				R E C O G N I Z A T I O N T E S T ***
2363				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2364				*				THIS SUBTEST TESTS THE ABILITY OF A RAD TO ACCEPT A 'I10' OPERATION WITHOUT ERROR, AND RETURN CONDITION CODE AND STATUS INFORMATION.
2365			*					
2366			*					
2367			*					
2368				*				
2369	01	004F2	CF0018D0		T1ST03	W10,0	*:DEVADDR	RESET THE RAD
2370	01	004F3	CFC018D0			W10,12	*:DEVADDR	IF WE TRAP, TRAP HERE
2371	01	004F4	6AF01AA9			RAL,15	I10+1	USE STANDARD I/O SUB-ROUTINE
2372	01	004F5	FF00C001 A			DATA	X'FF00C001'	
2373	01	004F6	10000000 A			DATA	X'10000000'	
2374	01	004F7	68000471			R	FUCTEXIT	IF NO ERRORS, RTN TO FTM
2375				*				
2376				*				*** 0 3 1 0 ***
2377				*				
2378				*				THIS TEST VERIFIES THAT CC1 WAS RETURNED
2379				*				AS A '0'
2380				*				
2381				*				
2382	01	004F8	703418BD		T1ST0310	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2383	01	004F9	688004FC			RCS,8	T1ST0311	IF CC1=0 NEXT TEST
2384	01	004FA	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2385	01	004FB	00000136 A			DATA	0310	*** ERROR 0310 ***
2386				*				
2387				*				*** 0 3 1 1 ***
2388				*				
2389				*				THIS TEST VERIFIES THAT CC2 WAS RETURNED
2390				*				AS A '0'
2391				*				
2392				*				
2393	01	004FC	703418BD		T1ST0311	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2394	01	004FD	68400500			RCS,4	T1ST0312	IF CC2=0 NEXT TEST
2395	01	004FE	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2396	01	004FF	00000137 A			DATA	0311	*** ERROR 0311 ***
2397				*				
2398				*				*** 0 3 1 2 ***
2399				*				
2400				*				THIS TEST VERIFIES THAT ONLY 'DEVICE AUTOMATIC'
2401				*				WAS REPORTED BY THE DEVICE.
2402				*				
2403				*				
2404	01	00500	703418BD		T1ST0312	LCF	:STATUSCC,2	IF NO DEV ADDR
2405	01	00501	69800471			RCS,8	FUCTEXIT	RECOGNIZATION EXIT
2406	01	00502	6AF01AAB			RAL,15	I10+3	GO TEST STATUS
2407	01	00503	FF000000 A			DATA	X'FF000000'	
2408	01	00504	10000000 A			DATA	X'10000000'	
2409	01	00505	68000471			R	FUCTEXIT	RETURN TO FTM
2410				*				
2411				*				
2412	01	00506	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2413	01	00507	00000138 A			DATA	0312	*** ERROR 0312 ***
2414	01	00508	6AF01AAB			RAL,15	I10+3	REPORT STATUS ERROR
2415	01	00509	FF00C000 A			DATA	X'FF00C000'	
2416	01	0050A	10000000 A			DATA	X'10000000'	
2417	01	0050B	68000471			R	FUCTEXIT	RETURN TO FTM
2418	01	0050C	68000472			R	FUCTEXIT+1	RETURN TO FTM TO TEST SENSE SWITCHES
2419				*				
2420				*				PAGE
2421				*				*** T S T 1 , 0 4 ***
2422				*				
2423				*				*** T I 0 I N S T R U C T I O N
2424				*				
2425				*				R E C O G N I T I O N T E S T ***
2426				*				
2427				*				THIS SUBTEST TESTS THE ABILITY OF A RAD TO ACCEPT
2428				*				A 'I10' OPERATION WITHOUT ERROR, AND RETURN
2429				*				CONDITION CODE AND STATUS INFORMATION.
2430				*				
2431				*				
2432				*	T1ST04			
2433	01	0050D	CF0018D0			W10,12	*:DEVADDR	IF WE TRAP, TRAP HERE
2434	01	0050E	6AF01AA4			RAL,15	I10+1	USE STANDARD I/O SUB-ROUTINE

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2435	01	0050F	FF000001	A		DATA	X'FF000001'	TO SAVE STATUS AND CC
2436	01	00510	10000000	A		DATA	X'10000000'	
2437	01	00511	68000471			R	FUCTEXIT	IF NO ERRORS, RTN TO FTM
2438					*			
2439					*			
2440					*		*** 0 4 1 0 ***	
2441					*			
2442					*		THIS TEST VERIFIES THAT CC1 WAS RETURNED	
2443					*		AS A '0'	
2444					*			
2445	01	00512	70341BRD		T1ST0410	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2446	01	00513	68800517			RCR,8	T1ST0411	IF CC1=0 NEXT TEST
2447	01	00514	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2448	01	00515	0000019A	A		DATA	0410	*** ERROR 0410 ***
2449	01	00516	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2450					*			
2451					*		*** 0 4 1 1 ***	
2452					*			
2453					*		THIS TEST VERIFIES THAT CC2 WAS RETURNED	
2454					*		AS A '0'	
2455					*			
2456					*			
2457	01	00517	70341BRD		T1ST0411	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2458	01	00518	6840051C			RCR,4	T1ST0412	IF CC2=0 NEXT TEST
2459	01	00519	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2460	01	0051A	0000019B	A		DATA	0411	*** ERROR 0411 ***
2461	01	0051B	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2462					*			
2463					*		*** 0 4 1 2 ***	
2464					*			
2465					*		THIS TEST VERIFIES THAT ONLY 'DEVICE AUTOMATIC'	
2466					*		WAS REPORTED BY THE DEVICE.	
2467					*			
2468					*			
2469	01	0051C	70341BRD		T1ST0412	LCF	:STATUSCC,2	IF NO DEV ADDR
2470	01	0051D	68R00471			RCR,8	FUCTEXIT	RECOGNITION EXIT
2471	01	0051E	6AF01AA6			BAL,15	:T19+3	GO TEST STATUS
2472	01	0051F	FF000001	A		DATA	X'FF000001'	TO SAVE STATUS AND CC
2473	01	00520	10000000	A		DATA	X'10000000'	
2474	01	00521	68000529			R	T1ST0413	RETURN TO FTM
2475					*			
2476					*			
2477	01	00522	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2478	01	00523	0000019C	A		DATA	0412	*** ERROR 0412 ***
2479	01	00524	6AF01AA6			BAL,15	:T19+3	REPORT STATUS ERROR
2480	01	00525	FF000000	A		DATA	X'FF000000'	
2481	01	00526	10000000	A		DATA	X'10000000'	
2482	01	00527	68000529			R	T1ST0413	RETURN TO FTM
2483	01	00528	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2484	01	00529	330004AE		T1ST0413	MTW,0	T1ERFLAG	TEST FOR ERROR
2485	01	0052A	64300471			BEZ	FUCTEXIT	TAKE TEST GO TO EXIT
2486	01	0052B	68000472			R	FUCTEXIT+1	GO TES
2487						PAGE		
2488					*			
2489					*		*** T S T 1 , 0 5 ***	
2490					*			
2491					*		*** T D V I N S T R U C T I O N	
2492					*			
2493					*		R E C O G N I T I O N T E S T ***	
2494					*			
2495					*		THIS SUBTEST TESTS THE ABILITY OF A RAD TO ACCEPT	
2496					*		A 'TDV' OPERATION WITHOUT ERROR, AND RETURN	
2497					*		CONDITION CODE AND STATUS INFORMATION.	
2498					*			
2499					*			
2500					T1ST05 J			
2501	01	0052C	CFC018D0			TDV,12	*:DEVADDR	IF WE TRAP, TRAP HERE
2502	01	0052D	6AF01AAE			BAL,15	:TDV+1	USE STANDARD I/O SUB-ROUTINE
2503	01	0052E	FF000001	A		DATA	X'FF000001'	
2504	01	0052F	10000000	A		DATA	X'10000000'	
2505	01	00530	68000471			R	FUCTEXIT	IF NO ERRORS, RTN TO FTM

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2506				*				
2507				*			*** 0 5 1 0 ***	
2508				*				
2509				*			THIS TEST VERIFIES THAT CC1 WAS RETURNED	
2510				*			AS A '0'	
2511				*				
2512				*				
2513	C1 00531	7034188D		*	T1ST0510	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2514	01 00532	68800535		*		RCR,8	T1ST0511	IF CC1=0 NEXT TEST
2515	C1 00533	6AF0110C		*		RAL,15	TST1ERMG	GO REPORT ERROR
2516	C1 00534	000001FE	A	*		DATA	0510	*** ERROR 0510 ***
2517				*				
2518				*			*** 0 5 1 1 ***	
2519				*				
2520				*			THIS TEST VERIFIES THAT CC2 WAS RETURNED	
2521				*			AS A '0'	
2522				*				
2523				*				
2524	C1 00535	7034188D		*	T1ST0511	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2525	C1 00536	68400539		*		RCR,4	T1ST0512	IF CC2=0 NEXT TEST
2526	C1 00537	6AF0110C		*		RAL,15	TST1ERMG	GO REPORT ERROR
2527	C1 00538	000001FF	A	*		DATA	0511	*** ERROR 0511 ***
2528				*				
2529				*			*** 0 5 1 2 ***	
2530				*				
2531				*			THIS TEST VERIFIES THAT ALL	
2532				*			ZEROS WERE RETURNED FOR TDV STATUS	
2533				*				
2534				*				
2535	C1 00539	7034188D		*	T1ST0512	LCF	:STATUSCC,2	IF NO DEV ADDR
2536	C1 0053A	68800471		*		RCR,8	FUCTEXIT	RECOGNIZATION EXIT
2537	C1 0053B	6AF01A80		*		RAL,15	:TDV+3	GO TEST STATUS
2538	C1 0053C	FF000001	A	*		DATA	X'FF000001'	
2539	C1 0053D	00000000	A	*		DATA	0	
2540	C1 0053E	68000471		*		B	FUCTEXIT	RETURN TO FTM
2541				*				
2542				*				
2543	C1 0053F	6AF0110C		*		RAL,15	TST1ERMG	GO REPORT ERROR
2544	C1 00540	00000200	A	*		DATA	0512	*** ERROR 0512 ***
2545	C1 00541	6AF01A80		*		RAL,15	:TDV+3	REPORT STATUS ERROR
2546	C1 00542	FF000000	A	*		DATA	X'FF000000'	
2547	C1 00543	00000000	A	*		DATA	0	
2548	C1 00544	68000471		*		B	FUCTEXIT	RETURN TO FTM
2549	C1 00545	68000472		*		B	FUCTEXIT+1	RETURN TO FTM TO TEST SENSE SWITCHES
2550				*		PAGE		
2551				*				
2552				*			*** T S T 1 , 0 6 ***	
2553				*				
2554				*			*** S I 0 I N S T R U C T I 0 N	
2555				*				
2556				*			R E C 0 G N I T I 0 N T E S T ***	
2557				*				
2558				*			THIS SURTEST TESTS THE ABILITY OF A RAD TO ACCEPT	
2559				*			A 'SI0' OPERATION WITHOUT ERROR, AND RETURN	
2560				*			CONDITION CODE AND STATUS INFORMATION.	
2561				*				
2562				*				
2563	C1 00546	32601802		*	T1ST06	LW,6	BYTCURR	LOAD, SAVE
2564	C1 00547	55620E89		*		STH,6	18C00610+1,1	AND
2565	C1 00548	2560007E	A	*		SLS,6	-2	CONVERT
2566	C1 00549	35601CA8		*		STW,6	:PATWC	SAVE WORD COUNT OF PATTERN AREA
2567	C1 0054A	22601F7E		*		LI,6	PUF1L0	LOAD AND
2568	C1 0054B	35601CA3		*		STW,6	:PATBFR	SAVE START ADDR OF PATTERN AREA
2569	C1 0054C	6AF01CFD		*		RAL,15	:PATTERN	GO BUILD PATTERN
2570	C1 0054D	22000744		*		LI,0	DA(18CD0610)	LOAD DW FOR IBCD
2571	C1 0054E	00001800		*		SI0,12	*:DEVADDR	ATTEMPT A STOP ORDER
2572	C1 0054F	6AF01A9F		*		RAL,15	:SI0+1	SAVE SI0 STATUS
2573	C1 00550	FF000001	A	*		DATA	X'FF000001'	
2574	C1 00551	10000000	A	*		DATA	X'10000000'	
2575	C1 00552	68000553		*		B	*+1	CONTINUE
2576				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OP REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2577				*			RETRIEVE TDV STATUS	
2578				*				
2579	01	00553	331013CF			MTW,1	WATCHERR	UPDATE WATCHDOG TRAP TO *** 0601 ***
2580	01	00554	CE6018D0			TDV,6	*IDEVADDR	
2581	01	00555	74040007 A			STCF	7,2	SAVE CONDITION CODES
2582				*				
2583				*			RETRIEVE HIO STATUS	
2584				*				
2585	01	00556	331013CF			MTW,1	WATCHERR	UPDATE WATCHDOG TRAP TO *** 0602 ***
2586	01	00557	CF8018D0			HIO,8	*IDEVADDR	HALT DEVICE IN CASE OF RUN AWAY
2587	01	00558	52A20009 A			LH,10	9,1	SAVE BYTE COUNT
2588	01	00559	74040009 A			STCF	9,2	SAVE CONDITION CODES
2589				*				
2590				*			*** 0 6 1 0 ***	
2591				*				
2592				*			THIS TEST VERIFIES THAT CC1 WAS RETURNED	
2593				*			AS A '0'	
2594				*				
2595				*				
2596	01	0055A	70341BRD		T1ST0610	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2597	01	0055B	6880055F			RCR,8	T1ST0611	IF CC1=0 NEXT TEST
2598	01	0055C	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2599	01	0055D	00000262 A			DATA	0610	*** ERROR 0610 ***
2600	01	0055E	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2601				*				
2602				*			*** 0 6 1 1 ***	
2603				*				
2604				*			THIS TEST VERIFIES THAT CC2 WAS RETURNED	
2605				*			AS A '0'	
2606				*				
2607				*				
2608	01	0055F	70341BRD		T1ST0611	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2609	01	00560	68400564			RCR,4	T1ST0612	IF CC2=0 NEXT TEST
2610	01	00561	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2611	01	00562	00000263 A			DATA	0611	*** ERROR 0611 ***
2612	01	00563	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2613				*				
2614				*			*** 0 6 1 2 ***	
2615				*				
2616				*			THIS TEST VERIFIES THAT ONLY 'DEVICE AUTOMATIC'	
2617				*			WAS REPORTED BY THE DEVICE.	
2618				*				
2619				*				
2620	01	00564	70341BRD		T1ST0612	LCF	:STATUSCC,2	IF NO DEV ADDR
2621	01	00565	68400471			RCR,8	FUCTEXIT	RECOGNIZATION EXIT
2622	01	00566	6AF01AA1			RAL,15	:SI0+3	GO TEST STATUS
2623	01	00567	FF000001 A			DATA	X'FF000001'	
2624	01	00568	10000000 A			DATA	X'10000000'	
2625	01	00569	68000571			R	T1ST0613	GO TO NEXT TEST
2626				*				
2627				*				
2628	01	0056A	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2629	01	0056B	00000264 A			DATA	0612	*** ERROR 0612 ***
2630				*				
2631	01	0056C	6AF01AA1			RAL,15	:SI0+3	REPORT STATUS ERROR
2632	01	0056D	FF000000 A			DATA	X'FF000000'	
2633	01	0056E	10000000 A			DATA	X'10000000'	
2634	01	0056F	68000570			R	*+1	
2635	01	00570	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2636				*				
2637				*			*** 0 6 1 3 ***	
2638				*				
2639				*			THIS TEST VERIFIES THAT THE BYTE COUNT WAS	
2640				*			NOT REDUCED BY THE ISSUANCE OF A 'STOP' ORDER.	
2641				*				
2642				*				
2643	01	00571	51A20E89		T1ST0613	CH,10	I9C00610+1,1	COMPARE BYTE COUNTS
2644	01	00572	68300576			BE	T1ST0614	IF EQUAL NEXT TEST
2645	01	00573	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2646	01	00574	00000265 A			DATA	0613	*** ERROR 0613 ***
2647	01	00575	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2648					T1ST0614	J		
2649	C1	00576	357018BD			STW,7	!STATUSCC	STORE WORD
2650					*			
2651					*		*** 0 6 1 5 ***	
2652					*			
2653					*			
2654					*			THIS TEST VERIFIES THAT NO ERRORS WERE REPORTED
2655					*			INCONJUNCTION WITH THE STATUS RETURN FROM THE TOV.
2656	C1	00577	6AFC1AB0		T1ST0615	BAL,15	!TDV+3	GO TEST STATUS
2657	C1	00578	CCFF0001	A		DATA	X'CCFF0001'	
2658	C1	00579	00000000	A		DATA	X'0'	
2659	C1	0057A	68000582			B	T1ST0616	GO TO NEXT TEST
2660					*			
2661					*			
2662	C1	0057B	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2663	C1	0057C	00000267	A		DATA	0615	*** ERROR 0615 ***
2664					*			
2665	C1	0057D	6AF01AB0			BAL,15	!TDV+3	GO REPORT STATUS ERROR
2666	C1	0057E	FFFFC000	A		DATA	X'FFFFC000'	
2667	C1	0057F	00000000	A		DATA	X'0'	
2668	C1	00580	68000581			B	#+1	GO TO NEXT TEST
2669	C1	00581	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2670					*			
2671					*		*** 0 6 1 6 ***	
2672					*			
2673					*			
2674					*			THIS TEST VERIFIES THAT THE RAD WAS NOT
2675					*			BUSY WHEN IT WAS HALTED.
2676	C1	00582	359018BD		T1ST0616	STW,9	!STATUSCC	LOAD HIS STATUS
2677	C1	00583	703418BD			LCF	!STATUSCC,2	RESTORE CONDITION CODES
2678	C1	00584	6R4C0588			BCR,4	T1ST0617	IF CC2 = 0 NEXT TEST
2679	C1	00585	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2680	C1	00586	00000268	A		DATA	0616	*** ERROR 0616 ***
2681	C1	00587	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2682					*			
2683					*		*** 0 6 1 7 ***	
2684					*			
2685					*			
2686					*			THIS TEST VERIFIES THAT NO ERRORS, EXCEPT 'UNUSUAL
2687					*			END' WAS REPORTED INCONJUNCTION WITH STATUS
2688					*			RETURNED FROM A HIS.
2689	C1	00588	6AF01AAB		T1ST0617	BAL,15	!HIS+3	GO TEST STATUS
2690	C1	00589	FFFF0001	A		DATA	X'FFFF0001'	
2691	C1	0058A	18000000	A		DATA	X'18000000'	
2692	C1	0058B	68000593			B	T1ST0618	GO TO EXIT
2693	C1	0058C	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2694	C1	0058D	00000269	A		DATA	0617	*** ERROR 0617 ***
2695	C1	0058E	6AFC1AAB			BAL,15	!HIS+3	GO REPORT STATUS ERROR
2696	C1	0058F	FFFFC000	A		DATA	X'FFFFC000'	
2697	C1	00590	18000000	A		DATA	X'18000000'	
2698	C1	00591	68000592			B	#+1	GO TO EXIT
2699	C1	00592	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2700	C1	00593	330004AE		T1ST0618	MTW,0	T1ERFLAG	TEST FOR ERROR
2701	C1	00594	68300598			BEZ	T1ST0619	BRANCH TO NEXT TEST
2702	C1	00595	EAF00210	A		BAL,15	*!SENSE	
2703	C1	00596	2E000596			WAIT	\$	
2704	C1	00597	68000546			B	T1ST06	LOOP ON ERROR
2705					*			
2706					*			
2707					*		*** 0 6 1 9 ***	
2708					*			
2709					*			THIS TEST VERIFIES UE WAS RESET BY THE HIS
2710					*			
2711	C1	00598	6AF01AA3		T1ST0619	BAL,15	!TIS	BRANCH TO TIS SUB.
2712	C1	00599	18000001	A		DATA	X'18000001'	
2713	C1	0059A	10000000	A		DATA	X'10000000'	
2714	C1	0059B	68000471			B	FUCTEXIT	EXIT
2715	C1	0059C	6AF0110C			BAL,15	TST1ERMG	REPORT ERROR
2716	C1	0059D	0000026B	A		DATA	0619	*** ERROR 0619 ***
2717	C1	0059E	6AF01AA6			BAL,15	!TIS+3	BRANCH TO TIS SUB-TEST
2718	C1	0059F	18000000	A		DATA	X'18000000'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2719	01	005A0	10000000	A		DATA	X'10000000'	
2720	01	005A1	680005A2			R	*+1	
2721	01	005A2	EAF0021D	A		RAL,15	*:SENSE	TEST SENSE SW
2722	01	005A3	2E0005A3			WAIT	*	
2723	01	005A4	68000546			R	T1ST06	LOOP ON ERROR
2724	01	005A5	68000471			R	FUCTEXIT	EXIT
2725						PAGE		
2726					*			
2727					*			
2728					*		*** T S T 1 , 0 7 ***	
2729					*			
2730					*		*** B A C K T O B A C K S I 0 T E S T ***	
2731					*			
2732					*			
2733					*		THIS SUBTEST TESTS THE ABILITY OF A RAD TO ACCEPT	
2734					*		BACK TO BACK 'STOP' SIO'S, WITHOUT WATCHDOG	
2735					*		TIMER TRAPPING OR RETURNING INCORRECT STATUS.	
2736					*			
2737	01	005A6	326018D2		T1ST07	LW,6	BYTCURR	LOAD, SAVE
2738	01	005A7	56620E89			STH,6	I0CD0610+1,1	AND
2739	01	005A8	2560007E	A		SLS,6	-2	CONVERT
2740	01	005A9	35601CA8			STW,6	:PATWC	SAVE WORD COUNT OF PATTERN AREA
2741	01	005AA	22601F7E			LI,6	BUF10	LOAD AND SAVE
2742	01	005AB	35601CA3			STW,6	:PATBFR	STARTING ADDRESS OF PATTERN AREA
2743	01	005AC	6AF01CED			RAL,15	:PATTERN	GO BUILD PATTERN
2744					*			
2745					*			THIS TEST VERIFIES THAT BACK TO BACK SIO'S
2746					*			OF THE FOLLOWING FORMAT CAN BE ISSUED.
2747					*			
2748					*		ORDER:	STOP
2749					*		BYTE ADDR:	BA(BUF10)
2750					*		FLAGS:	SKIP
2751					*		BYTE COUNT:	(BYTCURR)
2752					*			
2753	01	005AD	22000744			LI,0	DA(I0CD0610)	LOAD DOUBLE WORD ADDR OF I0CD
2754	01	005AE	00001870			SIO,0	*:DEVADDR	DB BACK
2755	01	005AF	225FFF9C	A		LI,5	-100	
2756	01	005B0	655005B0			RIR,5	*	
2757	01	005B1	000018D0			SIO,12	*:DEVADDR	TO BACK SIO'S
2758	01	005B2	6AF01A9F			RAL,15	:SIO+1	SAVE STATUS
2759	01	005B3	00000001	A		DATA	X'00000001'	
2760	01	005B4	10000000	A		DATA	X'10000000'	
2761	01	005B5	680005B6			R	*+1	
2762	01	005B6	CF0018D0			HIO,0	*:DEVADDR	STOP DEVICE TO PREVENT RUN AWAY
2763					*			
2764					*			*** 0 7 1 0 ***
2765					*			
2766					*			THIS TEST VERIFIES THAT CC2 WAS RETURNED
2767					*			AS A '0'.
2768					*			
2769	01	005B7	70341HRD		T1ST0710	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2770	01	005B8	684005BC			RCR,4	T1ST0711	IF CC2=0 NEXT TEST
2771	01	005B9	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2772	01	005BA	000002C6	A		DATA	0710	** ERROR 0710 ***
2773	01	005BB	331004AE			MTW,1	T1EFFLAG	SET TST1 ERROR FLAG
2774					*			
2775					*			*** 0 7 1 1 ***
2776					*			
2777					*			THIS TEST VERIFIES THAT THE BYTE COUNT WAS
2778					*			NOT REDUCED BETWEEN SIO'S.
2779					*			
2780					*			
2781	01	005BC	50A2000D	A	T1ST0711	LH,10	13,1	FETCH BYTE COUNT
2782	01	005BD	51A20E89			CH,10	I0CD0610+1,1	COMPARE BYTE COUNT
2783	01	005BE	683005C2			RE	T1ST0712	IF EQUAL NEXT TEST
2784	01	005BF	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
2785	01	005C0	000002C7	A		DATA	0711	*** ERROR 0711 ***
2786	01	005C1	331004AE			MTW,1	T1EFFLAG	SET TST1 ERROR FLAG
2787					*			
2788					*			*** 0 7 1 2 ***
2789					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL O R I G	LABEL	OPERATION	OPERAND	COMMENTS
2790				*				THIS TEST VERIFIES THAT NO ERRORS, EXCEPT
2791				*				'UNUSUAL END' WAS REPORTED IN CONJUNCTION WITH
2792				*				STATUS RETURNED FROM A SIO.
2793				*				
2794	C1	005C2	6AF01AA1		T1ST0712	BAL,15	:SIO+3	GO TEST STATUS
2795	C1	005C3	FFFF0001 A			DATA	X'FFFFFF0001'	
2796	C1	005C4	18000C00 A			DATA	X'18000000'	
2797	01	005C5	680005CD			R	T1ST0713	GO TO EXIT
2798	01	005C6	6AF0110C			BAL,15	TST1FRMG	GO REPORT ERROR
2799	01	005C7	000002C8 A			DATA	0712	*** ERROR 0712 ***
2800	C1	005C8	6AF01AA1			BAL,15	:SIO+3	GO REPORT STATUS ERROR
2801	C1	005C9	FFFFC001 A			DATA	X'FFFFFFC001'	
2802	C1	005CA	18000000 A			DATA	X'18000000'	
2803	01	005CB	680005CC			R	*+1	
2804	01	005CC	331004AE			MTW,1	T1ERFLAG	SET ERROR FLAG
2805	01	005CD	330004AE		T1ST0713	MTW,0	T1ERFLAG	TEST FOR ERROR
2806	01	005CE	68300471			BEZ	FUCTEXIT	TAKE GOOD EXIT
2807	01	005CF	68000472			R	FUCTEXIT+1	GO TEST SENSE SWITCHES
2808							PAGE	
2809				*				
2810				*				*** T S T 1 , 0 8 ***
2811				*				
2812				*				*** I N T E R R U P T G E N E R A T I O N T E S T ***
2813				*				
2814				*				THIS SUBTEST TESTS THE ABILITY OF A PAD TO GENERATE
2815				*				AN INTERRUPT AND RETURN THE ASSOCIATE STATUS AND
2816				*				CONDITION CODE INFORMATION.
2817				*				
2818				*				ORDER: STOP
2819				*				BYTE ADDR: BA(BUF1LR)
2820				*				FLAGS: UF, SKIP
2821				*				BYTE COUNT: (BYTCURR)
2822				*				
2823				*	T1ST08 J			
2824	C1	005D0	326018D2			LW,6	BYTCURR	
2825	01	005D1	55620E88			STW,6	I0CD0810+1,1	COUNT
2826	01	005D2	22000745			LI,0	DA(I0CD0810)	LOAD DOUBLE WORD ADDR OF I0CD
2827	01	005D3	CC0018D0			SIO,0	+I0EVADDR	DO ILLEGAL STOP ORDER
2828	01	005D4	225FFF9C A			LI,5	-100	
2829	01	005D5	655005D5			RIR,5	*	
2830	01	005D6	CDC018D0			TIO,12	+I0EVADDR	SAVE STATUS OF TIO
2831				*				
2832				*				*** O R 1 0 ***
2833				*				
2834				*				THIS TEST VERIFIES THAT 'UNUSUAL END' WAS REPORT
2835				*				BY THE PAD.
2836				*				
2837				*				
2838	01	005D7	6AF01AA4		T1ST0810	BAL,15	:TIO+1	GO TEST STATUS
2839	01	005D8	7F000C01 A			DATA	X'7F000C01'	
2840	01	005D9	18000C00 A			DATA	X'18000000'	
2841	01	005DA	680005F2			R	T1ST0811	GO TO NEXT TEST
2842	01	005DB	6AF0110C			BAL,15	TST1FRMG	GO REPORT ERROR
2843	01	005DC	0000037A A			DATA	0810	*** ERROR 0810 ***
2844	01	005DD	6AF01AA6			BAL,15	:TIO+3	GO REPORT STATUS ERROR
2845	01	005DE	7FFFCC00 A			DATA	X'7FFFCC00'	
2846	01	005DF	18000000 A			DATA	X'18000000'	
2847	01	005E0	680005E1			R	*+1	
2848	01	005E1	331004AE			MTW,1	T1ERFLAG	SET ERROR FLAG
2849				*				
2850				*				*** O 8 1 1 ***
2851				*				
2852				*				THIS TEST VERIFIES THAT 'INTERRUPT PENDING'
2853				*				BIT WAS SET IN THE TIO STATUS.
2854				*				
2855				*				
2856	C1	005E2	6AF01AA6		T1ST0811	BAL,15	:TIO+3	GO TEST STATUS
2857	01	005E3	80000001 A			DATA	X'80000001'	
2858	01	005E4	80000000 A			DATA	X'80000000'	
2859	01	005E5	680005E9			R	T1ST0812	
2860	01	005E6	6AFC110C			BAL,15	TST1FRMG	GO REPORT ERROR

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LA:FF	OPERATION	OPERAND	COMMENTS
2861	01	005E7	000032B	A		DATA	0811	*** ERROR 0811 ***
2862	01	005E8	331004AE			MTW,1	T1ERFLAG	SET ERROR FLAG
2863					*			
2864					*		*** 0 8 1 2 ***	
2865					*			
2866					*			
2867					*			THIS TEST VERIFIES THAT CC2 WAS RETURNED AS A '1'.
2868					*			
2869	01	005E9	7034188D		T1ST0812	LCF	:STATUSCC,2	RESTORE CONDITION CODES
2870	01	005EA	694005EE			BCS,4	T1ST0813	IF CC2=1 NEXT TEST
2871	01	005EB	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2872	01	005EC	000032C	A		DATA	0812	*** ERROR 0812 ***
2873	01	005ED	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2874					*			
2875					*		*** 0 8 1 3 ***	
2876					*			
2877					*			
2878					*			THIS TEST VERIFIES THAT NO FLAGS WERE SET IN THE OPERATIONAL STATUS BYTE.
2879					*			
2880	01	005EE	6AF01AA6		T1ST0813	BAL,15	:TI0+3	GO TEST STATUS
2881	01	005EF	00FF0001	A		DATA	X'00FF0001'	
2882	01	005F0	00000000	A		DATA	X'00000000'	
2883	01	005F1	680005F9			B	T1ST0814	GO TO NEXT TEST
2884	01	005F2	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2885	01	005F3	000032D	A		DATA	0813	*** ERROR 0813 ***
2886	01	005F4	6AF01AA6			BAL,15	:TI0+3	
2887	01	005F5	00FF0001	A		DATA	X'00FF0001'	
2888	01	005F6	00000000	A		DATA	0	
2889	01	005F7	680005F8			B	*+1	
2890	01	005F8	331004AE			MTW,1	T1ERFLAG	SET ERROR FLAG
2891					*			
2892					*		*** 0 8 1 4 ***	
2893					*			
2894					*			
2895					*			THIS TEST VERIFIES THAT THERE IS AN ACTUAL INTERRUPT PENDING
2896					*			
2897	01	005F9	32600642		T1ST0814	LW,6	XPSD1108	SET UP
2898	01	005FA	3540005C	A		STW,4	X'5C'	INTERRUPT LOCATION
2899	01	005FB	22800000	A		LI,8	0	ZERO
2900	01	005FC	35800643			STW,8	INTRFLAG	INTERRUPT OCCURRED FLAG
2901	01	005FD	22600032	A		LI,6	50	LOAD DELAY COUNT
2902	01	005FE	6D000022	A		WD,0	X'22'	
2903	01	005FF	22400020	A		LI,4	X'20'	ARM AND ENABLE
2904	01	00600	6D401200	A		WD,4	X'1200'	INTERRUPTS
2905	01	00601	64600601			RDR,6	*	
2906	01	00602	6D401100	A		WD,4	X'1100'	DISARM INTERRUPTS
2907	01	00603	33000643			MTW,0	INTRFLAG	TEST INTERRUPT OCCURRED FLAG
2908	01	00604	69300608			RNEZ	T1ST0815	IF OCCUR, BRANCH
2909	01	00605	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2910	01	00606	000032E	A		DATA	0814	*** ERROR 0814 ***
2911	01	00607	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2912					*			
2913					*		*** 0 8 1 5 ***	
2914					*			
2915					*			
2916					*			THIS TEST VERIFIES THAT PREVIOUS OPERATION WAS NOT TERMINATED BECAUSE OF A FAULT CONDITION.
2917					*			
2918	01	00608	CEC018D0		T1ST0815	TDV,12	*IDEVADDR	TEST DEVICE
2919	01	00609	6AF01AAE			BAL,15	:TDV+1	SAVE STATUS
2920	01	0060A	00000001	A		DATA	1	
2921	01	0060B	00000000	A		DATA	0	
2922	01	0060C	6800060E			B	*+2	
2923	01	0060D	7034188D			LCF	:STATUSCC,2	
2924	01	0060E	68400612			RCR,4	T1ST0816	IF CC2=0 NEXT TEST
2925	01	0060F	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
2926	01	00610	000032F	A		DATA	0815	*** ERROR 0815 ***
2927	01	00611	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2928					*			
2929					*		*** 0 8 1 6 ***	
2930					*			
2931					*			THIS TEST VERIFIES THAT NO ERRORS WERE REPORTED

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
2932					*		INCONJUNCTION WITH THE STATUS RETURNED FROM THE TDV.	
2933					*			
2934	C1	00612	6AF01A0		T1ST0816	RAL,15	ITDV+3	GO TEST STATUS
2935	C1	00613	COFF0001	A		DATA	X'COFF0001'	
2936	C1	00614	00000000	A		DATA	X'00000000'	
2937	C1	00615	6800061D			R	T1ST0817	GO TO NEXT TEST
2938	C1	00616	6AFC110C			RAL,15	TST1ERMG	GO REPORT ERROR
2939	C1	00617	00000330	A		DATA	0816	*** ERROR 0816 ***
2940	C1	00618	6AF01A0			RAL,15	ITDV+3	GO REPORT STATUS ERROR
2941	C1	00619	COFFC000	A		DATA	X'COFFC000'	
2942	C1	0061A	00000000	A		DATA	X'00000000'	
2943	01	0061B	6800061C			R	*+1	
2944	01	0061C	331004AE			MTW,1	T1FRFLAG	SET TST1 ERROR FLAG
2945					*			
2946					*		*** 0 8 1 7 ***	
2947					*			
2948					*			
2949					*		THIS TEST VERIFIES THAT THE 'INTERRUPT PENDING'	
2950					*		R 1T IN THE T10 STATUS WILL BE RESET BY A H10,	
2951	C1	0061D	22000000	A	T1ST0817	LI,0	0	
2952	C1	0061E	35000643			STW,0	INTRFLAG	RESET INTER. PENDING FLAG
2953	C1	0061F	CF0018D0			H10,0	*:DEVADDR	
2954	C1	00620	CDCC18D0			T10,12	*:DEVADDR	GO TEST STATUS
2955	C1	00621	6AF01AA4			RAL,15	IT10+1	SAVE STATUS
2956	C1	00622	80000001	A		DATA	X'80000001'	
2957	C1	00623	00000000	A		DATA	X'0'	
2958	C1	00624	68000628			R	T1ST0818	GO TO NEXT TEST
2959	C1	00625	6AFC110C			RAL,15	TST1ERMG	GO REPORT ERROR
2960	01	00626	00000331	A		DATA	0817	*** ERROR 0817 ***
2961	C1	00627	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2962					*			
2963					*		*** 0 8 1 8 ***	
2964					*			
2965					*			
2966					*		THIS TEST VERIFIES THAT THE PENDING INTERRUPT	
2967					*		WAS RESET BY THE H10.	
2968	C1	00628	22800000	A	T1ST0818	LI,8	0	ZERO
2969	C1	00629	35800643			STW,8	INTRFLAG	INTERUPT OCCURRED FLAG
2970	C1	0062A	22600032	A		LI,6	50	LOAD DELAY COUNT
2971	C1	0062B	6D000022	A		WD,0	X'22'	
2972	C1	0062C	22400020	A		LI,4	X'20'	ARM AND ENABLE
2973	C1	0062D	6D401700	A		WD,4	X'1700'	
2974	C1	0062E	6460062E			RDR,6	\$	
2975	C1	0062F	22600032	A		LI,6	50	
2976	C1	00630	6D401200	A		WD,4	X'1200'	INTERRUPTS
2977	C1	00631	64600631			RDR,6	\$	
2978	C1	00632	6D401100	A		WD,4	X'1100'	DISARM INTERRUPTS
2979	01	00633	33000643			MTW,0	INTRFLAG	TEST INTERRUPT OCCURRED FLAG
2980	C1	00634	68300638			REZ	T1ST0819	IF NOT SET BRANCH
2981	C1	00635	6AFC110C			RAL,15	TST1ERMG	GO REPORT ERROR
2982	C1	00636	00000332	A		DATA	0818	*** ERROR 0818 ***
2983	C1	00637	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
2984	01	00638	330004AE		T1ST0819	MTW,0	T1FRFLAG	TEST FOR ERROR
2985	C1	00639	68300471			REZ	FUCTEXIT	
2986	C1	0063A	68000472			R	FUCTEXIT+1	
2987					*			
2988					*		THIS CODE HANDLES AN INTERRUPT IF IT	
2989					*		ACCURS.	
2990					*			
2991						RUND	8	
2992	C1	0063C	00000000	A	T1INT08	DATA	0,C	
2993	C1	0063D	00000000	A				
2994	C1	0063E	00000640			DATA	*+2,7**24	
2995	C1	0063F	C7000000	A				
2996	C1	00640	35100643			STW,1	INTRFLAG	SET INTERRUPT OCCURRED FLAG
2997	C1	00641	CF20063C			LPSD,2	T1INT08	
2998					*			
2999	C1	00642	CF00063C		XPSDT108	XPSD,0	T1INT08	
3000	C1	00643	00000000	A	INTRFLAG	DATA	0	INTERRUPT OCCUR FLAG

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3001					*			
3002					*		*** T S T 1 , 0 9 ***	
3003					*			
3004					*		*** A I 0 I N S T R U C T I O N T E S T ***	
3005					*			
3006					*		THIS SUBTEST TESTS THE ABILITY OF A RAD TO	
3007					*		GENERATE AN INTERRUPT WITH A 'STOP' ORDER THEN	
3008					*		CLEAR IT WITH AN 'AIO'.	
3009					*			
3010					*		ORDER: STOP	
3011					*		BYTE ADDR: BA(BUF1L0)	
3012					*		FLAGS: UE,SKIP	
3013					*		BYTE COUNT (BYTCURR)	
3014					*			
3015					*			
3016					*			
3017	C1	00644	326018D2		T1ST09 J	LW,6	BYTCURR	SET UP BYTE
3018	C1	00645	55620E8B			STH,6	I0CD0810+1,1	COUNT
3019	C1	00646	22000745			LI,0	DA(I0CD0810)	LOAD DOUBLE WORD ADDR OF I0CD
3020	C1	00647	CC0018D0			SI0,0	*IDEVADDR	DO ILLEGAL STOP ORDER
3021	C1	00648	225FFF9C A			LI,5	-100	
3022	C1	00649	65500649			BIR,5	*	
3023	C1	0064A	C0CC18D0			TIO,12	*IDEVADDR	SAVE STATUS OF TIO
3024					*			
3025					*		*** 0 9 1 0 ***	
3026					*			
3027					*		THIS TEST VERIFIES THAT 'UNUSUAL END' WAS REPORT	
3028					*		BY THE RAD.	
3029					*			
3030					*			
3031	C1	0064B	6AF01AA4		T1ST0910	RAL,15	ITIO+1	GO TEST STATUS
3032	C1	0064C	7F000001 A			DATA	X'17F000001'	
3033	C1	0064D	18000000 A			DATA	X'18000000'	
3034	C1	0064E	68000656			R	T1ST0911	GO TO NEXT TEST
3035	C1	0064F	6AF0110C			RAL,15	TST1ERM0	GO REPORT ERROR
3036	C1	00650	C000038E A			DATA	0910	*** ERROR 0910 ***
3037	C1	00651	6AF01AA6			RAL,15	ITIO+3	GO REPORT STATUS FRR0R
3038	C1	00652	7FFFC000 A			DATA	X'17FFFC000'	
3039	C1	00653	18000000 A			DATA	X'18000000'	
3040	C1	00654	68000655			R	**1	
3041	C1	00655	331004AE			MTW,1	TIERFLAG	SET ERROR FLAG
3042					*			
3043					*		*** 0 9 1 1 ***	
3044					*			
3045					*		THIS TEST VERIFIES THAT 'INTERRUPT PENDING'	
3046					*		BIT WAS SET IN THE TIO STATUS.	
3047					*			
3048					*			
3049	C1	00656	6AF01AA6		T1ST0911	RAL,15	ITIO+3	GO TEST STATUS
3050	C1	00657	80000001 A			DATA	X'180000001'	
3051	C1	00658	80000000 A			DATA	X'180000000'	
3052	C1	00659	6800065D			R	T1ST0912	
3053	C1	0065A	6AF0110C			RAL,15	TST1ERM0	GO REPORT ERROR
3054	C1	0065B	C000038F A			DATA	0911	*** ERROR 0911 ***
3055	C1	0065C	331004AE			MTW,1	TIERFLAG	SET ERROR FLAG
3056					*			
3057					*		*** 0 9 1 2 ***	
3058					*			
3059					*		THIS TEST VERIFIES THAT CC2 WAS RETURNED	
3060					*		AS A '1'.	
3061					*			
3062	C1	0065D	703418BD		T1ST0912	LCF	:STATUSCC,2	RESTORE CONDITION CODES
3063	C1	0065E	69400662			RCS,4	T1ST0913	IF CC2=1 NEXT TEST
3064	C1	0065F	6AF0110C			RAL,15	TST1ERM0	GO REPORT ERROR
3065	C1	00660	C0000390 A			DATA	0912	*** ERROR 0912 ***
3066	C1	00661	331004AE			MTW,1	TIERFLAG	SET TST1 ERROR FLAG
3067					*			
3068					*		*** 0 9 1 3 ***	
3069					*			
3070					*		THIS TEST VERIFIES THAT THERE IS AN ACTUAL	
3071					*		INTERRUPT PENDING	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3072					*			
3073	C1	0C662	326C0684		T1ST0913	LI,6	XPSDT109	SET UP
3074	C1	0C663	356C005C	A		STW,6	X'5C'	INTERRUPT LOCATION
3075	C1	0C664	228C0000	A		LI,8	0	ZERO
3076	C1	0C665	358C0643			STW,8	INTPFLAG	INTERRUPT OCCURRED FLAG
3077	C1	0C666	226C0032	A		LI,6	50	LOAD DELAY COUNT
3078	C1	0C667	6D0C0022	A		WD,0	X'22'	
3079	C1	0C668	224C0020	A		LI,4	X'20'	ARM AND ENABLE
3080	C1	0C669	6D4C1200	A		WD,4	X'1200'	INTERRUPTS
3081	C1	0C66A	646C066A			RDR,6	*	
3082	C1	0C66B	6D4C1100	A		WD,4	X'1100'	DISARM INTERRUPTS
3083	C1	0C66C	6AFC110C			RAL,15	TST1ERMG	GO REPORT ERROR
3084	C1	0C66D	C0000391	A		DATA	0913	*** ERROR 0913 ***
3085	C1	0C66E	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3086	C1	0C66F	630C0681			R	T1ST0920	
3087					*			
3088					*			
3089					*			
3090					*			
3091					*			
3092					*			
3093	C1	0C670	C0000000	A	T1INT09	BOUND	R	
	C1	0C671	C0000000	A		DATA	0,0	
3094	C1	0C672	C0000674			DATA	**2,7**24	
	C1	0C673	07000000	A				
3095	C1	0C674	330C0643			MTW,0	INTRFLAG	SET INTERRUPT OCCURRED FLAG
3096	C1	0C675	693C067F			RNEZ	T1INT094	IF NOT ZERO BRANCH
3097	C1	0C676	331C0643			MTW,1	INTRFLAG	SET INTERRUPT OCCURRED FLAG
3098	C1	0C677	6EDC0000	A		AIO,13	C	ACKNOWLEDGE INTERRUPT
3099	C1	0C678	6AFC1A83			RAL,15	:AIO+1	SAVE AIO STATUS
3100	C1	0C679	C0000C01	A		DATA	1	
3101	C1	0C67A	C0000000	A		DATA	0	
3102	C1	0C67B	680C067C			R	*+1	
3103	C1	0C67C	226C0685			LI,6	T1INT095	LOAD A RETURN
3104	C1	0C67D	356C0670			STW,6	T1INT09	GO TRY THE RETURN
3105	C1	0C67E	CE300670			LPSD,3	T1INT09	RESTORE MODIFY LPSD.
3106					*			
3107					*			*** 0 9 1 4 ***
3108					*			
3109					*			THIS TEST VERIFIES THAT THE PENDING INTERRUPT
3110					*			CLEARED BY THE AIO.
3111					*			
3112					*			
3113	C1	0C67F	226C0682		T1INT094	J		
3114	C1	0C680	356C0670			LI,6	T1INTX	LOAD ANOTHER RETURN
3115	C1	0C681	CE2C0670			STW,6	T1INT09	AND SAVE IT
3116	C1	0C682	6AFC110C		T1INTX	LPSD,2	T1INT09	RESTORE LPSD, CLEAR & DISARM INTR
3117	C1	0C683	C0000392	A		RAL,15	TST1ERMG	GO REPORT ERROR
3118	C1	0C684	331C04AE			DATA	0914	*** ERROR 0914 ***
3119						MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3120					*			
3121					*			*** 0 9 1 5 ***
3122					*			
3123					*			THIS TEST VERIFIES INTERRUPT RECOGNITION
3124					*			OF THE PENDING INTERRUPT.
3125					*			
3126	C1	0C685	226C0064	A	T1INT095	J		
3127	C1	0C686	646C0686			LI,6	100	
3128	C1	0C687	224C0020	A		RDR,6	*	DELAY IN CASE INTERRUPT DIDN'T RESET
3129	C1	0C688	6D4C1100	A		LI,4	X'20'	DISARM
3130	C1	0C689	7034188D			WD,4	X'1100'	THE INTERRUPT
3131	C1	0C68A	688C068E			LCF	:STATUSCC,2	RESTORE CONDITION CODES
3132	C1	0C68B	6AFC110C			PCR,8	T1INT096	IF INTERRUPT RECOGNIZED BRANCH
3133	C1	0C68C	C0000393	A		RAL,15	TST1ERMG	GO REPORT ERROR
3134	C1	0C68D	331004AE			DATA	0915	*** ERROR 0915 ***
3135						MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3136					*			
3137					*			*** 0 9 1 6 ***
3138					*			
3139					*			THIS TEST VERIFIES THE DEVICE ADDRESS RETURNED
3140					*			BY THE AIO COMPARES WITH THE EXPECT DEVICE ADDRESS.

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3141					*			
3142	C1	0068E	6AF01A95		T1INT096	RAL,15	:A10+3	GO TEST DEVICE ADDRESS
3143	C1	0068F	00000003	A		DATA	3	
3144	C1	00690	00000000	A		DATA	0	
3145	C1	00691	68000699			B	T1INT097	GOOD DEVICE ADDRESS
3146	C1	00692	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
3147	C1	00693	00000394	A		DATA	0916	*** ERROR 0916 ***
3148	C1	00694	6AF01A85			RAL,15	:A10+3	REPORT DEVICE ADDRESS ERROR
3149	C1	00695	00000002	A		DATA	2	
3150	C1	00696	00000000	A		DATA	0	
3151	C1	00697	68000698			R	*+1	
3152	C1	00698	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3153					*			
3154					*			*** 0 9 1 7 ***
3155					*			
3156					*			THIS TEST VERIFIES THAT AN ABNORMAL INTERRUPT
3157					*			WAS RECOGNIZED.
3158					*			
3159	O1	00699	703418BD		T1INT097	LCF	:STATUSCC,2	RESTORE CONDITION CODES
3160	C1	0069A	6940069E			RCS,4	T1INT098	IF ABNORMAL INTERRUPT BRANCH
3161	O1	0069B	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
3162	C1	0069C	00000395	A		DATA	0917	*** ERROR 0 9 1 7 **
3163	C1	0069D	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3164					*			
3165					*			*** 0 9 1 8 ***
3166					*			
3167					*			THIS TEST VERIFIES THE RETURNED STATUS OF
3168					*			THE 'A10' FOR 'UNUSUAL END INTERRUPT'
3169					*			
3170	C1	0069E	6AFC1A85		T1INT098	RAL,15	:A10+3	GO TEST STATUS
3171	C1	0069F	00000001	A		DATA	X'00000001'	
3172	C1	006A0	00080000	A		DATA	X'00080000'	
3173	C1	006A1	680006A9			R	T1ST0919	GOOD STATUS NEXT TEST
3174	C1	006A2	6AF0110C			RAL,15	TST1ERMG	GO REPORT ERROR
3175	C1	006A3	00000396	A		DATA	0918	*** ERROR 0918 ***
3176	C1	006A4	6AF01A85			RAL,15	:A10+3	GO REPORT STATUS ERROR
3177	C1	006A5	00000000	A		DATA	X'00000000'	
3178	C1	006A6	00084000	A		DATA	X'00084000'	
3179	C1	006A7	680006A8			R	*+1	
3180	C1	006A8	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3181					*			
3182					*			*** 0 9 1 9 ***
3183					*			
3184					*			THIS TEST VERIFIES THAT THE 'INTERRUPT PENDING'
3185					*			BIT IN THE I10 STATUS WAS RESET BY THE 'A10'
3186					*			
3187	C1	006A9	000018D0		T1ST0919	J		GO TEST STATUS
3188	C1	006AA	6AFC1A44			I10,12	+1DEVADDR	SAVE STATUS
3189	C1	006AB	80000001	A		RAL,15	:I10+1	
3190	C1	006AC	00000000	A		DATA	X'80000001'	
3191	C1	006AD	680006B1			DATA	X'0'	
3192	C1	006AE	6AF0110C			R	T1ST0920	GO TO NEXT TEST
3193	C1	006AF	00000397	A		RAL,15	TST1ERMG	GO REPORT ERROR
3194	C1	006B0	331004AE			DATA	0919	*** ERROR 0919 ***
3195						MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
3196	C1	006B1	330004AE		T1ST0920	J		TEST FOR ERROR
3197	C1	006B2	68300471			MTW,0	T1ERFLAG	TAKE TEST GOOD EXIT
3198	C1	006B3	68000472			REZ	FUCTEXIT	GO TEST SENSE SWITCHES
3199					*			
3200					*			
3201	C1	006B4	0F000670		XPSDT109	XPSD,C	T1INT09	
3202						PAGE		
3203					*			
3204					*			*** T S T 1 , 1 0 ***
3205					*			
3206					*			*** S E E K T E S T 1 ***
3207					*			
3208					*			THIS TEST IS DESIGNED TO TEST SOME OF THE RESPONSES
3209					*			OF A RAD, TO A SEEK OPERATION. THIS TEST VERIFIES
3210					*			ORDER RECOGNITION, COUNT DONE RECOGNITION, ORDER
3211					*			IN GENERATION, TERMINAL ORDER GENERATION AND

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3212					*		LENGTH TESTING LOGIC.	
3213					*			
3214					T1ST10	J		
3215	01	006B5	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
3216	01	006B6	2560007E A			SLS,6	-2	CONVERT TO A WORD COUNT
3217	01	006B7	35601CA8			STW,6	:PATWC	SAVE AS SIZE OF BUFFER TO BE USED
3218	01	006B8	22601F7F			LI,6	BUF1L0+1	LOAD AND SAVE
3219	01	006B9	35601CA3			STW,6	:PATBFR	STARTING ADDR OF BUFFER ADDR
3220	01	006BA	6AF01CFD			BAL,15	:PATTERN	GO SPREAD PATTERN
3221					*			
3222					*		*** 1 0 1 0 ***	
3223					*			
3224					*		THIS TEST VERIFIES THAT AN ORDER WITH THE	
3225					*		FOLLOWING FORMAT CAN BE CORRECTLY EXECUTED:	
3226					*			
3227					*		ORDER:	SEEK
3228					*		BYTE ADDR:	BA(BUF1L0)+2
3229					*		FLAGS:	HTF
3230					*		BYTE COUNT:	2
3231					*			
3232	01	006BB	326018D6		T1ST1010	LW,6	TSSTARTC	LOAD AND SAVE
3233	01	006BC	35601F7E			STW,6	BUF1L0	SEEK ADDR
3234	01	006BD	6AF00FEB			BAL,15	:FUCTEST+1	GO TO FUNCTIONAL TEST
3235	01	006BE	00000E8C			DATA	I0CD1010	
3236	01	006BF	000003F2 A			DATA	1010	** ERROR 1010 **
3237	01	006C0	00000EFC			DATA	BSIP1010	
3238	01	006C1	00000EF9			DATA	BSNP1010	
3239	01	006C2	680006C7			R	T1ST1015	GO TO NEXT TEST
3240					*			
3241	01	006C3	CF0018D0			HIO,C	:IDEVADDR	RESET DEV. WHERE ERROR WAS DETECTED
3242	01	006C4	EAFC021D A			BAL,15	:ISENSE	TEST SENSE SWITCHES
3243	01	006C5	2E0006C5			WAIT	\$	
3244	01	006C6	680006B5			R	T1ST10	
3245					*			
3246					*		*** 1 0 1 5 ***	
3247					*			
3248					*		THIS TEST VERIFIES THAT NO DATA WAS ALTERED	
3249					*		IN THE OUTPUT BUFFER BY THE SEEK OPERATION.	
3250					*			
3251					*			
3252	01	006C7	6AF018D0		T1ST1015	BAL,15	:COMPARE	TEST FOR CHANGES IN BUFFER AREA
3253	01	006C8	680006CA			R	\$+2	RETURN: IN NO CHANGES
3254	01	006C9	680006CD			R	\$+4	* IF CHANGES OCCURRED
3255	01	006CA	32601F7E			LW,6	BUF1L0	LOAD SEEK ADDR FROM BUFFER AREA
3256	01	006CB	316018D6			CW,6	TSSTARTC	COMPARE WITH EXPECTED PATTERN
3257	01	006CC	683006D2			RE	T1ST1020	IF EQUAL NEXT TEST
3258	01	006CD	6AF0110C			BAL,15	TSTJERM0	GO REPORT ERROR
3259	01	006CE	000003F7 A			DATA	1015	** ERROR 1015 **
3260	01	006CF	EAFC021D A			BAL,15	:ISENSE	TEST SENSE SWITCH
3261	01	006D0	2E0006D0			WAIT	\$	
3262	01	006D1	680006B5			R	T1ST10	GO TRY AGAIN
3263					*			
3264					*		*** 1 0 2 0 ***	
3265					*			
3266					*		THIS TEST VERIFIES THAT AN OPERATION WITH THE	
3267					*		FOLLOWING FORMAT CAN BE CORRECTLY EXECUTED.	
3268					*			
3269					*		ORDER:	SEEK
3270					*		BYTE ADDR:	BA(BUF1L0)+2
3271					*		FLAGS:	UE
3272					*		BYTE COUNT:	2
3273					*			
3274	01	006D2	326018D6		T1ST1020	LW,6	TSSTARTC	LOAD AND SAVE
3275	01	006D3	35601F7E			STW,6	BUF1L0	SEEK ADDR
3276					*			
3277					*			
3278	01	006D4	6AF00FEB			BAL,15	:FUCTEST+1	GO TO FUNCTIONAL TEST
3279	01	006D5	00000E8E			DATA	I0CD1020	
3280	01	006D6	000003FC A			DATA	1020	** ERROR 1020 **
3281	01	006D7	CC000FF0			DATA	BSIP1010	
3282	01	006D8	CC000EF9			DATA	BSNP1010	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3283	C1	006D9	680006DE			B	T1ST1030	GO TO NEXT TEST
3284				*				
3285	C1	006DA	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3286	C1	006DB	EAF0021D A			RAL,15	*ISENSE	TEST SENSE SWITCHES
3287	C1	006DC	2E0006DC			WAIT	*	
3288	C1	006DD	680006D2			B	T1ST1020	GO LOOP ON ERROR
3289				*				
3290				*			*** 1 0 3 0 ***	
3291				*				
3292				*				
3293				*				THIS TEST VERIFIES THAT AN OPERATION WITH THE
3294				*				FOLLOWING FORMAT CAN CAUSE AN INTERRUPT TO
3295				*				BE GENERATED ON ZERO BYTE COUNT.
3296				*			ORDER:	SEEK
3297				*			BYTE ADDR:	BA(BUF1L0)+2
3298				*			FLAGS:	IZC
3299				*			BYTE COUNT:	2
3300				*				
3301	C1	006DE	326018D6		T1ST1030	LW,6	TSSTARTC	LOAD AND SAVE
3302	C1	006DF	35601F7E			STW,6	BUF1L0	SEEK ADDR
3303				*				
3304				*				
3305	C1	006E0	6AF00FEA			RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
3306	C1	006E1	00000E90			DATA	I0CD1030	
3307	C1	006E2	00000406 A			DATA	1030	*** ERROR 1030 ***
3308	C1	006E3	00000EF3			DATA	BS1P1030	
3309	C1	006E4	00000EF9			DATA	BSNP1010	
3310	C1	006E5	680006EA			B	T1ST1040	GO TO NEXT TEST
3311	C1	006E6	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3312	C1	006E7	EAF0021D A			RAL,15	*ISENSE	TEST SENSE SWITCHES
3313	C1	006E8	2E0006E8			WAIT	*	
3314	C1	006E9	680006DE			B	T1ST1030	GO LOOP ON ERROR
3315				*				
3316				*			*** 1 0 4 0 ***	
3317				*				
3318				*				
3319				*				THE TEST VERIFIES THAT AN OPERATION WITH THE
3320				*				FOLLOWING FORMAT CAN CAUSE AN INTERRUPT TO
3321				*				BE GENERATED ON CHANNEL END.
3322				*			ORDER:	SEEK
3323				*			BYTE ADDR:	BA(BUF1L0)+2
3324				*			FLAGS:	ICE
3325				*			BYTE COUNT:	2
3326				*				
3327				*				
3328	C1	006EA	326018D6		T1ST1040	LW,6	TSSTARTC	LOAD AND SAVE
3329	C1	006EB	35601F7E			STW,6	BUF1L0	SEEK ADDR
3330				*				
3331				*				
3332	C1	006EC	6AF00FEA			RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
3333	C1	006ED	00000E92			DATA	I0CD1040	
3334	C1	006EE	00000410 A			DATA	1040	*** ERROR 1040 ***
3335	C1	006EF	00000EF6			DATA	BS1P1040	
3336	C1	006F0	00000EF9			DATA	BSNP1010	
3337	C1	006F1	68000471			B	FUCTEXIT	
3338	C1	006F2	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3339	C1	006F3	EAF0021D A			RAL,15	*ISENSE	TEST SENSE SWITCH
3340	C1	006F4	2E0006F4			WAIT	*	
3341	C1	006F5	680006EA			B	T1ST1040	GO LOOP ON ERROR
3342	C1	006F6	68000471			B	FUCTEXIT	
3343				*		PAGE		
3344				*				
3345				*			*** T S T 1, 1 1 ***	
3346				*				
3347				*			*** S E E K T E S T 2 ***	
3348				*				
3349				*				
3350				*			*** (TEST NOT RUN FOR HIGH SPEED RAD) ***	
3351				*				
3352				*				THIS TEST IS DESIGNED TO TEST SOME OF THE
3353				*				RESPONSES OF A RAD, TO A SEEK OPERATION WITH A

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3354					*			BYTE COUNT OF LESS THAN 2. THIS TEST VERIFIES ORDER RECOGNITION, COUNT DONE RECOGNITION, ORDER IN GENERATION AND LENGTH TESTING LOGIC.
3355				*				
3356				*				
3357				*				
3358				*				
3359					T1ST11	J		
3360	C1	006F7	326018CF			LW,6	MODEL	
3361	C1	006FA	21607212	A		CI,6	X'7212'	IS IT HIGH SPEED
3362	C1	006FB	68300471			RE	FUCTFIXIT	IF EQUAL PR. TO EXIT
3363	C1	006FA	326018D2			LW,6	RYTCURR	LOAD NO. OF BYTES/SECTOR
3364	C1	006FB	2F60007E	A		SLS,6	=2	CONVERT TO A WORD COUNT
3365	C1	006FC	3F601CA8			STW,6	:PATWC	SAVE AS SIZE OF BUFFER TO BE USED
3366	C1	006FD	22601F7F			LI,6	RUF1L0+1	LOAD AND SAVE
3367	C1	006FE	3F601CA3			STW,6	:PATBR	STARTING ADDR OF BUFFER ADDR
3368	C1	006FF	6AF01CFD			RAL,15	:PATTERN	GO SPREAD PATTERN
3369					*		*** 1 1 1 0 ***	
3370					*			
3371					*			
3372					*			THIS TEST VERIFIES THAT THE RAD WILL REPORT
3373					*			'INCORRECT LENGTH' FOR A SEEK ORDER WITH A
3374					*			BYTE COUNT OF LESS THAN 2
3375					*		ORDER:	SEEK
3376					*		BYTE ADDR:	BA(BUF1L0)+2
3377					*		BYTE COUNT:	1
3378					*			
3379	01	00700	326018D6		T1ST1110	LW,6	TSSTARTC	LOAD AND SAVE
3380	01	00701	3F601F7E			STW,6	RUF1L0	SEEK ADDR
3381	01	00702	6AF00FEB			RAL,15	:FUCTEST+1	GO TO FUNCTIONAL TEST
3382	01	00703	00000E94			DATA	I0CD1110	
3383	01	00704	00000456	A		DATA	1110	**ERROR 1110**
3384	01	00705	00000FFB			DATA	BSIP1110	
3385	01	00706	00000F04			DATA	BSMP1110	
3386	01	00707	6800070C			R	T1ST1115	GO TO NEXT TEST
3387	01	00708	CF0018D0			HIO,0	+IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3388	01	00709	EAF0021D	A		RAL,15	*:SENSE	CHECK SENSE SW SETTING
3389	01	0070A	2E00070A			WAIT	*	HALT ON ERROR IF SS3 RESET
3390	01	0070B	680006F7			R	T1ST11	LOOP ON ERROR
3391					*			
3392					*		*** 1 1 1 5 ***	
3393					*			
3394					*			THIS TEST VERIFIES THAT AN ORDER WITH THE FOLLOWING
3395					*			FORMAT CAN BE CORRECTLY EXECUTED:
3396					*			
3397					*			
3398	C1	0070C	6AF018D0		T1ST1115	RAL,15	:COMPARE	TEST FOR CHANGES IN BUFFER AREA
3399	C1	0070D	68000713			R	TST1115	BRANCH TO NEXT TEST
3400	01	0070E	6AF0110C		TST1115A	RAL,15	TST1ERMG	REPORT ERROR
3401	C1	0070F	0000045B	A		DATA	1115	*** ERROR 1115 ***
3402	C1	00710	EAF0021D	A		RAL,15	*:SENSE	TEST SENSE SW
3403	C1	00711	2E000711			WAIT	*	HALT ON ERROR IF SS3 RESET
3404	C1	00712	680006F7			R	T1ST11	LOOP ON ERROR
3405	C1	00713	32601F7E		TST1115	LW,6	RUF1L0	LOAD SEEK ADDR FROM BUFFER AREA
3406	C1	00714	316018D6			OW,6	TSSTARTC	COMPARE WITH EXPECTED PATTERN
3407	C1	00715	6930070E			RNE	TST1115A	IF NOT EQUAL BRANCH TO ERROR
3408	C1	00716	68000717			R	T1ST1120	
3409					*			
3410					*		*** 1 1 2 0 ***	
3411					*			
3412					*			THIS TEST VERIFIES THAT THE RAD WILL REPORT
3413					*			'INCORRECT LENGTH' AND 'UNUSUAL END' FOR A
3414					*			SEEK ORDER WITH A BYTE COUNT LESS THAN 2
3415					*		ORDER:	SEEK
3416					*		BYTE ADDR	BA(BUF1L0)+2
3417					*		FLAGS:	HTE
3418					*		BYTE COUNT	1
3419					*			
3420					*			
3421					*			
3422	01	00717	326018D6		T1ST1120	LW,6	TSSTARTC	LOAD AND SAVE
3423	01	00718	3F601F7E			STW,6	BUF1L0	SEEK ADDR
3424					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3425	C1	00719	6AF00FE8			RAL,15	:FUCTEST+1	
3426	C1	0071A	C0000E96			DATA	I0CD1120	
3427	C1	0071B	00000460	A		DATA	1120	*** ERROR 1120 ***
3428	C1	0071C	00000FE			DATA	BSIP1120	
3429	C1	0071D	C0000F06			DATA	BSNP1120	
3430	01	0071E	68C00723			R	T1ST1130	GO TO NEXT TEST
3431				*				
3432	01	0071F	CF0018D0			HI0,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3433	01	00720	EAF0021D	A		RAL,15	*:ISENSE	TEST SENSE SWITCHES
3434	C1	00721	2F000721			WAIT	\$	HALT ON ERROR IF SS3 RESET
3435	01	00722	68C00717			R	T1ST1120	LOOP ON ERROR
3436				*				
3437				*				
3438				*				*** 1 1 3 0 ***
3439				*				THIS TEST VERIFIES THAT THE RAD WILL REPORT
3440				*				'CHANNEL END', TO A SEEK ORDER WITH A BYTE
3441				*				COUNT OF LESS THAN 2
3442				*				
3443				*				
3444				*				
3445				*		ORDER:	SEEK	
3446				*		BYTE ADDR:	BA(BUF10)+2	
3447				*		FLAGS:	ICE	
3448				*		BYTE COUNT:	1	
3449				*				
3450	01	00723	326018D6		T1ST1130	LW,6	TSSTARTC	LOAD AND SAVE
3451	01	00724	3F601F7E			STW,6	BUF10	SEEK ADDR
3452				*				
3453				*				
3454	01	00725	6AF00FEA			RAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
3455	01	00726	C0000E98			DATA	I0CD1130	
3456	01	00727	0000046A	A		DATA	1130	*** ERROR 1130 ***
3457	01	00728	00000F01			DATA	BSIP1130	
3458	01	00729	00000F08			DATA	BSNP1130	
3459	01	0072A	68000471			R	FUCTEXIT	
3460	01	0072B	CF0018D0			HI0,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3461	01	0072C	EAF0021D	A		RAL,15	*:ISENSE	TEST SENSE SWITCHES
3462	C1	0072D	2F00072D			WAIT	\$	
3463	C1	0072E	68000723			R	T1ST1130	
3464	C1	0072F	68000471			R	FUCTEXIT	
3465				*				
3466				*		PAGE		
3467				*				
3468				*				*** T S T 1 , 1 2 ***
3469				*				
3470				*				*** S E E K T F S T 3 ***
3471				*				
3472				*				*** (TEST NOT RUN FOR HIGH SPEED RAD) ***
3473				*				
3474				*				THIS TEST IS DESIGNED TO TEST SOME OF THE RESPONSES
3475				*				OF A RAD, TO A SEEK OPERATION THAT HAS A BYTE
3476				*				COUNT GREATER THAN 2. THIS TEST VERIFIES ORDER
3477				*				RECOGNITION, COUNT DONE RECOGNITION, ORDER IN
3478				*				GENERATION, TERMINAL ORDER GENERATION, AND LENGTH
3479				*				TESTING LOGIC.
3480				*				
3481				*				
3482				*				
3483				*				
3484				*	T1ST12			
3485	C1	00730	2P400005	A		LI,4	5	LOAD BYTE COUNT FOR HIGH SPEED RAD
3486	C1	00731	3P6018CF			LW,6	MOFLC	FETCH MODEL NO.
3487	C1	00732	21607212	A		CI,6	X17212	IS IT HIGH SPEED
3488	C1	00733	68300471			RE	FUCTEXIT	HIGH SPEED
3489	01	00734	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
3490	C1	00735	2560007E	A		SL,6	=2	CONVERT TO A WORD COUNT
3491	C1	00736	35601CA8			STW,6	:PATWC	SAVE AS SIZE OF BUFFER TO BE USED
3492	C1	00737	22601F7F			LI,6	BUF10+1	LOAD AND SAVE
3493	C1	00738	35601CA3			STW,6	:PATBFR	STARTING ADDR OF BUFFER ADDR
3494	C1	00739	6AF01CFD			RAL,15	:PATTERN	
3495				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3496				*			*** 1 2 1 0 ***	
3497				*			THIS TEST VERIFIES THAT THE RAD CAN REPORT	
3498				*			'INCORRECT LENGTH', 'CHANNEL END', AND HAVE BYTES	
3499				*			REMAINING IF THE BYTE COUNT IS GREATER THAN 2	
3500				*			FOR A SEEK ORDER.	
3501				*				
3502				*			ORDER: SEEK	
3503				*			BYTE ADDR: BA(BUF1L0)+2	
3504				*			FLAGS: ICE	
3505				*			BYTE COUNT: 3	
3506				*				
3507				*				
3508	01	0073A	326018D6		T1ST1210	LW,6	TSSTARTC	LOAD AND SAVE
3509	01	0073B	35601F7E			STW,6	BUF1L0	SEEK ADDRESS
3510	01	0073C	6AF00FEA			RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
3511	01	0073D	00000E9A				DATA	I0CD1210
3512	01	0073E	0000048A A				DATA	1210
3513	01	0073F	00000FOA				DATA	BSIP1210
3514	01	00740	00000F13				DATA	BSNP1210
3515	01	00741	68000746			R	T1ST1215	GO TO NEXT TEST
3516				*				
3517				*				
3518	01	00742	CF0018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3519	01	00743	EAF0021D A			RAL,15	*:SENSE	TEST SENSE SW
3520	01	00744	2E000744			WAIT	*	HALT ON ERROR IF SS3 RESET
3521	01	00745	68000730			R	T1ST12	LOOP ON ERROR
3522				*				
3523				*			*** 1 2 1 5 ***	
3524				*				
3525				*			THIS TEST VERIFIES THAT NO DATA WAS ALTERED	
3526				*			IN THE OUTPUT BUFFER BY THE SEEK OPERATION.	
3527				*				
3528				*				
3529				*				
3530	01	00746	6AF018D0		T1ST1215	RAL,15	:COMPARE	TEST FOR CHANGES IN BUFFER AREA
3531	01	00747	68000749			R	*+2	RETURN: IF NO CHANGE
3532	01	00748	6800074C			R	*+4	RETURN: IF CHANGES OCCURED
3533	01	00749	32601F7E			LW,6	BUF1L0	LOAD SEEK ADDR FROM BUFFER AREA
3534	01	0074A	316018D6			STW,6	TSSTARTC	COMPARE WITH EXPECTED PATTERN
3535	01	0074B	68300751			RE	T1ST1220	IF EQUAL NEXT TEST
3536	01	0074C	6AF0110C			RAL,15	TST1ERMG	REPORT ERROR
3537	01	0074D	0000048F A			DATA	1215	*** ERROR 1215 ***
3538	01	0074E	EAF0021D A			RAL,15	*:SENSE	TEST SENSE SWITCH
3539	01	0074F	2E00074F			WAIT	*	
3540	01	00750	68000730			R	T1ST12	RETRY
3541				*				
3542				*			*** 1 2 2 0 ***	
3543				*				
3544				*			THIS TEST VERIFIES THAT THE RAD CAN REPORT	
3545				*			'INCORRECT LENGTH', 'UNUSUAL END', AND HAVE	
3546				*			BYTES REMAINING IF THE BYTE COUNT IS GREATER	
3547				*			THAN 2 FOR A SEEK ORDER.	
3548				*			ORDER: SEEK	
3549				*			BYTE ADDR: BA(BUF1L0)+2	
3550				*			FLAGS: HTE	
3551				*			BYTE COUNT: 3	
3552				*				
3553				*				
3554				*				
3555	01	00751	326018D6		T1ST1220	LW,6	TSSTARTC	LOAD AND SAVE
3556	01	00752	35601F7E			STW,6	BUF1L0	SEEK ADDR
3557	01	00753	6AF00FEB			RAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
3558	01	00754	00000E9C				DATA	I0CD1220
3559	01	00755	000004C4 A				DATA	1220
3560	01	00756	00000F0D				DATA	BSIP1220
3561	01	00757	00000F15				DATA	BSNP1220
3562	01	00758	6800075D			R	T1ST1230	TO NEXT TEST
3563				*				
3564	01	00759	CF0018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3565	01	0075A	EAF0021D A			RAL,15	*:SENSE	TEST SENSE SW
3566	01	0075B	2E00075B			WAIT	*	HALT ON ERROR IF SS3 RESET

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3567	01	0075C	68000751			B	T1ST1220	LOOP ON ERROR
3568				*				
3569				*			*** 1 2 3 0 ***	
3570				*				
3571				*				THIS TEST VERIFIES THAT THE RAD WILL NOT SET
3572				*				'UNUSUAL END' IF THE BYTE COUNT IS GREATER
3573				*				THAN FOR A SEEK ORDER
3574				*				
3575				*			ORDER:	SEEK
3576				*			BYTE ADDR:	BA(BUF1L0)+2
3577				*			FLAGS:	UE
3578				*			BYTE COUNT:	3
3579				*				
3580				*				
3581				*				
3582	01	0075D	326018D6		T1ST1230	LW,6	TSSTARTC	LOAD AND SAVE
3583	01	0075E	35601F7E			STW,6	BUF1L0	SEEK ADDR
3584				*				
3585				*				
3586	01	0075F	6AF00FEB			RAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
3587	01	00760	00000E9E			DATA	I0CD1230	
3588	01	00761	000004CE A			DATA	1230	*** ERROR 1230 ***
3589	01	00762	00000F0A			DATA	BSIP1210	
3590	01	00763	00000F13			DATA	BSNP1210	
3591	01	00764	68000769			R	T1ST1240	GO TO NEXT TEST
3592	01	00765	CF0018D0			WIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3593	01	00766	EAF0021D A			RAL,15	*:SENSE	TEST SENSE SW
3594	01	00767	2E000767			WAIT	\$	HALT ON ERROR IF SS3 RESET
3595	01	00768	6800075D			B	T1ST1230	LOOP ON ERROR
3596				*				
3597				*			*** 1 2 4 0 ***	
3598				*				
3599				*				THIS TEST VERIFIES THAT THE RAD WILL NOT REPORT
3600				*				A 'ZERO BYTE COUNT', IF THE BYTE COUNT IN THE TOP
3601				*				DOESN'T GO TO ZERO FOR A SEEK ORDER
3602				*				
3603				*				
3604				*			ORDER:	SEEK
3605				*			BYTE ADDR:	BA(BUF1L0)+2
3606				*			FLAGS:	I2C
3607				*			BYTE COUNT	3
3608	01	00769	326018D6		T1ST1240	LW,6	TSSTARTC	LOAD AND SAVE
3609	01	0076A	35601F7E			STW,6	BUF1L0	SEEK ADDR
3610				*				
3611				*				
3612	01	0076B	6AF00FEB			RAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
3613	01	0076C	00000EA0			DATA	I0CD1240	
3614	01	0076D	000004DB A			DATA	1240	*** ERROR 1240 ***
3615	01	0076E	00000F0A			DATA	BSIP1210	
3616	01	0076F	00000F13			DATA	BSNP1210	
3617	01	00770	68000471			R	FUCTEXIT	
3618	01	00771	CF0018D0			WIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3619	01	00772	EAF0021D A			RAL,15	*:SENSE	TEST SENSE SW
3620	01	00773	2E000773			WAIT	\$	HALT ON ERROR IF SS3 RESET
3621	01	00774	68000769			R	T1ST1240	LOOP ON ERROR
3622	01	00775	68000471			R	FUCTEXIT	
3623				*		PAGE		
3624				*				
3625				*			*** T S T 1, 1 3 ***	
3626				*				
3627				*			*** S E N S E T E S T 1 ***	
3628				*				
3629				*				THIS TEST IS DESIGNED TO TEST SOME OF THE RESPONSES
3630				*				OF A RAD, TO A SENSE OPERATION WITH A BYTE COUNT
3631				*				OF 4 (FOR MODEL 7212) OR 3 (FOR MODELS OTHER THAN
3632				*				MODEL 7212). THIS TEST VERIFIES ORDER RECOGNITION,
3633				*				COUNT DONE RECOGNITION, ORDER IN GENERATION AND
3634				*				LENGTH TESTING LOGIC.
3635				*				
3636				*				
3637				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
3638					T1ST13			
3639	C1	00776	22400004	A		LI,4	4	FETCH BYTE NO.
3640	C1	00777	326018CF			LW,6	MODEL	FETCH MODEL NO
3641	C1	00778	21607212	A		CI,6	X'7212'	
3642	C1	00779	6830077B			BE	*+2	BRANCH IF MODEL NO. IS 7212
3643	C1	0077A	22400003	A		LI,4	3	
3644	C1	0077B	55420EA3			STW,4	I0CD1310+1,1	
3645	C1	0077C	55420EA5			STW,4	I0CD1320+1,1	
3646	C1	0077D	55420EA7			STW,4	I0CD1330+1,1	
3647	C1	0077E	55420EA9			STW,4	I0CD1340+1,1	
3648	C1	0077F	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
3649	C1	00780	2560007E	A		SL,6	-2	CONVERT TO A WORD COUNT
3650	C1	00781	35601CA8			STW,6	IPATWC	SAVE AS SIZE OF BUFFER TO BE USED
3651	C1	00782	22601F7E			LI,6	BUF1L0	
3652	C1	00783	35601CA3			STW,6	IPATBFR	STARTING ADDR OF BUFFER ADDR
3653	C1	00784	6AF00F91			RAL,15	ISEEKMOD	BRANCH TO SEEK OPERATION
3654	C1	00785	6AF01CED			RAL,15	IPATTERN	SPREAD PATTERN
3655					*		*** 1 3 1 C ***	
3656					*			
3657					*			
3658					*			
3659					*			
3660					*			
3661					*			
3662					*			
3663					*			
3664					*			
3665	C1	00786	6AF00FEB		T1ST1310	RAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
3666	C1	00787	00000EA2			DATA	I0CD1310	
3667	C1	00788	0000051E	A		DATA	1310	*** ERROR 1310 ***
3668	C1	00789	00000F17			DATA	BSIP1310	
3669	C1	0078A	00000F20			DATA	BSNP1310	
3670	C1	0078B	68000790			R	T1ST1315	GO TO NEXT TEST
3671					*			
3672	C1	0078C	CF0018D0			W10,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3673	C1	0078D	EAF0021D	A		RAL,15	*ISENSE	TEST SENSE SWITCHES
3674	C1	0078E	2F00078E			WAIT	*	HALT ON ERROR IF SS3 RESET
3675	C1	0078F	68000776			R	T1ST13	LOOP ON ERROR
3676					*			
3677					*			
3678					*			
3679					*			
3680					*			
3681					*			
3682					*			
3683					*			
3684					*			
3685					*			
3686					*			
3687					*			
3688	C1	00790	32601F7E		T1ST1315	LW,6	BUF1L0	FETCH BUF1L0
3689	C1	00791	31601D0B			CW,6	IPATID+1	COMPARE
3690	C1	00792	69300796			RNE	T1ST1316	BRANCH IF NOT EQUAL
3691	C1	00793	6AF0110C			RAL,15	TST1ERMG	REPORT ERROR
3692	C1	00794	00000523	A		DATA	1315	** ERROR 1315 **
3693	C1	00795	6800079C			R	T1ST1317	BRANCH TO SENSE TEST
3694	C1	00796	32601D0B		T1ST1316	LW,6	IPATID+1	LOAD IPATID+1 INTO
3695	C1	00797	35601F7E			STW,6	BUF1L0	BUF1L0
3696	C1	00798	6AF018D0			RAL,15	ICMPARE	BRANCH TO COMPARE SUBROUTINE
3697	C1	00799	6800079F			R	T1ST1320	BRANCH IF NO CHANGE OCCURRED
3698	C1	0079A	6AF0110C			RAL,15	TST1ERMG	REPORT ERROR
3699	C1	0079B	00000524	A		DATA	1316	** ERROR 1316 **
3700	C1	0079C	EAF0021D	A	T1ST1317	RAL,15	*ISENSE	TEST SENSE SW
3701	C1	0079D	2E00079D			WAIT	*	HALT IF SS3 RESET
3702	C1	0079E	68000776			R	T1ST13	LOOP ON ERROR
3703					*			
3704					*			
3705					*			
3706					*			
3707					*			
3708					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3709					*			
3710					*			
3711					*		ORDER:	SENSE
3712					*		BYTE ADDR:	BA(BUF1L0)
3713					*		FLAGS:	HTE
3714					*		BYTE COUNT:	3 OR 4 DEPENDS ON THE MODEL
3715					*			
3716	01	0079F	6AF00FEB		T1ST1320	BAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
3717	01	007A0	00000EA4			DATA	I0CD1320	
3718	01	007A1	00000B28	A		DATA	1320	*** ERROR 1320 ***
3719	01	007A2	00000F17			DATA	BSIP1310	
3720	01	007A3	00000F20			DATA	BSNP1310	
3721	01	007A4	680007A9			B	T1ST1330	BRANCH TO NEXT TEST
3722					*			
3723	01	007A5	CF0018D0			HIO,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3724	01	007A6	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
3725	01	007A7	2E0007A7			WAIT	*	
3726	01	007A8	6800079F			B	T1ST1320	LOOP ON ERROR
3727					*			
3728					*			*** 1 3 3 0 ***
3729					*			
3730					*			THIS TEST VERIFIES THAT THE RAD WILL REPORT ZERO
3731					*			BYTE COUNT AFTER ACCEPTING A SENSE ORDER
3732					*			
3733					*		ORDER:	SENSE
3734					*		BYTE ADDR:	BA(BUF1L0)
3735					*		FLAGS:	IZC
3736					*		BYTE COUNT:	3 OR 4 DEPENDS ON THE MODEL
3737					*			
3738					*			
3739	01	007A9	6AF00FEA		T1ST1330	BAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
3740	01	007AA	00000EA6			DATA	I0CD1330	
3741	01	007AB	00000532	A		DATA	1330	*** ERROR 1330 ***
3742	01	007AC	00000F1A			DATA	BSIP1330	
3743	01	007AD	00000F20			DATA	BSNP1310	
3744	01	007AE	680007B3			B	T1ST1340	GO TO NEXT TEST
3745					*			
3746	01	007AF	CF0018D0			HIO,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3747	01	007B0	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SWITCHES
3748	01	007B1	2E0007B1			WAIT	*	
3749	01	007B2	680007A9			B	T1ST1330	LOOP ON ERROR
3750					*			
3751					*			*** 1 3 4 0 ***
3752					*			
3753					*			THIS TEST VERIFIES THAT THE RAD WILL REPORT
3754					*			CHANNEL END AFTER ACCEPTING A SENSE ORDER
3755					*			
3756					*		ORDER:	SENSE
3757					*		BYTE ADDR:	BA(BUF1L0)
3758					*		FLAGS:	ICE
3759					*		BYTE COUNT:	3 OR 4 DEPENDS ON THE MODEL
3760					*			
3761					*			
3762	01	007B3	6AF00FEA		T1ST1340	BAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
3763	01	007B4	00000EA8			DATA	I0CD1340	
3764	01	007B5	0000053C	A		DATA	1340	*** ERROR 1340 ***
3765	01	007B6	00000F1D			DATA	BSIP1340	
3766	01	007B7	00000F20			DATA	BSNP1310	
3767	01	007B8	68000471			B	FUCTEXIT	
3768					*			
3769	01	007B9	CF0018D0			HIO,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3770	01	007BA	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
3771	01	007BB	2E0007BB			WAIT	*	
3772	01	007BC	680007B3			B	T1ST1340	LOOP ON ERROR
3773	01	007BD	68000471			B	FUCTEXIT	
3774					*		PAGE	
3775					*			
3776					*			*** T S T 1, 1 4 ***
3777					*			
3778					*			*** S E N S E T E S T 2 ***
3779					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3780					*			*** (TEST NOT RUN FOR HIGH SPEED RAD) ***
3781					*			
3782					*			THIS TEST IS DESIGNED TO TEST SOME OF THE RESPONSES
3783					*			OF A RAD, TO A SENSE OPERATION WITH A BYTE COUNT LESS
3784					*			
3785					*			THAN REQUIRED. THIS TEST VERIFIES ORDER RECOGNITION,
3786					*			COUNT DONE RECOGNITION, ORDER IN GENERATION AND
3787					*			LENGTH TESTING LOGIC.
3788					*			
3789					*			
3790					*			
3791					*			
3792					T1ST14 ;			
3792	01	0078E	326018CF			LW,6	MODEL C	FETCH MODEL NO.
3793	01	0078F	21607212 A			CI,6	X'7212'	IS IT HIGH SPEED
3794	01	007C0	68300471			BE	FUCTEXIT	IF YES BR. TO EXIT
3795	01	007C1	22400002 A			LI,4	2	
3796	01	007C2	55420EAB			STW,4	I0CD1410+1,1	
3797	01	007C3	55420EAD			STW,4	I0CD1420+1,1	
3798	01	007C4	55420EAF			STW,4	I0CD1430+1,1	
3799	01	007C5	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
3800	01	007C6	2560007E A			SLS,6	-2	CONVERT TO A WORD COUNT
3801	01	007C7	35601CA8			STW,6	!PATWC	SAVE AS SIZE OF BUFFER TO BE USED
3802	01	007C8	22601F7E			LI,6	BUF1L0	LOAD AND SAVE
3803	01	007C9	35601CA3			STW,6	!PATBFR	STARTING ADDR OF BUFFER ADDR
3804	01	007CA	6AF00F91			RAL,15	!SEEKMOD	BRANCH TO SEEK OPERATION
3805	01	007CB	6AF01CED			RAL,15	!PATTERN	SPREAD PATTERN
3806					*			
3807					*			
3808					*			*** 1 4 1 0 ***
3809					*			
3810					*			THIS TEST VERIFIES THAT THE RAD WILL REPORT
3811					*			'INCORRECT LENGTH' FOR A SENSE ORDER WITH A BYTE
3812					*			COUNT LESS THAN REQUIRED
3813					*			
3814					*			
3815					*		ORDER:	SENSE
3816					*		BYTE ADDR:	BA(BUF1L0)
3817					*		FLAGS:	IUE
3818					*		BYTE COUNT:	2
3819					*			
3820					*			
3821	01	007CC	6AF00FEB		T1ST1410	RAL,15	!FUCTEST+1	GO TO FUNCTIONAL TEST
3822	01	007CD	00000EAA			DATA	I0CD1410	
3823	01	007CE	00000582 A			DATA	1410	*** ERROR 1410 ***
3824	01	007CF	00000F22			DATA	BSIP1410	
3825	01	007D0	00000F2B			DATA	RSNP1410	
3826	01	007D1	680007D6			R	T1ST1415	GO TO NEXT TEST
3827					*			
3828	01	007D2	CF0018D0			HID,0	!DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3829	01	007D3	EAF0021D A			RAL,15	!ISENSE	TEST SENSE SWITCHES
3830	01	007D4	2F0007D4			WAIT	\$	HALT ON ERROR IF S33 RESET
3831	01	007D5	680007BE			R	T1ST14	LOOP ON ERROR
3832					*			
3833					*			*** 1 4 1 5 ***
3834					*			
3835					*			THIS TEST VERIFIES THAT NO DATA WAS ALTERED
3836					*			IN THE OUTPUT BUFFER BY THE SENSE OPERATION.
3837					*			
3838					*			
3839					*			
3840					*			
3841					*			
3842					*			
3843					*			
3844	01	007D6	32601F7E		T1ST1415	LW,6	BUF1L0	FETCH BUF1L0
3845	01	007D7	316C1D08			CW,6	!PATID+1	COMPARE
3846	01	007D8	693007DC			RNE	T1ST1416	BRANCH IF NOT EQUAL
3847	01	007D9	6AF0110C			RAL,15	TSTIERMG	REPORT ERROR
3848	01	007DA	00000587 A			DATA	1415	** ERROR 1415 **
3849	01	007DB	680007E2			R	T1ST1417	BRANCH TO SENSE TEST
3850	01	007DC	326C1D08		T1ST1416	LW,6	!PATID+1	LOAD !PATID+1 INTO

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3851	01	007DD	35601F7E			STW,6	BUF1L0	BUF1L0
3852	01	007DE	6AF01B00			BAL,16	1COMPARE	BRANCH TO COMPARE SUBROUTINE
3853	01	007DF	680007E5			B	T1ST1420	BRANCH IF NO CHANGE OCCURRED
3854	01	007E0	6AF0110C			BAL,15	TST1ERR0	REPORT ERROR
3855	01	007E1	00000588	A		DATA	1416	** ERROR 1416 **
3856	01	007E2	EAF0021D	A	T1ST1417	BAL,15	+1SENSE	TEST SENSE SW
3857	01	007E3	2E0007E3			WAIT	*	HALT IF 653 RESET
3858	01	007E4	680007BE			B	T1ST14	LOOP ON ERROR
3859					*			
3860					*			
3861					*			
3862					*			
3863					*			
3864					*			
3865					*			
3866					*			
3867					*			
3868					*			
3869					*			
3870					*			
3871					*			
3872					*			
3873	01	007E5	6AF00FEB		T1ST1420	BAL,16	1FUCTEST+1	GO TO FUNCTIONAL TEST
3874	01	007E6	00000EAC			DATA	10CD1420	
3875	01	007E7	0000058C	A		DATA	1420	*** ERROR 1420 ***
3876	01	007E8	00000F2B			DATA	BSIP1420	
3877	01	007E9	00000F2D			DATA	BSNP1420	
3878	01	007EA	680007EF			B	T1ST1430	BRANCH TO NEXT TEST
3879					*			
3880	01	007EB	CF0018D0			HI0,0	+1DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3881	01	007EC	EAF0021D	A		BAL,15	+1SENSE	TEST SENSE SW
3882	01	007ED	2E0007ED			WAIT	*	
3883	01	007EE	680007E5			B	T1ST1420	LOOP ON ERROR
3884					*			
3885					*			
3886					*			
3887					*			
3888					*			
3889					*			
3890					*			
3891					*			
3892					*			
3893					*			
3894					*			
3895					*			
3896	01	007EF	6AF00FEA		T1ST1430	BAL,15	1FUCTEST	GO TO FUNCTIONAL TEST
3897	01	007F0	00000EAE			DATA	10CD1430	
3898	01	007F1	00000596	A		DATA	1430	*** ERROR 1430 ***
3899	01	007F2	00000F2B			DATA	BSIP1430	
3900	01	007F3	00000F2D			DATA	BSNP1420	
3901	01	007F4	68000471			B	FUCTEXIT	RETURN TO FUNCTIONAL DISPATCHER
3902					*			
3903	01	007F5	CF0018D0			HI0,0	+1DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3904	01	007F6	EAF0021D	A		BAL,15	+1SENSE	TEST SENSE SWITCHES
3905	01	007F7	2E0007F7			WAIT	*	
3906	01	007F8	680007EF			B	T1ST1430	LOOP ON ERROR
3907	01	007F9	68000471			B	FUCTEXIT	GO TO FUNCTIONAL DISPATCHER
3908					*			
3909					*			
3910					*			
3911					*			
3912					*			
3913					*			
3914					*			
3915					*			
3916					*			
3917					*			
3918					*			
3919					*			
3920					*			
3921					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3922					*			
3923					*			
3924					T15T15			
3925	01	007FA	22400005	A		LI,6	5	FETCH BYTE NO.
3926	C1	007FB	326018CF			LW,6	MODEL C	FETCH MODEL NO.
3927	C1	007FC	21607212	A		CI,6	X17212	
3928	C1	007FD	683007FF			BE	*+2	BRANCH IF MODEL NO. IS EQUAL
3929	C1	007FE	22400004	A		LI,6	4	
3930	C1	007FF	55420EB1			STH,4	I0CD1510+1,1	
3931	01	00800	55420EB3			STH,4	I0CD1520+1,1	
3932	01	00801	55420EB5			STH,4	I0CD1530+1,1	
3933	C1	00802	55420EB7			STH,4	I0CD1540+1,1	
3934	C1	00803	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
3935	C1	00804	2560007E	A		SLB,6	-2	CONVERT TO A WORD COUNT
3936	C1	00805	35601CAB			STW,6	:PATWC	SAVE AS SIZE OF BUFFER TO BE USED
3937	C1	00806	22601F7E			LI,6	BUF1L0	LOAD AND SAVE
3938	01	00807	35601CA3			STW,6	:PATBFR	STARTING ADDR OF BUFFER ADDR
3939	01	00808	6AF00F91			RAL,15	:SEEKMOD	BRANCH TO SEEK OPERATION
3940	01	00809	6AF01CED			RAL,15	:PATTERN	SPREAD PATTERN
3941					*			
3942					*			
3943					*		*** 1 5 1 0 ***	
3944					*			
3945					*			THIS TEST VERIFIES THAT THE RAD WILL REPORT
3946					*			'INCORRECT LENGTH', 'CHANNEL END' AND HAVE BYTES
3947					*			REMAINING IF THE BYTE COUNT IS GREATER THAN
3948					*			REQUIRED
3949					*			
3950					*			
3951					*		ORDER:	SENSE
3952					*		BYTE ADDR:	BA(BUF1L0)
3953					*		FLAGS:	ICE
3954					*		BYTE COUNT:	5 OR 4 DEPENDS ON THE MODEL
3955					*			
3956	01	0080A	6AF00FEA		T15T1510	RAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
3957	01	0080B	00000E80			DATA	I0CD1510	
3958	01	0080C	000005E6	A		DATA	1510	*** ERROR 1510 ***
3959	01	0080D	000002F			DATA	RSIP1510	
3960	01	0080E	00000F38			DATA	RSNP1510	
3961	01	0080F	68000814			R	T15T1515	GO TO NEXT TEST
3962					*			
3963	01	00810	CF0018D0			WIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
3964	01	00811	EAF0021D	A		RAL,15	*:ISENSE	TEST SENSE SWITCHES
3965	01	00812	2F000812			WAIT	*	HALT ON ERROR IF SS3 RESET
3966	01	00813	680C07FA			R	T15T15	LOOP ON ERROR
3967					*			
3968					*		*** 1 5 1 5 ***	
3969					*			
3970					*			THIS TEST VERIFIES THAT NO DATA WAS ALTERED
3971					*			IN THE OUTPUT BUFFER BY THE SENSE OPERATION.
3972					*			
3973					*			
3974					*			
3975					*			
3976					*			
3977					*			
3978					*			
3979	C1	00814	32601F7E		T15T1515	LW,6	BUF1L0	FETCH BUF1L0
3980	C1	00815	31601D08			CV,6	:PATID+1	COMPARE
3981	01	00816	6930081A			RNE	T15T1516	BRANCH IF NOT EQUAL
3982	C1	00817	6AF0110C			RAL,15	TST1FRMG	REPORT ERROR
3983	C1	00818	000005FB	A		DATA	1515	** ERROR 1515 **
3984	01	00819	680007F2			R	T15T1417	BRANCH TO SENSE TEST
3985	C1	0081A	32601D0B		T15T1516	LW,6	:PATID+1	LOAD :PATID+1 INTO
3986	C1	0081B	35601F7E			STW,6	BUF1L0	BUF1L0
3987	01	0081C	6AF01B00			RAL,15	:COMPARE	BRANCH TO COMPARE SUBROUTINE
3988	01	0081D	68000823			R	T15T1520	BRANCH IF NO CHANGE OCCURRED
3989	C1	0081E	6AF0110C			RAL,15	TST1FRMG	REPORT ERROR
3990	C1	0081F	000005EC	A		DATA	1516	** ERROR 1516 **
3991	01	00820	EAF0021D	A	T15T1517	RAL,15	*:ISENSE	TEST SENSE SW
3992	C1	00821	2F000821			WAIT	*	HALT IF SS3 RESET

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
3993	01	00822	680007FA			B	T1ST15	LOOP ON ERROR
3994				*				
3995				*				
3996				*				
3997				*				*** 1 5 2 0 ***
3998				*				THIS TEST VERIFIES THAT THE RAD WILL REPORT
3999				*				'INCORRECT LENGTH' AND 'UNUSUAL END' AND HAVE
4000				*				BYTES REMAINING IF THE BYTE COUNT IS GREATER
4001				*				THAN REQUIRED.
4002				*			ORDER:	SENSE
4003				*			BYTE ADDR:	BA(BUF1L0)
4004				*			FLAGS:	WTE
4005				*			BYTE COUNT:	4 OR 5 DEPENDS ON THE MODEL
4006				*				
4007				*	T1ST1520	J		
4008	01	00823	6AF00FEB			BAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
4009	01	00824	00000EB2			DATA	I0CD1520	
4010	01	00825	000005FC A			DATA	1520	*** ERROR 1520 ***
4011	01	00826	00000F32			DATA	BSIP1520	
4012	01	00827	00000F3A			DATA	BSNP1520	
4013	01	00828	6800082D			B	T1ST1530	BRANCH TO NEXT TEST
4014				*				
4015	01	00829	CF0018D0			W10,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4016	01	0082A	EAF0021D A			BAL,15	*:SENSE	TEST SENSE SW
4017	01	0082B	2E00082B			WAIT	*	
4018	01	0082C	68000823			B	T1ST1520	LOOP ON ERROR
4019				*				
4020				*				*** 1 5 3 0 ***
4021				*				
4022				*				THIS TEST VERIFIES THAT THE RAD WILL REPORT 'UNUSUAL
4023				*				END' FOR A SENSE ORDER WITH A BYTE COUNT GREATER
4024				*				THAN REQUIRED.
4025				*			ORDER:	SENSE
4026				*			BYTE ADDR:	BA(BUF1L0)
4027				*			FLAGS:	UE
4028				*			BYTE COUNT:	4 OR 5 DEPENDS ON THE MODEL
4029				*				
4030				*				
4031	01	0082D	6AF00FEB		T1ST1530	BAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
4032	01	0082E	00000EB4			DATA	I0CD1530	
4033	01	0082F	000005FA A			DATA	1530	*** ERROR 1530 ***
4034	01	00830	00000F35			DATA	BSIP1530	
4035	01	00831	00000F38			DATA	BSNP1510	
4036	01	00832	68000837			B	T1ST1540	RETURN TO FUNCTIONAL DISPATCHER
4037				*				
4038	01	00833	CF0018D0			W10,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4039	01	00834	EAF0021D A			BAL,15	*:SENSE	TEST SENSE SWITCHES
4040	01	00835	2E000835			WAIT	*	
4041	01	00836	6800082D			B	T1ST1530	LOOP ON ERROR
4042				*				
4043				*				
4044				*				*** 1 5 4 0 ***
4045				*				
4046				*				THIS TEST VERIFIES THAT THE RAD WILL NOT REPORT A
4047				*				'ZERO BYTE COUNT', IF THE BYTE COUNT IN THE IOP
4048				*				DOES NOT GO TO ZERO FOR A SENSE ORDER
4049				*				
4050				*			ORDER:	SENSE
4051				*			BYTE ADDR:	BA(BUF1L0)
4052				*			FLAGS:	I2C
4053				*			BYTE COUNT:	4 OR 5 DEPENDS ON THE MODEL
4054	01	00837	6AF00FEB		T1ST1540	BAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
4055	01	00838	00000EB6			DATA	I0CD1540	
4056	01	00839	00000604 A			DATA	1540	*** ERROR 1540 ***
4057	01	0083A	00000F35			DATA	BSIP1530	
4058	01	0083B	00000F38			DATA	BSNP1510	
4059	01	0083C	68000471			B	FUCTEXIT	RETURN TO FUNCTIONAL DISPATCHER
4060				*				
4061	01	0083D	CF0018D0			W10,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4062	01	0083E	EAF0021D A			BAL,15	*:SENSE	TEST SENSE SW
4063	01	0083F	2E00083F			WAIT	*	HALT ON ERROR IF SS3 RESET

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4064	C1	00840	68000837			R	T1ST1540	LOOP ON ERROR
4065	C1	00841	68000471			R	FUCTEXIT	RETURN TO FUNCTIONAL DISPATCHER
4066				*				
4067				*			PAGE	
4068				*				
4069				*			*** T S T 1 , 1 6 ***	
4070				*				
4071				*			*** B U S Y / N O T B U S Y T E S T ***	
4072				*				
4073				*			THIS SUBTEST TESTS THAT THE RAD CAN GO BUSY, THEN	
4074				*			AFTER A PERIOD OF TIME GO NOT BUSY.	
4075				*				
4076				*				
4077	C1	00842	22000000 A		T1ST16	LI,0	0	RESET
4078	C1	00843	350004AE			STW,0	T1ERFLAG	ERROR FLAG
4079	C1	00844	2200075C			LI,0	DA(I0CC1610)	LOAD D W OF JACC
4080	C1	00845	00001800			SI0,0	*IDEVADDR	START SEEK
4081	C1	00846	6AFC1AA3			RAL,15	ITI0	TEST FOR BUSY
4082	C1	00847	FF000001 A			DATA	X'FF000001'	
4083	C1	00848	70004000 A			DATA	X'70004000'	
4084	C1	00849	6800084A			R	*+1	
4085	C1	0084A	6AFC1F00			RAL,15	:SAVETIP	SAVE TI0 STATUS
4086				*			*** 1 6 1 0 ***	
4087				*				
4088				*			THIS TEST VERIFIES THAT CC2= 1 (DEVICE NOT 'READY')	
4089				*				
4090	C1	0084H	703418RD		T1ST1610	LCF	:STATUSCC,2	TEST FOR DEVICE NOT READY
4091	C1	0084C	69400850			RCS,4	T1ST1620	IF SO NEXT TEST
4092	C1	0084D	6AFC110C			RAL,15	TST1ERMG	GO REPORT ERROR
4093	C1	0084E	0000064A A			DATA	1610	*** ERROR 1610 ***
4094	C1	0084F	331004AE			MTW,1	T1ERFLAG	SFT TST1 ERROR FLAG
4095				*				
4096				*			*** 1 6 2 0 ***	
4097				*				
4098				*			THIS TEST VERIFIES THAT THE RAD STORAGE UNIT	
4099				*			AND THE RAD CONTROLLER WAS BUSY AT THE TIME OF	
4100				*			TIP.	
4101				*				
4102	C1	00850	22600654 A		T1ST1620	LI,6	1620	LOAD ERROR NO.
4103	C1	00851	356C10DA			STW,6	:ERRPRT#	SAVE ERROR N.R.
4104	C1	00852	22600000 A			LI,6	0	FETCH ZERO
4105	C1	00853	356C10AC			STW,6	:FUNFLAG	STORE ZERO
4106	C1	00854	6AFC107E			RAL,15	:ERRPRT	GO TO ERROR TEST ROUTINE
4107	C1	00855	00003CFC			DATA	BA(RSNP1620)	
4108	C1	00856	68000858			R	T1ST1625	GOOD RETURN
4109	C1	00857	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
4110				*				
4111	C1	00858	330004AE		T1ST1625	MTW,0	T1ERFLAG	TEST FOR ERROR
4112	C1	00859	683C085E			REZ	T1ST1630	TAKE TEST GOOD EXIT
4113	C1	0085A	0F001800			HIO,0	*IDEVADDR	HALT ERRORING DEVICE
4114	C1	0085H	EAFC021D A			RAL,15	*ISENSE	GO TEST SENSE SWITCHES
4115	C1	0085C	2F00085C			WAIT	*	
4116	C1	0085D	68000842			R	T1ST16	GO LOOP ON ERROR
4117				*				
4118				*			*** 1 6 3 0 ***	
4119				*				
4120				*			THIS TEST VERIFIES THAT CC2 = 0 (DEVICE READY)	
4121				*			AFTER THE SEEK IS ACCEPTED.	
4122				*				
4123	C1	0085E	22400FA0 A		T1ST1630	LI,4	4000	WAIT
4124	C1	0085F	6440085F			RDR,4	\$	AT LEAST 1 SECTOR TIME
4125	C1	00860	354004AE			STW,4	T1ERFLAG	ZERO ERROR FLAG
4126	C1	00861	6AFC1AA3			RAL,15	ITI0	TEST DEVICE FOR NOT BUSY
4127	C1	00862	FF000001 A			DATA	X'FF000001'	
4128	C1	00863	10000000 A			DATA	X'10000000'	
4129	C1	00864	68000471			R	FUCTEXIT	IF NOT EXIT TEST
4130	C1	00865	6AFC1F00			RAL,15	:SAVETIP	
4131				*				
4132	C1	00866	703418RD			LCF	:STATUSCC,2	LOAD CONDITION CODES
4133	C1	00867	6840086B			RDR,4	T1ST1640	IF CC2=0 NEXT TEST
4134	C1	00868	6AFC110C			RAL,15	TST1ERMG	GO REPORT ERROR

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4135	C1	00869	0000065E A			DATA	1630	*** ERROR 1630 ***
4136	01	0086A	331004AE			MTW,1	TIERFLAG	SET TST1 ERROR FLAG
4137					*			
4138					*		*** 1 6 4 0 ***	
4139					*			
4140					*		THIS TEST VERIFIES THAT THE RAD STORAGE UNIT	
4141					*		AND THE RAD CONTROLLER WHEN NOT BUSY AFTER	
4142					*		BEING BUSY.	
4143					*			
4144	C1	0086B	22600668 A		T1ST1640	LI,6	1640	LOAD ERROR NO.
4145	C1	0086C	35601DDA			STW,6	TERRORT#	SAVE ERROR NO.
4146	C1	0086D	22600000 A			LI,6	0	FETCH ZERO
4147	01	0086E	356010AC			STW,6	IFUNFLAG	STORE ZERO
4148	01	0086F	6AF01D7E			BAL,15	TERRORT	GO TO ERROR TEST ROUTINE
4149	01	00870	00003CF8			DATA	BA(BSNP1640)	
4150	C1	00871	68000873			R	T1ST1645	GOOD RETURN
4151	01	00872	331004AE			MTW,1	TIERFLAG	SET TST1 ERROR FLAG
4152					*			
4153	01	00873	330004AE		T1ST1645	MTW,0	TIERFLAG	TEST FOR ERROR
4154	01	00874	68300471			REZ	FUCTEXIT	RETURN TO FTM
4155	01	00875	CF0018D0			WIO,0	*IDEVADDR	HALT DEVICE
4156	01	00876	EAF0021D A			BAL,15	*:SENSE	GO TEST SENSE SWITCHES
4157	01	00877	2E000877			WAIT	*	
4158	01	00878	68000842			R	T1ST16	GO LOOP
4159	01	00879	68000471			R	FUCTEXIT	RETURN TO FTM
4160						PAGE		
4161					*			
4162					*		*** T S T 1 , 1 7 ***	
4163					*			
4164					*		*** C U R R E N T S E C T O R T E S T ***	
4165					*			
4166					*		THIS SUBTEST VERIFIES THAT ALL SECTORS CAN BE	
4167					*		SENSED FROM THE RAD. IF ANY ERRORS ARE	
4168					*		DETECTED A TABLE WILL BE OUTPUT SHOWING THE	
4169					*		NUMBER OF TIMES EACH CURRENT SECTOR WAS OBSERVED.	
4170					*		EACH CURRENT SECTOR SHOULD HAVE BEEN OBSERVED	
4171					*		ONLY ONCE.	
4172					*			
4173	C1	0087A	22F006AE A		T1ST17	LI,15	1710	LOAD AND SAVE
4174	01	0087B	35F0116F			STW,15	TAPDPLY1	TEST ERROR NO.
4175	01	0087C	02200040 A			LCI	4	LOAD AND
4176	01	0087D	2A4011DA			LM,4	TABLE010	SAVE
4177	01	0087E	2B4011AC			STM,4	TABLE100+2	'CURRENT SECTOR'
4178	01	0087F	124011D4			LD,4	TABLE001	LOAD AND SAVE
4179	01	00880	554211BE			STW,4	TABLE101,1	'SECTOR'
4180	01	00881	355011BF			STW,5	TABLE101+1	
4181	01	00882	22000000 A			LI,0	C	
4182	01	00883	350011E7			STW,0	TABBIAS	
4183	01	00884	350011E6			STW,0	TABPASS	
4184	C1	00885	22E00004 A			LI,14	4	FETCH NO.
4185	01	00886	22FC7212 A			LI,15	X'17212'	FETCH NO.
4186	01	00887	31F018CF			CW,15	MODELC	IS IT HIGH SPEED
4187	01	00888	6830088A			RE	*+2	IF EQUAL BR.
4188	C1	00889	22E00003 A			LI,14	3	FETCH NO.
4189	01	0088A	55E20FD9			STW,14	IOCD8NMD+1,1	STORE HALF WORD
4190	C1	0088B	325008A9			LW,5	T1ST17XP	FETCH WORD
4191	01	0088C	3550005C A			STW,5	X'15C'	STORE WORD
4192	01	0088D	22C00020 A			LI,12	X'20'	FETCH NO.
4193	C1	0088E	6DCC12C0 A			WD,12	X'1200'	WRITE DIRECT
4194	01	0088F	6D000022 A			WD,0	X'22'	WRITE DIRECT
4195	C1	00890	326018D1		T1ST1710	LW,6	SECTCURR	LOAD NORMAL LENGTH OF THE TABLE
4196	01	00891	356010AF			STW,6	T1ST34SV	STORE NORMAL LENGTH OF TABLE
4197	01	00892	6AF017DE			BAL,15	MEMORY3	GO MAKE MEMORY AVAILABLE
4198	01	00893	68000471			R	FUCTEXIT	IF NONE AVAILABLE SKIP TEST
4199					*			
4200					*			
4201					*			
4202					*		*** 1 7 1 0 ***	
4203					*			
4204					*		THIS TEST IS DESIGNED TO SENSE FOR CURRENT	
4205					*		SECTORS. IT WILL ATTEMPT TO FIND ALL CURRENT	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS	
4206					*			SECTORS, IF A CURRENT SECTOR IS NOT FOUND OR IS FOUND MORE THAN ONCE FOR A REVOLUTION OF THE DISC, A TABLE WILL BE OUTPUT SHOWING THE NUMBER OF TIMES EACH SECTOR WAS SENSED. IF FOR SOME REASON MORE THAN THE EXPECTED NUMBER OF SECTORS ARE OBSERVED FOR A REVOLUTION THE TABLE WILL BE ADJUSTED UP TO DISPLAY THE ADDITIONAL SECTORS.	
4207					*				
4208					*				
4209					*				
4210					*				
4211					*				
4212					*				
4213					*				
4214					*				
4215					*				
4216	C1	00894	220007EC		T1ST1711 J	LI,0	DA(10CDSNMD)		FETCH DOUBLEWORD
4217	C1	00895	22C00000	A		LI,12	0		
4218	C1	00896	35C008AA			STW,12	T1ST17LP		STORE WORD
4219	C1	00897	CCC01800			SI0,12	*IDEVADDR		SI0
4220	C1	00898	330008AA			MTW,0	T1ST17LP	TESTING	
4221	C1	00899	68300898			REZ	0-1		
4222	C1	0089A	72740FDA			LH,7	ISNSWORD,2	FETCH CURRENT SECTOR ADDR	
4223	C1	0089B	6AF01143			BAL,15	TABUILDS	GO TO BUILD TABLE ROUTINE	
4224	C1	0089C	68000471			R	FUCTEXIT	IF DONE EXIT	
4225	C1	0089D	68000894			R	T1ST1711	IF NOT DONE LOOP	
4226	C1	0089E	EAF0021D	A		BAL,15	*ISENSE	IF ERROR TEST SENSE SWITCHES	
4227	C1	0089F	2E00089F			WAIT	*		
4228	C1	008A0	68000890			B	T1ST1710	LOOP ON ERROR	
4229	C1	008A1	68000471			B	FUCTEXIT	GO BACK TO FTM	
4230					*				
4231					*				
4232						ROUND	R		
4233					*				
4234					*				
4235	C1	008A2	00000000	A	T1ST171T	DATA	0,C	DATA FORMAT	
	C1	008A3	00000000	A					
4236	C1	008A4	000008A6			DATA	T1ST171P		
4237	C1	008A5	07000000	A		DATA	7**24		
4238					*				
4239					*				
4240					*				
4241					*				
4242	C1	008A6	6E000000	A	T1ST171P	A10,13	0	A10	
4243	C1	008A7	331008AA			MTW,1	T1ST17LP	ADD 1	
4244	C1	008A8	0F3008A2			LPSD,3	T1ST171T		
4245					*				
4246					*				
4247					*				
4248	C1	008A9	0F3008A2		T1ST17XP	XPSD,3	T1ST171T		
4249	C1	008AA	00000000	A	T1ST17LP	DATA	0		
4250						PAGE			
4251					*				
4252					*			*** T S T 1 , 18 ***	
4253					*				
4254					*			*** S E E K / S E N S E T E S T ***	
4255					*				
4256					*			THIS SUBTEST VERIFIES THAT ALL SECTORS AND	
4257					*			TRACKS (BANDS) CAN BE SEEKED THEN SENSED.	
4258					*			IF ANY ERRORS ARE DETECTED A TABLE WILL BE	
4259					*			OUTPUT SHOWING THE NUMBER OF TIMES EACH	
4260					*			SECTOR OR TRACK (BAND) WAS OBSERVED.	
4261					*			EACH SECTOR OR TRACK (BAND) SHOULD HAVE BEEN	
4262					*			RESERVED ONLY ONCE.	
4263					*				
4264	C1	008AB	22F00712	A	T1ST18	LI,15	1810	LOAD AND SAVE	
4265	C1	008AC	35F0116F			STW,15	TARPLY1	TEST ERROR NO.	
4266	C1	008AD	02200040	A		LCI	4	LOAD AND	
4267	C1	008AE	2A4C11DE			LM,4	TABLE011	SAVE	
4268	C1	008AF	2R4C11AC			STM,4	TABLE100+2	'SEEK/SENSE TEST	
4269	C1	008B0	124C1104			LD,4	TABLE001	LOAD AND	
4270	C1	008B1	554211RE			STH,4	TABLE101,1	SAVE	
4271	C1	008B2	355011RF			STW,5	TABLE101+1	'SECTOR'	
4272	C1	008B3	22000000	A		LI,0	C		
4273	C1	008B4	350011E6			STW,0	TARPASS	RESET PRINT INHIBIT FLAG	
4274	C1	008B5	32601F4E			LW,6	L(X1010FFFF)	LOAD AND SAVE	
4275	C1	008B6	35601CAD			STW,6	'FT10MSK	A T10 MASK	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4276	C1	008B7	32601F4F			LW,6	L(X'00B7FFFF')	LOAD AND SAVE
4277	C1	008B8	356010AE			STW,6	IFAT0MSK	A AIB MASK
4278				*				
4279				*			*** 1 8 1 0 ***	
4280				*			THIS TEST IS DESIGNED TO SENSE THE SEEKED SECTOR.	
4281				*			IT WILL ATTEMPT TO SEEK THEN SENSE ALL SECTORS	
4282				*			OF A TRACK (BAND). IF A SECTOR IS NOT FOUND	
4283				*			OR IS FOUND MORE THAN ONCE PER TRACK (BAND),	
4284				*			A TABLE WILL BE OUTPUT SHOWING THE NUMBER	
4285				*			OF TIMES EACH SECTOR WAS SENSED.	
4286				*				
4287				*				
4288	01	008B9	326018D1		T1ST1810	LW,6	SECTCURR	LOAD NO. OF SECTORS
4289	C1	008BA	356010AF			STW,6	T1ST30BV	SAVE NORMAL LENGTH OF TABLE
4290	C1	008BB	22600052 A			LI,6	82	LOAD SIZE OF MEMORY RESERVE AREA
4291	C1	008BC	6AF017DE			RAL,15	MEMORY3	GO MAKE MEMORY AVAILABLE
4292	C1	008BD	68000471			R	FUCTEXIT	IF NOT ENOUGH MEMORY SKIP TEST
4293	C1	008BE	326010AF			LW,6	T1ST30BV	LOAD NORMAL LENGTH OF TABLE
4294	C1	008BF	325018D3			LW,5	CURRSEEK	LOAD CURRENT SEEK ADDR
4295	C1	008C0	6AC017CE		T1ST1811	RAL,12	BUILD5K	GO BUILD DEV SEEK ADDR
4296	C1	008C1	6AF00F91			RAL,15	ISEEKMD	GO SEEK THE RAD
4297	C1	008C2	680008C3			B	*+1	
4298	C1	008C3	20500C01 A			AI,5	1	UPDATE ABSOLUTE SEEK ADDR
4299	C1	008C4	6AF00FC0			RAL,15	ISENSEMD	GO SENSE RAD
4300	C1	008C5	680008C6			B	*+1	
4301	C1	008C6	72720FDA			LB,7	ISNSWORD,1	LOAD SEEK SECTOR SENSE STATUS
4302	C1	008C7	224C0020 A			LI,4	32	LOAD BIT WORD LENGTH
4303	01	008C8	384018D7			SW,4	TCKCURR	SUBTRACT SHIFT CONSTANT
4304	01	008C9	A5700004 A			SL6,7	*4	SHIFT TO LEFT TO REMOVE TRACK (B)INF
4305	01	008CA	324C18D7			LW,4	TCKCURR	
4306	01	008CB	20400200 A			AI,4	X'200'	
4307	01	008CC	A5700004 A			SC6,7	*4	
4308	01	008CD	6AF01151			RAL,15	TABUILD	GO TO BUILD TABLE ROUTINE
4309	01	008CE	680008D3			R	T1ST1820	IF DONE NEXT TEST
4310	01	008CF	680008C0			R	T1ST1811	IF NOT DONE LOOP
4311	01	008D0	EAF0021D A			RAL,15	*ISENSE	IF ERROR TEST SENSE SWITCHES
4312	01	008D1	2F0008D1			WAIT	S	
4313	01	008D2	68000899			R	T1ST1810	LOOP ON ERROR
4314				*				
4315				*			*** 1 8 2 0 ***	
4316				*				
4317				*			THIS TEST IS DESIGNED TO SENSE THE SEEKED TRACK (BAND)	
4318				*			IT WILL ATTEMPT TO SEEK THEN SENSE ALL	
4319				*			TRACKS (BANDS) SPECIFIED BY THE 'SYST' AND	
4320				*			'SEEK' DIRECTIVES. IF A TRACK (BAND) IS NOT	
4321				*			FOUND OR IS FOUND MORE THAN ONCE A TABLE WILL	
4322				*			BE OUTPUT SHOWING THE NUMBER OF TIMES EACH	
4323				*			TRACK (BAND) WAS SENSED.	
4324				*				
4325	01	008D3	22F0071C A		T1ST1820	LI,15	1820	LOAD AND SAVE
4326	01	008D4	35F0116F			STW,15	TABDPLY1	TEST ERROR NO.
4327	01	008D5	124011D6			LD,4	TABLE002	LOAD 'BAND'
4328	01	008D6	22707212 A			LI,7	X'17212'	LOAD HIGH SPEED MODEL NO.
4329	01	008D7	317018CF			CH,7	MODEL C	IS IT HIGH SPEED
4330	01	008D8	683008DA			BE	*+2	IF SO BRANCH
4331	01	008D9	124011D8			LD,4	TABLE003	LOAD 'TRACK'
4332	C1	008DA	554211BE			STW,4	TABLE101,1	STORE
4333	01	008DB	355011BF			STW,5	TABLE101+1	INFORMATION INTO MESSAGE
4334	01	008DC	32401866			LW,4	#DDTBIAS	LOAD BIAS POINTER
4335	01	008DD	3258186B			LW,5	SLOWER,4	FETCH WORD
4336	01	008DE	6AC017CE			RAL,12	BUILD5K	GO TO BUILD5K SURR.
4337	01	008DF	3A7C18D7			LCW,7	TCKCURR	FETCH COMPLEMENT WORD
4338	01	008E0	48701F50			AND,7	'X'7F'	MASKING
4339	01	008E1	32900FB8			LW,9	SEEK RAD	FETCH WORD
4340	01	008E2	A5900007 A			SL6,9	*7	SHIFT
4341	01	008E3	228C0000 A			LI,8	0	FETCH ZERO
4342	01	008E4	378C18D1			HW,8	SECTCURR	MULTIPLICATION
4343	01	008E5	359018D3			STW,9	CURRSEEK	STORE WORD
4344	01	008E6	325018D4			LW,5	SURFCEND	LOAD ABSOLUTE UPPER LIMIT
4345	01	008E7	22000000 A			LI,0	0	
4346	01	008E8	350011F6			STW,0	TABPASS	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4347	01	008E9	385018D3			SW,5	CURRSEEK	
4348	01	008EA	6AC017CE			RAL,12	BUILDSK	GO CONVERT TO RAD ADDR
4349	01	008EB	32600FB8			LW,6	SEEKRAD	LOAD DEVICE SEEK SPAN
4350	01	008EC	A5600007	A		SLS,6	*7	REMOVE SECTOR ADDR
4351	01	008ED	356010AF			STW,6	T1ST348V	
4352	01	008EE	33000006	A		MTW,0	6	
4353	01	008EF	6R200471			RLEZ	FUCTEXIT	IF LESS OR EQUAL ZERO EXIT
4354	01	008F0	22600200	A	T1ST1822	LI,6	512	
4355	01	008F1	6AF017DE			RAL,15	MEMORY3	GO MAKE MEMORY AVAILABLE
4356	01	008F2	68000471			R	FUCTEXIT	IF NONE AVAILABLE SKIP TEST
4357	01	008F3	3A7018D7			LCW,7	TCKCURR	
4358	01	008F4	325018D3			LW,5	CURRSEEK	LOAD ABSOLUTE SEEK ADDR
4359	01	008F5	6AC017CE			RAL,12	BUILDSK	GO CONVERT TO DEVICE SEEK ADDR
4360	01	008F6	32600FB8			LW,8	SEEKRAD	LOAD DEVICE SEEK ADDRESS
4361	01	008F7	4B701F50			AND,7	*X'7F'	
4362	01	008F8	A5800007	A		SLS,8	*7	REMOVE SECTOR ADDR
4363	01	008F9	358011E7			STW,8	TABBIA5	SET UP TABLE BIAS
4364	01	008FA	308010AF			AW,8	T1ST348V	ADD WORDS
4365	01	008FB	35801831			STW,8	SECTLMT	STORE WORD INTO SECTLMT
4366	01	008FC	33000000	A		MTW,0	0	NO OPERATION
4367					T1ST1821	J		
4368	01	008FD	326010AF			LW,6	T1ST348V	FETCH WORD
4369	01	008FE	6AC017CE			RAL,12	BUILDSK	GO TO BUILDSK SUBR.
4370	01	008FF	6AF00F91			RAL,15	ISEEKMOD	GO SEEK RAD
4371	01	00900	309018D1			AW,5	SECTCURR	UPDATE SEEK ADDRESS
4372	01	00901	6AF00FC0			RAL,15	ISFNSEMOD	GO SENSE RAD
4373	01	00902	52700FDA			LH,7	ISNSWORD	LOAD SEEKED TRACK (BAND)
4374	01	00903	4B701F51			AND,7	*X'7FFF'	REMOVE WRITE PROTECT BIT
4375	01	00904	3A4018D7			LCW,4	TCKCURR	LOAD CURRENT SHIFT COUNT
4376	01	00905	4B401F50			AND,4	*X'7F'	REMOVE ALL BUT SHIFT INFORMATION
4377	01	00906	A5700004	A		SLS,7	*4	POSITION TO REMOVE SECTOR
4378	01	00907	6AF01151			RAL,15	TARUILD	GO UPDATE TABLE
4379	01	00908	68000471			R	FUCTEXIT	IF DONE EXIT
4380	01	00909	680008FD			R	T1ST1821	IF NOT DONE LOOP
4381	01	0090A	EAF0021D	A		RAL,15	*ISENSE	IF ERROR TEST SENSE SWITCHES
4382	01	0090B	2F00090B			WAIT	*	
4383	01	0090C	680008F0			R	T1ST1822	LOOP ON ERROR
4384	01	0090D	68000471			R	FUCTEXIT	
4385						PAGE		
4386					*			
4387					*			
4388					*			
4389					*			
4390					*			
4391					*			
4392					*			
4393					*			
4394					*			
4395					*			
4396					*			
4397					*			
4398					*			
4399	C1	0090E	32801F4E		T1ST19 J	LW,8	L(X'101DFFFF')	SET UP
4400	01	0090F	358010AD			STW,8	IFT10MSK	T10 MASK FOR FUNCTIONAL TEST
4401	C1	00910	32801F4F			LW,8	L(X'100B7FFFF')	SET UP
4402	01	00911	358010AE			STW,8	IFTA0MSK	A10 MASK FOR FUNCTIONAL TEST
4403	01	00912	22400000	A		LI,4	0	
4404	01	00913	35401106			STW,4	TCKUNVL	LOAD TRACK (BAND) UNAVAILABLE ADDR
4405	C1	00914	35401108			STW,4	TCKWPVL1	LOAD TRACK (BAND) WRT PROTECT ADDR
4406	C1	00915	3540110A			STW,4	TCKWPVL	LOAD TRACK (BAND) WRT PROTECT ADDR
4407	C1	00916	22400C00	A	T1ST1908	LI,4	0	
4408	C1	00917	32500FB8			LW,5	SEEKRAD	LOAD SEEK ADDR.
4409					T1ST1909	J		
4410	01	00918	3A4018D7			LCW,4	TCKCURR	LOAD WORD COMPLEMENT
4411	01	00919	4B401F50			AND,4	*X'7F'	AND
4412	01	0091A	A5500004	A		SLS,5	*4	SHIFT
4413	01	0091B	22400000	A		LI,4	0	
4414	01	0091C	3540096A			STW,4	T1ST19XF	
4415	C1	0091D	35500006	A		STW,5	6	LOAD TRACK (BAND) ADDRESS
4416	01	0091E	30601F52			AW,6	*X'80000000'	SET UP FOR REGISTER IS NOT ZERO
4417	01	0091F	374018D1			MTW,4	SECTCURR	CALCULATE NEW DEVICE SEEK ADDRESS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABFL	OPERATION	OPERAND	COMMENTS
4418	C1	00920	6AC017CE		T1ST1910	BAL,12	BUILDOK	
4419					*			
4420					*		*** 1 9 1 0 ***	
4421					*			
4422					*		THIS TEST VERIFIES THAT THIS TRACK (BAND)	
4423					*		IS AVAILABLE.	
4424					*			
4425	C1	00921	6AF00F91			BAL,15	ISENMOO	SEEK A TRACK (BAND)
4426	C1	00922	68000923			B	*+1	
4427	C1	00923	6AF00FC0			BAL,15	ISENMOO	GO SENSE A TRACK (BAND)
4428	C1	00924	68000928			B	*+1	
4429	C1	00925	6AF01AAD			BAL,15	ITDV	GO FETCH TDV STATUS
4430	C1	00926	20000001	A		DATA	X'20000001'	TEST FOR SECTOR UNAVAILABLE
4431	C1	00927	00000000	A		DATA	X'0'	
4432	C1	00928	6800092E			R	T1ST1911	IF AVAILABLE BRANCH
4433	C1	00929	35601107			STW,6	TCKUNVM	IF NOT STORE AS UPPER LIMIT
4434	C1	0092A	39001106			MTW,0	TCKUNVL	TEST LOWER LIMIT
4435	C1	0092B	6930092C			BNEZ	*+2	IF NONE
4436	C1	0092C	35601106			STW,6	TCKUNVL	STORE AS LOWER LIMIT TOO
4437	C1	0092D	68000939			B	T1ST1920	GO TO NEXT TEST
4438	C1	0092E	33001106		T1ST1911	MTW,0	TCKUNVL	TEST LOWER LIMIT
4439	C1	0092F	68300939			BEZ	T1ST1920	IF ZERO NEXT TEST
4440	C1	00930	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
4441	C1	00931	00000776	A		DATA	1910	*** ERROR 1910 ***
4442	C1	00932	6AF010C7			BAL,15	T1ST19RP	REPORT WRITE PROTECT VIOLATE
4443	C1	00933	00001106			DATA	TCKUNVL	
4444	C1	00934	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SWITCHES
4445	C1	00935	2E000935			WAIT	*	
4446	C1	00936	68000918			B	T1ST1909	LOOP ON ERROR
4447	C1	00937	3300096A			MTW,0	T1ST19XF	
4448	C1	00938	68300916			BEZ	T1ST1908	CONTINUE
4449					*			
4450					*		*** 1 9 2 0 ***	
4451					*			
4452					*		THIS TEST VERIFIES THAT THIS TRACK (BAND)	
4453					*		WAS NOT REPORTED WRITE PROTECTED IN THE	
4454					*		TEST DEVICE STATUS (TDV).	
4455	C1	00939	6AF01AB0		T1ST1920	BAL,15	ITDV+3	TO TEST THE DEVICE STATUS
4456	C1	0093A	10000001	A		DATA	X'10000001'	
4457	C1	0093B	00000000	A		DATA	X'0'	
4458	C1	0093C	68000942			B	T1ST1921	IF NOT WRITE PROTECTED BRANCH
4459	C1	0093D	35601109			STW,6	TCKWVH1	IF NOT STORE UPPER LIMIT
4460	C1	0093E	33001108			MTW,0	TCKWPVL1	TEST LOWER LIMIT
4461	C1	0093F	69300941			BNEZ	*+2	IF NONE
4462	C1	00940	35601108			STW,6	TCKWPVL1	STORE AS LOWER LIMIT TOO
4463	C1	00941	6800094D			R	T1ST1930	
4464	C1	00942	33001108		T1ST1921	MTW,0	TCKWPVL1	TEST LOWER LIMIT
4465	C1	00943	6830094D			BEZ	T1ST1930	IF ZERO NEXT TEST
4466	C1	00944	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
4467	C1	00945	00000780	A		DATA	1920	*** ERROR 1920 ***
4468	C1	00946	6AF010C7			BAL,15	T1ST19RP	REPORT WRITE PROTECT VIOLATE
4469	C1	00947	00001108			DATA	TCKWPVL1	
4470	C1	00948	EAF0021D	A		BAL,15	*ISENSE	GO TEST SENSE SWITCHES
4471	C1	00949	2E000949			WAIT	*	
4472	C1	0094A	68000918			B	T1ST1909	LOOP ON ERROR
4473	C1	0094B	3300096A			MTW,0	T1ST19XF	
4474	C1	0094C	68300916			BEZ	T1ST1908	CONTINUE
4475					*			
4476					*		*** 1 9 3 0 ***	
4477					*			
4478					*		THIS TEST VERIFIES THAT THIS TRACK (BAND)	
4479					*		WAS NOT REPORTED WRITE PROTECTED IN THE RETURNED	
4480					*		SENSE WORD.	
4481					*			
4482					T1ST1930	J		
4483	C1	0094D	33000FDA			MTW,0	ISNSWORD	TEST FOR WRITE PROTECT
4484	C1	0094E	68100954			RGEZ	T1ST1932	
4485	C1	0094F	3560110B			STW,6	TCKWVH	IF NONE STORE UPPER LIMIT
4486	C1	00950	3300110A			MTW,0	TCKWPVL	TEST LOWER LIMIT
4487	C1	00951	69300953			BNEZ	*+2	IF NONE
4488	C1	00952	3560110A			STW,6	TCKWPVL	STORE AS LOWER LIMIT

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4489	01	00953	6800099F			B	T1ST1940	GO TO NEXT STEP
4490	01	00954	3300110A		T1ST1932	MTW,0	TCKWPVL	TEST LOWER LIMIT
4491	01	00955	6830095F			BNEZ	T1ST1940	IF ZERO NEXT PASS
4492	01	00956	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
4493	01	00957	0000078A	A		DATA	1930	*** ERROR 1930 ***
4494	01	00958	6AF010C7			BAL,15	T1ST19RP	REPORT WRITE PROTECT VIOLATE
4495	01	00959	0000110A			DATA	TCKWPVL	
4496	01	0095A	EAF0021D	A		BAL,15	*ISENSE	GO TEST SENSE SWITCHES
4497	01	0095B	2E00095B			WAIT	*	
4498	01	0095C	68000918			B	T1ST1909	LOOP ON ERROR
4499	01	0095D	3300096A			MTW,0	T1ST19XF	
4500	01	0095E	68300916			BNEZ	T1ST1908	CONTINUE
4501								
4502								
4503	01	0095F	3300096A		T1ST1940	MTW,0	T1ST19XF	IS EXIT FLAG SET
4504	01	00960	69300471			BNEZ	FUCTEXIT	IF SO RETURN FTM
4505	01	00961	20600001	A	T1ST1931	AI,6	1	ADD 1 TO TRACK (RAND) COUNT
4506	01	00962	305018D1			AW,5	SECTCURR	ADD TO TRACK (BAND) ADDR
4507	01	00963	315018D4			CW,5	SURFCEND	IF NOT
4508	01	00964	69100920			RL	T1ST1910	PASS END GO TRY NEXT TRACK (BAND)
4509	01	00965	3510096A			STW,1	T1ST19XF	SET EXIT FLAG
4510	01	00966	22000000	A		LI,0	0	ZERO
4511	01	00967	350018BD			STW,0	:STATUSCC	CONDITIONS
4512	01	00968	35000FDA			STW,0	:SNSWORD	
4513	01	00969	6800092E			B	T1ST1911	GO BACK FOR LAST PASS
4514								
4515								
4516								
4517	01	0096A	00000000	A	T1ST19XF	DATA	0	TST1,19 EXIT FLAG
4518	01	0096B	00000000	A		DATA	0	
4519						PAGE		
4520								*** T S T 1 , 2 C
4521								
4522								*** U N A V A I L A B I L I T Y T E S T ***
4523								
4524								THIS SUBTEST VERIFIES THAT SECTOR UNAVAILABLE
4525								WILL BE REPORTED, WHENEVER A UNAVAILABLE SECTOR
4526								OR TRACK (BAND) IS SEEKED.
4527								
4528								
4529					T1ST20			
4530	01	0096C	3A4018D7			LCW,4	TCKCURR	LOAD - TRACK SHIFT COUNT
4531	01	0096D	4B401F50			AND,4	=X17F!	
4532	01	0096E	326018D1			LW,6	SECTCURR	LOAD NO. OF SECTORS/ TRACK (BAND)
4533	01	0096F	A5600004	A		SLB,6	*	SHIFT
4534	01	00970	33000006	A		MTW,0	6	
4535	01	00971	6930097E			BNEZ	T1ST2020	
4536								
4537								*** 2 0 1 0 ***
4538								
4539								THIS TEST SEEKS A UNAVAILABLE SECTOR, IT TESTS
4540								FOR SECTOR UNAVAILABLE. (TEST ONLY DONE FOR 7232 AND
4541								7212).
4542	01	00972	325018D1		T1ST2010	LW,5	SECTCURR	LOAD MAXIMUM NO. OF SECTOR/TRACK (B)
4543	01	00973	35500FB8			STW,5	SEEKRD	USE THIS AS SEEK ADDR.
4544	01	00974	6AF00FEA			BAL,15	FUCTEST	GO TO FUNCTIONAL TEST ROUTINE
4545	01	00975	00000EBA			DATA	I0CD2010	
4546	01	00976	000007DA	A		DATA	2010	*** 2 0 1 0 ***
4547	01	00977	00000F40			DATA	9SIP2010	
4548	01	00978	00000F42			DATA	BSNP2010	
4549	01	00979	6800097E			B	T1ST2020	
4550	01	0097A	CF0018D0			HIO,0	*IDEVADDR	HALT DEVICE
4551	01	0097B	EAF0021D	A		BAL,15	*ISENSE	GO TEST SENSE SWITCHES
4552	01	0097C	2E00097C			WAIT	*	
4553	01	0097D	6800096C			B	T1ST20	
4554								
4555								*** 2 0 2 0 ***
4556								
4557								THIS TEST SEEKS A UNAVAILABLE TRACK (BAND), IT TEST
4558								FOR THIS TRACK (BAND) BEING UNAVAILABLE.
4559								

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4560	01	0097E	325018CF		T1ST2020	LW,8	MODEL C	LOAD MODEL NO.
4561	01	0097F	22602000	A		LI,6	X'2000'	LOAD SEEK ADDRESS (720X OR 7232)
4562	01	00980	21507212	A		CI,5	X'7212'	
4563	01	00981	68300471			BE	FUCTEXIT	* TO BE REMOVED BEFORE RELEASE
4564	01	00982	35600F88			STW,6	SEEK RAD	
4565	01	00983	6AF00FEA			BAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
4566	01	00984	00000E8A			DATA	I0CD2010	
4567	01	00985	000007E4	A		DATA	2020	*** ERROR 2020 ***
4568	01	00986	00000F40			DATA	BSIP0010	
4569	01	00987	00000F42			DATA	BSNP0010	
4570	01	00988	68000471			R	FUCTEXIT	
4571	01	00989	CF0018D0			HIO,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4572	01	0098A	EAF0021D	A		BAL,15	*ISENSE	
4573	01	0098B	2E00098B			WAIT	*	
4574	01	0098C	6800097E			B	T1ST2020	GO LOOP ON ERROR
4575	01	0098D	68000471			R	FUCTEXIT	
4576					*			
4577						PAGE		
4578					*			
4579					*			*** T S T 1 , 2 1 ***
4580					*			
4581					*			*** C O M M A N D C H A I N I N G T E S T ***
4582					*			
4583					*			THIS SUBTEST TEST THE ABILITY OF THE RAD
4584					*			TO DETECT AND RESPOND CORRECTLY TO
4585					*			COMMAND CHAINING.
4586					*			
4587					*			
4588					*			
4589					*			*** 2 1 1 0 ***
4590					*			
4591					*			THIS TEST VERIFIES THAT COMMAND CHAINING WILL
4592					*			OCCUR PROPERLY.
4593					*			
4594					*			
4595	01	0098E	22000000	A	T1ST21	LI,0	0	ZERO
4596	01	0098F	350004AE			STW,0	T1ERFLAG	TST1 ERROR FLAG
4597	01	00990	6AF00FEB			BAL,15	:FUCTEST+1	GO TO FUNCTIONAL TEST
4598	01	00991	00000EBC			DATA	I0CD2110	
4599	01	00992	0000083E	A		DATA	2110	*** ERROR 2110 ***
4600	01	00993	00000F44			DATA	BSIP2110	
4601	01	00994	00000F45			DATA	BSNP2110	
4602	01	00995	68000997			R	T1ST2111	GO TO NEXT TEST
4603	01	00996	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
4604					*			
4605					*			*** 2 1 1 1 ***
4606					*			
4607					*			COMMAND CHAINING DID NOT TAKE PLACE.
4608					*			
4609	01	00997	GFC018D0		T1ST2111	HIO,12	*:DEVADDR	STOP DEVICE
4610	01	00998	21C0075E			CI,12	DA(I0CD2110)	IS THE CURRENT COMMAND ADDR CORRECT
4611	01	00999	6930099D			RNE	T1ST2112	IF NO MATCH COMMAND CHAINING TOOK PL
4612	01	0099A	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
4613	01	0099B	0000083F	A		DATA	2111	*** ERROR 2111 ***
4614	01	0099C	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
4615					*			
4616					*			*** 2 1 1 2 ***
4617					*			
4618					*			DEVICE DID NOT STOP ON STOP ORDER.
4619					*			
4620	01	0099D	21C0075F		T1ST2112	CI,12	DA(I0CD2111)	TEST I0CD
4621	01	0099E	683009A2			BE	T1ST2113	IF SECOND 1 THINGS ARE GOOD
4622	01	0099F	6AF0110C			BAL,15	TST1ERMG	GO REPORT ERROR
4623	01	009A0	00000840	A		DATA	2112	*** ERROR 2112 ***
4624	01	009A1	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
4625	01	009A2	330004AE		T1ST2113	MTW,0	T1ERFLAG	TEST TST1 ERROR FLAG
4626	01	009A3	683009A7			REZ	T1ST2120	IF NOT SET NEXT TEST
4627	01	009A4	EAF0021D	A		BAL,15	*ISENSE	GO TEST SENSE SWITCHES
4628	01	009A5	2E0009A5			WAIT	*	
4629	01	009A6	6800098E			R	T1ST21	GO LOOP ON ERROR
4630					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4631					*		*** 2 1 2 0 ***	
4632					*			
4633					*			
4634					*		THIS TEST VERIFIES THAT COMMAND CHAINING WILL	
4635					*		NOT OCCUR ON A STOP ORDER. TEST FOR NOT	
4636					*		BUSY, ETC.	
4637	C1	009A7	22000000	A	T1ST2120	LI,0	0	ZERO
4638	C1	009A8	350004AE			STW,0	T1ERFLAG	TST1 ERROR FLAG
4639	C1	009A9	6AF00FEB			RAL,15	IFUCTEST+1	GO TO FUNCTIONAL TEST
4640	C1	009AA	00000EC4			DATA	I0CD2120	
4641	C1	009AB	00000848	A		DATA	2120	*** ERROR 2120 ***
4642	C1	009AC	00000F44			DATA	BSIP2110	
4643	C1	009AD	00000F45			DATA	BSNP2110	
4644	C1	009AE	68000980			R	T1ST2121	GO TO NEXT TEST
4645	C1	009AF	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
4646					*			
4647					*		*** 2 1 2 1 ***	
4648					*			
4649					*		COMMAND CHAINING DID TAKE PLACE ON STOP ORDER.	
4650					*			
4651	01	00980	CFC01800		T1ST2121	HI,12	*IDEVADDR	HALT DEVICE
4652	C1	00981	21C00762			CI,12	DA(I0CD2120)	TEST FOR COMMAND CHAINING NOT
4653	C1	00982	68300986			RE	T1ST2123	TAKEN PLACE IF SP, NEXT STEP
4654	01	00983	331004AE			MTW,1	T1ERFLAG	SET TST1 ERROR FLAG
4655	01	00984	6AF0110C			RAL,15	TST1ERRM	GO REPORT ERROR
4656	01	00985	00000849	A		DATA	2121	*** ERROR 2121 ***
4657	01	00986	330004AE		T1ST2123	MTW,0	T1ERFLAG	TEST TST1 ERROR
4658	01	00987	68300471			REZ	FUCTEXIT	GO BACK TO FTM
4659	01	00988	EAF0021D	A		RAL,15	*ISFNSE	GO TEST SENSE SWITCHES
4660	C1	00989	2E000989			WAIT	*	
4661	01	0098A	680009A7			R	T1ST2120	GO LOOP ON ERROR
4662	01	0098B	68000471			R	FUCTEXIT	GO BACK TO FTM
4663						PAGE		
4664					*			
4665					*		TESTS' NUMBERS 22-30 ARE RESERVED	
4666					*			
4667		00000000			T1ST22	EQU	0	
4668		00000000			T1ST23	EQU	0	
4669		00000000			T1ST24	EQU	0	
4670		00000000			T1ST25	EQU	0	
4671		00000000			T1ST26	EQU	0	
4672		00000000			T1ST27	EQU	0	
4673		00000000			T1ST28	EQU	0	
4674		00000000			T1ST29	EQU	0	
4675		00000000			T1ST30	EQU	0	
4676						PAGE		
4677					*		*** T S T 1, 3 1 ***	
4678					*			
4679					*		*** W R I T E T E S T ***	
4680					*			
4681					*		THIS SUBTEST TESTS THE ABILITY OF THE RAD TO	
4682					*		CORRECTLY RECEIVE AND RESPOND TO WRITES OF A	
4683					*		SECTOR.	
4684					*			
4685					*			
4686					*			
4687					*			
4688					*			
4689					*			
4690					*			
4691					*			
4692					T1ST31			
4693	01	0098C	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
4694	01	0098D	2560007F	A		SLS,6	-1	CONVERT TO A HALF WORD COUNT
4695	01	0098E	35601CA8			STW,6	:PATWC	SAVE AS SIZE OF BUFFER USED
4696	01	0098F	22601F7E			LI,6	BUF1LR	LOAD AND SAVE
4697	01	009C0	35601CA3			STW,6	:PATBR	STARTING ADDR OF BUFFER ADDR
4698	01	009C1	6AF00F91			RAL,15	:SEEKMOD	BRANCH TO SEEK SUBROUTINE
4699	01	009C2	6AF01CFD			RAL,15	:PATTERN	GO SPREAD PATTERN
4700					*			
4701	01	009C3	324018D2			LW,4	BYTCURR	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
4702	01	009C4	55420EC9			STH,4	I0CD3110+1,1	
4703	01	009C5	55420ECB			STH,4	I0CD3120+1,1	
4704	01	009C6	304018D2			AW,4	BYTCURR	
4705	01	009C7	55420ECD			STH,4	I0CD3130+1,1	
4706	01	009C8	55420ECF			STH,4	I0CD3140+1,1	
4707					*			
4708					*		*** 3 1 1 0 ***	
4709					*			
4710					*			
4711					*			THIS TEST VERIFIES THAT THE RAD WILL ACCEPT
4712					*			THE NUMBER OF BYTES REQUIRED TO FILL A SECTOR
4713					*			WITHOUT REPORTING REPORTING AN ERROR
4714					*		ORDER:	WRITE
4715					*		BYTE ADDR:	BA(BUF1L0)
4716					*		FLAGS:	HTE AND UE
4717					*		BYTE COUNT:	(BYTCURR)
4718					*			
4719					*			
4720					*			
4721	01	009C9	6AF00FEB		T1ST3110	BAL,15	:FUCTEST+1	GO TO FUNCTIONAL TEST
4722	01	009CA	00000EC8			DATA	I0CD3110	
4723	01	009CB	00000C26 A			DATA	3110	*** ERROR 3110 ***
4724	01	009CC	00000F46			DATA	BSIP3110	
4725	01	009CD	00000F4C			DATA	BSNP3110	
4726	01	009CE	680009D3			B	T1ST3115	GO TO NEXT TEST
4727					*			
4728	01	009CF	CF0018D0			HIB,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4729	01	009D0	EAF0021D A			BAL,15	*ISENSE	TEST SENSE SW
4730	01	009D1	2E0009D1			WAIT	*	HALT ON ERROR IF SS3 RESET
4731	01	009D2	6800098C			B	T1ST31	LOOP ON ERROR
4732					*			
4733					*			
4734					*		*** 3 1 1 5 ***	
4735					*			
4736					*			THIS TEST VERIFIES THAT NO DATA WAS ALTERED
4737					*			IN THE OUTPUT BUFFER BY THE WRITE OPERATION.
4738					*			
4739					*			
4740					*			
4741					*			
4742					*			
4743					*			
4744					*			
4745					*			
4746	01	009D3	6AF018D0		T1ST3115	BAL,15	:COMPARE	
4747	01	009D4	680009DA			B	T1ST3120	BRANCH TO NEXT TEST
4748	01	009D5	6AF0110C			BAL,15	TST1ERM0	REPORT ERROR
4749	01	009D6	00000C2B A			DATA	3115	*** ERROR 3115 ***
4750	01	009D7	EAF0021D A		T1ST3117	BAL,15	*ISENSE	TEST SENSE SW
4751	01	009D8	2E0009D8			WAIT	*	HALT ON ERROR IF SS3 RESET
4752	01	009D9	6800098C			B	T1ST31	
4753					*			
4754					*		*** 3 1 2 0 ***	
4755					*			
4756					*			THIS TEST VERIFIES THAT A ZERO BYTE COUNT
4757					*			INTERRUPT IS GENERATED AT THE COMPLETION
4758					*			OF A 1 SECTOR WRITE.
4759					*			
4760					*		ORDER:	WRITE
4761					*		BYTE ADDR:	BA(BUF1L0)
4762					*		FLAGS:	IZC
4763					*		BYTE COUNT:	(BYTCURR)
4764					*			
4765					*			
4766					*			
4767	01	009DA	6AFC0F91		T1ST3120	BAL,15	:SEEK00	BRANCH TO SEEK SUBROUTINE
4768	01	009DB	6AF00FEA			BAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
4769	01	009DC	00000ECA			DATA	I0CD3120	
4770	01	009DD	00000C30 A			DATA	3120	*** ERROR 3120 ***
4771	01	009DE	00000F49			DATA	BSIP3120	
4772	01	009DF	00000F4C			DATA	BSNP3110	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4773	01	009E0	680009E5			B	T18T3130	BRANCH TO NEXT TEST
4774				*				
4775	01	009E1	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4776	01	009E2	EAF0021D A			BAL,15	*ISENSE	TEST SENSE SW
4777	01	009E3	2E0009E3			WAIT	*	HALT ON ERROR IF SS3 RESET
4778	01	009E4	680009DA			B	T18T3120	
4779				*				
4780				*				
4781				*			*** 3 1 3 0 ***	
4782				*				
4783				*				
4784				*			THIS TEST VERIFIES THAT THE RAD WILL ACCEPT	
4785				*			MULTIPLE SECTOR BYTES TRANSFERS WITHOUT	
4786				*			REPORTING ERROR.	
4787				*				
4788				*			ORDER:	WRITE
4789				*			BYTE ADDR:	BA(BUF1L0)
4790				*			FLAGS:	HTE AND UE
4791				*			BYTE COUNT:	2(BYTCURR)
4792				*				
4793				*				
4794	01	009E5	6AF00F91		T18T3130	BAL,15	ISEEKMOD	BRANCH TO SEEK SUBROUTINE
4795	01	009E6	6AF00FEB			BAL,15	IFUCTEST+1	
4796	01	009E7	00000ECC			DATA	I0C03130	
4797	01	009E8	00000C3A A			DATA	3130	*** ERROR 3130 ***
4798	01	009E9	00000F46			DATA	BSIP3110	
4799	01	009EA	00000F4C			DATA	BSNP3110	
4800	01	009EB	680009F0			B	T18T3140	RETURN TO FUNCTIONAL DISPATCHER
4801				*				
4802	01	009EC	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4803	01	009ED	EAF0021D A			BAL,15	*ISENSE	TEST SENSE SW
4804	01	009EE	2E0009EE			WAIT	*	HALT ON ERROR IF SS3 RESET
4805	01	009EF	680009E5			B	T18T3130	LOOP ON ERROR
4806				*				
4807				*				
4808				*			*** 3 1 4 0 ***	
4809				*				
4810				*				
4811				*			THIS TEST VERIFIES THAT A ZERO BYTE COUNT	
4812				*			INTERRUPT IS GENERATED AT THE COMPLETION	
4813				*			OF A 2 SECTOR WRITE.	
4814				*				
4815				*			ORDER:	WRITE
4816				*			BYTE ADDR:	BA(BUF1L0)
4817				*			FLAGS:	IZC
4818				*			BYTE COUNT:	(BYTCURR)
4819				*				
4820				*				
4821	01	009F0	6AF00F91		T18T3140	BAL,15	ISEEKMOD	
4822	01	009F1	6AF00FEA			BAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
4823	01	009F2	00000FCE			DATA	I0C03140	
4824	01	009F3	00000C44 A			DATA	3140	*** ERROR 3140 ***
4825	01	009F4	00000F49			DATA	BSIP3120	
4826	01	009F5	00000F4C			DATA	BSNP3110	
4827	01	009F6	68000471			B	FUCTEXIT	RETURN TO FUNCTIONAL DISPATCHER
4828				*				
4829				*				
4830	01	009F7	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4831	01	009F8	EAF0021D A			BAL,15	*ISENSE	TEST SENSE SW
4832	01	009F9	2E0009F9			WAIT	*	
4833	01	009FA	680009F0			B	T18T3140	LOOP ON ERROR
4834	01	009FB	68000471			B	FUCTEXIT	RETURN TO FUNCTIONAL DISPATCHER
4835				*			PAGE	
4836				*				
4837				*				
4838				*			*** T S T 1, 3 2 ***	
4839				*				
4840				*			*** W R I T E T E S T 2 ***	
4841				*				
4842				*				
4843				*			THIS SUBTEST TESTS THE ABILITY OF THE RAD TO	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4844				*				RECEIVE AND RESPOND CORRECTLY TO WRITE LESS THAN A SECTOR.
4845				*				
4846				*				
4847				*				
4848				*	T1ST32 J			
4849	01	009FC	22600004 A			LI,6	4	
4850	01	009FD	55620ED1			STH,6	I0CD3210+1,1	
4851	01	009FE	326018D2			LW,6	BYTCURR	LOAD NO. OF BYTES/SECTOR
4852	01	009FF	2560007F A			SLB,6	=1	CONVERT TO A HALF WORD COUNT
4853	01	00A00	35601CAB			STW,6	IPATWC	SAVE AS SIZE OF BUFFER USED
4854	01	00A01	22601F7E			LI,6	BUF1L0	LOAD AND SAVE
4855	01	00A02	35601CA3			STW,6	IPATBFR	STARTING ADDR OF BUFFER ADDR
4856	01	00A03	6AF00F91		T1ST32A	RAL,15	I9EKM0D	BRANCH TO SEEK SUBROUTINE
4857	01	00A04	6AF01CED			RAL,15	IPATTERN	GO SPREAD PATTERN
4858				*				
4859				*				*** 3 2 1 0 ***
4860				*				
4861				*				THIS TEST VERIFIES THAT THE RAD WILL REPORT 'INCORRECT LENGTH' TO BYTE TRANSFERS OF LESS THAN A SECTOR.
4862				*				
4863				*				
4864				*				
4865				*				ORDER: WRITE
4866				*				BYTE ADDR: BA(BUF1L0)
4867				*				FLAG: HTE,UE,CE
4868				*				BYTE COUNT: (BYTCURR)
4869				*				
4870				*				
4871	01	00A05	6AF00FEA		T1ST3210	RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
4872	01	00A06	00000ED0				DATA	I0CD3210
4873	01	00A07	00000CBA A				DATA	3210
4874	01	00A08	00000F4E				DATA	BSIP3210
4875	01	00A09	00000F51				DATA	BSNP3210
4876	01	00A0A	6R000A0F				B	T1ST3215
4877				*				GO TO NEXT TEST
4878	01	00A0B	CF0018D0			W10,0	*1DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4879	01	00A0C	EAF0021D A			RAL,15	*1SENSE	TEST SENSE SW
4880	01	00A0D	2E000A0D			WAIT	\$	
4881	01	00A0E	6R000A03			B	T1ST32A	LOOP ON ERROR
4882				*				
4883				*				*** 3 2 1 5 ***
4884				*				
4885				*				THIS TEST VERIFIES THAT NO DATA WAS ALTERED IN THE OUTPUT BUFFER BY THE WRITE OPERATION.
4886				*				
4887				*				
4888				*				
4889				*				
4890				*	T1ST3215 J			
4891	01	00A0F	6AF018D0			RAL,15	ICOMPARE	
4892	01	00A10	6R000A16			B	T1ST3216	
4893	01	00A11	6AF0110C			RAL,15	TST1ERM0	
4894	01	00A12	00000CBF A			DATA	3215	*** ERROR 3215 ***
4895	01	00A13	EAF0021D A			RAL,15	*1SENSE	
4896	01	00A14	2E000A14			WAIT	\$	
4897	01	00A15	6R000A03			R	T1ST32A	LOOP ON ERROR
4898	01	00A16	52620ED1		T1ST3216	LH,6	I9CD3210+1,1	
4899	01	00A17	20600004 A			AI,6	4	
4900	01	00A18	55620ED1			STH,6	I9CD3210+1,1	
4901	01	00A19	316018D2			CW,6	BYTCURR	
4902	01	00A1A	69100A03			RL	T1ST32A	
4903	01	00A1B	6R000471			B	FUCTEXIT	
4904				*				PAGE
4905				*				
4906				*				*** T S T 1, 3 3 ***
4907				*				
4908				*				*** W R I T E T E S T 3 ***
4909				*				
4910				*				THIS SUBTEST TESTS THE ABILITY OF THE RAD TO CORRECTLY RECEIVE AND RESPOND TO WRITES OF GREATER THAN A SECTOR
4911				*				
4912				*				
4913				*				
4914				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4915							*** 3 3 1 0 ***	
4916								
4917								
4918							THIS TEST VERIFIES THAT THE RAD WILL REPORT	
4919							'INCORRECT LENGTH' TO BYTE TRANSFERS OF	
4920							GREATER THAN A SECTOR BUT NOT EQUAL TO A SECTOR	
4921							ORDER: WRITE	
4922							BYTE ADDR: BA(BUF1L0)	
4923							FLAGS: ICE,HTE,IUE	
4924							BYTE COUNT: (BYTCURR)	
4925					T1ST33	J		
4926	01	00A1C	326018D2			LW,6	BYTCURR	
4927	01	00A1D	2560007F	A		SLS,6	-1	
4928	01	00A1E	35601CA8			STW,6	IPATWC	
4929	01	00A1F	22601F7E			LI,6	BUF1L0	
4930	01	00A20	35601CA3			STW,6	IPATBFR	
4931	01	00A21	22400004	A		LI,4	4	
4932	01	00A22	304018D2			AW,4	BYTCURR	
4933	01	00A23	55420ED3			STH,4	I0CD3310+1,1	
4934	01	00A24	6AF00F91		T1ST33A	RAL,15	ISEEKMOD	
4935	01	00A25	6AF01CED			RAL,15	IPATTERN	
4936	01	00A26	6AF00FEA		T1ST3310	RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
4937	01	00A27	00000ED2			DATA	I0CD3310	
4938	01	00A28	00000CEE	A		DATA	3310	*** ERROR 3310 ***
4939	01	00A29	00000F53			DATA	RSIP3310	
4940	01	00A2A	00000F56			DATA	BSNP3310	
4941	01	00A2B	68000A30			R	T1ST3315	BRANCH TO NEXT TEST
4942								
4943	01	00A2C	CF0018D0			HI0,0	*IDFVADDR	RESET DEV, WHERE ERROR WAS DETECTED
4944	01	00A2D	EAF0021D	A		RAL,15	*ISENSE	TEST SENSE SW
4945	01	00A2E	2E000A2E			WAIT	*	
4946	01	00A2F	68000A24			R	T1ST33A	
4947								
4948								
4949	01	00A30	6AF018D0		T1ST3315	RAL,15	ICMPARE	TEST FOR CHANGES IN BUFFER AREA
4950	01	00A31	68000A37			R	T1ST3316	
4951	01	00A32	6AF0110C			RAL,15	TST1ERM0	
4952	01	00A33	00000CF3	A		DATA	3315	*** ERROR 3315 ***
4953	01	00A34	EAF0021D	A		RAL,15	*ISENSE	
4954	01	00A35	2E000A35			WAIT	*	
4955	01	00A36	68000A24			R	T1ST33A	
4956								
4957								
4958								
4959					T1ST3316	J		
4960	01	00A37	52620ED3			LW,6	I0CD3310+1,1	
4961	01	00A38	20600004	A		AI,6	4	
4962	01	00A39	55620ED3			STH,6	I0CD3310+1,1	
4963	01	00A3A	2560007F	A		SLS,6	-1	
4964	01	00A3B	316018D2			AW,6	BYTCURR	
4965	01	00A3C	69100A24			RL	T1ST33A	
4966	01	00A3D	68000471			R	FUCTEXIT	
4967						PAGE		
4968								
4969							*** T S T 1 , 3 4 ***	
4970								
4971							*** S E C T O R I N C R E M E N T T E S T ***	
4972								
4973							THIS SUBTEST VERIFIES THAT RAD CAN INCREMENT	
4974							THE SEEK ADDRESS REGISTER. IF ANY ERRORS	
4975							ARE DETECTED A TABLE WILL BE OUTPUT SHOWING	
4976							THE NUMBER OF TIMES A PARTICULAR SECTOR OR	
4977							TRACK (BAND) WAS OBSERVED. EACH SECTOR OR	
4978							TRACK (BAND) SHOULD HAVE BEEN OBSERVED	
4979							ONLY ONCE.	
4980	01	00A3E	22F00D52	A	T1ST34	LI,15	3410	LOAD AND SAVE
4981	01	00A3F	35F0116F			STW,15	TARPLY1	ERROR TEST NO.
4982	01	00A40	02200040	A		LCI	4	LOAD AND
4983	01	00A41	2A4011E2			LM,4	TABLE012	SAVE
4984	01	00A42	2H4011AC			STW,4	TABLE100+2	'SECTOR INCREMENT'
4985	01	00A43	124011D4			LD,4	TABLE001	LOAD AND

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
4986	01	00A44	5542118E			STW,4	TABLE301,1	SAVE
4987	01	00A45	3550118F			STW,5	TABLE301+1	'SECTOR'
4988	01	00A46	326018D1			LW,6	SECTCURR	LOAD NORMAL LENGTH OF THE TABLE
4989	01	00A47	6AF017DE			RAL,15	MEMORY3	GO MAKE MEMORY AVAILABLE
4990	01	00A48	68000471			R	FUCTEXIT	IF NONE AVAILABLE SKIP TEST
4991	01	00A49	326018D2			LW,6	BYTCURR	FETCH BYTCURR
4992	01	00A4A	55620E05			STW,6	IOCD3030+1,1	STORE BYTE COUNT
4993	01	00A4B	2580007E A			GLS,8	-2	CONVERT TO WORD ADDR
4994	01	00A4C	35801CA8			STW,8	IPATWC	SAVE AS PATTERN WC
4995	01	00A4D	22801F7E			LI,8	BUF1L0	LOAD STARTING ADDR OF PATTERN
4996	01	00A4E	35801CA3			STW,8	IPATBFR	SAVE AS PATTERN STARTING ADDR
4997	01	00A4F	22900000 A			LI,8	0	LOAD ZERO
4998	01	00A50	15901D0A			STD,9	IPATID	SET UP ZERO PATTERN
4999	01	00A51	6AF01CED			BAL,15	IPATTERN	GO BUILD PATTERN
5000					*			
5001					*			
5002					*			
5003					*			
5004					*			
5005					*			
5006					*			
5007					*			
5008					*			
5009	01	00A52	22800000 A		T1ST3410	LI,8	0	SENSED.
5010	01	00A53	358011E6			STW,8	TARPASS	RESET PRINT INHIBIT FLAG
5011	01	00A54	326018D1			LW,6	SECTCURR	
5012	01	00A55	325018D3			LW,5	CURRSEEK	LOAD ABSOLUTE SEEK ADDR
5013	01	00A56	6AC017CE			RAL,12	BUILD8K	CONVERT TO DEV SEEK ADDR
5014	01	00A57	3A4018D7			LCW,4	TCKCURR	LOAD SHIFT COUNT
5015	01	00A58	4B401F53			AND,4	*X'37F'	
5016	01	00A59	32900F88			LW,9	SEEKRAD	LOAD DEV SEEK ADDR
5017	01	00A5A	A5800004 A			SCD,8	*4	REMOVE SECTOR ADDR
5018	01	00A5B	33800000 A			MTW,8	0	TEST FOR A SECTOR ADDR
5019	01	00A5C	68300A5E			REZ	*+2	IF NONE BRANCH
5020	01	00A5D	20900001 A			AI,9	1	ADD 1 TO TRACK (BAND) ADDR
5021	01	00A5E	22800000 A			LI,8	0	ZERO 8
5022	01	00A5F	378018D1			MW,8	SECTCURR	CALCULATE ABSOLUTE SEEK ADDR.
5023	01	00A60	359018D3			STW,9	CURRSEEK	SET UP A SEEK ABSOLUTE SEEK ORDER
5024	01	00A61	319018D4			CW,9	SURFCEND	IS NEW ABSOLUTE LOWER LIMIT GREATER
5025	01	00A62	68100471			RGE	FUCTEXIT	THAN ABSOLUTE UPPER LIMIT - SKIP
5026	01	00A63	309018D1			AW,9	SECTCURR	ADD 1 TO TRACK (BAND)
5027	01	00A64	319018D4			CW,9	SURFCEND	IS IT NOW GREATER
5028	01	00A65	68200A59			RLE	T1ST3414	IF NOT GO TO NEXT STEP OTHERWISE
5029	01	00A66	389018D4			SW,9	SURFCEND	FIND THE ONE AND SUBTRACT
5030	01	00A67	38600009 A			SW,6	9	IT FROM THE PRESENT
5031	01	00A68	68200471			BLEZ	FUCTEXIT	EXIT
5032					*			LENGTH OF THE TABLE
5033	01	00A69	356010AF		T1ST3414	STW,6	T1ST345V	SAVE TABLE SPAN
5034	01	00A6A	27600052 A		T1ST3412	LI,6	82	LOAD TABLE SPAN
5035	01	00A6B	6AF017DE			RAL,15	MEMORY3	GO MAKE MEMORY AVAILABLE
5036	01	00A6C	68000471			R	FUCTEXIT	IF NONE AVAILABLE SKIP TEST
5037	01	00A6D	325018D3			LW,5	CURRSEEK	RESTORE ABSOLUTE LOWER SEEK LIMIT
5038	01	00A6E	6AC017CE			RAL,12	BUILD8K	GO CONVERT TO DEVICE SEEK
5039	01	00A6F	6AF00F91			RAL,15	:SEEKMOD	SEEK DEVICE
5040	01	00A70	68000A71			R	*+1	
5041	01	00A71	326010AF			LW,6	T1ST345V	RESTORE TABLE SPAN
5042	01	00A72	68000A75			R	T1ST3415	GO DO SENSE
5043	01	00A73	326010AF		T1ST3411	LW,6	T1ST345V	RESTORE TABLE SPAN
5044	01	00A74	6AF00FA0			RAL,15	:WRTHOD	GO DO WRITE
5045	01	00A75	6AF00FC0		T1ST3415	RAL,15	:SENSEMOD	GO DO SENSE
5046	01	00A76	72720FDA			LB,7	:SNSWORD,1	LOAD SEEK BYTE
5047	01	00A77	27400020 A			LI,4	32	REMOVE
5048	01	00A78	384018D7			SW,4	TCKCURR	TRACK (BAND)
5049	01	00A79	A5700004 A			SLS,7	*4	INFORMATION
5050	01	00A7A	324018D7			LW,4	TCKCURR	LOAD SHIFT COUNT
5051	01	00A7B	20400200 A			AI,4	X'200'	
5052	01	00A7C	A5700004 A			SCS,7	*4	POSITION SECTOR ADDR
5053	01	00A7D	6AFC1151			RAL,15	TABUILD	GO PVT ENTIRE INTO TABLE
5054	01	00A7E	68000A83			R	T1ST3420	GO TO NEXT TEST
5055	01	00A7F	68000A73			R	T1ST3411	GO BACK FOR NEXT PASS
5056	01	00A80	EAF0021D A			RAL,15	*:SENSE	GO TEST SENSE SWITCHES

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5057	C1	00A81	2F000A81			VAIT	*	
5058	C1	00A82	6F000A6A			R	T1ST3412	LOOP ON ERROR
5059					*			
5060					*		*** 3 4 2 0 ***	
5061					*			
5062					*			THIS TEST IS DESIGNED TO WRITE A SECTOR, SENSE
5063					*			THE INCREMENTING TO THE NEXT HIGHER TRACK (BAND)
5064					*			AND CONTINUE TO DO THIS UNTIL ALL TRACKS (BANDS)
5065					*			THAT ARE SPECIFIED BY THE 'SYST' AND 'SEEK'
5066					*			DIRECTIVES HAVE BEEN TRIED. IF A TRACK (BAND)
5067					*			IS NOT FOUND OR IS FOUND MORE THAN ONCE, A
5068					*			TABLE WILL BE OUTPUT SHOWING THE NUMBER
5069					*			OF TIMES EACH TRACK (BAND) WAS SENSED.
5070					*			
5071	C1	00A83	22F00D5C	A	T1ST3420	LI,15	3420	LOAD AND SAVE
5072	C1	00A84	35F0116F			STW,15	TARDPLY1	TEST ERROR NO
5073	C1	00A85	12401106			LD,4	TAPLE002	LOAD 'BAND'
5074	C1	00A86	22707212	A		LI,7	X'7212'	LOAD HIGH SPEED MODEL NO.
5075	C1	00A87	317018CF			FW,7	MODEL	IS IT HIGH SPEED
5076	C1	00A88	68300A8A			RE	*+2	IF SO BRANCH
5077	C1	00A89	12401108			LD,4	TAPLE003	LOAD 'TRACK'
5078	C1	00A8A	5542119E			STH,4	TAPLE101,1	STORE
5079	C1	00A8B	3550118F			STW,5	TAPLE101+1	INFORMATION INTO MESSAGE
5080	C1	00A8C	22000000	A		LI,0	0	
5081	C1	00A8D	350011E6			STW,0	TAEPAAS	RESET HEADER PRINT INHIBIT FLAG
5082	C1	00A8E	32401866			LD,4	#DCTBIAS	LOAD BIAS POINTER
5083	C1	00A8F	3258186B			LD,5	SLEWER,4	LOAD ABSOLUTE SEEK LOWER LIMIT
5084	C1	00A90	6AC017CE			RAL,12	BUILDSK	CONVERT TO DEVICE SEEK
5085	C1	00A91	32900F88			LD,9	SEEKRAD	LOAD DEVICE SEEK ADDR
5086	C1	00A92	3A4018D7			LDW,4	TCKCURR	LOAD COMPLEMENT SHIFT COUNT
5087	C1	00A93	4B401F50			AND,4	*X'7F'	
5088	C1	00A94	A5900004	A		SLS,9	*4	REMOVE SECTOR INFO
5089	C1	00A95	35900ADD			STW,9	SAVEBIAS	
5090	C1	00A96	22800000	A		LI,8	0	LOAD ZERO
5091	C1	00A97	378018D1			LDW,8	SECTCURR	RECALULATE ABSOLUTE SEEK LOWER LIMIT
5092	C1	00A98	209FFFFF	A		AI,9	-1	SUBTRACT 1
5093	C1	00A99	309018D1			LDW,9	SECTCURR	ADD 1 ENTIRE TRACK (BAND)
5094	C1	00A9A	359018D3			STW,9	CURRSEEK	SAVE AS ABSOLUTE SEEK LOWER LIMIT
5095	C1	00A9B	325018D4			LDW,5	SUPFCEND	LOAD ABSOLUTE SEEK UPPER LIMIT
5096	C1	00A9C	385018D3			STW,5	CURRSEEK	SUBTRACT LOWER LIMIT
5097	C1	00A9D	68200471			RLEZ	FUCTEXIT	IF RESULT IS >= 0, QUIT
5098	C1	00A9E	20500001	A		AI,5	1	
5099	C1	00A9F	6AC017CE			RAL,12	BUILDSK	NOW GO CONVERT TO A DEVICE SEEK
5100	C1	00AA0	32400F88			LDW,6	SEEKRAD	LOAD PSEUDO DEVICE SEEK
5101	C1	00AA1	A5600004	A		SLS,6	*4	REMOVE SECTOR INFO
5102	C1	00AA2	356010AF			STW,6	T1ST34SV	SAVE AS NO. OF TRACKS (BANDS) TO BYT
5103	C1	00AA3	33000006	A		STW,0	6	TESTING WORD
5104	C1	00AA4	68200471			RLEZ	FUCTEXIT	IF LESS OR EQUAL ZERO EXIT
5105	C1	00AA5	22600200	A	T1ST3424	LI,6	512	LOAD MAX NO. OF TRACKS
5106	C1	00AA6	6AF017DE			RAL,15	MEMORY3	GO MAKE MEMORY AVAILABLE
5107	C1	00AA7	68000471			R	FUCTEXIT	IF NONE AVAILABLE SKIP TEST
5108	C1	00AA8	32F00ADD			LDW,15	SAVEBIAS	
5109	C1	00AA9	35F011E7			STW,15	TABBIAS	
5110	C1	00AAA	30F010AF			LDW,15	T1ST34SV	ADD WORDS
5111	C1	00AA8	35F01831			STW,15	SECTLMT	STORE WORD
5112	C1	00AAC	33000000	A		LDW,0	0	NO OPERATION
5113					T1ST3423	J		
5114	C1	00AA0	324010AF			LDW,6	T1ST34SV	RESTORE NO. OF TRACK (BAND) TO BE TST
5115	C1	00AAE	325018D3			LDW,5	CURRSEEK	LOAD ABSOLUTE SEEK ADDRESS
5116	C1	00AAF	6AC017CE			RAL,12	BUILDSK	GO BUILD DEV SEEK ADDR
5117	C1	00AB0	6AF00F91			RAL,15	:SEEKMOD	GO SEEK RAD
5118	C1	00AB1	68000A82			R	*+1	
5119	C1	00AB2	68000A85			R	T1ST3425	GO INTO TEST
5120	C1	00AB3	326010AF		T1ST3421	LDW,6	T1ST34SV	RESTORE NO. OF TRACK (BAND) TO BE TST
5121	C1	00AB4	6AF00FA0			RAL,15	:WRITMOD	GO WRITE
5122	C1	00AB5	6AF00FC0		T1ST3425	RAL,15	:SENSEMOD	SENSE WRITE
5123	C1	00AB6	52700FDA			LDW,7	:SNSWORD	LOAD TRACK (BAND) ADDR
5124	C1	00AB7	3A4018D7			LDW,4	TCKCURR	LOAD SHIFT COUNT
5125	C1	00AB8	4B401F50			AND,4	*X'7F'	
5126	C1	00AB9	4B701F51			AND,7	*X'7FFF'	REMOVE WRITE PROTECT BIT
5127	C1	00ABA	A5700004	A		SLS,7	*4	REMOVE SECTOR ADDR

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OP REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5128	C1	0CABB	324C18D1			LW,4	SECTCURR	UPDATE TRACK (BAND)
5129	C1	0CABC	664018D3			AWM,4	CURRSEEK	ADDRESS
5130	C1	0CABD	6AF01151			BAL,15	TABUILD	GO INSERT INTO TABLE
5131	C1	0OABE	68000AC3			R	T1ST3430	BRANCH TO ANOTHER TEST
5132	C1	0OABF	68000AAD			R	T1ST3483	GO DO SOME MORE
5133	C1	0OACO	EAF0021D A			BAL,15	*ISENSE	GO TEST SENSE SWITCHES
5134	C1	0OAC1	2E000AC1			WAIT	*	
5135	C1	0OAC2	68000AA5			R	T1ST3484	GO LOOP ON ERROR
5136				*				
5137				*				
5138				*			*** 3 4 3 0 ***	
5139				*				
5140				*				
5141				*				THIS VERIFIES A RAD WILL REPORT SECTOR UNAVAILABLE
5142				*				BY INCREMENTING PAST THE END OF THE LOGICAL SURFACE,
5143				*				THE TEST WILL ONLY BE PERFORMED IF THE END OF THE
5144				*				LOGICAL SURFACE IS AVAILABLE, THE PROGRAM HAS NOT
5145				*				LIMITED IT WITH THE 'SYST' OR 'SEEK' DIRECTIVES.
5146	C1	0OAC3	326018CF		T1ST3430	LW,6	MODEL C	LOAD MODEL NO.
5147	C1	0OAC4	22700000 A			LI,7	0	ZERO INDEX
5148	C1	0OAC5	316E0376		T1ST3431	CH,6	MODELNO,7	COMPARE FOR MATCH
5149	C1	0OAC6	68300ACB			RE	T1ST3432	IF MATCH CONTINUE
5150	C1	0OAC7	20700001 A			AI,7	1	
5151	C1	0OAC8	21700005 A			CI,7	MODELEND-MODELNO	
5152	C1	0OAC9	69100AC5			BL	T1ST3431	
5153	C1	0OACA	6AF01139			BAL,15	TILT	NO MODEL NO. COMPARED
5154				*				
5155				*				
5156				*				
5157	C1	0OACB	325018D4		T1ST3432	LW,5	SURFCEND	LOAD END ADDRESS OF SURFACE
5158	C1	0OACC	315E037B			CH,5	CAPACITY,7	IS IT EQUAL TO CAPACITY
5159	C1	0OACD	69300471			RNE	FUCTEXIT	IF NOT SKIP THIS TEST
5160	C1	0OACE	205FFFFF A			AI,5	=1	BACK UP 1
5161	C1	0OACF	6ACC17CE			BAL,12	BUILD8K	GO BUILD SEEK ADDR
5162	C1	0OADO	6AF00F91			BAL,15	ISEEKMOD	GO SEEK DEVICE
5163	C1	0OAD1	6AF00FA0			BAL,15	IWRTHOD	GO WRITE
5164	C1	0OAD2	6AF00FEA			BAL,15	IFUCTEST	NO GO WRITE AGAIN
5165	C1	0OAD3	C0000ED4			DATA	10CD3430	
5166	C1	0OAD4	C0000D66 A			DATA	3430	*** ERROR 3430 ***
5167	C1	0OAD5	C0000F40			DATA	BSIP2010	
5168	C1	0OAD6	C0000F42			DATA	BSNP2010	
5169	C1	0OAD7	68000471			R	FUCTEXIT	RETURN TO FTM
5170	C1	0OAD8	CF0C18D0			HIO,C	*IDEVADDR	RESET DEVICE
5171	C1	0OAD9	EAF0021D A			BAL,15	*ISENSE	GO TEST SENSE SWITCHES
5172	C1	0OADA	2E000ADA			WAIT	*	
5173	C1	0OADB	68000AC3			R	T1ST3430	GO LOOP ON ERROR
5174	C1	0OADC	68000471			R	FUCTEXIT	RETURN TO FTM.
5175	C1	0OADD	C0000000 A		SAVERIAS	DATA	0	
5176				*		PAGE		
5177				*				
5178				*				
5179				*				
5180				*			*** 3 5 1 0 ***	
5181				*				
5182				*				NO TRACK (BAND) ANYWHERE ON THE RAD COULD BE FOUND
5183				*				TO HAVE A SYNC PATTERN.
5184				*				
5185				*				
5186				*				
5187				*				
5188	C1	0OADE	22AC0DRC A		T1ST35 J	LI,10	3516	FETCH NO. 13516'
5189	C1	0OADF	6AF00AE8			BAL,15	FNDGTRK	BRANCH TO FIND A GOOD TRACK
5190	C1	0OAE0	6800CB11			R	T1ST3520	GO TO NEXT TEST
5191	C1	0OAE1	6AF0110C			BAL,15	TST1ERMG	REPORT ERROR
5192	C1	0OAE2	C0000DB6 A			DATA	3510	*** ERROR 3510 ***
5193	C1	0OAE3	CF0C18D0			HIO,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5194	C1	0OAE4	EAF0021D A			BAL,15	*ISENSE	
5195	C1	0OAE5	2E000AE5			WAIT	*	
5196	C1	0OAE6	68000ADE			R	T1ST35	LOOP ON ERROR
5197	C1	0OAE7	68000471			R	FUCTEXIT	EXIT
5198				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
5199							*** 3 5 1 6 ***	
5200								
5201							*** SEARCH FOR A GOOD TRACK ***	
5202								
5203								
5204								
5205								
5206								THIS SUBROUTINE SEARCHES TRACKS ON THE RAD.
5207								THE SEARCH IS STOPPED WHENEVER A GOOD TRACK
5208								IS LOCATED.
5209								
5210								
5211	01	00AE8	32401866		FNDGTRK J	LW,4	#DDTBIAS	FETCH DDTBIAS
5212	01	00AE9	32581868			LW,5	SLOWER,4	
5213	01	00AEA	35A00AFE			STW,10	T1ST3516	
5214	01	00AEB	35F00B10		FNDGTRKX	STW,15	FNDEXIT	STORE RETURN ADDR
5215	01	00AEC	326018D2			LW,6	BYTCURR	
5216	01	00AED	55620ED7			STH,6	I0CD3510+1,1	
5217	01	00AEE	2560007F A			SLS,6	-1	
5218	01	00AEF	35601CA8			STW,6	:PATNC	
5219	01	00AF0	22601F7E			LI,6	BUF1L0	
5220	01	00AF1	35601CA3			STW,6	IPATBFR	
5221	01	00AF2	22700000 A			LI,7	0	
5222	01	00AF3	15701D0A			STD,7	IPATID	STORE DOUBLEWORD
5223	01	00AF4	20500001 A			AI,5	1	
5224	01	00AF5	4B501F54			AND,5	L(X'FFFFFFE1)	
5225	01	00AF6	6B000B0C			R	T1ST3511	
5226								
5227								
5228	01	00AF7	6AC017CE		FNDGTRK1	BAL,12	BUILDSK	
5229	01	00AF8	6AF00F91			BAL,15	ISEEKMOD	
5230	01	00AF9	6AF01CED			BAL,15	IPATTERN	
5231	01	00AFA	6AF00FA0			BAL,15	IWRTHOD	
5232	01	00AFB	6AF00F91			BAL,15	ISEEKMOD	
5233	01	00AFC	6AF00FEA			BAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
5234	01	00AFD	00000ED6			DATA	I0CD3510	
5235	01	00AFE	00000000 A		T1ST3516	DATA	0	
5236	01	00AFF	0000CF58			DATA	RSIP3510	
5237	01	00B00	0000CF58			DATA	BSNP3510	
5238	01	00B01	68000B02			B	*+1	
5239	01	00B02	00001800			YI0,12	*IDEVADDR	
5240	01	00B03	52620000 A			LH,6	13,1	
5241	01	00B04	316018D2			CW,6	BYTCURR	COMPARE
5242	01	00B05	E9100B10			BL	*FNDEXIT	BR. IF BYTCURR IS GREATER THAN BC
5243	01	00B06	325018D3			LW,5	CURRSEEK	FETCH CURRSEEK
5244	01	00B07	305018D1			AW,5	SECTCURR	ADD SECTCURR TO REG 5
5245	01	00B08	22400000 A			LI,4	0	FETCH ZERO
5246	01	00B09	364018D1			DW,4	SECTCURR	DIVISION
5247	01	00B0A	22400000 A			LI,4	0	FETCH ZERO
5248	01	00B0B	374018D1			MW,4	SECTCURR	MULTIPLICATION
5249	01	00B0C	355018D3		T1ST3511	STW,5	CURRSEEK	STORE
5250	01	00B0D	315018D4			CW,5	SURFCEND	
5251	01	00B0E	69100AF7			BL	FNDGTRK1	
5252	01	00B0F	ER020B10			R	*FNDEXIT,1	
5253								
5254								
5255	01	00F10	00000000 A		FNDEXIT	DATA	0	
5256								
5257								
5258								
5259								
5260								
5261								THIS TEST VERIFIES THAT A ZERO BYTE
5262								COUNT INTERRUPT IS GENERATED IN SYNC
5263								WITH THE TRASFER OF DATA OF A RAD
5264								ASSOCIATED WITH AN '11' SECTOR READ.
5265								
5266							ORDER:	READ(X'02')
5267							BYTE ADDR:	BA(BUF1L0)
5268							FLAGS:	IZC
5269							BYTE COUNT:	(BYTCURR)

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5270	01	00B11	6AF00F91		T1ST3500	BAL,15	:SEEKMOD	FR. TO SEEKMOD SUBROUTINE
5271	01	00B12	326C18D2			LW,6	BYTCURR	FETCH BYTE COUNT
5272	01	00B13	5562CED9			STH,6	I8CD3520+1,1	
5273	01	00B14	6AF00FEA			BAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
5274	01	00B15	0000CE08			DATA	I8CD3520	
5275	01	00B16	00000DCC	A		DATA	3520	*** ERROR 3520 ***
5276	01	00B17	00000F59			DATA	BSIP3520	
5277	01	00B18	00000F5C			DATA	BSNP3520	
5278	01	00B19	68000471			R	FUCTEXIT	
5279					*			
5280					*			
5281	01	00B1A	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5282	01	00B1B	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
5283	01	00B1C	2F000B1C			WAIT	\$	
5284	01	00B1D	68000B11			R	T1ST3520	LOOP ON ERROR
5285	01	00B1E	68000471			R	FUCTEXIT	BRANCH TO EXIT
5286					*			
5287					*			
5288						PAGE		
5289					*			
5290					*		*** T S T 1, 3 6 ***	
5291					*			
5292					*		*** R E A D T E S T 2 ***	
5293					*			
5294					*			
5295					*			
5296					*			
5297					*			
5298					*			
5299					*			
5300					*			
5301					*			
5302	01	00B1F	22A00E20	A	T1ST36 J	LI,10	3616	
5303	01	00B20	6AF00AEB	A		BAL,15	FNDGTRK	
5304	01	00B21	68000B28			R	T1ST3620	
5305	01	00B22	6AF0110C			BAL,15	TST1ERMG	
5306	01	00B23	00000E1A	A		DATA	3610	*** ERROR 3610 ***
5307	01	00B24	EAF0021D	A		BAL,15	*:SENSE	
5308	01	00B25	2F000B25			WAIT	\$	
5309	01	00B26	68000B1F			R	T1ST36	
5310	01	00B27	68000471			R	FUCTEXIT	EXIT
5311					*			
5312					*			
5313					*		*** 3 6 2 0 ***	
5314					*			
5315					*			
5316					*			
5317					*			
5318					*			
5319					*			
5320					*		ORDER:	READ(X'02')
5321					*		BYTE ADDR:	BA(BUFILA)
5322					*		FLAGS:	IZC
5323					*		BYTE COUNT:	(BYTCURR)
5324					*			
5325					*			
5326	01	00B28	22400004	A	T1ST3620	LI,4	4	SET UP I8CD
5327	01	00B29	5542CEDB		T1ST3621	STH,4	I8CD3620+1,1	
5328	01	00B2A	6AF0CF91			BAL,15	:SEEKMOD	GO SEEK RAD
5329	01	00B2B	6AF00FEA			BAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
5330	01	00B2C	00000EDA			DATA	I8CD3620	
5331	01	00B2D	00000E24	A		DATA	3620	*** ERROR 3620 ***
5332	01	00B2E	00000F5E			DATA	BSIP3620	
5333	01	00B2F	00000F60			DATA	BSNP3620	
5334					*			
5335					*			
5336					*			
5337					*			
5338	01	00B30	68000B35			R	T1ST3622	
5339					*			
5340	01	00B31	CF0018D0			HI0,0	*:IDEVADDR	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5341	01	00B32	EAF0021D	A		BAL, 15	*ISENSE	
5342	01	00B33	2E000B33			WAIT	*	
5343	01	00B34	68000B29			B	T1ST3621	
5344	01	00B35	52420E08		T1ST3622	LH, 4	I0CD3620+1, 1	LOAD I0CD
5345	01	00B36	20400004	A		AI, 4	4	
5346	01	00B37	314018D2			CH, 4	BYTCURR	
5347	01	00B38	69100B29			BL	T1ST3621	GO LOOP
5348	01	00B39	68000471			B	FUCTEXIT	
5349						PAGE		
5350					*			
5351					*		*** T S T 1, 3 7 ***	
5352					*			
5353					*		*** R E A D T E S T 3 ***	
5354					*			
5355					*		THIS SUBTEST TESTS THE ABILITY OF THE RAD	
5356					*		TO CORRECTLY RECEIVE AND RESPOND TO READ	
5357					*		(ORDER X'02') OF GREATER THAN A SECTOR.	
5358					*			
5359					*			
5360					*			
5361					*			
5362					T1ST37			
5363	01	00B3A	22A00E84	A		LI, 10	3716	FETCH NO. 13716
5364	01	00B3B	6AFC0AE8			BAL, 15	FNDGTRK	BRANCH TO FIND GOOD TRACK SUBR.
5365	01	00B3C	68000B43			B	T1ST3720	IF GOOD BRANCH OUT
5366	01	00B3D	6AFC110C			BAL, 15	TST1ERM0	GO REPORT ERROR
5367	01	00B3E	C0000E7E	A		DATA	3710	*** ERROR 3710 ***
5368	01	00B3F	EAF0021D	A		BAL, 15	*ISENSE	TEST SENSE SW
5369	01	00B40	2E000B40			WAIT	*	
5370	01	00B41	68000B3A			B	T1ST37	LOOP ON ERROR
5371	01	00B42	68000471			B	FUCTEXIT	EXIT
5372					*			
5373					*			
5374					*		*** 3 7 2 0 ***	
5375					*			
5376					*		THIS TEST VERIFIES THAT THE RAD WILL REPORT	
5377					*		'INCORRECT LENGTH' TO BYTE TRANSFERS OF GREATER	
5378					*		THAN A SECTOR BUT LESS THAN 2 SECTORS	
5379					*			
5380					*		ORDER:	READ(X'02')
5381					*		BYTE ADDR:	BA(BUF1L0)
5382					*		FLAGS:	TZC
5383					*		BYTE COUNT:	(BYTCURR)
5384					*			
5385					*			
5386					*			
5387	01	00B43	324018D2		T1ST3720	LW, 4	BYTCURR	FETCH BYTCURR
5388	01	00B44	204C0004	A		AI, 4	4	
5389	01	00B45	55420E0D		T1ST3721	STW, 4	I0CD3720+1, 1	SET UP I0CD
5390	01	00B46	6AFC0F91			BAL, 15	:SEEK00	GO SEEK RAD
5391	01	00B47	6AFC0FEA			BAL, 15	:FUCTEST	GO TO FUNCTIONAL TEST
5392	01	00B48	C0000EDC			DATA	I0CD3720	
5393	01	00B49	C000CE88	A		DATA	3720	*** ERROR 3720 ***
5394	01	00B4A	C000CF62			DATA	BSIP3720	
5395	01	00B4B	C0000F64			DATA	BSNP3720	
5396	01	00B4C	68000B51			B	T1ST3722	IF GOOD BRANCH TO THE NEXT TEST
5397					*			
5398	01	00B4D	CF0018D0			HI0, 0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5399	01	00B4E	EAF0021D	A		BAL, 15	*:ISENSE	TEST SENSE SW
5400	01	00B4F	2F000B4F			WAIT	*	
5401	01	00B50	68000B29			B	T1ST3621	LOOP ON ERROR
5402	01	00B51	52420E0D		T1ST3722	LH, 4	I0CD3720+1, 1	LOAD BC FROM I0CD
5403	01	00B52	20400004	A		AI, 4	4	
5404	01	00B53	326018D2			LW, 6	BYTCURR	
5405	01	00B54	306018D2			AW, 6	BYTCURR	
5406	01	00B55	31400006	A		CH, 4	6	
5407	01	00B56	69100B45			BL	T1ST3721	IF LESS BRANCH BACK AND LOOP
5408	01	00B57	68000471			B	FUCTEXIT	IF EQUAL BRANCH TO EXIT
5409						PAGE		
5410					*			
5411					*		*** T S T 1, 3 8 ***	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5412				*				
5413				*				
5414				*				
5415				*				
5416				*				
5417				*				
5418				*				
5419				*				
5420				*				
5421				*				
5422				*				
5423				*				
5424				*				
5425				*				
5426				*				
5427				*				
5428				*				
5429				*				
5430				*				
5431				*				
5432				*				
5433				*				
5434				*				
5435	01 00B58	22700000	A		T1ST38 J	LI,7	0	
5436	01 00B59	35700B95				STW,7	COUNT38	
5437	01 00B5A	22A00EE8	A			LI,10	3816	
5438	01 00B5B	6AFE0AE8			T1ST3801	RAL,15	FNDSTRK,7	
5439	01 00B5C	68000B63				B	T1ST3820	BRANCH TO NEXT TEST
5440				*				
5441				*				
5442	01 00B5D	6AF0110C			T1ST3802 J	RAL,15	TSTIERMO	REPORT ERROR
5443	01 00B5E	00000EE2	A			DATA	3810	*** ERROR 3810 ***
5444	01 00B5F	EAF0021D	A			RAL,15	+1SENSE	TEST SENSE SW
5445	01 00B60	2F000B60				WAIT	*	
5446	01 00B61	68000B58				B	T1ST38	LOOP ON ERROR
5447	01 00B62	68000471				R	FUCTEXIT	EXIT
5448				*				
5449				*				
5450				*				
5451				*				
5452				*				
5453				*				
5454				*				
5455				*				
5456	01 00B63	326018D2			T1ST3820	LW,6	BYTCURR	FETCH BYTCURR
5457	01 00B64	55620EDF				STW,6	I0CD3820+1,1	STORE HALF WORD
5458	01 00B65	256C007E	A			SLS,6	-2	BYTCURR DIVIDED BY 4
5459	01 00B66	356C1D1C				STW,6	:CLRSIZE	STORE INTO CLRSIZE
5460	01 00B67	356C1CA8				STW,6	:PATWC	STORE INTO
5461	01 00B68	22601F7E				LI,6	BUF1L0	FETCH BUF1L0
5462	01 00B69	356C1CA3				STW,6	:PATBPR	STORE INTO :PATBPR
5463	01 00B6A	356C1D1B				STW,6	:CLRADDR	STORE INTO :CLRADDR
5464	01 00B6B	226C0005	A			LI,6	E	
5465	01 00B6C	32701F55				LW,7	=X'55555555'	
5466	01 00B6D	156C1D0A				STD,6	:PATID	FETCH DOUBLEWORD
5467	01 00B6E	6AF00F91			T1ST3821	RAL,15	:SEEKMOD	SEEKMOD SUBROUTINE
5468	01 00B6F	6AF01CED				RAL,15	:PATTERN	SPREAD PATTERN SUBROUTINE
5469	01 00B70	6AF00FA0				RAL,15	:WRTMOD	GO TO WRITE SUBROUTINE
5470	01 00B71	6AF01D10				RAL,15	:CLEAR	CLEAR SUBROUTINE
5471	01 00B72	6AF00F91				RAL,15	:SEEKMOD	SEEKMOD SUBROUTINE
5472				*				
5473	01 00B73	6AF00FEA				RAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
5474	01 00B74	00000EDE				DATA	I9CD3820	
5475	01 00B75	00000EEC	A			DATA	3820	*** ERROR 3820 ***
5476	01 00B76	00000F66				DATA	RSIP3820	
5477	01 00B77	00000F67				DATA	RSNP3820	
5478	01 00B78	68000B7D				R	T1ST3830	GO TO NEXT TEST
5479				*				
5480	01 00B79	CF0018D0				HIO,C	+1DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED.
5481	01 00B7A	EAF0021D	A			RAL,15	+1SENSE	TEST SENSE SW
5482	01 00B7B	2F000B78				WAIT	*	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5554					T1ST39			
5555	C1	00B96	22A00F4C	A		LI,10	3916	
5556	C1	00B97	22600208	A		LI,6	X12081	
5557	C1	00B98	35601D0C			STW,6	!PATID+2	
5558	C1	00B99	6AF00A28			BAL,15	FNDSTRK	BRANCH TO FIND GOOD TRK SUBROUTINE
5559	C1	00B9A	68000BA1			B	T1ST3920	IF GOOD GO TO NEXT TEST
5560	C1	00B9B	6AF0110C			BAL,15	TST1ENMS	REPORT ERROR
5561	C1	00B9C	00000F46	A		DATA	3910	*** ERROR 3910 ***
5562	C1	00B9D	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
5563	C1	00B9E	2E000B9E			WAIT	*	
5564	C1	00B9F	68000B96			B	T1ST39	LOOP ON ERROR
5565	C1	00BA0	68000471			B	FUCTEXIT	EXIT
5566					*			
5567					*			
5568					*			
5569					*			
5570					*			
5571					*			
5572					*			
5573					*			
5574					*			
5575					*			
5576					*			
5577					*			
5578					*			
5579					*			
5580					*			
5581					*			
5582					*			
5583					*			
5584					*			
5585					*			
5586					*			
5587					*			
5588	C1	00BA1	22600005	A	T1ST3920	LI,6	5	
5589	C1	00BA2	32701F56			LW,7	=X'55AA55AA'	
5590	C1	00BA3	15601D0A			STD,6	!PATID	STORE INTO !PATID
5591	C1	00BA4	6AF00F91		T1ST3921	BAL,15	!SEEKMD	BRANCH TO SEEKMD SUBROUTINE
5592	C1	00BA5	6AF01CED			BAL,15	!PATTERN	BRANCH TO PATTERN SUBROUTINE
5593	C1	00BA6	6AF00FA0			BAL,15	!WRMMD	GO WRITING MODULE
5594	C1	00BA7	6AF00F91			BAL,15	!SEEKMD	
5595	C1	00BA8	324018D2			LW,4	BYTCURR	FETCH BYTCURR
5596	C1	00BA9	55420EF1			STW,4	!BCD3920+1,1	STORE BYTE COUNT
5597	C1	00BAA	6AF00FEA			BAL,15	!FUCTEST	GO TO FUNCTIONAL TEST
5598	C1	00BAB	00000EED			DATA	!BCD3920	
5599	C1	00BAC	00000F50	A		DATA	3920	*** ERROR 3920 ***
5600	C1	00BAD	00000F68			DATA	BSIP3920	
5601	C1	00BAE	00000F6B			DATA	BSNP3920	
5602	C1	00BAF	68000BB4			B	T1ST3930	GO TO NEXT TEST
5603					*			
5604	C1	00BB0	CF0018D0			HIO,0	*!DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5605	C1	00BB1	EAF0021D	A		BAL,15	*!ISENSE	TEST SENSE SW
5606	C1	00BB2	2E000BB2			WAIT	*	
5607	C1	00BB3	68000BA4			B	T1ST3921	LOOP ON ERROR
5608					*			
5609					*			
5610					*			
5611					*			
5612					*			
5613					*			
5614					*			
5615					*			
5616					*			
5617					*			
5618					*			
5619					*			
5620					*			
5621					*			
5622					*			
5623					*			
5624					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5625					*			
5626					*			
5627					T1ST3930	J		
5628	01	00BB4	6AF00F91			RAL,15	:SEEKMOD	SEEK SUBR.
5629	01	00BB5	6AF01CED			RAL,15	:PATTERN	SPREAD PATTERN
5630	01	00BB6	32701F57			LW,7	*X'AA55AAAA'	
5631	01	00BB7	35701F7E			STW,7	BUF1L0	
5632	01	00BB8	6AF00FA0			RAL,15	:WRTHOD	WRITING
5633	01	00BB9	6AF00F91			RAL,15	:SEEKMOD	SEEK
5634	01	00BBA	6AF00FEA			RAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
5635	01	00BBB	00000E00			DATA	I0CD3920	
5636	01	00BBC	00000F5A	A		DATA	3930	*** ERROR 3930 ***
5637	01	00BBD	00000F68			DATA	BSIP3920	
5638	01	00BBE	00000F68			DATA	BSNP3920	
5639	01	00BBF	68000BC4			R	T1ST3940	BRANCH TO NEXT TEST
5640					*			
5641	01	00BC0	CF0018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5642	01	00BC1	EAF0021D	A		RAL,15	*:SENSE	TEST SENSE SWITCH
5643	01	00BC2	2E000BC2			WAIT	\$	
5644	01	00BC3	68000BB4			R	T1ST3930	LOOP ON ERROR
5645					*			
5646					*			
5647					*			
5648					*			
5649					*		*** 3 9 4 0 ***	
5650					*			
5651					*		THIS TEST VERIFIES THAT THE FOLLOWING	
5652					*		PATTERN MAY BE WRITTEN/READ WITHOUT THE	
5653					*		GENERATION OF PARITY ERRORS.	
5654					*		WORD 1 X'55AA5555'	
5655					*		WORD 2 X'AA55AA55'	
5656					*		WORD 3 X'55AA55AA'	
5657					*			
5658					*		ORDER: READ (X'02)	
5659					*		BYTE ADDR: BA(BUF1L0)	
5660					*		FLAGS: ICE	
5661					*		BYTE COUNT: (BYTCURR)	
5662					*			
5663					*			
5664					*			
5665					T1ST3940	J		
5666	01	00BC4	6AF00F91			RAL,15	:SEEKMOD	SEEK
5667	01	00BC5	6AF01CED			RAL,15	:PATTERN	SPREAD PATTERN
5668	01	00BC6	32601F58			LW,6	*X'55AA5555'	
5669	01	00BC7	35601F7E			STW,6	BUF1L0	STORE INTO BUF1L0
5670	01	00BC8	6AF00FA0			RAL,15	:WRTHOD	WRITING
5671	01	00BC9	6AF00F91			RAL,15	:SEEKMOD	SEEK
5672	01	00BCA	6AF00FEA			RAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
5673	01	00BCB	00000E00			DATA	I0CD3920	
5674	01	00BCC	00000F64	A		DATA	3940	*** ERROR 3940 ***
5675	01	00BCD	00000F68			DATA	BSIP3920	
5676	01	00BCE	00000F68			DATA	PSNP3920	
5677	01	00BCF	68000BD4			R	T1ST3950	BRANCH TO NEXT TEST
5678					*			
5679	01	00BD0	CF0018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5680	01	00BD1	EAF0021D	A		RAL,15	*:SENSE	TEST SENSE SW
5681	01	00BD2	2F000BD2			WAIT	\$	
5682	01	00BD3	68000BC4			R	T1ST3940	LOOP ON ERROR
5683					*			
5684					*			
5685					*			
5686					*			
5687					*		*** 3 9 5 0 ***	
5688					*			
5689					*		THIS TEST VERIFIES THAT THE FOLLOWING	
5690					*		PATTERN MAY BE WRITTEN/READ WITHOUT THE	
5691					*		GENERATION OF PARITY ERRORS.	
5692					*		WORD 1 0	
5693					*		WORD 2 0	
5694					*		WORD 3 0	
5695					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5696							ORDER:	READ (X'02')
5697							BYTE ADDR:	BA(BUF1L8)
5698							FLAGS:	ICE
5699							BYTE COUNT:	(BYTCURR)
5700								
5701								
5702								
5703	01	00BD4	22700000	A	T1ST3950	LI,7	0	FETCH ZERO
5704	01	00BD5	15701D0A			STD,7	IPATID	SET UP FIXED PATTERN OF ZEROS
5705	01	00BD6	6AF00F91		T1ST3951	RAL,15	ISEEKMOD	BRANCH TO ISEEKMOD SUBROUTINE
5706	01	00BD7	6AF01CED			RAL,15	IPATTERN	SPREAD PATTERN
5707	01	00BD8	6AF00FEA			RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
5708	01	00BD9	00000E00			DATA	I0CD3920	
5709	01	00BDA	00000F6E	A		DATA	3950	*** ERROR 3950 ***
5710	01	00BDB	00000F68			DATA	BSIP3920	
5711	01	00BDC	00000F6B			DATA	BSNP3920	
5712	01	00BDD	68000HE2			R	T1ST3960	BRANCH TO NEXT TEST
5713								
5714	01	00BDE	C00018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5715	01	00BDF	EAF0021D	A		RAL,15	*ISENSE	TEST SENSE SW
5716	01	00BE0	2E000BF0			WAIT	*	
5717	01	00BE1	68000BD6			R	T1ST3951	LOOP ON ERROR
5718								
5719								
5720								
5721								
5722								
5723								
5724								
5725								
5726	01	00BE2	32701F59		T1ST3960	LW,7	*X'FFFFFFFF'	
5727	01	00BE3	35701D0B			STW,7	IPATID+1	
5728	01	00BE4	6AF00F91		T1ST3961	RAL,15	ISEEKMOD	SEEK
5729	01	00BE5	6AF01CED			RAL,15	IPATTERN	SPREAD PATTERN
5730	01	00BE6	6AF00FEA			RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
5731	01	00BE7	00000E00			DATA	I0CD3920	
5732	01	00BE8	00000F78	A		DATA	3960	*** ERROR 3960 ***
5733	01	00BE9	00000F68			DATA	BSIP3920	
5734	01	00BEA	00000F6B			DATA	BSNP3920	
5735	01	00BEB	68000471			R	FUCTEXIT	EXIT
5736								
5737	01	00BEC	C00018D0			HI0,0	*IDEVADDR	
5738	01	00BED	EAF0021D	A		RAL,15	*ISENSE	GO TEST SENSE SWITCHES
5739	01	00BEE	2E000BF0			WAIT	*	
5740	01	00BEF	68000BE4			R	T1ST3961	
5741	01	00BF0	68000471			R	FUCTEXIT	
5742								
5743								
5744								
5745								
5746								
5747								
5748								
5749								
5750								
5751								
5752								
5753								
5754	01	00BF1	22AC0FR0	A	T1ST40	LI,10	4016	
5755	01	00BF2	6AF00AF8			RAL,15	FNDGTRK	GO SEARCH A GOOD TRACK
5756	01	00BF3	68000HFA			R	T1ST4022	
5757	01	00BF4	6AF0110C			RAL,15	TST1ERM0	REPORT ERROR
5758	01	00BF5	C0000FAA	A		DATA	4010	*** ERROR 4010
5759	01	00BF6	EAF0021D	A		RAL,15	*ISENSE	TEST SENSE SW
5760	01	00BF7	2E000BF7			WAIT	*	
5761	01	00BF8	68000BF1			R	T1ST40	LOOP ON ERROR
5762	01	00BF9	68000471			R	FUCTEXIT	EXIT
5763								
5764								
5765								
5766								

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5767				*				
5768				*			*** 4 0 2 0 ***	
5769				*			THIS TEST VERIFIES THAT THE RAD HAS	
5770				*			REDUCED THE BYTE COUNT TO ZERO	
5771				*			ORDER: READ ('X'02')	
5772				*			BYTE ADDR: RA(BUFIL0)	
5773				*			FLAGS: ICE	
5774				*			BYTE COUNT: BYTCURR	
5775				*				
5776				*				
5777	01	00FEA	22F00C0D		T1ST4022	LI,15	T1ST4021	
5778	01	00FEH	35F00FA7			STW,15	:WRTEXT	
5779	01	00FFC	324018D2			LW,4	:BYTCURR	
5780	01	00FFD	55420FE3			STW,4	:INCR4020+1,1	
5781	01	00FFE	2C4FFFC A			AI,4	-4	
5782	01	00FFF	54420FA5			STW,4	:INCR4020+1,1	
5783				*				
5784				*				
5785				*				
5786	01	00C00	324018D2		T1ST4020	LW,4	:BYTCURR	FETCH BYTCURR
5787	01	00C01	2540007E A			SL,4	-2	DIVIDED BY 4
5788	01	00C02	35401D1C			STW,4	:ICLRSIZF	STORE
5789	01	00C03	35401CA8			STW,4	:IPATWC	STORE
5790	01	00C04	22401F7E			LI,4	:BUFIL0	STORE
5791	01	00C05	35401CA3			STW,4	:IPATBFR	
5792	01	00C06	35401D1B			STW,4	:ICLRADDR	STORE
5793	01	00C07	22400000 A			LI,4	0	
5794	01	00C08	32501F55			LW,5	:X'55555555'	
5795	01	00C09	15401D0A			STD,4	:PATID	
5796	01	00C0A	6AF00F91			RAL,15	:SEEKMD	SEEK SUB.
5797	01	00C0B	6AF01CED			RAL,15	:PATTERN	SPREAD PATTERN
5798	01	00C0C	6AF00FA3			RAL,15	:WRTH0D1	WRITE SUB
5799	01	00C0D	6AF00F91		T1ST4021	RAL,15	:SEEKMD	SEEK SUB
5800	01	00C0E	6AF01D10			RAL,15	:CLEAR	CLEAR SUB.
5801	01	00C0F	6AF00FFA			RAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
5802	01	00C10	00000EF2			DATA	:INCR4020	
5803	01	00C11	00000F94 A			DATA	4020	*** ERROR 4020 ***
5804	01	00C12	00000F6D			DATA	:RSP4020	
5805	01	00C13	00000F6E			DATA	:RSP4020	
5806	01	00C14	68000C19			R	T1ST4025	BRANCH TO NEXT TEST
5807				*				
5808	01	00C15	CF0018D0			WR,0	:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5809	01	00C16	EAF0021D A			RAL,15	:ISENSE	TEST SENSE SW
5810	01	00C17	2E000C17			WAIT	*	
5811	01	00C18	68000C00			R	T1ST4020	LOOP ON ERROR
5812				*				
5813				*				
5814				*				
5815				*			*** 4 0 2 5 ***	
5816				*				
5817				*			THIS TEST VERIFIES THAT THE DATA WRITTEN AS THE	
5818				*			SHORTEN SECTOR PATTERN WAS CORRECT.	
5819	01	00C19	52420FA5		T1ST4025	LH,4	:INCR4025+1,1	
5820	01	00C1A	2540007E A			SL,4	-2	DIVIDED BY 4
5821	01	00C1B	35401CA8			STW,4	:IPATWC	STORE
5822	01	00C1C	35101CA9			STW,1	:COMFLAG	STORE
5823	01	00C1D	6AF01B90			RAL,15	:COMPARE	COMPARE SUBROUTINE
5824	01	00C1E	68000C29			R	T1ST4035	GO TO NEXT TEST
5825				*				
5826	01	00C1F	CF0018D0			WR,0	:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5827	01	00C20	22000000 A			LI,0	0	
5828	01	00C21	35001CA9			STW,0	:COMFLAG	SET UP COMFLAG =0
5829	01	00C22	6AF0110C			RAL,15	:TST1ERM0	
5830	01	00C23	00000F89 A			DATA	4025	*** ERROR 4025 ***
5831	01	00C24	6AF01B90			RAL,15	:COMPARE	COMPARE SUBROUTINE
5832	01	00C25	68000C29			R	T1ST4035	BRANCH TO NEXT TEST
5833	01	00C26	EAF0021C A			RAL,15	:ISENSE	TEST SENSE SW
5834	01	00C27	2F000C27			WAIT	*	
5835	01	00C28	68000C00			R	T1ST4020	LOOP ON ERROR
5836				*				
5837				*			*** 4 0 3 5 ***	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5838					*			
5839					*			THIS TEST VERIFIES THAT ZEROS WERE WRITTEN
5840					*			IN THE REMAINING SECTOR AREA.
5841					*			
5842	C1	00C29	22500000	A	T1ST4015	LI,5	0	
5843	C1	00C2A	15501D08			STD,5	IPATID+1	
5844	C1	00C2B	35101CA9			STW,1	ICOMFLAG	SET UP COMFLAG = 1
5845	C1	00C2C	22401F7E			LI,4	BUF1L8	
5846	C1	00C2D	30401CA8			AW,4	IPATWC	
5847	C1	00C2E	35401CA3			STW,4	IPATBFR	STORE NEW IPATBFR
5848	C1	00C2F	324018D2			LW,4	BYTCURR	
5849	C1	00C30	58420FB5			SH,4	I8CWRT+1,1	
5850	C1	00C31	2540007E	A		SLS,4	=2	DIVIDED BY 4
5851	C1	00C32	35401CA8			STW,4	IPATWC	STORE
5852	C1	00C33	6AF018D0			BAL,15	ICMPARE	COMPARE SUBR.
5853	C1	00C34	68000C3F			B	T1ST4040	BRANCH TO NEXT TEST
5854					*			
5855	C1	00C35	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5856	C1	00C36	22000000	A		LI,0	0	
5857	C1	00C37	35001CA9			STW,0	ICOMFLAG	SET UP COMFLAG = 0
5858	C1	00C38	6AF0110C			BAL,15	TST1ERM0	REPORT ERROR
5859	C1	00C39	00000FC3	A		DATA	4035	*** ERROR 4035 ***
5860	C1	00C3A	6AF018D0			BAL,15	ICMPARE	COMPARE SUBROUTINE
5861	C1	00C3B	68000C3F			B	T1ST4040	BRANCH TO NEXT TEST
5862	C1	00C3C	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
5863	C1	00C3D	2E000C3D			WAIT	0	
5864	C1	00C3E	68000C00			B	T1ST4020	LOOP ON ERROR
5865					*			
5866					*			
5867					*			*** 4 0 4 0 ***
5868					*			THIS TEST VERIFIES THAT THERE WERE NO
5869					*			PARITY REPORTED BECAUSE OF THIS TEST.
5870					*			
5871					*			
5872					*			
5873					*			
5874	C1	00C3F	6AF00FE3		T1ST4040	BAL,15	IFCTNXINT	
5875	C1	00C40	00000EE2			DATA	I8CD4020	
5876	C1	00C41	00000FC8	A		DATA	4040	*** ERROR 4040 ***
5877	C1	00C42	00000F6F			DATA	BSIP4040	
5878	C1	00C43	00000F6D			DATA	BSIP4020	
5879	C1	00C44	68000C49			B	T1ST4042	
5880	C1	00C45	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
5881	C1	00C46	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
5882	C1	00C47	2E000C47			WAIT	0	
5883	C1	00C48	68000C00			B	T1ST4020	LOOP ON ERROR
5884					*			
5885					*			
5886					*			
5887	C1	00C49	52420FB5		T1ST4042	LH,4	I8CWRT+1,1	
5888	C1	00C4A	204FFFC A			AI,4	=4	
5889	C1	00C4B	68200471			RLEZ	FUCTEXIT	
5890	C1	00C4C	55420FB5			STH,4	I8CWRT+1,1	
5891	C1	00C4D	68000C00			B	T1ST4020	BRANCH BACK
5892						PAGE		
5893					*			*** T S T 1 , 4 1 ***
5894					*			
5895					*			*** T R A C K (B A N D) S E A R C H T E S T ***
5896					*			
5897					*			THIS SUBTEST TESTS THE ABILITY OF THE RAD
5898					*			TO WRITE AND READ ALL TRACKS (BANDS)/SECTORS.
5899					*			THE TEST WRITES A RANDOM PATTERN STARTING AT THE LOWEST
5900					*			AVAILABLE TRACK (BAND) TO THE HIGHEST AVAILABLE
5901					*			TRACK (BAND). THEN THE PATTERN IS READ BACK IN THE
5902					*			SAME MANNER.
5903					*			
5904					*			
5905					T1ST41 J			
5906	C1	00C4E	022C0040	A		LCI	4	SET UP PATTERN TYPE
5907	C1	00C4F	248C1516			LM,8	TST2DATA	IN SURFACE TEST
5908	C1	00C50	288C1774			STM,8	TST3PAT	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5909					*			
5910					*		*** 4 1 1 0 ***	
5911					*			
5912					*		THIS TEST WRITES A RANDOM PATTERN STARTING AT THE	
5913					*		LOWEST AVAILABLE TRACK (BAND).	
5914					*			
5915	01	00C51	22800000	A	T1ST4110	LI,8	0	ZERO
5916	01	00C52	35801788			STW,8	MAXERR	MAXIMUM ERROR COUNT
5917	01	00C53	35801A87			STW,8	#MSGLEVL	ALLOW ALL ERROR IMMEDIATE
5918	01	00C54	35800CBF			STW,8	#MSGERR41	ERRORS FOR THIS TEST
5919	01	00C55	35800404			STW,8	DONTREAD	RESET THE DONT READ FLAG
5920	01	00C56	2280100E	A		LI,8	4110	LOAD AND SAVE
5921	01	00C57	35801954			STW,8	T1ST41ER	ERROR NO.
5922	01	00C58	32401866			LW,4	#DDTBIAS	FETCH WORD
5923	01	00C59	02200090	A		LCI	#DDTADR3-#DDTADR1	
5924	01	00C5A	2A681867			LM,6	MODEL,4	
5925	01	00C5B	286018CF			STM,6	MODEL	STORE MULTIPLE
5926	01	00C5C	22800C62			LI,8	T1ST411X	LOAD AND SAVE
5927	01	00C5D	3580157E			STW,8	SURRTN	ERROR RTN
5928	01	00C5E	6AF01580			BAL,15	WRONLY	GO DO A WRITE
5929	01	00C5F	68000C60			B	*+1	
5930	01	00C60	33000CBF			MTW,0	#MSGERR41	TEST FOR ERRORS
5931	01	00C61	68300C65			BEZ	T1ST4111	IF NONE, NEXT TEST
5932					T1ST411X	J		
5933	01	00C62	EAF0021D	A		BAL,15	*:SENSE	GO TEST SENSE SWITCHES
5934	01	00C63	2E000C63			WAIT	*	HALT
5935	01	00C64	68000C51			B	T1ST4110	LOOP ON TEST
5936					*			
5937					*		*** 4 1 1 1 ***	
5938					*			
5939					*		THIS TEST READS A RANDOM PATTERN FROM THE RAD	
5940					*		STARTING AT THE LOWEST AVAILABLE TRACK (BAND).	
5941					*			
5942					*			
5943	01	00C65	22800000	A	T1ST4111	LI,8	0	ZERO MSG ERROR FLAG
5944	01	00C66	35800CBF			STW,8	#MSGERR41	
5945	01	00C67	2280100F	A		LI,8	4111	LOAD AND SAVE
5946	01	00C68	35801954			STW,8	T1ST41ER	ERROR NO.
5947	01	00C69	3580155F			STW,8	TST3EXIT	SET UP RTN IF NOT ENOUGH MEMORY
5948	01	00C6A	35201A87			STW,2	#MSGLEVL	ALLOW ONLY CERTAIN ERRORS
5949	01	00C6B	32401866			LW,4	#DDTBIAS	FETCH WORD
5950	01	00C6C	02200090	A		LCI	#DDTADR3-#DDTADR1	
5951	01	00C6D	2A681867			LM,6	MODEL,4	
5952	01	00C6E	286018CF			STM,6	MODEL	STORE MULTIPLE
5953	01	00C6F	22800C78			LI,8	T1ST411Y	LOAD AND SAVE
5954	01	00C70	3580157E			STW,8	SURRTN	ERROR RTN.
5955	01	00C71	6AF01583			BAL,15	RDONLY	GO READ PATTERN
5956	01	00C72	68000C73			B	*+1	
5957	01	00C73	33000CBF			MTW,0	#MSGERR41	TEST FOR ERRORS
5958	01	00C74	68300471			BEZ	FUCTEXIT	RETURN TO FTM
5959	01	00C75	6AF0110C			BAL,15	TST1ERMG	
5960	01	00C76	00001010	A		DATA	4112	*** ERROR 4112 ***
5961	01	00C77	6AF011EB			BAL,15	SELECTOUT	GO OUTPUT ERROR TABLE
5962					T1ST411Y	J		
5963	01	00C78	EAF0021D	A		BAL,15	*:SENSE	GO TEST SENSE SWITCHES
5964	01	00C79	2E000C79			WAIT	*	HALT
5965	01	00C7A	68000C65			B	T1ST4111	LOOP ON TEST
5966	01	00C7B	68000471			B	FUCTEXIT	RETURN TO FTM
5967						PAGE		
5968					*			
5969					*		*** T S T 1 , 4 2 ***	
5970					*			
5971					*		*** T R A C K (B A N D) S E A R C H T E S T 2 ***	
5972					*			
5973					*		THIS SUBTEST TESTS THE ABILITY OF THE RAD	
5974					*		TO WRITE A RANDOM PATTERN STARTING AT THE	
5975					*		HIGHEST AVAILABLE TRACK (BAND) TO THE LOWEST	
5976					*		AVAILABLE TRACK (BAND). THEN THE PATTERN IS READ	
5977					*		BACK STARTING AT THE LOWEST AVAILABLE TRACK (BAND)	
5978					*		TO THE HIGHEST AVAILABLE TRACK (BAND).	
5979					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
5980	01	00C7C	22800000	A	T1ST42	LI,8	0	ZERO MSG ERROR FLAG
5981	01	00C7D	35800CBF			STW,8	#MSGERR41	
5982	01	00C7E	35801A87			STW,8	#MSGLEVL	ALLOW ALL ERROR IMMEDIATE
5983	01	00C7F	35800404			STW,8	DONTRRAD	RESET THE DONIT READ FLAG
5984	01	00C80	35801788			STW,8	MAXERR	ZERO MAXIMUM ERROR COUNT
5985	01	00C81	02200040	A		LCI	4	
5986	01	00C82	2A801516			LM,8	TST2DATA	
5987	01	00C83	2B801774			STM,8	TST3PAT	
5988	01	00C84	27801072	A		LI,8	421C	LOAD AND SAVE
5989	01	00C85	35801954			STW,8	T1ST41ER	ERROR NO.
5990	01	00C86	22800C9A			LI,8	T1ST421Z	LOAD AND SZVE
5991	01	00C87	3580157E			STW,8	SURRTN	ERROR RTN
5992	01	00C88	32501866		T1ST4213	LW,5	#DDTBIAS	LOAD TABLE BIAS
5993	01	00C89	02200090	A		LCI	#DDTADR3=#DDTADR1	LOAD AND
5994	01	00C8A	2A6A1867			LM,6	MODEL25	SAVE
5995	01	00C8B	2B6018CF			STM,6	MODEL C	DEVICE DESCRIPTION TABLE
5996					*			
5997					*			
5998					*			
5999					*			
6000					*			
6001					*			
6002					*			
6003					*			
6004					*			
6005	01	00C8C	22A00000	A		LI,10	0	LOAD ZERO
6006	01	00C8D	328A186C			LW,11	SUPPER,5	LOAD ABSOLUTE UPPER LIMIT
6007	01	00C8E	36A018D1			DW,10	SECTCURR	DIVIDE BY SECTORS/TRACK(BAND)
6008	01	00C8F	22A00000	A		LI,10	0	LOAD ZERO
6009	01	00C90	37A018D1			MW,10	SECTCURR	CALCULATE NEW LOWER ABSOLUTE LIMIT
6010	01	00C91	358000C0			STW,11	LSEEKTEP	SAVE SECTOR LOWER LIMIT
6011	01	00C92	31BA186C			CW,11	SUPPER,5	
6012	01	00C93	69300C9A			RNE	T1ST421Z	GO SET UP TO WRITE
6013	01	00C94	32501866		T1ST4214	LW,5	#DDTBIAS	LOAD DDT BIAS POINTER
6014	01	00C95	32B000C0			LW,11	LSEEKTEP	LOAD LOAD SECTOR LIMIT
6015	01	00C96	35801874			STW,11	SURFCEND	SAVE AS UPPER SECTOR LIMIT
6016	01	00C97	31BA186B			CW,11	SLOWER,5	COMPARE WITH ABSOLUTE LOWER LIMIT
6017	01	00C98	68200CA9			RLE	T1ST4211	IF LESS OR EQUAL TO NEXT TEST
6018	01	00C99	388018D1			SW,11	SECTCURR	SUBTRACT 1 TRACK
6019	01	00CA0	31BA186B		T1ST421Z	CW,11	SLOWER,5	COMPARE NEW LOWER LIMIT TO
6020	01	00CA1	69200C9D			RG	++2	ABSOLUTE LOWER LIMIT IF LESS
6021	01	00CA2	328A186B			LW,11	SLOWER,5	LOAD ABSOLUTE LOWER LIMIT AS LIMIT
6022	01	00CA3	358000C0			STW,11	LSEEKTEP	SAVE IN LOWER SEEK LIMIT
6023	01	00CA4	358018D3			STW,11	CURRSEEK	SAVE AS CURRENT SEEK LIMIT
6024	01	00CA5	6AF01580			RAL,15	WRONLY	GO WRITE 1 TRACK
6025	01	00CA6	68000CA1			R	*+1	
6026	01	00CA7	33000CBF			MTW,0	#MSGERR41	TEST FOR AN ERROR
6027	01	00CA8	68300C94			REZ	T1ST4214	IF NO ERRORS WRITE NEXT TRACK
6028	01	00CA9	32501866			LW,5	#DDTBIAS	LOAD DDT BIAS POINTER
6029	01	00CAA	328000C0			LW,11	LSEEKTEP	LOAD LOWER SEEK LIMIT
6030	01	00CA5	EAF0021D	A		RAL,15	*:SENSE	GO TEST SENSE SWITCHES
6031	01	00CA6	2E000CA6			WAIT	*	
6032	01	00CA7	68000C9A			R	T1ST421Z	LOOP ON ERROR
6033	01	00CA8	68000C94			R	T1ST4214	GO WRITE NEXT TRACK (BAND)
6034					*			
6035					*			
6036					*			
6037					*			
6038					*			
6039					*			
6040					*			
6041	01	00CA9	22800000	A	T1ST4211	LI,8	0	ZERO
6042	01	00CAA	35800CBF			STW,8	#MSGERR41	ERRORS FOR THIS TEST COUNT
6043	01	00CAB	22801073	A		LI,8	4211	LOAD AND SAVE
6044	01	00CAC	35801954			STW,8	T1ST41ER	ERROR NO.
6045	01	00CAD	22800CBB			LI,8	T1ST421W	LOAD AND SAVE ERROR
6046	01	00CAE	3580157E			STW,8	SURRTN	RETURN
6047	01	00CAF	3580155F			STW,8	TST3EXIT	SET UP RTN IF NOT ENOUGH MEMORY
6048	01	00CB0	35201A87			STW,7	#MSGLEVL	ALLOW ONLY CERTAIN ERRORS
6049	01	00CB1	33F01864			MTW,-1	#DDTP	BACK UP PRINTER
6050	01	00CB2	6AF01850			RAL,15	#DDTICHT	GO BRING IN NEW DDT

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6051	01	00CB3	68000CB4			R	**1	
6052	01	00CB4	6AF01583			RAL,15	REDONLY	GO READ RAD
6053	01	00CB5	68000CB6			R	**1	
6054	01	00CB6	33000CBF			MTW,0	#MSGFR41	TEST FOR ERRORS
6055	01	00CB7	68300471			REZ	FUCTEXIT	IF NONE, NEXT SUB-TEST
6056	01	00CB8	6AFC110C			RAL,15	TST1ERMG	
6057	01	00CB9	00001074 A			DATA	4212	*** ERROR 4212 ***
6058	01	00CBA	6AF011EB			RAL,15	SELCTOUT	GO OUTPUT ERROR TABLE
6059					*			
6060					*			
6061	01	00CBB	EAF0021D A		T1ST421W	BAL,15	*ISENSE	GO TEST SENSE SWITCHES
6062	01	00CBC	2E000CBC			WAIT	*	WAIT
6063	01	00CBD	68000CA9			B	T1ST4211	LOOP ON TEST
6064	01	00CBE	68000471			B	FUCTEXIT	RETURN TO FTM
6065	01	00CBF	00000000 A		#MSGFR41	DATA	0	ERROR COUNT FOR TEST
6066	01	00CC0	00000000 A		LSEEKTEP	DATA	0	LOWER SEEK LIMIT
6067						PAGE		
6068					*			
6069					*		*** T S T 1, 4 3 ***	
6070					*			
6071					*		*** R E A D T E S T (X ' 1 2 ') ***	
6072					*			
6073					*		THIS SUBTEST TESTS THE ABILITY OF THE	
6074					*		RAD TO RECEIVE AND RESPOND CORRECTLY	
6075					*		TO READS (ORDER X'12') OF A SECTOR	
6076					*			
6077					*			
6078					*			
6079					*			
6080					T1ST43 J			
6081	01	00CC1	22AC10DC A			LI,10	4316	
6082	01	00CC2	6AF00AEB			BAL,15	FNDGTRK	SEARCH FOR A GOOD TRACK
6083	01	00CC3	68000CCA			B	T1ST4320	GO TO NEXT TEST
6084	01	00CC4	6AF0110C			BAL,15	TST1ERMG	REPORT ERROR
6085	01	00CC5	000010D6 A			DATA	4310	*** ERROR 4310 ***
6086	01	00CC6	EAF0021D A			RAL,15	*ISENSE	TEST SENSE SW
6087	01	00CC7	2E000CC7			WAIT	*	
6088	01	00CC8	68000CC1			B	T1ST43	BRANCH BACK AND RE-TRY
6089	01	00CC9	68000471			B	FUCTEXIT	EXIT
6090					*			
6091					*			
6092					*			
6093					*			
6094					*			
6095					*			
6096					*			
6097					*		*** 4 3 2 0 ***	
6098					*			
6099					*		THIS TEST VERIFIES THAT THE RAD WILL	
6100					*		REPORT 'INCORRECT LENGTH' TO BYTE	
6101					*		TRANSFERS OF GREATER THAN A SECTOR BUT	
6102					*		LESS THAN 2 SECTORS.	
6103					*			
6104					*		ORDER:	READ (X'12')
6105					*		BYTE ADDR:	BA(BUF1L6)
6106					*		FLAGS:	IZC
6107					*		BYTE COUNT:	BYTCURR
6108					*			
6109					*			
6110	01	00CCA	22400004 A		T1ST4320	LI,4	4	
6111	01	00CCB	304018D2			AW,4	BYTCURR	ADD 4 TO BYTCURR
6112	01	00CCC	55420EE5			STH,4	10CD4320+1,1	STORE BYTE COUNT INTO 10CD
6113	01	00CCD	6AF00F91		T1ST4321	BAL,15	:SEEKMD	SEEK SUBROUTINE
6114	01	00CCE	6AF00FEA			RAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
6115	01	00CCF	00000EE4			DATA	10CD4320	
6116	01	00CD0	000010E0 A			DATA	4320	*** ERROR 4320 ***
6117	01	00CD1	00000F70			DATA	BSIP4320	
6118	01	00CD2	00000F72			DATA	BSNP4320	
6119	01	00CD3	68000CD8			B	T1ST4322	BRANCH TO NEXT TEST
6120					*			
6121	01	00CD4	CF0018D0			HIO,0	*:DEVADDR	RESET DEV, WHEN ERROR WAS DETECTED

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6122	01	00CD5	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
6123	01	00CD6	2F000CD6			WAIT	*	
6124	01	00CD7	68000CCD			B	T1ST4321	BRANCH BACK TO RETRY
6125	01	00CD8	52420EE5		T1ST4322	LH,4	I0CD4320+1,1	FETCH BYTE COUNT
6126	01	00CD9	20400004	A		AI,4	4	ADD 4 TO THE BYTE COUNT
6127	01	00CDA	55420EF5			STH,4	I0CD4320+1,1	
6128	01	00CDB	326018D2			LW,6	BYTCURR	
6129	01	00CC	306018D2			AW,6	BYTCURR	
6130	01	00CCD	31400006	A		CW,4	6	
6131	01	00CDE	69100CCD			BL	T1ST4321	GO LOOP
6132	01	00CDF	68000471			B	FUCTEXIT	GO TO FUNCTIONAL DISPATCHER
6133					*			
6134					*			
6135						PAGE		
6136					*			
6137					*			
6138					*			*** T S T 1, 4 4 ***
6139					*			*** C H E C K W R I T E 1 ***
6140					*			
6141					*			THE SUBTEST FINDS A GOOD TRACK, BUILDS A
6142					*			PATTERN, WRITES THIS PATTERN ON ONE SECTOR
6143					*			OF THE RAD AND THEN CHECKS THIS PATTERN WITH
6144					*			A CHECKWRITE. A COMPARISON IS EXPECTED.
6145					*			
6146					*			
6147					*			
6148					T1ST44 J			
6149	01	00CE0	22AC1140	A		LI,10	4416	
6150	01	00CE1	6AF00AEB			BAL,15	FNDGTRK	SEARCH FOR A GOOD TRACK
6151	01	00CE2	68000CE9			B	T1ST4420	BRANCH TO NEXT TEST
6152	01	00CE3	6AF0110C			BAL,15	TST1ERM0	REPORT ERROR
6153	01	00CE4	0000113A	A		DATA	4410	*** ERROR 4410 ***
6154	01	00CE5	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
6155	01	00CE6	2E000CE6			WAIT	*	
6156	01	00CE7	68000CED			B	T1ST44	LOOP ON ERROR
6157	01	00CE8	68000471			B	FUCTEXIT	EXIT
6158					*			
6159					*			
6160					*			*** 4 4 2 0 ***
6161					*			
6162					*			
6163					*			THIS TEST VERIFIES THAT THERE WERE NO ERRORS
6164					*			DETECTED WHEN A PATTERN OF ALL ZEROS COMPARES
6165					*			TO AN IDENTICAL PATTERN BY MEANS OF A CHECK
6166					*			WRITE
6167					*			
6168					*			
6169	01	00CE9	22500000	A	T1ST4420	LI,5	0	LOAD FIXED
6170	01	00CEA	15501D0A			STD,5	IPATID	PATTERN OF ZERO
6171	01	00CEB	326018D2			LW,6	BYTCURR	FETCH BYTE COUNT
6172	01	00CEC	55620EE7			STH,6	I0CD4420+1,1	
6173	01	00CED	6AF00F91		T1ST4421	BAL,15	ISEEKMOD	SEEK SUB
6174	01	00CEE	6AF01CED			BAL,15	IPATTERN	SPREAD PATTERN
6175	01	00CEF	6AF0CFA0			BAL,15	IWRM0D	WRITE SUB
6176	01	00CF0	6AF00F91			BAL,15	ISEEKMOD	SEEK SUB
6177	01	00CF1	6AF00FFA			BAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
6178	01	00CF2	00000EE6			DATA	I0CD4420	
6179	01	00CF3	00001144	A		DATA	4420	*** ERROR 4220 ***
6180	01	00CF4	0000CF74			DATA	BSIP4420	
6181	01	00CF5	0000CF77			DATA	BSNP4420	
6182	01	00CF6	6800CCFB			B	T1ST4430	BRANCH TO NEXT TEST
6183					*			
6184	01	00CF7	CF0018D0			HI0,0	*IDEVADDR	RESET DEV, WHERE WAS ERROR DETECTED
6185	01	00CF8	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
6186	01	00CF9	2F000CF9			WAIT	*	
6187	01	00CFA	68000CED			B	T1ST4421	LOOP ON ERROR
6188					*			
6189					*			
6190					*			
6191					*			*** 4 4 3 0 = 7 (H I G H S P E E D
6192					*			*** R A D O N L Y, M O D E L 7 2 1 2)

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6193					*			
6194					*			
6195					*			THIS TEST VERIFIES THAT NONE OF THE FAILING
6196					*			TRACK BITS IN RYTE 4 OF THE SENSE RETURNED
6197					*			AS A '1' FOR A CHECKWRITE (4430 BIT 0 WAS '1',
6198					*			4431 BIT 1 WAS '1' ETC) OF ALL ZERO PATTERNS.
6199	01	00CFB	325018CF		T1ST4430	LW,5	MODEL C	FETCH MODEL NO.
6200	01	00CFC	21507212	A		CI,5	X'7212'	IF HIGH SPEED RAD
6201	01	00CFD	69300D10			BNE	T1ST4440	CONTINUE
6202					*			
6203	01	00CFE	6AF00FC0			BAL,15	ISENSEMOD	GO TO SENSE SUB.
6204	01	00CFF	680C0D00			B	*+1	
6205	01	00D00	22600080	A		LI,6	X'80'	LOAD COMPARE BIT
6206	C1	00D01	2280114E	A		LI,8	4430	LOAD ERROR NO.
6207	01	00D02	72760FDA		T1ST4431	LB,7	ISNSWORD,3	FETCH 'BAD TRACK' BYTE
6208	C1	00D03	4B700006	A		AND,7	6	MASK
6209	01	00D04	6830C0D8			REZ	*+4	BRANCH IF EQUAL ZERO
6210	01	00D05	35800D07			STW,8	*+2	STORE ERROR NO.
6211	01	00D06	6AF0110C			BAL,15	TST1ERM0	REPORT ERROR
6212	01	00D07	C0000000	A		DATA	0	*** ERROR NO. ***
6213	01	00D08	2560007F	A		SLS,6	-1	SHIFT 1 BIT TO RIGHT
6214	C1	00D09	33100008	A		MTW,1	8	ADD 1 TO REG 8
6215	C1	00D0A	21801155	A		CI,8	4437	TEST FOR END OF COMPARISON
6216	01	00D0B	68200D0E			SLE	T1ST4431	BRANCH BACK
6217					*			
6218	C1	00D0C	CF0018D0			HI0,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6219	C1	00D0D	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
6220	01	00D0E	2E000D0E			WAIT	*	
6221	C1	00D0F	68000CFD			B	T1ST4421	LOOP ON ERROR
6222					*			
6223					*			
6224					*			
6225					*			
6226					*			
6227					*			
6228					*			*** 4 4 4 0 ***
6229					*			
6230					*			THIS TEST VERIFIES THAT THERE ARE NO ERRORS
6231					*			DETECTED WHEN A PATTERN OF ALL '1'S IS COMPARED
6232					*			TO AN IDENTICAL PATTERN BY MEANS OF A
6233					*			CHECKWRITE.
6234	01	00D10	22400000	A	T1ST4440	LI,4	0	FETCH ZERO
6235	C1	00D11	32501F59			LW,5	=X'FFFFFFFF'	FETCH
6236	C1	00D12	15401D0A			STD,4	:IPATID	STORE DOUBLEWORD
6237	C1	00D13	6AF00F91			BAL,15	:SEKMOD	SEEK SUB.
6238	01	00D14	6AF01CED			BAL,15	:IPATTERN	SPREAD PATTERN
6239	01	00D15	6AF00FA0			BAL,15	:IWRMOD	WRITE SUB.
6240	C1	00D16	6AF00F91			BAL,15	:SEKMOD	SEEK SUB.
6241	C1	00D17	6AF00FEA			BAL,15	:FUCTEST	GO TO FUNCTIONAL TEST
6242	C1	00D18	C0000EE6			DATA	I0CD4420	
6243	01	00D19	C0001158	A		DATA	4440	*** ERROR 4440 ***
6244	01	00D1A	C0000F74			DATA	BSIP4420	
6245	01	00D1B	C0000F77			DATA	RSNP4420	
6246	01	00D1C	68000D21			B	T1ST4450	BRANCH TO NEXT TEST
6247					*			
6248	C1	00D1D	CF0018D0			HI0,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6249	C1	00D1E	EAF0021D	A		BAL,15	*ISENSE	TEST SENSE SW
6250	01	00D1F	2E000D1F			WAIT	*	
6251	C1	00D20	68000D10			B	T1ST4440	LOOP ON ERROR
6252					*			
6253					*			
6254					*			*** 4 4 5 0 (HIGH SPEED RAD ONLY, MODE7 7212) ***
6255					*			
6256					*			
6257					*			THIS TEST VERIFIES THAT NONE OF THE FAILING
6258					*			TRACK BITS IN RYTE 4 OF THE SENSE STATUS RETURNED
6259					*			AS A '1' FOR AN ALL '1'S CHECKWRITE. (4450 BIT '0'
6260					*			WAS '1', 4451 BIT 1 WAS '1', ETC).
6261	C1	00D21	325018CF		T1ST4450	LW,5	MODEL C	FETCH MODEL NO.
6262	C1	00D22	21507212	A		CI,5	X'7212'	IF HIGH SPEED RAD
6263	C1	00D23	69300471			BNE	FUCTEXIT	CONTINUE

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6264	C1	00D24	6AF00FC0			BAL,15	:SENSEMOD	GO TO SENSE SUB
6265	C1	00D25	68000D26			B	*+1	
6266	C1	00D26	22600080	A		LI,6	X'80'	LOAD COMPARE BIT
6267	C1	00D27	22801162	A		LI,8	4450	LOAD ERROR NO.
6268	C1	00D28	72760FDA		T1ST4451	LB,7	:SNWORD,3	FETCH 'BAD TRACK' BYTE
6269	C1	00D29	4B600007	A		AND,6	7	MASK
6270	C1	00D2A	68300D2E			BEZ	*+4	BRANCH IF EQUAL ZERO
6271	C1	00D2B	35800D2D			STW,8	*+2	STORE ERROR NO.
6272	C1	00D2C	6AF0110C			BAL,15	TST1ERM0	REPORT ERROR
6273	C1	00D2D	00000000	A		DATA	0	
6274	C1	00D2E	2560007F	A		SLS,6	-1	MOVE 1 BIT TO RIGHT
6275	C1	00D2F	33100008	A		MTW,1	8	ADD 1 TO REG 8
6276	C1	00D30	21801169	A		CI,8	4457	COMPARE
6277	C1	00D31	68200D28			RLE	T1ST4451	
6278					*			
6279	C1	00D32	CF0018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6280	C1	00D33	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
6281	C1	00D34	2E000D34			WAIT	*	
6282	C1	00D35	68000D10			B	T1ST4440	
6283	C1	00D36	68000471			B	FUCTEXIT	EXIT
6284					*			
6285					*			
6286					*	PAGE		
6287					*			
6288					*			
6289					*		*** T S T 1, 4 5 ***	
6290					*			
6291					*		*** C H E C K W R I T E 2 ***	
6292					*			
6293					*			THE SUBTEST FINDS A GOOD TRACK, BUILDS A
6294					*			PATTERN, AND WRITES THIS PATTERN ON ONE SECTOR
6295					*			OF THE RAD. THEN ALTER THIS PATTERN SO THAT 1
6296					*			BIT A PASS WILL CAUSE AN ERROR.
6297					*			IF THE RAD WAS A HIGH SPEED (MODEL 7212), IT WILL
6298					*			THEN SENSE TO VERIFY THAT THE FAILING TRACK IS
6299					*			REPORTED IN BYTE 4 OF THE SENSE STATUS.
6300					*			
6301					*			
6302					*			
6303	C1	00D37	32601F5A		T1ST45 J	LW,6	=X'FFFFFFF'	REMOVE
6304	C1	00D38	356010AE			STW,6	:FAI0MSK	ICE
6305	C1	00D39	22A011A4	A		LI,10	4516	FETCH ERROR NO.
6306	C1	00D3A	326018D2			LW,6	BYTCURR	FETCH BYTE COUNT
6307	C1	00D3B	55620EE9			STW,6	10CD4520+1,1	STORE BYTE COUNT
6308	C1	00D3C	6AF00AE8			BAL,15	FNDGTRK	SEARCH A GOOD TRACK
6309	C1	00D3D	68000D44			R	T1ST4520	BRANCH TO NEXT TEST
6310					*			
6311	C1	00D3E	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
6312	C1	00D3F	0000119E	A		DATA	4510	*** ERROR 4510 ***
6313	C1	00D40	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
6314	C1	00D41	2E000D41			WAIT	*	
6315	C1	00D42	68000D37			R	T1ST45	LOOP ON ERROR
6316	C1	00D43	68000471			R	FUCTEXIT	EXIT
6317					*			
6318					*		*** 4 5 2 0 - 7 ***	
6319					*			
6320					*			
6321					*			THIS TEST VERIFIES THAT THERE IS AN ERROR
6322					*			DETECTED FOR EACH BIT, WHEN THE CHECKWRITE BIT
6323					*			IS A '1' AND THE BIT FROM THE RAD IS A '0'.
6324					*			(4520 BIT 0, ERROR J 4521 BIT 1, ERRORJ ETC)
6325					*			
6326					*			
6327	C1	00D44	22700000	A	T1ST4520	LI,7	0	SET UP FIXED PATTERN OF ZERO
6328	C1	00D45	1570100A			STD,7	:PATID	GO SEEK SUB
6329	C1	00D46	6AF00F91			BAL,15	:SEEKMOD	SPREAD PATTERN
6330	C1	00D47	6AF01CED			BAL,15	:PATTERN	WRITE SUB
6331	C1	00D48	6AF00FAD			BAL,15	:WRTRMD	WRITE SUB
6332	C1	00D49	224011AB	A		LI,4	4520	FETCH NO.
6333	C1	00D4A	35400D58			STW,4	T1ST4522	
6334	C1	00D4B	22800080	A		LI,11	X'80'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6335	C1	00D4C	22A002FC	A		LI,10	X'2FC'	
6336	01	00D4D	32401F52			LW,4	*X'8C000000'	FETCH WORD
6337	01	00D4E	22801182	A		LI,8	4530	SET UP ERROR NO.
6338	C1	00D4F	326018CF			LW,6	MODEL C	LOAD MODEL NO.
6339	01	00D50	21607212	A		CI,6	X'7212'	IS IT HIGH SPEED
6340	01	00D51	68300D54			BE	*+3	BRANCH
6341	01	00D52	22A002FF	A		LI,10	X'2FF'	FETCH NO.
6342	01	00D53	22400080	A		LI,4	X'80'	FETCH DATA
6343	C1	00D54	35401F7E			STW,4	BUF1L0	STORE DATA INTO BUF1L0
6344	01	00D55	6AF00F91		T1ST4521	RAL,15	!SEEKMOD	GO TO SEEK SUB
6345	C1	00D56	6AF00FEA			RAL,15	!FUCTEST	GO TO FUNCTIONAL TEST
6346	C1	00D57	00000EE8			DATA	!0CD4520	
6347	01	00D58	00000000	A	T1ST4522	DATA	0	ERROR NO. 4520-27
6348	01	00D59	00000F79			DATA	BSIP4520	
6349	01	00D5A	00000F7C			DATA	BSNP4520	
6350	01	00D5B	68000D60			R	T1ST4527	BRANCH TO NEXT TEST
6351					*			
6352	01	00D5C	CF0018D0			HI0,0	*!DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6353	01	00D5D	EAF0021D	A		RAL,15	*!SENSE	TEST SENSE SW
6354	01	00D5E	2E000D5E			WAIT	*	
6355	01	00D5F	68000D55			R	T1ST4521	LOOP ON ERROR
6356					*			
6357					*			
6358	01	00D60	326018CF		T1ST4527	LW,6	MODEL C	FETCH MODEL NO.
6359	01	00D61	21607212	A		CI,6	X'7212'	IS IT HIGH SPEED MODEL
6360	01	00D62	69300D6F			RNE	T1ST4539	BRANCH IF IT IS
6361	01	00D63	6AF00FC0			RAL,15	!SENSEMOD	BRANCH TO SENSE SUB.
6362	01	00D64	68000D65			R	*+1	
6363	01	00D65	72760FDA			LB,7	!SNSWORD,3	FETCH SENSE STATUS BYTE 4
6364					*			
6365					*			
6366					*			
6367					*			
6368					*			
6369					*			
6370					*			
6371					*			
6372					*			
6373					*			
6374	01	00D66	4R70000B	A	T1ST4530	AND,7	11	
6375	01	00D67	69300D6F			RNEZ	T1ST4539	
6376	01	00D68	35800D6A			STW,8	*+2	STORE ERROR NO.
6377	01	00D69	6AF0110C			RAL,15	TST1ERMG	REPORT ERROR
6378	01	00D6A	00000000	A		DATA	0	*** ERROR NO. ***
6379	01	00D6B	CF0018D0			HI0,0	*!DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6380	C1	00D6C	EAF0021D	A		RAL,15	*!SENSE	TEST SENSE SW
6381	C1	00D6D	2E000D6D			WAIT	*	
6382					*			
6383					*			
6384					*			
6385	01	00D6E	68000D55			R	T1ST4521	LOOP ON ERROR
6386	01	00D6F	32601F7E		T1ST4539	LW,6	BUF1L0	FETCH BUF1L0
6387	01	00D70	A560000A	A		SCS,6	+10	
6388	01	00D71	35601F7E			STW,6	BUF1L0	STORE RESULT INTO BUF1L0
6389	C1	00D72	25B0027F	A		SCS,11	-1	
6390	01	00D73	33100008	A		MTW,1	8	UPDATE ERROR COUNT
6391	C1	00D74	33100D58			MTW,1	T1ST4522	UPDATE ERROR COUNT
6392	01	00D75	21801189	A		CI,8	4537	IF NOT ALL TEST
6393	C1	00D76	68200D55			RLE	T1ST4521	CONTINUE
6394	01	00D77	225FFFFF	A		LI,5	-1	FETCH -1
6395	01	00D78	35501D0B			STW,5	!PATID+1	STORE INTO !PATID
6396	01	00D79	6AF00F91			RAL,15	!SEEKMOD	SEEK SUB
6397	01	00D7A	6AF01CED			RAL,15	!PATTERN	SPREAD PATTERN
6398	C1	00D7B	6AF00FA0			RAL,15	!WRM0D	WRITE SUB
6399	01	00D7C	22B00080	A		LI,11	X'80'	
6400	C1	00D7D	32401F5B			LW,4	*X'7F7F7F7F'	FETCH DATA
6401	01	00D7E	326018CF			LW,6	MODEL C	FETCH MODEL NO.
6402	01	00D7F	21607212	A		CI,6	X'7212'	IS IT HIGH SPEED MODEL
6403	01	00D80	68300D82			BE	*+2	BRANCH IF YES
6404	01	00D81	32401F5C			LW,4	*X'FFFFFF7F'	FETCH DATA
6405	01	00D82	35401F7E			STW,4	BUF1L0	STORE INTO BUF1L0

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6406	C1	00D83	224011BC	A		LI,4	4540	LOAD AND SAVE
6407	C1	00D84	35400D89			STW,4	T1ST4542	ERROR NO.
6408	C1	00D85	228011C6	A		LI,8	4550	LOAD AND ERROR NO.
6409					*			
6410					*			
6411					*		*** 4 5 4 0 - 7 ***	
6412					*			
6413					*			
6414					*			THIS TEST VERIFIES THAT THERE IS AN ERROR
6415					*			DETECTED FOR EACH BIT, WHEN THE CHECKWRITE BIT
6416					*			IS A '0' AND THE BIT FROM THE RAD IS A '1'.
6417					*			
6418					*			(4540 BIT 0, ERROR; 4541 BIT 1, ERROR; ETC)
6419					*			
6420	01	00D86	6AF00F91		T1ST4540	BAL,15	ISEEKMOD	SEEK SUB
6421	01	00D87	6AF00FEA			BAL,15	IFUCTEST	GO TO FUNCTIONAL TEST
6422	01	00D88	00000EE8			DATA	I0CD4820	
6423	01	00D89	00000000	A	T1ST4542	DATA	0	ERROR NO: 4540=4547
6424	01	00D8A	00000F79			DATA	BSIP4520	
6425	01	00D8B	00000F7C			DATA	RSNP4520	
6426	01	00D8C	68000D91			B	T1ST4541	BRANCH TO NEXT TEST
6427					*			
6428	01	00D8D	CF0018D0			HI0,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6429	01	00D8E	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
6430	01	00D8F	2E000D8F			WAIT	\$	
6431	01	00D90	68000D86			B	T1ST4540	BRANCH TO NEXT TEST
6432	01	00D91	326018CF		T1ST4541	LW,6	MODEL	FETCH MODEL NO.
6433	01	00D92	21607212	A		CI,6	X172121	IS IT HIGH SPEED MODEL
6434	01	00D93	69300DA0			RNE	T1ST4551	BRANCH IF YES
6435	01	00D94	6AF00FC0		T1ST4543	BAL,15	:SENSEMOD	GO TO SENSE SUB
6436	01	00D95	68000D96			R	*+1	
6437	01	00D96	72760FDA			LB,7	:SNSWORD,3	FETCH SENSE STATUS BYTE
6438	01	00D97	48700008	A		AND,7	11	
6439	01	00D98	69300DA0			RNEZ	T1ST4551	
6440	01	00D99	35800D98			STW,8	*+2	STORE ERROR NO.
6441	01	00D9A	6AF0110C			BAL,15	TST1ERM0	REPORT ERROR
6442	01	00D9B	00000000	A		DATA	0	*** ERROR NO. ***
6443					*			
6444	01	00D9C	CF0018D0			HI0,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6445	01	00D9D	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
6446	01	00D9E	2F000D9E			WAIT	\$	
6447	01	00D9F	68000D86			B	T1ST4540	LOOP ON ERROR
6448					*			
6449					*			
6450					*		*** 4 5 5 0 - 7 ***	
6451					*			
6452					*			
6453					*			THIS TEST VERIFIES THAT EACH OF THE FAILING
6454					*			TRACK BITS IN BYTE 4 OF THE SENSE STATUS REPORTS
6455					*			AN ERROR, WHEN THE CHECKWRITE BIT WAS A '0' AND
6456					*			THE BIT FROM THE RAD WAS A '1'. (4450 BIT 0 IS
6457	01	00DA0	32601F7E		T1ST4551	LW,6	BUF10	FETCH BUF10
6458	01	00DA1	A560000A	A		SCS,6	*10	
6459	01	00DA2	25B0027F	A		SCS,11	=1	
6460	C1	00DA3	35601F7E			STW,6	BUF10	STORE BACK INTO BUF10
6461	01	00DA4	33100D89			MTW,1	T1ST4542	ADD 1
6462	C1	00DA5	33100008	A		MTW,1	8	UPDATE ERROR COUNT
6463	C1	00DA6	218011CD	A		CI,8	4557	
6464	C1	00DA7	68200D86			BLE	T1ST4540	
6465	01	00DA8	68000471			B	FUCTEXIT	EXIT
6466					*			
6467					*			
6468					*			
6469					*			PAGE
6470					*			
6471					*			
6472					*			
6473					*			
6474					*			
6475					*		*** T S T 1, 4 6 ***	
6476					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6477					*			*** HALT WRITE TEST ***
6478					*			
6479					*			
6480					*			THIS TEST VERIFIES THAT A HIO CAN STOP
6481					*			A WRITE OPERATION AND CAUSE THE DEVICE
6482					*			TO REPORT THE CONDITION OF THE RAD JUST
6483					*			PRIOR AND AFTER THE HALT OCCURS.
6484					*			
6485					*			
6486	C1	00DA9	22700000 A		T1ST46 J	LI,7	0	FETCH ZERO
6487	C1	00DAA	1570100A			STD,7	:PATID	
6488	C1	00DAB	22701F7E			LI,7	PUPIL0	
6489	C1	00DAC	3F701CA3			STW,7	:PATBR	STORE INTO :PATBR
6490	C1	00DAD	32601802			LW,6	RYTCURR	FETCH BYTCURR
6491	C1	00DAE	55620EEB			STH,6	I0CD4620+1,1	
6492	C1	00DAF	2560007E A			SLS,6	+2	DIVISION BY 4
6493	C1	00DB0	35601CA8			STW,6	:PATWC	STORE INTO :PATWC
6494	C1	00DB1	6AF00F91			BAL,15	:SEEKMOD	SEEK SUB
6495	C1	00DB2	6AF01CE0			RAL,15	:PATTERN	SPREAD PATTERN
6496	C1	00DB3	6AF00FA0			RAL,15	:WRTMOD	WRITE SUB
6497	C1	00DB4	CFC018D0		T1ST4601	HIO,12	*:DEVADDR	HIO
6498	C1	00DB5	6AF00F91			RAL,15	:SEEKMOD	SEEK SUB
6499	C1	00DB6	22000775			LI,0	DA(I0CD4620)	FERCH I0CD DW
6500	C1	00DB7	CCC018D0			SIO,12	*:DEVADDR	SIO
6501					*			
6502					*			
6503					*			*** 4 6 1 0 ***
6504					*			
6505					*			THIS TEST VERIFIES THAT THE DEVICE IS BUSY
6506					*			AT TIME OF THE HALT (CC2=1).
6507					*			
6508					*			
6509	C1	00DB8	CFC018D0		T1ST4610	HIO,12	*:DEVADDR	HIO
6510	C1	00DB9	69400DC2			RCS,4	T1ST4620	TEST CONDITION CODE
6511	C1	00DBA	6AF01F0E			BAL,15	:SAVEHIO	
6512	C1	00DBB	6AF0110C			RAL,15	TSTIERMG	REPORT ERROR
6513	C1	00DBC	C0001202 A			DATA	4610	*** ERROR 4610 ***
6514	C1	00DBD	CFC018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6515	C1	00DBE	EAF00210 A			RAL,15	*:ISENSE	TEST SENSE SW
6516	C1	00DBF	2E000DF			WAIT	\$	
6517	C1	00DC0	68000DB4			R	T1ST4601	LOOP ON ERROR
6518	C1	00DC1	68000DC3			R	\$+2	
6519					*			
6520					*			*** 4 6 2 0 ***
6521					*			
6522					*			THIS TEST VERIFIES ALL STATUS RETURNED FROM
6523					*			THE HALT OPERATION TO BE CORRECT.
6524					*			
6525	C1	00DC2	6AF01F0E		T1ST4620	BAL,15	:SAVEHIO	
6526	C1	00DC3	6AF00FE3			BAL,15	:FCTNXINT	GO TO FUNCTIONAL TEST
6527	C1	00DC4	C0000EEA			DATA	I0CD4620	
6528	C1	00DC5	C000120C A			DATA	4620	*** ERROR 4620 ***
6529	C1	00DC6	00000F7E			DATA	RSIP4620	
6530	C1	00DC7	00000F82			DATA	RSNP4620	
6531	C1	00DC8	68000471			B	FUCTEXIT	EXIT
6532	C1	00DC9	CFC018D0			HIO,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6533	C1	00DCA	EAF00210 A			RAL,15	*:ISENSE	TEST SENSE SW
6534	C1	00DCB	2E000DCB			WAIT	\$	
6535	C1	00DCC	68000DB4			B	T1ST4601	LOOP ON ERROR
6536	C1	00DCD	68000471			B	FUCTEXIT	EXIT
6537						PAGE		
6538					*			*** T S T 1, 4 7 ***
6539					*			
6540					*			*** HALT READ TEST ***
6541					*			
6542					*			THIS TEST VERIFIES THAT A HIO CAN STOP A READ
6543					*			OPERATION AND CAUSE THE DEVICE TO REPORT THE
6544					*			CONDITION OF THE RAD JUST PRIOR AND JUST AFTER
6545					*			THE HALT OCCURS.
6546					*			
6547					*			
6548					T1ST47 J			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6548	C1	00DCE	22700000	A		LI,7	0	FETCH ZERO
6549	C1	00DCF	1570100A			STD,7	IPATID	
6550	C1	00DD0	22701F7E			LI,7	BUF1L8	
6551	C1	00DD1	35701CA3			STW,7	IPATBFR	STORE INTO IPATBR
6552	C1	00DD2	326018D2			LW,6	BYTCURR	FETCH BYTCURR
6553	C1	00DD3	55620EED			STH,6	I8CD4720+1,1	
6554	C1	00DD4	2560007E	A		SLS,6	-2	DIVISION BY 4
6555	C1	00DD5	35601CAB			STW,6	IPATWC	STORE INTO IPATWC
6556	C1	00DD6	6AF00F91			BAL,15	ISEEKMD	SEEK SUB
6557	C1	00DD7	6AF01CED			BAL,15	IPATTERN	SPREAD PATTERN
6558	C1	00DD8	6AF00FA0			BAL,15	IWRTHMD	WRITE SUB
6559	C1	00DD9	CFC018D0		T1ST4701	HI8,12	*:DEVADDR	HI8
6560	C1	00DDA	6AF00F91			BAL,15	ISEEKMD	SEEK SUB
6561	C1	00DDb	22000776			LI,0	DA(I8CD4720)	FETCH I8CD DW
6562	C1	00DDC	CCC018D0			SI8,12	*:DEVADDR	SI8
6563					*			
6564					*		*** 4 7 1 0 ***	
6565					*			
6566					*		THIS TEST VERIFIES THAT THE DEVICE IS BUSY	
6567					*		AT THE TIME OF THE HALT (CCR=1)	
6568					*			
6569	C1	00DDD	CFC018D0		T1ST4710	HI8,12	*:DEVADDR	HI8
6570	C1	00DDE	69400DE7			BCS,4	T1ST4720	TEST CONDITION CODE
6571	C1	00DDF	6AF01FOE			BAL,15	:SAVEHI8	
6572	C1	00DE0	6AF0110C			BAL,15	TSTIERM8	REPORT ERROR
6573	C1	00DE1	00001266	A		DATA	4710	*** ERROR 4710 ***
6574	C1	00DE2	CFC018D0			HI8,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6575	C1	00DE3	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
6576	C1	00DE4	2E000DE4			WAIT	*	
6577	C1	00DE5	68000DD9			B	T1ST4701	LOOP ON ERROR
6578	C1	00DE6	68000DE8			R	*P2	
6579					*			
6580					*		*** 4 7 2 0 ***	
6581					*			
6582					*		THIS TEST VERIFIES ALL STATUS RETURNED FROM THE	
6583					*		HALT OPERATION TO BE CORRECT	
6584					*			
6585	C1	00DE7	6AF01FOE		T1ST4720	BAL,15	:SAVEHI8	
6586	C1	00DE8	6AF00FE3			BAL,15	IFCTNXINT	GO TO FUNCTIONAL TEST
6587	C1	00DE9	00000EEC			DATA	I8CD4720	
6588	C1	00DEA	00001270	A		DATA	4720	*** ERROR 4720 ***
6589	C1	00DEB	00000F85			DATA	BSIP4720	
6590	C1	00DEC	00000F89			DATA	B8NP4720	
6591	C1	00DED	68000471			R	FUCTEXIT	EXIT
6592	C1	00DEE	CFC018D0			HI8,0	*:DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
6593	C1	00DEF	EAF0021D	A		BAL,15	*:SENSE	TEST SENSE SW
6594	C1	00DF0	2E000DF0			WAIT	*	
6595	C1	00DF1	68000DD9			B	T1ST4701	LOOP ON ERROR
6596	C1	00DF2	68000471			R	FUCTEXIT	EXIT
6597						PAGE		
6598					*			
6599					*		*** T S T 1 , 4 8 ***	
6600					*			
6601					*		*** D A T A O V E R R U N ***	
6602					*			
6603					*		THIS TEST FORCES A DATA OVER RUN TO OCCUR	
6604					*		BY EXECUTING MANY 1 OR 4 BYTE DATA CHAINED	
6605					*		I8CD'S.	
6606					*			
6607					*			
6608					*			
6609					*			
6610					*		*** 4 8 1 0 ***	
6611					*			
6612					*		THIS TEST VERIFIES THAT A RAD WILL REPORT	
6613					*		DATA OVER RUN FOR A SERIES OF SHORT	
6614					*		DATA CHAINED I8CD'S.	
6615					*			
6616					*			
6617	C1	00DF3	22600001	A	T1ST48 J	LI,6	1	LOAD WRITE ORDER
6618	C1	00DF4	6AF00E16			BAL,15	T1ST48ID	GO BUILD I8CD'S

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6619	C1	00DF5	35800DFD			STW,11	T1ST4813	SAVE FIRST IBCD WORD ADDR
6620	01	00DF6	6AF00F91			BAL,15	ISEEKMOD	GO SEEK RAD
6621	01	00DF7	68000DF8			R	**1	
6622	C1	00DF8	32601F5D			LW,6	*X1197FFFFF'	REMOVE INCORRECT LENGTH
6623	C1	00DF9	356010AD			STW,6	:FTI9MSK	FROM TIO STATUS
6624	C1	00DFA	32601F5E			LW,6	*X1FF7FFFFF'	REMOVE INCORRECT LENGTH
6625	C1	00DFB	356010AE			STW,6	:FAI9MSK	FROM AIO STATUS
6626	C1	00DFC	6AF00FEA			BAL,15	:FUCTEST	GO DO FUCTIONAL TEST
6627	C1	00DFD	00000000	A	T1ST4813	DATA	0	FIRST IBCD
6628	C1	00DFE	000012CA	A		DATA	4810	*** ERROR 4810 ***
6629	01	00DFE	00000F8C			DATA	BSIP4810	
6630	C1	00E00	00000FBE			DATA	BSNP4810	
6631	01	00E01	68000E06			R	T1ST4820	GO TO NEXT TEST
6632	01	00E02	CF0018D0			HIO,0	*:DEVADDR	STOP DEVICE
6633	01	00E03	EAF0021D	A		BAL,15	*:ISENSE	GO TEST SENSE SWITCHES
6634	01	00E04	2F000E04			WAIT	\$	
6635	01	00E05	68000DF3			R	T1ST48	GO LOOP ON ERROR
6636					*			
6637					*		*** 4 8 2 0 ***	
6638					*			
6639					*			
6640					*		THIS TEST VERIFIES THAT A RAD WILL REPORT	
6641					*		DATA OVER RUN FOR A SERIES OF SHORT	
6642					*		DATA CHAINED IBCD'S.	
6643	01	00E06	22600012	A	T1ST4820	LI,6	X'121'	LOAD READ ORDER
6644	01	00E07	6AF00E16			BAL,15	T1ST481D	GO BUILD IBCD'S
6645	01	00E08	35800E0C			STW,11	T1ST4823	SAVE WORD ADDR OF FIRST IBCD
6646	01	00E09	6AF00F91			BAL,15	ISEEKMOD	GO SEEK RAD
6647	01	00E0A	68000E0B			R	**1	
6648	01	00E0B	6AF00FEA			BAL,15	:FUCTEST	GO DO FUCTIONAL TEST
6649	01	00E0C	00000000	A	T1ST4823	DATA	0	WORD ADDR OF FIRST IBCD
6650	01	00E0D	000012D4	A		DATA	4820	*** ERROR 4820 ***
6651	01	00E0E	00000F8C			DATA	BSIP4810	
6652	01	00E0F	00000F8E			DATA	BSNP4810	
6653	C1	00E10	68000471			R	FUCTEXIT	
6654	01	00E11	CF0018D0			HIO,0	*:DEVADDR	GO TO NEXT TEST
6655	01	00E12	EAF0021D	A		BAL,15	*:ISENSE	GO TEST SENSE SWITCHES
6656	01	00E13	2F000E13			WAIT	\$	
6657	01	00E14	68000E06			R	T1ST4820	GO LOOP ON ERROR
6658	01	00E15	68000471			R	FUCTEXIT	RETURN TO FTM
6659					*			
6660					*			
6661	01	00E16	22800471		T1ST481D	LI,8	FUCTEXIT	SET UP EXIT
6662	01	00E17	5582181B			STW,8	MEMORY2,1	TO FTM IF NOT ENOUGH MEMORY
6663	01	00E18	32901F5F			LW,9	*X18C0000011	
6664	C1	00E19	22800FBF			LI,8	DA(RUF1L0+1)	
6665	01	00E1A	25800003	A		SLS,8	3	
6666	01	00E1B	75600008	A		STB,6	8	LOAD ORDER
6667	01	00E1C	327018D2			LW,7	BYTCURR	LOAD NO. OF BYTES/SECTOR
6668	01	00E1D	21700168	A		CI,7	360	IS IT A 720X
6669	01	00E1E	68300E21			ME	**3	IF SO WE ARE SET UP
6670	C1	00E1F	2570007E	A		SLS,7	-2	IF NOT SET UP FOR OTHER TYPES
6671	C1	00E20	64300009	A		AWM,3	9	LOAD BC = 4
6672	01	00E21	52520008	A		LH,5	8,1	
6673	C1	00E22	305018D2			AW,5	BYTCURR	ADD LENGTH OF BUFFER AREA
6674	C1	00E23	20500040	A		AI,5	64	ADD FUDGE FACTOR
6675	C1	00E24	2550007E	A		SLS,5	-2	CONVERT TO WORD ADDR.
6676	C1	00E25	3550000B	A		STW,5	11	START AS STARTING ADDR OF IBCD
6677	C1	00E26	30500007	A		AW,5	7	ADD NUMBER OF IBCD'S
6678	01	00F27	30500007	A		AW,5	7	ADD NUMBER OF IBCD'S
6679	01	00F28	3150022F	A		CW,5	:MEMLAST	TEST FOR SIZE OF MEMORY
6680	01	00E29	68101805			RGE	MEMORY1	IF GREATER EXIT TEST
6681	C1	00E2A	22600000	A		LI,6	0	ZERO IBCD COUNTER
6682	01	00E2B	68000E2D			R	**2	SKIP UPDATE
6683	01	00F2C	20600001	A	T1ST481C	AI,6	1	UPDATE IBCD COUNT
6684	01	00E2D	958C000B	A		STD,8	*11,6	ADD BYTE COUNT TO MEMORY BYTE ADDR.
6685	01	00F2E	50820009	A		AH,8	9,1	
6686	C1	00E2F	31600007	A		CW,6	7	TEST FOR COMPETION
6687	C1	00E30	62200E2C			BLE	T1ST481C	IF NOT GO BACK FOR NEXT IBCD.
6688	C1	00E31	30600006	A		AW,6	6	FIND
6689	C1	00F32	3060000B	A		AW,6	11	LAST IBCD

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6690	01	00E33	22A01C00	A		LI,10	X'1C00'	LOAD CE, HTE, UE FLAGS
6691	01	00E34	D5A40006	A		STW,10	*6,2	SAVE IN LAST 10CD
6692	01	00E35	ER00000F	A		R	*15	RETURN TO CALLING ROUTINE
6693						PAGE		
6694					*			
6695					*		*** T S T 1 , 4 9 ***	
6696					*			
6697					*		*** W R I T E P R O T E C T T E S T ***	
6698					*			
6699					*		THIS SUBTEST VERIFIES THAT ALL TRACKS (BANDS)	
6700					*		CAN REPORT WRITE PROTECTED, BOTH FROM SENSE INFORMATION	
6701					*		AND STATUS RETURN FROM A WRITE OPERATION.	
6702					*			
6703					*		TO CHECK WRITE PROTECTION:	
6704					*			
6705					*		SET DESIRED WRITE PROTECT SWITCHES IF THEY	
6706					*		DETECTED THE TRACKS (BANDS) WILL BE REPORTED	
6707					*		ON THE OUTPUT MESSAGE DEVICE:	
6708					*			
6709					*		(NOTE: REMEMBER THAT THE TRACKS (BANDS) THAT	
6710					*		WILL BE TESTED ARE LIMITED BY BOTH THE	
6711					*		'SYST', AND 'SEEK' DIRECTIVES.	
6712					*			
6713					*			
6714	01	00E36	328018D2		T1ST49 J	LW,8	RYTCURR	
6715	01	00E37	55820EEF			STW,8	I0CD4911+1,1	
6716	01	00E38	22400000	A		LI,4	0	
6717	01	00E39	35401106			STW,4	TCKUNVL	TRACK (BAND) UNAVAILABLE ADDR
6718	01	00E3A	35401108			STW,4	TCKWPVL1	TRACK (BAND) WRT PROTECT ADDR
6719	01	00E3B	3540110A			STW,4	TCKWPVL	TRACK (BAND) WRT PROTECT ADDR
6720	01	00E3C	22400000	A	T1ST4908	LI,4	0	
6721	01	00E3D	32500FB8			LW,5	SEEK RAD	LOAD DEV SEEK ADDR.
6722					T1ST4909 J			
6723	01	00E3E	3A4018D7			LCW,4	TCKCURR	LOAD WORD COMPLEMENT
6724	01	00E3F	4B401F50			AND,4	*X'17F'	AND
6725	01	00E40	A5500004	A		SLS,5	*4	SHIFT
6726	01	00E41	22400000	A		LI,4	0	LOAD ZERO
6727	01	00E42	3540096A			STW,4	T1ST19XF	ZERO TEST EXIT FLAG
6728	01	00E43	35500006	A		STW,5	6	LOAD TRACK (BAND) ADDR
6729	01	00E44	30601F52			AW,6	*X'00000000'	SET UP REGISTER SP IT'S NOT ZFRB
6730	01	00E45	374018D1			MW,4	SECTCURR	CALCULATE NEW DEVICE SEEK ADDR
6731	01	00E46	35500FB8			STW,5	SEEK RAD	SAVE IN SEEK RAD LOCATION
6732					*			
6733					*		*** 4 9 1 0 ***	
6734					*			
6735					*		THIS TEST VERIFIES THAT, SET WRITE PROTECT SWITCHES	
6736					*		WILL BE DETECTED AND REPORTED AS PART OF THE	
6737					*		STATUS RETURN AFTER A WRITE. (NOTE: ERR 4910 DOESN'T	
6738					*		NECESSARY INFER THERE WAS AN ERROR DETECTED	
6739					*		BY THIS TEST, BUT RATHER, THAT WRITE PROTECTION	
6740					*		WAS DETECTED AS PART OF THE STATUS RETURNED	
6741					*		AFTER A WRITE OPERATION.	
6742					*			
6743	01	00E47	6AC017CE		T1ST4910	RAL,12	BUILDSK	GO BUILD SEEK ADDR
6744	01	00E48	6AF00F91			RAL,15	:SEFKM0D	GO SEEK RAD
6745	01	00E49	68000E4A			R	*+1	
6746	01	00E4A	6AF00FEA			RAL,15	IFUCTEST	
6747	01	00E4B	00000EEE			DATA	I0CD4911	
6748	01	00E4C	0000132F	A		DATA	4911	*** REPORT 4911 ***
6749	01	00E4D	00000F90			DATA	BSIP4910	
6750	01	00E4E	00000F90			DATA	BSIP4910	
6751	01	00E4F	68000E53			R	T1ST4912	
6752	01	00E50	EAF0021D	A		RAL,15	*:SENSE	
6753	01	00E51	2E000E51			WAIT	\$	
6754	01	00E52	68000E47			R	T1ST4910	
6755					*			
6756					T1ST4912 J			
6757	01	00E53	6AF01AAD			RAL,15	:TDV	GO FETCH TDV STATUS
6758	01	00E54	10000001	A		DATA	X'10000001'	
6759	01	00E55	00000000	A		DATA	0	
6760	01	00E56	68000E5C			R	T1ST4911	IF NOT WRITE PROTECTED BRANCH

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6761	01	00E57	35601109			STW,6	TCKWPH1	IF WRITE PROTECT STORE UPPER LIMIT
6762	01	00E58	33001108			MTW,0	TCKWPVL1	TEST FOR LOWER LIMIT
6763	01	00E59	69300E58			RNEZ	*+2	IF NONE
6764	01	00E5A	35601108			STW,6	TCKWPVL1	STORE ALSO AS LOWER LIMIT TOO
6765	01	00E5B	68000E67			R	T1ST4920	GO TO NEXT TEST
6766	01	00E5C	33001108		T1ST4911	MTW,0	TCKWPVL1	TEST LOWER LIMIT
6767	01	00E5D	68300E67			REZ	T1ST4920	IF ZERO NEXT TEST
6768	01	00E5E	6AF0110C			RAL,15	TST1ERMG	GO REPORT TRACK(BAND) INFORMATION
6769	01	00E5F	0000132E A			DATA	4910	*** TEST 4910 ***
6770	01	00E60	6AF010C7			RAL,15	T1ST19RP	
6771	01	00E61	00001108			DATA	TCKWPVL1	
6772	01	00E62	EAF0021D A			BAL,15	*:SENSE	TEST SENSE SWITCHES
6773	01	00E63	2F000E63			WAIT	\$	
6774	01	00E64	68000E3E			R	T1ST4909	LOOP ON ERROR
6775	01	00E65	3300096A			MTW,0	T1ST19XF	
6776	01	00E66	68300E3C			REZ	T1ST4908	
6777					*			
6778					*			
6779					*		*** 4 9 2 0 ***	
6780					*			
6781					*			
6782					*			THIS TEST VERIFIES THAT, SET WRITE PROTECT SWITCHES
6783					*			WILL BE DETECTED AND REPORTED AS PART OF THE
6784					*			SENSE WORD RETURN BY A DEVICE SENSE OPERATION.
6785					*			(NOTE) ERR 4920 DOESN'T NECESSARY INFER THERE
6786					*			WAS AN ERROR DETECTED BY THIS TEST, BUT RATHER,
6787					*			THAT WRITE PROTECTION WAS DETECTED AS PART OF
6788					*			THE SENSE WORD RETURNED FROM A SENSE OF THE DEVICE.
6789					*			
6790	01	00E67	3300096A		T1ST4920 J	MTW,0	T1ST19XF	IF EXIT FLAG SET
6791	01	00E68	69300E6A			RNEZ	*+2	SKIP SENSE
6792	01	00E69	6AF00FC0			BAL,15	:SENSEMOD	GO SENSE THE DEVICE
6793	01	00E6A	68000E6B			R	*+1	
6794	01	00E6B	33000FDA			MTW,0	:SNSWORD	TEST FOR WRITE PROTECT
6795	01	00E6C	68100E72			RNEZ	T1ST4921	IF NOT BRANCH
6796	01	00E6D	3560110B			STW,6	TCKWPH1	IF NOT STORE AS UPPER LIMIT
6797	01	00E6E	3300110A			MTW,0	TCKWPVL	TEST LOWER LIMIT FOR ZERO
6798	01	00E6F	69300E71			RNEZ	*+2	IF NOT BRANCH
6799	01	00E70	3560110A			STW,6	TCKWPVL	STORE AS LOWER LIMIT TOO
6800	01	00E71	68000E7D			R	T1ST4930	GO TO UPDATE
6801	01	00E72	3300110A		T1ST4921	MTW,0	TCKWPVL	TEST LOWER LIMIT
6802	01	00E73	68300E7D			REZ	T1ST4930	IF ZERO NEXT TEST
6803	01	00E74	6AF0110C			RAL,15	TST1ERMG	GO REPORT MESSAGE
6804	01	00E75	00001338 A			DATA	4920	*** REPORT 4920 ***
6805	01	00E76	6AF010C7			BAL,15	T1ST19RP	FOR REPORT WRITE PROTECTED TRACKS
6806	01	00E77	0000110A			DATA	TCKWPVL	
6807	01	00E78	EAF0021D A			BAL,15	*:SENSE	TEST SENSE SWITCHES
6808	01	00E79	2F000E79			WAIT	\$	
6809	01	00E7A	68000E3E			R	T1ST4909	LOOP ON ERROR
6810	01	00E7B	3300096A			MTW,0	T1ST19XF	
6811	01	00E7C	68300E3C			REZ	T1ST4908	
6812					*			
6813					*			
6814	01	00E7D	3300096A		T1ST4930	MTW,0	T1ST19XF	RESET EXIT FLAG
6815	01	00E7E	69300471			RNEZ	FUCTEXIT	IF SET RETURN TO FUNCTIONAL MONT
6816	01	00E7F	20600001 A			AI,6	1	ADD 1 TO TRACK (BAND) COUNT
6817	01	00E80	305018D1			AW,5	SECTCURR	ADD TO TRACK (BAND) ADDR
6818	01	00E81	315018D4			CW,5	SURFCEND	IF NOT
6819	01	00E82	69100E47			RL	T1ST4910	PASS END, GO TRY NEXT TCK (BAND)
6820	01	00E83	3510096A			STW,1	T1ST19XF	SET TEST EXIT FLAG
6821	01	00E84	22000000 A			LI,0	0	ZERO
6822	01	00E85	35001BRD			STW,0	:STATUSCC	CONDITIONS STATUS
6823	01	00E86	35000FDA			STW,0	:SNSWORD	
6824	01	00E87	68000E5C			R	T1ST4911	GO BACK FOR LAST PASS
6825						PAGE		
6826					*			
6827					*			
6828					*			
6829					*			
6830					*			
6831					*		IOCD TABLE	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6832						OUND	B	
6833	01	00E88	80007DF8		IACD0610	GEN,8,24	X'80',BA(BUF1L0)	
6834	01	00E89	01000000	A		GEN,8,24	1,0	
6835	01	00E8A	00007DF8		IACD0810	GEN,8,24	X'0',BA(BUF1L0)	
6836	01	00E8B	05000000	A		GEN,8,24	X'05',0	
6837					*			
6838					*			
6839	01	00E8C	03007DFA		IACD1010	GEN,8,24	X'03',BA(BUF1L0)+2	
6840	01	00E8D	08000002	A		GEN,8,24	X'08',2	
6841	01	00E8E	03007DFA		IACD1020	GEN,8,24	X'03',BA(BUF1L0)+2	
6842	01	00E8F	04000002	A		GEN,8,24	X'04',2	
6843	01	00E90	03007DFA		IACD1030	GEN,8,24	X'03',BA(BUF1L0)+2	
6844	01	00E91	40000002	A		GEN,8,24	X'40',2	
6845	01	00E92	03007DFA		IACD1040	GEN,8,24	X'03',BA(BUF1L0)+2	
6846	01	00E93	10000002	A		GEN,8,24	X'10',2	
6847					*			
6848	01	00E94	03007DFA		IACD1110	GEN,8,24	X'03',BA(BUF1L0)+2	
6849	01	00E95	04000001	A		GEN,8,24	X'04',1	
6850	01	00E96	03007DFA		IACD1120	GEN,8,24	X'03',BA(BUF1L0)+2	
6851	01	00E97	08000001	A		GEN,8,24	X'08',1	
6852	01	00E98	03007DFA		IACD1130	GEN,8,24	X'03',BA(BUF1L0)+2	
6853	01	00E99	10000001	A		GEN,8,24	X'10',1	
6854					*			
6855					*			
6856					*			
6857	01	00E9A	03007DFA		IACD1210	GEN,8,24	X'03',BA(BUF1L0)+2	
6858	01	00E9B	10000003	A		GEN,8,24	X'10',3	
6859	01	00E9C	03007DFA		IACD1220	GEN,8,24	X'03',BA(BUF1L0)+2	
6860	01	00E9D	08000003	A		GEN,8,24	X'08',3	
6861	01	00E9E	03007DFA		IACD1230	GEN,8,24	X'03',BA(BUF1L0)+2	
6862	01	00E9F	04000003	A		GEN,8,24	X'04',3	
6863	01	00EA0	03007DFA		IACD1240	GEN,8,24	X'03',BA(BUF1L0)+2	
6864	01	00EA1	40000003	A		GEN,8,24	X'40',3	
6865					*			
6866					*			
6867	01	00EA2	04007DF8		IACD1310	GEN,8,24	X'04',BA(BUF1L0)	
6868	01	00EA3	04000000	A		GEN,8,24	X'04',0	
6869	01	00EA4	04007DF8		IACD1320	GEN,8,24	X'04',BA(BUF1L0)	
6870	01	00EA5	08000000	A		GEN,8,24	X'08',0	
6871	01	00EA6	04007DF8		IACD1330	GEN,8,24	X'04',BA(BUF1L0)	
6872	01	00EA7	40000000	A		GEN,8,24	X'40',0	
6873	01	00EA8	04007DF8		IACD1340	GEN,8,24	X'04',BA(BUF1L0)	
6874	01	00EA9	10000000	A		GEN,8,24	X'10',0	
6875					*			
6876					*			
6877	01	00EAA	04007DF8		IACD1410	GEN,8,24	X'04',BA(BUF1L0)	
6878	01	00EAB	04000000	A		GEN,8,24	X'04',0	
6879	01	00EAC	04007DF8		IACD1420	GEN,8,24	X'04',BA(BUF1L0)	
6880	01	00EAD	08000000	A		GEN,8,24	X'08',0	
6881	01	00EAE	04007DF8		IACD1430	GEN,8,24	X'04',BA(BUF1L0)	
6882	01	00EAF	10000000	A		GEN,8,24	X'10',0	
6883	01	00E30	04007DF8		IACD1510	GEN,8,24	X'04',BA(BUF1L0)	
6884	01	00E31	10000000	A		GEN,8,24	X'10',0	
6885	01	00E32	04007DF8		IACD1520	GEN,8,24	X'04',BA(BUF1L0)	
6886	01	00E33	08000000	A		GEN,8,24	X'08',0	
6887	01	00E34	04007DF8		IACD1530	GEN,8,24	X'04',BA(BUF1L0)	
6888	01	00E35	04000000	A		GEN,8,24	X'04',0	
6889	01	00E36	04007DF8		IACD1540	GEN,8,24	X'04',BA(BUF1L0)	
6890	01	00E37	40000000	A		GEN,8,24	X'40',0	
6891	01	00E38	03003EE2		IACD1610	GEN,8,24	X'03',BA(SEEKRA0)+2	
6892	01	00E39	00000002	A		GEN,8,24	X'00',2	
6893	01	00E3A	03003EE2		IACD2010	GEN,8,24	X'03',BA(SEEKRA0)+2	
6894	01	00E3B	00000002	A		GEN,8,24	X'00',2	
6895	01	00E3C	03003EE2		IACD2110	GEN,8,24	X'03',BA(SEEKRA0)+2	
6896	01	00E3D	20000002	A		GEN,8,24	X'20',2	
6897	01	00E3E	00007DF8		IACD2111	GEN,8,24	X'00',BA(BUF1L0)	
6898	01	00E3F	20000002	A		GEN,8,24	X'20',2	
6899	01	00EC0	00007DF8		IACD2112	GEN,8,24	X'00',BA(BUF1L0)	
6900	01	00EC1	20000002	A		GEN,8,24	X'20',2	
6901	01	00EC2	08000760		IACD2113	GEN,8,24	X'08',DA(IACD2112)	
6902	01	00EC3	00000002	A		GEN,8,24	0,2	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6903	01	00EC4	00007DF8		I8CD2120	GEN,8,24	X'00',BA(BUF1L8)	
6904	01	00EC5	20000002	A		GEN,8,24	X'20',2	
6905	01	00EC6	0000760		I8CD2121	GEN,8,24	X'08',DA(I8CD2112)	
6906	01	00EC7	20000002	A		GEN,8,24	X'20',2	
6907					*			
6908	01	00EC8	01007DF8		I8CD3110	GEN,8,24	X'01',BA(BUF1L8)	
6909	01	00EC9	0C000000	A		GEN,8,24	X'0C',0	
6910	01	00ECA	01007DF8		I8CD3120	GEN,8,24	X'01',BA(BUF1L8)	
6911	01	00ECB	40000000	A		GEN,8,24	X'40',0	
6912	01	00ECC	01007DF8		I8CD3130	GEN,8,24	X'01',BA(BUF1L8)	
6913	01	00ECD	0C000000	A		GEN,8,24	X'0C',0	
6914	01	00ECE	01007DF8		I8CD3140	GEN,8,24	X'01',BA(BUF1L8)	
6915	01	00ECF	40000000	A		GEN,8,24	X'40',0	
6916					*			
6917					*			
6918	01	00ED0	01007DF8		I8CD3210	GEN,8,24	X'01',BA(BUF1L8)	
6919	01	00ED1	1C000000	A		GEN,8,24	X'1C',0	
6920					*			
6921					*			
6922	01	00ED2	01007DF8		I8CD3310	GEN,8,24	X'01',BA(BUF1L8)	
6923	01	00ED3	1C000000	A		GEN,8,24	X'1C',0	
6924	01	00ED4	01007DF8		I8CD3430	GEN,8,24	X'01',BA(BUF1L8)	
6925	01	00ED5	0C000000	A		GEN,8,24	X'0C',0	
6926					*			
6927	01	00ED6	02007DF8		I8CD3510	GEN,8,24	X'02',BA(BUF1L8)	
6928	01	00ED7	1C000000	A		GEN,8,24	X'1C',0	
6929					*			
6930					*			
6931	01	00ED8	02007DF8		I8CD3520	GEN,8,24	X'02',BA(BUF1L8)	
6932	01	00ED9	40000000	A		GEN,8,24	X'40',0	
6933					*			
6934	01	00EDA	02007DF8		I8CD3620	GEN,8,24	X'02',BA(BUF1L8)	
6935	01	00EDB	40000000	A		GEN,8,24	X'40',0	
6936					*			
6937					*			
6938					*			
6939	01	00EDC	02007DF8		I8CD3720	GEN,8,24	X'02',BA(BUF1L8)	
6940	01	00EDD	40000000	A		GEN,8,24	X'40',0	
6941					*			
6942	01	00EDE	02007DF8		I8CD3820	GEN,8,24	X'02',BA(BUF1L8)	
6943	01	00EDF	10000000	A		GEN,8,24	X'10',0	
6944					*			
6945					*			
6946	01	00EE0	02007DF8		I8CD3920	GEN,8,24	X'02',BA(BUF1L8)	
6947	01	00EE1	10000000	A		GEN,8,24	X'10',0	
6948					*			
6949	01	00EE2	02007DF8		I8CD4020	GEN,8,24	X'02',BA(BUF1L8)	
6950	01	00EE3	10000000	A		GEN,8,24	X'10',0	
6951					*			
6952	01	00EE4	12007DF8		I8CD4320	GEN,8,24	X'12',BA(BUF1L8)	
6953	01	00EE5	40000000	A		GEN,8,24	X'40',0	
6954					*			
6955	01	00EE6	05007DF8		I8CD4420	GEN,8,24	X'05',BA(BUF1L8)	
6956	01	00EE7	1C000000	A		GEN,8,24	X'1C',0	
6957					*			
6958					*			
6959	01	00EE8	05007DF8		I8CD4520	GEN,8,24	X'05',BA(BUF1L8)	
6960	01	00EE9	1C000000	A		GEN,8,24	X'1C',0	
6961					*			
6962					*			
6963	01	00EEA	01007DF8		I8CD4620	GEN,8,24	X'01',BA(BUF1L8)	
6964	01	00EEB	12000000	A		GEN,8,24	X'12',0	
6965					*			
6966	01	00EEC	02007DF8		I8CD4720	GEN,8,24	X'02',BA(BUF1L8)	
6967	01	00EED	12000000	A		GEN,8,24	X'12',0	
6968					*			
6969	01	00EEE	01007DF8		I8CD4911	GEN,8,24	X'01',BA(BUF1L8)	
6970	01	00EEF	1C000000	A		GEN,8,24	X'1C',0	
6971					*			
6972					*			
6973					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
6974					*			
6975	C1	00EF0	14202170 A	A	BSIP1010	ITSEG	T1BF4,0SBF0,0SRF1,ISBF0,ISBF1,ISBF3,ISBF4,RYT00	
	C1	00EF1	717374E1 A	A				
	C1	00EF2	00000000 A	A				
6976					*			
6977	C1	00EF3	14202170 A	A	BSIP1030	ITSEG	T1BF4,0SBF0,0SRF1,ISBF0,ISBF1,ISBT2,ISBF3,ISBF4,RYT00	
	C1	00EF4	717A7374 A	A				
	C1	00EF5	E1000000 A	A				
6978					*			
6979	C1	00EF6	14202170 A	A	BSIP1040	ITSEG	T1BF4,0SBF0,0SRF1,ISBF0,ISBF1,ISBF2,ISBT3,ISBF4,RYT00	
	C1	00EF7	71727B74 A	A				
	C1	00EF8	E1000000 A	A				
6980					*			
6981	C1	00EF9	142021E1 A	A	BSNP1010	ITSEG	T1BF4,0SBF0,0SRF1,RYT00	
	C1	00EFA	00000000 A	A				
6982					*			
6983					*			
6984					*			
6985					*			
6986	C1	00EFB	14282178 A	A	BSIP1110	ITSEG	T1BF4,0SBT0,0SBF1,ISBT0,ISBF1,ISBF2,ISBF3,ISBF4,RYT00	
	C1	00EFC	71727374 A	A				
	C1	00EFD	E1000000 A	A				
6987					*			
6988					BSIP1120	ITSEG	0SBT0,0SBF1,0SRT6,ISBT0,ISBF1,,	
6989	C1	00EFE	28212E78 A	A			ISBF2,ISBF3,ISBF4,RYT00	
	C1	00EFF	71727374 A	A				
	C1	00F00	E1000000 A	A				
6990	C1	00F01	14282178 A	A	BSIP1130	ITSEG	T1BF4,0SBT0,0SBF1,ISBT0,ISBF1,ISBF2,ISBT3,ISBF4,RYT00	
	C1	00F02	71727B74 A	A				
	C1	00F03	E1000000 A	A				
6991					*			
6992	C1	00F04	142821E1 A	A	BSNP1110	ITSEG	T1BF4,0SBT0,0SBF1,RYT00	
	C1	00F05	00000000 A	A				
6993					*			
6994	C1	00F06	28212EE1 A	A	BSNP1120	ITSEG	0SBT0,0SBF1,0SRT6,RYT00	
	C1	00F07	00000000 A	A				
6995					*			
6996	C1	00F08	142821E1 A	A	BSNP1130	ITSEG	T1BF4,0SBT0,0SRF1,RYT00	
	C1	00F09	00000000 A	A				
6997					*			
6998					*			
6999					BSIP1210	ITSEG	T1BF4,0SBT0,0SRF1,ISBT0,ISBF1,,	
7000	C1	00FOA	14282178 A	A			ISBF2,ISBT3,ISBF4,RYT01	
	C1	00FOB	71727B74 A	A				
	C1	00FOC	E2000000 A	A				
7001					*			
7002					BSIP1220	ITSEG	0SBT0,0SBF1,0SRT6,ISBT0,ISBF1,,	
7003	C1	00F0D	28212E78 A	A			ISBF2,ISBF3,ISBF4,RYT01	
	C1	00FOE	71727374 A	A				
	C1	00FOF	E2000000 A	A				
7004					*			
7005					BSIP1230	ITSEG	T1BF4,0SBT0,0SBF1,ISBT0,ISBF1,,	
7006	C1	00F10	14282178 A	A			ISBF2,ISBF3,ISBF4,RYT01	
	C1	00F11	71727374 A	A				
	C1	00F12	E2000000 A	A				
7007					*			
7008	C1	00F13	142821E2 A	A	BSNP1210	ITSEG	T1BF4,0SBT0,0SRF1,RYT01	
	C1	00F14	00000000 A	A				
7009					*			
7010					*			
7011	C1	00F15	28212EE2 A	A	BSNP1220	ITSEG	0SBT0,0SBF1,0SRT6,RYT01	
	C1	00F16	00000000 A	A				
7012					*			
7013					BSIP1310	ITSEG	T1BF4,0SBF0,0SRF1,ISBF0,ISBF1,,	
7014	C1	00F17	14202170 A	A			ISBF2,ISBF3,ISBF4,RYT00	
	C1	00F18	71727374 A	A				
	C1	00F19	E1000000 A	A				
7015					*			
7016					BSIP1330	ITSEG	T1BF4,0SBF0,0SRF1,ISBF0,ISBF1,,	
7017	C1	00F1A	14202170 A	A			ISBF2,ISBF3,ISBF4,RYT00	
	C1	00F1B	717A7374 A	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7018	01	00F1C	E1000000	A	*			
7019					BSIP1340	:TSEQ	T10F4,0SBF0,0SBF1,ISBF0,ISBF1,,	
7020	01	00F1D	14202170	A			ISRF2,ISBT3,ISRF4,BYT00	
	01	00F1E	71727B74	A				
	01	00F1F	E1000000	A	*			
7021					*			
7022	01	00F20	142021E1	A	BSNP1310	:TSEQ	T10F4,0SBF0,0SBF1,BYT00	
	01	00F21	00000000	A				
7023					*			
7024					*			
7025					BSIP1410	:TSEQ	T10F4,0SBT0,0SBF1,ISBT0,ISBF1,,	
7026	01	00F22	14282178	A			ISRF2,ISBF3,ISRF4,BYT00	
	01	00F23	71727374	A				
	01	00F24	E1000000	A	*			
7027					*			
7028					BSIP1420	:TSEQ	0SBT0,0SBF1,0SRT6,ISBT0,ISBF1,,	
7029	01	00F25	28212E78	A			ISBF2,ISBF3,ISRF4,BYT00	
	01	00F26	71727374	A				
	01	00F27	E1000000	A	*			
7030					*			
7031					BSIP1430	:TSEQ	T10F4,0SBT0,0SBF1,ISBT0,ISBF1,,	
7032	01	00F28	14282178	A			ISRF2,ISBT3,ISRF4,BYT00	
	01	00F29	71727B74	A				
	01	00F2A	E1000000	A	*			
7033					*			
7034	01	00F2B	142821E1	A	BSNP1410	:TSEQ	T10F4,0SBT0,0SRF1,BYT00	
	01	00F2C	00000000	A				
7035	01	00F2D	28212EE1	A	BSNP1420	:TSEQ	0SRT0,0SBF1,0SRT6,BYT00	
	01	00F2E	00000000	A	*			
7036					*			
7037					*			
7038					BSIP1510	:TSEQ	T10F4,0SBT0,0SBF1,ISBT0,ISBF1,,	
7039	01	00F2F	14282178	A			ISBF2,ISBT3,ISRF4,BYT01	
	01	00F30	71727B74	A				
	01	00F31	E2000000	A	*			
7040					*			
7041					BSIP1520	:TSEQ	0SRT0,0SBF1,0SRT6,ISBT0,ISBF1,,	
7042	01	00F32	28212E78	A			ISRF2,ISBF3,ISRT4,BYT01	
	01	00F33	7172737C	A				
	01	00F34	E2000000	A	*			
7043					*			
7044					BSIP1530	:TSEQ	T10F4,0SRT0,0SRF1,ISBT0,ISBF1,,	
7045	01	00F35	14282178	A			ISRF2,ISBF3,ISRF4,BYT01	
	01	00F36	71727374	A				
	01	00F37	E2000000	A	*			
7046					*			
7047	01	00F38	142821E2	A	BSNP1510	:TSEQ	T10F4,0SBT0,0SRF1,BYT01	
	01	00F39	00000000	A	*			
7048					*			
7049	01	00F3A	28212EE2	A	BSNP1520	:TSEQ	0SRT0,0SBF1,0SRT6,BYT01	
	01	00F3B	00000000	A	*			
7050					*			
7051					*			
7052	01	00F3C	191A1D1E	A	BSNP1620	:TSEQ	T10T1,T10T2,T10T5,T10T6	
	01	00F3D	00000000	A	*			
7053					*			
7054	01	00F3E	11121516	A	BSNP1640	:TSEQ	T10F1,T10F2,T10F5,T10F6	
	01	00F3F	00000000	A				
7055	01	00F40	1C21606A	A	BSIP2010	:TSEQ	T10T4,0SBF1,A10F0,A10T2,A10F3,ISBT4	
	01	00F41	637C0000	A	*			
7056					*			
7057	01	00F42	1C21404A	A	BSNP2010	:TSEQ	T10T4,0SBF1,TDVFC,TDVT2,TDVF3	
	01	00F43	43000000	A	*			
7058					*			
7059					*			
7060	01	00F44	1C217100	A	BSIP2110	:TSEQ	T10T4,0SBF1,ISRF1	
7061	01	00F45	1C210000	A	BSNP2110	:TSEQ	T10T4,0SBF1	
7062					BSIP3110	:TSEQ	T10F4,0SBF0,0SBF1,A10F0,A10F2,A10F3,ISBF0,ISBF1,,	
7063	01	00F46	14202160	A			ISRF4,BYT00	
	01	00F47	62637C71	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7064	C1	00F48	74E10000	A				
7065					*			
7066	C1	00F49	14202160	A	BSIP3120	ITSEQ	T10F4,08BF0,08BF1,A10F0,A10F2,A10F3,ISBF0,ISBF1,,	ISBT2,ISBF4,BYTOO
	C1	00F4A	62637071	A				
	C1	00F4B	7A74E100	A				
7067					*			
7068	C1	00F4C	14202140	A	BSNP3110	ITSEQ	T10F4,08BF0,08BF1,TDVFO,TDVF2,TDVF3,BYTOO	
	01	00F4D	4243E100	A				
7069					*			
7070					*			
7071					*			
7072					*			
7073					BSIP3210	ITSEQ	08BT0,08BF1,08BT6,A10F0,A10F2,A10F3,ISBT0,,	ISBF1,ISBT3,ISBT4,BYTOO
7074	01	00F4E	28212E60	A				
	01	00F4F	62637871	A				
	01	00F50	7B7CE100	A				
7075					*			
7076	01	00F51	28212E40	A	BSNP3210	ITSEQ	08BT0,08BF1,08BT6,TDVFO,TDVF2,TDVF3,BYTOO	
	01	00F52	4243E100	A				
7077					*			
7078					*			
7079					*			
7080					BSIP3310	ITSEQ	08BT0,08BF1,08BT6,A10F0,A10F2,A10F3,ISBT0,,	ISBF1,ISBT3,ISBT4,BYTOO
7081	01	00F53	28212E60	A				
	01	00F54	62637871	A				
	01	00F55	7B7CE100	A				
7082					*			
7083	01	00F56	28212E40	A	BSNP3310	ITSEQ	08BT0,08BF1,08BT6,TDVFO,TDVF2,TDVF3,BYTOO	
	01	00F57	4243E100	A				
7084					*			
7085	C1	00F58	00000000	A	BSIP3510	ITSEQ	0	
7086					*			
7087					*			
7088	01	00F59	20606263	A	BSIP3520	ITSEQ	08BF0,A10F0,A10F2,A10F3,ISBF0,ISBT2,BYTOO	
	01	00F5A	707AE100	A				
7089					*			
7090	01	00F5B	00000000	A	BSNP3510	ITSEQ	0	
7091					*			
7092					*			
7093	C1	00F5C	20404243	A	BSNP3520	ITSEQ	08BF0,TDVFO,TDVF2,TDVF3,BYTOO	
	01	00F5D	E1000000	A				
7094					*			
7095					*			
7096	C1	00F5E	28606263	A	BSIP3620	ITSEQ	08BT0,A10F0,A10F2,A10F3,ISBT0,ISBT2,BYTOO	
	C1	00F5F	7A7AE100	A				
7097					*			
7098	01	00F60	28404243	A	BSNP3620	ITSEQ	08BT0,TDVFO,TDVF2,TDVF3,BYTOO	
	01	00F61	E1000000	A				
7099					*			
7100					*			
7101					*			
7102	01	00F62	28606263	A	BSIP3720	ITSEQ	08BT0,A10F0,A10F2,A10F3,ISBT0,ISBT2,BYTOO	
	01	00F63	7A7AE100	A				
7103					*			
7104	C1	00F64	28404243	A	BSNP3720	ITSEQ	08BT0,TDVFO,TDVF2,TDVF3,BYTOO	
	C1	00F65	E1000000	A				
7105					*			
7106	01	00F66	E1000000	A	BSIP3820	ITSEQ	BYTOO	
7107					*			
7108	01	00F67	E1000000	A	BSNP3820	ITSEQ	BYTOO	
7109					*			
7110					*			
7111					*			
7112					BSIP3920	ITSEQ	T10F4,08BF0,08BF1,A10F0,A10F2,A10F3,ISBF0,ISBF1,,	ISBT3,ISBF4,BYTOO
7113	C1	00F68	14202160	A				
	C1	00F69	62637071	A				
	C1	00F6A	7B74E100	A				
7114					*			
7115	01	00F6B	14202140	A	BSNP3920	ITSEQ	T10F4,08BF0,08BF1,TDVFO,TDVF2,TDVF3,BYTOO	
	01	00F6C	4243E100	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7116					*			
7117					*			
7118	01	00F6D	E1000000	A	BSIP4020	ITSEG	BYT00	
7119					*			
7120	C1	00F6E	E1000000	A	BSNP4020	ITSEG	BYT00	
7121					*			
7122	01	00F6F	14202100	A	BSIP4040	ITSEG	T10F4,0SBF0,0SBF1	
7123	C1	00F70	28606263	A	BSIP4320	ITSEG	0SBT0,A10F0,A10F2,A10F3,BYT00	
	01	00F71	E1000000	A				
7124					*			
7125	01	00F72	28404243	A	BSNP4320	ITSEG	0SBT0,TDVF0,TDVF2,TDVF3,BYT00	
	01	00F73	E1000000	A				
7126					*			
7127					*			
7128					BSIP4420	ITSEG	T10F4,0SBF0,0SBF0,A10F0,A10F2,A10F3,ISBF0,ISBF1,,	
7129	01	00F74	14202060	A			ISBT3,ISBF4,BYT0C	
	01	00F75	62637071	A				
	01	00F76	7974E100	A				
7130					*			
7131	01	00F77	14202140	A	BSNP4420	ITSEG	T10F4,0SBF0,0SBF1,TDVF0,TDVF2,TDVF3,BYT00	
	01	00F78	4243E100	A				
7132					*			
7133					*			
7134					BSIP4520	ITSEG	T10T4,0SBF0,0SBT1,0SBT6,A10F0,A10F2,A10F3,ISBF0,,	
7135	01	00F79	1C20292E	A			ISBT1,ISBT4	
	01	00F7A	60626370	A				
	01	00F7B	797C0000	A				
7136					*			
7137	01	00F7C	1C20292E	A	BSNP4520	ITSEG	T10T4,0SBF0,0SBT1,0SBT6,TDVF0,TDVF2,TDVF3	
	01	00F7D	40424300	A				
7138					*			
7139					*			
7140					BSIP4620	ITSEG	T10F4,HI0T1,HI0T2,HI0T5,HI0T6,A10F0,A10F2,A10F3,,	
7141	01	00F7E	14393A3D	A			ISBF0,ISBF1,ISBF2,ISBF3,ISBT4	
	01	00F7F	3E606263	A				
	01	00F80	70717273	A				
	01	00F81	7C000000	A				
7142					*			
7143					*			
7144	01	00F82	14393A3D	A	BSNP4620	ITSEG	T10F4,HI0T1,HI0T2,HI0T5,HI0T6,TDVF0,TDVF2,TDVF3	
	01	00F83	3E404243	A				
	01	00F84	C0000000	A				
7145					*			
7146					*			
7147					*			
7148					BSIP4720	ITSEG	T10F4,HI0T1,HI0T2,HI0T5,HI0T6,A10F0,A10F2,A10F3,,	
7149	01	00F85	14393A3D	A			ISBF0,ISBF1,ISBF2,ISBF3,ISBT4	
	01	00F86	3E606263	A				
	01	00F87	70717273	A				
	01	00F88	7C000000	A				
7150					*			
7151	01	00F89	14393A3D	A	BSNP4720	ITSEG	T10F4,HI0T1,HI0T2,HI0T5,HI0T6,TDVF0,TDVF2,TDVF3	
	01	00F8A	3E404243	A				
	01	00F8B	C0000000	A				
7152					*			
7153	01	00F8C	1C292E68	A	BSIP4810	ITSEG	T10T4,0SBT1,0SBT6,A10T0,ISBT1,ISBF3,ISBT4	
	01	00F8D	79737C00	A				
7154					*			
7155	01	00F8E	1C292E48	A	BSNP4810	ITSEG	T10T4,0SBT1,0SBT6,TDVTO	
	01	00F8F	C0000000	A				
7156					*			
7157					*			
7158					*			
7159	01	00F90	C0000000	A	BSIP4910	ITSEG	0	
7160						PAGE		
7161					*			
7162					*			*** X X 9 5 ***
7163					*			*** S E E K M O D U L E ***
7164					*			
7165					*			THIS SUB-ROUTINE ISSUES A STANDARD 'SEEK' REQUEST
7166					*			TO THE RAD BEING TESTED.

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7167					*			INPUT PARAMETERS:
7168					*			
7169					*			SEEKRAD = THE TRACK (BAND) = SECTOR SEEK ADDR
7170					*			WATCHERR = NO OF THE TEST BEING RUN
7171					*			
7172					*			REGISTERS DISTURBED:
7173					*			
7174					*			(NONE)
7175					*			
7176					*			OUTPUT PARAMETERS:
7177					*			
7178					*			THE RAD SEEKED TO THE SPECIFIED ADDRESS
7179					*			
7180					*			CALLING FORMAT:
7181					*			
7182					*		BAL,15	!SEEKMD
7183					*		*	RETURNS HERE
7184					*			
7185					*			
7186					*			
7187	01	00F91	35F00FB6		!SEEKMD	STW,15	!SEEKEXT	SAVE RETURN ADDRESS
7188	01	00F92	32F013CF		LW,15		WATCHERR	BUILD ERROR
7189	01	00F93	20F0005F	A	AI,15		95	** XX95 **
7190	01	00F94	35F00F97		STW,15		!SKERRNO	SAVE ERROR NUMBER
7191	01	00F95	6AF00FEA		!SEEKMD2	BAL,15	!FUCTEST	GO TO FUNCTION TEST ROUTINE
7192	01	00F96	00000FB2		DATA		!BCDSKMD	!BCD
7193	01	00F97	00000000	A	!SKERRNO	DATA	0	*** ERROR NO. (TEST NO. + 95)
7194	01	00F98	00000FBA		DATA		BSIPSEEK	
7195	01	00F99	00000FB9		DATA		RSNPSEEK	
7196	01	00FA0	E8000FB6		*		!SEEKEXT	RETURN TO CALL ROUTINE
7197	01	00FA1	CF0018D0		HIO,0		!DEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
7198	01	00FA2	EAF0021D	A	BAL,15		!SENSE	TEST SENSE SWITCHES
7199	01	00FA3	2E000F9D		WAIT		*	
7200	01	00FA4	63000F95		B		!SEEKMD2	GO ERROR LOOP
7201	01	00FA5	E3000FB6		B-		!SEEKEXT	RETURN TO CALLING ROUTINE
7202					PAGE			
7203					*			*** X X 9 6 ***
7204					*			*** W R I T E M O D U L E ***
7205					*			
7206					*			
7207					*			THIS SUB-ROUTINE ISSUES A STANDARD 'WRITE' REQUEST
7208					*			TO THE RAD BEING TESTED.
7209					*			
7210					*			INPUT PARAMETERS:
7211					*			DATA AREA STARTING AT 'BU1FL0'
7212					*			WATCHERR = NO. OF THE TEST BEING RUN
7213					*			!BCDWR+1 (THE BYTE COUNT MUST BE SET UP BY THE
7214					*			CALLING ROUTINE)
7215					*			
7216					*			REGISTERS DISTURBED:
7217					*			
7218					*			(NONE)
7219					*			
7220					*			OUTPUT PARAMETERS:
7221					*			
7222					*			A WRITTEN DATA PATTERN
7223					*			
7224					*			CALLING FORMAT:
7225					*			
7226					*		BAL,15	!WRTMD
7227					*		*	RETURNS HERE
7228	01	00FA0	35F00FB7		!WRTMD	STW,15	!WRTXT	SAVE RETURN ADDRESS
7229	01	00FA1	324C18D2		LW,4		RYTCURR	
7230	01	00FA2	55420FB5		STW,4		!BCDWR+1,1	
7231	01	00FA3	32F013CF		!WRTMD1	LW,15	WATCHERR	BUILD ERROR
7232	01	00FA4	20F00060	A	AI,15		96	** XX96 **
7233	01	00FA5	35F00FA8		STW,15		!WRTERN0	SAVE ERROR NO.
7234	01	00FA6	6AF00FEA		!WRTMD2	BAL,15	!FUCTEST	GO TO FUNCTION TEST ROUTINE
7235	01	00FA7	00000FB4		DATA		!BCDWR	
7236	01	00FA8	00000000	A	!WRTERN0	DATA	0	*** ERROR NO. (TEST NO. + 96)
7237	01	00FA9	00000FBC		DATA		PSIPWRT	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7238	C1	COFAA	C0000FBE			DATA	BSNPWRT	
7239	C1	COFAB	E8000FB7			B	*IWRTEXT	RETURN TO CALLING ROUTINE
7240	C1	COFAC	CF001800			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
7241	C1	COFAD	EAF00210	A		RAL,15	*ISENSE	TEST SENSE SWITCHES
7242	C1	COFAE	2E000FAE			WAIT	*	
7243	C1	COFAF	68000FA6			B	IWRTHD2	GO ERROR LOOP
7244	C1	COFBO	E8000FB7			B	*IWRTEXT	RETURN TO CALLING ROUTINE
7245						BOUND	B	
7246	01	00FB2	03003EE2		I0CDSKMD	GEN,8,24	X'03',BA(SEEKRD)+2	
7247	01	00FB3	10000002	A		GEN,8,24	X'10',2	
7248	01	00FB4	01007DF8		I0CDWRT	GEN,8,24	X'01',BA(BUF1L0)	
7249	01	00FB5	12000002	A		GEN,8,24	X'12',2	
7250	01	00FB6	00000000	A	ISEEKEXT	DATA	0	RETURN EXIT ADDR FOR 'ISEEKMD'
7251	01	00FB7	00000000	A	IWRTEXT	DATA	0	RETURN EXIT ADDR FOR 'IWRTHD'
7252	01	00FB8	00000000	A	SEEKRD	DATA	0	
7253	01	00FB9	00000000	A		DATA	0	
7254	01	00FBA	E1000000	A	BSIPSEEK	ITSEQ	RYT00	
7255	01	00FBB	E1000000	A	BSNPSEEK	ITSEQ	RYT00	
7256	01	00FBC	606263E1	A	BSIPWRT	ITSEQ	A10F0,A10F2,A10F3,BYT00	
	01	00FBD	00000000	A				
7257	01	00FBE	404243E1	A	BSNPWRT	ITSEQ	TDVFO,TDVF2,TDVF3,BYT00	
	01	00FBF	00000000	A				
7258						PAGE		
7259					*		*** X X 9 7 ***	
7260					*			
7261					*		*** S E N S E M O D U L E ***	
7262					*			
7263					*		THIS SUB-ROUTINE ISSUES A STANDARD 'SENSE' REQUEST	
7264					*		TO THE RAD BEING TESTED	
7265					*			
7266					*		INPUT PARAMETERS:	
7267					*			
7268					*		WATCHERR - NO. OF THE TEST BEING RUN.	
7269					*			
7270					*		REGISTER DISTURBED.	
7271					*			
7272					*		(NONE)	
7273					*			
7274					*		OUTPUT PARAMETERS:	
7275					*			
7276					*		:SNSWORD - LEFT JUSTIFIED SENSE INFORMATION	
7277					*		FROM RAD.	
7278					*			
7279					*		CALLING FORMAT:	
7280					*			
7281					*		RAL,15 :SENSEM0D	
7282					*		* RETURNS HERE IF GOOD	
7283					*			
7284					*			
7285					*		ISENSEMD J	
7286	01	00FC0	15E00FD6			STD,14	:SNSSAVE	SAVE REG 14 & 15
7287	01	00FC1	32F013CF			LW,15	WATCHERR	BUILD ERROR
7288	01	00FC2	20F00061	A		AI,15	97	*** XX97 ***
7289	01	00FC3	35F00FCD			STW,15	:SNSERN0	SAVE ERROR NUMBER
7290	01	00FC4	22E00004	A		LI,14	4	CALCULATE BYTE COUNT FOR SENSE
7291	01	00FC5	22F07212	A		LI,15	X'7212'	TEST FOR
7292	01	00FC6	31FC18CF			CW,15	MODELC	HIGH SPEED RAD IF HIGH SPEED
7293	01	00FC7	68300FC9			BE	#+2	BC #4 OTHERWISE,
7294	01	00FC8	22E00003	A		LI,14	3	BC #3
7295	01	00FC9	55E20FD9			STH,14	I0CDSAMD+1,1	SAVE IN SENSE I0CD
7296	01	00FCA	32E00FD6			LW,14	:SNSSAVE	RESTORE REGISTER 14
7297	01	00FCB	6AF00FEA		:SNSMD2	RAL,15	:IFUCTEST	GO TO FUNCTIONAL TEST ROUTINE
7298	01	00FCC	C0000FDB			DATA	I0CDSAMD	I0CD WORD ADDRESS
7299	01	00FCD	C0000000	A	:SNSERN0	DATA	0	*** ERROR NO. (TEST NO. + 97) ***
7300	01	00FCE	C0000FBA			DATA	BSIPSEEK	BYTE STRING IF INTERRUPT
7301	01	00FCF	C0000FRB			DATA	BSNPSEEK	BYTE STRING IF NO INTERRUPT
7302	01	00FD0	E800CFD7			R	*:SNSSAVE+1	RETURN TO CALLING ROUTINE
7303	01	00FD1	CF0C1800			HI0,0	*IDEVADDR	RESET DEV, WHERE ERROR WAS DETECTED
7304	01	00FD2	EAF00210	A		RAL,15	*ISENSE	TEST SENSE SWITCHES
7305	01	00FD3	2E000FD3			WAIT	*	
7306	01	00FD4	68000FCB			R	:SNSMD2	GO LOOP ON ERROR

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7307	C1	00FD5	E800FD7			R	*ISNSAVE+1	RETURN TO CALLING ROUTINE
7308				*				
7309				*				
7310				*				
7311						ROUND	R	
7312	C1	00FD6	00000000	A	:SNSSAVE	DATA	0	
7313	C1	00FD7	00000000	A		DATA	0	
7314	C1	00FD8	04003F68	A	ICCDSNMD	GEN,8,24	X'04',BA(ISNSWORD)	
7315	C1	00FD9	12000000	A		GEN,8,24	X'12',0	
7316	C1	00FDA	00000000	A	:SNSWORD	DATA	0	
7317	C1	00FDB	00000000	A		DATA	0	
7318						PAGE		
7319				*				
7320				*				F U N C T I O N A L T E S T R O U T I N E
7321				*				
7322				*				
7323				*				
7324				*				THIS ROUTINE IS USED TO ISSUE AND TEST I/O
7325				*				RESPONSES ACCORDING TO A PREDEFINED SET OF INPUT
7326				*				PARAMETERS. THIS ROUTINE WILL BE USED TO
7327				*				HANDLE TESTING OF THE CONTROL LOGIC OF A DEVICE.
7328				*				IT DOES THIS BY ISSUING A SIO (IF ONE IS POSSIBLE),
7329				*				DELAYING UNTIL THE CONTROLLER AND DEVICE SHOULD
7330				*				BE READY, AN ERROR IS REPORTED IF NOT READY. IT
7331				*				THEN CHECKS TO SEE IF AN INTERRUPT SHOULD BE EXPECTED,
7332				*				IT ACKNOWLEDGE ANY PENDING INTERRUPTS AND VERIFIES
7333				*				THAT IT CAME FROM THE CORRECT DEVICE. IT TESTS
7334				*				FOR EXPECTED CONDITIONS ACCORDING TO WHETHER
7335				*				OR NOT AN INTERRUPT WAS PENDING IT REPORTS
7336				*				ALL ERRORS DETECTED.
7337				*				
7338				*				INPUT PARAMETERS:
7339				*				
7340				*				(SEE CALLING FORMAT)
7341				*				
7342				*				REGISTERS DISTURBED:
7343				*				
7344				*				(NONE)
7345				*				
7346				*				OUTPUT PARAMETERS
7347				*				
7348				*				(NONE)
7349				*				
7350				*				CALLING FORMAT:
7351				*				
7352				*				
7353				*	BAL,15	:FUNCTEST	(FUNCTEST + 1 IF NO INTER. IS EXPECTED).	
7354				*	BAL,15	:FCTXINT	IF INTER. IS EXPECTED BUT NO SIO TO BE ISSUED.	
7355				*	BAL,15	:FCYNXINT	IF NO INTER. EXPECTED AND NO SIO IS TO BE ISSUED.	
7356				*				
7357				*				
7358				*				
7359				*	DATA		ERROR NO. OF THE TEST	
7360				*	DATA	WORD ADDR OF ICOD		
7361				*	DATA	WORD ADDR OF INFORMATION TO BE EXPECTED IF INTERRUPT OCCURS		
7362				*	DATA	WORD ADDR OF INFORMATION TO BE EXPECTED IF NO INTER. OCCURS		
7363				*			IF AN INTERRUPT OCCURS	
7364				*	ADDR		WORD ADDRESS OF INFORMATION TO BE EXPECTED	
7365				*			IF AN INTERRUPT DOESN'T OCCUR	
7366				*	P	GOINDEXIT	CONTROL RTNS HERE IF NO ERRORS ARE DETECTED	
7367				*	BAL,15	*ISENSE	CONTROL RTNS HERE IF ANY ERRORS ARE DETECTED	
7368				*				
7369				*				
7370				*				
7371				*				F U N C T I O N A L T E S T O F R E T U R N E D S T A T U S N O S I O I S S U E D
7372				*				B U T I N T E R R U P T E X P E C T E D .
7373				*				
7374	C1	00FDC	02200C00	A	:FCTXINT	LCI	0	LOAD AND SAVE
7375	C1	00FDD	2500109B	A		STM,C	:FUNSAVE	ALL REGISTERS
7376	C1	00FDE	22600C00	A		LI,6	0	FETCH ZERO
7377	C1	00FDF	356010AC	A		STW,6	:FUNFLAG	RESET FUNCTIONAL FLAG

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7378	C1	00FE0	22700000	A		LI,7	0	
7379	C1	00FE1	351010A0			STW,1	INTEXPB	SET INTERRUPT EXPECTED FLAG
7380	C1	00FE2	68001002			B	IFUNCT09	GO TEST I/O
7381					*			
7382					*			
7383					*			
7384								FUNCTIONAL TEST OF RETURNED STATUS NO SIO ISSUED AND NO INTERRUPT EXPECTED.
7385	C1	00FE3	02200000	A	IFCTNXINT	LCI	0	
7386	C1	00FE4	2400109B			STW,0	IFUNSAVE	
7387	C1	00FE5	22600000	A		LI,6	0	
7388	C1	00FE6	356010AC			STW,6	IFUNFLAG	
7389	01	00FE7	356010A0			STW,6	INTEXPB	
7390	01	00FE8	22700000	A		LI,7	0	
7391	C1	00FE9	68001002			B	IFUNCT09	
7392					*			
7393					*			
7394					*			
7395					*			
7396	C1	00FEA	6800FEF		IFUCTEST	R	0+6	ENTRY IF INTER. IS EXPECTED
7397	01	00FEB	460010AB			XW,0	INTEXPB	ENTRY IF NO INTERRUPT IS EXPECTED
7398	C1	00FEC	22000000	A		LI,0	0	ZERO 0
7399	01	00FED	460010AB			XW,0	INTEXPB	RESTORE 0 - ZERO INTERRUPT EXPECTED
7400	01	00FEE	6800FF0			R	0+2	
7401	C1	00FEF	351010AB			STW,1	INTEXPB	SET INTERRUPT EXPECTED
7402	C1	00FF0	02200000	A		LCI	0	SAVE ALL
7403	01	00FF1	2800109B			STW,0	IFUNSAVE	REGISTERS
7404	01	00FF2	22000000	A		LI,0	0	ZERO FUNCTIONAL TEST ERROR FLAG
7405	C1	00FF3	350010AC			STW,0	IFUNFLAG	
7406	01	00FF4	B202000F	A		LW,0	+15,1	FETCH WORD
7407	C1	00FF5	35001DDA			STW,0	!ERRORT#	STORE WORD
7408					*			
7409					*			
7410	01	00FF6	B200000F	A		LW,0	+15	FETCH WORD ADDRESS OF THE 18CD
7411	C1	00FF7	326004AC			LW,6	SECTDLAY	
7412	01	00FF8	F2400000	A		LB,4	+0	PICK UP ORDER BYTE
7413	C1	00FF9	68300FFF			BEZ	0+6	
7414	C1	00FFA	21400004	A		CI,4	4	
7415	C1	00FFB	68300FFF			RE	0+4	
7416	C1	00FFC	21400003	A		CI,4	3	
7417	C1	00FFD	68300FFF			RE	0+2	
7418	C1	00FFE	2260C350	A		LI,6	50000	
7419	C1	00FFF	2500007F	A		SLB,0	-1	CONVERT WORD ADDR TO DOUBLEWORD ADDR
7420					*			
7421	C1	01000	6AF01D21			RAL,15	!IBEXEC	GO ISSUE I/O
7422					*			
7423					*			
7424	C1	01001	327004AD			LW,7	CDELAY	
7425	01	01002	37E010C6		IFUNCT09	LW,14	XPSDFUCT	
7426	C1	01003	35E0005C	A		STW,14	X'15C'	
7427	C1	01004	35101135			STW,1	LOCATION	STORE WORD
7428	C1	01005	60000032	A		WD,0	X'32'	
7429	01	01006	22E00020	A		LI,14	X'20'	
7430	C1	01007	60EC1200	A		WD,14	X'1200'	
7431	01	01008	60000022	A		WD,0	X'22'	
7432					*			
7433	01	01009	2560007E	A		SLB,6	-2	DIVIDE DELAY IN MIRC0SECONDS/4
7434	01	0100A	33000006	A		MTW,0	6	IF NOW ZERO
7435	C1	0100B	6820100F			BLEZ	0+*	EXIT
7436	C1	0100C	20600000	A		AI,6	0	OTHERWISE
7437	C1	0100D	20600000	A		AI,6	0	LOOP IN THIS 4 MIRC0SECON0 L00P
7438	C1	0100E	6460100C			BDR,6	0-2	UNTIL COUNT IS USED UP
7439	C1	0100F	02200030	A		LCI	3	
7440	C1	01010	AAB210AA			LI,8	*IFUNSAVE+15,1	
7441	C1	01011	358010DA			STW,8	!ERRORT#	SAVE ERROR #
7442	C1	01012	27900002	A		SLB,9	2	
7443	C1	01013	25AC0002	A		SLB,10	2	
7444	01	01014	22E00020	A		LI,14	X'20'	
7445	C1	01015	60EC1100	A		WD,14	X'1100'	
7446	C1	01016	6AFC1AA3			RAL,15	!TJ0	GO TEST FOR CONTROLLER BUSY
7447	C1	01017	06000001	A		DATA	X'06000001'	
7448	C1	01018	00000000	A		DATA	X'00000000'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7449	C1	01019	68001020			R	IFUNCT10	IF NOT BUSY GO TO NEXT TEST
7450				*				
7451				*				
7452				*				
7453	C1	0101A	351010AC			STW,1	IFUNFLAG	SET FUNCTIONAL TEST ERROR FLAG
7454	01	0101B	3580101D			STW,8	*+2	SAVE ERROR NO. (REG.8)
7455	C1	0101C	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
7456	C1	0101D	00000000 A			DATA	0	
7457	01	0101E	EAF0021C A			BAL,15	*I:PRINT	PRINT:CONTROLLER BUSY
7458	01	0101F	000010B3			DATA	C0TRBUSY	
7459				*				
7460				*				
7461				*				
7462				*	IFUNCT10			
7463	01	01020	2570007E A			SLB,7	-2	DIVIDE DELAY BY 4
7464	01	01021	33000006 A			MTW,0	6	IF NOW ZERO
7465	01	01022	68201026			BLZ	*+4	EXIT
7466	C1	01023	20700000 A			AI,7	0	OTHERWISE
7467	01	01024	20700000 A			AI,7	0	LOOP IN THIS 4 MICROSECOND LOOP
7468	01	01025	64701023			RDR,7	*-2	UNTIL COUNT IS USED UP
7469				*				
7470				*				
7471				*			TEST FOR DEVICE READY	
7472	01	01026	6AF01AA3			BAL,15	IT10	
7473	01	01027	60000001 A			DATA	X'60000001'	
7474	01	01028	00000000 A			DATA	X'00000000'	
7475	01	01029	68001032			R	IFUNCT00	IF NOT BUSY GO TO NEXT TEST
7476				*				
7477				*				
7478				*				
7479	01	0102A	330010AC			MTW,0	IFUNFLAG	TEST FUNCTIONAL ERROR FLAG
7480	C1	0102B	69301030			RNEZ	IFUNCT11	IF SET SKIP NEXT MSG
7481				*				
7482				*			REPORT: DEVICE BUSY	
7483				*				
7484	01	0102C	351010AC			STW,1	IFUNFLAG	SET FUNCTIONAL TEST ERROR FLAG
7485	01	0102D	3580102F			STW,8	*+2	SAVE ERROR NO. (REG 8)
7486	01	0102E	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
7487	01	0102F	00000000 A			DATA	0	
7488	01	01030	EAF0021C A		IFUNCT11	BAL,15	*I:PRINT	PRINT: DEVICE BUSY
7489	C1	01031	000010B0			DATA	DEVBUSY	
7490				*				
7491				*			SAVE T10 STATUS	
7492				*				
7493	01	01032	3280000D A		IFUNCT00	LW,11	13	
7494	01	01033	48D010AD			AND,13	IFT10BK	
7495	C1	01034	6AF01F00			BAL,15	ISAVET10	
7496				*				
7497				*			TEST TO DETERMINE IF AN INTERRUPT SHOULD BE EXPECTED	
7498				*				
7499	01	01035	330010AB			MTW,0	INTEXP0	IF INTERRUPT NOT EXPECTED
7500	C1	01036	6830105D			REZ	IFUNCT01	BRANCH
7501				*				
7502				*			TEST FOR A PENDING INTERRUPT	
7503				*			ERROR: IF ONE IS NOT PENDING	
7504				*				
7505	01	01037	3300000B A			MTW,0	11	
7506	C1	01038	69101046			BLZ	IFUNCT02	BI INTERRUPT WAS PENDING
7507				*				
7508				*				
7509				*				
7510	C1	01039	330010AC			MTW,0	IFUNFLAG	TEST FUNCTIONAL ERROR FLAG
7511	C1	0103A	6930103F			RNEZ	IFUNCT12	IF SET SKIP NEXT MSG
7512				*				
7513				*			REPORT: NO EXPECTED INTERRUPT	
7514				*				
7515	01	0103B	351010AC			STW,1	IFUNFLAG	SET FUNCTIONAL TEST ERROR FLAG
7516	01	0103C	3580103E			STW,8	*+2	SAVE ERROR NO. (REG 8)
7517	01	0103D	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
7518	C1	0103E	00000000 A			DATA	0	
7519	C1	0103F	EAF0021C A		IFUNCT12	BAL,15	*I:PRINT	PRINT: NO EXPECTED INTERRUPT

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7520	01	01040	00001087			DATA	NOXINTX	
7521				*				
7522				*			TEST EXPECTED STATUS AND REPORT ERRORS	
7523				*				
7524	01	01041	35A01043			STW,10	*+2	SAVE ADDRESS OF EXPECTED INFORMATION
7525	01	01042	6AF01D7E			BAL,18	!ERROR	GO TO ERROR TEST ROUTINE
7526	01	01043	00000000 A			DATA	0	
7527	01	01044	68001045			B	*+1	
7528	01	01045	68001082			B	!FUNEXIT	GO TO EXIT
7529				*				
7530				*				
7531				*			TEST DEV-ADDR ASSOCIATED WITH PENDING INTERRUPT	
7532				*				
7533				*				
7534	01	01046	6AF01A82		IFUNCT02	BAL,15	!AIO	TEST FOR INTERRUPT FROM CORRECT DEV
7535	01	01047	00000003 A			DATA	3	
7536	01	01048	00000000 A			DATA	0	
7537	01	01049	68001055			B	!FUNCT05	INTERRUPT WAS GOOD
7538				*				
7539				*				
7540				*				
7541	01	0104A	330010AC			MTW,0	!FUNFLAG	TEST FUNCTIONAL ERROR FLAG
7542	01	0104B	69301050			BNEZ	!FUNCT13	IF SET SKIP NEXT MSG
7543				*				
7544				*				
7545				*				
7546	01	0104C	351010AC			STW,1	!FUNFLAG	SET FUNCTIONAL TEST ERROR FLAG
7547	01	0104D	3580104F			STW,8	*+2	SAVE ERROR NO. (REG 8)
7548	01	0104E	6AF0110C			BAL,18	TSTERRM0	GO REPORT ERROR
7549	01	0104F	00000000 A			DATA	0	
7550				*				
7551				*			REPORT: AIO-DEV ADDR ERROR	
7552				*				
7553	01	01050	6AF01A85		IFUNCT13	BAL,15	!AIO+3	GO REPORT ADDRESS ERROR
7554	01	01051	00000002 A			DATA	2	
7555	01	01052	00000000 A			DATA	0	
7556	01	01053	68001055			B	!FUNCT05	
7557	01	01054	68001082			B	!FUNEXIT	GO TO EXIT
7558				*				
7559				*			TEST INFORMATION ASSOCIATED WITH TEST	
7560				*				
7561	01	01055	48D010AE		IFUNCT05	AND,13	!FAIOMSK	
7562	01	01056	6AF01F1D			BAL,15	!SAVEAIO	
7563	01	01057	35901059			STW,9	*+2	SAVE ADDRESS OF EXPECTED INFORMATION
7564	01	01058	6AF01D7E			BAL,15	!ERROR	GO TO ERROR TEST ROUTINE
7565	01	01059	00000000 A			DATA	0	
7566	01	0105A	68001082			B	!FUNEXIT	GO TO EXIT
7567	01	0105B	351010AC			STW,1	!FUNFLAG	SET FUNCTIONAL ERROR FLAG
7568	01	0105C	68001082			B	!FUNEXIT	GO TO EXIT
7569				*				
7570				*				
7571				*			NO INTERRUPT EXPECTED	
7572				*				
7573				*				
7574	01	0105D	3300000B A		IFUNCT01	MTW,0	11	TEST FOR NO INTER. PENDING
7575	01	0105E	6810107D			BNEZ	!FUNCT03	BI IF INTERRUPT WAS NOT PENDING
7576				*				
7577				*			TEST THE DEV=ADDR ASSOCIATED WITH PENDING INTERRUPT	
7578				*				
7579	01	0105F	6AF01A82			BAL,15	!AIO	TEST FOR INTERRUPT FROM CORRECT DEV
7580	01	01060	00000003 A			DATA	3	
7581	01	01061	00000000 A			DATA	0	
7582	01	01062	6800106E			B	!FUNCT04	INTERRUPT WAS GOOD
7583				*				
7584				*				
7585				*				
7586	01	01063	330010AC			MTW,0	!FUNFLAG	TEST FUNCTIONAL ERROR FLAG
7587	01	01064	69301069			BNEZ	!FUNCT14	IF SET SKIP NEXT MSG
7588				*				
7589				*				
7590				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7591	C1	01065	35101CAC			STW,1	IFUNFLAG	SET FUNCTIONAL TEST ERROR FLAG
7592	01	01066	35801068			STW,8	*+2	SAVE ERROR NO. (REG 8)
7593	01	01067	6AF0110C			BAL,15	TST1ERM0	GO REPORT ERROR
7594	01	01068	00000000	A		DATA	0	
7595					*			
7596					*			REPORT AIO=DEV ADDR ERROR
7597					*			
7598	C1	01069	6AF01AB5		IFUNCT14	BAL,15	IA'0+3	REPORT ADDR ERROR
7599	01	0106A	00000002	A		DATA	2	
7600	01	0106B	00000000	A		DATA	0	
7601	C1	0106C	6800106E			B	IFUNCT04	
7602	01	0106D	68001082			B	IFUNEXIT	GO TO EXIT
7603					*			
7604					*			SAVE AIO STATUS
7605					*			
7606	C1	0106E	4BD010AE		IFUNCT04	AND,13	IFAIOBK	REMOVE UNWANTED STATUS BITS
7607	01	0106F	6AF01F1D			BAL,15	ISAVEAIO	SAVE AIO STATUS
7608					*			
7609					*			
7610					*			
7611	01	01070	330010AC			MTW,0	IFUNFLAG	TEST FUNCTIONAL ERROR FLAG
7612	01	01071	69301076			BNEZ	IFUNCT15	IF SET SKIP NEXT MSG
7613					*			
7614					*			
7615					*			
7616	C1	01072	351010AC			STW,1	IFUNFLAG	SET FUNCTIONAL TEST ERROR FLAG
7617	C1	01073	35801075			STW,8	*+2	SAVE ERROR NO. (REG 8)
7618	C1	01074	6AFC110C			BAL,15	TST1ERM0	GO REPORT ERROR
7619	C1	01075	00000000	A		DATA	0	
7620					*			
7621					*			REPORT: UNEXPECTED INTERRUPT
7622					*			
7623	C1	01076	EAF0021C	A	IFUNCT15	BAL,15	*IPRINT	
7624	C1	01077	0000108D			DATA	UNXINTR	
7625					*			
7626					*			TEST INFORMATION ASSOCIATED WITH TEST
7627					*			
7628	01	01078	3590107A			STW,9	*+2	SAVE ADDR OF EXPECTED INFORMATION
7629	C1	01079	6AF01D7E			BAL,15	!ERR0RT	GO TO ERROR TEST ROUTINE
7630	01	0107A	00000000	A		DATA	0	
7631	C1	0107B	6800107C			R	*+1	
7632	C1	0107C	68001082			R	IFUNEXIT	GO TO EXIT
7633					*			
7634					*			TEST INFORMATION ASSOCIATED WITH TEST
7635					*			
7636	01	0107D	35AC107F		IFUNCT03	STW,10	*+2	SAVE ADDR OF EXPECTED INFORMATION
7637	01	0107E	6AFC1D7E			BAL,15	!ERR0RT	GO TO ERROR TEST ROUTINE
7638	01	0107F	00000000	A		DATA	0	
7639	01	01080	68001082			R	IFUNEXIT	GO TO EXIT
7640	C1	01081	351010AC			STW,1	IFUNFLAG	SET FUNCTIONAL ERROR FLAG
7641	C1	01082	6E000000	A	IFUNEXIT	AIO,C	0	
7642	01	01083	22E00020	A		LI,14	X'20'	
7643	01	01084	6DE01700	A		WD,14	X'1700'	
7644	01	01085	22E00000	A		LI,14	C	FETCH WORD
7645	01	01086	35E01135			STW,14	LOCATION	STORE WORD
7646	01	01087	330010AC			MTW,C	IFUNFLAG	IF ANY ERRORS PRINT BC
7647	01	01088	6830108F			REZ	IFUNEX	
7648	01	01089	B2F01CAA			LW,15	*:FUNSAVE+15	LOAD ADDR OF IBCD
7649	C1	0108A	D2C6000F	A		LH,12	*15,3	
7650	01	0108B	EAF00218	A		BAL,15	*:HEXC	CONVERT TO HEXC
7651	01	0108C	35F010C5			STW,15	BYTEN01+3	
7652	C1	0108D	EAF0021C	A		BAL,15	*:PRINT	PRINT BC MSG
7653	01	0108E	000010C2			DATA	BYTEN01	
7654					IFUNEX ;			
7655	C1	0108F	02200000	A		LCI	C	RESTORE
7656	01	01090	2AC0109B			LM,0	IFUNSAVE	REGISTERS
7657	01	01091	20F00004	A		AI,15	4	
7658	C1	01092	30FC10AC			AW,15	IFUNFLAG	ADD IN FUNCTIONAL ERROR FLAG
7659	C1	01093	E800000F	A		B	*15	RETURN TO CALLING ROUTINE
7660					*			
7661					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7662					*			
7663						BOUND	8	
7664	C1	01094	00000000	A	FUCTINT	DATA	0,0	
	C1	01095	00000000	A				
7665	C1	01096	00001098	A		DATA	FUCTINT1,7**24	
	C1	01097	07000000	A				
7666					*			
7667	C1	01098	326004AC	A	FUCTINT1	LW,6	SECTDLAY	
7668	C1	01099	22700001	A		LI,7	1	
7669	C1	0109A	0E201094	A		LPSD,2	FUCTINT	
7670					*			
7671					*			
7672	C1	0109H		A	IFUNSAVE	RES	16	
7673	C1	010AH	00000000	A	INTECFG	DATA	0	TEST FOR AN INTERRUPT IF FLAG > 0
7674	C1	010AC	00000000	A	IFUNFLAG	DATA	0	FLAG = 1 IF ERROR HAS BEEN FOUND
7675	C1	010AD	00000000	A	IFTI0MSK	DATA	0	
7676	C1	010AE	00000000	A	IFAI0MSK	DATA	0	
7677	C1	010AF	00000000	A	T1ST34SV	DATA	0	
7678					*			
7679					*			
7680					*			
7681	C1	010B0	C8C4C5E5	A	DEVBUSY	TEXTC	'DEV-BUSY'	
	C1	010B1	60C2E4F2	A				
	C1	010B2	E8404040	A				
7682	C1	010B3	CFC3D6D5	A	CONTRBUSY	TEXTC	'CONTROLLER-BUSY'	
	C1	010B4	E3D9D6D3	A				
	C1	010B5	D3C5D960	A				
	C1	010B6	C2E4E2F8	A				
7683	C1	010B7	14C5F7D7	A	NOXINTR	TEXTC	'EXP INTR DID NOT OCCUR'	
	C1	010B8	40C9D5E3	A				
	C1	010B9	D940C4C9	A				
	C1	010BA	C440D5D6	A				
	C1	010BB	E340D6C3	A				
	C1	010BC	C3E4D940	A				
7684	C1	010BD	13E4D5C5	A	UNXINTR	TEXTC	'UNEXP INTR OCCURRED'	
	C1	010BE	E7D740C9	A				
	C1	010BF	D5E3D940	A				
	C1	010C0	D6C3C3F4	A				
	C1	010C1	D9D9C5C4	A				
7685	C1	010C2	CFC9D6C3	A	HYTEN01	TEXTC	'IBCD BC = XXXX'	
	C1	010C3	C440C2C3	A				
	C1	010C4	407E4040	A				
	C1	010C5	E7E7E7E7	A				
7686	C1	010C6	CF0C1094	A	XPSDFUCT	XPSD,0	FUCTINT	
7687						PAGE		
7688					*			STATUS OF TRACKS (BAND)
7689					*			
7690					*			REPORTER
7691					*			
7692					*			THIS ROUTINE IS DESIGNED TO REPORT THE CONDITION
7693					*			OF A TRACK (BAND) WHEN IT WAS TESTED.
7694					*			
7695					*			INPUT PARAMETERS:
7696					*			
7697					*			TCKUNVL - TCK UNAVAILABLE LOWER LIMIT
7698					*			TCKUNVH - TCK UNAVAILABLE UPPER LIMIT
7699					*			TCKWPVL1 - TCK WPT PROTECTED LOWER LIMIT RPT BY TDV
7700					*			TCKWPVH1 - TCK WPT PROTECTED UPPER LIMIT RPT BY TDV
7701					*			TCKWPVL - TCK WPT PROTECTED LOWER LIMIT RPT BY SNS
7702					*			TCKWPVH - TCK WPT PROTECTED UPPER LIMIT RPT BY SNS
7703					*			REG 5 - CURRENT DEVICE SEEK ADDRESS
7704					*			REG 6 - TRACK (BAND) ADDRESS
7705					*			
7706					*			
7707					*			REGISTER DISTURBED.
7708					*			
7709					*			REG 4,7,8,12,15
7710					*			
7711					*			OUTPUT PARAMETERS:
7712					*			
7713					*			REPORT TRACK (BAND)

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7714					*			
7715					*		REG 8=FIRST BAD TRACK (BAND)	
7716					*			
7717					*			
7718					*		CALLING FORMAT:	
7719					*			
7720					*		BAL,15 T1ST19RP	
7721					*		DATA	WORD ADDRESS OF LOWER VIOLATION PARM
7722					*		8+1	RETURN
7723					*			
7724	C1	010C7	35F010EE		T1ST19RP	STW,18	T1ST19RT	SAVE RETURN ADDRESS
7725	C1	010C8	351004AE			STW,1	T1ST19RT	SET TEST 1 ERROR FLAG
7726	C1	010C9	128010FA			LD,8	MSGTRACK	LOAD 'TRACKS'
7727	C1	010CA	22A07212 A			LI,10	X172121	TEST FOR HIGH SPEED RAD
7728	C1	010CB	31A018CF			CW,10	MODELC	
7729	C1	010CC	693010CE			BNE	8+2	IF HIGH SPEED
7730	C1	010CD	128010FC			LD,8	MSGBAND	LOAD 'BANDS'
7731	C1	010CE	558210EF			STW,8	MSGT1T19,1	SAVE
7732	C1	010CF	359010FO			STW,9	MSGT1T19+1	IN MESSAGE
7733	C1	010D0	02200040 A			LCI	4	LOAD
7734	C1	010D1	2A8010FE			LM,8	WRTPTD	'WRT PROTECTED.'
7735	C1	010D2	22701106			LI,7	TCKUNVL	LOAD TCKUNVL ADDRESS
7736	C1	010D3	8170000F A			CW,7	*15	
7737	C1	010D4	693010D7			BNE	8+3	IF NOT
7738	C1	010D5	02200040 A			LCI	4	LOAD 'UNAVAILABLE.'
7739	C1	010D6	2A801102			LM,8	UNVABLE	
7740	C1	010D7	558210F5			STW,8	MSGT1T19+6,1	SAVE
7741	C1	010D8	02200030 A			LCI	3	IN
7742	C1	010D9	2B9C10F6			STM,9	MSGT1T19+7	MESSAGE
7743	C1	010DA	829010EE			LW,9	*T1ST19RT	LOAD ADDRESS
7744	C1	010DB	02C20009 A			LM,12	*9,1	OF FIRST BAD TRACK (BAND)
7745	C1	010DC	EAF00217 A			BAL,15	*1DECC	CONVERT TO
7746	C1	010DD	55F210F1			STW,15	MSGT1T19+2,1	DECIMAL
7747	C1	010DE	25F00070 A			SLS,15	-16	AND SAVE
7748	C1	010DF	75F210F1			STB,15	MSGT1T19+2,1	IN MESSAGE
7749	C1	010E0	82C20009 A			LW,12	*9,1	LOAD ADDRESS OF LAST BAD TRACK (BAND)
7750	C1	010E1	52C2000C A			LM,12	12,1	
7751	C1	010E2	EAF00217 A			BAL,15	*1DECC	CONVERT TO
7752	C1	010E3	75F010F4			STB,15	MSGT1T19+5	DECIMAL
7753	C1	010E4	25F00078 A			SLS,15	-8	AND SAVE IN
7754	C1	010E5	55F210F3			STW,15	MSGT1T19+4,1	MESSAGE
7755	C1	010E6	EAF0021C A			BAL,15	*1PRINT	OUTPUT
7756	C1	010E7	000010EF			DATA	MSGT1T19	MESSAGE
7757	C1	010E8	22400000 A			LI,4	0	LOAD ZERO
7758	C1	010E9	02520009 A			LM,5	*9,1	LOAD FIRST BAD TRACK (BAND)
7759	C1	010EA	854000C9 A			STW,4	*9	ZERO FIRST BAD TRACK (BAND)
7760	C1	010EB	374018D1			MW,4	SFCTCURR	CALCULATE NEW SEEK ADDRESS
7761	C1	010EC	22400000 A			LI,4	C	
7762	C1	010ED	E80210EE			R	*T1ST19RT,1	RETURN
7763	C1	010EE	00000000 A		T1ST19RT	DATA	0	RETURN ADDRESS TO TST1,19
7764					MSGT1T19	TEXTC	J	
7765	C1	010EF	274CE3D9 A					' TRACKS XXX THRU XXX ARE WRT PROTECTED.'
	C1	010F0	C1C3D2E2 A					
	C1	010F1	40E7E7E7 A					
	C1	010F2	40E3C8D9 A					
	C1	010F3	E44CE7E7 A					
	C1	010F4	E740C1D9 A					
	C1	010F5	C540E6D9 A					
	C1	010F6	E340D7D9 A					
	C1	010F7	D6E3C5C3 A					
	C1	010F8	E3C5C44B A					
7766	C1	010F9				RES	1	
7767						ROUND	8	
7768	C1	010FA	404CF3D9 A		MSGTRACK	TEXT	' TRACKS'	
	C1	010FB	C1C3D2E2 A					
7769	C1	010FC	404040C2 A		MSGBAND	TEXT	' BANDS'	
	C1	010FD	C1D5C4E2 A					
7770	C1	010FE	4040E6D9 A		WRTPTD	TEXT	' WRT PROTECTED.'	
	C1	010FF	E340D7D9 A					
	C1	01100	D6E3C5C3 A					
	C1	01101	E3C5C44B A					

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7771	C1	01102	4040E4D5	A	UNVABLE	TEXT	UNAVAILABLE.	
	C1	01103	C1E5C1C9	A				
	C1	01104	D3C1C2D3	A				
	C1	01105	CF4B4040	A				
7772						BOUND	8	
7773	C1	01106	C0000000	A	TCKUNVL	DATA	0	TCK UNAVAILABLE LOWER LIMIT
7774	C1	01107	C0000000	A	TCKUNVH	DATA	0	TCK UNAVAILABLE UPPER LIMIT
7775	C1	01108	C0000000	A	TCKWVPV1	DATA	0	TCK WRT PROTECT LOWER LIMIT FROM TDV
7776	C1	01109	C0000000	A	TCKWVPVH1	DATA	0	TCK WRT PROTECT UPPER LIMIT FROM TDV
7777	C1	0110A	C0000000	A	TCKWVPV1	DATA	0	TCK WRT PROTECT LOWER LIMIT FROM SNS
7778	C1	0110B	C0000000	A	TCKWVPVH	DATA	0	TCK WRT PROTECT UPPER LIMIT FROM SNS
7779						PAGE		
7780					*			
7781					*			TST1 ERROR PRINT ROUTINE
7782					*			
7783					*			THIS ROUTINE HANDLES ERROR MESSAGE PRINTOUTS
7784					*			BY FIRST REQUIRING TEST TYPE AND DEVICE ADDRESS TO BE
7785					*			REPORTED FOR THE FIRST ERROR ON EACH DEVICE.
7786					*			THEN FOLLOWING ERROR MESSAGES ON THAT DEVICE
7787					*			WILL ONLY HAVE AND ERROR NO. PRINTOUT
7788					*			
7789					*			INPUT PARAMETERS:
7790					*			TST1DVFG - TST1 DEVICE ADDRESS NOT REPORTED, IF=1
7791					*			REG 15 - ADDRESS OF THE ERROR NO.
7792					*			
7793					*			REGISTER DISTURBED:
7794					*			
7795					*			REG 12
7796					*			
7797					*			OUTPUT PARAMETERS:
7798					*			
7799					*			'TST1 DEV XXX' (MESSAGE IF TST1DVFG WAS =1)
7800					*			'ERROR DDDD'
7801					*			
7802					*			
7803					*			CALLING FORMAT:
7804					*			
7805					*			BAL,15 TST1ERMG GO TO TST1 ERROR REPORT ROUTINE
7806					*			DATA DDDD (ERROR NO.)
7807					*			CONTROL IS RETURN HERE
7808					*			
7809					*			
7810	C1	0110C	55F21128		TST1ERMG	STH,15	TST1ERTN,1	SAVE RETURN ADDRESS
7811	C1	0110D	22F00000	A		LT,15	0	LOAD TO RESET PRINT 'TST1 DEV XXX'FG
7812	C1	0110E	46F00482			XW,15	TST1DVFG	RESET FLAG
7813	C1	0110F	6830111A			REZ	TST1ER01	IF IT WAS ZERO BRANCH
7814					*			
7815					*			
7816	C1	01110	32C01870			LW,12	:DEVADDR	LOAD DEVICE ADDRESS
7817	C1	01111	EAF00218	A		BAL,15	*:HEXC	CONVERT TO EBCDIC
7818	C1	01112	75F0112C			STB,15	TST1MSG+3	
7819	C1	01113	25F00078	A		SLB,15	=8	
7820	C1	01114	55F21128			STW,15	TST1MSG+2,1	
7821	C1	01115	EAF0021C	A		BAL,15	*:PRINT	BRANCH TO PRINT SUBROUTINE
7822	C1	01116	C0001134			DATA	HEADER	
7823	C1	01117	EAF0021C	A		BAL,15	*:PRINT	PRINT MSG
7824	C1	01118	C0001129			DATA	TST1MSG	
7825	C1	01119	6800111C			R	*+3	
7826	C1	0111A	EAF0021C	A	TST1ER01	BAL,15	*:PRINT	
7827	C1	0111B	C000112D			DATA	SPACE	
7828	C1	0111C	B2C01128		TST1ER02	LW,12	*TST1ERTN	FETCH WORD
7829	C1	0111D	EAF00217	A		BAL,15	*:DECC	BRANCH TO SUBR.
7830	C1	0111E	55F01131			STH,15	TST1MSG1+3	STORE HALF-WORD
7831	C1	0111F	25F00070	A		SLB,15	-16	SHIFT
7832	C1	01120	55F21130			STW,15	TST1MSG1+2,1	STORE HALF-WORD
7833	C1	01121	32701135			LW,7	LOCATION	LOAD LOCATION INDEX TO ERROR ADDR
7834	C1	01122	670E1136			EXU	TST1ER04,7	FETCH ERROR ADDR
7835	C1	01123	EAF00218	A	TST1ER03	BAL,15	*:HEXC	CONVERT TO HEX
7836	C1	01124	35F01133			STW,15	TST1MSG1+5	AND STORE IN OUTPUT MESSAGE
7837	C1	01125	33100223	A		MTW,1	IERR0RC	ADD 1 TO IERR0RC
7838	C1	01126	EAF0021C	A		BAL,15	*:PRINT	BRANCH TO PRINT SUBR.

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7839	01	01127	0000112E			DATA	TSTIMSG1	
7840	01	01128	68020000	A	TST1ERTN B		0,1	
7841					TSTIMSG	TEXTC		
7842	01	01129	0CE3E2E3	A	'TST1 DEV XXX'			
	01	0112A	F140C4C5	A				
	01	0112B	E540E7E7	A				
	01	0112C	E7404040	A				
7843	01	0112D	01404040	A	SPACE	TEXTC	' '	
7844	01	0112E	17C5D9D9	A	TSTIMSG1	TEXTC	'ERR NO. DDDD LOC XXXX'	
	01	0112F	4005D64B	A				
	01	01130	4040C4C4	A				
	01	01131	C4C44040	A				
	01	01132	D3D6C340	A				
	01	01133	E7E7E7E7	A				
7845	01	01134	035C5C5C	A	HEADER	TEXTC	'***'	
7846	01	01135	00000000	A	LOCATION	DATA	0	
7847	01	01136	52C21128	A	TST1ER04	LH,12	TST1ERTN,1	
7848	01	01137	52C210AA	A		LH,12	IFUNSAV*15,1	
7849	01	01138	52C21A97	A		LH,12	#MSG00+15,1	
7850						PAGE		
7851					*			
7852					*			
7853					*			
7854	01	01139	32C0000F	A	TILT	LW,12	15	LOAD ADDR OF WHERE NON-RECOVERABLE
7855	01	0113A	EAF00218	A		HAL,15	*IWXG	ERROR OCCURRED, CONVERT TO ERIDIC
7856	01	0113B	35F01142	A		STW,15	TILT1+3	
7857	01	0113C	EAF0021C	A		HAL,15	*IPRINT	PRINT
7858	01	0113D	0000113F	A		DATA	TILT1	
7859	01	0113E	E8000214	A		R	*IMONITOR	RETURN CONTROL TO MONITOR
7860					*			
7861					*			
7862	01	0113F	0FE3C9D3	A	TILT1	TEXTC	'TILT LOC XXXX'	
	01	01140	E34040D3	A				
	01	01141	D6C34040	A				
	01	01142	E7E7E7E7	A				
7863						PAGE		
7864					*			
7865					*			*** S E E K / S E N S E T A B L E R O U T I N E ***
7866					*			
7867					*			THIS ROUTINE BUILDS A SENSE TABLE, TEST THE TABLE
7868					*			FOR ERRORS AND REPORTS ERRORS.
7869					*			
7870					*			INPUT PARAMETERS:
7871					*			
7872					*			ROUTINE (MEMORY) MUST BE EXECUTED BEFORE FIRST
7873					*			CALL TO THIS ROUTINE.
7874					*			REG 6 PRESENT LENGTH OF TABLE
7875					*			REG 7 INDEX FOR UPDATING THE TABLE
7876					*			TABDPLY1 = ERROR NO. OF SUBTEST
7877					*			REGISTERS DISTURBED
7878					*			
7879					*			NONE AS LONG AS THE TABLE IS BEING BUILT
7880					*			OR TESTED
7881					*			ALL WHEN THE TABLE IS BEING DISPLAYED
7882					*			
7883					*			
7884					*			OUTPUT PARAMETERS:
7885					*			
7886					*			ERROR TABLE, WHEN AN ERROR IS DETECTED.
7887					*			
7888					*			CALLING FORMAT:
7889					*			
7890					*			HAL,15 TABUILD
7891					*			* NO ERROR EXIT
7892					*			*+1 LOOP EXIT
7893					*			*+2 ERROR EXIT
7894					*			
7895					*			
7896					*			TABUILDS ;
7897	01	01143	35FC11E8	A		STW,15	TAPRTN	SAVE RETURN
7898	01	01144	317C182F	A		CW,7	TARLEMAX	DOES IT EXCEEDING THE TABLE

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7859	C1	C1145	68201147			RLE	*+2	LENGTH IF SO *** WHBA ***
7900	C1	C1146	6AFC1139			RAL,15	TILT	GO REPORT NON-RECOVERABLE CONDITION
7901	C1	C1147	D31E182E			MTW,1	*SSTABLE,7	UPDATE TABLE
7902	C1	C1148	20700001	A		AI,7	1	ADD 1 TO INDEX
7903	C1	C1149	31600007	A		CW,6	7	IF NORMAL TABLE LENGTH EXCEEDED
7904	C1	C114A	6810114D			BGE	*+3	
7905	C1	C114B	35101830			STW,1	TABERR0R	SET ERROR FLAG
7906	C1	C114C	32600007	A		LW,6	7	AND EXTEND TABLE
7907	C1	C114D	331011F9			MTW,1	TABINDEX	ADD U TO TABINDEX
7908	C1	C114E	316011F9			CW,6	TABINDEX	COMPARE WORDS
7909	C1	C114F	68201163			RLE	TABUILD2	BRANCH IF LESS
7910	C1	C1150	E802000F	A		R	*15,1	GO TEST SOME MORE
7911					*			
7912					*			
7913					*			
7914					TABUILD	J		
7915	C1	C1151	35F011E8			STW,15	TABRTN	SAVE RETURN ADDRESS
7916	C1	C1152	3170182F			CW,7	TARLEMAX	IF INDEX IS GREATER THAN TABLE
7917	C1	C1153	68201155			RLE	*+2	TWICE THE NORMAL SIZE TABLE
7918	C1	C1154	6AFC1139			RAL,15	TILT	GO REPORT NON-RECOVERABLE CONDITION
7919	C1	C1155	D31E182E			MTW,1	*SSTABLE,7	UPDATE TABLE
7920	C1	C1156	317011E7			CW,7	TABBIAS	
7921	C1	C1157	6810115A			BGE	*+3	
7922	C1	C1158	33101830			MTW,1	TABERR0R	
7923	C1	C1159	33000000	A		MTW,0	0	
7924	C1	C115A	331011E9			MTW,1	TABINDEX	
7925	C1	C115B	316011E9			CW,6	TABINDEX	TEST FOR END OF TABLE
7926	C1	C115C	68201163			RLE	TABUILD2	IF END GO CHECK TABLE
7927	C1	C115D	33000000	A		MTW,0	0	
7928	C1	C115E	31701831			CW,7	SECTLMT	COMPARE WORDS
7929	C1	C115F	68201162			RLE	*+3	BRANCH LESS OR EQUAL
7930	C1	C1160	33101830			MTW,1	TABERR0R	
7931	C1	C1161	32600007	A		LW,6	7	
7932	C1	C1162	E802000F	A		R	*15,1	
7933					*			
7934					*			
7935					*			
7936	C1	C1163	33001830			TABUILD2	MTW,0	TABERR0R
7937	C1	C1164	6930116C			RNEZ	TABDPLY	BR. NOT = ZERO
7938	C1	C1165	327011E7			LW,7	TABBIAS	FETCH TABBIAS
7939	C1	C1166	D11F182E			TABUILD1	CH,1	*SSTABLE,7
7940	C1	C1167	6930116C			RNE	TABDPLY	GO CHECK TABLE FOR ERROR
7941	C1	C1168	20700001	A		AI,7	1	IF NOT EQUAL ERROR
7942	C1	C1169	31700006	A		CW,7	6	ADD 1 TO INDEX
7943	C1	C116A	69101166			RL	TABUILD1	IF MORE TO DO GO DO IT
7944	C1	C116B	E800000F	A		R	*15	RETURN
7945					*			ARE GOOD
7946					TABDPLY	J		
7947	C1	C116C	330011E6			MTW,0	TABPASS	TEST HEADER INHIBIT IF SET SKIP
7948	C1	C116D	6930117A			RNEZ	TABDPLY2	IF SET GO PRINT INFO
7949	C1	C116E	6AFC110C			RAL,15	TST1FRMG	OTHERWISE PRINT ERROR NO.
7950	C1	C116F	00000000	A		TABDPLY1	DATA	0
7951	C1	C1170	EAF0021C	A		RAL,15	*:PRINT	PRINT FIRST LINE OF HEADER
7952	C1	C1171	000011AA			DATA	TABLF10C	
7953	C1	C1172	351011E6			STW,1	TABPASS	SET HEADER PRINT INHIBIT FLAG
7954	C1	C1173	22800047	A		LI,8	71	LOAD MAX BYTES M
7955	C1	C1174	758011BE			STB,8	TARLF101	PRINT SECOND LINE OF HEADER
7956	C1	C1175	EAF0021C	A		RAL,15	*:PRINT	
7957	C1	C1176	000011BE			DATA	TARLF101	
7958	C1	C1177	EAF0021C	A		RAL,15	*:PRINT	
7959	C1	C1178	000011D0			DATA	TABLF102	
7960	C1	C1179	6800117C			R	*+3	
7961	C1	C117A	EAF0021C	A		TABDPLY2	RAL,15	*:PRINT
7962	C1	C117B	00001A33			DATA	#MSGERR9	UP SPACE
7963	C1	C117C	227FFEE	A		LI,7	-18	1
7964	C1	C117D	32401F60			LW,4	L(X'40404040')	LOAD BLANKS
7965	C1	C117E	354E1F90			STW,4	RUF1L'+18,7	INT0
7966	C1	C117F	6570117E			RIR,7	*=1	OUTPUT LINE
7967	C1	C1180	329011E7			LW,9	TABBIAS	AREA
7968	C1	C1181	48901F61			AND,9	#X'FFFFFFF0'	LOAD TABLE STARTING BIAS
7969	C1	C1182	324011E7			LW,4	TABBIAS	REMOVE LSB 4
								LOAD TABLE STARTING BIAS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
7970	01	01183	4B401F62			AND,6	'X'F'	
7971	01	01184	22700000	A		LI,7	0	
7972	01	01185	357011EA			STW,7	TABCOUNT	STORE WORD
7973	01	01186	327C11E7			LW,7	TABBIAS	FETCH WORD
7974	01	01187	22A000F0	A		LI,10	'X'F0'	LOAD EBCDIC ZERO
7975	01	01188	22B00040	A		LI,11	'X'40'	LOAD EBCDIC BLANK
7976					TABDPLY3			
7977	01	01189	316011EA			CH,6	TABCOUNT	COMPARE WORDS
7978	01	0118A	E82411E8			BLE	*TABRTN,R	
7979	01	0118B	D2CE182E			LH,12	*SSTABLE,7	LOAD PASS COUNT
7980	01	0118C	EAF00217	A		BAL,18	*IDCCC	CONVERT TO DECIMAL
7981	01	0118D	75B0000F	A		STB,11	15	STORE A BLANK IN MSB POSITION
7982	01	0118E	71A2000F	A		CB,10	15,1	TEST BYTE 1 FOR ZERO
7983	01	0118F	69301191	A		RNE	*+2	IF ZERO
7984	01	01190	75B2000F	A		STB,11	15,1	STORE A BLANK
7985	01	01191	71A4000F	A		CB,10	15,2	TEST BYTE 2 FOR ZERO
7986	01	01192	69301194	A		RNE	*+2	IF ZERO
7987	01	01193	75B4000F	A		STB,11	15,2	STORE A BLANK
7988	01	01194	35F81F80			STW,15	BUF1L0,2,4	STORE ENTRY INTO OUTPUT LINE
7989	01	01195	331011EA			MTW,1	TABCOUNT	ADD 1 TO TABCOUNT
7990	01	01196	20400001	A		AI,4	1	UP DATE LINE INDEX
7991	01	01197	20700001	A		AI,7	1	UP DATA TABLE INDEX
7992	01	01198	21400010	A		CI,4	16	IS LINE INDEX
7993	01	01199	6810119C			BGE	TABDLY4	GREATER THAN TABLE LENGTH
7994	01	0119A	316011EA			CH,6	TABCOUNT	COMPARE WORDS
7995	01	0119B	69201189			BO	TABDPLY3	BRANCH IF GREATER
7996					*			
7997					*			
7998					*			
7999	01	0119C	32C00009	A	TABDLY4	LW,12	9	LOAD TABLE STARTING BIAS
8000	01	0119D	EAF00218	A		BAL,15	*IHEXC	CONVERT TO HEX
8001	01	0119E	25400002	A		SLS,4	2	CONVERTS TO A BYTE
8002	01	0119F	20400007	A		AI,4	7	ADD7
8003	01	011A0	75F01F7F			STB,15	BUF1L0+1	
8004	01	011A1	25F00078	A		SLS,15	-8	
8005	01	011A2	75B2000F	A		STB,11	15,1	
8006	01	011A3	7540000F	A		STB,4	15	
8007	01	011A4	35F01F7E			STW,15	BUF1L0	
8008	01	011A5	20900010	A		AI,9	'X'10'	UPDATE TABLE BIAS FOR NEXT PASS
8009	01	011A6	EAF0021C	A		BAL,15	*IPRINT	GO PRINT
8010	01	011A7	00001F7E			DATA	BUF1L0	LINE
8011	01	011A8	22400000	A		LI,4	0	SET LINE BIAS POINTER =0
8012	01	011A9	68001189			R	TABDPLY3	GO DO ANY OTHER LINE
8013					TABLE100	TEXTC		
8014							TTTTTTTTTTTTTTTT	*SEEK/SENSE TABLE (EACH ENTRY '),
8015							'SHOULD APPEAR ONLY ONCE)'	
	01	011AA	4E404040	A				
	01	011AB	40404040	A				
	01	011AC	E3E3E3E3	A				
	01	011AD	E3E3E3E3	A				
	01	011AE	E3E3E3E3	A				
	01	011AF	E3E3E3E3	A				
	01	01180	4060E2C5	A				
	01	01181	C5D261E2	A				
	01	01182	C5D5E2C5	A				
	01	01183	40E3C1C2	A				
	01	01184	D3C5404D	A				
	01	01185	C5C1C3C8	A				
	01	01186	40C5D5E3	A				
	01	01187	D9E840E2	A				
	01	01188	C8D6E4D3	A				
	01	01189	C44CC1D7	A				
	01	0118A	D7C5C1D9	A				
	01	0118B	40D6D5D3	A				
	01	0118C	E840D6D5	A				
	01	0118D	C3C55D40	A				
8016					TABLE101	TEXTC		
8017							'TTTTTT 000 001 002 003 004 005 006 007 008 009 00A 00B 00C '),	
8018	01	011RE	4740E3E3	A			'00D 00E 00F'	
	01	011RF	E3F3E3E3	A				
	01	011CO	40F0F0F0	A				
	01	011C1	40F0F0F1	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
	01	011C2	4CF0CF2	A				
	01	011C3	40F0F0F3	A				
	01	011C4	40F0F0F4	A				
	01	011C5	40F0F0F5	A				
	01	011C6	40F0F0F6	A				
	01	011C7	40F0F0F7	A				
	01	011C8	40F0F0F8	A				
	01	011C9	40F0F0F9	A				
	01	011CA	40F0F0C1	A				
	01	011CB	40F0F0C2	A				
	01	011CC	40F0F0C3	A				
	01	011CD	40F0F0C4	A				
	01	011CE	40F0F0C5	A				
	01	011CF	40F0F0C6	A				
8019					TABLE102 TEXTC	;		
8020	01	011D0	0940D5D6	A	' NB*(HEX)'			
	01	011D1	4B4DC8C5	A				
	01	011D2	E75D4040	A				
8021					ROUND	8		
8022					TABLE001 TEXT	;		
8023	01	011D4	4040E2C5	A	' SECTOR'			
	01	011D5	C3E3D6D9	A				
8024					TABLE002 TEXT	;		
8025	01	011D6	4040C2C1	A	' BAND '			
	01	011D7	D5C44040	A				
8026					TABLE003 TEXT	;		
8027	01	011D8	4040E3D9	A	' TRACK '			
	01	011D9	C1C3D240	A				
8028					TABLE010 TEXT	;		
8029	01	011DA	40C3E4D9	A	' CURRENT SECTOR '			
	01	011DB	D9C5D5E3	A				
	01	011DC	40E2C5C3	A				
	01	011DD	E3D6D940	A				
8030					TABLE011 TEXT	;		
8031	01	011DE	40E2C5C5	A	' SEEK/SFNSE TEST'			
	01	011DF	D261E2C5	A				
	01	011E0	D5E2C540	A				
	01	011E1	E3C5E2F3	A				
8032					TABLE012 TEXT	;		
8033	01	011E2	E2C5C3E3	A	' SECTOR INCREMENT'			
	01	011E3	D4D940C9	A				
	01	011E4	D5C3D9C5	A				
	01	011E5	D4C5D5E3	A				
8034	01	011E6	00000000	A	TABPASS	DATA	0	INHIBIT FLAG IF=1 HEADER DOESN'T PNT
8035	01	011E7	00000000	A	TABBRIAS	DATA	0	TABLE LINE STARTING RIAS
8036	01	011E8	00000000	A	TABRTN	DATA	0	RETURN ADDRESS FROM TABLE BUILD RTN
8037	01	011E9	00000000	A	TABINDEX	DATA	0	TABLE INDEX CURRENT COUNT
8038	01	011EA	00000000	A	TABCCUNT	DATA	0	COUNT FOR MSG BUT
8039					PAGE			
8040					SELECTRTN			
8041	01	011EB	35F01324	A	STW,15	SELECTRTN		SAVE RETURN ADDR
8042	01	011EC	EAF0021C	A	RAL,15	*IPRINT		PRINT HEADER 1
8043	01	011ED	000012A7	A	DATA	SELECT90		
8044	01	011EE	22E00007	A	LI,14	7		
8045	01	011EF	12801108	A	LD,8	TABLE003		LOAD 'RAND'
8046	01	011F0	327018CF	A	LW,7	MODEL C		LOAD MODEL NO.
8047	01	011F1	21707212	A	CI,7	X'7212'		IS IT HIGH SPEED
8048	01	011F2	693011F5	A	RNE	*+3		
8049	01	011F3	22E00000	A	LI,14	0		LOAD BAND UPDATE COUNT
8050	01	011F4	12801106	A	LD,8	TABLE002		LOAD 'TRACK'
8051	01	011F5	5582128B	A	STW,8	SELECT91,1		FORMAT
8052	01	011F6	3590128C	A	STW,9	SELECT91+1		INT8 MESSAGE
8053	01	011F7	EAF0021C	A	RAL,15	*IPRINT		PRINT HEADER 2
8054	01	011F8	0000128B	A	DATA	SELECT91		
8055	01	011F9	22701F7F	A	LI,7	BUF10+1		LOAD FIRST AVAILABLE MEMORY LOC
8056	01	011FA	44701F63	A	AND,7	*+2		CONVERT TO A DOUBLE WORD COMPATABLE
8057	01	011FB	35701256	A	STW,7	SELECT5		SAVE STARTING LINE NO.
8058	01	011FC	35701285	A	STW,7	SELECT89		SAVE STARTING LINE NO.
8059	01	011FD	EAF0021C	A	RAL,15	*IPRINT		PRINT HEADER 3
8060	01	011FE	000012C4	A	DATA	SELECT93		
8061	01	011FF	22400000	A	LI,4	0		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEI	OPERATION	OPERAND	COMMENTS
8062	01	01200	32801804			LW,5	SURFCEND	LOAD END OF RAD
8063	01	01201	36401801			SW,4	SECTCURR	DIVIDE TO FIND LAST TRACK,
8064	01	01202	33000004 A			MTW,0	4	IF NO
8065	01	01203	68301205			BEZ	**2	CARRY BRANCH
8066	01	01204	20500001 A			AI,5	1	OTHER WISE UPDATE LAST TRACK BY 1
8067	01	01205	22700000 A			LI,7	0	ZERO TRACK TABLE INDEX
8068	01	01206	22400000 A			LI,4	0	ZERO TRACK (RAND) COUNT
8069	01	01207	35401325			SW,4	OCTAL	ZERO Y-AXIS COUNT
8070								
8071					*			
8072	C1	01208	32C00004 A		SELCT60	LW,12	4	LOAD Y-AXIS COUNT
8073	01	01209	EAF00217 A			BAL,15	*IDECC	CONVERT TO DECIMAL
8074	01	0120A	85F01256			SW,15	*SELCT52	LOAD INTO OUTPUT MESSAGE
8075	01	0120B	22F0004F A			LI,15	79	LOAD BYTE OF MESSAGE
8076	01	0120C	F5F01256			SW,15	*SELCT52	LOAD BYTE COUNT
8077	C1	0120D	3040000E A			AW,4	14	ADD INCREMENT COUNT
8078	01	0120E	32C00004 A			LW,12	4	
8079	01	0120F	EAF00217 A			BAL,15	*IDECC	CONVERT TO DECIMAL
8080	C1	01210	22C00060 A			LI,12	1-1	LOAD 1-1
8081	01	01211	75C0000F A			SW,12	15	INSERT INTO OUTPUT MESSAGE
8082	01	01212	85F21256			SW,15	*SELCT52,1	LOAD MESSAGE
8083	01	01213	32C01325			LW,12	OCTAL	LOAD Y-AXIS OCTAL VALUE
8084	01	01214	21C00008 A			CI,12	X'08'	TEST FOR OVERFLOW
8085	01	01215	68401219			BCR,4	**4	IF NONE BRANCH
8086	01	01216	48C01F64			AND,12	*X'F0'	OTHERWISE REMOVE OVERFLOW
8087	01	01217	20C00010 A			AI,12	X'10'	AND ADD 1 TO NEXT POSITION
8088	01	01218	35C01325			SW,12	OCTAL	SAVE
8089	01	01219	33101325			MTW,1	OCTAL	UPDATE SAVED VALUE
8090	C1	0121A	EAF00218 A			BAL,15	*IHEXC	CONVERT FOR OUTPUT
8091	01	0121B	48F01F65			AND,15	*X'4040FFFF'	AND IN TWO SPACES UP FRONT
8092	C1	0121C	85F41256			SW,15	*SELCT52,2	LOAD INTO OUTPUT MESSAGE
8093	C1	0121D	32F01F60			LW,15	*X'40404040'	
8094	01	0121E	85F61256			SW,15	*SELCT52,3	LOAD SPACE INTO OUTPUT MSG
8095	01	0121F	22600002 A			LI,6	2	LOAD LINE INDEX
8096	01	01220	22000000 A			LI,0	0	ZERO ERROR
8097	01	01221	35001323			SW,0	LINE	ENCOUNTERED FLAG
8098	01	01222	12A012EC		SELCT51	LD,10	SELCT95	LOAD DOUBLEWORD OF SPACES
8099	01	01223	D28E1828			LH,8	*TCKSHBT,7	LOAD ERROR HALF WORD
8100	01	01224	6830124E			BEZ	SELCT53	IF ZERO SKIP FORMATING
8101	01	01225	21800200 A			CI,8	X'200'	TEST FOR ADDRESS ERROR
8102	01	01226	68401235			BCR,4	SELCT70	IF NONE GO LOOK FOR OTHER ERRORS
8103	01	01227	32D00008 A			LW,13	8	LOAD ADDR
8104	01	01228	48D01F66			AND,13	*X'7'	REMOVE ALL BUT FIRST OCTAL DIGIT
8105	C1	01229	35D0000C A			SW,13	12	FORMAT INTO CONVERT LOC
8106	C1	0122A	32D00008 A			LW,13	8	LOAD ADDR
8107	01	0122B	48D01F67			AND,13	*X'38'	REMOVE ALL BUT SECOND OCTAL DIGIT
8108	C1	0122C	25D00001 A			SLS,13	1	POSITION
8109	01	0122D	30C0000D A			AW,12	13	ADD TO FORMAT LOC
8110	01	0122E	32D00008 A			LW,13	8	LOAD ADDR
8111	01	0122F	48D01F68			AND,13	*X'1C0'	REMOVE ALL BUT THIRD OCTAL DIGIT
8112	01	01230	25D00002 A			SLS,13	2	POSITION
8113	C1	01231	30C0000D A			AW,12	13	ADD TO FORMAT LOC
8114	01	01232	EAF00218 A			BAL,15	*IHEXC	CONVERT TO HEX
8115	01	01233	48F01F69			AND,15	*X'40FFFFFF'	INSERT SPACE INTO BYTE 0
8116	01	01234	35F0000B A			SW,15	11	STORE IN ERROR DOUBLEWORD
8117	C1	01235	21808000 A		SELCT70	CI,8	X'8000'	TEST OVERRUN BIT
8118	01	01236	68401239			BCR,4	SELCT71	IF NOT SET NEXT TEST
8119	01	01237	22C00006 A			LI,12	'0'	LOAD '0'
8120	01	01238	75C0000A A			SW,12	10,0	INSERT INTO ERROR MESSAGE
8121					*			
8122					*			
8123					*			
8124	C1	01239	21804000 A		SELCT71	CI,8	X'4000'	TEST FOR SECTOR UNAVAILABLE
8125	C1	0123A	6840123D			BCR,4	SELCT72	IF NOT SET NEXT TEST
8126	01	0123B	22C000E4 A			LI,12	'U'	LOAD 'U'
8127	C1	0123C	75C2000A A			SW,12	10,1	INSERT INTO ERROR MESSAGE
8128					*			
8129					*			
8130					*			
8131	01	0123D	21801000 A		SELCT72	CI,8	X'1000'	TEST FOR TRANSMISSION ERROR
8132	C1	0123E	68401241			BCR,4	SELCT73	IF NOT SET NEXT TEST

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
R133	C1	0123F	22C000E3	A		LI,12	'I'	LOAD A 'I'
R134	C1	01240	75C4000A	A		STB,12	10,2	INSERT INTO ERROR MESSAGE
R135					*			
R136					*			
R137					*			
R138	C1	01241	21802000	A	SELCT73	CI,8	X'2000'	TEST FOR SYNC PATTERN MISSED
R139	C1	01242	68401245	A		BCR,4	SELCT74	IF NOT SFT NEXT TEST
R140	C1	01243	22C000D7	A		LI,12	'I'	LOAD A 'I'
R141	C1	01244	75C4000A	A		STB,12	10,2	INSERT INTO ERROR MESSAGE
R142					*			
R143					*			
R144					*			
R145	C1	01245	21800800	A	SELCT74	CI,8	X'0800'	TEST FOR UNUSUAL END
R146	C1	01246	68401249	A		BCR,4	SELCT75	IF NOT SET NEXT TEST
R147	C1	01247	22C000C5	A		LI,12	'E'	LOAD A 'E'
R148	C1	01248	75C6000A	A		STB,12	10,3	INSERT INTO ERROR MESSAGE
R149					*			
R150					*			
R151					*			
R152	C1	01249	21800400	A	SELCT75	CI,8	X'0400'	TEST FOR DATA COMPARE ERROR
R153	C1	0124A	6840124D	A		BCR,4	SELCT76	IF NOT SFT NEXT TEST
R154	C1	0124B	22C000C4	A		LI,12	'D'	LOAD A 'D'
R155	C1	0124C	75C0000B	A		STB,12	11,0	INSERT INTO ERROR MESSAGE
R156	C1	0124D	33101323	A	SELCT76	MTW,1	LINE	SET ERROR IN THIS LINE FLAG
R157	C1	0124E	95AC1256	A	SELCT53	STD,10	*SELCT52,6	STORE ERROR DW IN OUTPUT LINE
R158	C1	0124F	20700001	A		AI,7	1	INCREMENT TRACK TABLE INDEX
R159	C1	01250	20600001	A		AI,6	1	INCREMENT OUTPUT LINE INDEX
R160	C1	01251	2160000A	A		CI,6	10	TEST FOR FULL LINE
R161	C1	01252	69101222	A		RL	SELCT51	IF NOT FULL LOOP BACK
R162	C1	01253	33001323	A		MTW,0	LINE	TEST FOR ERROR IN THE LINE
R163	C1	01254	68301257	A		REZ	SELCT52+1	IF NONE SKIP MESSAGE
R164	C1	01255	EAF0021C	A		BAL,15	*IPRINT	OUTPUT ERROR LINE
R165	C1	01256	00000000	A	SELCT52	DATA	0	
R166	C1	01257	20400001	A		AI,4	1	UPDATE TRACK (BAND) COUNT
R167	C1	01258	31400005	A		CH,4	5	IF LESS THEN
R168	C1	01259	69101208	A		RL	SELCT60	UPDATE LIMIT CONTINUE TO OUTP
R169	C1	0125A	EAF0021C	A		BAL,15	*IPRINT	PRINT A SPACE BETWEEN TABLES
R170	C1	0125B	0000112D	A		DATA	SPACE	
R171					*			
R172					*			
R173	C1	0125C	EAF0021C	A		BAL,15	*IPRINT	PRINT HEADER 1
R174	C1	0125D	00001278	A		DATA	SELECT94	
R175					*			
R176					*			
R177	C1	0125E	EAF0021C	A		BAL,15	*IPRINT	PRINT HEADER 2
R178	C1	0125F	000012E0	A		DATA	SELECT96	
R179	C1	01260	22A00000	A		LI,10	0	ZERO PRINT TOTAL LINE FLAG
R180	C1	01261	22600000	A		LI,6	0	ZERO SECTOR TABLE INDEX
R181	C1	01262	22400000	A		LI,4	0	ZERO SECTOR LINE NO.
R182	C1	01263	32801F6A	A		LW,8	#X'23404040'	
R183	C1	01264	85801285	A		STW,8	*SELCT89	SAVE IN OUTPUT MESSAGE AREA
R184	C1	01265	32801829	A		LW,11	SECTSH0T	LOAD STARTING ADDR OF SECTOR TABLE
R185					SELCT83			
R186	C1	01266	32C00004	A		LW,12	4	LOAD SECTOR LINE NO.
R187	C1	01267	EAF00217	A		BAL,15	*IDECC	CONVERT IT TO DECIMAL
R188	C1	01268	25F00010	A		SLS,15	16	
R189	C1	01269	5582000F	A		STH,8	15,1	STORE IN TWO 'SPACES'
R190	C1	0126A	85F21285	A		STW,15	*SELCT89,1	SET INTO OUTPUT MESSAGE
R191	C1	0126B	22900C00	A	SELCT85	LI,9	0	ZERO ERROR ENCOUNTERED FLAG
R192	C1	0126C	22700002	A		LI,7	2	SET UP LINE INDEX
R193	C1	0126D	32F01F68	A	SELCT82	LW,15	#X'404040F0'	LOAD SPACE
R194	C1	0126E	D2CC000B	A		LH,12	#11,6	LOAD ERROR COUNT
R195	C1	0126F	6830127D	A		REZ	SELCT81	IF ZERO BRANCH
R196	C1	01270	22900001	A		LI,9	1	OTHERWISE SET ERROR ENCOUNTERED FLAG
R197	C1	01271	32F01F6C	A		LW,15	#' <1K'	
R198	C1	01272	21C003F8	A		CI,12	1000	
R199	C1	01273	6810127D	A		RGE	SELCT81	ERROR LOAD IF BRANCH
R200	C1	01274	EAF00217	A		BAL,15	*IDECC	AND CONVERT IT TO DECIMAL
R201	C1	01275	7580000F	A		STB,8	15	
R202	C1	01276	22C000C0	A		LI,12	X'F0'	LOAD EBCDIC ZERO
R203	C1	01277	71C2000F	A		CB,12	15,1	IF ZERO SUPPRESS PRINTING

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8204	01	01278	6930127D			BNEZ	SELCT81	IF NOT BRANCH
8205	01	01279	7582000F A			STB,8	15,1	OTHERWISE REPLACE WITH SPACE
8206	01	0127A	71C4000F A			CB,12	15,2	IF ZERO SUPPRESS PRINTING
8207	01	0127B	6930127D			BNEZ	SELCT81	IF NOT BRANCH
8208	01	0127C	7584000F A			STB,8	15,2	OTHERWISE REPLACE WITH SPACE
8209	01	0127D	85FE1285		SELCT81	STW,15	*SELCT89,9	SAVE IN OUTPUT MESSAGE
8210	01	0127E	80600001 A			AI,4	1	ADD 1 TO SECTOR TABLE INDEX
8211	01	0127F	20700001 A			AI,7	1	ADD 1 TO LINE INDEX
8212	01	01280	21700009 A			CI,7	9	TEST FOR END OF LINE
8213	01	01281	6820126D			BLE	SELCT82	IF NOT END GO BACK
8214	01	01282	33000009 A			MTW,0	9	IF NO ERRORS ENCOUNTERED SKIP PRINT
8215	01	01283	68301286			BEZ	0+3	
8216	01	01284	EAFO021C A			BAL,15	*I'PRINT	PRINT LINE IF ERROR
8217	01	01285	00000000 A		SELCT89	DATA	0	
8218					*			
8219					*			
8220	01	01286	20400001 A			AI,4	1	UPDATE SECTOR LINE NO.
8221	01	01287	314018D1			CH,4	SECTCURR	TEST FOR ALL SECTOR DONE
8222	01	01288	69101266			BL	SELCT83	IF NOT GO BACK
8223	01	01289	3300000A A			MTW,0	10	TEST FOR TOTAL LINE PRINT
8224	01	0128A	69301292			BNEZ	SELCT87	IF PRINTED EXIT
8225	01	0128B	2310000A A			MTW,1	10	SET TOTAL LINE FLAG
8226	01	0128C	32B0182A			LD,11	TOTLBNOT	LOAD STARTING ADDR OF TOTAL TABLE
8227	01	0128D	12C012EA			LD,12	SELCT97	LOAD 'TOTAL'
8228	01	0128E	05C21285			STW,12	*SELCT89,1	FORMAT INTO TOTAL LINE
8229	01	0128F	85D21285			STW,13	*SELCT89,1	
8230	01	01290	22600000 A			LI,6	0	ZERO TOTAL TABLE INDEX
8231	01	01291	6800126B			B	SELCT85	GO FORMAT & PRINT TOTAL LINE
8232					*			
8233					*			
8234					*			
8235	01	01292	EAFO021C A		SELCT87	BAL,15	*I'PRINT	
8236	01	01293	0000112D			DATA	SPACE	
8237	01	01294	EAFO021C A			BAL,15	*I'PRINT	
8238	01	01295	000012EE			DATA	SECTOROC	
8239	01	01296	EAFO021C A			BAL,15	*I'PRINT	
8240	01	01297	000012F9			DATA	SECTORZ	
8241	01	01298	EAFO021C A			BAL,15	*I'PRINT	
8242	01	01299	0000130B			DATA	SECTORB	
8243	01	0129A	EAFO021C A			BAL,15	*I'PRINT	
8244	01	0129B	0000130D			DATA	SECTORU	
8245	01	0129C	EAFO021C A			BAL,15	*I'PRINT	
8246	01	0129D	00001311			DATA	SECTORP	
8247	01	0129E	EAFO021C A			BAL,15	*I'PRINT	
8248	01	0129F	00001315			DATA	SECTORY	
8249	01	012A0	EAFO021C A			BAL,15	*I'PRINT	
8250	01	012A1	00001318			DATA	SECTORE	
8251	01	012A2	EAFO021C A			BAL,15	*I'PRINT	
8252	01	012A3	0000131A			DATA	SECTORD	
8253	01	012A4	EAFO021C A			BAL,15	*I'PRINT	
8254	01	012A5	0000131F			DATA	SECTORA	
8255	01	012A6	E8001324			B	*SELCTRTN	
8256					*			
8257					*			
8258					*			
8259					SELECT90	TEXTC	J	
8260						SELECTION MATRIX (ALL VALUES ARE IN OCTAL, UNLESS OTHERWISE I,		
8261						I SPECIFIED)		
	01	012A7	4D404040 A					
	01	012A8	40404040 A					
	01	012A9	40E2C5D3 A					
	01	012AA	C5C3E3C9 A					
	01	012AB	D6D540D4 A					
	01	012AC	C1E3D9C9 A					
	01	012AD	E7404DC1 A					
	01	012AE	D3D340E5 A					
	01	012AF	C1D3E4C5 A					
	01	01290	E240C1D9 A					
	01	012B1	C540C9D5 A					
	01	012B2	40D6C3E3 A					
	01	012B3	C1D36B40 A					
	01	012B4	E4D5D3C5 A					

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
	01	012B5	E2E240D6	A				
	01	012B6	E3C8C5D9	A				
	01	012B7	E6C9E2C5	A				
	01	012B8	40E2D7C5	A				
	01	012B9	C3C9C6C9	A				
	01	012BA	C5C44040	A				
8262								
8263	01	012BB	2240E3E3	A	SELECT91 TEXTC	J		
	01	012BC	E3E3E3E3	A	'TTTTT Y-AXIS		**** X-AXIS'	
	01	012BD	40E860C1	A				
	01	012BE	E7C9E240	A				
	01	012BF	40404040	A				
	01	012C0	5C5C5C5C	A				
	01	012C1	40404040	A				
	01	012C2	40E760C1	A				
	01	012C3	E7C9E240	A				
8264								
8265	01	012C4	4F4DC4C5	A	SELECT93 TEXTC		'(DEC) * ** 0 * 1 * 2 * 3 *',	
	01	012C5	C35D4040	A	' 4 * 5 * 6 * 7 *'			
	01	012C6	405C4040	A				
	01	012C7	4040405C	A				
	01	012C8	5C4040F0	A				
	01	012C9	4040405C	A				
	01	012CA	404040F1	A				
	01	012CB	4040405C	A				
	01	012CC	404040F2	A				
	01	012CD	4040405C	A				
	01	012CE	404040F3	A				
	01	012CF	4040405C	A				
	01	012D0	404040F4	A				
	01	012D1	4040405C	A				
	01	012D2	404040F5	A				
	01	012D3	4040405C	A				
	01	012D4	404040F6	A				
	01	012D5	4040405C	A				
	01	012D6	404040F7	A				
	01	012D7	4040405C	A				
8266								
8267	01	012D8	1FE2C5C3	A	SELECT94 TEXTC	J		
	01	012D9	E376D940	A	'SECTOR NO. SECTOR ERROR TABLE'			
	01	012DA	D5D64B40	A				
	01	012DB	4040E2C5	A				
	01	012DC	C3E3D6D9	A				
	01	012DD	40C5D9D9	A				
	01	012DE	D6D940F3	A				
	01	012DF	C1C2D3C5	A				
8268								
8269	01	012E0	22404DC4	A	SELECT96 TEXTC	J		
	01	012E1	C5C35D40	A	'(DEC) 8 U P T E D A'			
	01	012E2	4040D640	A				
	01	012E3	4040E440	A				
	01	012E4	4040D740	A				
	01	012E5	4040E340	A				
	01	012E6	4040C540	A				
	01	012E7	4040C440	A				
	01	012E8	4040C140	A				
8270								
8271	01	012EA	4040E3D6	A	BOUND 8			
	01	012EB	E3C1D340	A	SELECT97 TEXT		' TOTAL '	
8272	01	012EC	40404040	A	SELECT95 TEXT		' '	
	01	012ED	40404040	A				
8273								
8274	01	012EE	22D6C3E3	A	SECT0R0C TEXTC	J		
	01	012EF	C1D340E5	A	'ACTAL VALUES IN SELECTION MATRIX TABLE, '			
	01	012F0	C1D3E4C5	A				
	01	012F1	E240C9D5	A				
	01	012F2	40E2C5D3	A				
	01	012F3	C5C3E3C9	A				
	01	012F4	D6D540D4	A				
	01	012F5	C1E3D9C9	A				
	01	012F6	E740E3C1	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
	C1	012F7	C2D3C56B	A				
	C1	012F8	40404040	A				
8275					SECT0R2	TEXTC		
8276	01	012F9	38C9D8C4	A				'INDICATE ADDRESSES WHERE ACCESSED DATA SHOULD HAVE BEEN.'
	01	012FA	C9C3C1E3	A				
	01	012FB	C540C1C4	A				
	01	012FC	C4D9C5E2	A				
	01	012FD	E2C5E240	A				
	01	012FE	E6C8C5D9	A				
	01	012FF	C540C1C3	A				
	01	01300	C3C5E2E2	A				
	01	01301	C5C440C4	A				
	01	01302	C1E3C140	A				
	01	01303	E2C8D6E4	A				
	01	01304	D3C440C8	A				
	01	01305	C1E5C540	A				
	01	01306	C2C5C5D5	A				
	01	01307	4B404040	A				
8277	01	01308	10D6407E	A	SECT0R8	TEXTC		'8 = DATA OVERRUN'
	01	01309	40C4C1E3	A				
	01	0130A	C140D6E5	A				
	01	0130B	C5D9D9E4	A				
	01	0130C	D5404040	A				
8278	01	0130D	0CE4407E	A	SECT0RU	TEXTC		'U = SEC UNVL'
	01	0130E	40E2C5C3	A				
	01	0130F	40E4D5E5	A				
	01	01310	D3404040	A				
8279	01	01311	0CD7407E	A	SECT0RP	TEXTC		'P = SYNC MSD'
	01	01312	40E2E8D5	A				
	01	01313	C340D4E2	A				
	01	01314	C4404040	A				
8280	01	01315	0AE3407E	A	SECT0RT	TEXTC		'T = TRANSM'
	01	01316	40E3D9C1	A				
	01	01317	D5E2D440	A				
8281	01	01318	06C5407E	A	SECT0RE	TEXTC		'E = UE'
	01	01319	40E4C540	A				
8282	01	0131A	13C4407E	A	SECT0RD	TEXTC		'D = DATA COMPARISON'
	01	0131B	40C4C1E3	A				
	01	0131C	C140C3D6	A				
	01	0131D	D4D7C1D9	A				
	01	0131E	C9E2D6D5	A				
8283	01	0131F	0EC1407E	A	SECT0RA	TEXTC		'A = TRACK ADDR'
	01	01320	40E3D9C1	A				
	01	01321	C3D240C1	A				
	01	01322	C4C4D940	A				
8284	01	01323	00000000	A	LINE	DATA	0	ERROR EXISTS IN THIS LINE IF NOT 0
8285	01	01324	00000000	A	SELCTRTN	DATA	0	RETURN
8286	01	01325	00000000	A	OCTAL	DATA	0	OCTAL (Y-AXIS)
8287						PAGE		
8288					*			
8289					*			
8290					*			*** D A T A ***
8291					*			
8292					*			
8293					*			
8294					*			THIS DIRECTIVE WILL ENABLE THE USER TO DEFINE THE
8295					*			DATA PATTERN. IF NOT EXECUTED A PRE-SET DATA PATTERN
8296					*			WILL BE USED BY THE SURFACE TEST.
8297					*			
8298					*			PARAMETERS:
8299					*			
8300					*			D1 = 0 FIXED PATTERN; THE PATTERN IS DEFINED BY H2
8301					*			
8302					*			D1 = 1 INCREMENTAL PATTERN 1; THE SEED FOR THE
8303					*			PATTERN IS DEFINED BY H2, AND THE
8304					*			INCREMENTING CONSTANT IS DEFINED BY D3.
8305					*			
8306					*			D1 = 2 RANDOM PATTERN; THE SEED FOR THE PATTERN
8307					*			IS DEFINED BY H2.
8308					*			
8309					*			D1 = 3 SPREAD CURRENT SEEK ADDRESS. THIS OPTION
					*			WILL ALLOW THE USER TO SPREAD THE CURRENT

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
R310					*			RAD ADDRESS AS A DATA PATTERN.
R311					*			
R312					*		H2 =	THE PATTERN SEED. (D1 = 0,1,2)
R313					*		H3 =	THE INCREMENTING CONSTANT. (D1 = 1 ONLY)
R314					*		D4 =	(UNUSED)
R315					*			
R316					*			
R317					*			
R318	C1	01326	35100404		:DATA J	STW,1	D8NTRD	SET THE D8NIT READ FLAG
R319	C1	01327	3510030A	A		STW,1	:ERPARN0	SET NO OF BAD PARAMETER
R320	C1	01328	22600000	A		LI,6	0	LOAD LOWER LIMIT
R321	C1	01329	22700003	A		LI,7	3	LOAD UPPER LIMIT
R322	C1	0132A	39600201	A		CLR,6	:P1	TEST TYPE OF PATTERN PARAMETER
R323	C1	0132B	69601332	A		BCS,6	DATAPERR	IF WITHIN LIMITS CONTINUE
R324	C1	0132C	3560030A	A		STW,6	:ERPARN0	ZERO BAD PARAMETER LOCATION
R325	C1	0132D	02200040	A		LCI	4	LOAD PARAMETERS
R326	C1	0132E	2A400201	A		LM,4	:P1	P1, P2, P3, P4
R327	C1	0132F	02200040	A		LCI	4	SAVE PARAMETERS
R328	C1	01330	2H401335	A		STM,4	DATAP1	P1, P2, P3, P4
R329	C1	01331	E8000214	A		R	*:MONITOR	RETURN TO MONITOR
R330					*			
R331	C1	01332	EAF00229	A	DATAPERR	HAL,15	*:ERRPARM	GO TO MONITOR TO REPORT BAD PARAMETER
R332	C1	01333	00000328	A		DATA	:DATADIR	
R333	C1	01334	E8000214	A		R	*:MONITOR	RETURN TO THE MONITOR
R334					*			
R335	C1	01335	00000002	A	DATAP1	DATA	2	
R336	C1	01336	54482FBA	A	DATAP2	DATA	1414213562	
R337	C1	01337	00000000	A	DATAP3	DATA	0	
R338	C1	01338	00000000	A	DATAP4	DATA	0	
R339						PAGE		
R340					*			
R341					*			*** S E E K ***
R342					*			
R343					*			THIS DIRECTIVE DEFINES THE STARTING TRACK AND
R344					*			SECTOR ADDRESS, THE ENDING TRACK AND SECTOR
R345					*			ADDRESS AND THE NUMBER OF SECTORS TO BE TESTED.
R346					*			
R347					*			THIS DIRECTIVE WILL NOT RESULT IN I/R OPERATION.
R348					*			IT MERELY DEFINES THE RECORDING MEDIA SIZE USED
R349					*			IN THE RANDOM AND SURFACE TEST.
R350					*			
R351					*			PARAMETERS:
R352					*			
R353					*			D1 = THE STARTING TRACK ADDRESS
R354					*			D2 = THE STARTING SECTOR ADDRESS
R355					*			D3 = THE ENDING TRACK ADDRESS
R356					*			D4 = THE ENDING SECTOR ADDRESS
R357					*			
R358					*			
R359					*			
R360					*			
R361					*			
R362					*			
R363					*			
R364					*			
R365					*			
R366	C1	01339	224FFFFF	A	SEEK J	LI,4	-1	INITIALIZE DDT
R367	C1	0133A	35401864	A		STW,4	#DDTP	POINTER TO -1
R368	C1	0133B	6AF01850	A	SFEK1	HAL,15	#DDTICM	UPDATE DDT POINTER
R369	C1	0133C	68001363	A		R	SEEKSAV	IF ALL TABLES UPDATED NEXT PHASE
R370	C1	0133D	32401866	A		LW,4	#DDTBIAS	LOAD BIAS POINTER
R371	C1	0133E	3520030A	A		STW,2	SKDIRN0	
R372	C1	0133F	326A1869	A		LW,6	SECTORS,4	LOAD NO. OF SECTORS/TRACK
R373	C1	01340	31600202	A		CW,6	:P2	
R374	C1	01341	6910136F	A		RL	SEEKERR	
R375	C1	01342	6620030A	A		AWM,2	SKDIRN0	
R376	C1	01343	31600204	A		CW,6	:P4	
R377	C1	01344	6910136F	A		RL	SEEKERR	
R378	C1	01345	32900201	A		LW,9	:P1	'FETCH 'STARTING TRACK ADDRESS'
R379	C1	01346	32A00203	A		LW,11	:P3	'FETCH 'ENDING TRACK ADDRESS'
R380	C1	01347	22800000	A		LI,8	0	ZERO REG 8

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8381	01	01348	22A00000	A		LI,10	0	ZERO REG 10
8382	01	01349	32681870			LW,6	SWPROT12,4	LOAD EXISTING LOWER SECTOR LIMIT
8383	01	0134A	37881869			MW,8	SECTORS,4	CALCULATE A TEMPORARY LOWER SECTOR =
8384	01	0134B	30900202	A		AW,9	IP2	(P1 + SECTORS) + P2
8385	01	0134C	32600009	A		LW,6	9	DON'T TRANSFER CALC. TEMP
8386					*			LOWER SECTOR TO TEMP. LOWER SECT
8387	01	0134D	31681870			CW,6	SWPROT12,4	IF TEMP. LOWER SECTOR
8388	01	0134E	68101351			BGE	SEEK2	IS > EXISTING LOWER SECTOR LIMIT
8389	01	0134F	3510030A	A		STW,1	SKDIRNO	SET P1 IN ERROR
8390	01	01350	6800136F			B	SEEKERR	AND GO REPORT PARAMETER ERROR
8391	01	01351	32781871		SEEK2	LW,7	SWPROT34,4	LOAD EXISTING UPPER SECTOR LIMIT
8392	01	01352	37A81869			MW,10	SECTORS,4	CALCULATE A TEMPORARY UPPER SECTOR =
8393	01	01353	30800204	A		AW,11	IP4	(P3 + SECTORS)
8394	01	01354	3270000B	A		LW,7	11	OTHERWISE USED CALCULATE TEMP
8395	01	01355	20700001	A		AI,7	1	UPPER SECTOR + 1
8396	01	01356	31781871			CW,7	SWPROT34,4	IF TEMP. UPPER SECTOR IS
8397	01	01357	6820135A			BLE	SEEK3	> EXISTING UPPER SECTOR LIMIT
8398	01	01358	3530030A	A		STW,3	SKDIRNO	SET P3 IN ERROR
8399	01	01359	6800136F			B	SEEKERR	AND GO REPORT PARAMETER ERROR
8400	01	0135A	35681872		SEEK3	STW,6	TEMPSEK1,4	SAVE TEMP LOW SECTOR LIMIT
8401	01	0135B	35781873			STW,7	TEMPSEK2,4	SAVE TEMP UPPER SECTOR LIMIT
8402	01	0135C	31600007	A		CW,6	7	IF UPPER LIMIT
8403	01	0135D	6910133B			RL	SEEK1	IS < LOWER LIMIT
8404	01	0135E	3510030A	A		STW,1	SKDIRNO	SET P3 IN ERROR
8405	01	0135F	33000009	A		MTW,0	9	CALC LOWER LIMIT WAS = 0
8406	01	01360	6830136F			BEZ	SEEKERR	OTHERWISE
8407	01	01361	3530030A	A		STW,3	SKDIRNO	SET P3 IN ERROR
8408	01	01362	6800136F			9	SEEKERR	ERROR
8409	01	01363	224FFFFF	A	SEEKSAVE	LI,4	=1	INITIALIZE DDT
8410	01	01364	35401864			STW,4	#DDTP	POINTER TO =1
8411	01	01365	35100404			STW,1	DONTREAD	SET DON'T READ FLAG
8412	01	01366	6AF01850		SEEK4	BAL,15	#DDTICMT	UPDATE DDT POINTER
8413	01	01367	E8000214	A		R	*IMONITOR	IF ALL TABLES UPDATED RETURN TO DPM
8414	01	01368	22E01365			LI,14	SEEK4+1	LOAD A RETURN FOR 'TSSTART'
8415	01	01369	32401866			LW,4	#DDTBIAS	LOAD BIAS POINTER
8416					*			AND 'SSIZE' CALCULATIONS
8417	01	0136A	32981873			LW,9	TEMPSEK2,4	LOAD TEMP UPPER SECTOR ADDRESS
8418	01	0136B	32881872			LW,11	TEMPSEK1,4	LOAD TEMP LOWER SECTOR ADDRESS
8419	01	0136C	3598186C			STW,9	SUPPER,4	SAVE AS SECTOR UPPER LIMIT
8420	01	0136D	3588186B			STW,11	SLOWER,4	SAVE AS SECTOR LOWER LIMIT
8421	01	0136E	680003F6			R	INITSIZE	GO CALC 'SSIZE' AND 'TSSTART'
8422					*			
8423					*			
8424					*			
8425	01	0136F	EAF00229	A	SEEKERR	BAL,15	*IERRPARM	GO REPORT BAD PARAMETER
8426	01	01370	0000032A			DATA	ISEEKDIR	
8427	01	01371	E8000214	A		B	*IMONITOR	
8428					*			
8429		00 0030A			SKDIRNO	FGU	IERRPARNO	
8430					*			
8431						PAGE		
8432					*			
8433					*			
8434					*			RESET I/O DIRECTIVE
8435					*			*** RESET ***
8436					*			
8437					*			THIS DIRECTIVE ALLOWS I/O RESET LINE TO BE
8438					*			DRIVEN TO ALL CONNECTED DEVICE AFTER A WATCHDOG
8439					*			TIMER TRAP OCCURS.
8440					*			
8441					*			THIS DIRECTIVE REQUIRES THAT THE PROGRAMABLE
8442					*			I/O RESET JUMPER BE INSTALLED (SEE CUSTOMER
8443					*			SERVICE TEK TIP NO. 65-75-610, DATED 8 JANUARY
8444					*			1968 FOR INSTALLATION).
8445					*			
8446	01	01372	22401F9F		RSET	LI,4	BUF1L0+132/4	LOAD BUFFER ENDING ADDRESS
8447	01	01373	32601F60			LW,6	L(X'40404040')	LOAD BLANKS
8448	01	01374	225FFFDF	A		LI,5	-132/4	LOAD INDEX COUNT
8449	01	01375	856A0004	A		STW,6	+4,5	STORE BLANKS
8450	01	01376	65501375			RIR,5	0=1	
8451	01	01377	73000220	A		MTB,0	IMS9OUT	TEST FOR LINE PRINTER

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8452	C1	01378	68301378			BE	0+3	IF NOT BRANCH
8453	C1	01379	224000C2 A			LI,4	X'1C2'	LOAD UP SPACE 2 LINES
8454	C1	0137A	75401F7E			STB,4	BUF1L0	SAVE BYTE IN MSG
8455	C1	0137B	220009CB			LI,0	DA(10CRSET)	LOAD DOUBLEWORD ADDR
8456	C1	0137C	CC000220 A			SI0,0	*IMSGOUT	START I/O TO MSG OUTPUT DEVICE
8457	C1	0137D	22401388 A			LI,4	5000	SET UP 7.5 MS DELAY
8458	C1	0137E	22501388 A			LI,8	5000	SET UP 7.5 MS DELAY
8459	C1	0137F	6D000042 A			WD,0	X'142'	DRIVE I/O RESET LINE IF JUMPER IN
8460	C1	01380	64401380			RDR,4	0	WAIT 7.5 MS
8461	C1	01381	6D000042 A			WD,0	X'142'	RESET I/O RESET LINE
8462	C1	01382	64501382			RDR,5	0	WAIT 7.5 MS
8463	C1	01383	CD000220 A			TIO,0	*IMSGOUT	TEST DEVICE FOR BUSY
8464	C1	01384	68C0138C			BCR,12	RSET1	IF NOT BUSY; I/O RESET JUMPER IS IN
8465	C1	01385	CF000220 A			HIO,0	*IMSGOUT	JUMP NOT IN; HALT I/O
8466	C1	01386	CD000220 A			TIO,0	*IMSGOUT	TEST FOR I/O HALTED
8467	C1	01387	68C01389			BCR,12	0+2	BRANCH IF 'ISIA' CAN BE ACCEPTED
8468	C1	01388	68001386			B	0-2	HANG HERE UNTILL DEVICE GOES NOT BUS
8469	C1	01389	EAF0021C A			RAL,15	*IPRINT	PRINT FACT NO JUMPER INSTALLED
8470	C1	0138A	0000138E			DATA	INSTALL	
8471	C1	0138B	E8000214 A			B	*IMONITOR	RETURN TO MONITOR
8472	C1	0138C	35101398		RSET1	STW,1	RESETI0	SET I/O RESET JUMPER IN FLAG
8473	C1	0138D	EA000214 A			B	*IMONITOR	RETURN TO MONITOR
8474	C1	0138E	18C9D5E2 A		INSTALL	TEXTC	'INSTALL I/O RESET JUMPER'	
		C1	0138F					
		C1	01390					
		C1	01391					
		C1	01392					
		C1	01393					
		C1	01394					
8475						BRND	8	
8476	C1	01396	05007DF8		10CRSET	GEN,8,24	X'051,BA(BUF1LA)	
8477	C1	01397	00000084 A			GEN,8,24	0,132	
8478	C1	01398	00000000 A		RESETI0	DATA	0	I/O JUMPER IN FLAG
8479						PAGE		
8480					*			
8481					*			WATCHDOG TIMER TRAP ROUTINE
8482					*			
8483					*			
8484					*			THIS ROUTINE HANDLES WATCHDOG TIMER TRAPS
8485					*			
8486					*			(1.) BY ISSUING AN I/O RESET IF:
8487					*			A. THE I/O RESET JUMPER IS INSTALLED AND
8488					*			B. THE 'RSET' DIRECTIVE HAS BEEN EXECUTED
8489					*			AFTER THE INSTALLATION OF THE JUMPER.
8490					*			
8491					*			(2.) BY HALTING PROGRAM EXECUTION IF:
8492					*			A. THE 'RSET' DIRECTIVE WAS NOT EXECUTED.
8493					*			B. A WATCHDOG TIMER TRAPS OCCURS IN THIS ROUTINE.
8494					*			TO CLEAR THIS WAIT!
8495					*			1. PUT COMPUTE SWITCH ON PCP TO 'IDLE'.
8496					*			2. PRESS 'SYST RESET' ON PCP.
8497					*			3. PUT COMPUTE SWITCH ON PCP TO 'RUN'.
8498					*			
8499					*			
8500					*			
8501					*			
8502					*			
8503					*			INPUT PARAMETERS:
8504					*			RESETI0 IF = 0 'RSET' HAS NOT BEEN EXECUTED
8505					*			SUCCESSFULLY
8506					*			ENDOPER IF = 0 DIRECTIVE WATCHDOG TRAP
8507					*			OCCURRED WAS 'TST1'
8508					*			WRITTEN
8509					*			LOCATION CONTAINING RETURN
8510					*			ADDRESS TO 'TST3'
8511					*			
8512					*			
8513					*			
8514					*			REGISTERS DISTURBED
8515					*			
8516					*			(NONE)

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8517					*			
8518					*			
8519					*		OUTPUT FUNCTION	
8520					*			
8521					*		I/O SENT TO ALL DEVICES	
8522					*			
8523					*			
8524					*			
8525	01	0139A	00000000	A	WATCHD8G	BOUND DATA	8 0,0	
8526	01	0139B	00000000	A				
	01	0139C	0000139E			DATA	**2,7**2*	
	01	0139D	07000000	A				
8527					*			
8528	01	0139E	330013DF			MTW,0	WATCHPL8	TEST THE WATCH FLAG IF SET SECD PASS
8529	01	0139F	693013A5			SNEZ	WATCH6	GO WAIT
8530	01	013A0	02200000	A		LCI	0	SAVE ALL
8531	01	013A1	880013E2			STM,0	WATCH8V	REGISTERS
8532	01	013A2	331013DF			MTW,1	WATCHPL8	SET WATCH FLAG
8533	01	013A3	33001398			MTW,0	RESEI8	TEST FOR I/O RESET FLAG
8534	01	013A4	693013AA			SNEZ	WATCH1	IF SET GO RESET I/O
8535					*			
8536	01	013A5	32A013E0		WATCH6	LW,10	WATCHBRM	LOAD BRANCH INSTRUCTION
8537	01	013A6	46A00026	A		XW,10	X'26'	EXCHANGE WITH MONITOR SUPPLIED INST
8538	01	013A7	35A013E1			STW,10	WATCHRTN	SAVE SO IT CAN BE RESTORED
8539	01	013A8	680013A8			B	*	OTHERWISE A HALT WILL OCCUR
8540					*			TO CLEAR THE HALT
8541					*			1. PUT COMPUTE SWITCH TO 'IDLE'
8542					*			2. PRESS 'SYST RESET'
8543					*			3. PUT COMPUTE SWITCH TO 'RUN'
8544	01	013A9	680013B1			B	WATCH2	GO TO CONTINUE
8545					*			
8546	01	013AA	22601388	A	WATCH1 J	LI,6	5000	LOAD DELAY
8547	01	013AB	22701388	A		LI,7	5000	LOAD DELAY
8548	01	013AC	60000042	A		WD,0	X'42'	DRIVE I/O RESET LINE
8549	01	013AD	646013AD			SDR,6	*	WAIT 7.5 MS
8550	01	013AE	60000042	A		WD,0	X'42'	RESET I/O RESET LINE
8551	01	013AF	647013AF			SDR,7	*	WAIT 7.5 MS
8552	01	013B0	680013B3			B	WATCH7	
8553					*			
8554					*			
8555					*			
8556	01	013B1	32A013E1		WATCH2	LW,10	WATCHRTN	
8557	01	013B2	35A00026	A		STW,10	X'26'	RESTORE MONITOR INST INTO X'26'
8558	01	013B3	22A00020	A	WATCH7	LI,10	X'20'	LOAD I/O BIT
8559	01	013B4	6DA01500	A		WD,10	X'1500'	DISABLE AND
8560	01	013B5	6DA01100	A		WD,10	X'1100'	DISARM I/O INTERRUPTS
8561	01	013B6	22A00010	A		LI,10	X'10'	
8562	01	013B7	6DA01200	A		WD,10	X'1200'	
8563	01	013B8	6D000022	A		WD,0	X'22'	RESET INHIBIT INTERRUPT
8564	01	013B9	32C0139A			LW,12	WATCHD88	FETCH LOCATION OF TRAP
8565	01	013BA	48C01F6D			AND,12	L(X'0001FFFF')	SAVE INST ADDR
8566	01	013BB	EAF00218	A		BAL,15	*IHEXC	CONVERT TO EBCDIC
8567	01	013BC	35F013DE			STW,15	WATCHM88+7	
8568	01	013BD	EAF00218	A		BAL,15	*IHEXC	
8569	01	013BE	75F613DD			STB,15	WATCHM88+6,3	
8570					*			
8571					*			
8572					*			
8573	01	013BF	22600000	A		LI,6	0	
8574	01	013C0	356018D0			STW,6	IDEVADDR	ZERO DEVICE ADDRESS
8575	01	013C1	22D013C4			LI,13	**3	SET BRANCH
8576	01	013C2	35D0139A			STW,13	WATCHD88	SAVE BRANCH
8577	01	013C3	0E20139A			LPSD,2	WATCHD88	GO TO NEXT LOCATION
8578	01	013C4	33001787			MTW,0	END\$PER	WAS IT A SURFACE OR RANDOM TEST
8579	01	013C5	683013CE			REZ	WATCH3	IF ZERO BRANCH
8580	01	013C6	22A00000	A		LI,10	0	LOAD ZERO
8581	01	013C7	35A01A87			STW,10	#MSGLEVL	RESET MSG LEVEL FLAG
8582	01	013C8	35201787			STW,2	END\$PER	FORCE END OF \$PER FLAG SR: NO TIO
8583	01	013C9	32701783			LW,9	WRITTEN	LOAD AND
8584	01	013CA	359013F2			STW,9	WHC\$GRTN	
8585	01	013CB	6AF018DC			BAL,15	#MSGERR	GO REPORT INFORMATION

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
R586	01	013CC	680013D0			R	WATCH4	GO TO EXIT
R587	01	013CD	680013D0			R	WATCH4	GO TO EXIT
R588					*			
R589					*			
R590					*			
R591					WATCH3 J			
R592	01	013CE	6AF0110C			RAL,15	TST1ERMG	GO SEE IF DEV ADDRESS HAS BEEN RPT
R593	01	013CF	00000000	A	WATCHERR	DATA	0	CURRENT FUNCTIONAL ERROR NO.
R594					*			
R595					*			
R596					*			
R597					WATCH4 J			
R598	01	013D0	EAF0021C	A		RAL,15	*IPRINT	PRINT MSG
R599	01	013D1	000013D7			DATA	WATCHMSG	
R600	01	013D2	22000000	A		LI,0	0	ZERO
R601	01	013D3	350013DF			STW,0	WATCHFLG	WATCH FLAG
R602	01	013D4	02200000	A		LCI	0	RESTORE
R603	01	013D5	2A0013F2			LM,0	WATCHSV	ALL REGISTERS
R604	01	013D6	E80013F2			R	*WHDBGRTN	
R605					WATCHMSG TEXTC			
R606	01	013D7	1FE6C1E3	A	WATCH	DAG TIMER	TRAP LBC	XXXXX'
	01	013D8	C3C840C4	A				
	01	013D9	D6C740E3	A				
	01	013DA	C9D4C5D9	A				
	01	013DB	40E3D9C1	A				
	01	013DC	D740D3D6	A				
	01	013DD	C34040E7	A				
	01	013DE	E7E7E7E7	A				
R607	01	013DF	00000000	A	WATCHFLG	DATA	0	FLAG TO ASSURE WATCHDOG DOES NOT HAP
R608	01	013E0	68C013B1		WATCHBRH	R	WATCH2	
R609	01	013E1	00000000	A	WATCHRTN	DATA	0	RETURN LOCATION
R610	01	013E2			WATCHSV	RES	16	
R611	01	013F2	00000000	A	WHDBGRTN	DATA	0	
R612					PAGE			
R613					*			
R614					*			
R615					*			*** R A N D O M E X E R C I S E R ***
R616					*			
R617					*			*** T S T 2 , D 1 , D 2 ***
R618					*			
R619					*			THIS DIRECTIVE PROVIDES A MEANS OF OPERATING A
R620					*			RAD STORAGE SYSTEM WITH PSEUDO RANDOM, STORAGE
R621					*			UNIT SELECTION, ORDER SEQUENCE, DATA PATTERN, AND
R622					*			I/O BUFFER AREA, FOR THE PURPOSE OF DETECTING
R623					*			INTERMITTENT FAILURES. THE RECORDING MEDIA WILL
R624					*			BE INITIALIZED WITH A PSEUDO RANDOM PATTERN BEFORE
R625					*			THE EXERCISER PORTION OF THE TEST IS ENTERED.
R626					*			ONCE STARTED, THE EXERCISER WILL RUN FOR (D1)
R627					*			CYCLES OR UNTIL TERMINATED BY THE OPERATOR.
R628					*			THE RANDOM EXERCISER WILL REPORT ERRORS AS THEY
R629					*			OCCUR, BUT ONLY AS TO THE FUNCTION THAT FAILED.
R630					*			THE RANDOM EXERCISER PROVIDES NO LOOP ON ERROR
R631					*			CAPABILITY. THIS DIRECTIVE WILL BE EXECUTED FOR
R632					*			ALL STORAGE UNITS SPECIFIED BY THE 'SYST' DIRECTIVE.
R633					*			
R634					*			TEST VARIATIONS:
R635					*			THE 'DATA' DIRECTIVE NOT BE EFFECTIVE FOR THE
R636					*			RANDOM EXERCISER. THE SURFACE AREA TO BE TESTED
R637					*			CAN BE LIMITED WITH THE 'SEEK' DIRECTIVE.
R638					*			
R639					*			PARAMETERS:
R640					*			
R641					*			D1 - NUMBER OF CYCLES TO BE PERFORMED.
R642					*			
R643					*			D2 - NUMBER OF RETRIES ON AN ERROR, BEFORE
R644					*			GOING ON TO NEXT PASS.
R645					*			
R646					*			
R647					*			
R648	01	013F3	32600201	A	TST2	LW,6	:P1	FETCH AND SAVE
R649	01	013F4	3560151D			STW,6	CYCLE	NO. OF PASSES

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8660	C1	013F5	32600202	A		LW,6	#P2	FETCH AND SAVE
8661	01	013F6	3560151C			STW,6	TST2PAR#2	NO. OF RETRIES ON ERROR
8662	01	013F7	226FFFF5	A		LI,6	RTRACETOP-RTRACBOT	
8663	01	013F8	22700000	A		LI,7	0	
8664	01	013F9	357C1531			STW,7	RTRACBOT,6	
8665	01	013FA	656013F9			RIR,6	*-1	
8666	C1	013FB	22600000	A		LI,6	0	ZERO
8667	C1	013FC	35601A87			STW,6	#MSGLEVL	ZERO MESSAGE LEVEL
8668	01	013FD	6AF01403			BAL,15	TST2LEV2	GO TO LEVEL 2
8669	01	013FE	EAF0021D	A		BAL,15	*ISENSE	GO TEST SENSE SWITCHES
8660	01	013FF	2E0013FF			WAIT	*	SS3 = OFF SS1 = UNK (MLT AFTFR TEST)
8661	01	01400	680013F3			B	TST2	SS3 = ON SS1 = ON (LOOP ON TEST)
8662	01	01401	35100404			STW,1	DONTREAD	
8663	01	01402	E8000214	A		B	*IMONITOR	SS3 = ON SS1 = OFF (RTN TO MONITOR)
8664					*			
8665					*			
8666					*			COMPREHENSIVE TEST ENTRY (LEVEL 2)
8667	01	01403	35F0151E		TST2LEV2	STW,15	TST2RTN1	SAVE RTN TO LEVEL 1
8668	01	01404	22400000	A		LI,4	0	LOAD ZERO
8669	01	01405	35401866			STW,4	#DDTBias	SET UP ZERO BIAS
8670	01	01406	6AF017F0			BAL,15	MEMORY	GO CALCULATE MEMORY SIZE
8671	01	01407	E800151E			B	*TST2RTN1	IF NOT ENOUGH MEMORY ABORT
8672	01	01408	02200040	A		LCI	4	AND
8673	01	01409	2A801516			LM,8	TST2DATA	FETCH
8674	01	0140A	28801774			STW,8	TST3PAT	SAVE TYPE OF
8675	01	0140B	35901863			STW,9	RADSEED	STORE A RANDOM NO.
8676	01	0140C	22E0151A			LI,14	TST2PAR	DATA PATTERN
8677	01	0140D	6AF01544			BAL,15	TST3RAND	GO DO SURFACE TEST
8678	01	0140E	22600324			LI,6	*TST2DIR	LOAD AND SAVE
8679	C1	0140F	35601A99			STW,6	MSGADDR	THE ADDR OF NAME OF DIRECTIVE
8680	C1	01410	3310151D			MTW,1	CYCLE	ADD 1 TO NO OF CYCLES TO DO
8681	01	01411	6AF01413			BAL,15	TST2LEV3	GO TO LEVEL 3
8682	01	01412	E800151E			B	*TST2RTN1	GO TO LEVEL 1
8683					*			
8684					*			
8685					*			RANDOM TESTING (LEVEL 3)
8686	01	01413	35F0151F		TST2LEV3	STW,15	TST2RTN2	SAVE RTN ADDR TO LEVEL 2
8687					*			
8688					*			
8689	01	01414	33F0151D		TST2LOOP	MTW,-1	CYCLE	DECREMENT NO OF PASSES
8690	01	01415	E830151F			SEZ	*TST2RTN2	IF ZERO RTN TO LEVEL 2
8691					*			
8692					*			
8693					*			
8694	01	01416	6AF01419			BAL,15	TST2LEV4	GO BUILD RANDOM I/O CONTROL TABLES
8695	01	01417	6AF015C4			BAL,15	IOCNT	GO DO I/O
8696	01	01418	68001414			B	TST2LOOP	GO TO TOP OF LOOP
8697					*			
8698					*			
8699					*			
8700	01	01419	35F01520		TST2LEV4	STW,15	TST2RTN3	SAVE RETURN ADDRESS
8701	01	0141A	6AF01848			BAL,15	#DDTRADM	GO FIND A RANDOM DEVICE
8702	01	0141B	6800141C			B	*-1	
8703	01	0141C	32401866			LW,4	#DDTBias	FETCH THE BIAS TO DDT
8704	01	0141D	326018D2			LW,6	BYTCURR	FETCH CURRENT NO. OF BYTES
8705	01	0141E	2560027E	A		SCS,6	-2	
8706	01	0141F	35601CA8			STW,6	ICOMWCNT	SET UP BUFFER LENGTH
8707	01	01420	22000000	A		LI,0	0	SET UP ZERO
8708	C1	01421	35000404			STW,0	DONTREAD	RESET THE DON'T READ FLAG
8709	01	01422	35101525			STW,1	RDMPTM	STORE WORD
8710	01	01423	6AF01437			BAL,15	TST2LEV5	FIND SECTORS AND BYTE COUNT
8711	01	01424	6AF01785			BAL,15	BUILDIOC	GO BUILD IOC WORD
8712	01	01425	326015C2			LW,6	EXSKAIO	LOAD EXPECTED SEEK STATUS
8713	01	01426	35601844			STW,6	EXSEKAIO	SAVE EXPECTED SEEK STATUS
8714	C1	01427	32601F6E			LW,6	L(X'FFFFC001')	LOAD RECEIVED STATUS MASK
8715	01	01428	35601843			STW,6	MASK	SET UP MASK STORAGE
8716	01	01429	1260158E			LD,6	SEEKIOC	LOAD AND SAVE
8717	01	0142A	15601832			STD,6	IOCSEEK1	IOC SEEK INFORMATION
8718	01	0142B	551216A0			STW,1	BUFINCMT,1	LOAD BUFFER INCREMENT COUNT
8719	C1	0142C	551216A1			STW,1	SECINCMT,1	LOAD SECTOR INCREMENT COUNT
8720	C1	0142D	35101793			STW,1	IOCPCNT	SET AS A TWO IOC OPERATION

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8721	C1	0142E	3510178B			STW,1	READVERY	SET READ VERIFICATION FLAG
8722	C1	0142F	35201D0A			STW,2	IPATID	SET RANDOM PATTERN
8723				*				
8724				*				
8725				*				
8726				*				
8727				*				
8728	C1	01430	327018CE			LW,7	ISEED	FETCH RANDOM WORD
8729	C1	01431	22600000	A		LI,6	0	ZER0
8730	C1	01432	22900008	A		LI,9	10CDS1-10CDS	LOAD TABLE LENGTH
8731	C1	01433	36600009	A		DW,6	9	FIND RANDOM ROUTINE
8732	C1	01434	35601524			STW,6	PASSTYPF	SAVE TYPE OF RANDOM PASS
8733	C1	01435	670C1475			EXU	10CDS,6	GO DO A RANDOM FUNCTION
8734				*				
8735	C1	01436	ER001520			R	*TST2RTN3	RETURN TO CALLING ROUTINE
8736				*				
8737				*				
8738				*				
8739				*			LEVEL 5	
8740				*				
8741	C1	01437	35F01521		TST2LEV5	STW,15	TST2RTN4	SAVE RETURN ADDRESS
8742	C1	01438	33101526			MTW,1	RTRACEL50	
8743	C1	01439	32EC1863			LW,14	RADSEED	FETCH THE RANDOM NO.
8744	C1	0143A	6AF018C0			BAL,15	:RANDOM	GENERATE A NEW RANDOM NO.
8745	C1	0143H	35EC1863			STW,14	RADSEED	SAVE THE NEW RANDOM NO.
8746	C1	0143C	32F0000E	A		LW,15	14	LOAD RANDOM NO. INTO LSB'S
8747	C1	0143D	6830143A			REZ	\$-3	IF ZER0 GET ANOTHER RANDOM NO.
8748	C1	0143E	22F00000	A		LI,14	0	ZER0 MSB'S OF DOUBLEWORD
8749	C1	0143F	32A018D5			LW,10	SSIZEC	
8750	C1	01440	20A00001	A		AI,10	1	INCREMENT BY 1
8751	C1	01441	34E0000A	A		DW,14	10	DIVIDE TO OBTAIN REMAINDER
8752	C1	01442	3300000E	A		MTW,0	14	TEST FOR A ZER0
8753	C1	01443	68301438			REZ	TST2LEV5+1	SECTOR SIZE
8754	C1	01444	6AF017F0			BAL,15	MEMORY	GO CALC MEMORY SIZE
8755	C1	01445	ER00151E			R	*TST2RTN1	RTN HERE IF NO MEMORY IS AVAILABLE
8756	C1	01446	32801841			LW,11	MEMLSTBA	LOAD ADDR OF LAST USUABLE MEM BYTE
8757	C1	01447	203F8208	N		AI,11	-BA(BUF1L0)	SUBTRACT LOWER BYTE ADDRESS
8758	C1	01448	22A00000	A		LI,10	0	ZER0
8759	C1	01449	34AC18D2			DW,10	RYTCURR	
8760	C1	0144A	3300000B	A		MTW,0	11	IF ZER0
8761	C1	0144H	6830144D			RNEZ	\$+2	
8762	C1	0144C	6AF01139			BAL,15	TILT	GO REPORT NON-RECOVERABLE CONDITION
8763	C1	0144D	3180000E	A		DW,11	14	TEST AGAINST RANDOM SECTOR COUNT
8764	C1	0144E	69101450			AL	\$+2	IF LESS BRANCH
8765	C1	0144F	3240000E	A		LW,11	14	IF NOT LOAD NEW SECTOR COUNT
8766	C1	01450	358C1523			STW,11	MAXSECT	SAVE AS THE MAXIMUM NO. OF SECTORS
8767	C1	01451	22A00000	A		LI,10	0	ZER0 THE MSB'S OF DOUBLEWORD
8768	C1	01452	37A018D2			MTW,10	RYTCURR	
8769	C1	01453	20807DF8			AI,11	BA(BUF1L0)	FIND THE ENDING BYTE ADDRESS
8770	C1	01454	35801841			STW,11	MEMLSTBA	SAVE AS ADDR OF LAST BYTE
8771	C1	01455	358C183C			STW,11	RUFENDAD	SAVE AS END PATTERN BYTE ADDR
8772	C1	01456	208F8208	N		AI,11	-BA(BUF1L0)	FIND SIZE OF PATTERN BUFFER
8773	C1	01457	32FC1863			LW,15	RADSEED	FETCH RANDOM NO.
8774	C1	01458	22E00000	A		LI,14	0	ZER0 MSB'S OF DOUBLE WORD
8775	C1	01459	34E0000B	A		DW,14	11	R = NO. OF BYTES IN PATTERN
8776				*				
8777				*				
8778				*				
8779	C1	0145A	33101527			MTW,1	RTRACEL51	
8780	C1	0145B	32F0000E	A		LW,15	14	
8781	C1	0145C	68301438			REZ	TST2LEV5+1	
8782	C1	0145D	22F00000	A		LI,14	0	
8783	C1	0145E	34EC18D2			DW,14	RYTCURR	
8784	C1	0145F	3300000F	A		MTW,0	15	
8785	C1	01460	68301462			RNEZ	\$+2	IF SECTOR COUNT = 0
8786	C1	01461	22F00001	A		LI,15	1	LOAD SECTOR COUNT OF ONE
8787	C1	01462	33101528			MTW,1	RTRACEL52	
8788	C1	01463	35F01522			STW,15	TSPREAD	
8789				*				
8790				*				
8791	C1	01464	22E00000	A		LI,14	0	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8792	C1	01466	37E018D2			MW,14	BYTCURN	
8793	C1	01466	32A01841			SW,10	MEMLSTBA	FETCH ENDING RYTE ADDRESS
8794	C1	01467	38A0000F A			SW,10	15	
8795	C1	01468	35A01842			STW,10	BUF1L0BA	SAVE LOWER LIMIT BYTE ADDR
8796	C1	01469	32A018D4			LW,10	SURFCEND	
8797	C1	0146A	38A01523			SW,10	MAXSECT	
8798	C1	0146B	22E00000 A			LI,14	0	LOAD ZERO
8799	C1	0146C	38A018D3			SW,10	CURRSEEK	SUBTRACT WORDS
8800	C1	0146D	68301470			BEZ	*+3	IF ZERO SKIP CALCULATION
8801	C1	0146E	32F01863			LW,15	RADSEED	LOAD RANDOM SEED
8802	C1	0146F	36E0000A A			DW,14	10	FIND THE NO. OF AVAILARLE SECTORS
8803	C1	01470	30E018D3			AW,14	CURRSEEK	
8804	C1	01471	35E018D3			STW,14	CURRSEEK	SET UP SEEK ADDRESS
8805	C1	01472	30E01822			AW,14	TSPREAD	
8806	C1	01473	35E018D4			STW,14	SURFCEND	** SECTOR ENDING ADDRESS
8807	C1	01474	28001521			R	*TSPRTNA	RETURN TO CALLING ROUTINE
8808					*			
8809					*			
8810		01 01475			10CDS	SET	*	
8811	C1	01475	6AF0147D			BAL,15	STOP	
8812					*			
8813	C1	01476	6AF0148D			BAL,15	SKCCWRT	
8814					*			
8815	C1	01477	6AF014A2			BAL,15	SKCRDQ2	
8816					*			
8817	C1	01478	6AF014B4			BAL,15	SENSE	
8818					*			
8819	C1	01479	6AF014D4			BAL,15	READ12	
8820					*			
8821	C1	0147A	6AF014E4			BAL,15	READQ2	
8822					*			
8823	C1	0147B	6AF014F2			BAL,15	WRTDWR7	
8824					*			
8825	C1	0147C	6AF01510			BAL,15	REDQRED	
8826		01 0147D			10CDS1	SET	*	
8827						PAGE		
8828					*			
8829					*			
8830					*			
8831	C1	0147D	1280148A		STOP	STOP	ORDER	
8832	C1	0147E	33101529			LD,8	10CDD0	FETCH 10CD
8833	C1	0147F	3510183A			MTW,1	RTRACED0	
8834	C1	01480	3080183D			STW,1	SURORDER	LOAD TYPE OF OPERATION
8835	C1	01481	15801834			AW,8	BUF1NAD	LOAD BUFFER ADDRESS 10CD
8836	C1	01482	3280183F			STD,8	10CDATA	SAVE 10CD
8837	C1	01483	558216A1			LW,8	BUFAVAIL	LOAD THE NO. OF AVAILABLE BUFFER
8838	C1	01484	558216A0			STW,8	SECINCHT,1	SET UP COUNT
8839	C1	01485	3260148C			STW,8	BUFINCHT,1	SET UP COUNT
8840	C1	01486	35601845			LW,6	STOPA10	LOAD EXPECTED A10 STATUS
8841	C1	01487	32601F6F			STW,6	EXDATA10	SAVED EXPECTED A10 STATUS
8842	C1	01488	35601843			LW,6	L(X'FFFEFC00,1)	
8843	C1	01489	E800000F A			STW,6	MASK	SET UP MASK STORAGE
8844						R	*15	RETURN TO CALLING ROUTINE
8845					*			
8846					*			
8847	C1	0148A	00000000 A		10CDD0	ROUND	8	
8848	C1	0148B	10000003 A			GEN,8,24	X'001,0	
8849	C1	0148C	00084000 A		STOPA10	GEN,8,24	X'1C1,3	
8850						DATA	X'00084000'	
8851						PAGE		
8852					*			
8853					*			
8854					*			
8855					*			
8856	C1	0148D	3310152A		SKCCWRT	MTW,1	RTRACE01	
8857	C1	0148E	3510183A			STW,1	SURORDER	LOAD TYPE OF OPERATION
8858	C1	0148F	1280149E			LD,8	10CDD1	FETCH THE WRITE 10CD
8859	C1	01490	3080183D			AW,8	BUFINAD	ADD TO IF THE STARTING ADDRESS
8860	C1	01491	309C183B			AW,9	BUFLENGT	ADD IN THE BYTE COUNT
8861	C1	01492	15801834			STD,8	10CDATA	SAVE DOUBLE WORD
8862	C1	01493	128014A0			LD,8	10CDD10	LOAD COMMAND CHAINING SEFK

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8863	C1	01494	15801832			STD,8	I0CSEK1	STORE THIS DOUBLEWORD
8864	C1	01495	3280183F			LW,8	BUFAVAIL	LOAD NO. OF BUFFERS AVAILABLE
8865	C1	01496	558216A1			STH,8	SECINCM1,1	SET UP COUNTERS
8866	C1	01497	558216A0			STH,8	RUFINCM1,1	SET UP COUNTERS
8867	C1	01498	35001525			STW,0	RDMPATTM	STORE RANDOM PATTERN
8868	C1	01499	35001793			STW,0	I0CDPNT	SET UP ONLY 1 I0CD OPERATION
8869	C1	0149A	328015C3			LW,8	EXDTA18	LOAD AND SAVE
8870	C1	0149B	35801844			STW,8	EXSEKAI8	SET UP EXPECTED AIB STATUS
8871	C1	0149C	E000000F	A		R	*15	GO BACK TO RANDOM ROUTINE
8872								
8873								
8874								
8875	C1	0149E	01000000	A	I0CD01	BRUND	R	
8876	C1	0149F	10000000	A		GEN,8,24	X'101',0	SAVE WRITE
8877	C1	014A0	03003EF2		I0CD10	GEN,8,24	X'1C1',0	SAV
8878	C1	014A1	20000002	A		GEN,8,24	X'031,BA(SEFKRAD)+2	
8879								
8880								
8881								
8882								
8883								
8884								
8885	C1	014A2	33101528		SKCRD02 ;	MTW,1	RTRACE02	
8886	C1	014A3	3520183A			STW,2	SURORDER	SET READ TEST FLAG
8887	C1	014A4	12801492			LD,8	I0CD02	FETCH THE READ OP I0CD
8888	C1	014A5	3080183D			AW,8	RUFINAD	ADD TO IT, THE STARTING BYTE ADDR
8889	C1	014A6	3090183H			AW,9	RUFLENGT	ADD NO. OF BYTES
8890	C1	014A7	15801834			STD,8	I0CDATA	SET UP I0CD
8891	C1	014A8	128014A0			LD,8	I0CD10	LOAD COMMAND CHAINING SEEK
8892	C1	014A9	15801832			STD,8	I0CSEFK1	STORE THIS DOUBLEWORD
8893	C1	014AA	35001793			STW,0	I0CDPNT	SET UP A ONLY 1 I0CD OPERATION
8894	C1	014AB	328015C3			LW,8	EXDTA18	LOAD AND SAVE
8895	C1	014AC	35801844			STW,8	EXSEKAI8	EXPECTED AIB STATUS
8896	C1	014AD	3280183F			LW,8	BUFAVAIL	SET UP COUNTERS
8897	C1	014AE	558216A0			STH,8	BUFINCM1,1	SET UP COUNTERS
8898	C1	014AF	558216A1			STH,8	SECINCM1,1	SET UP COUNTERS
8899	C1	014B0	33000000	A		MTW,0	0	
8900	C1	014B1	E000000F	A		R	*15	GO BACK TO RANDOM ROUTINE
8901								
8902	C1	014B2	10000000	A	I0CD02	BRUND	R	
8903	C1	014B3	10000000	A		GEN,8,24	X'121',0	
8904								
8905								
8906								
8907								
8908								
8909								
8910	C1	014B4	3310152C		SENSE ;	MTW,1	RTRACE03	
8911	C1	014B5	22A00004	A		LI,8	4	LOAD AND SAVE
8912	C1	014B6	3580183A			STW,8	SURORDER	TYPE OF OPERATION
8913	C1	014B7	12801402			LD,8	I0CD03	FETCH THE SENSE I0CD
8914	C1	014B8	3080183D			AW,8	RUFINAD	ADD TO IT, THE STARTING BYTE ADDR
8915	C1	014B9	20400002	A		AI,8	2	NOW ADJUST TO A HALF WORD BOUND
8916	C1	014BA	22707212	A		LI,7	X'7212'	LOAD THE MODEL NO. OF HIGH SPEED RAD
8917	C1	014BB	75360009	A		STB,3	9,3	
8918	C1	014BC	31781867			STW,7	MODEL,4	TEST MODEL NO.
8919	C1	014BD	603014C0			RNE	9+3	
8920	C1	014BE	22700004	A		LI,7	4	
8921	C1	014BF	75760009	A		STB,7	9,3	
8922	C1	014C0	15801834			STD,8	I0CDATA	SET UP I0CD
8923	C1	014C1	44801F70			AND,8	L(X'0007FFFF')	MASK OUT ORDER
8924	C1	014C2	35801842			STW,8	BUFIL08A	SET LOWER BYTE ADDRESS
8925	C1	014C3	3580183E			STW,8	BUFAUTAD	SET UP OUTPUT BUFFER ADDRESS
8926	C1	014C4	3580183D			STW,8	RUFINAD	SET UP BUFFER IN ADDRESS
8927	C1	014C5	2580007E	A		SLS,8	-2	FIND WORD ADDRESS
8928	C1	014C6	85000008	A		STW,0	*8	ZERO SENSE LOCATION
8929	C1	014C7	85020008	A		STW,0	*8,1	ZERO SENSE LOCATION
8930	C1	014C8	327018D0			LW,7	I0FVADDR	LOAD DEVICE ADDR
8931	C1	014C9	05700008	A		STH,7	*8	SET UP BYTE ADDR
8932	C1	014CA	3280183F			LW,8	BUFAVAIL	SET UP COUNTERS
8933	C1	014CB	558216A1			STH,8	SECINCM1,1	SET UP COUNTERS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
8934	01	014CC	328015C3			LW,8	EXDTA10	LOAD AND SAVE
8935	01	014CD	35801845			STW,8	EXDATA10	EXPECTED A10 STATUS
8936	01	014CE	35101CA8			STW,1	ICMCMNT	SAVE NO. OF WORDS TO BE COMPARED
8937	01	014CF	35301D0A			STW,3	IPATID	
8938	01	014D0	E800000F A			B	*15	GO BACK TO RANDOM ROUTINE
8939						BOUND	8	
8940	01	014D2	04000000 A		10CD03	GEN,8,24	X'04',0	
8941	01	014D3	1C000003 A			GEN,8,24	X'1C',3	
8942						PAGE		
8943					*			
8944					*		R E A D 1 2	
8945					*			
8946					*			
8947					READ12 ;			
8948	01	014D4	3310152D			MTW,1	RTRACE04	
8949	01	014D5	22800012 A			LI,8	X'12',	LOAD AND SAVE
8950	01	014D6	3580183A			STW,8	SURORDER	TYPE OF ORDER
8951	01	014D7	128014E2			LD,8	10CD04	FETCH THE READ 12 10CD
8952	01	014D8	3080183D			AW,8	BUFINAD	ADD TO, THE STARTING BYTE ADDR
8953	01	014D9	3090183B			AW,9	BUFLENGY	ADD NO. OF BYTES
8954	01	014DA	15801834			STD,8	10CDATA	SET UP 10CD
8955	01	014DB	3280183F			LW,8	BUFAVAIL	SET UP COUNTERS
8956	01	014DC	558216A0			STW,8	BUFINCHY,1	SET UP COUNTERS
8957	01	014DD	658216A1			STW,8	SECINCHY,1	SET UP COUNTERS
8958	01	014DE	328015C3			LW,8	EXDTA10	LOAD AND SAVE
8959	01	014DF	35801845			STW,8	EXDATA10	EXPECTED A10 STATUS
8960	01	014E0	E800000F A			B	*15	GO BACK TO RANDOM ROUTINE
8961						BOUND	8	
8962	01	014E2	12000000 A		10CD04	GEN,8,24	X'12',0	
8963	01	014E3	1C000000 A			GEN,8,24	X'1C',0	
8964						PAGE		
8965					*			
8966					*		R E A D 0 2	
8967					*			
8968					*			
8969					READ02 ;			
8970	01	014E4	3310152E			MTW,1	RTRACE05	
8971	01	014E5	3520183A			STW,2	SURORDER	LOAD AND SAVE TYPE OF ORDER
8972	01	014E6	128014F0			LD,8	10CD05	FETCH THE READ 02 10CD
8973	01	014E7	3080183D			AW,8	BUFINAD	ADD TO, THE STARTING BYTE ADDR
8974	01	014E8	3090183B			AW,9	BUFLENGY	ADD NO. OF BYTES
8975	01	014E9	15801834			STD,8	10CDATA	SET UP 10CD
8976	01	014EA	3280183F			LW,8	BUFAVAIL	SET UP COUNTERS
8977	01	014EB	558216A1			STW,8	SECINCHY,1	SET UP COUNTERS
8978	01	014EC	658216A0			STW,8	BUFINCHY,1	SET UP COUNTERS
8979	01	014ED	328015C3			LW,8	EXDTA10	LOAD AND SAVE
8980	01	014EE	35801845			STW,8	EXDATA10	EXPECTED A10 STATUS
8981	01	014EF	E800000F A			B	*15	
8982						BOUND	8	GO BACK TO RANDOM ROUTINE
8983	01	014F0	02000000 A		10CD05	GEN,8,24	X'02',0	
8984	01	014F1	1C000000 A			GEN,8,24	X'1C',0	
8985						PAGE		
8986					*			
8987					*		W R I T E - D C - W R I T E	
8988					*			
8989					*			
8990					WRTDWRT ;			
8991	01	014F2	3310152F			MTW,1	RTRACE06	
8992	01	014F3	35001525			STW,0	RDMPATM	STORE RANDOM PATTERN
8993	01	014F4	3510183A			STW,1	SURORDER	LOAD AND SAVE TYPE OF ORDER
8994	01	014F5	1280150E			LD,8	10CD06	FETCH THE WRITE 10CD
8995	01	014F6	3080183D		WRTDWRT1	AW,8	BUFINAD	ADD TO IT, THE STARTING RYTE ADDR
8996	01	014F7	15801834			STD,8	10CDATA	SET UP 10CD'S
8997	01	014F8	15801836			STD,8	10CDATA+2	SET UP 10CD'S
8998	01	014F9	3260183F			LW,6	BUFAVAIL	FETCH NO. OF BUFFER AREAS AVAILABLE
8999	01	014FA	2560027F A			SCS,6	-1	DIVIDE BY 2
9000	01	014FB	32900006 A			LW,9	6	SAVE BYTE COUNT IN REG 9
9001	01	014FC	48901F71			AND,9	L(X'7FFFFFFF')	
9002	01	014FD	22800000 A			LI,8	0	ZERO 8
9003	01	014FE	378018D2			MW,8	RYTCURR	MULTPLY BY NO. OF BYTES/SECTORS
9004	01	014FF	66901837			AWM,9	10CDATA+3	SAVE RESULTS IN 10CD DATA 2

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9005	C1	01500	33000006	A		MTW,0	6	TEST FOR REMAINDER
9006	C1	01501	68101503			RGEZ	*+2	IF NONE BRANCH
9007	C1	01502	30901802			AW,9	BYTCURR	ADD IN 1 MORE BUFFER
9008	C1	01503	66901835			AWM,9	I0CDATA+1	SAVE IN I0CD DATA 1
9009	C1	01504	66901836			AWM,9	I0CDATA+2	UPDATE BYTE ADDRESS STARTING ADDR
9010	C1	01505	32801F52			LW,11	L('80000000')	LOAD DATA CHAINING FLAG
9011	C1	01506	53020006	A		MTW,0	6,1	IF MORE THAN 1 BUFFER
9012	C1	01507	68301509			REZ	*+2	
9013	C1	01508	66801835			AWM,11	I0CDATA+1	SET DATA CHAINING FLAG
9014	C1	01509	3280183F			LW,8	BUFAVAIL	SET UP COUNTERS
9015	C1	0150A	558216A1			STW,8	SECINCMT,1	SET UP COUNTERS
9016	C1	0150B	558216A0			STW,8	BUFINCMT,1	SET UP COUNTERS
9017	C1	0150C	ER00000F	A		R	*15	
9018						ROUND	8	
9019	C1	0150E	01000000	A	I0CD06	GEN,8,24	X'01',0	
9020	C1	0150F	10000000	A		GEN,8,24	X'1C',0	
9021						PAGE		
9022					*			
9023					*			
9024					*			READ - D C - READ
9025					*			
9026					REDDREN ;			
9027	C1	01510	33101530			MTW,1	RTRACE07	
9028	C1	01511	12801514			LD,8	I0CD07	FETCH THE READ I0CD
9029	C1	01512	352C183A			STW,2	SURORDER	SET READ FLAG
9030	C1	01513	680014F6			R	WRDWR1	
9031						ROUND	8	GO TO WRITE ROUTINE FOR SET UP
9032	C1	01514	17000000	A	I0CD07	GEN,8,24	X'12',0	
9033	C1	01515	10000000	A		GEN,8,24	X'1C',0	
9034						PAGE		
9035	C1	01516	00000002	A	TST2DATA	DATA	2	RANDOM DATA
9036	C1	01517	54482F8A	A		DATA	1414213562	PSEUDORANDOM NUMBER
9037	C1	01518	00000000	A		DATA	0	ZERO
9038	C1	01519	00000000	A		DATA	0	ZERO
9039	C1	0151A	00000001	A	TST2PAR	DATA	1	SURFACE TEST
9040	C1	0151B	00000001	A		DATA	1	WRITE/READ COMMAND
9041	C1	0151C	00000000	A		DATA	0	NO. OF RETRIES ON ERROR
9042	C1	0151D	00000000	A	CYCLE	DATA	0	NO. OF CYCLES TO BE DONE
9043	C1	0151E	00000000	A	TST2RTN1	DATA	0	RTN ADDR TO LEVEL 1
9044	C1	0151F	00000000	A	TST2RTN2	DATA	0	RTN ADDR TO LEVEL 2
9045	C1	01520	00000000	A	TST2RTN3	DATA	0	RTN ADDR TO LEVEL 3
9046	C1	01521	00000000	A	TST2RTN4	DATA	0	
9047	C1	01522	00000000	A	TSPREAD	DATA	0	
9048	C1	01523	00000000	A	MAXSECT	DATA	0	
9049	C1	01524	00000000	A	PASSTYPE	DATA	0	TYPE OF RANDOM PASS IT IS
9050	C1	01525	00000000	A	RDMPATM	DATA	0	IF ZERO BUILD ALL I/O BUFFERS IMMED
9051					RTRACETOP ;			
9052		01 01526			SET		\$	
9053	C1	01526	00000000	A	RTRACEL50	DATA	0	
9054	C1	01527	00000000	A	RTRACEL51	DATA	0	
9055	C1	01528	00000000	A	RTRACEL52	DATA	0	
9056	C1	01529	00000000	A	RTRACE00	DATA	0	
9057	C1	0152A	00000000	A	RTRACE01	DATA	0	
9058	C1	0152B	00000000	A	RTRACE02	DATA	0	
9059	C1	0152C	00000000	A	RTRACE03	DATA	0	
9060	C1	0152D	00000000	A	RTRACE04	DATA	0	
9061	C1	0152E	00000000	A	RTRACE05	DATA	0	
9062	C1	0152F	00000000	A	RTRACE06	DATA	0	
9063	C1	01530	00000000	A	RTRACE07	DATA	0	
9064					RTRACEBOT ;			
9065		01 01531			SET		\$	
9066					PAGE			
9067					*			
9068					*			*** UTILITY TEST ***
9069					*			
9070					*			*** T S T 3 , D 1 , D 2 , D 3 ***
9071					*			
9072					*			THIS DIRECTIVE ALLOWS THE USER TO SELECT THE UTILITY
9073					*			TESTS BY SPECIFYING IN PARAMETER 1 THE DESIRED TEST.
9074					*			PARAMETER 2,3, AND 4 APPLY TO THE SPECIFIC UTILITY
9075					*			TESTS.

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9076				*				
9077				*				
9078				*				TEST VARIATIONS CAN BE SPECIFIED WITH THE 'DATA' AND 'SEEK' DIRECTIVES TO SELECT THE DATA PATTERN AND THE SURFACE AREA RESPECTIVELY.
9079				*				
9080				*				
9081				*				
9082				*				THE UTILITY TEST ROUTINES ARE DESCRIBED BELOW ALONG WITH THE PARAMETER VALUE OF (D1).
9083				*				UNLESS SPECIFICALLY INDICATED IN THE DESCRIPTION OF THE SUBTESTS, PARAMETERS (D2), (D3), AND (D4) ARE NOT APPLICABLE.
9084				*				
9085				*				
9086				*				
9087				*				PARAMETER D1 (D1 = 1)
9088				*				D1 = 1 SURFACE
9089				*				
9090				*				
9091				*				THIS TEST DIRECTIVE WILL PERFORM A SURFACE TEST OF THE RECORDING SURFACE OF THE RAD STORAGE UNIT.
9092				*				THIS TEST WILL BE EXECUTED FOR ALL STORAGE UNITS SPECIFIED BY THE 'SYST' DIRECTIVE.
9093				*				
9094				*				
9095				*				TEST VARIATION
9096				*				
9097				*				THE 'DATA' AND 'SEEK' DIRECTIVE CAN BE SELECTED TO ALTER THE PREDEFINED PATTERN AND SURFACE AREA.
9098				*				
9099				*				
9100				*				ANYTIME A 'SYST', 'SEEK' OR A 'DATA' DIRECTIVE IS EXECUTED A 'WRITE AND READ' (D2=0) OR A 'WRITE' (D2=1), MUST BE EXECUTED BEFORE A 'READ' (D2=2), OR A 'CHECKWRITE' (D2=4) MAY BE EXECUTED.
9101				*				
9102				*				PARAMETER D2 (0 ≤ D2 ≤ 4)
9103				*				
9104				*				
9105				*				
9106				*				D2 = 0 WRITE AND READ (VERIFY DATA)
9107				*				
9108				*				D2 = 1 WRITE ONLY
9109				*				
9110				*				D2 = 2 READ ONLY (VERIFY DATA)
9111				*				
9112				*				D2 = 3 READ ONLY (NO DATA VERIFICATION)
9113				*				
9114				*				D2 = 4 CHECKWRITE
9115				*				
9116				*				
9117				*				
9118				*				PARAMETER D3 (0 ≤ D3 NO UPPER LIMIT)
9119				*				
9120				*				D3 = NUMBER OF RETRIES ON AN ERROR BEFORE GOING ON TO NEXT PASS.
9121				*				
9122				*				
9123				*				
9124				*				
9125				*				
9126		01 01531		*	TST3P1T1	SET	*	
9127	01	01531	6AF01531	*		BAL, 15	*	
9128	01	01532	6AF01560	*		BAL, 15	SURFACE	ADDRESS OF THE SURFACE TESTS
9129		01 01532		*	TST3P1T2	SET	*=1	
9130				*				
9131				*				
9132		01 01533		*	TST3P2T1	SET	*	
9133	01	01533	6AF0158C	*		BAL, 15	WRTED	D2 = WRITE AND READ TEST
9134	01	01534	6AF01580	*		BAL, 15	WRONLY	D2 = 1 WRITE ONLY
9135	01	01535	6AF01583	*		BAL, 15	REDONLY	D2 = 2 READ ONLY (VERIFY DATA)
9136	01	01536	6AF01586	*		BAL, 15	READONLY	D2=3 READ ONLY (NO VERIFY DATA)
9137	01	01537	6AF01589	*		BAL, 15	CHKWRITE	D2 = 4 CHECKWRITE
9138		01 01537		*	TST3P2T2	SET	*=1	
9139		01 01538		*	TST3P3T1	SET	*	
9140				*				INSERT PARAMETER 3 INFORMATION
9141		01 01538		*	TST3P3T2	SET	*	
9142				*				
9143				*				
9144		01 01538		*	TST3P4T1	SET	*	
9145				*				INSERT PARAMETER 4 INFORMATION
9146				*				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9147		01 01538			TST3P4T2	SET	*	
9148					*			
9149					*			
9150					TST3 J			
9151	C1	01538	22E00201	A		LI,14	IP1	LOAD ADDRESS OF PARAMETERS
9152	C1	01539	02200040	A		LCI	4	LOAD
9153	C1	0153A	2A801335			LM,8	DATAP1	AND
9154	C1	0153B	02200040	A		LCI	4	SAVE
9155	C1	0153C	2A801774			STM,8	TST3PAT	PATTERN TYPE
9156	C1	0153D	22000000	A	TST32	LI,0	0	
9157	C1	0153E	35001A87			STW,0	#MSGLEVL	SET MSG LEVEL = 0
9158	C1	0153F	6AF01544			RAL,15	TST3RAND	GO TO DB UTILITY TEST
9159	C1	01540	EAF0021D	A		RAL,15	*:SENSE	GO TEST SENSE SWITCHES
9160	C1	01541	2F001541			WAIT	*	SS3 = OFF SS1 = UNK (HALT AFTER TEST
9161	C1	01542	680C153D			R	TST32	
9162	C1	01543	E8000214	A		R	*IMONITOR	SS3 = ON SS1 = OFF (RTN TO MONITOR)
9163					*			
9164					*			
9165					*			
9166	C1	01544	15E0155E		TST3RAND	STD,14	TST3PARM	SAVE PARAMETER POINTER & RTN ADDR
9167	C1	01545	22E00326			LI,14	:TST3DIR	LOAD ADDRESS OF DIRECTIVE NAME
9168	C1	01546	35E01A99			STW,14	:MSGADR	SAVE ADDRESS OF DIRECTIVE NAME
9169	C1	01547	3510030A	A		STW,1	:ERRPARM	SET P1 IS IN ERROR
9170	C1	01548	226000C1	A		LI,6	1	LOAD LOWER LIMIT OF P1
9171	C1	01549	227000C1	A		LI,7	TST3P1T2-TST3P1T1	* UPPER * * P1
9172	C1	0154A	6960155E			CLR,6	*TST3PARM	TEST TO SEE LIMITS AREN'T EXCEEDED
9173	C1	0154B	6960155B			RCS,6	SURPERR	IF THEY ARE BAD RTN
9174					*			
9175					*			
9176	C1	0154C	3520030A	A		STW,2	:ERRPARM	SET P2 IN ERROR
9177	C1	0154D	22600000	A		LI,6	0	LOAD LOWER LIMIT OF P2
9178	C1	0154E	22700004	A		LI,7	TST3P2T2-TST3P2T1	LOAD UPPER LIMIT OF P2
9179	C1	0154F	6962155E			CLR,6	*TST3PARM,1	TEST TO SEE LIMITS AREN'T EXCEEDED
9180	C1	01550	6960155B			RCS,6	SURPERR	IF THEY ARE BAD RTN
9181	C1	01551	35601799			STW,6	MAJERRR	ZERO MAJOR ERROR FLAG IF = 0 NO ERR
9182	C1	01552	3560030A	A		STW,6	:ERRPARM	
9183	C1	01553	6260155E			LW,6	*TST3PARM,0	LOAD TYPE OF TEST
9184	C1	01554	620C1531			FXU	TST3P1T1,6	BRANCH TO REQUESTED TEST
9185	C1	01555	33001799			MTW,0	MAJERRR	TEST MAJOR ERROR FLAG
9186	C1	01556	69301559			RNEZ	TST31	
9187	C1	01557	22000000	A		LI,0	0	LOAD ZERO
9188	C1	01558	35000404			STW,0	DBNTREAD	RESET THE DON'T READ FLAG
9189					TST31 J			
9190	C1	01559	12F0155F			LD,14	TST3PARM	RESTORE REG 14 & 15
9191	C1	0155A	E800155F			R	*TST3EXIT	RETURN TO CALLING ROUTINE
9192					*			
9193					*			
9194					*			
9195	C1	0155B	EAF00229	A	SURPERR	RAL,15	*:ERRPARM	GO AND REPORT BAD PARAMETER
9196	C1	0155C	00000326			DATA	:TST3DIR	
9197	C1	0155D	E8000214	A		R	*:MONITOR	RETURN TO MONITOR
9198						R	R	
9199	C1	0155E	00000000	A	TST3PARM	DATA	0	PARAMETER POINTER
9200	C1	0155F	00000000	A	TST3EXIT	DATA	0	RETURN ADDRESS
9201					*			
9202					*			
9203					*			
9204	C1	01560	35FC157E		SURFACE	STW,15	SURRTN	SAVE RETURN ADDRESS
9205	C1	01561	224FFFFF	A		LI,4	-1	INITIALIZE DDT
9206	C1	01562	35401564			STW,4	#DDTP	POINTER TO -1
9207	C1	01563	6264155E			LW,6	*TST3PARM,2	LOAD AND SAVE
9208	C1	01564	35601788			STW,6	MAXERR	MAXIMUM NO. OF RETRIES ON ERROR
9209	C1	01565	6AF01850		SURFACE2	RAL,15	#DDTICMT	UPDATE DDT POINTER
9210	C1	01566	E800157E			R	*SURRTN	IF ALL DEVICES TEST RETURN
9211	C1	01567	E252155E			LW,5	*TST3PARM,1	LOAD CONTENTS OF P2 INTO REG 5
9212	C1	01568	32401866			LW,4	#DDTBIAS	LOAD THE DDT POINTER
9213	C1	01569	32C81868			LW,12	IGTDEV,4	LOAD DEVICE ADDRESS
9214	C1	0156A	350018D0			STW,12	:DEVADDR	SAVE DEVICE ADDRESS
9215	C1	0156B	670A1533			FXU	TST3P2T1,5	BRANCH TO REQUESTED TEST
9216	C1	0156C	690C1565			R	SURFACEP	GO TEST NEXT DEVICE
9217					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	AFF OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9218	C1	0156D	35101799			STW,1	MAJORERR	SET THE MAJOR ERROR FLAG
9219	C1	0156E	EAF0021C	A	NBPAT	RAL,15	*PPRINT	GO TO PRINT ROUTINE
9220	01	0156F	0C001571			DATA	NBPATN	ADDRESS OF MESSAGE
9221	01	01570	E800157E			B	*SURRTN	EXIT FROM THE SURFACE TEST
9222					*			
9223					*			
9224					*			
9225					*			
9226	01	01571	33D5D640	A	NBPATN	TEXTC	INB PATTERN WRITTEN, DO TSTR,1,1	TO WRITE A PATTERN
	01	01572	D7C1E3E3	A				
	01	01573	C5D9D540	A				
	01	01574	E6D9C9E3	A				
	01	01575	E3C5D56B	A				
	01	01576	40C4D640	A				
	01	01577	E3E2E3F3	A				
	01	01578	68F16BF1	A				
	01	01579	4D40E3D6	A				
	01	0157A	40E6D9C9	A				
	01	0157B	E3C54DC1	A				
	01	0157C	4DD7C1E3	A				
	01	0157D	E3C5D9D5	A				
9227	01	0157E	00000000	A	SURRTN	DATA	0	
9228	01	0157F	00000000	A	SURFACE3	DATA	0	
9229					*			
9230					*		WRITE ONLY	
9231					*			
9232	01	01580	22D00000	A	WRTONLY	LI,13	0	NO READ VERIFICATION
9233	01	01581	22E00001	A		LI,14	X'01'	WRITE ORDER
9234	01	01582	68001596			B	SURPAT	GO TO SURFACE TEST
9235					*			
9236					*		READ ONLY (VERIFY DATA)	
9237					*			
9238	01	01583	22D00001	A	READONLY	LI,13	1	READ VERIFICATION OF DATA
9239	01	01584	22E00012	A		LI,14	X'12'	READ ERROR
9240	01	01585	68001596			B	SURPAT	GO TO SURFACE TEST
9241					*			
9242					*		READ ONLY (NO DATA VERIFICATION)	
9243					*			
9244	01	01586	22D00000	A	READONLY	LI,13	0	NO READ VERIFICATION
9245	01	01587	22E00012	A		LI,14	X'12'	READ ERROR
9246	01	01588	68001596			B	SURPAT	GO TO SURFACE TEST
9247					*			
9248					*		CHECKWRITE	
9249					*			
9250	01	01589	22D00001	A	CHKWRITE	LI,13	1	READ VERIFICATION OF DATA
9251	01	0158A	22E00005	A		LI,14	X'05'	CHECKWRITE ORDER
9252	01	0158B	68001596			B	SURPAT	GO TO SURFACE TEST
9253					*			
9254					*		WRITE / READ TEST	
9255	C1	0158C	35F0157F		WRTRED	STW,15	SURFACE3	SAVE RETURN ADDRESS
9256	C1	0158D	35100404			STW,1	DONTREAD	SET THE DONT READ FLAG
9257	C1	0158E	6AF01580			RAL,15	WRTONLY	GO DO A WRITE
9258	C1	0158F	22000000	A		LI,0	0	
9259	C1	01590	35000404			STW,0	DONTREAD	RESET THE DONTREAD FLAG
9260	C1	01591	32F0157F		WRTRED1	LW,15	SURFACE3	LOAD A RETURN ADDRESS
9261	01	01592	32401866			LW,4	*DDTBIAS	
9262	C1	01593	3258186B			LW,5	SLWNR,4	
9263	C1	01594	355018D3			STW,5	CURRSEEK	
9264	01	01595	68001583			R	READONLY	GO DO A READ VERIFY
9265						PAGE		
9266					*			
9267					*			
9268					*		SURFACE TESTING	
9269					*			
9270					*			
9271					*			
9272					*			
9273					*		THIS ROUTINE HANDLES ALL I/O OPERATIONS TO AND FROM THE DEVICE DURING THE SURFACE TEST.	
9274	01	01596	35F0178D		SURPAT	STW,15	SURTN1	SAVE RETURN ADDRESS
9275	01	01597	35E0183A			STW,14	SURORDER	SAVE ORDER IN BYTE 3
9276	01	01598	75E015C0			STB,14	*PERIODC	SAVE BYTE IN 10CD

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9277	C1	C1599	35D0178B			STW,13	READVERY	SAVE READ VERIFY FLAG VFR #1
9278	C1	C159A	3300178B			MTW,0	READVERY	GO TEST THE READ VERIFY FLAG
9279	C1	C159H	6A30159E			REZ	SURPAT01	IF NO READ VERIFICATION OR WRITE RNW
9280	C1	C159C	33000404			MTW,0	DONTREAD	IF WRITE NOT DONE
9281	C1	C159D	E932178D			RNEZ	*SURTNI,1	RETURN IN ERROR
9282				*				
9283				*				
9284	C1	C159E	C2200040	A	SURPAT01	LCI	4	
9285	C1	C159F	2A6C1774			LI,6	TST3PAT	
9286	C1	C15A0	C2200040	A		LCI	4	
9287	C1	C15A1	2B601DCA			STM,6	:PATID	
9288	C1	C15A2	21600C12	A		CI,6	X'12'	IF RANDOM CHANGE PATTERN BEFORE GOING ON
9289	C1	C15A3	693C15A5			RNE	*+2	
9290	C1	C15A4	33701775			MTW,7	TST3PAT+1	
9291				*				
9292				*				
9293				*				
9294				*				
9295				*				
9296				*				
9297	C1	C15A5	6AFC17F0			HAL,15	MEMORY	GO CALC MEMORY SIZE
9298	C1	C15A6	F800155F			R	*TST3EXIT	RTN HERE IF NO MEMORY IS AVAILABLE
9299	C1	C15A7	22607DF8			LI,6	BA(BUFL0)	LOAD AND SAVE BYTE ADDRESS
9300	C1	C15A8	356C1842			STW,6	BUFL0RA	OF FIRST LOCATION IN BUFFER AREA
9301	C1	C15A9	32601802			LW,6	RYTCURR	FETCH CURRENT NO. OF BYTES
9302	C1	C15AA	256C007E	A		SLS,6	=2	FIND NO OF WORDS/SECTOR
9303	C1	C15AB	356C1CA8			STW,6	:CPMWCNT	SAVE PATTERN LENGTH
9304	C1	C15AC	326C15C2			LW,6	EXSKAIB	LOAD EXPECTED SEEK STATUS
9305	C1	C15AD	356C1844			STW,6	EXSEKAIB	EXPECTED STATUS
9306	C1	C15AE	326C15C3			LW,6	EXDTAIB	LOAD AND SAVE
9307	C1	C15AF	356C1845			STW,6	EXDATAIB	EXPECT DATA ATB STATUS
9308	C1	C15B0	326C1F6E			LW,6	L(X'FFFFC001')	LOAD RECEIVED STATUS MASK
9309	C1	C15B1	356C1843			STW,6	MASK	SET UP MASK STORAGE
9310	C1	C15B2	126C159E			LD,6	SEEKIBCD	LOAD SEEK IBCD
9311	C1	C15B3	156C1832			STD,6	IBCSEFK1	SEEK IBCD
9312	C1	C15B4	126C15C0			LD,6	OPERIBCD	LOAD DATA IBCD
9313	C1	C15B5	156C1834			STD,6	IBCDATA	SAVE DATA IBCD
9314	C1	C15B6	551216A0			STH,1	BUFINCNT,1	LOAD BUFFER INCREMENTING COUNT
9315	C1	C15B7	551216A1			STH,1	SECTINCNT,1	LOAD SECTOR INCREMENT COUNT
9316	C1	C15B8	351C1793			STW,1	IBCDPNT	SET AS A TWO IBCD OPERATION
9317	C1	C15B9	351C1F25			STW,1	RMPATTM	STORE WORD
9318	C1	C15BA	6AFC1785			HAL,15	BUILDIBC	GO BUILD THE IBCD
9319	C1	C15BH	6AFC1FC4			HAL,15	IBCNT	GO TO THE 00 I/O
9320	C1	C15BC	CF0018D0			HI0,0	*DEVADDR	CLEAR DEVICE
9321	C1	C15BD	E800178D			R	*SURTNI	GOOD RETURN
9322				*				
9323				*				
9324				*				
9325	C1	C15BE	C30C3EF2		SFEKIBCD	GEN,R,24	X'03',RA(SEFKRAD)+2	
9326	C1	C15BF	1C000002	A		GEN,R,24	X'1C',2	
9327	C1	C15C0	C0000000	A	RPERIBCD	GEN,R,24	C,0	
9328	C1	C15C1	1C000000	A		GEN,R,24	X'1C',0	
9329	C1	C15C2	0C100000	A	EXSKAIB	DATA	X'0C100000'	
9330	C1	C15C3	0C100000	A	EXDTAIB	DATA	X'0C100000'	
9331							PAGE	
9332				*				
9333				*				
9334				*				
9335	C1	C15C4	35FC1783		IBCNT	STW,15	WRITTEN	SAVE RETURN ADDRESS
9336	C1	C15C5	226FFFFF	A		LI,6	TRACETBP-TRACEPAT	
9337	C1	C15C6	22700000	A		LI,7	0	
9338	C1	C15C7	357C17AB			STW,7	TRACERBT,6	
9339	C1	C15C8	656C15C7			RIR,6	*-1	
9340	C1	C15C9	22400000	A		LI,11	0	INITIALIZE THE FOLLOWING:
9341	C1	C15CA	354C1794			STW,11	IBERSIB1	
9342	C1	C15CB	354C1795			STW,11	IBERSIB2	
9343	C1	C15CC	358C1796			STW,11	IBERSIB3	
9344	C1	C15CD	358C1797			STW,11	IBERSIB4	
9345	C1	C15CE	358C1789			STW,11	COMPERF	
9346	C1	C15CF	351C1CA9			STW,1	:CBMFLAG	SET THE DUNIT PRINT OR COMPARE FLAG
9347	C1	C15D0	351C1787			STW,1	ENDOPER	INITIALIZE END OF OPERATION FLAG

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9348	01	01501	3280178E			LW,8	XPSDSEEK	LOAD AND
9349	01	01502	3580005C A			STW,8	X'15C1	STORE XPSD FOR I/O INTERRUPT
9350	01	01503	32801790			LW,8	XPSDCAL1	LOAD AND SAVE XPSD FOR
9351	01	01504	35800048 A			STW,8	X'1481	CALL 1 INTERRUPT
9352	01	01505	32801791			LW,8	XPSDCAL2	LOAD AND SAVE XPSD FOR
9353	01	01506	35800049 A			STW,8	X'1491	FOR CALL 2 INTERRUPT
9354	01	01507	32801792			LW,8	XPSDCAL3	LOAD A XPSD FOR THE CALL 3
9355	01	01508	3580004A A			STW,8	X'14A1	SET UP THE LOCATION
9356	01	01509	32801843			LW,8	MASK	LOAD RECEIVED STATUS MASK
9357	01	0150A	358016E2			STW,8	SURINT88	SET UP RECEIVED STATUS MASK
9358	01	0150B	358016D4			STW,8	SURMASK-1	SET UP RECEIVED STATUS MASK
9359	01	0150C	32801844			LW,8	EXSEKA10	SET UP THE SEEK A10 STATUS
9360	01	0150D	358016D5			STW,8	SURMASK	
9361	01	0150E	358016E3			STW,8	SURINT89	
9362	01	0150F	328018D0			LW,8	:DEVADDR	SET UP THE S10 WITH A DEV ADDR
9363	01	015E0	8582169E			STW,8	SURSTART,1	
9364				*				
9365	01	015E1	325018D3		SURPAT04	LW,5	CURRSEEK	LOAD CURRENT SEEK ADDRESS
9366	01	015E2	84C017CE			BAL,12	BUILD8K	CONVERT TO DEVICE SEEK ADDR
9367	01	015E3	32700FB8			LW,7	SEEKRAD	LOAD THE REAL SEEK ADDR
9368	01	015E4	85800007 A			STW,8	7	SAVE IN PATTERN ID TABLE
9369	01	015E5	35701D0D			STW,7	:IPATID*8	SAVE IN PATTERN ID TABLE
9370	01	015E6	31301D0A			CW,3	IPATID	TEST FOR SPREED SEEK ADDRESS
9371	01	015E7	833015E9			BNE	**2	IF NOT BRANCH
9372	01	015E8	35701D0B			STW,7	IPATID*1	SAVE IT AS PATTERN TYPE
9373	01	015E9	6D000032 A			WD,0	X'1321	INHIBIT INTERRUPTS
9374	01	015EA	35101784			STW,1	FAKEINTR	STORE A 1 IN FAKE AN INTERRUPT
9375				*				
9376	01	015EB	6E000000 A			A10,0	0	CLEAR ANY PENDING INTERRUPT
9377	01	015EC	6E000000 A			A10,0	0	IN CASE OF A SECOND INTERRUPT PENDING
9378	01	015ED	22A00C20 A			LI,10	X'1201	LOAD I/O INTERRUPT BIT
9379	01	015EE	6DAC1500 A			WD,10	X'115001	DISABLE I/O INTERRUPTS
9380	01	015EF	6DA01100 A			WD,10	X'11001	DISARM I/O INTERRUPTS
9381	01	015F0	6DA01200 A			WD,10	X'12001	ARM AND ENAABLE I/O INTERRUPTS
9382				*				
9383	01	015F1	3270183F			LW,7	BUFAVAIL	LOAD NO. OF BUFFERS AVAILABLE
9384	01	015F2	587216A0			STW,7	BUFCOUNT,1	SUBTRACT BUFFER COUNT
9385	01	015F3	357C1840			STW,7	BUFM1AVL	SAVE AS BUFFERS AVAILABLE MINUS 1
9386	01	015F4	327018D4			LW,7	SURFCEND	LOAD END ADDRESS OF SECTORS
9387	01	015F5	587216A1			SH,7	SECTCOUT,1	SUBTRACT SECTOR COUNT
9388	01	015F6	357C1847			STW,7	SURMIEND	SAVE AS END ADDRESS MINUS 1
9389	01	015F7	3240183F			LW,4	BUFAVAIL	OTHERWISE LOAD 'BUFWORK' WITH BUFAVL
9390	01	015F8	311C183A			CW,1	SURORDER	IS THIS A WRITE
9391	01	015F9	694C160A			BCW,4	SURPAT23	
9392	01	015FA	22400000 A			LI,4	0	ZERO 'BUFWORK'
9393				*				
9394				*				
9395				*				
9396				*				
9397				*	SURPAT07			
9398	01	015FB	22EC0000 A			LI,14	X'1C0001	LOAD DELAY COUNT
9399	01	015FC	35E0178C			STW,14	SURDELAY	SAVE DELAY COUNT
9400				*				
9401				*				
9402	01	015FD	6D000022 A		SURPAT12	WD,0	X'1221	RESET INHIBIT INTERRUPTS
9403				*				
9404	01	015FE	33001787			MTW,0	ENDOPER	TEST FOR END OF OPERATION
9405	01	015FF	68301603			REZ	SURPAT25	IF END OF IO OPER SKIP CALL
9406				*				
9407	01	01600	33001784			MTW,0	FAKEINTR	TEST FAKE A INTERRUPT FLAG
9408	01	01601	68301603			REZ	SURPAT25	IF ZERO SKIP CALL
9409				*				
9410	01	01602	06800000 A			CAL3	SURINTC2-SURINT 0	GO START IO
9411				*				
9412	01	01603	204C0000 A		SURPAT25	A1,4	0	TEST 'BUFWORK' FOR ZERO
9413	01	01604	692C160A			BGZ	SURPAT23	IF NOT ZERO GO BUILD OR COMPARE BUF
9414				*				
9415	01	01605	330C1787			MTW,0	ENDOPER	TEST FOR END OF OPERATION
9416	01	01606	68301638			REZ	SURPAT20	IF END OF IO OPER EXIT
9417				*				
9418	01	01607	3310178C			MTW,1	SURDELAY	TEST FOR END OF DFLAY

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9419	01	01608	68301638			BEZ	SURPAT20	IF DELAY UP EXIT
9420	01	01609	680015FD			B	SURPAT12	
9421				*				
9422				*				
9423				*	SURPAT23	J		
9424	C1	0160A	35101CA9			STW,1	ICOMFLAG	SET PRINT INHIBIT FLAG
9425	C1	0160B	32F0183D			LW,15	BUFINAD	LOAD ADDR PNT TO IBCD DATA PAT
9426	C1	0160C	25F0007E	A		SLS,15	=R	CONVERT TO WORD ADDRESS
9427	C1	0160D	35F01CA3			STW,15	ICOMBFRB	SAVE BEGINNING ADDR OF PATTERN
9428	C1	0160E	3110183A			CW,1	SURORDER	TEST FOR A WRITE
9429	C1	0160F	6940161B			BCS,4	PATWRT	IF A WRITE DO A WRITE THING
9430				*				
9431				*				
9432	C1	01610	31201D0A		PATREAD	CW,2	IPATID	TEST FOR A RANDOM PATTERN
9433	C1	01611	69301614			BNE	PATREAD1	IF NOT RANDOM CONTINUE
9434	C1	01612	B2E01CA3			LW,14	*ICOMBFRB	FETCH FIRST WORD FROM RANDOM
9435	01	01613	35E01D0B			STW,14	IPATID*1	PATTERN AND USE IT AS A SEED
9436				*				
9437				*				
9438				*	PATREAD1	J		
9439	C1	01614	3300178B			MTW,0	READVERY	IF NO READ VRF BRANCH
9440	01	01615	6830161E			BEZ	PATSETUP	SET UP FOR NEXT PAT
9441	01	01616	6AF018D0			BAL,15	ICOMPARE	GO DO THE COMPARE THING
9442	01	01617	6800161E			B	PATSETUP	GOOD RETURN
9443	01	01618	05001749			CAL2,0	CPERROR	
9444	01	01619	680015FB			R	SURPAT07	RTN TO LOOP
9445	01	0161A	680015FB			B	SURPAT07	RTN TO LOOP
9446				*				
9447				*				
9448	01	0161B	33001787		PATWRT	MTW,0	ENDOPER	TEST END OPER FLAG
9449	01	0161C	68301638			BEZ	SURPAT20	IF ZERO EXIT
9450	01	0161D	6AF01CED			BAL,15	IPATTERN	BUILD A PATTERN
9451				*				
9452				*	PATSETUP	J		
9453	C1	0161E	204FFFFF	A		AI,4	-1	DECREMENT NO. OF AVAILABLE BUFFERS
9454	C1	0161F	32F0183D			LW,15	BUFINAD	LOAD ADDR PNT TO IBCD DATA PAT BE BT
9455	C1	01620	30F018D2			AW,15	BYTCURR	UPDATE DATA PATTERN POINTER
9456	C1	01621	31F0183C			CW,15	BUFENDAD	IF END OF DATA
9457	C1	01622	69101624			RL	*+2	PATTERN AREA
9458	C1	01623	32F01842			LW,15	BUF1L0RA	LOAD BEGINNING ADDR OF DATA PATS
9459	C1	01624	35F0183D			STW,15	BUFINAD	SAVE AS BYTE ADDRESS
9460	01	01625	331018D3			MTW,1	CURRSEEK	UPDATE SECTOR ADDRESS
9461	01	01626	32F018D3			LW,15	CURRSEEK	FETCH SECTOR ADDRESS
9462	01	01627	22E00000	A		LI,14	0	ZERO REG 14
9463	01	01628	35E01789			STW,14	COMPERR	RESET COMPARE ERROR COUNT
9464	01	01629	36E018D1			DW,14	SECTCURR	DIVIDE SECTORS BY SECTORS/TRACK
9465	01	0162A	326018D7			LW,6	TCKCURR	LOAD SHIFTING COUNT
9466	01	0162B	A5F00006	A		SLS,15	*6	SHIFT TRACK PORTION
9467	01	0162C	30E0000F	A		AW,14	15	ADD TO FORM TRACK-SECTOR ADDRESS
9468	01	0162D	32F018D0			LW,15	DEVADDR	LOAD DEVICE
9469	01	0162E	55F0000E	A		STW,15	14	ADDRESS INTO PATTERN
9470	01	0162F	35E01D0D			STW,14	IPATID+3,0	SAVE CURRENT SEEK AND DEVICE ADDR
9471	01	01630	31301D0A			CW,3	IPATID	IF * 3 THIS IS A SPREAD CURRENT SEEK
9472	01	01631	69301633			BNE	*+2	SAVE
9473	01	01632	35E01D0B			STW,14	IPATID*1	SAVE CURRENT SEEK AND DEVICE ADDR
9474	01	01633	33001525			MTW,0	RDMPATTM	
9475	01	01634	693015FB			RNEZ	SURPAT07	BR. NOT EQUAL ZERO
9476	01	01635	20400000	A		AI,4	0	
9477	01	01636	6920160A			BGZ	SURPAT23	BR. GREATER THAN ZERO
9478	01	01637	680015FB			B	SURPAT07	
9479				*				
9480				*				
9481				*				
9482				*				
9483				*				
9484	01	01638	22A00020	A	SURPAT20	LI,10	X'120'	LOAD I/O INTERRUPT BIT
9485	01	01639	6DA01500	A		WD,10	X'1500'	DISABLE
9486	01	0163A	6DA01100	A		WD,10	X'1100'	AND DISARM I/O INTERRUPTS
9487	01	0163B	6D000022	A		WD,0	X'22'	RESET INHIBIT INTERRUPTS
9488	01	0163C	32601787			LW,6	ENDOPER	FETCH END OF OPERATION FLAG
9489	01	0163D	E8301783			BEZ	*WRITTEN	IF ZERO GOOD TEST

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9490	01	0163E	22A00000	A		LI,10	0	
9491	01	0163F	35A01A86			STW,10	#MSGPTFG	RESET MSG PRINT INHIBIT FLAG
9492	01	01640	32AC1657			LW,10	ERRWORD,6	LOAD ADDRESS OF MSG TO BE PRINTED
9493	01	01641	02200030	A		LCI	3	
9494	01	01642	AA70000A	A		LM,7	*10	LOAD MSG
9495	01	01643	02200030	A		LCI	3	
9496	01	01644	2B701655			STM,7	ERRTSTHT*5	
9497					*			
9498	01	01645	EAF0021C	A		BAL,15	*IPRINT	UP SPACES
9499	01	01646	00001A33			DATA	#MSGERR9	
9500	01	01647	EAF0021C	A		BAL,15	*IPRINT	
9501	01	01648	00001650			DATA	ERRTSTHT	
9502	01	01649	6AF018D8			BAL,15	#MSGNOBP	OUTPUT MESSAGE WITHOUT UP SPACING
9503	01	0164A	E8001783			B	*WRITTEN	RETURN IF NOT TEST LEVEL ZERO
9504	01	0164B	6AF01AA3			BAL,15	IT10	
9505	01	0164C	FFFFC000	A		DATA	X'FFFFC000'	
9506	01	0164D	10000000	A		DATA	X'10000000'	
9507	01	0164E	E8001783			B	*WRITTEN	
9508	01	0164F	E8001783			B	*WRITTEN	
9509						ERRTSTHT TEXTC		
9510	01	01650	1FE3C8E8	A		'TESTING ABORTED'		
	01	01651	E3C9D5C7	A				
	01	01652	40C1C2D6	A				
	01	01653	D9E3C5C4	A				
	01	01654	7A404040	A				
	01	01655	40404040	A				
	01	01656	40404040	A				
	01	01657	40404040	A				
9511					*			
9512		01 01657			ERRWORD	SET	*-1	
9513	01	01658	0000165A			DATA	ERRNOINT	
9514	01	01659	0000165D			DATA	ERRCBR	
9515	01	0165A	D5D640C9	A	ERRNOINT	TEXT	'NO INTERRUPT'	
	01	0165B	D5E3C5D9	A				
	01	0165C	D9E4D7E3	A				
9516	01	0165D	C3C1D57D	A	ERRCBR	TEXT	'CAN'T BE RST'	
	01	0165E	E340C2C5	A				
	01	0165F	40D9E2E3	A				
9517					*			
9518					*	PAGE		
9519					*			
9520					*			
9521						ROUND	8	
9522	01	01660	00000000	A	SURINT00	DATA	0,0	
	01	01661	00000000	A				
9523	01	01662	00001664			DATA	SURINT60,7**24	
	01	01663	07000000	A				
9524	01	01664	12C01660		SURINT60	LD,12	SURINT00	FETCH SYSTEM ENVIRONMENT
9525	01	01665	15C0168C			STD,12	SURINT01	SO THAT RETURN IS POSSIBLE
9526	01	01666	6FD00000	A		AIO,13	0	ACKNOWLEDGE IOCD 1 INTERRUPT
9527	01	01667	050C16CA			CAL2,0	SURINT04	GO TEST AIO STATUS
9528					*			
9529	01	01668	6RCC166D			R	SURINT62	STATUS WAS OK
9530	01	01669	C40C1794			CAL1,0	ISERAIO1	ERROR, GO ATTEMPT RECOVERY
9531	01	0166A	C50016E6			CAL2,0	SURINT09	
9532	01	0166B	68001679			R	SURINT65	STATUS WAS OK
9533	01	0166C	6AF01139			BAL,15	TILT	SHOULD NEVER GET HERE
9534					*			
9535					*			
9536					*			
9537					*			
9538	01	0166D	33001784		SURINT62	MTW,0	FAKEINTR	IF FAKE INTERRUPT IS SET
9539	01	0166E	69301679			RNEZ	SURINT65	GO SEEK AGAIN
9540	01	0166F	22000C1A		SURINT63	LI,0	DA(IOCDATA)	LOAD DW ADDR OF SECOND IOCD
9541	01	01670	22C00000	A		LI,12	0	LOAD A ZERO
9542	01	01671	35C01794			STW,12	ISERAIO1	ZERO I/O AIO 1 ERROR COUNT
9543	01	01672	22D0169C			LI,13	SURINT02	SET UP
9544	01	01673	55D21691			STW,13	SWTCH,1	BRANCH INSTRUCTION
9545	01	01674	35301798			STW,3	IOCPASS2	SET UP IOCD 2 PASS COUNT
9546	01	01675	32C0178F			LW,12	XPSDATA	LOAD XPSD FOR SECOND IOCD
9547	01	01676	32D01845			LW,13	EXDATAIO	LOAD EXPECTED AIO STATUS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9548	01	01677	3310179C			MTW,1	TRACE01	
9549	01	01678	88001681			B	SURINT64	GO SAVE RESULTS
9550				*				
9551	01	01679	32C0178F		SURINT65	LW,12	XPSDATA	LOAD XPSD FOR SECOND IBCD
9552	01	0167A	33001793			MTW,0	I0CDPNT	TEST TO SEE HOW MANY IBCD THERE ARE
9553	01	0167B	6830167D			BEZ	*+2	IF MORE THAN 1 DENIT BRANCH
9554	01	0167C	32C0178E			LW,12	XPSDSEEK	LOAD XPSD FOR IBCD 1
9555	01	0167D	22D0169F			LI,13	SURSTART+1	BRANCH INSTRUCTION
9556	01	0167E	55D21691			STW,13	SWITCH,1	BRANCH INSTRUCTION
9557	01	0167F	32D01844			LW,13	EXSEKA10	LOAD STATUS FOR A10
9558	01	01680	22000C19			LI,0	DA(I0CSEEK1)	LOAD DW ADDRESS OF FIRST IBCD
9559				*				
9560				*				
9561	01	01681	35C0005C A		SURINT64	STW,12	X15C1	SAVE XPSD
9562	01	01682	35D016D5			STW,13	SURMASK	SAVE THE EXPECTED A10 STATUS
9563	01	01683	35D016E3			STW,13	SURINT59	SAVE THE EXPECTED A10 STATUS
9564	01	01684	3310179D			MTW,1	TRACE02	
9565	01	01685	6AC017CE			BAL,12	BUILD5K	BUILD NEW SEEK ADDR
9566	01	01686	CCC018D0			SI0,12	*IDEVADDR	DO I/O TO GET THINGS STARTED
9567	01	01687	7406168C			STCF	SURINT31,3	SAVE CONDITION CODES
9568	01	01688	22C00000 A		SURINT25	LI,12	0	LOAD ZERO
9569	01	01689	35C01785			STW,12	BUFM1FLG	ZERO THE BUFFER AVAILABLE -1 FLAG
9570	01	0168A	35C01784			STW,12	FAKEINTR	SET FAKE AN INTERRUPT FLAG
9571	01	0168B	680016A2			R	SECTCOUT+1	GO CHECK I/O
9572						PAGE		
9573				*				
9574				*				
9575				*				
9576						ROUND	8	
9577	01	0168C	00000000 A		SURINT01	DATA	0,0	
	01	0168D	00000000 A					
9578	01	0168E	00001690			DATA	*+2,7**24	
	01	0168F	07000000 A					
9579				*				
9580				*				
9581					SURINT			
9582	01	01690	6ED00000 A			A10,13	0	ACKNOWLEDGE I/O INTERRUPT
9583	01	01691	68C00000 A		SWITCH	RCR,12	0	BRANCH IF NORMAL INTERRUPT
9584	01	01692	050216CA			CAL2,0	SURINT04,1	GO TEST A10 STATUS
9585				*				
9586	01	01693	680016A0			R	BUFCOUNT	RTN HERE IF NO ERROR
9587				*				
9588	01	01694	04101795			CAL1,1	I0FRAI02	GO ATTEMPT ERROR RECOVERY
9589	01	01695	050016E6			CAL2,0	SURINT09	
9590	01	01696	68001679			R	SURINT65	GO DO IBCD 1
9591	01	01697	6AF01139			BAL,15	TILT	SHOULD NEVER GET HERE
9592				*				
9593	01	01698	3310168C		SURINTC2	MTW,1	SURINT01	CALLED HERE TO GET I/O STARTED
9594				*				
9595	01	01699	050016E6			CAL2,0	SURINT09	UPDATE RETURN LOCATION TO CALL + 1
9596	01	0169A	6800166D			R	SURINT62	GO SAVE REGISTERS AND INHIBIT INTR
9597	01	0169B	6AF01139			BAL,15	TILT	GO RETURN
9598				*				SHOULD NEVER GET HERE
9599				*				
9600				*				
9601	01	0169C	32D01782		SURINT02	LW,13	SURINT03	LOAD NEW BYTE COUNT
9602	01	0169D	35D01834			STW,13	I0CDATA	SAVE BYTE COUNT
9603				*				OTHER CODE
9604	01	0169E	4C000000 A		SURSTART	SI0,0	0	START IT ALL GOING
9605	01	0169F	7406168C			STCF	SURINT31,3	SAVE THE CONDITION CODES
9606	01	016A0	20400000 A		BUFCOUNT	AI,4	0	THIS INSTRUCTION IS MODIFIED BY
9607				*				OTHER CODE
9608	01	016A1	20500000 A		SECTCOUT	AI,5	0	THIS INSTRUCTION IS MODIFY BY OTHER
9609	01	016A2	31501847			CW,5	SURM1END	TEST FOR UPPER SECTOR LIMIT -1
9610	01	016A3	691016AC			BL	SURINT06	IF NO GREATER CONTINUE
9611	01	016A4	331017A5			MTW,1	TRACE10	
9612	01	016A5	22D0169F			LI,13	SURSTART+1	BRANCH INSTRUCTION
9613	01	016A6	55D21691			STW,13	SWITCH,1	BRANCH INSTRUCTION
9614	01	016A7	315018D4			CW,5	SURFCEND	TEST FOR UPPER SECTOR LIMIT
9615	01	016A8	691016AC			BL	SURINT06	IF NO GREATER CONTINUE
9616					SURINT11			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9617	01	016A9	22C00000	A		LI,12	0	ZERO FOR THE
9618	01	016AA	35C01787			STW,12	ENDOPER	THE END OF OPERATION FLAG
9619	01	016AB	0E30168C			LPSD,3	SURINT01	GO BACK TO WHERE INTERRUPTED
9620	01	016AC	33001785		SURINT06	MTW,0	BUFFMIFLG	TEST BUFFER AVAILABLE =1 FLAG
9621	01	016AD	68301683			REZ	SURINT07	IF NOT SET CONTINUE
9622	01	016AE	35101784			STW,1	FAKEINTR	SET FAKE INTERRUPT
9623	01	016AF	6AC017AB			BAL,12	IOCDP1	BUILD A NEW IOCD BYTE ADDRESS
9624	01	016B0	6700169C			EXU	SURINT08	UPDATE BYTE ADDR
9625	01	016B1	6700169D			EXU	SURINT08+1	UPDATE BYTE ADDR
9626	01	016B2	0E30168C			LPSD,3	SURINT01	RETURN TO POINT OF INTERRUPT
9627					*			
9628					*			
9629					*			
9630	01	016B3	31401840		SURINT07	CM,4	BUFFMIFLG	IF BUFFERS ARE AVAILABLE
9631	01	016B4	6910168C			BL	SURINT31	KEPT I/O GOING
9632	01	016B5	22D0169F			LI,13	SURSTART+1	SETUP
9633	01	016B6	55D21691			STW,13	SWTCH,1	BRANCH INSTRUCTION
9634	01	016B7	35101785			STW,1	BUFFMIFLG	SET BUFFER FULL MIMUS =1
9635	01	016B8	6AC017AB			BAL,12	IOCDP1	BUILD A NEW IOCD BYTE ADDRESS
9636	01	016B9	33000000	A		MTW,0	0	
9637	01	016BA	331017A4			MTW,1	TRACE09	
9638	01	016BB	0E30168C			LPSD,3	SURINT01	RETURN TO POINT OF INTERRUPT
9639					*			
9640					*			
9641	01	016BC	02200000	A	SURINT31	LCI	0	RESTORE CONDITION CODES
9642	01	016BD	68C016C1			RCR,12	SURINT29	IF NOT BUSY CONTINUE
9643	01	016BE	05001763			CAL2,0	NOTACCPY	CALLI IF SIG NOT ACCEPTED
9644	01	016BF	680016C0			B	**1	GO RETURN
9645	01	016C0	68001679			B	SURINT65	SHOULD NOT HAVE GOT HERE! BAD RTN
9646					*			
9647					*			
9648	01	016C1	22C00000	A	SURINT29	LI,12	0	ZERO NOT ACCEPTED COUNT FOR IOCD1
9649	01	016C2	35C01796			STW,12	IOERS101	ZERO NOT ACCEPTED COUNT FOR IOCD1
9650	01	016C3	33F01798			MTW,-1	IOCPASS2	HAVE IOCD 2 BEEN EXECUTED
9651	01	016C4	693016C7			BNEZ	SURINT30	IF SO THIS COUNT WILL GO THRU ZERO
9652	01	016C5	35C01795			STW,12	IOERA102	THEN ZERO AIO-IOCD 2 COUNT
9653	01	016C6	35C01797			STW,12	IOERS102	AND NOT ACCEPTED COUNT FOR IOCD 2
9654					*			
9655					*			
9656	01	016C7	35C01784		SURINT30	STW,12	FAKEINTR	RESET FAKE INTERRUPT FLAG
9657	01	016C8	6AC017AB			BAL,12	IOCDP1	BUILD A NEW IOCD BYTE ADDRESS
9658	01	016C9	0E30168C			LPSD,3	SURINT01	RETURN
9659					*			
9660					*			
9661					*			
9662					*			
9663	01	016CA	6AF01AB3		SURINT04	BAL,15	I AIO+1	GO TEST I/O
9664	01	016CB	00008002	A		DATA	X'00008002'	MASK, PRINT ERROR
9665	01	016CC	00000000	A	SURINTXX	DATA	X'00000000'	EXPECTED CONDITION CODES DEVICE ADDR
9666					*			
9667					*			
9668	01	016CD	680016D3			B	SURINT05	DEVICE ADDRESS COMPARE
9669	01	016CE	331017A5			MTW,1	TRACE10	
9670	01	016CF	226016D2			LI,6	**3	
9671	01	016D0	356016F6			STW,6	IOTEST	
9672	01	016D1	68001705			B	FALSEINT	
9673	01	016D2	0F30168C			LPSD,3	SURINT01	
9674					*			
9675					*			
9676					*			
9677	01	016D3	6AF01AB5		SURINT05	BAL,15	I AIO+3	GO AND TEST AIO
9678	01	016D4	FFFFC001	A		DATA	X'FFFFC001'	MASK, PRINT ERROR
9679	01	016D5	00100000	A	SURMASK	DATA	X'00100000'	TEST FOR CHANNEL END
9680	01	016D6	68001704			B	IOGOOD	TAKE STATUS GOOD EXIT BACK
9681	01	016D7	331017A6			MTW,1	TRACE11	
9682	01	016D8	22700000	A		LI,7	0	
9683	01	016D9	757616E2			STB,7	SURINT58,3	RESET PRINT INHIBIT
9684	01	016DA	F30216F6			MTB,0	*IOTEST,1	TEST FOR IOCD 1
9685	01	016DB	683016DD			REZ	**2	IF IOCD 1 BRANCH
9686	01	016DC	22700001	A		LI,7	1	SET UP INDEX
9687	01	016DD	327E1794			LW,7	IOERA101,7	LOAD NO. OF I/O ERRORS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9688	01	016DE	35701A86			STW,7	#MSGPTFG	SET UP MSG PRINT FLAG PRINT IF = 0
9689	01	016DF	6AF018DC			BAL,18	#MSGERR	GO TO MSG HEADER ROUTINE
9690	01	016E0	751616E2			STB,1	SURINT58,3	RETURNS HERE IF NO MSG OF ANY KIND IS TO BE PRINTED
9691					*			GO REPORT ANY ERRORS
9692	01	016E1	6AF01A85		SURINT51	BAL,15	:A10+3	
9693	01	016E2	FFFFC000	A	SURINT58	DATA	X'FFFFFFC000'	
9694	01	016E3	00100000	A	SURINT59	DATA	X'00100000'	
9695	01	016E4	68001704		B		I0000D	TAKE STATUS GOOD EXIT BACK
9696	01	016E5	68001703		B		I0BAD	TAKE STATUS BAD EXIT BACK
9697					*			
9698					*			
9699					*			
9700					SURINT09	J		
9701	01	016E6	331017A7		MTW,1		TRACE12	
9702	01	016E7	6AF01AA3		BAL,15		IT10	TEST FOR DEVICE IN GOOD CONDITION
9703	01	016E8	FF00C001	A	DATA		X'FF00C001'	
9704	01	016E9	10000000	A	DATA		X'10000000'	
9705	01	016EA	68001704		B		I0000D	RTN HERE IF DEVICE IN GOOD CONDITION
9706	01	016EB	6AF01AA8		BAL,15		IT10	TRY TO RESET DEVICE
9707	01	016EC	FF00C001	A	DATA		X'FF00C001'	
9708	01	016ED	10000000	A	DATA		X'10000000'	
9709	01	016EE	68001704		B		I0000D	RTN HERE IF DEVICE IN GOOD CONDITION
9710	01	016EF	6AF01AA3		BAL,15		IT10	ARE THINGS GOOD YET
9711	01	016F0	F700C001	A	DATA		X'F700C001'	
9712	01	016F1	10000000	A	DATA		X'10000000'	
9713	01	016F2	68001704		B		I0000D	RTN HERE IF DEVICE IN GOOD CONDITION
9714	01	016F3	35201787		STW,2		ENDOPER	SET NO TEST POSSIBLE
9715	01	016F4	68001638		B		SURPAT20	
9716					*			
9717					*			
9718					*			
9719					PAGE			
9720					*		ERROR RECOVERY	
9721					*			
9722					*		THIS ROUTINE TAKES CARE OF INHIBITING INTERRUPTS	
9723					*		AND IT HANDLES ERROR NUMBERS DURING ERROR REPORTING	
9724					*		THIS IS A CALL ?	
9725					ROUND		8	
9726	01	016F6	00000000	A	I0TEST	DATA	0,0	
	01	016F7	00000000	A				
9727	01	016F8	000016FA			DATA	**2,7**24	
	01	016F9	07000000	A				
9728					*			
9729	01	016FA	022000A0	A	I0TEST1	LCI	10	SAVE REGISTERS
9730	01	016FB	2B601778		STM,6		SUR0615	L THRU 15
9731	01	016FC	331017AA		MTW,1		TRACE15	
9732	01	016FD	22A00020	A	LI,10		X'20'	LOAD INTERRUPT BIT
9733	01	016FE	6DA01100	A	WD,10		X'1100'	DISARM & DISABLE I/O INTERRUPTS
9734	01	016FF	6D000022	A	WD,0		X'22'	ALLOW INTERRUPTS
9735	01	01700	B2C016F6		LW,12		*I0TEST	FETCH RTN ADDR
9736	01	01701	703016F6		LCF		I0TEST	RESTORE CONDITION CODES
9737	01	01702	E800000C	A	R		*12	GO DR CALLED FOR TEST
9738					*			
9739					*			
9740	01	01703	331016F6		I0BAD	MTW,1	I0TEST	MODIFY RTN ADDR FOR ERROR RTN
9741	01	01704	331016F6		I0000D	MTW,1	I0TEST	UPDATE RTNADDR
9742	01	01705	22A00020	A	FALSEINT	LI,10	X'20'	LOAD INTERRUPT BIT
9743	01	01706	6D000032	A	WD,0		X'32'	INHIBIT INTERRUPTS
9744	01	01707	6DA01200	A	WD,10		X'1200'	ARM & ENABLE I/O INTERRUPTS
9745	01	01708	331017A2		MTW,1		TRACE07	
9746	01	01709	022000A0	A	LCI		10	RESTORE
9747	01	0170A	2A601778		LM,6		SUR0615	REGISTERS 6 THRU 15
9748	01	0170B	0E0016F6		LPSD,0		I0TEST	RETURN TO MAIN LINE CODE
9749					PAGE			
9750					*		CALL 1	
9751					*			
9752					*		THIS ROUTINE HANDLES UPDATING ERROR COUNTS BY	
9753					*		USING THE LABEL SUPPLIED IN THE ARGUMENT FIELD	
9754					*		OF THE CALL TO DEFINE THE ERROR COUNTER THAT IS	
9755					*		TO BE UPDATED. THIS ROUTINE BRANCH LINKS TO A	
9756					*		STEPPING ROUTINE IF THE MAXIMUM NO. OF RETRIES	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LAB: L	OPERATION	OPERAND	COMMENTS
9757					*			HAVE BEEN TRIED,
9758					*			INPUT PARAMETERS:
9759					*			THE ARGUMENT FIELD OF THE CALL, AS THE
9760					*			ERROR COUNT TO BE UPDATED
9761					*			
9762					*			MAXERR = THE NUMBER OF RETRIES PER INDIVIDUAL
9763					*			ERROR
9764					*			
9765					*			REGISTERS DISTURBED:
9766					*			
9767					*			(NONE)
9768					*			
9769					*			OUTPUT PARAMETERS:
9770					*			AN UPDATED ERROR COUNT
9771					*			
9772					*			
9773					*			CALLING FORMAT:
9774					*			
9775					*			CALL,0 (1/0 ERROR COUNT TO BE UPDATED)
9776					*			
9777					*			
9778					*			
9779	C1	0170C	00000000	A	SURCALL	BBOUND DATA	8 0,0	
	C1	0170D	00000000	A				
9780	C1	0170E	00001710			DATA	0*2,7**24	
	C1	0170F	07000000	A				
9781					*			
9782	01	01710	331017A8			MTW,1	TRACE13	
9783	01	01711	B2C0170C			LW,12	*SURCALL	FETCH RTN ADDR
9784	01	01712	35C01747			STW,12	*SURTEMP1	SAVE THIS RTN ADDR
9785	01	01713	B3101747			MTW,1	*SURTEMP1	UPDATE A10 ERROR COUNT
9786	01	01714	32C01788			LW,12	MAXERR	FETCH MAXIMUM ERROR COUNT
9787	01	01715	B1C01747			CW,12	*SURTEMP1	COMPARE WITH CURRENT ERROR COUNT
9788	01	01716	6810171A			BGE	SURCALL1	IF GREATER OR EQUAL DON'T UPDATE
9789	01	01717	6AC0171C			BAL,12	SURDATE	STEP PROGRAM COUNTS
9790	01	01718	22C00000	A		LI,12	0	ZERO ERROR COUNT
9791	01	01719	B5C01747			STW,12	*SURTEMP1	STORE ZERO IN THE RIGHT PLACE
9792	01	0171A	3310170C		SURCALL1	MTW,1	SURCALL	STEP RETURN ADDR
9793	C1	0171B	0E00170C			LPSD,0	SURCALL	RETURN
9794					*			
9795					*			SURFACE TEST UPDATE ROUTINE
9796					*			
9797					*			
9798					*			THIS ROUTINE IS USED IN STEPPING THE PROGRAM
9799					*			ONE FUNCTION AHEAD AFTER ALL EFFORTS AT RETRYING
9800					*			HAVE FAILED, IT DOES THIS BY EXECUTING ALL
9801					*			PROGRAM LOGIC THAT WOULD NORMALLY BEEN EXECUTED IF
9802					*			AN ERROR HAD NOT OCCURRED.
9803					*			
9804					*			INPUT PARAMETER:
9805					*			
9806					*			(NONE)
9807					*			
9808					*			REGISTER DISTURBED:
9809					*			
9810					*			(NONE)
9811					*			
9812					*			OUTPUT PARAMETERS:
9813					*			UPDATED:
9814					*			TRACK-SECTOR ADDRESS
9815					*			POINTER TO THE ACTIVE BUFFER
9816					*			MEMORY BYTE ADDRESS OF THE ACTIVE BUFFER
9817					*			NO. OF AVAILABLE BUFFERS
9818					*			
9819					*			CALLING FORMAT:
9820					*			
9821					*			BAL,15 SURDATE
9822					*			
9823					*			
9824					*			
9825					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9826	01	0171C	55C21748		SURDATE	STW,12	SURDATE1,1	SAVE RTN ADDR
9827	01	0171D	331017A0			MTW,1	TRACE05	
9828	01	0171E	670016A1			EXU	SECTCOUT	UPDATE SECTOR COUNT
9829	01	0171F	670016A0			EXU	BUFCOUNT	UPDATE AVAILABLE BUFFER COUNT
9830	01	01720	6AC017AB			BAL,12	I0CDP1	UPDATE
9831	01	01721	6700169C			EXU	SURINT02	PATTERN
9832	01	01722	6700169D			EXU	SURINT02+1	
9833	01	01723	6AC017CE			BAL,12	BUILD0K	CALCULATE SEEK ADDRESS
9834	01	01724	B2C016F6			LW,12	*I0TEST	LOAD TEST THYE
9835	01	01725	52C2000C A			LW,12	12,1	SAVE HALF WORD
9836	01	01726	21C01749			CI,12	CPERR0R	IF COMPARE ERROR SKIP IT
9837	01	01727	68301735			BE	SURDATE2	IF SH SKIP
9838	01	01728	32C01A6A			LW,12	H10DW	
9839	01	01729	25C00001 A			SLB,12	1	FIND I0CD ADDRESS
9840	01	0172A	F110000C A			CB,1	*12	TEST FOR A WITE BRDR
9841	01	0172B	69401735			BCB,4	SURDATE2	IF WRITE BRANCH
9842	01	0172C	B2D0000C A			LW,13	*12	LOAD BYTE ADDRESS OF PATTERN
9843	01	0172D	53021A2E			MTW,0	H10BC,1	TEST FOR ZERO BC
9844	01	0172E	6830173D			BEZ	SURHELP	
9845	01	0172F	25D0007E A			SLB,13	=2	POSITION THE WORD ADDRESS OF PATTERN
9846	01	01730	32C01C9A			LW,12	M1	LOAD M1
9847	01	01731	B5C0000D A			STW,12	*13	
9848	01	01732	32C01C9B			LW,12	M2	
9849	01	01733	B5C2000D A			STW,12	*13,1	
9850	01	01734	6800173D			B	SURHELP	
9851					SURDATE2	J		
9852	01	01735	32C00FB8			LW,12	SEEKRD	FETCH THE SEEK ADDR
9853	01	01736	35C01D0D			STW,12	IPATID+3	UPDATE PATTERN ROUTINES
9854	01	01737	32C018D0			LW,12	IDVADDR	
9855	01	01738	55C01D0D			STW,12	IPATID+3	
9856	01	01739	32C01D0D			LW,12	IPATID+3	
9857	01	0173A	31301D0A			CW,3	IPATID	TEST FOR SEEK ADDRESS PATTERN
9858	01	0173B	6930173D			RNE	*+2	IF NOT CONTINUE
9859	01	0173C	35C01D0B			STW,12	IPATID+1	OTHERWISE, SET UP PATTERN SEED
9860					SURHELP	J		
9861	01	0173D	331017A1			MTW,1	TRACE06	
9862	01	0173E	315018D4			CW,5	SURFCEND	IS THIS THE LAST SECTOR
9863	01	0173F	69101743			RL	*+4	IF NOT CONTINUE
9864	01	01740	22C00000 A			LI,12	0	LOAD ZERO
9865	01	01741	35C01787			STW,12	ENDAPER	ZERO END OF OPERATION FLAG
9866	01	01742	68001638			H	SURPAT20	QUIT RIGHT NOW
9867	01	01743	31401840			CW,4	BUFM1AVL	BUFFER AVAILABLE -1
9868	01	01744	E9101748			RL	*SURDATE1	IF LESS RETURN TO CALLING ROUTINE
9869	01	01745	35101784			STW,1	FAKEINTR	SET FAKE INTERRUPT FLAG
9870	01	01746	0E30168C			LPSD,3	SURINT01	RETURN
9871	01	01747	00000000 A		SURTEMP1	DATA	0	ADDRESS OF I0 A10 ERROR COUNT
9872	01	01748	00000000 A		SURDATE1	DATA	0	
9873						PAGE		
9874					*			COMPARE ERROR RECOVERY
9875					*			
9876					*			THIS ROUTINE HANDLES ERROR RECOVERY IF A
9877					*			DATA COMPARISON ERROR OCCURS. IT DOES THIS
9878					*			BY RESETTING THE ACTIVE BUFFER POINTER AND
9879					*			TRACK-SECTOR ADDRESS SO THAT THE FAILING SECTOR
9880					*			CAN BE REREAD.
9881					*			
9882					*			INPUT PARAMETERS:
9883					*			(NONE)
9884					*			
9885					*			REGISTERS DISTURBED:
9886					*			
9887					*			(NONE)
9888					*			
9889					*			OUTPUT PARAMETERS:
9890					*			
9891					*			TRACK-SECTOR ADDRESS
9892					*			POINTER TO THE ACTIVE BUFFER
9893					*			MEMORY BYTE ADDRESS OF THE ACTIVE BUFFER
9894					*			NO. OF AVAILABLE BUFFERS
9895					*			
9896					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9897				*			CALLING FORMAT:	
9898				*				
9899				*				
9900				*			* 12 (THE ADDRESS IN REG 12 COMES FROM THE ARGUMENT FIELD OF THE CALL ?)	
9901				*				
9902	01	01749	325C18D3		CPERRR	LW,5	CURRSEFK	SET UP CURRENT SEEK ADDR
9903	01	0174A	331017A9			MTW,1	TRACE14	
9904	01	0174B	3280183D			LW,R	RUFINAD	FETCH CURRENT BUFFER ADDR
9905	01	0174C	358C183E			STW,8	BUFBUTAD	INITIALIZE BUFFER BUT ADDR
9906	01	0174D	46801834			XW,R	IACDATA	SAVE THE BYTE COUNT
9907	01	0174E	44801F72			AND,R	L(X'FFFF0000')	SAVE THE ORDER
9908	01	0174F	66801834			AWM,R	IACDATA	UPDATE TO ADD ORDER
9909	01	01750	22400000 A			LI,4	0	ZERO
9910	01	01751	354C1CA9			STW,4	:COMFLAG	ALLOW COMPARE ERROR REPORTING
9911	01	01752	328C1789			LW,R	COMPERR	FETCH NO. OF COMPARE ERRORS
9912	01	01753	358C1A86			STW,R	#MSGPTFG	SET MSG PRINT FLAG IF = 0 HEADER WILL WILL BE PRINTED
9913				*				
9914	01	01754	6AF018DC			RAL,15	#MSGERR	
9915	01	01755	68001757			R	*+2	RETURNS HERE IF NO MSG IS TO PRINTED
9916				*				
9917				*				
9918	01	01756	6AF018D0			RAL,15	:COMPARE	GO COMPARE THE PATTERN AGAIN
9919	01	01757	68001758			R	*+1	FILLER
9920	01	01758	35101CA9			STW,1	:COMFLAG	SET PRINT INHIBIT FLAG FOR COMPARE
9921	01	01759	040C1789			CAL,0	COMPERR	GO CLEAN HOUSE
9922	01	0175A	355018D3			STW,5	CURRSEFK	SET UP CURRENT SEEK WITH UPDATED INF
9923	01	0175B	35101784			STW,1	FAKEINTR	SET FAKE AN INTERRUPT
9924	01	0175C	22400000 A			LI,4	0	ZERO BUFFERS AVAILABLE
9925	01	0175D	3280178E			LW,R	XPSSEFK	SET UP TO SEEK AGAIN
9926	01	0175E	3580005C A			STW,R	XIBCI	BY LEADING XPSD
9927	01	0175F	32801834			LW,R	IACDATA	FETCH PATTERN ADDRESS
9928	01	01760	44801F70			AND,R	L(X'00007FFFF')	
9929	01	01761	3580183D			STW,R	RUFINAD	SET UP BUFFER IN ADDRESS
9930	01	01762	68001704			R	IACADD	JUST RTN EVERY THING HAS BEEN DONE
9931						PAGE		
9932				*				
9933				*			SIB NOT ACCEPTED RECOVERY	
9934				*				
9935				*			THIS ROUTINE HANDLES ERROR RECOVERY IF A	
9936				*			SIB IS NOT ACCEPTED.	
9937				*				
9938				*			INPUT PARAMETERS:	
9939				*				
9940				*			(NONE)	
9941				*				
9942				*			REGISTERS DISTURBED:	
9943				*				
9944				*			(NONE)	
9945				*				
9946				*			OUTPUT PARAMETERS:	
9947				*				
9948				*			(NONE)	
9949				*				
9950				*			CALLING FORMAT:	
9951				*				
9952				*			B *12 (THE ADDRESS IN REG 12 COMES FROM THE ARGUMENT FIELD OF THE CALL ?)	
9953				*				
9954				*				
9955	01	01763	22901797		NBTACCT	LI,9	I0FRS102	LOAD ADDR OF IACD 2 ERROR COUNT
9956	01	01764	22800C1A			LI,8	DA(IACDATA)	LOAD DW ADDR OF IACD 2
9957	01	01765	31800000 A			CW,R	0	TEST AGAINST 1 PRESENTLY IN USE
9958	01	01766	68301768			BE	*+2	IF NOT EQUAL
9959	01	01767	22901796			LI,9	I0FRS101	LOAD ADDR OF IACD 1 ERROR COUNT
9960	01	01768	55921772			STH,9	NBTACCT1,1	SAVE IN THE CALL INST TO ERR CNT UPD
9961	01	01769	H2800009 A			LW,R	*9	LOAD CURRENT COUNT
9962	01	0176A	35801A86			STW,R	#MSGPTFG	USE IT TO SET MSG PRINT FLAG
9963	01	0176B	6AF018DC			RAL,15	#MSGERR	GO TO MSG PRINT ROUTINE
9964	01	0176C	68001772			R	NBTACCT1	RTNS HERE IF NO MSG ARE TO BE PRINTD
9965	01	0176D	703C16F6			LCF	I0TST	LOAD CONDITION CODES
9966	01	0176E	6AF01A9F			RAL,15	:SIB+1	GO TO REPORT SIB ERROR
9967	01	0176F	0000C000 A			DATA	X'0000C000'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
9968	01	01770	00000000	A		DATA	0	
9969	01	01771	6AF01139	A		BAL,15	TILT	
9970	01	01772	04000000	A	NTACCP1	CAL,10	0	SHOULD NEVER GET HERE
9971	01	01773	680016E6	A		R	SURINT09	GO UPDATE ERROR COUNT
9972						PAGE		GO RESET I/O
9973					*			
9974					*			
9975					*			TEMPORARY STORAGE FOR THE
9976					*			
9977					*			SURFACE TEST
9978						BOUND	8	
9979	01	01774	00000002	A	TST3PAT	DATA	2	
9980	01	01775	54482FBA	A		DATA	1414213562	
9981	01	01776	00000000	A		DATA	0	
9982	01	01777	00000000	A		DATA	0	
9983	01	01778		A	SUR0615	RES	9	RESERVED SPACE FOR REG 6 THRU 14
9984	01	01781	00000000	A	SUR0015	DATA	0	RESERVED FOR REG 15
9985	01	01782	00000000	A	SURINT03	DATA	0	UP DATE BYTE COUNT
9986	01	01783	00000000	A		WRITTEN	DATA	0
9987	01	01784	00000000	A	FAKEINTR	DATA	0	FAKE AN INTERRUPT IF = 1
9988	01	01785	00000000	A	BUFMI1LG	DATA	0	BUFFER = 1 FLAG
9989	01	01786	00000000	A	WRITEDLY	DATA	0	WRITE DELAY COUNT
9990	01	01787	00000000	A	ENDOPER	DATA	0	END OF OPERATION FLAG
9991	01	01788	00000000	A	MAXERR	DATA	0	THE NO. OF RETRIES ON AN ERROR
9992	01	01789	00000000	A	COMPERR	DATA	0	COMPARE ERROR COUNT
9993	01	0178A	00000000	A	EXAIBDST	DATA	0	TEMPORARY STORAGE FOR EXPECTED AIO
9994	01	0178B	00000000	A	READVRY	DATA	0	READ VERIFY FLAG
9995	01	0178C	00000000	A	SURDELAY	DATA	0	MAXIMUM DELAY BETWEEN INTERRUPTS
9996	01	0178D	00000000	A	SURTN1	DATA	0	RETURN ADDRESS TO HIGHER TEST
9997	01	0178E	0F001660	A	XPSDSEK	XPSD,0	SURINT00	LOAD XPSD FOR FIRST IBCD
9998	01	0178F	0F00168C	A	XPSDATA	XPSD,0	SURINT01	LOAD XPSD FOR SECOND IBCD
9999	01	01790	0F00170C	A	XPSDCAL1	XPSD,0	SURCALL	XPSD FOR CALL 1 TRAP
10000	01	01791	0F0016F6	A	XPSDCAL2	XPSD,0	I0TEST	XPSD FOR THE CALL 2 TRAP
10001	01	01792	0F40168C	A	XPSDCAL3	XPSD,4	SURINT01	LOAD XPSD FOR CALL3
10002	01	01793	00000000	A	I0CDPNT	DATA	0	IBCD POINTER 1 = MORE THAN IBCD
10003	01	01794	00000000	A	I0ERRA01	DATA	0	I/O AIO 1 ERROR COUNT
10004	01	01795	00000000	A	I0ERRA02	DATA	0	I/O AIO 2 ERROR COUNT
10005	01	01796	00000000	A	I0ERSI01	DATA	0	I/O SIO 1 ERROR COUNT
10006	01	01797	00000000	A	I0ERSI02	DATA	0	I/O SIO 2 ERROR COUNT
10007	01	01798	00000000	A	I0CPASS2	DATA	0	IBCD PASS 2 COUNT
10008	01	01799	00000000	A	MAJORERR	DATA	0	A MAJOR ERROR EXISTS IF = 1
10009		01 0179A			TRACETRP	SET	*	
10010	01	0179A	00000000	A	TRACE	DATA	0	
10011	01	0179B	00000000	A	TRACE00	DATA	0	
10012	01	0179C	00000000	A	TRACE01	DATA	0	
10013	01	0179D	00000000	A	TRACE02	DATA	0	
10014	01	0179E	00000000	A	TRACE03	DATA	0	
10015	01	0179F	00000000	A	TRACE04	DATA	0	
10016	01	017A0	00000000	A	TRACE05	DATA	0	
10017	01	017A1	00000000	A	TRACE06	DATA	0	
10018	01	017A2	00000000	A	TRACE07	DATA	0	
10019	01	017A3	00000000	A	TRACE08	DATA	0	
10020	01	017A4	00000000	A	TRACE09	DATA	0	
10021	01	017A5	00000000	A	TRACE10	DATA	0	
10022	01	017A6	00000000	A	TRACE11	DATA	0	
10023	01	017A7	00000000	A	TRACE12	DATA	0	
10024	01	017A8	00000000	A	TRACE13	DATA	0	
10025	01	017A9	00000000	A	TRACE14	DATA	0	
10026	01	017AA	00000000	A	TRACE15	DATA	0	
10027		01 017AB			TRACEB0T	SET *		
10028					PAGE			
10029					*			
10030					*			
10031					*			I B C D + 1 R O U T I N E
10032					*			
10033	01	017AB	32D01834	A	I0CDP1	LW,13	I0CDATA	LOAD FIRST WORD OF SECOND IBCD
10034	01	017AC	48D01F70	A		AND,13	L(X'0007FFFF')	
10035	01	017AD	30D018D2	A		AW,13	BYTCURR	ADD THE CURRENT BYTE COUNT
10036	01	017AE	31D0183C	A		CW,13	BUFENDAD	COMPARE WITH THE BUF END ADDR
10037	01	017AF	69101781	A		RL	*+2	IF LESS BRANCH
10038	01	017B0	32D01842	A		LW,13	BUF1L0BA	FETCH THE BUFFER STARTING ADDRESS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10039	01	01781	3F0017A2			STW,13	SURINT03	SAVE UP DATED BYTE COUNT
10040	01	01782	72001834			LB,13	I0CDATA	SAVE ORDER
10041	01	01783	75001782			STB,13	SURINT03	
10042	01	01784	E800000C A			R	*12	BRANCH BACK TO CALLING ROUTINE
10043						PAGE		
10044				*				
10045				*				
10046				*			BUILD I0CD	
10047				*				
10048				*			FOR SURFACE TESTS	
10049				*				
10050				*				
10051				*			THIS ROUTINE BUILDS A I0CD FOR USE	
10052				*			BY THE SURFACE TESTS.	
10053				*				
10054				*				
10055				*			INPUT PARAMETERS:	
10056				*			REG 15 =RETURN ADDRESS	
10057				*			MEMLAST=ADDRESS OF LAST USABLE MEMORY LOCATION	
10058				*			BYTESECT=NUMBER OF BYTES/SECTOR	
10059				*			SECTORS = * OF SECTORS/TRACK	
10060				*				
10061				*				
10062				*				
10063				*			REGISTERS DISTURBED:	
10064				*				
10065				*			(NONE)	
10066				*				
10067				*			OUTPUT PARAMETERS:	
10068				*				
10069				*			BUFAVAIL=NUMBER OF AVAILABLE BUFFER AREAS	
10070				*			I0CDATA =THE I0CD THAT WILL BE USED BY	
10071				*			THE SURFACE TESTS	
10072				*			BUFENDAD=ADDRESS POINTER TO LAST DATA PATTERN	
10073				*			BUFINAD =ADDRESS POINTER TO DATA PATTERN BEING BUILT	
10074				*			BUFAUTAD=ADDRESS POINTER TO DATA PATTERN BEING USED	
10075				*				
10076	01	01785	156017CC		BUILD I0C	STD,6	BULDSAVE	SAVE REG 6 & 7
10077	01	01786	22600000 A			LI,6	0	
10078	01	01787	32701841			LW,7	MEMLSTBA	LOAD ADDRESS OF LAST USUALABLE BYTE
10079	01	01788	34701842			SW,7	BUFIL0BA	SUBTRACT ADDRESS OF FIRST USUALABLE
10080	01	01789	366018D2			DW,6	BYTCURR	DIVIDE BY BYTES/SECTOR
10081	01	0178A	3570183F			STW,7	BUFAVAIL	
10082	01	0178B	22600000 A			LI,6	0	
10083	01	0178C	376018D2			MW,6	BYTCURR	MULTIPLY BY BYTES/SECTOR
10084	01	0178D	35701838			STW,7	BUFIENGT	
10085	01	0178E	30701842			AW,7	BUFIL0BA	SUBTRACT FIRST USUALABLE BYTE ADDR
10086	01	0178F	3570183C			STW,7	BUFENDAD	
10087	01	017C0	32701842			LW,7	BUFIL0BA	
10088	01	017C1	3570183E			STW,7	BUFAUTAD	
10089	01	017C2	3570183D			STW,7	BUFINAD	
10090	01	017C3	12601834			LD,6	I0CDATA	LOAD DATA I0CD
10091	01	017C4	48601F72			AND,6	L(X'FF000000')	SAVE ONLY THE ORDER
10092	01	017C5	48701F72			AND,7	L(X'FF000000')	
10093	01	017C6	30601842			AW,6	BUFIL0BA	
10094	01	017C7	307018D2			AW,7	BYTCURR	ADD BYTES/SECTOR
10095	01	017C8	15601834			STD,6	I0CDATA	
10096	01	017C9	35601782			STW,6	SURINT03	SAVE UPDATED BYTE COUNT
10097	01	017CA	126017CC			LD,6	BULDSAVF	
10098	01	017CB	E800000F A			R	*15	
10099				*				
10100				*				
10101				*				
10102				*			ROUND	8
10103	01	017CC			BULDSAVE	RES	2	
10104						PAGE		
10105				*				
10106				*			THIS ROUTINE CONVERTS THE TRACK/SECTOR FROM AND	
10107				*			ABSOLUTE SECTOR COUNT TO A TRACK/SECTOR ADDRESS.	
10108				*				
10109	01	017CE	156017DC		BUILD SK	STD,6	BUILD SK1	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10110	01	017CF	3A6018D7			LCW,6	TCKCURR	LOAD COMPLEMENT SHIFT COUNT
10111	01	017D0	756617D8			STB,6	BLDSHIFT,3	SHIFT COUNT
10112	01	017D1	22600000	A		LI,6	0	
10113	01	017D2	32700005	A		LW,7	5	FETCH SECTOR ADDR
10114	01	017D3	366018D1			DW,6	SECTCURR	DIVIDE BY SECTOR/TRACK
10115	01	017D4	A57018D7			SLB,7	*YCKCURR	POSITION TRACK (BAND) ADDR
10116	01	017D5	35700FB8			STW,7	SEEKRAD	SAVE TRACK (RAND) ADDR
10117	01	017D6	66600FB8			AWM,6	SEEKRAD	ADD IN SECTOR ADDR
10118	01	017D7	466017DC			XW,6	BUILDSK1	SAVE SECTOR ADDR BY IT SELF
10119	01	017D8	25700000	A	BLDSHIFT	SLB,7	0	POSITION TRACK (BAND) ADDR
10120	01	017D9	467017DD			XW,7	BUILDSK1+1	SAVE IT BY IT SELF
10121	01	017DA	E800000C	A		R	*12	RETURN
10122						BOUND	8	
10123	01	017DC	00000000	A	BUILDSK1	DATA	0,0	
10124	01	017DD	00000000	A				
10124					*			
10125						PAGE		
10126					*			
10127					*			MEMORY ALLOCATION ROUTINE
10128					*			
10129					*			
10130					*			THIS ROUTINE ALLOCATES MEMORY FOR INPUT/OUTPUT
10131					*			AND FOR SNAP SHOTS OF TRACK AND SECTOR
10132					*			RELATED ERRORS.
10133					*			
10134					*			INPUT PARAMETERS:
10135					*			
10136					*		IMEMLAST	LAST USUABLE MEMORY LOCATION
10137					*		#MSGLEVL	IF #P MEMORY IS ALLOCATED TO SNAP
10138					*			SHOT OF ERRORS
10139					*			
10140					*			REGISTERS DISTURBED:
10141					*			
10142					*			REGISTERS 4-7
10143					*			
10144					*			OUTPUT PARAMETERS:
10145					*			
10146					*		MEMLSTBA	LAST USUABLE MEMORY BYTE ADDRESS
10147					*			
10148					*			MEMORY FOR I/O BUFFERS
10149					*			MEMORY FOR TRACK AND SECTOR SNAP
10150					*			SHOTS IF #MSGLEVL=2
10151					*			CALLING FORMAT:
10152					*			
10153					*		RAL,15 MEMORY	GO TO MEMORY ALLOCATION ROUTINE
10154					*		*	(NO MEMORY AVAILABLE FOR THE TEST)
10155					*		*+1	(MEMORY IS AVAILABLE FOR THE TEST)
10156					*			
10157					*			
10158					*			
10159					*			
10160	C1	017DE	55F2181B		MEMORY3 ;	STH,15	MEMORY2,1	SAVE RETURN ADDR
10161	C1	017DF	3250022F	A		LW,5	IMEMLAST	LOAD LAST AVAILABLE MEMORY ADDR
10162	C1	017E0	38500006	A		SW,5	6	SUBTRACT LENGTH OF TABLE BUFFER
10163	C1	017E1	3550182E			STW,5	SSTABLE	SAVE IN SEEK/SENSE ADDR
10164	C1	017E2	21501F7E			CI,5	BUF10	
10165	C1	017E3	69101805			RL	MEMORY1	NOT ENOUGH MEMORY STOP RIGHT NOW
10166	C1	017E4	3560182F			STW,6	TABLEMAX	STORE WORD
10167	01	017E5	35601831			STW,6	SECTLMT	STORE IN TO SECTLMT
10168	01	017E6	22000000	A		LI,0	0	LOAD ZERO
10169	C1	017E7	850C182E			STW,0	*SSTABLE,6	ZERO SEEK/SENSE BUFFER
10170	01	017E8	646017E7			RDR,6	*-1	
10171	C1	017E9	8500182E			STW,0	*SSTABLE	
10172	C1	017EA	350011E9			STW,0	TAPINDEX	ZERO INDEX COUNT
10173	C1	017EB	350011E7			STW,0	TABBIAS	ZERO TABLE BIAS
10174	C1	017EC	35001830			STW,0	TABERROR	
10175	C1	017ED	3260182F			LW,6	TABLEMAX	
10176	01	017EF	6660182F			AWM,6	TABLEMAX	
10177	C1	017EF	68001805			R	MEMORY1	
10178					*			
10179					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10180					*			
10181	01	017F0	55F2181B		MEMORY	STW,15	MEMORY2,1	SAVE RTN ADDR
10182	01	017F1	3250022F A			LW,5	:MEMLAST	FETCH ADDRESS OF LAST USABLE MEMORY
10183					*			
10184	01	017F2	31201A87			CW,2	#MSGLEVL	IS THIS A TRACK SNAP SHOT
10185	01	017F3	69301805			RNE	MEMORY1	IF NOT BRANCH
10186	01	017F4	3550182B			STW,5	ENDSHOT	SET UP ADDR END ADDR OF SNAP SHOT
10187	01	017F5	205FFFF8 A			AI,5	-TOTALS	SUBTRACT TOTALS
10188	01	017F6	3550182A			STW,5	TOTLSHOT	SAVE AS STARTING ADDR TOTALS SHOT
10189	01	017F7	22600000 A			LI,6	0	ZERO
10190	01	017F8	327018D1			LW,7	SECTCURP	LOAD CURRENT SECTRS/TRACK
10191	01	017F9	2570007F A			SLS,7	-1	DIVIDE BY 2
10192	01	017FA	23600008 A			MI,6	TOTALS	CAL NR. LOCATIONS REQD FOR SECT SHOT
10193	01	017FB	38500007 A			SW,5	7	SUBTRACT LOCATIONS REQD FOR SECT SHOT
10194	01	017FC	35501829			STW,5	SECTSHOT	SAVE AS STARTING ADDR OF SECT SNAP S
10195	01	017FD	205FFF00 A			AI,5	-256	SUBTRACT TRACK TABLE LENGTH
10196	01	017FE	35501828			STW,5	TCKSHOT	SAVE AS STARTING ADDR OF TCK SNAP SH
10197					*			
10198					*			
10199	01	017FF	22700000 A			LI,7	0	LOAD ZERO
10200	01	01800	B5701828			STW,7	*TCKSHOT	CLEAR FIRST LOCATION IN TABLE
10201	01	01801	32601828			LW,6	TCKSHOT	LOAD STARTING ADDR OF TRACK SNAP SHOT
10202	01	01802	3860022F A			SW,6	:MEMLAST	CALC LENGTH OF SECTR SNAP SHOT AREA
10203	01	01803	B57C022F A			STW,7	*:MEMLAST,6	ZERO THIS AREA
10204	01	01804	65601803			RIR,6	*-1	UNTIL ALL ZERO
10205					*			
10206					*			
10207	01	01805	25500002 A		MEMORY1	SLS,5	2	CONVERT MEMORY LAST TO BYTE ADDR
10208	01	01806	2150FFFC A			CI,5	XIFFFC	IS IT GREATER 64K BYTES
10209	01	01807	69101809			RL	*+2	IF SO
10210	01	01808	2250FFFC A			LI,5	XIFFFC	LOAD 64K BYTE AS LAST BYTE ADDR
10211	01	01809	35501841			STW,5	MEMLSTBA	AND SAVE IN MEMORY LAST BYTE ADDR
10212	01	0180A	205F8208 N			AI,5	-BA(BUF1L0)	SUBTRACT LOWER BUFFER LIMIT
10213	01	0180B	385018D2			SW,5	BYTCURR	SUBTRACT # OF BYTES PER SECTOR
10214	01	0180C	385018D2			SW,5	BYTCURR	SUBTRACT # OF BYTES PER SECTOR
10215	01	0180D	E812000F A			RGEZ	*15,1	IF =<0 TAKE MEMORY AVAILABLE RTN
10216	01	0180E	B2E01A99			LW,14	*:MSGADDR	LOAD TYPE OF DIRECTIVE
10217	01	0180F	32F01F60			LW,15	L(X'40404040')	LOAD BLANKS
10218	01	01810	31E00322			CW,14	:STTDIR	TEST FOR FUNCTIONAL DIRECTIVE
10219	01	01811	69301817			RNE	MEMORY4	IF NOT BRANCH
10220	01	01812	32C013CF			LW,12	WATCHERR	LOAD SUB-TEST NO.
10221	01	01813	EAF00217 A			RAL,15	:DECC	CONVERT TO DECIMAL
10222	01	01814	22D06B40 A			LI,13	' , '	LOAD COMMA AND A SPACE
10223	01	01815	25F00270 A			SCS,15	-16	POSITION SUB-TEST NO.
10224	01	01816	55D0000F A			STW,13	15	INSERT COMMA AND SPACE
10225					*			
10226					*			
10227	01	01817	35E01826		MEMORY4	STW,14	NAMEMEMORY+10	SETUP
10228	01	01818	35F01827			STW,15	NAMEMEMORY+11	MESSAGE
10229	01	01819	EAF0021C A			RAL,15	*:PRINT	REPORT NO BUFFER MEMORY AVAILABLE
10230	01	0181A	0000181C				DATA	NAMEMEMORY
10231	01	0181B	68000000 A		MEMORY2	R	0	TAKE MEMORY AVAILABLE RTN
10232	01	0181C	2FD4C5D4 A		NAMEMEMORY	TEXTC	NAMEMEMORY	MEMORY SIZE NOT GREAT ENOUGH FOR TEST TTTT, TT
10233			0000000A		TOTALS	EGU	8	
10234	01	01828	00000000 A		TCKSHOT	DATA	0	STARTING ADDR OF THE TRACK SNAP SHOT
10235	01	01829	00000000 A		SECTSHOT	DATA	0	STARTING ADDR OF THE SECTR SNAP SHOT
10236	01	0182A	00000000 A		TOTLSHOT	DATA	0	STARTING ADDR OF THE TOTLS SNAP SHOT
10237	01	0182B	00000000 A		ENDSHOT	DATA	0	ENDING ADDR OF THE SNAP SHOT
10238	01	0182C	00000000 A		TCKLGTH	DATA	0	LENGTH OF TRACK SNAP SHOT AREA
10239	01	0182D	00000000 A		SECTLGTH	DATA	0	LENGTH OF SECTR SNAP SHOT AREA

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10240	C1	0182E	00000000	A	SSTABLE	DATA	0	SEEK/SENSE TABLE STARTING ADDR
10241	C1	0182F	00000000	A	TABLEMAX	DATA	0	TABLE LENGTH IN HALF WORDS
10242	C1	01830	00000000	A	TABERR0R	DATA	0	ERROR IF NBY = ZERO
10243	C1	01831	00000000	A	SECTLMT	DATA	0	LIMIT OF NUMBER OF SECTORS BEING TESTED.
10244					*			
10245						PAGE		
10246					*			
10247						CALLING PARAMETER TABLE		
10248					*			
10249					*			
10250						BOUND	8	
10251	C1	01832	00000000	A	I0CSEEK1	DATA	0	I0CD (SEEK) FOR I/O OPERATIONS
10252	C1	01833	00000000	A		DATA	0	
10253	C1	01834	00000000	A	I0CDATA	DATA	0	I0CD(DATA) FOR I/O OPERATIONS
10254	C1	01835	00000000	A		DATA	0	
10255	C1	01836	00000000	A	I0CDAT01	DATA	0	
10256	C1	01837	00000000	A		DATA	0	
10257	C1	01838	00000000	A	I0CDAT02	DATA	0	
10258	C1	01839	00000000	A		DATA	0	
10259	C1	0183A	00000000	A	SUR0RDER	DATA	0	ORDER FOR SURFACE TEST, IN BYTE 3
10260	C1	0183B	00000000	A	BUFLNGT	DATA	0	LENGTH OF USUABLE DATA AREA
10261	C1	0183C	00000000	A	BUFENDAD	DATA	0	STARTING ADDRESS OF LAST BUFFER +1
10262	C1	0183D	00000000	A	BUFINAD	DATA	0	STARTING ADDRESS OF BUFFER BEING BLT
10263	C1	0183E	00000000	A	BUF0UTAD	DATA	0	STARTING ADDRESS OF BUFFER BEING USE
10264	C1	0183F	00000000	A	BUFAVAIL	DATA	0	MAXIMUM NUMBER OF BUFFER AREAS
10265	C1	01840	00000000	A	BUFM1AVL	DATA	0	BUFFERS AVAILABLE MINUS 1
10266	C1	01841	00000000	A	MEML6TBA	DATA	0	LAST USUABLE BYTE ADDR
10267	C1	01842	00000000	A	BUFILOBA	DATA	0	BYTE ADDR OF FIRST USUABLE MEMORY LO
10268	C1	01843	00000000	A	MASK	DATA	0	RECEIVED STATUS MASK
10269	C1	01844	00000000	A	EXSEKAI0	DATA	0	EXPECTED AIO STATUS
10270	C1	01845	00000000	A	EXDATAI0	DATA	0	EXPECTED DATA AIO STATUS
10271	C1	01846	00000000	A	CURRSECT	DATA	0	CURRENT SECTOR UNDER TEST
10272	C1	01847	00000000	A	SURMIEND	DATA	0	SECTOR END MINUS 1
10273		01 016A0			BUFINCMT	EQU		BUFFER INCREMENT CONSTANT
10274		01 016A1			SECTINCMT	EQU		SECTCOUT
10275						PAGE		
10276					*			
10277					*			*** DEVICE DESCRIPTION TABLE POINTER GENERATOR ***
10278					*			
10279					*			THIS SUBROUTINE GENERATES A BIAS POINTER TO THE
10280					*			DEVICE DESCRIPTION TABLE THAT DESCRIPTION THE DEVICE
10281					*			TO BE TESTED.
10282					*			
10283					*			IF THE POINTER IS TO BE INITIALIZED A -1
10284					*			MUST BE STORED INTO 'DDTPI' BEFORE BRANCH LINK TO
10285					*			THIS SUBROUTINE.
10286					*			
10287					*			INPUT PARAMETERS:
10288					*			
10289					*			:DDTLGTH=NUMBER OF DEVICES CURRENTLY IN TABLE.
10290					*			
10291					*			REGISTER DISTURBED:
10292					*			(NONE)
10293					*			
10294					*			OUTPUT PARAMETERS:
10295					*			
10296					*			#DDYBIAS=THE BIAS POINTER TO THE DEVICE DISCRPTION
10297					*			TABLE.
10298					*			#DDTP =THE POINTER TO THE DEVICE DISCRPTION
10299					*			TABLE (0 DDTP 7).
10300					*			
10301					*			CALLING FORMAT:
10302					*			
10303					*			RAL,15 (#DDTRADM) RANDRM POINTER UPDATING
10304					*			(#DDTICMT) INCREMENT POINTER UPDATING
10305					*			
10306					*			* =THE LAST DEVICE DISCRIBED IN THE TABLES
10307					*			HAS BEEN TESTED.
10308					*			*+1 =THE LAST DEVICE DISCRIBED IN THE TABLES
10309					*			HAS NOT BEEN TESTED.
10310					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10311	01	01848	02200000	A	#DDTRADM	LCI	0	
10312	01	01849	28001A88			STM,0	#DDTSAVE	
10313	01	0184A	22E00000	A		LI,14	0	ZERO REG 14
10314	01	0184B	32FC1863			LW,15	RADSEED	LOAD THE RANDOM SEED
10315	01	0184C	68301854			REZ	#DDT1	IF RANDOM NO. = 0, USE AS IS.
10316	01	0184D	36F01865			DW,14	#DDTLGTH	FIND A REMAINDER
10317	01	0184E	32F0000E	A		LW,15	14	USE REMAINDER AS A RANDOM PRINTER
10318	01	0184F	62001854			R	#DDT1	
10319					*			
10320					*			
10321	01	01850	02200000	A	#DDTICMT	LCI	0	
10322	01	01851	28001A88			STM,0	#DDTSAVE	
10323	01	01852	32FC1864			LW,15	#DDTP	
10324	01	01853	20F00001	A		AI,15	1	FETCH OLD PRINTER
10325	01	01854	35FC1864		#DDT1	STM,15	#DDTP	INCREMENT TO GENERATE NEW PRINTER
10326	01	01855	31F01865			DW,15	#DDTLGTH	SAVE NEW PRINTER
10327	01	01856	68101860			RGE	#DDTEXIT	TEST PRINTER TO SEE IF
10328	01	01857	22E00000	A		LI,14	0	LIMITS HAVE BEEN EXCEEDED
10329	01	01858	23E00000	A		MI,14	#DDTADR2-#DDTADR1	ZERO REG 14
10330	01	01859	35FC1866			STM,15	#DDTBIAS	MULTIPLY SPAN BETWEEN DDT BY PRINT
10331	01	0185A	32001866			LW,0	#DDTBIAS	SAVE AS NEW BIAS PRINTER
10332	01	0185B	20001867			AI,0	#DDTADR1	
10333	01	0185C	02200090	A		LCI	#DDTADR3-#DDTADR1	
10334	01	0185D	AA100000	A		LM,1	*0	
10335	01	0185E	281018CF			STM,1	TESTDEV	
10336	01	0185F	33101A97			MTW,1	#DDTSAVE+15	
10337	01	01860	02200000	A	#DDTEXIT	LCI	0	
10338	01	01861	2A001A88			LM,0	#DDTSAVE	
10339	01	01862	E800000F	A		R	*15	
10340	01	01863	00000000	A	RADSEED	DATA	0	RANDOM SEED FOR TEST SELECTION
10341	01	01864	00000000	A	#DDTP	DATA	0	DEVICE DESCRIPTION TABLE PRINTER
10342	01	01865	00000000	A	#DDTLGTH	DATA	0	DEVICE DESCRIPTION TABLE LENGTH
10343	01	01866	00000000	A	#DDTBIAS	DATA	0	DEVICE DESCRIPTION TABLE BIAS
10344					*			
10345					*			
10346					*			
10347		01 01867			#DDTADR1	SET	\$	
10348	01	01867	00000000	A	MODEL	DATA	0	MODEL NO. OF THE DEVICE BEING TESTED
10349	01	01868	00000000	A	TGTDEV	DATA	0	TARGET DEVICE ADDRESS
10350	01	01869	00000000	A	SECTORS	DATA	0	NUMBER OF SECTORS PER TRACK
10351	01	0186A	00000000	A	BYTESECT	DATA	0	NUMBER OF BYTES PER SECTOR
10352	01	0186B	00000000	A	SLOWER	DATA	0	SECTOR LOWER LIMIT (USED BY TESTS)
10353	01	0186C	00000000	A	SUPPER	DATA	0	SECTOR UPPER LIMIT (USED BY TESTS)
10354	01	0186D	00000000	A	SSIZE	DATA	0	NUMBER OF AVAILABLE SECTORS
10355	01	0186E	00000000	A	TSSTART	DATA	0	TRACK SECTOR STARTING ADDRESS
10356	01	0186F	00000000	A	TCKSHIFT	DATA	0	NO. OF SHIFTS REQD TO POSITION TK AD
10357		01 01870			#DDTADR3	SET	\$	
10358	01	01870	00000000	A	SWPR0T12	DATA	0	SECTOR WRITE PROTECT LOWER LIMIT
10359	01	01871	00000000	A	SWPR0T34	DATA	0	SECTOR WRITE PROTECT UPPER LIMIT
10360	01	01872	00000000	A	TEMPSEK1	DATA	0	SECTOR TEMPORARY STORAGE FOR LW LMT
10361	01	01873	00000000	A	TEMPSEK2	DATA	0	SECTOR TEMPORARY STORAGE FOR UP LMT
10362		01 01874			#DDTADR2	SET	\$	
10363	01	01874			RES		7*(#DDTADR2-#DDTADR1)	
10364		FR			#DDTSAVE	EQU	#MSG00	
10365		01 018CF			TESTDEV	SET	\$	
10366	01	018CF	00000000	A	MODEL	DATA	0	CURRENT DEVICE MODEL NO.
10367	01	018D0	00000000	A	IDEVADDR	DATA	0	CURRENT DEVICE ADDRESS
10368	01	018D1	00000000	A	SECTCURR	DATA	0	CURRENT SECTORS/TRACK
10369	01	018D2	00000000	A	RYTCURR	DATA	0	CURRENT BYTES/SECTORS
10370	01	018D3	00000000	A	CURRSEEK	DATA	0	
10371	01	018D4	00000000	A	SURFCEND	DATA	0	END OF SURFACE AREA
10372	01	018D5	00000000	A	SSIZEC	DATA	0	CURRENT NO. OF SECTORS
10373	01	018D6	00000000	A	TSSTARTC	DATA	0	CURRENT TRACK SECTOR ADDRESS
10374	01	018D7	00000000	A	TCKCURR	DATA	0	CURRENT TRACK SHIFT COUNT
10375						PAGE		
10376					*			
10377					*			
10378					*			
10379					*			
10380	01	018D8	46A01A98		#MSGNBSP	XW,10	#PRINTFG	IF PRINT FLAG SET
10381	01	018D9	22A00000	A		LI,10	0	SET PRINT SPACE FLAG TO ZERO

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10382	C1	018DA	46A01A98			XW,10	#PRINTFG	ZERO PINT SPACE FLAG
10383	C1	018DB	680018DD			B	#MSGERR+1	CONTINUE
10384					#MSGERR			
10385	C1	018DC	35101A98			STW,1	#PRINTFG	SET PRINT SPACE FLAG
10386					*			
10387	C1	018DD	02200000	A	#MSGERR2	LC1	0	SAVE REGISTER 0
10388	C1	018DE	28001A88			STM,0	#MSG00	THRU 15
10389	C1	018DF	35201135			STW,2	LOCATION	SET UP ERROR INDEX COUNT
10390	C1	018E0	32601B8D			LW,6	!STATUSCC	LOAD AND SAVE
10391	C1	018E1	3560196F			STW,6	#MSGSCC	STATUS AND CONDITION CODES FROM AID
10392	C1	018E2	82E01A99		#MSGERR3	LW,14	*MSGADDR	LOAD TYPE OF TEST
10393	C1	018E3	35E01A36			STW,14	#MSGERR1+2	INSERT INTO MSG
10394					*			
10395					*			
10396					*			
10397	C1	018E4	22E0001F	A		LI,14	31	LOAD NO. OF BYTE IN MSG
10398	C1	018E5	75E01A34			STB,14	#MSGERR1	SAVE INTO MSG
10399	C1	018E6	CE8018D0			TDV,8	*IDEVADDR	GO TEST FOR SYNC PATTERN MISSED
10400	C1	018E7	48901F73			AND,9	#X'01000000'	SAVE ONLY SYNC PATTERN MISSED
10401	C1	018E8	35901A9C			STW,9	SYNCHMISS	SAVE
10402	C1	018E9	22800080	A		LI,8	X'80'	LOAD A FAILING TRACK BYTE
10403	C1	018EA	329018CF			LW,9	MODEL C	LOAD MODEL NUMBER
10404	C1	018EB	21907212	A		CI,9	X'17212'	COMPARE FOR HIGH SPEED
10405	C1	018EC	693018EE			BNE	*+2	IF NOT BRANCH
10406	C1	018ED	22800000	A		LI,8	0	LOAD ZERO
10407	C1	018EE	35801A9A			STW,8	#MNSSEFT	SET UP FAILING TRACK BYTE
10408					*			
10409					*			
10410					*			
10411	C1	018EF	32C018D0			LW,12	IDEVADDR	LOAD DEV ADDR
10412	C1	018F0	EAF00218	A		RAL,15	*1HEXC	CONVERT TO HEX
10413	C1	018F1	55F21A38			STH,15	#MSGERR1+4,1	AND
10414	C1	018F2	25F00070	A		SLS,15	=16	INSERT IN
10415	C1	018F3	75F21A38			STB,15	#MSGERR1+4,1	MSG
10416					*			
10417					*			
10418					*			
10419	C1	018F4	CF8018D0			HIO,8	*IDEVADDR	RESET DEV, BUT PICK UP DEV STATUS
10420	C1	018F5	15801A6A			STD,8	HIOBW	SAVE THE HIO DOUBLE WORD
10421	C1	018F6	74041A6B			STCF	HIOBW+1,2	SAVE CONDITION CODES
10422	C1	018F7	55921A2E			STH,9	HIOBC,1	SAVE BC
10423	C1	018F8	6E000000	A		AIO,0	0	
10424	C1	018F9	31201787			CH,2	ENDOPER	IF END OF OPERATION FLAG
10425	C1	018FA	6830193F			RE	#MSGERR6	*2 STATUS IS NOT GOOD
10426					*			
10427					*			
10428					*			
10429	C1	018FB	32700008	A		LW,7	8	LOAD CURRENT COMMAND ADDR
10430	C1	018FC	25700001	A		SLS,7	1	CONVERT TO WORD ADDR
10431	C1	018FD	92AC0007	A		LD,10	*7	LOAD CURRENT IBCD
10432	C1	018FE	22C000324			LI,12	:TST2DIR	LOAD RANDOM ADDR
10433	C1	018FF	31C01A99			CH,12	!MSGADDR	IF NOT RANDOM
10434	C1	01900	69301924			RNE	#MSGERR5	BRANCH
10435	C1	01901	33001CA9			MTW,0	!CAMFLAG	TESTING
10436	C1	01902	68301918			REZ	#MSGERR4	BR. EQUAL ZERO
10437	C1	01903	72C0000A	A		LB,12	10	LOAD ORDER
10438	C1	01904	68301918			REZ	#MSGERR4	IF ORDER WAS !STOP! BRANCH
10439	C1	01905	21C00003	A		CI,12	3	IF ORDER WAS
10440	C1	01906	68301918			RE	#MSGERR4	'!SEEK' BRANCH
10441	C1	01907	21C00004	A		CI,12	4	IF ORDER WAS
10442	C1	01908	68301918			RE	#MSGERR4	'!SENSE' BRANCH
10443	C1	01909	32D00008	A		LW,13	11	
10444	C1	0190A	4BDC1F74			AND,13	#X'FFFF'	
10445	C1	0190B	32C00009	A		LW,12	9	
10446	C1	0190C	4RC01F74			AND,12	#X'FFFF'	
10447	C1	0190D	38D0000C	A		SW,13	12	SUBTRACT BYTE REMAINING
10448	C1	0190E	21701834			CI,7	!BCDATA	TEST CURRENT COMMAND ADDRESS
10449	C1	0190F	68301913			RE	*+4	
10450	C1	01910	32C01835			LW,12	!BCDATA+1	
10451	C1	01911	4RC01F74			AND,12	#X'FFFF'	
10452	C1	01912	30D0000C	A		AW,13	12	ADD BC FROM PREVIOUS IBCD

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10453	01	01913	22C00000	A		LI,12	0	LOAD ZERO
10454	01	01914	3300000D	A		MTW,0	13	
10455	01	01915	68301917			BEZ	*+2	
10456	01	01916	36C018D2			DW,12	BYTCURR	CALCULATE NO. OF SECTOR WRITTEN BEFORE ERROR WAS DETECTED
10457	01	01917	3050000D	A		AW,5	13	
10458					#MSGERR4	J		
10459	01	01918	22C00324			LI,12	:TST2DIR	FETCH NO.
10460	01	01919	31C01A99			CW,12	:MSGADDR	COMPARE WORDS
10461	01	0191A	69301924			RNE	#MSGERR5	BR. NOT EQUAL
10462	01	0191B	727C1A34			LB,7	#MSGERR1	FETCH BYTE
10463	01	0191C	20700014	A		AI,7	20	ADD BYTE COUNT OF ADDITIONAL MSG
10464	01	0191D	757C1A34			STB,7	#MSGERR1	PLACE NEW COUNT BACK INTO THE MSG
10465	01	0191E	32701524			LW,7	PASSTYPE	LOAD TYPE OF PASS
10466	01	0191F	12EE1A6E			LD,14	*TYPE,7	LOAD TYPE OF OPERATION
10467	01	01920	02200030	A		LCI	3	LOAD
10468	01	01921	2ABC1A48			LM,11	#MSGER10	'OPERATION'
10469	01	01922	02200050	A		LCI	5	LOAD A WORD COUNT OF 5
10470	01	01923	28B01A3C			STM,11	#MSGERR1+8	INTO MESSAGE
10471	01	01924	327018CF		#MSGERR5	LW,7	MODEL	LOAD MODEL NUMBER
10472	01	01925	21707212	A		CI,7	X'17212'	TEST FOR HIGH SPEED
10473	01	01926	6930193E			BNE	#MSGERR7	IF NO DON'T LOOK FOR FAILING TCK
10474	01	01927	33001CA9			MTW,0	ICMFLAG	TESTING ZERO
10475	01	01928	6830193E			BEZ	#MSGERR7	BRANCH
10476	01	01929	22000D36			LI,0	DA(#MSSENSE)	LOAD DW ADDR OF SENSE I/OCD
10477	01	0192A	6AF01D21			RAL,15	:IBEXEC	GO TO A SENSE
10478	01	0192B	22F003E8	A		LI,15	1000	FETCH NO.
10479	01	0192C	64FC192E			BDR,15	*+2	BRANCH AND DEC. REG.
10480	01	0192D	6800193E			B	#MSGERR7	BRANCH
10481	01	0192E	CD0018D0			TIO,0	*IDEVADDR	WAIT FOR SENSE TO COMPLETE
10482	01	0192F	6940192C			RCS,4	*+2	BRANCH CONDITIONALLY SET
10483	01	01930	72C61A9A			LB,12	#MSNSEFT,3	LOAD INFO ABOUT FAILING TCK
10484	01	01931	EAF00216	A		RAL,15	*IBINC	CONVERT BINARY TO EBCDIC
10485	01	01932	35FC1A52			STW,15	#MSGERR11+5	INSERT INTO MSG
10486	01	01933	EAF00216	A		RAL,15	*IBINC	CONVERT BINARY TO EBCDIC
10487	01	01934	35FC1A51			STW,15	#MSGERR11+4	INSERT INTO MSG
10488	01	01935	72701A34			LB,7	#MSGERR1	LOAD NO. OF BYTES IN PRESENT MSG
10489	01	01936	20700003	A		AI,7	3	ADD 3
10490	01	01937	257C007E	A		SLS,7	-2	CONVERT TO A WORD COUNT
10491	01	01938	02200060	A		LCI	6	LOAD 'FAILING TRACK' MESSAGE
10492	01	01939	2AA01A4D			LM,10	#MSGER11	
10493	01	0193A	2BAE1A34			STM,10	#MSGERR1,7	STORE 'FAILING TRACK' MESSAGE
10494	01	0193B	72701A34			LB,7	#MSGERR1	LOAD NO. OF BYTES IN PRESENT MSG
10495	01	0193C	20700018	A		AI,7	24	ADD NO. OF BYTES IN 'FAILING TCK MSG
10496	01	0193D	757C1A34			STB,7	#MSGERR1	STORE IN MSG
10497					#MSGERR7	J		
10498	01	0193E	6AF01970			RAL,15	#MSGI/OCD	GO CONVERT I/OCD INFO FOR BUT PVT
10499					#MSGERR6	J		
10500	01	0193F	6AC017CE			RAL,12	BUILD\$K	CONVERT TO RAD TRACK(BAND)/SECTOR AD
10501	01	01940	6AF0199D			RAL,15	#SEEKCVT	FORMAT TRACK(BAND)/SECTOR INFO
10502	01	01941	312C1A87			CW,2	#MSGLEVL	TEST MESSAGE LEVEL
10503	01	01942	69301948			RNE	#MSGERR8	IF NOT =2 NEXT STEP
10504	01	01943	12C01A6A			LD,12	HIO\$W	TEST HIO STATUS
10505	01	01944	35DC18BD			STW,13	:STATUSCC	
10506	01	01945	33001CA9			MTW,0	ICMFLAG	IF COMPARE ERROR
10507	01	01946	6830198A			BEZ	SELECTER	GO DIRECTLY TO FORMAT ERROR
10508	01	01947	6AF01AAB			RAL,15	IHI\$+3	
10509	01	01948	10BD0001	A		DATA	X'10BD0001'	
10510	01	01949	10000000	A		DATA	X'10000000'	
10511	01	0194A	6800198A			B	SELECTER	GO FORMAT ERROR
10512					#MSGERR8	J		
10513	01	0194B	33001A98			MTW,0	#PRINTFG	TEST PRINT SPACE FLAG
10514	01	0194C	6830194F			BEZ	*+3	IF ZERO DON'T SPACE
10515	01	0194D	EAF00216	A		RAL,15	*IBPRINT	OUTPUT A SPACE
10516	01	0194E	00001A33			DATA	#MSGERR9	
10517	01	0194F	32E01A99			LW,14	:MSGADDR	
10518	01	01950	21E00322			CI,14	:TST1DIR	SKIP OVER NEXT SECTION
10519	01	01951	69301955			BNE	*+4	
10520	01	01952	33100CBF			MTW,1	#MSGER41	
10521	01	01953	6AF0110C			RAL,15	TST1ERMG	REPORT ERROR
10522	01	01954	00000000	A	T1ST41ER	DATA	0	
10523	01	01955	EAF0021C	A		RAL,15	*IBPRINT	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10524	01	01956	00001A34			DATA	#MSGERR1	
10525	01	01957	22C00324			LI,12	ITSTDIR	FETCH NO.
10526	01	01958	31C01A99			CM,12	IMSGADDR	COMPARE WORDS
10527	01	01959	6830195C			BE	*+3	BR. IF EQUAL
10528	01	0195A	33001CA9			MTW,0	ICOMFLAG	TEST FOR A COMPARE TEST
10529	01	0195B	6830196A			BEZ	#MSGEXIT	IF IT IS BRANCH
10530	01	0195C	31201787			CM,2	ENDOPER	
10531	01	0195D	6830196A			BE	#MSGEXIT	IF STATUS NOT GOOD SKIP REPORTING
10532	01	0195E	33001A9C			MTW,0	SYNCMISS	TEST FOR SYNC PATTERN MISSED
10533	01	0195F	68301962			BEZ	*+3	IF NOT SKIP
10534	01	01960	EAF0021C A			BAL,15	*IPRINT	
10535	01	01961	00001A65			DATA	#MSGERR13	
10536	01	01962	EAF0021C A			BAL,15	*IPRINT	PRINT CURRENT IOCD INFORMATION
10537	01	01963	00001A53			DATA	#MSGERR12	
10538	01	01964	12C01A6A			LD,12	HI0DW	LOAD HI0 DOUBLE WORD
10539	01	01965	35D018BD			STW,13	ISTATUSCC	SAVE STATUS AND CONDITION CODES
10540	01	01966	6AF01AAB			BAL,15	IHI0+3	GO REPORT ANY ERRORS IF THERE IS ANY
10541	01	01967	00FF0000 A			DATA	X'00FF0000'	
10542	01	01968	10000000 A			DATA	X'10000000'	
10543	01	01969	6800196A			R	*+1	
10544						#MSGEXIT	J	
10545	01	0196A	3260196F			LW,6	#MSGSCC	RESORE
10546	01	0196B	356018BD			STW,6	ISTATUSCC	STATUS AND CONDITION FROM AIO
10547	01	0196C	02200000 A			LCI	0	
10548	01	0196D	2A001A88			LM,0	#MSG00	
10549	01	0196E	E802000F A			R	*15,1	GO PRINT MORE DATA
10550						*		
10551	01	0196F	00000000 A			#MSGSCC	DATA	0
10552						*		
10553							PAGE	
10554						*		
10555						*		*** IOCD MESSAGE FORMATTER ***
10556						*		
10557						*		
10558						*		THIS ROUTINE FORMATS THE CURRENT IOCD,
10559						*		SO THAT IT MAY BE OUTPUT.
10560						*		
10561	01	01970	35F01A9B			#MSGIOCD	STW,15	#MSGRTN
10562	01	01971	52C20C09 A			LW,12	9,1	SAVE RTN
10563	01	01972	EAF00218 A			RAL,15	*IHEXC	LOAD CURRENT BYTE COUNT
10564	01	01973	35FC1A57			STW,15	#MSGERR12+4	CONVERT EBCDIC
10565						*		INSERT INTO MESSAGE
10566						*		
10567						*		
10568	01	01974	25800001 A			SLS,8	1	CONVERT CURRENT COMMAND ADDR TO WORD
10569	01	01975	92A00008 A			LD,10	*8	FFTC CURRENT IOCD
10570						*		
10571						*		
10572						*		
10573	01	01976	22701A6E			LI,7	#STOP	LOAD THE ADDR OF THE STOP ORDER MSG
10574	01	01977	7260000A A			LB,6	10	
10575	01	01978	6830198C			BEZ	#MSGTYPE	IF STOP GO REPORT THE ERROR
10576						*		
10577						*		
10578						*		
10579	01	01979	22701A7E			LI,7	#WRT0DR	LOAD THE ADDR OF THE WRITE ORDER MSG
10580	01	0197A	21600001 A			CI,6	1	TEST FOR THE WRITE ORDER
10581	01	0197B	6830198C			BE	#MSGTYPE	GO REPORT THE ERROR
10582						*		
10583						*		
10584						*		
10585	01	0197C	22701A78			LI,7	#REDC2	LOAD THE ADDR OF THE READ ORDER MSG
10586	01	0197D	21600002 A			CI,6	2	TEST FOR THE READ ORDER
10587	01	0197E	6830198C			BE	#MSGTYPE	GO REPORT THE ERROR
10588						*		
10589						*		
10590						*		
10591	01	0197F	22701A76			LI,7	#RED12	LOAD THE ADDR OF THE READ ORDER MSG
10592	01	01980	21600012 A			CI,6	X'12'	TEST FOR A READ ORDER
10593	01	01981	6830198C			BE	#MSGTYPE	GO REPORT THE ERROR
10594						*		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10595				*				
10596				*				
10597	C1 01982	22701A80				LI,7	#CHKWRT	LOAD THE ADDR OF THE CHECKWRT ORDER
10598	C1 01983	21600005	A			CI,6	5	TEST FOR THE CHECKWRITE ORDER
10599	C1 01984	6830198C				RE	#MSGTYPE	GO REPORT THE ERROR
10600				*				
10601				*				
10602				*				
10603	C1 01985	22701A74				LI,7	#SENSE	LOAD THE ADDR OF THE SENSE ORDER MSG
10604	C1 01986	21600004	A			CI,6	4	TEST FOR THE SENSE ORDER
10605	C1 01987	6830198C				RE	#MSGTYPE	GO REPORT THE ERROR
10606				*				
10607				*				
10608				*				
10609	C1 01988	22701A82				LI,7	#SEEK	LOAD THE ADDR OF THE SEEK ORDER MSG
10610	C1 01989	21600003	A			CI,6	3	TEST FOR THE SEEK ORDER
10611	C1 0198A	6830198C				RE	#MSGTYPE	IF SEEK GO REPORT THE ERROR
10612				*				
10613				*				
10614				*				
10615	C1 0198B	22701A84				LI,7	#NBMATCH	LOAD ADDR OF THE NB MATCH MSG
10616				*				
10617				*				
10618	C1 0198C	92600007	A			LD,6	*7	LOAD TYPE OF ORDER
10619	C1 0198D	35601A5A				STW,6	#MSGER12+7	INSERT TYPE OF ORDER INTO
10620	C1 0198E	38701A5B				STW,7	#MSGER12+8	THE MESSAGE
10621				*				
10622				*				
10623				*				
10624	C1 0198F	3200000A	A			LW,12	10	CURRENT BYTE ADDRESS
10625	C1 01990	43C01F70				AND,12	L(X10007FFFF1)	MASK OUT ORDER
10626	C1 01991	25C0007E	A			SLS,12	-2	CURRENT TO WORD ADDR
10627	C1 01992	EAF00218	A			RAL,15	*1HEXC	CONVERT TO EBCDIC
10628	C1 01993	35F01A5E				STW,15	#MSGER12+11	INSERT MWA INTO MESSAGE
10629				*				
10630				*				
10631				*				
10632	C1 01994	32000008	A			LW,12	11	LOAD FLAGS & BYTE COUNT
10633	C1 01995	EAF00218	A			RAL,15	*1HEXC	CONVERT TO EBCDIC
10634	C1 01996	55F01A64				STH,15	#MSGER12+17	INSERT
10635	C1 01997	25F00070	A			SLS,15	+16	MESSAGE
10636	C1 01998	55F21A63				STH,15	#MSGER12+16,1	INTO
10637	C1 01999	EAF00218	A			RAL,15	*1HEXC	CONVERT TO EBCDIC
10638	C1 0199A	25F00070	A			SLS,15	-16	INSERT
10639	C1 0199B	55F01A61				STH,15	#MSGER12+14	FLAGS INTO MESSAGE
10640	C1 0199C	ER001A9B				R	#MSGRTN	
10641				*				
10642				*				
10643				*				
10644				*				
10645				*				
10646				*				
10647				*				
10648	C1 0199D	02200040	A		#SEEKCVT	LCI	4	SAVE REG 12 - 15
10649	C1 0199E	28C01A2A				STM,12	#SEEKRTN	
10650	C1 0199F	22E000E3	A			LI,14	1T1	SET UP
10651	C1 019A0	32F018CF				LW,15	MODELC	FOR EITHER A
10652	C1 019A1	21F07212	A			CI,15	X172121	HIGH SPEED
10653	C1 019A2	693015A4				RNE	*+2	OR A MEDIUM
10654	C1 019A3	22E000C2	A			LI,14	'B'	SPEED
10655	C1 019A4	75E21A39				STB,14	#MSGERR1+5,1	RAD
10656	C1 019A5	75E01CE7				STB,14	1COMERRA+6	
10657	C1 019A6	32C00FB8				LW,12	SEEKRAD	LOAD SEEK ADDR
10658	C1 019A7	32D018D7				LW,13	TCKCURR	LOAD TCK SHIFT COUNT
10659	C1 019A8	75D61983				STB,13	#SHIFT2,3	LOAD
10660	C1 019A9	3AD018D7				LCW,13	TCKCURR	TO SET
10661	C1 019AA	75D619AC				STB,13	#SHIFT1,3	UP SHIFTS
10662	C1 019AB	22D00000	A			LI,13	C	
10663	C1 019AC	25C00300	A		#SHIFT1	SCD,12	0	
10664	C1 019AD	35C01A31				STW,12	ERRTRACK	
10665	C1 019AE	EAF00217	A			BAL,15	*1DECC	CONVERT TO DEC

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10666	01	019AF	79F41A3A			STB, 15	#MSGERR1+6, 2	
10667	01	019B0	25F00078	A		SLB, 15	-8	
10668	01	019B1	55F01A3A			STH, 15	#MSGERR1+6	
10669					*			
10670					*			
10671	01	019B2	22C00000	A		LI, 12	0	
10672	01	019B3	25C00300	A	#SHIFT2	SCD, 12	0	
10673	01	019B4	35C01A32			STW, 12	ERRRCTOR	
10674	01	019B5	EAF00217	A		BAL, 15	+IDCCC	CONVERT TO DEC
10675	01	019B6	55F21A3B			STW, 15	#MSGERR1+7, 1	
10676	01	019B7	02200040	A		LCI	4	RESTORE
10677	01	019B8	2ACC1A2A			LM, 12	#BEEKRTN	REG 12 - 15
10678	01	019B9	E800000F	A		B	*15	
10679						PAGE		
10680					SELECTER	J		
10681	01	019BA	228000FF	A		LI, 8	X'IFF'	
10682	01	019BB	73061A9A			MTB, 0	#MSNSEFT, 3	TEST FOR FAILING TRACK
10683	01	019BC	693019BE			RNEZ	*+2	IF 1 EXIST BRANCH
10684	01	019BD	75861A9A			STB, 8	#MSNSEFT, 3	OTHERWISE SET ALL FAILING
10685	01	019BE	325017DC			LW, 5	BUILDSK1	LOAD SECTOR INDEX
10686	01	019BF	22400000	A		LI, 4	0	ZERO REG 4
10687	01	019C0	35401A2F			STW, 4	SELPASS	ZERO PASS FLAG
10688	01	019C1	35401A30			STW, 4	SELMANY	ZERO FLAG
10689	01	019C2	23400008	A		MI, 4	TOTALS	CREATE SECTOR INDEX POINTER
10690	01	019C3	35501A9D			STW, 5	SELTEMP	SAVE AS PARTIAL INDEX
10691					*			
10692					*			
10693	01	019C4	52AC196F			LH, 10	#MSGSCC	LOAD AIO STATUS
10694	01	019C5	52BC1A6B			LH, 11	HIOBW+1	LOAD HIO STATUS
10695	01	019C6	22700000	A		LI, 7	0	LOAD ZERO
10696	01	019C7	32801CA6			LW, 8	ICMERRT	LOAD NUMBER OF COMPARE ERRORS
10697	01	019C8	32901CAA			LW, 9	ICMADDR	
10698	01	019C9	35701CA6			STW, 7	ICMERRT	NOW ZERO THESE COUNTS
10699	01	019CA	35701CAA			STW, 7	ICMADDR	NOW ZERO THESE COUNTS
10700	01	019CB	33001CA9			MTW, 0	ICMFLAG	TEST FOR A COMPARE OPERATION
10701	01	019CC	693019DE			RNEZ	SELECT01	IF NOT BRANCH
10702	01	019CD	22AC0000	A		LI, 10	0	IF SO RESET ALL STATUS
10703	01	019CE	22B00000	A		LI, 11	0	
10704	01	019CF	33000009	A		MTW, 0	9	TEST ADDR COMPARE FLAG
10705	01	019D0	68301905			RNEZ	*+5	IF ZERO NO ADDR ERRORS
10706	01	019D1	21800001	A		CI, 8	1	TEST FOR ONLY 1 COMPARE ERROR
10707	01	019D2	69301905			RNE	*+3	IF NOT DATA ERROR
10708	01	019D3	35101CAA			STW, 1	ICMADDR	IF NOT SET ADDRESS ERROR COUNT #1
10709	01	019D4	6800190E			B	SELECT01	AND SKIP SETTING COMPARE COUNT
10710					*			
10711					*			
10712					*			
10713	01	019D5	35101CA6			STW, 1	ICMERRT	SET COMPARE ERROR FLAG
10714	01	019D6	328018CF			LW, 8	MODEL	LOAD MODEL NO.
10715	01	019D7	21807212	A		CI, 8	X'7212'	TEST FOR HIGH SPEED
10716	01	019D8	693019DE			RNE	SELECT01	IF NOT CONTINUE
10717	01	019D9	22800002	A		LI, 8	2	
10718	01	019DA	46801CA9			XW, 8	ICMFLAG	
10719	01	019DB	6AFC1B00			RAL, 15	ICMPARE	
10720	01	019DC	680019DD			B	*+1	
10721	01	019DD	46801CA9			XW, 8	ICMFLAG	
10722	01	019DE	324017DD		SELECT01	LW, 4	BUILDSK1+1	TRACK INDEX =4
10723	01	019DF	328018CF			LW, 8	MODEL	LOAD MODEL NO.
10724	01	019E0	21807212	A		CI, 8	X'7212'	TEST FOR HIGH SPEED
10725	01	019E1	693019E3			RNE	*+2	IF NOT CONTINUE
10726	01	019E2	25400203	A		SC6, 4	3	IF HIGH SPEED MULTIPLY BY 8
10727	01	019E3	72961A9A			LB, 9	#MSNSEFT, 3	LOAD FAILING TRACKS
10728	01	019E4	68001A17			B	SELECT1?	GO TO FAILING TRACK
10729	01	019E5	D2881828		SELECT02	LH, 8	+TCKSH9T, 4	LOAD ERROR DISCRIPTOR
10730	01	019E6	22500000	A		LI, 5	C	
10731	01	019E7	21AC8000	A	SELECT03	CI, 10	X'8000'	TEST FOR DATA OVERRUN
10732	01	019E8	684019FB			RGR, 4	SELECT04	IF NONE NEXT TEST
10733	01	019E9	6AFC1A21			RAL, 15	SELECTUP	GO SET UP DATA OVERRUN BIT
10734	01	019EA	00080000	A		DATA	X'8000'	
10735					*			
10736					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10737					*			
10738	C1	019E8	20500001	A	SELECT04	AI,5	1	INCREMENT SECTOR INDEX
10739	C1	019EC	21A02000	A		CI,10	X'2000'	TEST FOR SECTOR UNAVAILABLE
10740	C1	019ED	684019F0			BCR,4	SELECT05	IF NOT NEXT TEST
10741	C1	019EE	6AF01A21			BAL,15	SELECTUP	GO SET UP SECTOR UNAVAILABLE
10742	C1	019EF	00004000	A		DATA	X'4000'	
10743					*			
10744					*			
10745					*			
10746	C1	019F0	20500001	A	SELECT05	AI,5	1	INCREMENT SECTOR INDEX
10747	C1	019F1	33001A9C			MTW,0	SYNCHISS	TEST FOR SYNC PATTERN MISSED
10748	C1	019F2	683019F5			REZ	SELECT06	IF NOT NEXT TEST
10749	C1	019F3	6AF01A21			BAL,15	SELECTUP	GO SET UP SYNC PATTERN BIT
10750	C1	019F4	00002000	A		DATA	X'2000'	
10751					*			
10752					*			
10753					*			
10754	01	019F5	20500001	A	SELECT06	AI,5	1	INCREMENT SECTOR INDEX
10755	01	019F6	21A00040	A		CI,10	X'0040'	TEST FOR TRANSMISSION ERROR
10756	C1	019F7	684019FA			BCR,4	SELECT07	IF NONE NEXT TEST
10757	C1	019F8	6AF01A21			BAL,15	SELECTUP	GO SET UP TRANSMISSION ERROR BIT
10758	C1	019F9	00001000	A		DATA	X'1000'	
10759					*			
10760					*			
10761					*			
10762	C1	019FA	20500001	A	SELECT07	AI,5	1	INCREMENT SECTOR INDEX
10763	01	019FB	21800800	A		CI,11	X'0800'	TEST FOR UNUSUAL END
10764	C1	019FC	684019FF			BCR,4	SELECT08	IF NOT NEXT TEST
10765	C1	019FD	6AF01A21			BAL,15	SELECTUP	GO SET UP UNUSUAL END BIT
10766	01	019FE	00000800	A		DATA	X'0800'	
10767					*			
10768					*			
10769					*			
10770	01	019FF	20500001	A	SELECT08	AI,5	1	INCREMENT SECTOR INDEX
10771	C1	01A00	33001CA6			MTW,0	ICOMERR	TEST FOR DATA COMPARE ERROR
10772	C1	01A01	68301A04			REZ	SELECT09	IF NONE NEXT TEST
10773	C1	01A02	6AF01A21			BAL,15	SELECTUP	GO SET UP DATA COMPARE ERROR BIT
10774	C1	01A03	00000400	A		DATA	X'0400'	
10775	C1	01A04	20500001	A	SELECT09	AI,5	1	INCREMENT SECTOR INDEX
10776	C1	01A05	33001CAA			MTW,0	ICOMADDR	TEST FOR COMPARE ADDRESSING ERROR
10777	C1	01A06	68301A11			REZ	SELECT10	IF NOT GO TEST EXIT
10778	C1	01A07	6AF01A21			BAL,15	SELECTUP	GO SET UP COMPARE ADDRESSING ERROR
10779	C1	01A08	00000200	A		DATA	X'200'	
10780	C1	01A09	48BC1F75			AND,8	X'FE00'	SAVE COMPARE ADDR
10781	01	01A0A	3AF01897			LCW,15	TCKCURR	LOAD TRACK SHIFT
10782	C1	01A0B	48F01F50			AND,15	X'7F'	REMOVE EVERYTHING BUT SHIFT INFOR
10783	C1	01A0C	75F61A0E			STB,15	#+2,3	CONSTRUCT SHIFT INSTRUCTION
10784	C1	01A0D	52F21CA5			LH,15	ICOMPADR,1	LOAD TRACK SECTOR ADDRESS
10785	C1	01A0E	25F00000	A		SLS,15	0	REMOVE SECTOR INFORMATION
10786	C1	01A0F	48F01F76			AND,15	X'1FF'	
10787	C1	01A10	3080000F	A		AW,8	15	ADD TO MESSAGE
10788	C1	01A11	05881828		SELECT10	STH,8	*TCKSHOT,4	SAVE ERROR DISCRIPTOR
10789	01	01A12	20400001	A		AI,4	1	UPDATE TRACK POINTER
10790	C1	01A13	25900001	A		SLS,9	1	POSITION FAILING TRACK BYTE
10791	01	01A14	33001A30			MTW,0	SELMANY	IF ERROR FOUND THIS PASS
10792	C1	01A15	68301A17			REZ	#+2	DON'T SKIP SET FLAG
10793	C1	01A16	35101A2F			STW,1	SELPASS	
10794	C1	01A17	21900080	A	SELECT12	CI,9	X'80'	TEST FOR NEXT FAILING TRACK
10795	C1	01A18	694019E5			RCS,4	SELECT07	IF IT EXISTS GO BUILD ERROR DISC
10796	C1	01A19	73060009	A		MTB,0	9,3	TEST FOR MORE FAILING TRACKS
10797	C1	01A1A	69301A12			RNEZ	SELECT10+1	IF ANY GO LOOP.
10798					SELECT11	J		
10799	C1	01A1B	35100CRF			STW,1	#MSGERR41	SET ERROR FLAG
10800	C1	01A1C	3260196F			LW,6	#MSGSCC	
10801	C1	01A1D	356018BD			STW,6	!STATUSCC	
10802	C1	01A1E	C2200000	A		LCI	0	RESTORE
10803	C1	01A1F	2A001A8B			LH,0	#MSG00	ALL REGISTERS
10804	C1	01A20	E800000F	A		R	*15	RETURN
10805					*			
10806					*			
10807					*			

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
1CR08	C1	01A21	32601A9D		SELECTUP	LW,6	SELTEMP	LOAD PARTIAL INDEX
1CR09	C1	01A22	30600005	A		AW,6	5	ADD ADDITIONAL INDEX
1CR10	C1	01A23	C980000F	A		OR,8	*15	SET ERROR BIT IN ERROR DESCRIPTOR
1CR11	C1	01A24	33001A2F			MTH,0	SELPASS	
1CR12	C1	01A25	E932000F	A		BNEZ	*15,1	
1CR13	C1	01A26	35101A30			STW,1	SELMANY	
1CR14	C1	01A27	D31C1829			MTH,1	*SECTSHOT,6	UPDATE TYPE OF ERROR FOR THIS SECTOR
1CR15	C1	01A28	D31A182A			MTH,1	*TDTLSHOT,5	UPDATE TOTAL OF THIS ERROR
1CR16	01	01A29	E802000F	A		R	*15,1	RETURN
1CR17					*			
1CR18					*			
1CR19					*			
1CR20	01	01A2A			#SEEKRTN	RES	4	
1CR21	C1	01A2E	C0000000	A	HI0BC	DATA	0	BC FROM HI0
1CR22	C1	01A2F	C0000000	A	SELPASS	DATA	0	
1CR23	C1	01A30	C0000000	A	SELMANY	DATA	0	
1CR24	C1	01A31	C0000000	A	ERRTRACK	DATA	0	
1CR25	C1	01A32	C0000000	A	ERRSCT0R	DATA	0	
1CR26	C1	01A33	C1404040	A	#MSGERR9	TEXTC	' '	
1CR27					#MSGERR1	TEXTC	' '	
1CR28					'ERR0R: AAAA DEV XXX T= DDD S=DD			' , ,
1CR29	01	01A34	4DC5D9D9	A				
	C1	01A35	D6D97A40	A				
	C1	01A36	C1C1C1C1	A				
	C1	01A37	40C4CFE5	A				
	01	01A38	40E7E7E7	A				
	C1	01A39	40E37E40	A				
	01	01A3A	C4C4C440	A				
	C1	01A3B	E27EC4C4	A				
	C1	01A3C	40404040	A				
	C1	01A3D	40404040	A				
	C1	01A3E	40404040	A				
	01	01A3F	40404040	A				
	C1	01A40	40404040	A				
	C1	01A41	40404040	A				
	C1	01A42	40404040	A				
	C1	01A43	40404040	A				
	C1	01A44	40404040	A				
	C1	01A45	40404040	A				
	C1	01A46	40404040	A				
	C1	01A47	40404040	A				
1CR30					#MSGERR10	TEXT	' '	
1CR31	C1	01A48	40D6D7C5	A	' OPERATION: TTTTTTTT'			
	C1	01A49	C9C1F3C9	A				
	C1	01A4A	D6D57A40	A				
	C1	01A4B	E3E3E3E3	A				
	C1	01A4C	E3E3E3E3	A				
1CR32					#MSGERR11	TEXT	' '	
1CR33	C1	01A4D	40C6C1C9	A	' FAILING TRACK: TTTTTTTT'			
	C1	01A4E	C3C9DEC7	A				
	C1	01A4F	4CE3D9C1	A				
	C1	01A50	C3D27A40	A				
	C1	01A51	E3E3E3E3	A				
	01	01A52	E3E3E3E3	A				
1CR34					#MSGERR12	TEXTC	' '	
1CR35					' CURRENT: BC =X'XXXXX'', IBCD(TTTTTTTT, ' , ,			
1CR36	C1	01A53	47C3E409	A	' MWA=X'XXXXX'', FLG=X'XXX'', BC=X'XXXXX'''			
	C1	01A54	D9C5D5E3	A				
	C1	01A55	7A4CC2C3	A				
	C1	01A56	407EE77D	A				
	C1	01A57	E7E7E7E7	A				
	C1	01A58	7D6B4CC9	A				
	C1	01A59	D6C3C44D	A				
	C1	01A5A	E3E3E3E3	A				
	C1	01A5B	E3E3E3E3	A				
	C1	01A5C	6B40D4E6	A				
	C1	01A5D	C17EE77D	A				
	C1	01A5E	E7E7E7F7	A				
	C1	01A5F	7D6BC6D3	A				
	C1	01A60	C77EF77D	A				
	C1	01A61	E7E77D6B	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
		01 01A62	40C2C37E	A				
		01 01A63	E77DE7E7	A				
		01 01A64	E7E77D5D	A				
10R37					#MSGR13	TEXT		
10R38		01 01A65	13E2E8D5	A				'SYNC PATTERN MISSED'
		01 01A66	C34CD7C1	A				
		01 01A67	E3E3C5D9	A				
		01 01A68	D54CD4C9	A				
		01 01A69	E2F2C5C4	A				
10R39						ROUND	R	
10R40		01 01A6A	00000000	A	FIELD	DATA	0,C	
		01 01A6B	00000000	A				
10R41		01 01A6C	C40C6A68	A	#MSENSE	GEN,R,24	4,BA(#MSNSEFT)	
10R42		01 01A6D	00000004	A		GEN,R,24	0,4	
10R43						ROUND	R	
10R44		01 01A6E			#TYPE	EQU	S	
10R45		01 01A6E	E2E3C6D7	A	#STOP	TEXT	'STOP	I
		01 01A6F	40404040	A				
10R46		01 01A70	E2D2C3C3	A		TEXT	'SKCCWRT	I
		01 01A71	E6D9E340	A				
10R47		01 01A72	E2D2C3C3	A		TEXT	'SKCCRD12'	
		01 01A73	D9C4F1F2	A				
10R48		01 01A74	E2C5D5F2	A	#SENSE	TEXT	'SENSE	I
		01 01A75	C5404040	A				
10R49		01 01A76	D9C5C1C4	A	#RD12	TEXT	'READ 12	I
		01 01A77	40F1F240	A				
10R50		01 01A78	D9C5C1C4	A	#RD02	TEXT	'READ 02	I
		01 01A79	40F0F240	A				
10R51		01 01A7A	E6D9E3C4	A		TEXT	'WPTDCWRT'	
		01 01A7B	C3E6D9F3	A				
10R52		01 01A7C	D9C5C4C4	A		TEXT	'RFDCCR'	
		01 01A7D	C3D9C5C4	A				
10R53		01 01A7E	E6D9C9E3	A	#WPTDR	TEXT	'WRITE	I
		01 01A7F	C5404040	A				
10R54		01 01A80	C3C8C5C3	A	#CHKWRT	TEXT	'CHECKWRT'	
		01 01A81	D2E6D9E3	A				
10R55		01 01A82	E2C5C5D2	A	#SEFK	TEXT	'SEFK	I
		01 01A83	40404040	A				
10R56		01 01A84	C2C1C440	A	#RBMATCH	TEXT	'RAD BRDR'	
		01 01A85	D4D9C4D9	A				
10R57		01 01A86	00000000	A	#MSGPTFG	DATA	0	MSG HEADER PRINT FLAG: PRINT IF = 0
10R58		01 01A87	00000000	A	#MSGLEVL	DATA	0	MSG LEVEL OF PRINTED MSG
10R59		01 01A88			#MSG00	RES	16	
10R60		01 01A88	00000000	A	#PRINTFG	DATA	0	PRINT SPACE FLAG
10R61		01 01A99	00000000	A	#MSGADDR	DATA	0	
10R62		01 01A9A	00000000	A	#MSNSEFT	DATA	0	SENSE INFR FROM HIGH SPEED RAD
10R63		01 01A9B	00000000	A	#MSGRTN	DATA	0	RTN FROM IBCD CONVERTER
10R64		01 01A9C	00000000	A	SYNCRMISS	DATA	0	SYNC MISSED = 1 IF SYNC PATTERN MISSED
10R65		01 01A9D	00000000	A	SELTEMP	DATA	0	
10R66						PAGE		
10R67					*			
10R68					*			*** ISSUE S10, T10, H10, TDV, A10 ***
10R69					*			
10R70					*			THE ISSUE SUBROUTINE ISSUES AN S10, T10, H10, TDV, OR A10 TO
10R71					*			SPECIFIED DEVICE. STATUS MASK IS COMPARED WITH RETURNED DEVICE
10R72					*			STATUS, CONDITION CODES. ERROR CONDITIONS ARE PRINTED.
10R73					*			
10R74					*			INPUT PARAMETERS:
10R75					*			
10R76					*			
10R77					*			
10R78					*			<<CALLING SEQUENCE >>
10R79					*			
10R80					*	RAL,15	(NAME OF SEQUENCE DESIRED; :S10 :T10 :H10 :TDV :A10)	
10R81					*	DATA	(MASK 0=MASK OUT BIT POSITION, 1=SAVE BIT POSITION)	
10R82					*	*	FOR BIT POSITIONS 0-17	
10R83					*	*	BIT POSITION 30 = COMPARE DEV-ADDR <A10 ONLY>	
10R84					*	*	BIT POSITION 31 = IF 1 INHIBIT PRINTING)	
10R85					*	DATA	(EXPECTED STATUS BIT POSITIONS 0-15	
10R86					*	*	(EXPECTED CONDITION CODES 14,17)	
10R87					*	R	(RETURNS HERE IF NO ERROR)	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL ORIG	LABEL	OPERATION	OPERAND	COMMENTS
10888					*			(RETURNS HERE IF THERE WAS AN ERROR)
10889					*			
10890					*			
10891					*			
10892					*			REGISTERS DISTURBED!
10893					*			
10894					*			14
10895					*			
10896					*			OUTPUT PARAMETERS:
10897					*			
10898					*			NORMAL EXIT-RETURN ADDRESS
10899					*			
10900					*			I S S U E S I 0
10901					*			
10902	01	01A9E	CCCC18D0		:SI0	SI0,12	*:DEVADDR	ISSUE SI0
10903	01	01A9F	35D018BD			STW,13	:STATUSCC	SAVE STATUS
10904	01	01AA0	740418BD			STCF	:STATUSCC,2	SAVE CONDITION CODES
10905	01	01AA1	22E00000 A		:SI01	LI,14	0	LOAD TYPE OF OPERATION
10906	01	01AA2	68001A87			R	:ISTATEST	GO TEST STATUS & CONDITION CODES
10907					*			
10908					*			I S S U E T I 0
10909					*			
10910	01	01AA3	CDC018D0		:TI0	TI0,12	*:DEVADDR	ISSUE TI0
10911	01	01AA4	35DC18BD			STW,13	:STATUSCC	SAVE STATUS
10912	01	01AA5	740418BD			STCF	:STATUSCC,2	SAVE CONDITION CODES
10913	01	01AA6	22E00001 A		:TI01	LI,14	1	LOAD TYPE OF OPERATION
10914	01	01AA7	68001A87			R	:ISTATEST	GO TEST STATUS & CONDITION CODES
10915					*			
10916					*			I S S U E H I 0
10917					*			
10918	01	01AA8	CFC018D0		:HI0	HI0,12	*:DEVADDR	ISSUE HI0
10919	01	01AA9	35D018BD			STW,13	:STATUSCC	SAVE STATUS
10920	01	01AAA	740418BD			STCF	:STATUSCC,2	SAVE CONDITION CODES
10921	01	01AAH	22E00C02 A		:HI01	LI,14	?	LOAD TYPE OF OPERATION
10922	01	01AAC	680C1A87			R	:ISTATEST	GO TEST STATUS & CONDITION CODES
10923					*			
10924					*			I S S U E T D V
10925					*			
10926	01	01AAD	CECC18D0		:TDV	TDV,12	*:DEVADDR	ISSUE TDV
10927	01	01AAE	35DC18BD			STW,13	:STATUSCC	SAVE STATUS
10928	01	01AAF	740418BD			STCF	:STATUSCC,2	SAVE CONDITION CODES
10929	01	01AAO	22E00003 A		:TDV1	LI,14	3	LOAD TYPE OF OPERATION
10930	01	01AB1	68001A87			R	:ISTATEST	GO TEST STATUS & CONDITION CODES
10931					*			
10932					*			I S S U F A I 0
10933					*			
10934	01	01AB2	6EDC0000 A		:AI0	AI0,13	0	ISSUE AI0
10935	01	01AB3	35DC18BD			STW,13	:STATUSCC	SAVE STATUS
10936	01	01AB4	740418BD			STCF	:STATUSCC,2	SAVE CONDITION CODES
10937	01	01AB5	22E00004 A		:AI01	LI,14	4	LOAD TYPE OF OPERATION
10938	01	01AB6	680C1A87			R	:ISTATEST	GO TEST STATUS & CONDITION CODES
10939					*			
10940					*			
10941					*			T E S T F O R A N Y E R R O R S
10942					*			
10943					*			
10944	01	01AB7	35E018BC		:ISTATEST	STW,14	:TYPE	SAVE TYPE OF I/O OPERATION
10945	01	01AB8	35F018BB			STW,15	:IORTN	
10946	01	01AB9	B2FC18BB			LW,14	:IORTN	FETCH MASK
10947	01	01ABA	B2F218BB			LW,15	:IORTN,1	FETCH EXPECTED STATUS
10948	01	01ABB	48EC1F77			AND,14	L('X'FFFFC000')	MASK OUT; PRINT INHIBIT & DEV AD BIT
10949	01	01ABC	48F0C00E A			AND,15	14	MASK EXPECTED STATUS
10950	01	01ABD	48E018BD			AND,14	:STATUSCC	MASK RECEIVED STATUS TO MASK
10951	01	01ABE	31E0C00F A			CW,14	15	COMPARE RECEIVED AND EXPECTED STATUS
10952	01	01ABF	693C1AC6			RNE	:CCTEST	IF ERROR GO TEST CONDITION CODES
10953	01	01ACC	B12C18BB			CW,2	:IORTN	IS THIS A TEST OF DEV ADDR
10954	01	01AC1	ER4418BB			RAZ	:IORTN,2	IF NOT RETURN
10955	01	01ACP	32FC000D A			LW,14	13	LOAD RECEIVED STATUS
10956	01	01AC3	48EC1F78			AND,14	L('X'7FF')	MASKOUT ALL BUT DEVICE ADDR
10957	01	01AC4	31E018D0			CW,14	:DEVADDR	COMPARE WITH EXPECTED DEV ADDR
10958	01	01AC5	ER3418BB			RE	:IORTN,2	IF EQUAL RETURN

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
10959					*			
10960					*			
10961					*			
10962	01	01AC6	B11018BB		:CCTEST	CW,1	*:I0RTN	TEST PRINT INHIBIT BIT
10963	01	01AC7	E94618BB			RANZ	*:I0RTN,3	IF SET TAKE ERROR RETURN
10964	01	01AC8	154018B2			STD,4	:REG0405	SAVE REGISTERS 4 & 5
10965	01	01AC9	15C018B6			STD,12	:REG1213	SAVE REGISTERS 12 & 13
10966	01	01ACA	32C018D0			LW,12	:DEVADDR	LOAD EXPECTED DEVICE ADDRESS
10967	01	01ACB	EAF00218	A		BAL,15	:IHEXC	CONVERT ERCDIC
10968	01	01ACC	55F21894			STH,15	:DAERM+6,1	SAVE IN DEVICE ADDR ERROR MESSAGE
10969	01	01ACD	25F00070	A		SLS,15	-16	POSITION MSB'S
10970	01	01ACE	75F21894			STB,15	:DAERM+6,1	SAVE IN DEVICE ADDR ERROR MESSAGE
10971	01	01ACF	703418BD			LCF	:STATUSCC,2	LOAD CONDITION CODES
10972	01	01AD0	324018BC			LW,4	:TYPE	LOAD TYPE OF I/O OPERATION
10973	01	01AD1	22500000	A		LI,5	0	ZERO CC3,4
10974	01	01AD2	68C01AE0			BCR,12	:DEVADER	CC1,2 = 0,0
10975	01	01AD3	68801AD6			RCR,8	:CCERR1	CC1,2 = 0,1
10976	01	01AD4	68401ADB			BCR,4	:CCERR2	CC1,2 = 1,0
10977	01	01AD5	68001AEF			B	:CCERR3	CC1,2 = 1,1
10978					*			
10979					*		CC 1, 2 = 0, 1	
10980					*			
10981	01	01AD6	32581B31		:CCERR1	LW,5	:ERRADR1,4	LOAD ADDRESS OF MSG
10982	01	01AD7	35501AD9			STW,5	*+2	SAVE ADDRESS OF MSG
10983	01	01AD8	EAF0021C	A		BAL,15	:PRINT	PRINT MSG
10984	01	01AD9	00000000	A		DATA	0	
10985	01	01ADA	68001AE0			B	:DEVADER	GO TO TEST DEV ADDR
10986					*			
10987					*		CC 1, 2 = 1, 0	
10988					*			
10989	01	01ADB	32581B36		:CCERR2	LW,5	:ERRADR2,4	LOAD ADDRESS OF MSG
10990	01	01ADC	35501ADE			STW,5	*+2	SAVE ADDRESS OF MSG
10991	01	01ADD	EAF0021C	A		BAL,15	:PRINT	PRINT MSG
10992	01	01ADE	00000000	A		DATA	0	
10993	01	01ADF	68001AEC			B	:DEVEXIT	GO TO ERROR EXIT
10994					*			
10995					*		REPORT DEV - ADDR IF IT EXISTS	
10996					*			
10997	01	01AE0	21400004	A	:DEVADER	CI,4	4	TEST FOR AIB
10998	01	01AE1	69301AF9			BNE	:STATERR	IF NOT, GO TEST STATUS
10999	01	01AE2	32C0000D	A		LW,12	13	LOAD DEVICE ADDRESS
11000	01	01AE3	48C01F78			AND,12	L(X'7FF')	SAVE ONLY DEVICE ADDRESS
11001	01	01AE4	31C018D0			CW,12	:DEVADDR	IS IT = TO EXPECTED ADDRESS
11002	01	01AE5	68301AF9			RE	:STATERR	GO TO TEST STATUS
11003	01	01AE6	EAF00218	A		BAL,15	:IHEXC	CONVERT TO ERCDIC
11004	01	01AE7	55F21896			STH,15	:DAERM+8,1	SAVE IN DEVICE ERROR MESSAGE
11005	01	01AE8	25F00070	A		SLS,15	-16	POSITION MSB'S
11006	01	01AE9	75F21896			STB,15	:DAERM+8,1	SAVE IN DEVICE ERROR MESSAGE
11007	01	01AEA	EAF0021C	A		BAL,15	:PRINT	PRINTOUT DEVICE ADDRESS ERROR
11008	01	01AEB	000018BE			DATA	:DAERM	MESSAGE
11009	01	01AEC	124018B2		:DEVEXIT	LD,4	:REG0405	RESTORE REG 4 & 5
11010	01	01AED	12CC18B6			LD,12	:REG1213	RESTORE REG 12 & 13
11011	01	01AEE	E90618BB			B	*:I0RTN,3	TAKE ERROR RETURN
11012					*			
11013					*		CC 1, 2 = 1, 1	
11014					*			
11015	01	01AEF	32581B3B		:CCERR3	LW,5	:ERRADR3,4	LOAD ERROR MSG ADDRESS
11016	01	01AF0	35501AF7			STW,5	:CCPRINT	SAVE ADDRESS OF MESSAGE TO BE PRINTED
11017	01	01AF1	22500004	A		LI,5	4	LOAD INDEX
11018	01	01AF2	21400004	A		CI,4	4	IS THIS AN AIB
11019	01	01AF3	68301AF6			RE	*+3	IF SO DON'T ADD DEVICE ADDRESS
11020	01	01AF4	32C01894			LW,12	:DAERM+6	LOAD A CONVERTED DEV ADDR
11021	01	01AF5	B5CA1AF7			STW,12	*:CCPRINT,5	SAVE DEVICE ADDRESS
11022	01	01AF6	EAF0021C	A		BAL,15	:PRINT	PRINT ERROR
11023	01	01AF7	00000000	A	:CCPRINT	DATA	0	
11024	01	01AF8	68001AEC			B	:DEVEXIT	TAKE ERROR EXIT
11025					*			
11026					*		REPORT STATUS ERROR IF PRESENT	
11027					*			
11028	01	01AF9	B2F018BB		:STATERR	LW,14	*:I0RTN	FETCH MASK
11029	01	01AFA	B2F218BB			LW,15	*:I0RTN,1	FETCH EXPECTED STATUS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11030	C1	01AFB	4BE01F79			AND,14	L('FFFF0000')	SAVE ONLY STATUS
11031	C1	01AFC	4BF0000E	A		AND,15	14	MASK TO EXPECTED CONDITIONS
11032	C1	01AFD	4BE01B8D			AND,14	!STATUSCC	MASK RECEIVED STATUS TO MASK
11033	C1	01AFE	31E0000F	A		CM,14	15	ARE THEY EQUAL
11034	C1	01AFF	68301AEC			RE	!DEVEEXIT	IF TAKE ERROR EXIT
11035	C1	01B00	32581BAC			LW,5	!STATYP,4	LOAD TYPE OF OPERATION
11036	C1	01B01	46501B97			XW,5	!STATEM1	SAVE TYPE OF OPERATION AND FETCH BC
11037	C1	01B02	72500005	A		LB,5	5	POSITION BYTE COUNT
11038	C1	01B03	75501B97			STB,5	!STATEM1	SAVE MESSAGE BYTE COUNT
11039	C1	01P04	EAF0021C	A		BAL,15	*!PRINT	PRINT STATUS ERROR HEADER MSG
11040	C1	01B05	00001B97			DATA	!STATEM1	
11041	C1	01B06	15601BB4			STD,6	!REG0607	SAVE REGISTER 6 & 7
11042					*			
11043	C1	01B07	22600002	A		LI,6	2	LOAD POINTER
11044	C1	01B08	B2701BBB			LW,7	*!BORTN	LOAD MASK
11045	C1	01B09	B2C21BBB			LW,12	*!BORTN,1	LOAD EXPECTED STATUS
11046	C1	01B0A	68001B0C			B	B*2	GO TO STATUS MESSAGE BUILDING
11047					*			
11048					*			
11049	C1	01B0B	32C01B8D		!STATER1	LW,12	!STATUSCC	LOAD RECEIVED STATUS
11050	C1	01B0C	25700074	A		SLS,7	-12	
11051	C1	01B0D	25C00074	A		SLS,12	-12	POSITION CC AND STATUS
11052	C1	01B0E	6AF01B22			BAL,15	!BINC0VT	GO TO CONVERT CC
11053	C1	01B0F	25F00070	A		SLS,15	-16	POSITION CC
11054	C1	01B10	55F21BA9			STW,15	!STATEM2+8,1	STORE CC IN MSG
11055	C1	01B11	22500012	A		LI,5	18	MSG BYTE INDEX=18
11056	C1	01B12	22400004	A		LI,4	4	MINOR INDEX=4
11057	C1	01B13	6AF01B22			BAL,15	!BINC0VT	CONVERT BINARY TO EBCDIC MASKED
11058	C1	01B14	75FA1BA4			STB,15	!STATEM2+3,5	STATUS BIT TO ERROR MSG
11059	C1	01B15	205FFFFF	A		AI,5	-1	BYTE INDEX=1
11060	C1	01B16	25F00078	A		SLS,15	-8	ADJUST CONVERTED STATUS BITS
11061	C1	01B17	64401B14			RDR,4	*-3	MINOR INDEX=1 NOT ZERO
11062	C1	01B18	64501B12			RDR,5	*-6	BYTE INDEX=1 NOT ZERO
11063	C1	01B19	325C1BA9			LW,5	!EXPOBS-1,6	LOAD EITHER 'OBS' OR 'EXPI' MSG
11064	C1	01B1A	46501BA1			XW,5	!STATEM2	SAVE TYPE OF OPERATION & FETCH MSG BC
11065	C1	01B1B	72500005	A		LB,5	5	POSITION MSG BYTE COUNT
11066	C1	01B1C	75501BA1			STB,5	!STATEM2	SAVE MESSAGE BYTE COUNT
11067	C1	01B1D	EAF0021C	A		BAL,15	*!PRINT	GO PRINT OUT MSG
11068	C1	01B1E	00001BA1			DATA	!STATEM2	
11069	C1	01B1F	64601B0B			RDR,6	!STATER1	IS THERE ANY MSG LEFT
11070	C1	01P20	12601BB4			LD,6	!REG0607	RESTORE REGISTER 6 & 7
11071	C1	01P21	68001AEC			B	!DEVEEXIT	TAKE ERROR EXIT
11072					*			
11073					*			
11074					*			
11075	C1	01P22	15401BB8		!BINC0VT	STD,4	!BINO405	SAVE REGISTERS 4 & 5
11076	C1	01P23	35F01BBA			STW,15	!BIRRTN	SAVE REGISTER 15
11077	C1	01B24	EAF00216	A		BAL,15	*!BINC	GO CONVERT BINARY TO EBCDIC
11078	C1	01B25	680C1B25			B	*!BINC	IF IT IS EXPECT MASK
11079	C1	01B26	68001B2F			B	!BINC0VT	IF IT IS RECEIVED EXIT
11080	C1	01B27	22400003	A	!BINC0T1	LI,4	3	LOAD INCREMENT POINTER
11081	C1	01B28	225000E7	A		LI,5	'X'	LOAD A 'X'
11082	C1	01B29	2570027F	A	!BINC0T2	SCS,7	-1	TEST A BIT
11083	C1	01B2A	33000007	A		MTW,0	7	TEST FOR NEGATIVE
11084	C1	01B2B	69101B2D			RLZ	B*2	IF NEGATIVE, DON'T ADD 'X'
11085	C1	01B2C	7558000F	A		STB,5	15,4	STORE 'X'
11086	C1	01B2D	204FFFFF	A		AI,4	-1	INCREMENT STORAGE POINTER
11087	C1	01B2E	68101B29			RGEZ	!BINC0T2	GO TO TEST NEXT BYTE
11088	C1	01B2F	12401BBB		!BINC0T2	LD,4	!BINO405	RESTORE REGISTER 4 & 5
11089	C1	01B30	E8001B9A			B	*!BIRRTN	RETURN
11090	C1	01B31	00001B40		!ERRADR1	DATA	!CCERM1	ERROR ADDRESS 1-F
11091	C1	01B32	00001B45			DATA	!CCERM2	
11092	C1	01B33	00001B4B			DATA	!CCERM3	
11093	C1	01B34	00001B51			DATA	!CCERM4	
11094	C1	01B35	00001B5B			DATA	!CCERM5	
11095	C1	01B36	00001B60		!ERRADR2	DATA	!CCERM6	
11096	C1	01B37	00001B64			DATA	!CCERM7	
11097	C1	01B38	00001B68			DATA	!CCERM8	
11098	C1	01B39	00001B6C			DATA	!CCERM9	
11099	C1	01B3A	000C1B70			DATA	!CCERMA	
11100	C1	01B3B	00001B74		!ERRADR3	DATA	!CCERMB	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11101	01	01B3C	00001B79			DATA	:CCERM C	
11102	01	01B3D	00001B7E			DATA	:CCERM D	
11103	01	01B3E	00001B83			DATA	:CCERM E	
11104	01	01B3F	00001B88			DATA	:CCERM F	
11105	01	01B40	10E2C9D6	A	:CCERM1	TEXTC	'SIR-NOT ACCEPTED'	
	01	01B41	60D5D6E3	A				
	01	01B42	40C1C3C3	A				
	01	01B43	C5D7E3C5	A				
	01	01B44	C4404C40	A				
11106	01	01B45	14E3C9D6	A	:CCERM2	TEXTC	'TIR-SIR NOT POSSIBLE'	
	01	01B46	60E2C9D6	A				
	01	01B47	40D5D6E3	A				
	01	01B48	40D7D6E2	A				
	01	01B49	E2C9C2D3	A				
	01	01B4A	C5404040	A				
11107	01	01B4B	14C8C9D6	A	:CCERM3	TEXTC	'HIB-DEV BUSY AT HALT'	
	01	01B4C	60C4C5F5	A				
	01	01B4D	40C2E4E2	A				
	01	01B4E	E840C1E3	A				
	01	01B4F	40C8C1D3	A				
	01	01B50	E3404040	A				
11108	01	01B51	25E3C4E5	A	:CCERM4	TEXTC	'TDV-DEV DEPENDENT CONDITION' CC1,2= 01'	
	01	01B52	60C4C5F5	A				
	01	01B53	40C4C5D7	A				
	01	01B54	C5D5C4C5	A				
	01	01B55	D5E340C3	A				
	01	01B56	D6D5C4C9	A				
	01	01B57	E3C9D6D5	A				
	01	01B58	40C3C3F1	A				
	01	01B59	68F27E40	A				
	01	01B5A	F0F14040	A				
11109	01	01B5B	10C1C9D6	A	:CCERM5	TEXTC	'AIR-UE INTERRUPT'	
	01	01B5C	60E4C540	A				
	01	01B5D	C9D5E3C5	A				
	01	01B5E	D9D9E4D7	A				
	01	01B5F	E3404040	A				
11110	01	01B60	0DE2C9D6	A	:CCERM6	TEXTC	'SIR-BUSY SIRP'	
	01	01B61	60C2E4E2	A				
	01	01B62	E840E2C9	A				
	01	01B63	D6D74040	A				
11111	01	01B64	0DE3C9D6	A	:CCERM7	TEXTC	'TIR-BUSY SIRP'	
	01	01B65	60C2E4E2	A				
	01	01B66	E840E2C9	A				
	01	01B67	D6D74040	A				
11112	01	01B68	0CC8C9D6	A	:CCERM8	TEXTC	'HIR-CC1,2=10'	
	01	01B69	60C3C3F1	A				
	01	01B6A	68F27EF1	A				
	01	01B6B	F0404040	A				
11113	01	01B6C	0DE3C4E5	A	:CCERM9	TEXTC	'TDV-BUSY SIRP'	
	01	01B6D	60C2E4E2	A				
	01	01B6E	E840E2C9	A				
	01	01B6F	D6D74040	A				
11114	01	01B70	0CC1C9D6	A	:CCERMA	TEXTC	'AIR-CC1,2=10'	
	01	01B71	60C3C3F1	A				
	01	01B72	68F27EF1	A				
	01	01B73	F0404040	A				
11115	01	01B74	13E2C9D6	A	:CCERMB	TEXTC	'SIR-NB AR-DEV XXXX'	
	01	01B75	60D5D640	A				
	01	01B76	C1D960C4	A				
	01	01B77	C5E54040	A				
	01	01B78	E7E7E7E7	A				
11116	01	01B79	13E3C9D6	A	:CCERM C	TEXTC	'TIR-NB AR-DEV XXXX'	
	01	01B7A	60D5D640	A				
	01	01B7B	C1D960C4	A				
	01	01B7C	C5E54040	A				
	01	01B7D	E7E7E7E7	A				
11117	01	01B7E	13C8C9D6	A	:CCERM D	TEXTC	'HIR-NB AR-DEV XXXX'	
	01	01B7F	60D5D640	A				
	01	01B80	C1D960C4	A				
	01	01B81	C5E54040	A				
	01	01B82	E7E7E7E7	A				

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11118	C1 01B83	13E3C4E5	A		ICCRME	TEXTC	' T NO AR=DEV XXXX'	
	C1 01B84	60D6D640	A					
	01 01B85	C1D960C4	A					
	01 01B86	C5E84040	A					
	01 01B87	E7E7E7E7	A					
11119	01 01B88	16C1C9D6	A		ICCRMF	TEXTC	'AIO=NO INTERRUPT RECOG'	
	01 01B89	60D6D640	A					
	01 01B8A	C9D5E3C5	A					
	C1 01B8B	D9D9E4D7	A					
	01 01B8C	E340D9C5	A					
	C1 01B8D	C3D6C740	A					
11120	01 01B8E	23C1C9D6	A		IDAERM	TEXTC	'AIO=DEV ADDR ERRORI EXP XXX REC XXY'	
	01 01B8F	60C4C5E5	A					
	01 01B90	40C1C4C4	A					
	01 01B91	D940C5D9	A					
	C1 01B92	D9D6D97A	A					
	C1 01B93	40C5E7D7	A					
	01 01B94	40E7E7E7	A					
	01 01B95	40D9C5C3	A					
	C1 01B96	40E7E7E7	A					
11121	C1 01B97	24404040	A		:STATEM1	TEXTC	' 0123 4567 8901 2345 CC1,2'	
	01 01B98	40404040	A					
	01 01B99	40404040	A					
	C1 01B9A	F0F1F2F3	A					
	C1 01B9B	40F4F5F6	A					
	01 01B9C	F740F8F9	A					
	01 01B9D	F0F140F2	A					
	01 01B9E	F3F4F540	A					
	01 01B9F	C3C3F16B	A					
	01 01BA0	F2404040	A					
11122	01 01BA1	23404040	A		:STATEM2	TEXTC	' STATUS XXXX XXXX XXXX XXXX XX'	
	01 01BA2	40E2E3C1	A					
	01 01BA3	E3E4E240	A					
	C1 01BA4	E7E7E7E7	A					
	C1 01BA5	40E7E7E7	A					
	C1 01BA6	E740E7E7	A					
	C1 01BA7	E7E740E7	A					
	C1 01BA8	E7E7E740	A					
	01 01BA9	4040E7E7	A					
11123	C1 01BAA	40D6C2E2	A		:FXPORS	TEXT	' ORS'	
11124	C1 01BAB	40C5E7D7	A			TEXT	' EXP'	
11125	C1 01BAC	40E2C9D6	A		:STATYTP	TEXT	' SIO', ' TIO', ' HIO', ' TDI', ' AIO'	
	C1 01BAD	40E3C9D6	A					
	01 01BAE	40C8C9D6	A					
	C1 01BAF	40E3C4E5	A					
	C1 01B90	40C1C9D6	A					
11126						ROUND	8	
11127	C1 01B92	00000000	A		:REG0405	DATA	0,0	STORAGE FOR REGS 4 & 5
	C1 01B93	00000000	A					
11128	C1 01B94	00000000	A		:REG0607	DATA	0,0	STORAGE FOR REG 6 & 7
	C1 01B95	00000000	A					
11129	C1 01B96	00000000	A		:REG1213	DATA	0,0	STORAGE FOR REGS 12 & 13
	01 01B97	00000000	A					
11130	C1 01B98	00000000	A		:BIN0405	DATA	0,0	
	01 01B99	00000000	A					
11131	C1 01B9A	00000000	A		:BINRTN	DATA	0	
11132	01 01B9B	00000000	A		:IBRTN	DATA	0	STORAGE FOR REG 15
11133	C1 01B9C	00000000	A		:TYPE	DATA	0	ISSUE TYPE
11134					:STATUSCC	J		
11135	01 01B9D	00000000	A			DATA	0	RECEIVED STATUS AND CONDITION CODES
11136						PAGE		
11137					*			
11138					*	MODIFIED PSEUDORANDOM NUMBER GENERATOR		
11139					*			
11140					*	THE ALGORITHM		
11141					*			
11142					*	THE CALCULATION OF THE NEXT NUMBER X(N+1) DEPENDS ON THE		
11143					*	PREVIOUS NUMBER X(N) AND THE VALUE OF TWO INTERNAL		
11144					*	COUNTERS M1 AND M2. THE TWO COUNTERS ARE CHANGED		
11145					*	BY UNITY EACH TIME A RANDOM NUMBER IS GENERATED, THE		
11146					*	ONE COUNTER INCREASING AND THE OTHER DECREASING.		

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11147					*			
11148					*		THE PROCEDURE	
11149					*			
11150					*		X(N+1) = M1 (+) M2 (+) M(X(N)), WHERE (+)=EXCLUSIVE OR	
11151					*			
11152					*		OPTION-1, USES INTERNAL VALUES OF M1, M2 AND X. RESULTS	
11153					*		FOUND IN REGISTER-14.	
11154					*			
11155					*		OPTION-1 CALLING SEQUENCE	
11156					*			
11157					*		BAL,15 :RANDOMX	
11158					*			
11159					*		OPTION-2, USES INTERNAL VALUES OF M1 AND M2. USER PROVIDES	
11160					*		SEED IN REGISTER-14. RESULT IN REGISTER-14.	
11161					*			
11162					*		OPTION-2 CALLING SEQUENCE	
11163					*			
11164					*		LW,14 :SEED	SEED IN REGISTER-14.
11165					*		BAL,15 :RANDOM	
11166					*			
11167					*		OPTION-3, USER PROVIDES M1, M2 AND X. RESULT IN REGISTER-14.	
11168					*			
11169					*		OPTION-3 CALLING SEQUENCE	
11170					*			
11171					*		LW,12 :M1	M1 = VALUE OF COUNTER 1
11172					*		LW,13 :M2	M2 = VALUE OF COUNTER 2
11173					*		LW,14 :SEED	SEED = RANDOM NUMBER SEED
11174					*		BAL,15 :RANDOMY	
11175					*			
11176					*			
11177	01	01B8E	35C01BCC			:RANDOMY	STW,12 :M1	OPTION-3 ENTRY
11178	01	01B8F	35D01BCD				STW,13 :M2	SAVE PARAMETERS
11179					*			
11180	01	01B8C	35E01BCE			:RANDOM	STW,14 :SEED	OPTION-2 ENTRY
11181					*			
11182	01	01B81	37101BCC			:RANDOMX	MTW,1 :M1	OPTION-1 ENTRY
11183	01	01B82	68301BC4				BCR,3 :+2	TEST, M1 + 1 = 0
11184	01	01B83	33F01BCD				MTW,-1 :M2	NO, M2 = M2 - 1
11185	01	01B84	32E01BCE				LW,14 :SEED	
11186	01	01B85	25E0020C A				SCS,14 :13	GENERATE M(SEED) BY ARITHMETIC MEANS
11187	01	01B86	30E01BCF				AW,14 :K	ADD CONSTANT :K
11188	01	01B87	48E01BCC				EOR,14 :M1	M(SEED) (+) M1, WHERE (+) = XOR
11189	01	01B88	48F01BCD				EOR,14 :M2	M(SEED) (+) M1 (+) M2
11190	01	01B89	35E01BCE				STW,14 :SEED	SEED = M(SEED) (+) M1 (+) M2
11191	01	01B8A	E800000F A				R *15	
11192					*			
11193					*			
11194					*			
11195					*			
11196					*		BOUND 8	
11197	01	01B8C	1249B0A1 A			:M1	DATA 314159265	PI = PRE-SET M1 VALUE
11198	01	01B8D	1033C407 A			:M2	DATA 271828183	E = PRE-SET M2 VALUE
11199	01	01B8E	544B2F8A A			:SEED	DATA 1414213562	SQRT(2) = PRE-SET SEED VALUE
11200	01	01B8F	22679CB1 A			:K	DATA 577215665	GAMMA = CONSTANT
11201					*		PAGE	
11202					*			
11203					*			
11204					*		*** C O M P A R E ***	
11205					*			
11206					*		THE COMPARE SUBROUTINE COMPARES TWO BUFFER AREAS A WORD AT A	
11207					*		TIME. AN ERROR COUNT IS GENERATED WHEN UNEQUAL COMPARES ARE	
11208					*		SENSED. UNEQUAL WORDS ARE PRINTED. ERROR EXIT IF ONE OR MORE	
11209					*		UNEQUAL COMPARES SENSED.	
11210					*			
11211					*		INPUT PARAMETERS:	
11212					*			
11213					*		REG 15 -RETURN ADDRESS	
11214					*		:COMWCNT-NUMBER OF WORDS TO BE COMPARED	
11215					*		:COMBFRA-EXPECTED BUFFER ADDRESS	
11216					*		:COMBFRR-OBSERVED BUFFER ADDRESS	
11217					*		:COMFLAG-ERROR PRINTOUT INHIBIT FLAG (INHIBIT IF <>0)	
					*		(REGISTERS 8 THRU 11 CAN BE USED AS BUFFERS)	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11218					*			
11219					*	REGISTERS DISTURBED:		
11220					*			
11221					*	(NONE)		
11222					*			
11223					*	OUTPUT PARAMETERS:		
11224					*			
11225					*	NORMAL EXIT-RETURN ADDRESS		
11226					*	ERROR EXIT -RETURN ADDRESS +1		
11227					*	ICOMERR -COUNT OF COMPARE ERRORS		
11228					*			
11229		0000000A				ICOMLEGT EQU	10	
11230	01	01BD0	022000A0	A		ICOMPARE LCI	ICOMLEGT	
11231	01	01BD1	2B601C8F			STW,6	ICOMTEM1	SAVE REGISTERS 6 THRU 15
11232	01	01BD2	32801F7A			LW,8	*314159265	ESTABLISH IPK
11233	01	01BD3	35801D0E			STW,8	IPK	
11234	01	01BD4	35E01D0F			STW,14	IPK1	
11235	01	01BD5	22700000	A		LI,7	0	
11236	01	01BD6	35701CA6			STW,7	ICOMERR	CLEAR ERROR TOTAL
11237	01	01BD7	35701CA7			STW,7	ICOMTEM3	CLEAR HEADER FLAG
11238	01	01BD8	35701CAA			STW,7	ICOMADDR	ZERO COMPARE ADDR ERROR FLAG
11239	01	01BD9	35701A9A			STW,7	#MSNSEFT	ZERO FAILING TRACK
11240	01	01BDA	32601CA2			LW,6	ICOMBFRA	EXPECTED BUFFER ADDRESS A
11241	01	01BDB	32701CA3			LW,7	ICOMBFRB	OBSERVED BUFFER ADDRESS B
11242	01	01BDC	30601CA8			AW,6	ICOMWCNT	BUFFER A + WORD COUNT
11243	01	01BDD	30701CA8			AW,7	ICOMWCNT	BUFFER B + WORD COUNT
11244	01	01BDE	15601C9C			STD,6	ICOMTEM2	SAVE FINAL BFR ADDRESSES
11245	01	01BDF	32E01D0B			LW,14	IPATID+1	LOAD EXPECTED PATTERN
11246	01	01BE0	3A601CA8			LCW,6	ICOMWCNT	FETCH COMPLEMENT WORD COUNT
11247	01	01BE1	32701D0A			LW,7	IPATID	LOAD PATTERN TYPE
11248	01	01BE2	31201D0A			CW,2	IPATID	TEST FOR RANDOM
11249	01	01BE3	68301BFO			BE	ICOM1R	IF RANDOM GO TO SPECIAL COMPARE
11250						ICOM1 J		
11251	01	01BE4	B1E1C1C9D			CW,14	*ICOMTEM2+1,6	TEST EXP AND OBS
11252	01	01BE5	68301BE7			BE	*+2	IF CONDITION CONTINUE
11253	01	01BE6	6AF01C18			BAL,15	ICOM2	GO REPORT ERROR
11254					*			
11255					*			
11256	01	01BE7	670E1C57			ICOM6 EXU	ICOMTEMP2,7	UPDATE EXP CONDITION
11257	01	01BE8	65601BE4			RIR,6	ICOM1	UPDATE OBS TABLE POINTER
11258	01	01BE9	33001CA6			MTW,0	ICOMERR	TEST FOR ERRORS
11259	01	01BEA	68301BED			REZ	ICOMEXIT+1	RETURN GOOD
11260	01	01BEB	68001BFA			R	ICOM7	
11261					*			
11262					*			
11263	01	01BFC	33101C98			ICOMEXIT MTW,1	ICOMTEM1+ICOMLEGT-1	UPDATE RTN ADDR FOR ERROR
11264	01	01BED	022000A0	A		LCI	ICOMLEGT	
11265	01	01BFE	2A601C8F			LW,6	ICOMTEM1	RESTORE REG 6 - 15
11266	01	01BEF	ER00000F	A		R	*R15	EXIT
11267					*			COMPARE ERROR
11268	01	01BFO	B1E1C1C9D			ICOM1R CW,14	*ICOMTEM2+1,6	COMPARE WORD
11269	01	01BF1	68301BF3			BE	*+2	IF EQUAL CONTINUE
11270	01	01BF2	6AF01C18			BAL,15	ICOM2	
11271	01	01BF3	35E01D0F			STW,14	IPK1	
11272	01	01BF4	25E00011	A		SLB,14	17	GENERATE
11273	01	01BF5	30E01D0F			AW,14	IPK1	
11274	01	01BF6	46E01D0E			XW,14	IPK	RANDOM NO.
11275	01	01BF7	30E01D0E			AW,14	IPK	
11276						ICOM6RDM J		
11277	01	01BF8	65601BFO			RIR,6	ICOM1R	
11278	01	01BF9	68001BE9			R	ICOM6+2	
11279					*			
11280	01	01BFA	33001CA9			ICOM7 MTW,0	ICOMFLAG	TEST PRINT INHIBIT FLAG
11281	01	01BFB	69301BFC			RNEZ	ICOMEXIT	IF IT IS SET EXIT
11282					*			
11283	01	01BFC	33001CAA			MTW,0	ICOMADDR	TEST FOR ADDRESS ERROR
11284	01	01BFD	68301BEC			REZ	ICOMEXIT	EXIT
11285	01	01BFE	31101CA6			CW,1	ICOMERR	TEST FOR MORE THAN 1 ERROR
11286	01	01BFF	69301BEC			RNE	ICOMEXIT	IF MORE THAN 1 RETURN
11287					*			
11288	01	01C00	31201D0A			CW,2	IPATID	IF NOT RANDOM

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11289	01	01C01	69301BFC			RNE	ICOMEXIT	RTN
11290					*			
11291	01	01C02	32C018D7			LW,12	TCKCURR	LOAD CURRENT TRACK SHIFT COUNT
11292	01	01C03	75C61C0D			STB,12	SHIFT2,3	SET UP SHIFT
11293	01	01C04	3AC018D7			LCW,12	TCKCURR	LOAD TRACK SHIFT COUNT
11294	01	01C05	75C61C08			STB,12	SHIFT1,3	
11295	01	01C06	52C21CA5			LH,12	ICOMPADR,1	LOAD TRACK ADDR
11296	01	01C07	22000C00	A		LI,13	0	
11297	01	01C08	25C00300	A	SHIFT1	SCD,12	0	
11298	01	01C09	EAF00217	A		RAL,15	*:DECC	CONVERT TO DEC
11299	01	01C0A	75F01CE8			STB,15	:COMERM6+7	
11300	01	01C0B	25F00278	A		SCS,15	-8	
11301	01	01C0C	55F21CE7			STH,15	:COMERM6+6,1	
11302	01	01C0D	25C00300	A	SHIFT2	SCD,12	0	
11303	01	01C0E	EAF00217	A		RAL,15	*:DECC	CONVERT TO DEC
11304	01	01C0F	55F01CE9			STH,15	:COMERM6+8	SAVE SECTOR ADDR
11305	01	01C10	52C01CA5			LH,12	ICOMPADR	LOAD CURRENT DEIVE ADDR
11306	01	01C11	EAF00218	A		RAL,15	*:HEXC	
11307	01	01C12	75F01CE4			STB,15	:COMERM6+3	
11308	01	01C13	25F00078	A		SLS,15	-8	
11309	01	01C14	55F21CE3			STH,15	:COMERM6+2,1	
11310					*			
11311	01	01C15	EAF0021C	A		RAL,15	*:PRINT	PRINT MSG
11312	01	01C16	00001CE1			DATA	:COMERM6	
11313	01	01C17	68001BEC			R	ICOMEXIT	RETURN
11314					*			
11315					*			
11316					*			
11317	01	01C18	15E01CA0		:COM2	STD,14	:COMTEM6	SAVE REG 14 AND 15
11318	01	01C19	32F01CA8			LW,15	:COMWCNT	FETCH WORD COUNT
11319	01	01C1A	30F00006	A		AW,15	6	ADD NEGATIVE WORD COUNT
11320	01	01C1B	21F00001	A		CI,15	1	
11321	01	01C1C	69201C21			RG	:CM491	IF GREATER THAN 1 BRANCH
11322	01	01C1D	B2E01CA3			LW,14	:COMBFRB	LOAD FIRST WORD FROM PATTERN
11323	01	01C1E	B2F21CA3			LW,15	:COMBFRB,1	LOAD SECOND WORD FROM PATTERN
11324	01	01C1F	11E01CA9			CD,14	M1	TEST BOTH WORDS
11325	01	01C20	683C1BE9			RE	:COM6+2	IF BOTH EQUAL QUIT TESTING
11326					:COM91			
11327	01	01C21	12E01CA0			LD,14	:COMTEM6	RESTORE REGISTERS 14 AND 15
11328	01	01C22	32F01CA8			LW,15	:COMWCNT	FETCH WORD COUNT
11329	01	01C23	30F00006	A		AW,15	6	ADD NEGATIVE WORD COUNT
11330	01	01C24	312C1D0A			CW,2	:PATID	
11331	01	01C25	69301C27			RNE	*+2	
11332	01	01C26	6AF01C5D			RAL,15	:COM12	
11333	01	01C27	31101CA6			MTW,1	:COMERRT	ERROR TOTAL + 1
11334	01	01C28	31101CA9			CW,1	:COMFLAG	TEST COMPARE FLAG
11335	01	01C29	E8701CA1			RE	*:COMTEM6+1	PRINT INHIBIT -RETURN TO COMPARE
11336	01	01C2A	69101C81			RL	:CM93	LOOK FOR A BAD TRACK
11337	01	01C2B	33001CA7			MTW,0	:COMTEM3	SET HEADER FLAG
11338	01	01C2C	69301C35			RNEZ	:COM3	FLAG NOT 0 - NO ERR MSG WRD REQ'D
11339					*			PRINT ERROR MSG HEADER
11340	01	01C2D	35101CA7			STW,1	:COMTEM3	SET HDR FLAG
11341	01	01C2E	32C01CA3			LW,R12	:COMBFRB	OBSERVED BUFFER ADDRESS
11342	01	01C2F	EAF00218	A		RAL,R15	*:HEXC	CONVERT TO HEXADECIMAL IN EBDDIC
11343	01	01C30	55F01CC5			STH,15	:COMERM3+17	BFR ADDR TO MSG
11344	01	01C31	25F00270	A		SCS,15	-16	
11345	01	01C32	55F21CC4			STH,15	:COMERM3+16,1	
11346					*			
11347	01	01C33	EAF0021C	A		RAL,R15	*:PRINT	PRINT ERROR MSG HEADER
11348	01	01C34	C0001CB4			DATA	:COMERM3	
11349					*			PRINT EXPECTED, OBSERVED WORDS
11350	01	01C35	32C01CA8		:COM3	LW,R12	:COMWCNT	NUMBER OF WORDS
11351	01	01C36	30CC0006	A		AW,12	6	WRD CNT=NUM WORDS + WRD CNT INDEX
11352	01	01C37	EAF00218	A		RAL,R15	*:HEXC	CONVERT TO HEXADECIMAL IN EBDDIC
11353	01	01C38	35F01CD3			STW,R15	:COMERM4+13	WRD CNT TO MSG
11354	01	01C39	32C0000E	A		LW,12	14	FETCH EXP WORD
11355	01	01C3A	31201D0A			CW,2	:PATID	TEST FOR RANDOM PATTERN
11356	01	01C3B	69301C3F			RNE	*+4	IF SO DON'T SKIP
11357	01	01C3C	219C0002	A		CI,9	2	TEST FOR WORD ?
11358	01	01C3D	69301C3F			RNE	*+2	IF NOT DON'T SKIP
11359	01	01C3E	32C01D0D			LW,12	:PATID+3	LOAD ACTUAL SEEK ADDRESS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11360	01	01C3F	22D01CC6			LI,R13	ICOMERM4	ERROR MSG ADDR
11361	01	01C40	6AE01C4A			BAL,R14	ICOM4	ENTER EXP WRD INTO MSG
11362	01	01C41	EAF0021C A			BAL,R15	*IPRINT	PRINT EXPECTED WORD MSG
11363	01	01C42	00001CC6			DATA	ICOMERM4	
11364	01	01C43	B2CC1C9D			LW,12	*ICOMTEM2+1,6	LOAD OBS WORD
11365	01	01C44	22D01CD4			LI,R13	ICOMERM5	ERROR MSG ADDR
11366	01	01C45	6AE01C4A			BAL,R14	ICOM4	ENTER OBS WRD INTO MSG
11367	01	01C46	EAF0021C A			BAL,R15	*IPRINT	PRINT OBSERVED WORD MSG
11368	01	01C47	00001CD4			DATA	ICOMERM5	
11369	01	01C48	12E01CA0			LD,14	ICOMTEM6	RESTORE REGISTER 14 AND 15
11370	01	01C49	E800000F A			B	*15	RETURN TO COMPARISON
11371					*			
11372					*			
11373					*			ENTER STATUS BITS INTO MESSAGE
11374	01	01C4A	15601C9E		ICOM4	STD,6	ICOMTEM4	SAVE REG 6 & 7
11375	01	01C4B	22600030 A			LI,6	48	BYTE INDEX=48
11376	01	01C4C	22700004 A			LI,R7	4	MINOR INDEX=4
11377	01	01C4D	EAF00216 A			BAL,R15	*IBINC	CONVERT TO BINARY IN EBCDIC
11378	01	01C4E	F5FC000D A			STD,R15	*R13,R6	BIT TO MSG
11379	01	01C4F	33F00006 A			MTW,-1	R6	BYTE INDEX -1
11380	01	01C50	25F00078 A			SLB,R15	-8	ADJUST EBCDIC BITS
11381	01	01C51	64701C4E			RDR,R7	8-3	MINOR LOOP INDEX NOT 0
11382	01	01C52	33F00006 A			MTW,-1	R6	BYTE INDEX -1
11383	01	01C53	21600009 A			CI,R6	9	BYTE INDEX:9
11384	01	01C54	69201C4C			RCB,2	ICOM4+2	BYTE INDEX NOT MINIMUM
11385	01	01C55	12601C9E			LD,6	ICOMTEM4	RESTORE REG 6 & 7
11386	01	01C56	E800000E A			R	*R14	ENTER COMPLETE-EXIT
11387					*			
11388					*			
11389					*			
11390					*			
11391					*			
11392	01	01C57	02300000 A		ICOMTYP2	LCF1	0	NO OPERATION
11393					*			
11394	01	01C58	30E01D0C			AW,14	*IPATID+2	UPDATE INCREMENTING PATTERN
11395					*			
11396	01	01C59	2F001C59			WAIT	8	SHOULD NEVER GET HERE
11397					*			
11398	01	01C5A	02300000 A			LCF1	0	NO OPERATION
11399					*			
11400	01	01C5B	02300000 A			LCF1	0	NO OPERATION
11401	01	01C5C	A5F01D0C			SCS,14	*IPATID+2	SHIFT PATTERN
11402					*			
11403					*			
11404					*			
11405					*			
11406					ICOM12			
11407	01	01C5D	329C1CAB			LW,9	ICOMWCNT	IF COMPARE
11408	01	01C5E	30900006 A			AW,9	6	ADD INDEX TO SFF IF THIRD WORD
11409	01	01C5F	21900002 A			CI,9	2	IF NOT THIRD WORD
11410	01	01C60	E930000F A			RNE	*15	TAKE ERROR EXIT
11411					*			
11412	01	01C61	32E01F7A			LW,14	*314159265	ESTABLISH IPK AGAIN
11413	01	01C62	35F01D0E			STW,14	IPK	
11414	01	01C63	B2E01CA3			LW,14	*ICAMBERR	
11415	01	01C64	25E00011 A			SLB,14	17	
11416	01	01C65	B0E01CA3			AW,14	*ICAMBERR	
11417	01	01C66	46E01D0E			XW,14	IPK	
11418	01	01C67	30E01D0E			AW,14	IPK	
11419	01	01C68	35E01D0F			STW,14	IPK1	
11420	01	01C69	25E00011 A			SLB,14	17	
11421	01	01C6A	30E01D0F			AW,14	IPK1	
11422	01	01C6B	46E01D0E			XW,14	IPK	
11423	01	01C6C	30E01D0E			AW,14	IPK	
11424	01	01C6D	35F01D0F			STW,14	IPK1	
11425	01	01C6E	25E00011 A			SLB,14	17	
11426	01	01C6F	30E01D0F			AW,14	IPK1	
11427	01	01C70	46E01D0E			XW,14	IPK	
11428	01	01C71	30E01D0E			AW,14	IPK	
11429	01	01C72	B28C1C9D			LW,8	*ICOMTEM2+1,6	
11430	01	01C73	31801D0D			CW,8	IPATID+3	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11431	01	01C74	68301BF8			RE	:COM6RDM	IF EQUAL TAKE GOOD RETURN
11432	01	01C75	35E01CA0			STW,14	:COMTEM6	
11433	01	01C76	22E01BF8			LI,14	:COM6RDM	
11434	01	01C77	35E01CA1			STW,14	:COMTEM6+1	
11435	01	01C78	32E01CA0			LW,14	:COMTEM6	
11436	01	01C79	31801F7B			CW,8	=X'FO00E000'	COMPARE FOR STRAY BITS
11437	01	01C7A	E940000F A			RCS,4	*15	IF ANY DATA LABOR
11438	01	01C7B	31101CA6			CW,1	:COMERTY	IF ERROR ALREADY FORGET IT
11439	01	01C7C	E830000F A			RE	*15	
11440	01	01C7D	33101CA6			MTW,1	:COMERTY	INCREMENT COMPARE ERROR TOTAL
11441	01	01C7E	35801CA5			STW,8	:COMPADR	SAVE COMPARE ADDR
11442	01	01C7F	35101CAA			STW,1	:COMADDR	SET COMPARE ADDR ERROR FLAG
11443	01	01C80	68001BF8			R	:COM6RDM	TAKE GOOD RETURN EXIT
11444					*			
11445					*			
11446					*			
11447	01	01C81	32C0000E A		:COM93	LW,12	14	
11448	01	01C82	21900002 A			CI,9	2	
11449	01	01C83	69301C85			RNE	*+2	
11450	01	01C84	32C01D0D			LW,12	:PATID+3	
11451	01	01C85	22F00080 A			LI,15	X'80'	
11452	01	01C86	22D0000F A			LI,13	X'F'	
11453	01	01C87	3300000F A		:COM92	MTW,0	15	
11454	01	01C88	E8301CA1			REZ	*:COMTEM6+1	IF END EXIT
11455	01	01C89	25D0027C A			RCS,13	-4	
11456	01	01C8A	C5CC1C9D			CS,12	*:COMTEM2+1,6	
11457	01	01C8B	68301C8D			RE	*+2	IF EQUAL POSITION COUNT
11458	01	01C8C	47F01A9A			STS,15	#MS*SEFT	
11459	01	01C8D	25F0007F A			SLS,15	-1	
11460	01	01C8E	68001C87			R	:COM92	
11461					*			
11462					*			
11463	01	01C8F			:COMTEM1	RES	:COMLEGT	
11464						BOUND	R	
11465	01	01C9A	12H9B0A1 A		M1	DATA	314159265	
11466	01	01C9B	1033C4D7 A		M2	DATA	271828183	
11467	01	01C9C	00000000 A		:COMTEM2	DATA	0,0	BUFFER A ADDR, BUFFER B ADDR
	01	01C9D	00000000 A					
11468	01	01C9E	00000000 A		:COMTEM4	DATA	0,0	
	01	01C9F	00000000 A					
11469	01	01CA0	00000000 A		:COMTEM6	DATA	0,0	SAVE REG 14
	01	01CA1	00000000 A					
11470	01	01CA2	00000000 A		:COMBFR A	DATA	0	EXPECTED BUFFER A
11471	01	01CA3	00000000 A		:COMBFR B	DATA	0	OBSERVED BUFFER B
11472	01	01CA4	00000000 A		:COMTEM5	DATA	0	
11473	01	01CA5	00000000 A		:COMPADR	DATA	0	ADDRESS OF RECEIVED PATTERN
11474	01	01CA6	00000000 A		:COMERTY	DATA	0	COMPARE ERROR TOTAL
11475	01	01CA7	00000000 A		:COMTEM3	DATA	0	MESSAGE HEADER FLAG
11476	01	01CA8	00000000 A		:COMWCNT	DATA	0	BUFFER WORD COUNT
11477	01	01CA9	00000000 A		:COMFLAG	DATA	0	PRINT INHIBIT FLAG
11478	01	01CAA	00000000 A		:COMADDR	DATA	0	COMPARE ADDRESS ERROR FLAG
11479	01	01CAB	00000000 A		:CADR0BS	DATA	0	0BS SECTOR ADDRESS
11480					:COMERM1	TEXTC	J	
11481	01	01CAC	1FE2C5C5 A			'SEEK ADDR XXXX	BFR ADDR XXXX'	
	01	01CAD	0P40C1C4 A					
	01	01CAE	C4D94040 A					
	01	01CAF	E7E7E7E7 A					
	01	01CB0	4040C2C6 A					
	01	01CB1	D940C1C4 A					
	01	01CB2	C4D94040 A					
	01	01CB3	E7E7E7E7 A					
11482					:COMERM3	TEXTC	J	
11483	01	01CB4	45404040 A			0123 4567 8901 2345 6789 0123 4567 8901	WD CNT BFR ADDR XXXX'	
	01	01CB5	40404040 A					
	01	01CB6	4040F0F1 A					
	01	01CB7	F2F340F4 A					
	01	01CB8	F5F6F740 A					
	01	01CB9	F8F9F0F1 A					
	01	01CBA	40F2F3F4 A					
	01	01CBB	F540F6F7 A					
	01	01CBC	F8F940F0 A					

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
	C1	01CB0	F1F2F340	A				
	C1	01CBE	F4F5F6F7	A				
	C1	01CBF	40F8F9F0	A				
	C1	01CC0	F140E6C4	A				
	C1	01CC1	40C3D5E3	A				
	C1	01CC2	40C2C6D9	A				
	C1	01CC3	40C1C4C4	A				
	C1	01CC4	D940E7E7	A				
	C1	01CC5	E7E74040	A				
11484	C1	01CC6	37C5E7D7	A	:COMERM4 TEXT		'EXPECTED	
	C1	01CC7	C5C3E3C5	A				
	C1	01CC8	C4404040	A				
11485			00000000					
11486	C1	01CC9	40404040	A		DB DATA	11 X'40404040'	SPACES
11487						FIN		
	C1	01CCA	40404040	A				
	C1	01CCB	40404040	A				
	C1	01CCC	40404040	A				
	C1	01CCD	40404040	A				
	C1	01CCE	40404040	A				
	C1	01CCF	40404040	A				
	C1	01CD0	40404040	A				
	C1	01CD1	40404040	A				
	C1	01CD2	40404040	A				
	C1	01CD3	40404040	A				
11488	C1	01CD4	34D6C2E2	A	:COMERM5 TEXT		'RESERVED	
	C1	01CD5	C5D9E5C5	A				
	C1	01CD6	C4404040	A				
11489			0000000A					
11490	C1	01CD7	40404040	A		DB DATA	10 X'40404040'	SPACES
11491						FIN		
	C1	01CD8	40404040	A				
	C1	01CD9	40404040	A				
	C1	01CDA	40404040	A				
	C1	01CDH	40404040	A				
	C1	01CDC	40404040	A				
	C1	01CDD	40404040	A				
	C1	01CDE	40404040	A				
	C1	01CDF	40404040	A				
	C1	01CE0	40404040	A				
11492					:COMERM6 TEXT			
11493	C1	01CE1	2EC4C5E5	A			'DEV ADDR XXX SEEK ADDR Y=DDD S=DD FROM PATTERN'	
	C1	01CE2	40C1C4C4	A				
	C1	01CE3	D940E7E7	A				
	C1	01CE4	E740E2C5	A				
	C1	01CE5	C5D240C1	A				
	C1	01CE6	C4C4D940	A				
	C1	01CE7	E37EC4C4	A				
	C1	01CE8	C440E27E	A				
	C1	01CE9	C4C400C6	A				
	C1	01CEA	D9D6D440	A				
	C1	01CEH	D7C1E3E3	A				
	C1	01CEC	C5D9D540	A				
11494					PAGE			
11495					*		*** PATTERN SPREAD ***	
11496					*			
11497					*		THE PATTERN SPREAD SUBROUTINE SPREADS A WORD PATTERN ACCORDING TO	
11498					*		THE TYPE SPECIFIED.	
11499					*			
11500					*			
11501					*		TYPE 0 - SPREAD WORD PATTERN	
11502					*		TYPE 1 - SPREAD AND INCREMENT WORD PATTERN	
11503					*		TYPE 2 - SPREAD RANDOM PATTERN	
11504					*		TYPE 3 - SPREAD CONTENTS OF SPECIFIED ADDRESS	
11505					*		TYPE 4 - SPREAD 3-WORD PATTERN	
11506					*			
11507					*			
11508					*		INPUT PARAMETERS:	
11509					*		IPATIO - PATTERN IDENTIFICATION (3 WORDS)	
11510					*		WORD 1 - TYPE (0-4)	
11511					*		WORD 2 - PATTERN (TYPE 0,1)	
					*		RANDOM GENERATOR SEED (TYPE 2)	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11512				*			WA(PATTERN) (TYPE 3,4)	
11513				*			WORD 3 - UNUSED (TYPE 0,2,3,4)	
11514				*			INCREMENT (TYPE 1)	
11515				*				
11516				*			:PATWC = PATTERN WORD COUNT	
11517				*			:PATBFR = WA(BUFFER)	
11518				*				
11519				*			REGISTERS DISTURBED:	
11520				*				
11521				*			(NONE)	
11522				*				
11523				*			OUTPUT PARAMETERS:	
11524				*				
11525				*			(NONE)	
11526				*				
11527				*			:PATTERN J	
11528	01	01CFD	32801F7A			LW,8	*314159265	ESTABLISH :PK
11529	01	01CEE	35801D0E			STW,8	:PK	
11530	01	01CEF	32E01D0B			LW,14	:PATID+1	LOAD PATTERN PATTERN
11531	01	01CF0	32701D0A			LW,7	:PATID	LOAD TYPE OF PATTERN
11532	01	01CF1	32801CA8			LW,8	:CBMWCNT	LOAD NO. OF WORDS IN PATTERN
11533	01	01CF2	30801CA3			AW,8	:PATBFR	ADD STARTING ADDRESS OF PATTERN
11534	01	01CF3	3A601CA8			LCW,6	:CBMWCNT	LOAD -(NO. OF WORDS) AS INDEX
11535	01	01CF4	31201D0A			QW,2	:PATID	IF RANDOM
11536	01	01CF5	68301CFA			RE	RDMPAT1	GO ON RANDOM PATTERN BUILDING
11537	01	01CF6	B5EC0C08 A			STW,14	*8,6	SAVE WORD
11538	01	01CF7	670E1D04			FXU	:PATABL,7	GO ON YOUR THING
11539	01	01CF8	65601CF6			BIR,6	*-2	IF MORE CONTINUE
11540	01	01CF9	E800000F A			R	*15	RETURN
11541				*				
11542	01	01CFA	B5EC0C08 A			RDMPAT1	STW,14	SAVE WORD
11543	01	01CF8	25E00011 A			SLS,14	17	GENERATE
11544	01	01CFC	B0FC0C08 A			AW,14	*8,6	
11545	01	01CFD	46E01D0E			YW,14	:PK	RANDOM NO.
11546	01	01CFE	30FC1D0E			AW,14	:PK	
11547	01	01CFF	65601CFA			BIR,6	RDMPAT1	IF MORE CONTINUE
11548	01	01D00	35E01D0B			STW,14	:PATID+1	
11549	01	01D01	32E01D0B			LW,14	:PATID+3	SEEK ADDRESS
11550	01	01D02	B5E41CA3			STW,14	*:PATBFR,2	RANDOM WITH SEEK ADDRESS
11551	01	01D03	E800000F A			R	*15	
11552				*				
11553				*				
11554				*				
11555	01	01D04	20E00000 A			:PATABL	AI,14	0
11556				*				
11557	01	01D05	30FC1D0C			AW,14	:PATID+2	INCREMENT PATTERN
11558				*				
11559	01	01D06	2E001D06			WAIT	\$	
11560				*				
11561	01	01D07	20FC0C00 A			AI,14	0	NO OPERATION
11562				*				
11563	01	01D08	20E00C00 A			AI,14	0	NO OPERATION
11564	01	01D09	A5EC1D0C			SCS,14	*:PATID+2	SHIFT PATTERN
11565				*				
11566				*				
11567				*				
11568				*				
11569	01	01D0A	00000000 A			BOUND	8	
	01	01D0B	00000000 A			DATA	0,0,0,0	
	01	01D0C	00000000 A					
	01	01D0D	00000000 A					
11570		01 01CA8				:PATWC	EQU	:CBMWCNT
11571		01 01CA3				:PATBFR	EQU	:CBMBFR
11572	01	01D0E	00000000 A			:PK	DATA	0
11573	01	01D0F	00000000 A			:PK1	DATA	0
11574							PAGE	
11575				*				
11576				*				*** CLEAR BUFFER ***
11577				*				
11578				*				* THE CLEAR BUFFER SUBROUTINE CLEARS A SPECIFIED BUFFER AREA.
11579				*				* BUFFER SIZE SPECIFIED IN NUMBER OF WORDS.

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11580					*			
11581					*	INPUT PARAMETERS:		
11582					*			
11583					*	REG 15 -RETURN ADDRESS		
11584					*	:CLRADDR=WA(BUFFER)		
11585					*	:CLRSIZE=BUFFER WORD SIZE		
11586					*			
11587					*	REGISTERS DISTURBED:		
11588					*			
11589					*	(NONE)		
11590					*			
11591					*	OUTPUT PARAMETERS:		
11592					*			
11593					*	(NONE)		
11594					*			
11595	C1	01D10	15401D1E		:CLEAR	STD,R4	:CLRSAVE	SAVE REGISTERS 4-6
11596	C1	01D11	35601D20			STW,R6	:CLRSAVE+2	
11597	C1	01D12	32501D18			LW,R5	:CLRADDR	BUFFER ADDRESS
11598	C1	01D13	30501D1C			AW,R5	:CLRSIZE	BUFFER ADDR + BUFFER SIZE
11599	C1	01D14	3A401D1C			LCW,R4	:CLRSIZE	-(BUFFER SIZE)
11600	C1	01D15	22A00000 A			LI,R6	0	
11601	C1	01D16	B5680005 A			STW,R6	*R5,R4	0 TO BUFFER
11602	C1	01D17	65401D16			BIR,R4	*-1	COUNT NOT 0
11603	C1	01D18	12401D1E			LD,R4	:CLRSAVE	RESTORE REGISTERS 4-6
11604	C1	01D19	32601D20			LW,R6	:CLRSAVE+2	
11605	C1	01D1A	E80000CF A			R	*R15	EXIT
11606					*			
11607	C1	01D1B	00000000 A		:CLRADDR DATA	0		BUFFER ADDRESS
11608	C1	01D1C	00000000 A		:CLRSIZE DATA	0		BUFFER SIZE
11609						BOUND	8	
11610	C1	01D1E			:CLRSAVE RES	3		REGISTERS 4-6
11611						PAGE		
11612					*			
11613					*	*** IO EXECUTE ***		
11614					*			
11615					*	THE IO EXECUTE SUBROUTINE ISSUES A TIO, SIO TO SPECIFIED DEVICE.		
11616					*	THE SUBROUTINE LOOPS UPON DETECTION OF STATUS OR CC ERROR.		
11617					*			
11618					*	INPUT PARAMETERS:		
11619					*			
11620					*	REG 0 -DA(I/OCD)		
11621					*	REG 15 -RETURN ADDRESS		
11622					*	:DEVADDR=DEVICE ADDRESS		
11623					*			
11624					*	REGISTERS DISTURBED:		
11625					*			
11626					*	(NONE)		
11627					*			
11628					*	OUTPUT PARAMETERS:		
11629					*			
11630					*	REG 12-SIO COMMAND ADDRESS		
11631					*	REG 13-SIO DEVICE STATUS, BYTE COUNT		
11632					*			
11633					*	WAIT CONDITION-PROGRAM ENTERS WAIT STATE (1) AFTER UNSUCCESSFUL		
11634					*	HIO, IO RESET, TIO SEQUENCE OR (2) IF DEVICE		
11635					*	MANUAL CONDITION IS DETECTED.		
11636					*			
11637	C1	01D21	35401D70		:IOEXEC	STW,R4	:IISAVE	SAVE REGISTERS 4,11,14,15
11638	C1	01D22	35801D71			STW,R11	:IISAVE+1	
11639	C1	01D23	15E01D72			STD,R14	:IISAVE+2	
11640	C1	01D24	6AF01AA3		:IOEXEC1	RAL,R15	:ITIO	ISSUE TIO
11641	C1	01D25	F600CC01 A			DATA	X'F600CC01'	STATUS MASK
11642	C1	01D26	10000000 A			DATA	X'10000000'	EXPECTED STATUS
11643	C1	01D27	68001D29			R	*+2	
11644	C1	01D28	680C1D3F			R	:IBERR1	TIO STATUS ERROR
11645	C1	01D29	4B001F7C			AND,R13	=X'10000000'	MASK DEV STATUS FOR AUTO TEST
11646	C1	01D2A	683C1D67			RCR,3	:IBERR2	DEVICE MANUAL ERROR
11647	C1	01D2B	6AF01A9E			RAL,R15	:SIO	ISSUE SIO
11648	C1	01D2C	F600CC01 A			DATA	X'F600CC01'	STATUS MASK
11649	C1	01D2D	10000000 A			DATA	X'10000000'	EXPECTED STATUS
11650	C1	01D2E	68001D3B			R	:IBERR6	BRANCH

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11651	01	01D2F	330010AC			MTW,0	:FUNFLAG	TESTING ZERO
11652	01	01D30	69301D35			RNEZ	*+5	BRANCH EQUAL NOT ZERO
11653	01	01D31	32FC1DDA			LW,15	:ERRR#	FETCH ERROR NO.
11654	01	01D32	35FC1D34			STW,15	*+2	STORE ERROR NO.
11655	01	01D33	6AFC110C			RAL,15	TST1ERMG	REPORT ERROR
11656	01	01D34	00000000	A		DATA	0	ERROR NO.
11657	01	01D35	351010AC			STW,1	:FUNFLAG	
11658	01	01D36	6AFC1AA1			RAL,15	:SI0+3	SI0 SUBR.
11659	01	01D37	F600CC00	A		DATA	X'F600CC00'	STATUS MASKING
11660	01	01D38	10000000	A		DATA	X'10000000'	EXPECTED STATUS
11661	01	01D39	68001D3B			R	:I0ERR6	BRANCH
11662	01	01D3A	68001D24			R	:I0EXEC1	BRANCH
11663	01	01D3B	324C1D70		:I0ERR6	LW,R4	:I0SAVE	FETCH WORD
11664	01	01D3C	32B01D71			LW,R11	:I0SAVE+1	
11665	01	01D3D	12E01D72			LD,R14	:I0SAVE+2	
11666	01	01D3E	E800CCCF	A		R	*R15	EXIT
11667					*			TI0 STATUS ERROR
11668	01	01D3F	6AFC1AA8		:I0ERR1	BAL,R15	:HI0	ISSUE HI0
11669	01	01D40	10000001	A		DATA	X'10000001'	STATUS MASK
11670	01	01D41	10000000	A		DATA	X'10000000'	EXPECTED STATUS
11671	01	01D42	68001D24			R	:I0EXEC1	HI0 STATUS ERROR-LOOP TO ISSUE TI0
11672	01	01D43	330010AC			MTW,0	:FUNFLAG	TESTING ZERO
11673	01	01D44	69301D49			RNEZ	*+5	
11674	01	01D45	32FC1DDA			LW,15	:ERRR#	FETCH ERROR NO.
11675	01	01D46	35FC1D48			STW,15	*+2	STORE WORD
11676	01	01D47	6AFC110C			RAL,15	TST1ERMG	REPORT ERROR
11677	01	01D48	00000000	A		DATA	0	ERROR NO.
11678	01	01D49	351010AC			STW,1	:FUNFLAG	STORE 1 INTO FUNFLAG
11679	01	01D4A	6AFC1AAB			RAL,15	:HI0+3	HI0
11680	01	01D4B	1000CC00	A		DATA	X'1000CC00'	MASKING STATUS
11681	01	01D4C	10000000	A		DATA	X'10000000'	EXP. STATUS
11682	01	01D4D	68001D24			R	:I0EXEC1	BRANCH TO SURR.
11683	01	01D4E	6D000042	A		WD,0	X'42'	I0 RESET
11684	01	01D4F	22401388	A		LI,4	5000	FETCH NO.
11685	01	01D50	64401D50			RDR,4	\$	BRANCH DEC. REG
11686	01	01D51	6D000042	A		WD,0	X'42'	
11687	01	01D52	22401388	A		LI,4	5000	FETCH NO.
11688	01	01D53	64401D53			RDR,4	\$	BRANCH DEC. REG.
11689	01	01D54	6AFC1AA3			RAL,R15	:TI0	ISSUE TI0
11690	01	01D55	F600CC01	A		DATA	X'F600CC01'	STATUS MASK
11691	01	01D56	10000000	A		DATA	X'10000000'	EXPECTED STATUS
11692	01	01D57	68001D24			R	:I0EXEC1	LOOP TO ISSUE TI0
11693	01	01D58	330010AC			MTW,0	:FUNFLAG	TESTING ZERO
11694	01	01D59	69301D5E			RNEZ	*+5	BRANCH
11695	01	01D5A	32FC1DDA			LW,15	:ERRR#	FETCH WORD
11696	01	01D5B	35FC1D5D			STW,15	*+2	STORE ERROR NO.
11697	01	01D5C	6AFC110C			RAL,15	TST1ERMG	REPORT ERROR
11698	01	01D5D	00000000	A		DATA	0	ERROR NO.
11699	01	01D5E	351010AC			STW,1	:FUNFLAG	STORE 1 INTO FUNFLAG
11700	01	01D5F	6AFC1AA6			RAL,15	:TI0+3	TI0 SUBR.
11701	01	01D60	F600CC00	A		DATA	X'F600CC00'	STATUS MASKING
11702	01	01D61	10000000	A		DATA	X'10000000'	EXPECTED STATUS
11703	01	01D62	68001D24			R	:I0EXEC1	BRANCH
11704					*			ENTER WAIT STATE
11705	01	01D63	EAF0021C	A	:I0ERR1A	BAL,R15	*:PRINT	ICLEAR WAIT TO CONTINUE'
11706	01	01D64	C0001D74			DATA	:I0ERM1	
11707	01	01D65	F600CC00	A		WAIT		
11708	01	01D66	68001D24			R	:I0EXEC1	LOOP TO ISSUE TI0
11709					*			DEVICE MANUAL ERROR
11710	01	01D67	32CC18D0		:I0ERR2	LW,R12	:DEVADDR	DEVICE ADDRESS
11711	01	01D68	EAF00218	A		RAL,R15	*:HEXC	CONVERT TO HEXADECIMAL IN EBCDIC
11712	01	01D69	35FC1D7B			STW,R15	:I0ERM2+1	DEV ADDR TO MSG
11713	01	01D6A	22C00C40	A		LI,R12	X'40'	SUPPRESS LEADING 0 OF DEV ADDR
11714	01	01D6B	75C01D7B			STW,R12	:I0ERM2+1	
11715	01	01D6C	EAF0021C	A		RAL,R15	*:PRINT	PRINT ERROR MSG
11716	01	01D6D	C0001D7A			DATA	:I0ERM2	
11717	01	01D6E	68001D63			R	:I0ERR1A	GO TO WAIT
11718					*			
11719						RBOUND	8	
11720	01	01D70			:I0SAVE	RES	4	REGISTERS 4,11,14,15
11721	01	01D74	14C3D3C5	A	:I0ERM1	TEXTC	'CLEAR WAIT TO CONTINUE'	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
		01 01D75	C1D940E6	A				
		01 01D76	C1C9E340	A				
		01 01D77	E3D640C3	A				
		01 01D78	D6DBE3C9	A				
		01 01D79	D5E4C540	A				
11722		01 01D7A	0EC4C5E5	A	11BERM2	TEXTC	'DEV XXX MANUAL'	
		C1 01D7B	40E7E7E7	A				
		C1 01D7C	40D4C1D5	A				
		C1 01D7D	E4C1D340	A				
11723						PAGE		
11724					*			
11725					*	*** ERROR ROUTINE ***		
11726					*	THIS SUBROUTINE ACCEPTS A STRING OF BYTES, EACH OF WHICH IDENTIFIES		
11727					*	THE STATUS TYPE (BITS 0 - 3), THE BIT TEST (BIT 4) AND THE STATUS		
11728					*	MASK (BITS 5 - 7). THE TESTS WILL BE PERFORMED IN THE SEQUENCE OF THE		
11729					*	BYTE STRING, WITH EACH TEST CHECKING A SPECIFIC STATUS BIT FOR THE		
11730					*	TRUE OR FALSE CONDITION. A ZERO BYTE WILL INDICATE THE END OF THE		
11731					*	BYTE STRING. AFTER THE BIT TESTS, THE REMAINING BITS OF THE STATUS		
11732					*	PREVIOUSLY SELECTED WILL BE TESTED.		
11733					*			
11734					*	THE BYTE HAS THE FOLLOWING FORMAT:		
11735					*			
11736					*	BITS 0 - 3	BIT 4	BITS 5 - 7
11737					*	-----	-----	-----
11738					*	0 NOT ALLOWED	0 FALSE	0 MASK X'80', BYT =, COM2<COM1
11739					*	1 I/O STATUS	1 TRUE	1 MASK X'40', BYT = 0, COM2=COM1
11740					*	2 OPERATIONAL STATUS (I/O) TEST	2 MASK X'20', BYT +1,	COM2=COM1+1
11741					*	3 I/O STATUS	3 MASK X'10', BYT +2,	COM2=COM1+2
11742					*	4 TDV STATUS	4 MASK X'08', BYT +3,	COM2=COM1+3
11743					*	5 SIO STATUS	5 MASK X'04', BYT +4,	COM2=COM1+4
11744					*	6 AIO STATUS	6 MASK X'02', BYT +5,	COM2=COM1+5
11745					*	7 INTERRUPT STATUS (AIO)	7 MASK X'01', BYT +6,	COM2=COM1+6
11746					*	8 BYTE # OF SENSE DATA		
11747					*	9 NOT ASSIGNED		
11748					*	A NOT ASSIGNED		
11749					*	B NOT ASSIGNED		
11750					*	C NOT ASSIGNED		
11751					*	D NOT ASSIGNED		
11752					*	E BYTE COUNT TEST (I/O)		
11753					*	F COMMAND ADDR TEST (I/O)		
11754					*			
11755					*			
11756					*	SUBROUTINES ARE PROVIDED TO STORE STATUS INFORMATION INTO A TABLE.		
11757					*	IF THE I/O, I/O, TDV, SSB, BYTE CNT, OR COMMAND ADR HAS NOT BEEN		
11758					*	STORED IN THE TABLE, THE ERROR ROUTINE SR WILL ISSUE THE APPROPRIATE		
11759					*	I/O INSTRUCTION AND STORE THE STATUS BEFORE TESTING COMMENCES.		
11760					*			
11761					*	CALLING SEQUENCE: BAL,15 IERRPT		
11762					*	DATA BA(TSEGNM)		
11763					*	NORMAL EXIT: P (CONTINUE TEST)		
11764					*	ERROR EXIT: (IDENTIFY SUBTEST)		
11765					*			
11766					*	REGISTERS DISTURBED: NONE (R1 = 1, R2 = 2, R3 = 3)		
11767					*			
11768					*	VARIABLES REQUIRED: STATUS IN SAVE TABLE		
11769					*	STARTING COMMAND ADR		
11770					*			
11771					*	OTHER SUBROUTINES: CLEAR STATUS SAVE TABLE (:SAVECLR)		
11772					*	STORE STATUS IN SAVE TABLE (:SAVETIO,:SAVEI/O,		
11773					*	:SAVETDV,:SAVESIO,:SAVEAIO,:SAVESSA,SAVESSB,:TIO,		
11774					*	:TDV,:HIO)		
11775					*			
11776					*			
11777					*	THE FOLLOWING EQUATE STATEMENTS ASSIGN LABELS TO BYTE VALUES		
11778					*			
11779					*	TIOF0,TIOF1,TIOF2,TIOF3,TIOF4,TIOF5,TIOF6,TIOF7	ITSECEQU	X'10'
11780					*	TIOF0,TIOF1,TIOF2,TIOF3,TIOF4,TIOF5,TIOF6,TIOF7	ITSECEQU	X'18'
11781					*	OSBF0,OSBF1,OSBF2,OSBF3,OSBF4,OSBF5,OSBF6,OSBF7	ITSECEQU	X'20'
11782					*	OSBT0,OSBT1,OSBT2,OSBT3,OSBT4,OSBT5,OSBT6,OSBT7	ITSECEQU	X'28'
11783					*	HIOF0,HIOF1,HIOF2,HIOF3,HIOF4,HIOF5,HIOF6,HIOF7	ITSECEQU	X'30'
11784					*	HIOF0,HIOF1,HIOF2,HIOF3,HIOF4,HIOF5,HIOF6,HIOF7	ITSECEQU	X'38'

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11785						TDVFO,TDVF1,TDVF2,TDVF3,TDVF4,TDVF5,TDVF6,TDVF7		:TSEFEQU X140'
11786						TDVTO,TDVT1,TDVT2,TDVT3,TDVT4,TDVT5,TDVT6,TDVT7		:TSEFEQU X148'
11787						SI0FO,SI0F1,SI0F2,SI0F3,SI0F4,SI0F5,SI0F6,SI0F7		:TSEFEQU X150'
11788						SI0TO,SI0T1,SI0T2,SI0T3,SI0T4,SI0T5,SI0T6,SI0T7		:TSEFEQU X158'
11789						AI0FO,AI0F1,AI0F2,AI0F3,AI0F4,AI0F5,AI0F6,AI0F7		:TSEFEQU X160'
11790						AI0TO,AI0T1,AI0T2,AI0T3,AI0T4,AI0T5,AI0T6,AI0T7		:TSEFEQU X168'
11791						ISBFO,ISBF1,ISBF2,ISBF3,ISBF4,ISBF5,ISBF6,ISBF7		:TSEFEQU X170'
11792						ISBTO,ISBT1,ISBT2,ISBT3,ISBT4,ISBT5,ISBT6,ISBT7		:TSEFEQU X178'
11793						SBAFO,SBAF1,SBAF2,SBAF3,SBAF4,SBAF5,SBAF6,SBAF7		:TSEFEQU X180'
11794						SBATO,SBAT1,SBAT2,SBAT3,SBAT4,SBAT5,SBAT6,SBAT7		:TSEFEQU X188'
11795						BYTNO,BYTO0,BYTO1,BYTO2,BYTO3,BYTO4,BYTO5,BYTO6		:TSEFEQU X1E0'
11796						CBMNG,CBM00,CBM01,CBM02,CBM03,CBM04,CBM05,CBM06		:TSEFEQU X1F0'
11797						*		
11798	01	0107E	C2200000	A	:ERRRT	LCI	C	
11799	01	0107F	240C1E4B			STM,C	:ERTMP1	SAVE ALL REGISTERS
11800	01	01080	B250000F	A		LW,5	*15	FETCH BYTE ADDR
11801	01	01081	22000000	A		LI,0	0	
11802	01	01082	35001E5F			STW,0	:ERTFLG	STORF WORD
11803	01	01083	726A0000	A	:ERRTO	LB,6	0,5	FETCH BYTE
11804	01	01084	683C1E19			BCR,3	:ERT13	BRANCH: BYTE = 0
11805	01	01085	22700000	A		LI,7	0	
11806	01	01086	256C037C	A		SCD,6	=4	BITS 0 - 3 RIGHT JUSTIFIED
11807	01	01087	3FA01E5C			STW,6	:ERTMP3	SAVE INDEX
11808	01	01088	216C0009	A		CI,6	0	
11809	01	01089	69101D8E			RCS,1	:ERT1	R: RANGE OF INDEX 1 - 8
11810	01	0108A	216C000D	A		CI,6	13	
11811	01	0108B	692C1DE0			RCS,2	:ERT11	BRANCH: RANGE OF INDEX 14 - 15
11812	01	0108C	2E0C0000	A		WAIT		/// HALT ///
11813	01	0108D	680C1D8C			R	*-1	PROGRAM ERRORS
11814						*		
11815	01	0108E	328C1F38		:ERRT1	LW,8	:SAVEIAR,6	FETCH STATUS
11816	01	0108F	69101DB1			RCS,1	:ERT6	BRANCH: STATUS IN TABLE
11817	01	01090	216C0005	A		CI,6	5	
11818	01	01091	69101D94			RCS,1	:ERT2	BRANCH: RANGE OF INDEX 1 - 4
11819	01	01092	2E0C0000	A		WAIT		/// HALT ///
11820	01	01093	680C1D92			R	*-1	PROGRAM ERROR
11821	01	01094	216C0003	A	:ERRT2	CI,6	3	
11822	01	01095	693C1D9D			RCS,3	:ERT3	BRANCH: NOT HI0 TEST
11823	01	01096	6AFC1A48			HAL,15	:HI0	ISSUE HI0 AND TEST CC1
11824	01	01097	0C008C00	A		DATA	X'00008000',0	
11825	01	01098	680C1D98	A		R	*+2	
11826	01	0109A	680C1DD0			R	:ERT10	BRANCH: NO ADDR RECBG OR BUSY SI0P
11827	01	0109B	6AFC1F0E			PAL,15	:SAVEHI0	STORE HI0 STATUS IN TABLE
11828	01	0109C	680C1D8E			R	:ERT1	FETCH STATUS
11829						*		
11830	01	0109D	216C0004	A	:ERRT3	CI,6	4	
11831	01	0109E	693C1DA6			RCS,3	:ERT4	BRANCH: NOT TDV TEST
11832	01	0109F	6AFC1AAD			PAL,15	:TDV	ISSUE TDV AND TEST CC1
11833	01	010A0	0C008C00	A		DATA	X'00008000',0	
11834	01	010A1	680C1DA1	A		R	*+2	
11835	01	010A2	680C1DA4			R	:ERT10	BRANCH: NO ADDR RECBG OR BUSY SI0P
11836	01	010A3	680C1DD0			PAL,15	:SAVETDV	STORE TDV STATUS
11837	01	010A4	6AFC1F13			R	:ERT1	FETCH STATUS
11838						*		
11839	01	010A5	680C1D9E	A	:ERRT4	PAL,15	:ERT5	ISSUE T10 AND STORE STATUS
11840	01	010A6	680C1D9E			R	:ERT1	
11841						*		
11842	01	010A7	35FC1DB0		:ERRT5	STW,15	:ERT5X	SAVE EXIT ADDR
11843	01	010A8	6AFC1AA3			PAL,15	:T10	ISSUE T10 AND TEST CC1
11844	01	010A9	0C008C00	A		DATA	X'00008000',0	
11845	01	010AA	0C008C00	A		R	*+2	
11846	01	010AB	680C1DAE			R	:ERT10	BRANCH: NO ADDR RECBG OR BUSY SI0P
11847	01	010AC	680C1DD0			PAL,15	:SAVET10	STORE T10 STATUS, ASB, BYT, CBM
11848	01	010AD	6AFC1F00			R	*ERT5X	EXIT IN TABLE
11849	01	010AE	680C1D90	A	:ERRT5X	DATA	0	EXIT ADDR
11850						*		
11851	01	010B0	0C008C00	A	:ERRT6	LI,6	0	
11852	01	010B1	226C0000	A		SCD,6	1	FETCH BIT 4

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11853	C1	01DR3	35601E5B			STW,6	IERRTMP2	SAVE TRUE/FALSE TEST FLAG
11854	C1	01DB4	22600000	A		LI,6	0	
11855	C1	01DB5	25600303	A		SCD,6	3	FETCH BITS 5 - 7
11856	C1	01DB6	35601EE9			STW,6	IERRBITS	
11857	C1	01DR7	729C1E5D			LB,9	IERRMSK,6	FETCH MASK
11858	C1	01DR8	49800009	A		BR,8	9	UPDATE CURRENT MASK
11859	C1	01DB9	71920008	A		CB,9	8,1	COMPARE MASK TO STATUS
11860	C1	01DRA	69401DBE			RCS,4	IERRT7	BRANCH: MATCH BETWEEN STATUS & MASK
11861	C1	01DRB	33001E5B			MTW,0	IERRTMP2	TEST TRUE/FALSE FLAG
11862	C1	01DRC	68301DC1			RCR,3	IERRT8	BRANCH: FALSE TEST SUCCESSFUL
11863	C1	01DRD	68001DC5			R	IERRT9	BRANCH: TRUE TEST UNSUCCESSFUL
11864					*			
11865	C1	01DRF	33001E5B		IERRT7	MTW,0	IERRTMP2	TEST TRUE/FALSE FLAG
11866	C1	01DRF	68301DC5			RCR,3	IERRT9	BRANCH: FALSE TEST UNSUCCESSFUL
11867	C1	01DC0	68001DC1			R	IERRT8	BRANCH: TRUE TEST SUCCESSFUL
11868					*			
11869	C1	01DC1	32601E5C		IERRT8	LW,6	IERRTMP3	FETCH INDEX
11870	C1	01DC2	358C1F38			STW,8	ISAVETAB,6	SAVE STATUS IN TABLE
11871	C1	01DC3	33100005	A	IERRT8A	MTW,1	5	INCREMENT BYTE ADDR
11872	C1	01DC4	68001D83			B	IERRT0	TEST NEXT BYTE
11873					*			
11874	C1	01DC5	32601E5C		IERRT9	LW,6	IERRTMP3	FETCH INDEX
11875	C1	01DC6	358C1F38			STW,8	ISAVETAB,6	SAVE STATUS IN TABLE
11876	C1	01DC7	32601E5C		IERRT9A	LW,6	IERRTMP3	FETCH INDEX
11877	C1	01DC8	327C1E60			LW,7	IERRTYPE,6	FETCH WORD CORRESP. TO INDEX
11878	C1	01DC9	357C1ED7			STW,7	IERRTMG1+1	STORE IN OUTPUT FORMAT
11879	C1	01DCA	327C1EE0			LW,7	IERRTB,6	FETCH INDEX FROM INDEX TABLE
11880	C1	01DCP	32601EE9			LW,6	IERRBITS	FETCH BIT SELECTED
11881	C1	01DCC	928C0007	A		LD,8	*7,6	FETCH DOUBLEWORD ERROR MESSAGE
11882	C1	01DCD	15801EDA			STD,8	IERRTMG1+4	STORE DOUBLEWORD TO OUTPUT FORMAT
11883	C1	01DCE	206000F0	A		AI,6	X'FO'	CHANGE HEX TO EBCDIC
11884	C1	01DCF	75621ED9			STB,6	IERRTMG1+3,1	STORE BIT NUMBER IN OUTPUT FORMAT
11885	C1	01DD0	32601E5B			LW,6	IERRTMP2	FETCH TRUE OR FALSE BIT
11886	C1	01DD1	206000F0	A		AI,6	X'FO'	CHANGE TO EBCDIC
11887	C1	01DD2	75641EDD			STB,6	IERRTMG1+7,2	STORE T/F BIT IN OUTPUT FORMAT
11888	C1	01DD3	32601E5B			LW,6	IERRTMP2	
11889	C1	01DD4	48600001	A		FOR,6	1	COMPLEMENT T/F BIT
11890	C1	01DD5	206000F0	A		AI,6	X'FO'	CHANGE TO EBCDIC
11891	C1	01DD6	756C1EDF			STB,6	IERRTMG1+9,0	STORE COMPLEMENTED T/F BIT
11892	C1	01DD7	33001CAC			MTW,0	IFUNFLAG	
11893	C1	01DDR	69301DDB			RNEZ	*+3	
11894	C1	01DD9	6AF0110C			RAL,15	TST1ERMG	
11895	C1	01DDA	000C0000	A	:ERRORT#	DATA	0	
11896	C1	01DDB	EAF0021C	A		BAL,15	*:PRINT	
11897	C1	01DDC	00001ED6			DATA	IERRTMG1	
11898					*			
11899	C1	01DDD	33101E5F		IERRT10	MTW,1	IERRFLG	INCR. ERROR TALLY
11900	C1	01DDE	351010AC			STW,1	IFUNFLAG	STORE WORD
11901	C1	01DDF	68001DC3			B	IERRT8A	
11902					*			
11903	C1	01DE0	328C1F38		IERRT11	LW,8	ISAVETAB,6	FETCH STATUS
11904	C1	01DE1	69101DE3			RCS,1	*+2	BRANCH: STATUS IN TABLE
11905	C1	01DE2	6AF01DAB			RAL,15	IERRT5	ISSUE T10 AND STORE STATUS
11906	C1	01DE3	48801F74			AND,8	*X'FFFF'	BITS 16 - 31
11907	C1	01DE4	52820008	A		LH,8	8,1	
11908	C1	01DE5	2160000E	A		CI,6	14	
11909	C1	01DE6	69301E16			RCS,3	IERRT12	BRANCH: COMMAND ADDR TEST
11910	C1	01DE7	25600304	A	IERRT11A	SCD,6	4	FETCH BITS 4 - 7
11911	C1	01DE8	48601F66			AND,6	*X'7'	
11912	C1	01DE9	69301DED			RCS,3	IERRT11B	BRANCH: NOT EQUAL TO ZERO
11913	C1	01DEA	33000008	A		MTW,0	8	TEST BYTE COUNT OR COMMAND DIFF
11914	C1	01DEB	69101DC3			RCS,1	IERRT8A	BRANCH: NEGATIVE TEST SUCCESSFUL
11915	C1	01DEC	68001DFA			R	IERRT91A	R: NEGATIVE TEST NOT SUCCESSFUL
11916	C1	01DED	33F00006	A	IERRT11B	MTW,-1	6	SUBTRACT 1 FROM BITS 5 - 7
11917	C1	01DEE	31600008	A		CW,6	8	COMPARE R8 TO TEST VALUE
11918	C1	01DEF	68301DC3			RCR,3	IERRTRA	BRANCH: TEST SUCCESSFUL
11919					*			TEST NOT SUCCESSFUL
11920	C1	01DF0	327C1E5C		IERRT92A	LW,7	IERRTMP3	FETCH INDEX
11921	C1	01DF1	217C000E	A		CI,7	14	BYTE COUNT OR COMMAND ADDRESS
11922	C1	01DF2	68301DF7			RCR,3	IERRT92C	BRANCH IF EQUAL TO
11923	C1	01DF3	32901F4C			LW,9	ISAVCOM1	FETCH ORIG COMMAND ADDRESS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11924	C1	01DF4	30900006	A		AW,9	6	SAVCOM1 + 1
11925	C1	01DF5	3590000C	A		STW,9	12	STORE IN R12
11926	C1	01DF6	68001E00			R	:ERRT92B	BRANCH
11927	C1	01DF7	30601F7D		:ERRT92C	AW,6	*XIFOF0F0F0	CONVERT INDEX TO EBCDIC
11928	C1	01DF8	3560000F	A		STW,6	15	STORE IN R15
11929	C1	01DF9	68001E04			R	:ERRT91C	BRANCH
11930	C1	01DFA	32701E5C		:ERRT91A	LW,7	:ERRTMP3	FETCH INDEX
11931	C1	01DFB	2170000E	A		CI,7	14	BYTE COUNT OR COMMAND ADDRESS
11932	C1	01DFC	68301E03			RCR,3	:ERRT91B	BRANCH IF EQUAL TO
11933	C1	01DFD	32901F4C			LW,9	:SAVCOM1	FETCH ORIG COMMAND ADDR.
11934	C1	01DFE	38900001	A		SW,9	1	SUBTRACT 1 FROM SAVCOM1
11935	C1	01DFE	3590000C	A		STW,9	12	STORE IN R12
11936	C1	01E00	EAFC0218	A	:ERRT92B	RAL,15	*:HEXC	CONVERT TO EBCDIC
11937	C1	01E01	12AC1EF6			LD,10	:ERRTCAM	FETCH COMMAND ADDRESS ID
11938	C1	01E02	68001E05			R	*+3	BRANCH
11939	C1	01E03	32FC1EF3		:ERRT91B	LW,15	:ERRTNEG	FETCH EXPECTED NEGATIVE WORD
11940	C1	01E04	12A01EF4		:ERRT91C	LD,10	:ERRTBCM	FETCH BYTE COUNT ID
11941	C1	01E05	35A01EFB			STW,10	:ERRTMG2+1	STORE ID
11942	C1	01E06	35BC1EEC			STW,11	:ERRTMG2+2	IN MESSAGE
11943	C1	01E07	35F01EFF			STW,15	:ERRTMG2+5	STORE R15 IN MESSAGE
11944	C1	01E08	32601E5C			LW,6	:ERRTMP3	FETCH INDEX
11945	C1	01E09	32CC1F38			LW,12	:SAVETAB,6	LOAD BYTE COUNT OR COMMAND ADR
11946	C1	01E0A	EAFC0218	A		RAL,15	*:HEXC	CONVERT INTO EBCDIC
11947	C1	01E0B	35FC1FF2			STW,15	:ERRTMG2+8	STORE R15 IN MESSAGE
11948	C1	01E0C	330C1CAC			MTW,0	:FUNFLAG	
11949	C1	01E0D	693C1F12			RNEZ	*+5	
11950	C1	01E0E	32FC1DDA			LW,15	:ERRPT#	
11951	C1	01E0F	35FC1F11			STW,15	*+2	
11952	C1	01E10	6AFC110C			RAL,15	TST1ERMG	
11953	C1	01E11	00000C00	A		DATA	0	
11954	C1	01E12	EAFC021C	A		RAL,15	*:PRINT	BRANCH TO PRINT ROUTINE
11955	C1	01E13	000C1EFA			DATA	:ERRTMG2	
11956	C1	01E14	35101CAC			STW,1	:FUNFLAG	STORE WORD
11957	C1	01E15	680C1DDD			R	:ERRT10	B: TEST NEXT BIT
11958					*			
11959	C1	01E16	329C1F4C		:ERRT12	LW,9	:SAVCOM1	FETCH ORIGINAL COMMAND ADDR
11960	C1	01E17	38800C09	A		SW,8	9	FIND DIFFERENCE OF COMMAND ADDRESSES
11961	C1	01E18	680C1DF7			R	:ERRT11A	
11962					*			
11963	C1	01E19	224FFFF7	A	:ERRT13	LI,4	-9	SET INDEX
11964	C1	01E1A	32881F42			LW,8	:SAVETAB+10,4	FETCH STATUS
11965	C1	01E1B	68101E2A			RCR,1	:ERRT14	BRANCH: NO STATUS
11966	C1	01E1C	7296C008	A		LB,9	8,3	FETCH CURRENT MASK
11967	C1	01E1D	683C1E2A			RCR,3	:ERRT14	BRANCH: STATUS NOT PREVIOUSLY TESTED
11968	C1	01E1E	22AC0000	A		LI,10	0	
11969	C1	01E1F	75AC0008	A		STB,10	8	RESET STATUS FLAG
11970	C1	01E20	35881F42			STW,8	:SAVETAB+10,4	RESTORE WORD IN TABLE
11971	C1	01E21	22AC00FF	A		LI,10	X'FFF'	
11972	C1	01E22	48900C0A	A		RCR,9	10	COMPLEMENT CURRENT MASK
11973	C1	01E23	72A4C008	A		LB,10	8,2	FETCH STANDARD MASK
11974	C1	01E24	48900C0A	A		AND,9	10	STATUS COMPARE MASK FOR REMAINING
11975	C1	01E25	72A20C08	A		LB,10	8,1	FETCH STATUS BYTE
11976	C1	01E26	48AC0009	A		AND,10	9	TEST STATUS
11977	C1	01E27	693C1E30			RCS,3	:ERRT15	BRANCH: STATUS IN ERROR
11978	C1	01E28	330C1F5F			MTW,0	:ERRTFLG	TEST ERROR FLAG
11979	C1	01E29	69301E30			RNEZ	:ERRT15	BRANCH: PRINT STATUS
11980	C1	01E2A	65401E1A		:ERRT14	RIR,4	:ERRT13+1	BRANCH: TEST NEXT STATUS
11981	C1	01E2B	02200C00	A		LCI	0	
11982	C1	01E2C	2A0C1F4B			LM,0	:ERRTMP1	RESTORE REGISTERS
11983	C1	01E2D	330C1F5F			MTW,0	:ERRTFLG	TEST ERROR FLAG
11984	C1	01E2E	E832C00F	A		RCR,3	*15,1	NORMAL EXIT
11985	C1	01E2F	ER04000F	A		R	*15,2	ERROR EXIT
11986					*			
11987	C1	01E30	32C81E6A		:ERRT15	LW,12	:ERRTYPF+10,4	FETCH STATUS TYPE
11988	C1	01E31	35CC1F6A			STW,12	:ERRTM1+1	STORE STATUS ID
11989	C1	01E32	330C1CAC			MTW,0	:FUNFLAG	
11990	C1	01E33	693C1F38			RNEZ	*+5	
11991	C1	01E34	32FC1DDA			LW,15	:ERRPT#	
11992	C1	01E35	35F01E37			STW,15	*+2	
11993	C1	01E36	6AFC110C			RAL,15	TST1ERMG	
11994	C1	01E37	00000C00	A		DATA	0	

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
11995	01	01E38	EAF0021C	A		BAL,15	*IPRINT	PRINT LINE 1
11996	01	01E39	00001E69			DATA	IERRTM1	MSG = ' TIO 01234567'
11997	01	01F3A	351010AC			STW,1	IFUNFLAG	STORE WORD
11998	01	01E3B	72C20008	A		LB,12	8,1	FETCH STATUS BYTE
11999	01	01E3C	EAF00216	A		BAL,15	*IBINC	CONVERT FOUR BYTES
12000	01	01F3D	35F01E70			STW,15	IERRTM2+3	STORE IN MSG AREA
12001	01	01F3E	EAF00216	A		BAL,15	*IBINC	CONVERT FOUR BYTES
12002	01	01E3F	35F01F6F			STW,15	IERRTM2+2	STORE IN MSG AREA
12003	01	01E40	EAF0021C	A		BAL,15	*IPRINT	PRINT LINE 2
12004	01	01E41	00001E6D			DATA	IERRTM2	MSG = 'STATUS BBBB BBBB'
12005	01	01E42	72C60009	A		LB,12	9,3	FETCH MASK
12006	01	01E43	EAF00216	A		BAL,15	*IBINC	CONVERT FOUR BYTES
12007	01	01E44	35F01E74			STW,15	IERRTM3+3	STORE IN MSG AREA
12008	01	01E45	EAF00216	A		BAL,15	*IBINC	CONVERT FOUR BYTES
12009	01	01E46	35F01E73			STW,15	IERRTM3+2	STORE IN MSG AREA
12010	01	01E47	EAF0021C	A		BAL,15	*IPRINT	PRINT LINE 3
12011	01	01E48	00001E71			DATA	IERRTM3	MSG = ' MASK MMMMMMMM'
12012	01	01E49	33101E5F			MTW,1	IERRTFLG	INCR ERROR TALLY
12013	01	01E4A	68001E2A			R	IERRT14	
12014								*
12015	01	01E4B			IERRTMP1	RES	16	REGISTER SAVE AREA
12016	01	01E5B	00000000	A	IERRTMP2	DATA	0	TRUE/FALSE TEST FLAG
12017	01	01E5C	00000000	A	IERRTMP3	DATA	0	INDEX
12018	01	01E5D	80402010	A	IERRTMSK	GEN,8,8,8,8	X'80',X'40',X'20',X'10'	TEST
12019	01	01E5E	08040201	A		GEN,8,8,8,8	X'08',X'04',X'02',X'01'	MASKS
12020	01	01E5F	00000000	A	IERRTFLG	DATA	0	
12021	01	01F60	00000000	A	IERRTYPE	DATA	0,'TIO ','08B ','HIO ','TDV ','SIO ','AIO ','ISB ','SBB'	
		01	01E61	A				E3C9D640
		01	01E62	A				D6E2C240
		01	01E63	A				C8C9D640
		01	01E64	A				E3C4F540
		01	01E65	A				E2C9D640
		01	01E66	A				C1C9D640
		01	01E67	A				C9E2C240
		01	01E68	A				E2C2F840
12022	01	01E69	0F404040	A	IERRTM1	TEXTC	' XXX 01234567'	STATUS
		01	01E6A	A				E7E7E740
		01	01E6B	A				F0F1F2F3
		01	01E6C	A				F4F5F6F7
12023	01	01F6D	0FE2E3C1	A	IERRTM2	TEXTC	'STATUS BBBB BBBB'	
		01	01E6E	A				E3E4E240
		01	01E6F	A				C2C2C2C2
		01	01E70	A				C2C2C2C2
12024	01	01F71	0F4040D4	A	IERRTM3	TEXTC	' MASK MMMMMMMM'	MSGS
		01	01F72	A				C1E2D240
		01	01E73	A				D4D4D4D4
		01	01E74	A				D4D4D4D4
12025						BOUND	8	
12026	01	01E76	C9D5E340	A	IERRTBA	TEXT	'INT PEND'	BIT 0
		01	01E77	A				D7C5D5C4
12027	01	01E78	D5D6E340	A		TEXT	'NOT SP '	BIT 1 TIO
		01	01E79	A				D6D7406F
12028	01	01E7A	E4D5C1E5	A		TEXT	'UNAVAIL '	BIT 2
		01	01E7B	A				C1C9D36F
12029	01	01F7C	4040C1E4	A		TEXT	' AUTO '	BIT 3 SIA (1)
		01	01E7D	A				E3D640C4
12030	01	01F7E	404040E4	A		TEXT	' UE '	BIT 4 (3)
		01	01E7F	A				C5404040
12031	01	01E80	D5D6E340	A		TEXT	'NOT SP '	BIT 5 HIO (5)
		01	01E81	A				D6D7406F
12032	01	01F82	E4D5C1E5	A		TEXT	'UNAVAIL '	BIT 6
		01	01E83	A				C1C9D36F
12033	01	01E84	D5D6E340	A		TEXT	'NOT USFD'	BIT 7 STATUS
		01	01E85	A				E4E2C5C4
12034	01	01F86	C9D5C340	A	IERRTRB	TEXT	'INC LEN '	BIT 0
		01	01F87	A				D3C5D540
12035	01	01E88	E3D9C1D5	A		TEXT	'TRANSM '	BIT 1
		01	01F89	A				E2D44040
12036	01	01F8A	E3D9C1D5	A		TEXT	'TRANSMEM'	BIT 2 OPERATIONAL
		01	01E8B	A				E2D4C5D4
12037	01	01F8C	D4C5D440	A		TEXT	'MEM ADR '	BIT 3

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
12038	01	01F8D	C1C4D940 A					
	01	01F8E	C9D6D740 A			TEXT	'IAP MEM '	BIT 4 STATUS BYTE (MSB)
	01	01F8F	D4C5D440 A					
12039	01	01F90	C9D6D740 A			TEXT	'IAP CONT'	BIT 5 (2)
	01	01E91	C3D6D5F3 A					
12040	01	01E92	C9D6D740 A			TEXT	'IAP HALT'	BIT 6
	01	01E93	C8C1D3F3 A					
12041	01	01E94	E2C9D6D7 A			TEXT	'STOPBUSY'	BIT 7
	01	01E95	C2F4E2F8 A					
12042	01	01E96	D6E5C5D9 A		:FRRTTBC	TEXT	'OVERRUN '	BIT 0
	01	01E97	D9E4D540 A					
12043	01	01E98	D5D6E340 A			TEXT	'NOT USED'	BIT 1
	01	01E99	E4E2C5C4 A					
12044	01	01E9A	E2C5C340 A			TEXT	'SEC UNVL'	BIT 2 TDV
	01	01E9B	E4D5E5D3 A					
12045	01	01E9C	E6D9E340 A			TEXT	'WRT PV'	BIT 3
	01	01E9D	D7E54C40 A					
12046	01	01E9E	E2E8D5C3 A			TEXT	'SYNC MSD'	BIT 4
	01	01E9F	4D4E2C4 A					
12047	01	01EA0	D5D6E340 A			TEXT	'NOT USED'	BIT 5
	01	01EA1	E4E2C5C4 A					
12048	01	01EA2	D5D6E340 A			TEXT	'NOT USED'	BIT 6
	01	01EA3	E4E2C5C4 A					
12049	01	01EA4	D5D6E340 A			TEXT	'NOT USED'	BIT 7
	01	01EA5	E4E2C5C4 A					
12050	01	01EA6	D6E5C5D9 A		:FRRTTBC	TEXT	'OVERRUN '	BIT 0
	01	01EA7	D9E4D540 A					
12051	01	01EA8	D5D6E340 A			TEXT	'NOT USED'	BIT 1
	01	01EA9	E4E2C5C4 A					
12052	01	01EAA	E2C5C340 A			TEXT	'SEC UNVL'	BIT 2 AIS
	01	01EAB	E4D5E5D3 A					
12053	01	01EAC	E6D9E340 A			TEXT	'WRT PV'	BIT 3
	01	01EAD	D7E54C40 A					
12054	01	01EAE	D5D6E340 A			TEXT	'NOT USED'	BIT 4 STATUS (6)
	01	01EAF	E4E2C5C4 A					
12055	01	01EB0	D5D6E340 A			TEXT	'NOT USED'	BIT 5
	01	01EB1	E4E2C5C4 A					
12056	01	01EB2	D5D6E340 A			TEXT	'NOT USED'	BIT 6
	01	01EB3	E4E2C5C4 A					
12057	01	01EB4	D5D6E340 A			TEXT	'NOT USED'	BIT 7
	01	01EB5	E4E2C5C4 A					
12058	01	01EB6	C9D5C340 A		:FRRTTBC	TEXT	'INC LEN '	BIT 0
	01	01EB7	D3C5D540 A					
12059	01	01EB8	E3D9C1D5 A			TEXT	'TRANSM '	BIT 1
	01	01EB9	E2D44C40 A					
12060	01	01EBA	E9C2C340 A			TEXT	'ZBC INT '	BIT 2 INTERRUPT
	01	01EBB	C9D5E340 A					
12061	01	01EBC	4C03C540 A			TEXT	'CE INT '	BIT 3
	01	01EBD	C9D5E340 A					
12062	01	01EBE	4CE4C540 A			TEXT	'UE INT '	BIT 4 STATUS BYTE (ISR) (7)
	01	01EBF	C9D5E340 A					
12063	01	01EC0	D5D6E340 A			TEXT	'NOT USED'	BIT 5
	01	01FC1	E4E2C5C4 A					
12064	01	01EC2	D5D6E340 A			TEXT	'NOT USED'	BIT 6
	01	01EC3	E4E2C5C4 A					
12065	01	01EC4	D5D6E340 A			TEXT	'NOT USED'	BIT 7
	01	01FC5	E4E2C5C4 A					
12066	01	01EC6	C44D7C1 A		:FRRTTBC	TEXT	'D PAR E '	BIT 0
	01	01EC7	D940C540 A					
12067	01	01EC8	C3C8D2F6 A			TEXT	'CHKWRT E'	BIT 1
	01	01EC9	D9E34C5 A					
12068	01	01ECA	E2C5C3E3 A			TEXT	'SECT CAM'	BIT 2 SENSE
	01	01ECB	4C03D6D4 A					
12069	01	01ECC	C8C5C1C4 A			TEXT	'HEAD CAM'	BIT 3
	01	01ECD	4C03D6D4 A					
12070	01	01ECE	C3E8D340 A			TEXT	'CYL COM '	BIT 4 BYTE 8 (8)
	01	01ECF	C3D6D440 A					
12071	01	01ED0	C8C44C01 A			TEXT	'HD ADR E'	BIT 5
	01	01ED1	C4D94C05 A					
12072	01	01ED2	D5D6E340 A			TEXT	'NOT USED'	BIT 6
	01	01ED3	E4E2C5C4 A					

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
12073	01	01ED4	D5D6E340	A		TEXT	'NOT USED'	BIT 7
	01	01ED5	E4E2C5C4	A				
12074	01	01ED6	24404040	A	:ERRTMG1	TEXTC	' XXX BIT X (XXXXXXXX) EXP X OBS X'	
	01	01ED7	E7E7E740	A				
	01	01ED8	C2C9E340	A				
	01	01ED9	40E7404D	A				
	01	01EDA	E7E7E7E7	A				
	01	01E0B	E7E7E7E7	A				
	01	01EDC	5D40C5E7	A				
	01	01E0D	D740E740	A				
	01	01E0E	D6C2E240	A				
	01	01E0F	E7404040	A				
12075	01	01EE0	00000000	A	:ERRTTB	DATA	0, :ERRTTBA, :ERRTTBB, :ERRTTBA, :ERRTTPC, :ERRTTBA	
	01	01EE1	00001E76					
	01	01EE2	00001E86					
	01	01EE3	00001E76					
	01	01EE4	00001E96					
	01	01EE5	00001E76					
12076	01	01EE6	00001EA6			DATA	:ERRTTBD, :ERRTTBE, :ERRTTBF	
	01	01EE7	00001E86					
	01	01EE8	00001EC6					
12077	01	01EE9	00000000	A	:ERRBITS	DATA	0	
12078	01	01EEA	23404040	A	:ERRTMG2	TEXTC	' XXXXXX = EXP. XXXX OBS. XXXX'	
	01	01EEB	E7E7E7E7	A				
	01	01EEC	E7E7E740	A				
	01	01EED	6040C5E7	A				
	01	01EEE	D74B4040	A				
	01	01EEF	E7E7E7E7	A				
	01	01EF0	4040D6C2	A				
	01	01EF1	E24B4040	A				
	01	01EF2	E7E7E7E7	A				
12079	01	01EF3	40D5C5C7	A	:ERRTNEG	TEXT	' NEG'	
12080						ROUND	8	
12081	01	01EF4	C2E8E340	A	:ERRTRCM	TEXT	'RYT CNT'	BYTE COUNT MESSAGE
	01	01EF5	C3D5F340	A				
12082	01	01EF6	C3D6D440	A	:ERRTCAM	TEXT	'CBM ADR'	COMMAND ADDRESS MESSAGE
	01	01EF7	C1C4D940	A				
12083					*			
12084					*			
12085					*			
12086					*			
12087					*			
12088					*			
12089					*			
12090					*			
12091					*			
12092					*			
12093					*			
12094					*			
12095					*			
12096					*			
12097					*			
12098					*			
12099					*			
12100					*			
12101					*			
12102	01	01FF8	15401F48		:SAVECLR	STD,4	:SAVETMP	SAVE R4 AND R5
12103	01	01EF9	224FFFE0	A	LI,4	-32		INDEX
12104	01	01EFA	22500000	A	LI,5	0		0
12105	01	01EFB	55581F48		STH,5	:SAVETAB+16,4		CLEAR FLAG AND CURRENT STATUS
12106	01	01EFC	65401EFD		RIR,4	*+1		INCR R4
12107	01	01EFD	65401EFB		BIR,4	*-2		LOOP
12108	01	01EFE	12401F48		LD,4	:SAVETMP		RESTORE R4 AND R5
12109	01	01FFF	ER00000F	A	R	*15		EXIT
12110					*			
12111	01	01F00	15401F48		:SAVETI0	STD,4	:SAVETMP	SAVE R4 AND R5
12112	01	01F01	35D01F4A		STW,13	:SAVETMP+2		SAVE STATUS
12113	01	01F02	22401F39		LI,4	WA(:SAVETAB+1)		INDEX = TI0 STATUS
12114	01	01F03	6A501F30		RAL,5	:SAVEALL		STORE STATUS
12115	01	01F04	22401F3A		LI,4	WA(:SAVETAB+2)		INDEX = 05B
12116	01	01F05	6A501F30		RAL,5	:SAVEALL		STORE STATUS

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
12117	01	01F06	32D01F4A			LW,13	:SAVETMP+2	FETCH STATUS
12118	01	01F07	55D21F46			STW,13	:SAVETAB+14,1	STORE BYTE COUNT
12119	01	01F08	225FFFFF A			LI,5	=1	
12120	01	01F09	75501F46			STB,5	:SAVETAB+14,0	SET FLAG
12121	01	01F0A	55C21F47			STW,12	:SAVETAB+15,1	STORE CURRENT COMMAND ADDR
12122	01	01F0B	75501F47			STB,5	:SAVETAB+15,0	SET FLAG
12123	01	01F0C	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12124	01	01F0D	E800000F A			B	*15	EXIT
12125					*			
12126	01	01F0E	15401F48		:SAVEH0	STD,4	:SAVETMP	SAVE R4 AND R5
12127	01	01F0F	22401F3B			LI,4	WA(:SAVETAB+3)	INDEX = H0 STATUS
12128	01	01F10	6A501F30			BAL,5	:SAVEALL	STORE STATUS
12129	01	01F11	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12130	01	01F12	E800000F A			B	*15	EXIT
12131	01	01F13	15401F48		:SAVETDV	STD,4	:SAVETMP	SAVE R4 AND R5
12132	01	01F14	22401F3C			LI,4	WA(:SAVETAB+4)	INDEX = TDV STATUS
12133	01	01F15	6A501F30			BAL,5	:SAVEALL	STORE STATUS
12134	01	01F16	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12135	01	01F17	E800000F A			B	*15	EXIT
12136					*			
12137	01	01F18	15401F48		:SAVES10	STD,4	:SAVETMP	SAVE R4 AND R5
12138	01	01F19	22401F3D			LI,4	WA(:SAVETAB+5)	INDEX = S10
12139	01	01F1A	6A501F30			BAL,5	:SAVEALL	STORE STATUS
12140	01	01F1B	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12141	01	01F1C	E800000F A			B	*15	EXIT
12142					*			
12143	01	01F1D	15401F48		:SAVEA10	STD,4	:SAVETMP	SAVE R4 AND R5
12144	01	01F1E	35D01F4A			STW,13	:SAVETMP+2	SAVE STATUS
12145	01	01F1F	22401F3E			LI,4	WA(:SAVETAB+6)	INDEX = A10
12146	01	01F20	6A501F30			BAL,5	:SAVEALL	STORE STATUS
12147	01	01F21	22401F3F			LI,4	WA(:SAVETAB+7)	INDEX = 1SB
12148	01	01F22	6A501F30			BAL,5	:SAVEALL	STORE STATUS
12149	01	01F23	32D01F4A			LW,13	:SAVETMP+2	FETCH STATUS
12150	01	01F24	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12151	01	01F25	E800000F A			B	*15	EXIT
12152					*			
12153	01	01F26	15401F48		:SAVESSA	STD,4	:SAVETMP	SAVE R4 AND R5
12154	01	01F27	22401F40			LI,4	WA(:SAVETAB+8)	SAVE STATUS
12155	01	01F28	6A501F30			BAL,5	:SAVEALL	RESTORE R4 AND R5
12156	01	01F29	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12157	01	01F2A	E800000F A			B	*15	EXIT
12158					*			
12159	01	01F2B	15401F48		:SAVESSB	STD,4	:SAVETMP	SAVE R4 AND R5
12160	01	01F2C	22401F41			LI,4	WA(:SAVETAB+9)	SAVE STATUS
12161	01	01F2D	6A501F30			BAL,5	:SAVEALL	RESTORE R4 AND R5
12162	01	01F2E	12401F48			LD,4	:SAVETMP	RESTORE R4 AND R5
12163	01	01F2F	E800000F A			B	*15	EXIT
12164					*			
12165	01	01F30	35501F48		:SAVEALL	STW,5	:SAVETMP+3	SAVE EXIT ADDR
12166	01	01F31	22500000 A			LI,5	0	
12167	01	01F32	F5560004 A			STB,5	*4,3	CLEAR CURRENT STATUS MASK
12168	01	01F33	25D00208 A			SCS,13	+8	
12169	01	01F34	F5D20004 A			STB,13	*4,1	STORE CURRENT STATUS
12170	01	01F35	225FFFFF A			LI,5	-1	
12171	01	01F36	F5500004 A			STB,5	*4,C	STORE FLAG
12172	01	01F37	E8001F48			B	*:SAVETMP+3	EXIT
12173					*			
12174						ROUND	8	
12175		01 01F38			:SAVETAB	FGU	8	
12176	01	01F38	C0000000 A			DATA	0	UNDEFINED
12177	01	01F39	0000EF00 A			DATA	X'0000EF00'	T10 STATUS
12178	01	01F3A	0000FF00 A			DATA	X'0000FF00'	0SB STATUS
12179	01	01F3B	0000EF00 A			DATA	X'0000EF00'	H10 STATUS
12180	01	01F3C	C000FB00 A			DATA	X'0000FB00'	TDV STATUS
12181	01	01F3D	C000EF00 A			DATA	X'0000EF00'	S10 STATUS
12182	01	01F3E	C000FF00 A			DATA	X'0000FF00'	A10 STATUS
12183	01	01F3F	C000FF00 A			DATA	X'0000FF00'	1SB STATUS
12184	01	01F40	0000FB00 A			DATA	X'0000FB00'	SBA STATUS
12185	01	01F41	0000FF00 A			DATA	X'0000FF00'	SBB STATUS
12186	01	01F42	C0000000 A			DATA	0,C,0,0	NOT ASSIGNED
	01	01F43	C0000000 A					10 - 13

LINE NO.	MEM PROT KEY	MEMORY ADDRESS	MEMORY CONTENTS	ABS OR REL OR I G	LABEL	OPERATION	OPERAND	COMMENTS
	01	01F44	00000000	A				
	01	01F45	00000000	A				
12187	01	01F46	00000000	A		DATA	0,0	BYTE COUNT, COMMAND ADR 14 - 15
	01	01F47	00000000	A				
12188	01	01F48	00000000	A	:SAVETMP	DATA	0,0,0,0	* TEMP LOC
	01	01F49	00000000	A				
	01	01F4A	00000000	A				
	01	01F4B	00000000	A				
12189	01	01F4C	00000000	A	:SAVCOM1	DATA	0	ORIGINAL COMMAND ADDR
12190					* BUF1L6	END		
12191								
	01	01F4D	19FFFFFF	A				
	01	01F4E	101DFFFF	A				
	01	01F4F	00B7FFFF	A				
	01	01F50	0000007F	A				
	01	01F51	00007FFF	A				
	01	01F52	80000000	A				
	01	01F53	0000037F	A				
	01	01F54	FFFFFFFFE	A				
	01	01F55	55555555	A				
	01	01F56	55AA55AA	A				
	01	01F57	AA55AAAA	A				
	01	01F58	55AA5555	A				
	01	01F59	FFFFFFFF	A				
	01	01F5A	FFFFFFFF	A				
	01	01F5B	7F7F7F7F	A				
	01	01F5C	FFFFFFFF7F	A				
	01	01F5D	197FFFFFF	A				
	01	01F5E	FF7FFFFFF	A				
	01	01F5F	8C000001	A				
	01	01F60	40404040	A				
	01	01F61	FFFFFFFF0	A				
	01	01F62	0000000F	A				
	01	01F63	FFFFFFFFE	A				
	01	01F64	000000F0	A				
	01	01F65	4040FFFF	A				
	01	01F66	00000007	A				
	01	01F67	00000038	A				
	01	01F68	00001C0	A				
	01	01F69	40FFFFFF	A				
	01	01F6A	23404C40	A				
	01	01F6B	404040F0	A				
	01	01F6C	404CF1D2	A				
	01	01F6D	0001FFFF	A				
	01	01F6E	FFFFC001	A				
	01	01F6F	FFEFC001	A				
	01	01F70	0007FFFF	A				
	01	01F71	7FFFFFFF	A				
	01	01F72	FF000000	A				
	01	01F73	C1000000	A				
	01	01F74	0000FFFF	A				
	01	01F75	0000FF00	A				
	01	01F76	000001FF	A				
	01	01F77	FFFFC000	A				
	01	01F78	000007FF	A				
	01	01F79	FFFF0000	A				
	01	01F7A	12B9BCA1	A				
	01	01F7B	F000E000	A				
	01	01F7C	10000000	A				
	01	01F7D	F0F0FCF0	A				

CONTROL SECTION SUMMARY: 01 01F7E PT 0

XDS 901678

SECTION II
CONCORDANCE LISTING

SIGMA 5/7 COMPREHENSIVE PAD TEST 705730-11/51A00

ABSVAL	1475/GEN	1475/GEN	1476/GEN	1476/GEN	1477/GEN	1477/GEN	
AF	1447/DB	1448/GEN	1448/GEN	1448/GEN	1448/GEN	1458/EQU	1459/EQU
	1460/EQU	1461/EQU	1462/EQU	1463/EQU	1464/EQU	1465/EQU	1475/GEN
	1475/GEN	1475/GEN	1476/GEN	1476/GEN	1477/GEN	1477/GEN	
AIPFC	7055/:TSEQ	7062/:TSEQ	7065/:TSEQ	7073/:TSEQ	7080/:TSEQ	7088/:TSEQ	
	7096/:TSEQ	7102/:TSEQ	7112/:TSEQ	7123/:TSEQ	7128/:TSEQ	7134/:TSEQ	
	7140/:TSEQ	7148/:TSEQ	7256/:TSEQ	11789-ITSEGEQU			
AIOF1	11789-ITSEGEQU						
AIOF2	7062/:TSEQ	7065/:TSEQ	7073/:TSEQ	7080/:TSEQ	7088/:TSEQ	7096/:TSEQ	
	7102/:TSEQ	7112/:TSEQ	7123/:TSEQ	7128/:TSEQ	7134/:TSEQ	7140/:TSEQ	
	7148/:TSEQ	7256/:TSEQ	11789-ITSEGEQU				
AIOF3	7055/:TSEQ	7062/:TSEQ	7065/:TSEQ	7073/:TSEQ	7080/:TSEQ	7088/:TSEQ	
	7096/:TSEQ	7102/:TSEQ	7112/:TSEQ	7123/:TSEQ	7128/:TSEQ	7134/:TSEQ	
	7140/:TSEQ	7148/:TSEQ	7256/:TSEQ	11789-ITSEGEQU			
AIOF4	11789-ITSEGEQU						
AIOF5	11789-ITSEGEQU						
AIOF6	11789-ITSEGEQU						
AIOF7	11789-ITSEGEQU						
AIO7C	7153/:TSEQ	11790-ITSEGEQU					
AIO7T1	11790-ITSEGEQU						
AIO7T2	7055/:TSEQ	11790-ITSEGEQU					
AIO7T3	11790-ITSEGEQU						
AIO7T4	11790-ITSEGEQU						
AIO7T5	11790-ITSEGEQU						
AIO7T6	11790-ITSEGEQU						
AIO7T7	11790-ITSEGEQU						
ASECTMLT	1488-ASECT						
ASECTPII	1545-ASECT						
BA	4107/DATA	4149/DATA	6833/GEN	6835/GEN	6839/GEN	6841/GEN	6843/GEN
	6845/GEN	6848/GEN	6850/GEN	6852/GEN	6857/GEN	6859/GEN	6861/GEN
	6863/GEN	6867/GEN	6869/GEN	6871/GEN	6873/GEN	6877/GEN	6879/GEN
	6881/GEN	6883/GEN	6885/GEN	6887/GEN	6889/GEN	6891/GEN	6893/GEN
	6895/GEN	6897/GEN	6899/GEN	6903/GEN	6908/GEN	6910/GEN	6912/GEN
	6914/GEN	6918/GEN	6922/GEN	6924/GEN	6927/GEN	6931/GEN	6934/GEN
	6939/GEN	6942/GEN	6946/GEN	6949/GEN	6952/GEN	6955/GEN	6959/GEN
	6963/GEN	6966/GEN	6969/GEN	7246/GEN	7248/GEN	7314/GEN	8476/GEN
	8757/AI	8769/AI	8772/AI	8877/GEN	9299/LI	9325/GEN	10212/AI
	10841/GEN						
BLDSHIFT	10111/STF	10119-SLS					
HSIPSEFK	7194/DATA	7254-ITSEQ	7300/DATA				
HSIPWRT	7237/DATA	7256-ITSEQ					
BSIP101C	3237/DATA	3281/DATA	6975-ITSEQ				
BSIP103C	3308/DATA	6977-ITSEQ					
BSIP1040	3335/DATA	6979-ITSEQ					

BSIP1110						
	3384/DATA	6986-ITSEQ				
BSIP1120						
	3428/DATA	6988-ITSEQ				
BSIP1130						
	3457/DATA	6990-ITSEQ				
BSIP1210						
	3513/DATA	3589/DATA	3615/DATA	6999-ITSEQ		
BSIP1220						
	3560/DATA	7002-ITSEQ				
BSIP1230						
	7005-ITSEQ					
BSIP1310						
	3668/DATA	3719/DATA	7013-ITSEQ			
BSIP1330						
	3742/DATA	7016-ITSEQ				
BSIP1340						
	3765/DATA	7019-ITSEQ				
BSIP1410						
	3824/DATA	7025-ITSEQ				
BSIP1420						
	3876/DATA	7028-ITSEQ				
BSIP1430						
	3899/DATA	7031-ITSEQ				
BSIP1510						
	3959/DATA	7038-ITSEQ				
BSIP1520						
	4011/DATA	7041-ITSEQ				
BSIP1530						
	4034/DATA	4057/DATA	7044-ITSEQ			
BSIP2010						
	4547/DATA	4568/DATA	5167/DATA	7055-ITSEQ		
BSIP2110						
	4600/DATA	4642/DATA	7060-ITSEQ			
BSIP3110						
	4724/DATA	4798/DATA	7062-ITSEQ			
BSIP3120						
	4771/DATA	4825/DATA	7065-ITSEQ			
BSIP3210						
	4874/DATA	7073-ITSEQ				
BSIP3310						
	4939/DATA	7080-ITSEQ				
BSIP3510						
	5236/DATA	7085-ITSEQ				
BSIP3520						
	5276/DATA	7088-ITSEQ				
BSIP3620						
	5332/DATA	7096-ITSEQ				
BSIP3720						
	5394/DATA	7102-ITSEQ				
BSIP3820						
	5476/DATA	7106-ITSEQ				
BSIP3920						
	5600/DATA	5637/DATA	5675/DATA	5710/DATA	5733/DATA	7112-ITSEQ
BSIP4020						
	5804/DATA	5878/DATA	7118-ITSEQ			
BSIP4040						
	5877/DATA	7122-ITSEQ				
BSIP4320						
	6117/DATA	7123-ITSEQ				
BSIP4420						
	6180/DATA	6244/DATA	7128-ITSEQ			
BSIP4520						
	6348/DATA	6424/DATA	7134-ITSEQ			
BSIP4620						
	6529/DATA	7140-ITSEQ				
BSIP4720						
	6589/DATA	7148-ITSEQ				
BSIP4810						
	6629/DATA	6651/DATA	7153-ITSEQ			
BSIP4910						

6749/DATA	6750/DATA	7159-ITSEQ				
BSNPSEFK						
7195/DATA	7256-ITSEQ	7301/DATA				
BSNPKRT						
7238/DATA	7257-ITSEQ					
BSNP1010						
3238/DATA	3282/DATA	3309/DATA	3336/DATA	6981-ITSEQ		
BSNP1110						
3385/DATA	6992-ITSEQ					
BSNP1120						
3429/DATA	6994-ITSEQ					
BSNP1130						
3458/DATA	6996-ITSEQ					
BSNP1210						
3514/DATA	3590/DATA	3616/DATA	7008-ITSEQ			
BSNP1220						
3561/DATA	7011-ITSEQ					
BSNP1310						
3669/DATA	3720/DATA	3743/DATA	3766/DATA	7022-ITSEQ		
BSNP1410						
3825/DATA	7034-ITSEQ					
BSNP1420						
3877/DATA	3900/DATA	7035-ITSEQ				
BSNP1510						
3960/DATA	4035/DATA	4058/DATA	7047-ITSEQ			
BSNP1520						
4012/DATA	7049-ITSEQ					
BSNP1620						
4107/DATA	7052-ITSEQ					
BSNP1640						
4149/DATA	7054-ITSEQ					
BSNP2010						
4548/DATA	4569/DATA	5168/DATA	7057-ITSEQ			
BSNP2110						
4601/DATA	4643/DATA	7061-ITSEQ				
BSNP3110						
4725/DATA	4772/DATA	4799/DATA	4826/DATA	7068-ITSEQ		
BSNP3210						
4875/DATA	7076-ITSEQ					
BSNP3310						
4940/DATA	7083-ITSEQ					
BSNP3510						
5237/DATA	7090-ITSEQ					
BSNP3520						
5277/DATA	7093-ITSEQ					
BSNP3620						
5333/DATA	7098-ITSEQ					
BSNP3720						
5395/DATA	7104-ITSEQ					
BSNP3820						
5477/DATA	7108-ITSEQ					
BSNP3920						
5601/DATA	5638/DATA	5676/DATA	5711/DATA	5734/DATA	7115-ITSEQ	
BSNP4020						
5805/DATA	7120-ITSEQ					
BSNP4320						
6118/DATA	7128-ITSEQ					
BSNP4420						
6181/DATA	6245/DATA	7131-ITSEQ				
BSNP4520						
6349/DATA	6425/DATA	7137-ITSEQ				
BSNP4620						
6530/DATA	7144-ITSEQ					
BSNP4720						
6590/DATA	7151-ITSEQ					
BSNP4810						
6630/DATA	6652/DATA	7155-ITSEQ				
BUFAVAIL						
8836/LW	8864/LW	8896/LW	8932/LW	8955/LW	8976/LW	8998/LW
9014/LW	9383/LW	9389/LW	10081/STW	10264-DATA		
BUFCOUNT						

9384/SH	9586/R	9606-AI	9829/EXU	10273/EQU		
BUFENDAD	8771/STW	9456/CW	10036/CW	10086/STW	10261-DATA	
BUFINAD	8834/AW	8859/AW	8888/AW	8914/AW	8926/STW	8952/AW
	8995/AW	9425/LW	9454/LW	9459/STW	9904/LW	9929/STW
10262-DATA						10089/STW
BUFINCMT	8718/STH	8838/STH	8866/STH	8897/STH	8956/STH	8978/STH
	9314/STH	10273-EQU				9016/STH
BUFLENGT	8860/AW	8889/AW	8953/AW	8974/AW	10084/STW	10260-DATA
BUFM1AVL	9385/STW	9630/CW	9867/CW	10265-DATA		
BUFM1FLG	9569/STW	9620/MTW	9634/STW	9988-DATA		
BUFOUTAD	8925/STW	9908/STW	10088/STW	10263-DATA		
BUF1L0	2140/LI	2567/LI	2741/LI	3218/LI	3233/STW	3255/LW
	3302/STW	3329/STW	3366/LI	3380/STW	3405/LW	3423/STW
	3492/LI	3509/STW	3533/LW	3556/STW	3583/STW	3609/STW
	3688/LW	3695/STW	3802/LI	3844/LW	3851/STW	3937/LI
	3986/STW	4696/LI	4854/LI	4929/LI	4995/LI	5219/LI
	5631/STW	5669/STW	5790/LI	5845/LI	6343/STW	6386/LW
	6405/STW	6457/LW	6460/STW	6488/LI	6550/LI	6664/LI
	6835/GEN	6839/GEN	6841/GEN	6843/GEN	6845/GEN	6848/GEN
	6852/GEN	6857/GEN	6859/GEN	6861/GEN	6863/GEN	6867/GEN
	6871/GEN	6873/GEN	6877/GEN	6879/GEN	6881/GEN	6883/GEN
	6887/GEN	6889/GEN	6897/GEN	6899/GEN	6903/GEN	6908/GEN
	6912/GEN	6914/GEN	6918/GEN	6922/GEN	6924/GEN	6927/GEN
	6934/GEN	6939/GEN	6942/GEN	6946/GEN	6949/GEN	6952/GEN
	6959/GEN	6963/GEN	6966/GEN	6969/GEN	7248/GEN	7265/STW
	8003/STB	8007/STW	8010/DATA	8055/LI	8446/LI	8454/STB
	8757/AI	8769/AI	8772/AI	9299/LI	10164/CI	10212/AI
BUF1L0BA	8795/STW	8924/STW	9300/STW	9458/LW	10038/LW	10079/SW
	10087/LW	10093/AW	10267-DATA			10085/AW
BUILDJ0C	8711/BAL	9318/BAL	10076-STD			
BUILDSK	2119/BAL	4295/BAL	4336/BAL	4348/BAL	4359/BAL	4369/PAL
	5013/BAL	5038/BAL	5084/BAL	5099/BAL	5116/BAL	5161/PAL
	6743/PAL	9366/PAL	9565/BAL	9833/BAL	10109-STD	10500/PAL
BUILDSK1	10109/STD	10118/XW	10120/XW	10123-DATA	10685/LW	10722/LW
BULDSAVE	10074/STC	10097/LD	10103-RFS			
BYTCURR	2137/LW	2563/LW	2737/LW	2824/LW	3017/LW	3215/LW
	3489/LW	3648/LW	3799/LW	3934/LW	4693/LW	4701/LW
	4851/LW	4901/CW	4926/LW	4932/AW	4964/CW	4991/LW
	5241/CW	5271/LW	5346/CW	5387/LW	5404/LW	5405/AW
	5595/LW	5779/LW	5786/LW	5848/LW	6111/AW	6128/LW
	6171/LW	6306/LW	6490/LW	6552/LW	6667/LW	6673/AW
	7229/LW	8704/LW	8759/DW	8768/MW	8783/DW	8792/MW
	9007/AW	9301/LW	9455/AW	10035/AW	10080/DW	10083/MW
	10213/SW	10214/SW	10369-DATA	10456/DW		10094/AW
BYTEND	1752-SET	1856/LW				
BYTEN01	7651/STW	7653/DATA	7685-TEXTC			
BYTESECT	1857/STW	10351-DATA				
BYTESTAT	1746-FGU					
BYTNO	11795-ITSEREQ					
BYTOO	6975/:TSEQ	6977/:TSEQ	6979/:TSEQ	6981/:TSEQ	6986/:TSEQ	6989/:TSEQ
	6990/:TSEQ	6992/:TSEQ	6994/:TSEQ	6996/:TSEQ	7014/:TSEQ	7017/:TSEQ

	7020/ITSEQ	7022/ITSEQ	7026/ITSEQ	7029/ITSEQ	7032/ITSEQ	7034/ITSEQ
	7035/ITSEQ	7063/ITSEQ	7066/ITSEQ	7068/ITSEQ	7074/ITSEQ	7076/ITSEQ
	7081/ITSEQ	7083/ITSEQ	7088/ITSEQ	7093/ITSEQ	7096/ITSEQ	7098/ITSEQ
	7102/ITSEQ	7104/ITSEQ	7106/ITSEQ	7108/ITSEQ	7113/ITSEQ	7115/ITSEQ
	7118/ITSEQ	7120/ITSEQ	7123/ITSEQ	7125/ITSEQ	7129/ITSEQ	7131/ITSEQ
	7254/ITSEQ	7255/ITSEQ	7256/ITSEQ	7257/ITSEQ	11795-ITSEQEQU	
BYT01	7000/ITSEQ	7003/ITSEQ	7006/ITSEQ	7008/ITSEQ	7011/ITSEQ	7039/ITSEQ
	7042/ITSEQ	7045/ITSEQ	7047/ITSEQ	7049/ITSEQ	11795-ITSEQEQU	
BYT02						
	11795-ITSEQEQU					
BYT03						
	11795-ITSEQEQU					
BYT04						
	11795-ITSEQEQU					
BYT05						
	11795-ITSEQEQU					
BYT06						
	11795-ITSEQEQU					
CAPACITY						
	1738-SET	5158/CW				
CAPEND						
	1744-SET	1855/LW				
CDELAY						
	2127/STW	2228-DATA	7424/LW			
CHKWRITE						
	9137/BAL	9250-LI				
COMNG						
	11796-ITSEQEQU					
COMPERR						
	9345/STW	9463/STW	9911/LW	9921/CAL1	9992-DATA	
COMOC						
	11796-ITSEQEQU					
COMO1						
	11796-ITSEQEQU					
COMO2						
	11796-ITSEQEQU					
COMO3						
	11796-ITSEQEQU					
COMO4						
	11796-ITSEQEQU					
COMO5						
	11796-ITSEQEQU					
COMO6						
	11796-ITSEQEQU					
COTRHUSY						
	7458/DATA	7682-TEXTC				
COUNT38						
	5436/STW	5516/MTW	5517/LW	5542-DATA		
CPERROR						
	9443/CAL2	9836/CI	9902-LW			
CSECTDIC						
	1598-CSECT					
CURRSECT						
	10271-DATA					
CURRSEEK						
	2118/LW	4294/LW	4343/STW	4347/SW	4358/LW	5012/LW
	5037/LW	5094/STW	5096/SW	5115/LW	5129/AWM	5023/STW
	5521/LW	6023/STW	8799/SW	8803/AW	8804/STW	5243/LW
	9460/MTW	9461/LW	9902/LW	9922/STW	10370-DATA	9263/STW
						9365/LW
CYCLE						
	1978/STW	8649/STW	8680/MTW	8689/MTW	9042-DATA	
DA						
	2570/LI	2753/LI	2826/LI	3019/LI	4079/LI	4216/LI
	4620/CI	4652/CI	6499/LI	6561/LI	6664/LI	4610/CI
	8455/LI	9540/LI	9558/LI	9956/LI	10476/LI	6901/GEN
						6905/GEN
DATAADDR						
	276-DATA					
DATAPERR						
	8323/BCS	8331-BAL				
DATAP1						

DATAP2	832R/STM	8335-DATA	9153/LM				
DATAP3	8336-DATA						
DATAP4	8337-DATA						
DEVHUSY	8338-DATA						
DBNTREAD	7489/DATA	7681-TEXTC					
ENDOPER	1775/STW	1939-DATA	1985/STW	5919/STW	5983/STW	8318/STW	8411/STW
ENDSHOT	8662/STW	8708/STW	9188/STW	9256/STW	9259/STW	9280/MTW	
ERRCBH	1677/STW	212R/STW	857R/MTW	8582/STW	9347/STW	9404/MTW	9415/MTW
ERRNOINT	9448/MTW	948R/LW	9618/STW	9714/STW	9865/STW	9990-DATA	10424/CW
ERRSCTBR	10530/CW						
ERRTRACK	10186/STW	10237-DATA					
ERRSTHT	9514/DATA	9514-TEXT					
ERRWORD	9513/DATA	9515-TEXT					
EXAI0JST	10673/STW	10825-DATA					
EXDATAI0	10664/STW	10824-DATA					
EXDTAI0	9496/STW	9501/DATA	9509-TEXTC				
EXSFKAI0	9492/LW	9512-SET					
EXSKAI0	9993-DATA						
FAKEINTR	8840/STW	8935/STW	8959/STW	8980/STW	9307/STW	9547/LW	10270-DATA
FALSEINT	8869/LW	8894/LW	8934/LW	8958/LW	8979/LW	9306/LW	9330-DATA
FINDEXIT	8713/STW	8870/STW	8895/STW	9305/STW	9359/LW	9557/LW	10269-DATA
FNDGTRK	8712/LW	9304/LW	9329-DATA				
FNDGTRK1	9374/STW	9407/MTW	9538/MTW	9570/STW	9622/STW	9656/STW	9869/STW
FNDGTRKX	9923/STW	9987-DATA					
FUCTEXIT	9672/B	9742-LI					
	5214/STW	5242/BL*	5252/B*	5255-DATA			
	5189/BAL	5210-LW	5303/PAL	5364/BAL	5438/BAL	5558/PAL	5755/PAL
	6082/PAL	6150/PAL	6308/PAL				
	522R-BAL	5251/BL					
	2135/LI	2157-B	2237/HFZ	2238/BLEZ	2271/B	2299/P	2327/BEZ
	2352/PCF	2355/B	2374/B	2405/BCS	2409/B	2417/P	2418/P
	2437/H	2470/BCS	2485/BFZ	2486/B	2505/B	2536/PCS	2540/B
	2548/B	2549/B	2621/BCS	2714/B	2724/B	2806/PEZ	2807/B
	2985/BEZ	2986/P	3197/RFZ	3198/B	3337/B	3342/P	3362/BE
	3459/P	3464/B	3488/BF	3617/B	3622/B	3767/P	3773/B
	3794/BE	3901/B	3907/B	4059/B	4129/P	4129/P	4154/BEZ
	4159/P	4198/B	4224/B	4229/B	4292/B	4353/PLEZ	4356/B
	4379/P	4384/P	4504/RNEZ	4563/BE	4570/B	4575/P	4658/BEZ
	4662/H	4827/P	4834/B	4903/B	4966/B	4990/P	5025/RGE
	5031/RLFZ	5036/P	5097/BLEZ	5104/BLFZ	5107/B	5159/PNE	5169/B
	5174/P	5197/P	5278/B	5285/B	5310/B	5348/P	5371/B
	5408/P	5447/P	5515/B	5533/B	5539/B	5565/P	5735/B
	5741/P	5762/B	5889/BLEZ	5958/BEZ	5966/B	6055/PEZ	6064/P
	6089/P	6132/B	6157/P	6263/BNF	6283/B	6316/P	6465/B
	6531/B	6536/B	6591/B	6596/B	6653/B	6658/P	6661/LI

	6815/RNEZ						
FUCTINT	7664=DATA	7669/LPSD	7686/XP8D				
FUCTINT1	7665/DATA	7667-LW					
HEADER	7822/DATA	7845-TEXTC					
H188C	9843/MTH	10422/STH	10821=DATA				
H189W	9838/LW	10420/STD	10421/STCF	10504/LD	10538/LD	10694/LW	10840=DATA
H18F0	11783=ITSEQEGU						
H18F1	11783=ITSEQEGU						
H18F2	11783=ITSEQEGU						
H18F3	11783=ITSEQEGU						
H18F4	11783=ITSEQEGU						
H18F5	11783=ITSEQEGU						
H18F6	11783=ITSEQEGU						
H18F7	11783=ITSEQEGU						
H18T0	11784=ITSEQEGU						
H18T1	7140/ITSEQ	7144/ITSEQ	7148/ITSEQ	7151/ITSEQ	11784=ITSEQEGU		
H18T2	7140/ITSEQ	7144/ITSEQ	7148/ITSEQ	7151/ITSEQ	11784=ITSEQEGU		
H18T3	11784=ITSEQEGU						
H18T4	11784=ITSEQEGU						
H18T5	7140/ITSEQ	7144/ITSEQ	7148/ITSEQ	7151/ITSEQ	11784=ITSEQEGU		
H18T6	7140/ITSEQ	7144/ITSEQ	7148/ITSEQ	7151/ITSEQ	11784=ITSEQEGU		
H18T7	11784=ITSEQEGU						
I	1446=SET	1448/GEN	1448/GEN	1448/GEN	1448/GEN	1449=SET	1449/SET
INITERR	1782/BL	1784/BG	1797/B	1813/BL	1815/BG	1823/P	1829=STW
INITEXIT	1810/PGE	1836=LI					
INITPAR	1822/BAU	1844=AI					
INITPAR1	1848/BE	1854=STW					
INITRTA	1773/STW	1840/R*	1936=DATA				
INITSIZE	1921=SW	8421/B					
INITC	1788=LW						
INITC4	1791/HEZ	1795/BLE	1801=STW				
INITC5	1796=LI	1817/RE					
INIT1	1807=AI						
INIT2	1808=AI	1826/R					
INIT3	1820=LW						
INIT4	1780/STH	1809=CI	1869/CH				

INSTALL	8470/DATA	8474-TEXTC					
INTXFG	7379/STW	7389/STW	7397/XW	7399/XW	7401/STW	7499/MTW	7673-DATA
INTTXT1	1832/B	1839=STW					
INTRFLAG	2900/STW	2907/MTW	2952/STW	2969/STW	2979/MTW	2994/STW	2999-DATA
	3076/STW	3095/MTW	3097/MTW				
INVDEV	1801/STW	1816/CW	1937-DATA	2326/LW			
I8BAD	9696/B	9740=MTW					
I8CDATA	8835/STD	8861/STD	8890/STD	8922/STD	8954/STD	8975/STD	8996/STD
	8997/STD	9004/AWM	9008/AWM	9009/AWM	9013/AWM	9313/STD	9540/LI
	9602/STW	9906/XW	9908/AWM	9927/LW	9956/LI	10033/LW	10040/LB
	10090/LD	10095/STD	10253-DATA	10448/CI	10450/LW		
I8CDAT01	10255-DATA						
I8CDAT02	10257-DATA						
I8CDPNT	8720/STW	8868/STW	8893/STW	9316/STW	9552/MTW	10002-DATA	
I8CDP1	9623/BAL	9635/BAL	9657/BAL	9830/BAL	10033-LW		
I8CDRSET	8455/LI	8476-GEN					
I8CDS	8730/LI	8733/EXU	8810=SET				
I8CDSKMD	7192/DATA	7246-GEN					
I8CDSNMD	4189/STH	4216/LI	7295/STH	7298/DATA	7314-GEN		
I8CDS1	8730/LI	8826=SET					
I8CDWRT	5782/STH	5819/LH	5849/SH	5887/LH	5890/STH	7230/STH	7235-DATA
	7248-GEN						
I8CD00	8831/LD	8847-GEN					
I8CD01	8858/LD	8875-GEN					
I8CD02	8887/LD	8902-GEN					
I8CD03	8913/LD	8940-GEN					
I8CD04	8951/LD	8962-GEN					
I8CD05	8972/LD	8983-GEN					
I8CD06	8994/LD	9019-GEN					
I8CD0610	2564/STH	2570/LI	2643/CH	2738/STH	2753/LI	2782/CH	6833-GEN
I8CD07	9028/LD	9032-GEN					
I8CD0810	2825/STH	2826/LI	3018/STH	3019/LI	6835-GEN		
I8CD10	8862/LD	8877-GEN	8891/LD				
I8CD1010	3235/DATA	6839-GEN					
I8CD1020	3279/DATA	6841-GEN					
I8CD1030	3306/DATA	6843-GEN					
I8CD1040	3333/DATA	6845-GEN					
I8CD1110	3382/DATA	6848-GEN					

I0CD1120				
3426/DATA	6850-GEN			
I0CD1130				
3495/DATA	6852-GEN			
I0CD1210				
3511/DATA	6857-GEN			
I0CD1220				
3558/DATA	6859-GEN			
I0CD1230				
3587/DATA	6861-GEN			
I0CD1240				
3613/DATA	6863-GEN			
I0CD1310				
3644/STH	3666/DATA	6867-GEN		
I0CD1320				
3645/STH	3717/DATA	6869-GEN		
I0CD1330				
3646/STH	3740/DATA	6871-GEN		
I0CD1340				
3647/STH	3763/DATA	6873-GEN		
I0CD1410				
3796/STH	3822/DATA	6877-GEN		
I0CD1420				
3797/STH	3874/DATA	6879-GEN		
I0CD1430				
3798/STH	3897/DATA	6881-GEN		
I0CD1510				
3930/STH	3957/DATA	6883-GEN		
I0CD1520				
3931/STH	4009/DATA	6885-GEN		
I0CD1530				
3932/STH	4032/DATA	6887-GEN		
I0CD1540				
3933/STH	4055/DATA	6889-GEN		
I0CD1610				
4079/LI	6891-GEN			
I0CD2010				
4545/DATA	4566/DATA	6893-GEN		
I0CD2110				
4598/DATA	4610/CI	6895-GEN		
I0CD2113				
6901-GEN				
I0CD2112				
6899-GEN	6901/GEN	6905/GEN		
I0CD2111				
4620/CI	6897-GEN			
I0CD2120				
4640/DATA	4652/CI	6903-GEN		
I0CD2121				
6905-GEN				
I0CD3110				
4702/STH	4722/DATA	6908-GEN		
I0CD3120				
4703/STH	4769/DATA	6910-GEN		
I0CD3130				
4705/STH	4796/DATA	6912-GEN		
I0CD3140				
4706/STH	4823/DATA	6914-GEN		
I0CD3210				
4850/STH	4872/DATA	4898/LH	4900/STH	6918-GEN
I0CD3310				
4933/STH	4937/DATA	4960/LH	4962/STH	6922-GEN
I0CD3430				
4992/STH	5165/DATA	6924-GEN		
I0CD3510				
5216/STH	5234/DATA	6927-GEN		
I0CD3520				
5272/STH	5274/DATA	6931-GEN		
I0CD3620				
5327/STH	5330/DATA	6934/LH	6934-GEN	
I0CD3720				

	5389/STW	5392/DATA	5402/LW	6939-GEN			
I0C03820	5457/STW	5474/DATA	6942-GEN				
I0C03920	5596/STW	5598/DATA	5635/DATA	5673/DATA	5708/DATA	5731/DATA	6946-GEN
I0C04020	5780/STW	5802/DATA	5875/DATA	6949-GEN			
I0C04320	6112/STW	6115/DATA	6125/LW	6127/STW	6952-GEN		
I0C04420	6172/STW	6178/DATA	6242/DATA	6955-GEN			
I0C04520	6307/STW	6346/DATA	6422/DATA	6959-GEN			
I0C04620	6491/STW	6499/LI	6527/DATA	6963-GEN			
I0C04720	6553/STW	6561/LI	6587/DATA	6966-GEN			
I0C04911	6715/STW	6747/DATA	6969-GEN				
I0C04NT	9695/BAL	9319/BAL	9335-STW				
I0CPASS2	9545/STW	9650/MTW	10007-DATA				
I0CSEK1	8717/STD	8863/STD	8892/STD	9311/STD	9558/LI	10251-DATA	
I0FRAI01	9341/STW	9530/CAL1	9542/STW	9687/LW	10003-DATA		
I0EWA102	9342/STW	9588/CAL1	9652/STW	10004-DATA			
I0ERSI01	9343/STW	9649/STW	9959/LI	10005-DATA			
I0ERSI02	9344/STW	9653/STW	9955/LI	10006-DATA			
I0G000	9680/B	9695/B	9705/B	9709/B	9713/B	9741-MTW	9930/B
I0TEST	9671/STW	9684/MTB*	9726-DATA	9735/LW*	9736/LCF	9740/MTW	9741/MTW
	9748/LPSD	9834/LW*	9965/LCF	10007/XPSD			
I0TEST1	9729-LCI						
ISBF0	6975/:TSEQ	6977/:TSEQ	6979/:TSEQ	7013/:TSEQ	7016/:TSEQ	7019/:TSEQ	
	7062/:TSEQ	7065/:TSEQ	7088/:TSEQ	7112/:TSEQ	7128/:TSEQ	7134/:TSEQ	
	7141/:TSEQ	7149/:TSEQ	11791-:TSEQEQU				
ISBF1	6975/:TSEQ	6977/:TSEQ	6979/:TSEQ	6986/:TSEQ	6988/:TSEQ	6990/:TSEQ	
	6999/:TSEQ	7002/:TSEQ	7005/:TSEQ	7013/:TSEQ	7016/:TSEQ	7019/:TSEQ	
	7025/:TSEQ	7028/:TSEQ	7031/:TSEQ	7038/:TSEQ	7041/:TSEQ	7044/:TSEQ	
	7066/:TSEQ	7062/:TSEQ	7065/:TSEQ	7074/:TSEQ	7081/:TSEQ	7112/:TSEQ	
	7128/:TSEQ	7141/:TSEQ	7149/:TSEQ	11791-:TSEQEQU			
ISBF2	6979/:TSEQ	6986/:TSEQ	6989/:TSEQ	6990/:TSEQ	7000/:TSEQ	7003/:TSEQ	
	7006/:TSEQ	7014/:TSEQ	7020/:TSEQ	7026/:TSEQ	7029/:TSEQ	7032/:TSEQ	
	7039/:TSEQ	7042/:TSEQ	7045/:TSEQ	7141/:TSEQ	7149/:TSEQ	11791-:TSEQEQU	
ISBF3	6975/:TSEQ	6977/:TSEQ	6986/:TSEQ	6989/:TSEQ	7003/:TSEQ	7006/:TSEQ	
	7014/:TSEQ	7017/:TSEQ	7026/:TSEQ	7029/:TSEQ	7042/:TSEQ	7045/:TSEQ	
	7141/:TSEQ	7149/:TSEQ	7153/:TSEQ	11791-:TSEQEQU			
ISBF4	6975/:TSEQ	6977/:TSEQ	6979/:TSEQ	6986/:TSEQ	6989/:TSEQ	6990/:TSEQ	
	7000/:TSEQ	7003/:TSEQ	7006/:TSEQ	7014/:TSEQ	7017/:TSEQ	7020/:TSEQ	
	7026/:TSEQ	7029/:TSEQ	7032/:TSEQ	7039/:TSEQ	7045/:TSEQ	7063/:TSEQ	
	7066/:TSEQ	7113/:TSEQ	7129/:TSEQ	11791-:TSEQEQU			
ISBF5	11791-:TSEQEQU						
ISBF6	11791-:TSEQEQU						
ISBF7	11791-:TSEQEQU						
ISPT0	6986/:TSEQ	6988/:TSEQ	6990/:TSEQ	6999/:TSEQ	7002/:TSEQ	7005/:TSEQ	

	7025/ITSEQ 7073/ITSEQ	7028/ITSEQ 7080/ITSEQ	7031/ITSEQ 7096/ITSEQ	7038/ITSEQ 7102/ITSEQ	7041/ITSEQ 11792-ITSEGEQU	7044/ITSEQ	
ISBT1	7135/ITSEQ	7153/ITSEQ	11792-ITSEGEQU				
ISBT2	6977/ITSEQ 11792-ITSEGEQU	7017/ITSEQ	7066/ITSEQ	7088/ITSEQ	7096/ITSEQ	7102/ITSEQ	
ISBT3	6979/ITSEQ 7074/ITSEQ	6990/ITSEQ 7081/ITSEQ	7000/ITSEQ 7113/ITSEQ	7020/ITSEQ 7129/ITSEQ	7032/ITSEQ 11792-ITSEGEQU	7039/ITSEQ	
ISBT4	7042/ITSEQ 7149/ITSEQ	7055/ITSEQ 7153/ITSEQ	7074/ITSEQ 11792-ITSEGEQU	7081/ITSEQ	7135/ITSEQ	7141/ITSEQ	
ISBT5	11792-ITSEGEQU						
ISBT6	11792-ITSEGEQU						
ISBT7	11792-ITSEGEQU						
L	2120/LW 8447/LW 9308/LW 10625/AND	4274/LW 8565/AND 9907/AND 10948/AND	4276/LW 8714/LW 9928/AND 10956/AND	4399/LW 8841/LW 10034/AND 11000/AND	4401/LW 8923/AND 10091/AND 11030/AND	5224/AND 9001/AND 10092/AND 10217/LW	7964/LW 9010/LW
LF	1445-EQU 1464-EQU	1458-EQU 1465-EQU	1459-EQU 1475-EQU	1460-EQU	1461-EQU	1462-EQU	1463-EQU
LINE	8097/STW	8156/MTW	8162/MTW	8284-DATA			
LOCATION	2125/STW	7427/STW	7645/STW	7833/LW	7846-DATA	10389/STW	
LSEKTEP	6010/STW	6014/LW	6022/STW	6029/LW	6066-DATA		
MAJORERR	9181/STW	9185/MTW	9218/STW	10008-DATA			
MASK	8715/STW	8842/STW	9309/STW	9356/LW	10268-DATA		
MAXERR	5916/STW	5984/STW	9208/STW	9786/LW	9991-DATA		
MAXSECT	8766/STW	8797/SW	9048-DATA				
MEMLSTRA	8756/LW	8770/STW	8793/LW	10078/LW	10211/STW	10266-DATA	
MEMORY	2089/BAL	8670/BAL	8754/BAL	9297/BAL	10181-STH		
MEMORY1	6680/BGE	10165/BL	10177/B	10185/BNE	10207-SLS		
MEMORY2	6662/STW	10160/STH	10181/STH	10231-B			
MEMORY3	4197/BAL	4291/BAL	4355/BAL	4989/BAL	5035/BAL	5106/BAL	10159-STH
MEMORY4	10219/BNE	10227-STW					
MOEFL	1854/STW	2116/LM	5924/LM	5951/LM	5994/LM	8918/CW	10348-DATA
MOEFLC	2117/STW 4329/CW 6199/LW 7728/CW 10723/LW	3360/LW 4560/LW 6261/LW 8046/LW	3486/LW 5075/CW 6338/LW 10366-DATA	3640/LW 5146/LW 6358/LW 10403/LW	3792/LW 5925/STW 6401/LW 10471/LW	3926/LW 5952/STW 6432/LW 10651/LW	4186/CW 5995/STW 7292/CW 10714/LW
MOEFLND	1736-SET	1846/LI	1847/CW	5151/CI			
MOEFLNR	1730-SET	1846/LI	5148/CW	5151/CI			
MSGHAND	7730/LD	7769-TEXT					
MSGTRACK	7726/LD	7768-TEXT					
MSGTIT19	7731/STW	7732/STW	7740/STW	7742/STW	7746/STW	7748/STB	7752/STB

M1	7754/STH	7756/DATA	7764-TFXTC			
M2	9846/LW	11324/CD	11465-DATA			
NO MEMORY	9848/LW	11466-DATA				
NHPAT	10227/STW	10228/STW	10230/DATA	10232-TEXTC		
NBPATTN	9219-BAL					
NO TACCP1	9220/DATA	9226-TEXTC				
NEXT INTR	9643/CAL2	9955-LI				
NTACCP1	7520/DATA	7683-TEXTC				
NUM	9960/STH	9964/R	9970-CAL1			
BCTAL	1447/D0					
OPERIOD	8069/STW	8083/LW	8088/STW	8089/MTW	8286-DATA	
OSRF0	9276/STR	9312/LD	9327-GEN			
	6975/ITSEQ	6977/ITSEQ	6979/ITSEQ	6981/ITSEQ	7013/ITSEQ	7016/ITSEQ
	7019/ITSEQ	7022/ITSEQ	7062/ITSEQ	7065/ITSEQ	7068/ITSEQ	7088/ITSEQ
	7093/ITSEQ	7112/ITSEQ	7115/ITSEQ	7122/ITSEQ	7128/ITSEQ	7128/ITSEQ
	7131/ITSEQ	7134/ITSEQ	7137/ITSEQ	11781-ITSEQEQU		
OSRF1						
	6975/ITSEQ	6977/ITSEQ	6979/ITSEQ	6981/ITSEQ	6986/ITSEQ	6988/ITSEQ
	6990/ITSEQ	6992/ITSEQ	6994/ITSEQ	6996/ITSEQ	6999/ITSEQ	7002/ITSEQ
	7005/ITSEQ	7008/ITSEQ	7011/ITSEQ	7013/ITSEQ	7016/ITSEQ	7019/ITSEQ
	7022/ITSEQ	7025/ITSEQ	7028/ITSEQ	7031/ITSEQ	7034/ITSEQ	7035/ITSEQ
	7038/ITSEQ	7041/ITSEQ	7044/ITSEQ	7047/ITSEQ	7049/ITSEQ	7055/ITSEQ
	7057/ITSEQ	7060/ITSEQ	7061/ITSEQ	7062/ITSEQ	7065/ITSEQ	7068/ITSEQ
	7073/ITSEQ	7076/ITSEQ	7080/ITSEQ	7083/ITSEQ	7112/ITSEQ	7115/ITSEQ
	7122/ITSEQ	7131/ITSEQ	11781-ITSEQEQU			
OSRF2						
	11781-ITSEQEQU					
OSRF3						
	11781-ITSEQEQU					
OSRF4						
	11781-ITSEQEQU					
OSRF5						
	11781-ITSEQEQU					
OSRF6						
	11781-ITSEQEQU					
OSRF7						
	11781-ITSEQEQU					
OSBT0						
	6986/ITSEQ	6988/ITSEQ	6990/ITSEQ	6992/ITSEQ	6994/ITSEQ	6996/ITSEQ
	6999/ITSEQ	7002/ITSEQ	7005/ITSEQ	7008/ITSEQ	7011/ITSEQ	7025/ITSEQ
	7028/ITSEQ	7031/ITSEQ	7034/ITSEQ	7035/ITSEQ	7038/ITSEQ	7041/ITSEQ
	7044/ITSEQ	7047/ITSEQ	7049/ITSEQ	7073/ITSEQ	7076/ITSEQ	7080/ITSEQ
	7083/ITSEQ	7096/ITSEQ	7098/ITSEQ	7102/ITSEQ	7104/ITSEQ	7123/ITSEQ
	7125/ITSEQ	11782-ITSEQEQU				
OSBT1						
	7134/ITSEQ	7137/ITSEQ	7153/ITSEQ	7155/ITSEQ	11782-ITSEQEQU	
OSBT2						
	11782-ITSEQEQU					
OSBT3						
	11782-ITSEQEQU					
OSBT4						
	11782-ITSEQEQU					
OSBT5						
	11782-ITSEQEQU					
OSBT6						
	6988/ITSEQ	6994/ITSEQ	7002/ITSEQ	7011/ITSEQ	7028/ITSEQ	7035/ITSEQ
	7041/ITSEQ	7049/ITSEQ	7073/ITSEQ	7076/ITSEQ	7080/ITSEQ	7083/ITSEQ
	7134/ITSEQ	7137/ITSEQ	7153/ITSEQ	7155/ITSEQ	11782-ITSEQEQU	
OSBT7						

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11782-ITSEGEQU
PAGE 1438/OPEN
PAGE 1438/OPEN
PASSTYPE 1438/OPEN 1439-CNAME
PATREAD 8732/STW 9049-DATA 10465/LW
PATREAD1 9432-CW
PATREAD1 9433/BNE 9438-MTW
PATSETUP 9440/REZ 9442/B 9452-AI
PATTWRT 9429/BCS 9448-MTW
RADSEED 8675/STW 8743/LW 8748/STW 8773/LW 8801/LW 10314/LW 10340-DATA
RDMPATM 8709/STW 8867/STW 8992/STW 9050-DATA 9317/STW 9474/MTW
RDMPAT1 11536/RE 11542-STW 11547/RI
READONLY 9136/HAL 9244-LI
READVERY 8721/STW 9277/STW 9278/MTW 9439/MTW 9994-DATA
READ02 8821/HAL 8969-MTW
READ12 8819/HAL 8947-MTW
REDDRED 8825/BAL 9026-MTW
REDONLY 5955/BAL 6052/BAL 9135/BAL 9238-LI 9264/B
RESETIP 8472/STW 8478-DATA 8533/MTW
REVISION 1789/STW 1938-DATA
RESET 312/DATA 1609/IPROCDIC 8445-LI
RESETADDR 312-DATA
RESET1 8464/BCR 8472-STW
RTRACEBOT 8652/LI 8654/STW 9064-SET
RTRACEL5C 8742/MTW 9053-DATA
RTRACEL5P 8787/MTW 9055-DATA
RTRACEL51 8779/MTW 9054-DATA
RTRACETRP 8652/LI 9051-SET
RTRACEC0 8832/MTW 9056-DATA
RTRACEC4 8948/MTW 9060-DATA
RTRACEC7 9027/MTW 9063-DATA
RTRACEC1 8856/MTW 9057-DATA
RTRACEO6 8991/MTW 9062-DATA
RTRACEC2 8885/MTW 9058-DATA
RTRACEO5 8970/MTW 9061-DATA
RTRACEO3 8910/MTW 9059-DATA
RC 1418-EQU

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R1	1419-EQU							
R10	1428-EQU							
R11	1429-EQU	11638/STW	11664/LW					
R12	1430-EQU	11341/LW	11350/LW	11710/LW	11713/LI	11714/STB		
R13	1431-EQU	11360/LI	11365/LI	11378/STB*	11645/AND			
R14	1432-EQU	11361/BAL	11366/BAL	11386/B*	11639/STD	11665/LD		
R15	1433-EQU	11266/B*	11342/BAL	11347/BAL	11352/BAL	11353/STW	11362/BAL	
	11367/BAL	11377/BAL	11378/STB	11380/SLS	11605/B*	11640/BAL	11647/BAL	
	11666/B*	11668/BAL	11689/BAL	11705/BAL	11711/BAL	11712/STW	11715/BAL	
R2	1420-EQU							
R3	1421-EQU							
R4	1422-EQU	11595/STD	11599/LCW	11601/STW	11602/BIR	11603/LD	11637/STW	
	11663/LW							
R5	1423-EQU	11597/LW	11598/AW	11601/STW*				
R6	1424-EQU	11378/STB	11379/MTW	11382/MTW	11383/CI	11596/STW	11600/LI	
	11601/STW	11604/LW						
R7	1425-EQU	11376/LI	11381/RDR					
R8	1426-EQU							
R9	1427-EQU							
SAVEBIAS	5089/STW	5108/LW	5175-DATA					
SBAF0	11793-ITSEQEGU							
SBAF1	11793-ITSEQEGU							
SBAF2	11793-ITSEQEGU							
SBAF3	11793-ITSEQEGU							
SBAF4	11793-ITSEQEGU							
SBAF5	11793-ITSEQEGU							
SBAF6	11793-ITSEQEGU							
SBAF7	11793-ITSEQEGU							
SBAT0	11794-ITSEQEGU							
SBAT1	11794-ITSEQEGU							
SBAT2	11794-ITSEQEGU							
SBAT3	11794-ITSEQEGU							
SBAT4	11794-ITSEQEGU							
SBAT5	11794-ITSEQEGU							
SBAT6	11794-ITSEQEGU							
SBAT7	11794-ITSEQEGU							
SECINCMT	8719/STH	8837/STH	8865/STH	8898/STH	8933/STH	8957/STH	8977/STH	
	9015/STH	9315/STH	10274-FQU					

SECTCOUT	9387/SH	9571/B	9608-AI	9828/EXU	10274/EQU		
SECTCURR	2097/DW	4195/LW	4288/LW	4342/MW	4371/AW	4417/MW	4506/AW
	4532/LW	4542/LW	4988/LW	5011/LW	5022/MW	5026/AW	5091/MW
	5093/AW	5128/LW	5244/AW	5246/DW	5248/MW	5522/AW	6007/DW
	6009/MW	6018/SW	6730/MW	6817/AW	7760/MW	8063/DW	8221/CW
	9464/DW	10114/DW	10190/LW	10368-DATA			
SECTDLAY	2098/STW	2227-DATA	7411/LW	7667/LW			
SECTLGTH	10239-DATA						
SECTLMT	4365/STW	5111/STW	7928/CW	10167/STW	10243-DATA		
SECTORA	8254/DATA	8283-TEXTC					
SECTBRD	8252/DATA	8282-TEXTC					
SECTBKE	8250/DATA	8281-TEXTC					
SECTBRBC	8238/DATA	8273-TEXTC					
SECTBRB	8242/DATA	8277-TEXTC					
SECTBRP	8246/DATA	8279-TEXTC					
SECTBRS	1860/STW	1902/MW	1911/MW	1928/DW	8372/LW	8383/MW	8392/MW
	10350-DATA						
SECTBRT	8248/DATA	8280-TEXTC					
SECTBRU	8244/DATA	8278-TEXTC					
SECTBRZ	8240/DATA	8275-TEXTC					
SECTRACK	1754-SET						
SECTHEND	1760-SET	1859/LW					
SECTSHRT	8184/LW	10194/STW	10235-DATA	10814/MTH*			
SEFK	297/DATA	1608/IPRCDIC	8365-LI				
SEFKADD	297-DATA						
SEFKERR	8374/HL	8377/BL	8390/B	8399/R	8406/BEZ	8408/R	8425-BAL
SEFKIBCD	8716/LD	9310/LD	9325-GEN				
SEFKRAD	4339/LW	4349/LW	4360/LW	4408/LW	4543/STW	4564/STW	5016/LW
	5085/LW	5100/LW	6721/LW	6731/STW	6891/GEN	6893/GEN	6895/GEN
	7246/GEN	7252-DATA	8877/GEN	9325/GEN	9367/LW	9852/LW	10116/STW
	10117/AWM	10657/LW					
SEFKSAVE	8369/R	8409-LI					
SEFK1	8368-BAL	8403/BL					
SEFK2	8388/BGE	8391-LW					
SEFK3	8397/HLE	8400-STW					
SEFK4	8412-BAL	8414/LI					
SELCOUT	5961/BAL	6058/BAL	8040-STW				
SELCRTN	8041/STW	8255/R*	8285-DATA				
SELC151	8098-LD	8161/BL					
SELC152							

8057/STW 8163/BEZ	8074/STW* 8165-DATA	8076/S*P*	8082/STW*	8092/STW*	8094/STW*	8157/STD*
SELECT53	8100/BEZ	8157-STD				
SELECT60	8072-LW	8168/BL				
SELECT70	8102/BCR	8117-CI				
SELECT71	8118/BCR	8124-CI				
SELECT72	8125/BCR	8131-CI				
SELECT73	8132/BCR	8138-CI				
SELECT74	8139/BCR	8145-CI				
SELECT75	8146/BCR	8152-CI				
SELECT76	8153/BCR	8156-MTW				
SELECT81	8195/BEZ	8199/BGE	8204/BNEZ	8207/BNEZ	8209-STW	
SELECT82	8193-LW	8213/BLE				
SELECT83	8185-LW	8222/BL				
SELECT85	8191-LI	8231/B				
SELECT87	8224/BNEZ	8235-BAL				
SELECT89	8058/STW	8183/STW*	8190/STW*	8209/STW*	8217-DATA	8228/STH* 8229/STW*
SELECTER	10507/BEZ	10511/B	10680-LI			
SELECTUP	10733/PAL	10741/BAL	10749/BAL	10757/BAL	10765/BAL	10773/PAL 10778/BAL
SELECT01	10701/BNEZ	10709/B	10716/BNE	10722-LW		
SELECT03	10731-CI					
SELECT09	10772/BEZ	10775-AI				
SELECT08	10764/BCR	10770-AI				
SELECT07	10756/BCR	10762-AI				
SELECT06	10748/BEZ	10754-AI				
SELECT05	10740/BCR	10746-AI				
SELECT02	10729-LH	10795/BCS				
SELECT04	10732/BCR	10738-AI				
SELECT12	10728/B	10794-CI				
SELECT11	10798-STW					
SELECT10	10777/BEZ	10788-STH	10797/BNEZ			
SELECT90	8043/DATA	8259-TEXTC				
SELECT96	8178/DATA	8268-TEXTC				
SELECT94	8174/DATA	8266-TEXTC				
SELECT97	8227/LD	8271-TEXT				
SELECT95	8098/LD	8272-TEXT				

SELFCT93	8060/DATA	8264-TEXTC					
SELFCT91	8051/STW	8052/STW	8054/DATA	8262-TEXTC			
SELMANY	10688/STW	10791/MTW	10813/STW	10823-DATA			
SELPASS	10687/STW	10793/STW	10811/MTW	10822-DATA			
SELTEMP	10690/STW	10808/LW	10865-DATA				
SENSE	8817/BAL	8909-MTW					
SHIFT1	11294/STB	11297-SCD					
SHIFT2	11292/STB	11302-SCD					
SI0F0	11787-:TSEQEQU						
SI0F1	11787-:TSEQEQU						
SI0F2	11787-:TSEQEQU						
SI0F3	11787-:TSEQEQU						
SI0F4	11787-:TSEQEQU						
SI0F5	11787-:TSEQEQU						
SI0F6	11787-:TSEQEQU						
SI0F7	11787-:TSEQEQU						
SI0T0	11788-:TSEQEQU						
SI0T1	11788-:TSEQEQU						
SI0T2	11788-:TSEQEQU						
SI0T3	11788-:TSEQEQU						
SI0T4	11788-:TSEQEQU						
SI0T5	11788-:TSEQEQU						
SI0T6	11788-:TSEQEQU						
SI0T7	11788-:TSEQEQU						
SKCCWRT	8813/BAL	8855-MTW					
SKCHD02	8815/BAL	8884-MTW					
SKDIRNB	8371/STW	8375/AWM	8389/STW	8398/STW	8404/STW	8407/STW	8429-EQU
SLPPER	1907/STW	4335/LW	5083/LW	5212/LW	6016/CW	6019/CW	6021/LW
SPACE	8420/STW	9262/LW	10352-DATA				
SSIZE	7827/DATA	7843-TEXTC	8170/DATA	8236/DATA			
SSI/EC	1922/STW	10354-DATA					
SSTABLE	8749/LW	10372-DATA					
STAP	7901/MTW*	7919/MTW*	7939/CH*	7979/LH*	10163/STW	10169/STW*	10171/STW*
STPFAIR	10240-DATA						
STPFAIR	8811/BAL	8831-LD					
SLPPER	8839/LW	8849-DATA					

	1916/STW	6006/LW	6011/CW	8419/STW	10353-DATA			
SURCALL	9779-DATA	9783/LW*	9792/MTW	9793/LPSD	9999/XPSD			
SURCALL1	9788/RGE	9792=MTW						
SURDATE	9789/BAL	9826=STW						
SURDATE1	9826/STW	9868/BL*	9872-DATA					
SURDATE2	9837/BE	9841/RCS	9851-LW					
SURDFLAY	9399/STW	9418/MTW	9995-DATA					
SURFACE	9128/BAL	9204=STW						
SURFACE2	9209-BAL	9216/B						
SURFACE3	9228-DATA	9255/STW	9260/LW					
SURFCEND	4344/LW	4507/CW	5024/CW	5027/CW	5029/SW	5095/LW	5157/LW	
	5250/CW	5523/CW	6015/STW	6818/CW	8062/LW	8796/LW	8806/STW	
	9386/LW	9614/CW	9862/CW	10371-DATA				
SURHELP	9844/BEZ	9850/B	9860=MTW					
SURINT	9410/CAL3	9581-AIB						
SURINTC2	9410/CAL3	9593=MTW						
SURINTXX	9665-DATA							
SURINT00	9522-DATA	9524/LD	9997/XPSD					
SURINT01	9525/STW	9577-DATA	9593/MTW	9619/LPSD	9626/LPSD	9638/LPSD	9658/LPSD	
	9673/LPSD	9870/LPSD	9998/XPSD	10001/XPSD				
SURINT07	9621/BEZ	9630-CW						
SURINT06	9610/BL	9615/BL	9620=MTW					
SURINT03	9601/LW	9985-DATA	10039/STW	10041/STB	10096/STW			
SURINT09	9531/CAL2	9589/CAL2	9595/CAL2	9700=MTW	9971/B			
SURINT04	9527/CAL2	9584/CAL2	9663-BAL					
SURINT05	9668/B	9677-BAL						
SURINT02	9543/LI	9601-LW	9624/EXU	9625/EXU	9831/EXU	9832/EXU		
SURINT11	9616-LI							
SURINT25	9568-LI							
SURINT29	9642/BCP	9648-LI						
SURINT31	9567/STCF	9605/STCF	9631/BL	9641-LCI				
SURINT30	9651/RNEZ	9656=STW						
SURINT58	9357/STW	9683/STB	9690/STB	9693-DATA				
SURINT59	9361/STW	9563/STW	9694-DATA					
SURINT51	9692-BAL							
SURINT60	9523/DATA	9524-LD						
SURINT62	9529/B	9538=MTW	9596/B					
SURINT63								

9540=LI							
SURINT65	9532/B	9539/BNEZ	9551=LW	9590/B	9645/B		
SURINT64	9549/B	9561-STW					
SURMASK	935A/STW	9360/STW	9562/STW	9679-DATA			
SURM1END	9388/STW	9609/CW	10272-DATA				
SURORDER	8833/STW	8857/STW	8886/STW	8912/STW	8950/STW	8971/STW	8993/STW
	9029/STW	9275/STW	9390/CW	9428/CW	10259-DATA		
SURPAT	9234/B	9240/B	9246/B	9252/B	9274-STW		
SURPAT01	9279/REZ	9284-LCI					
SURPAT04	9365=LW						
SURPAT07	9397=LI	9444/B	9445/B	9475/BNEZ	9478/B		
SURPAT12	9402=WD	9420/B					
SURPAT23	9391/HCS	9413/RGZ	9423-STW	9477/RGZ			
SURPAT20	9416/HEZ	9419/BEZ	9449/BEZ	9484-LI	9715/B	9866/R	
SURPAT25	9405/HEZ	9408/BEZ	9412-AI				
SURPFRR	9173/HCS	9180/HCS	9195-BAL				
SURRTN	5927/STW	5954/STW	5991/STW	6046/STW	9204/STW	9210/R*	9221/R*
	9227-CATA						
SURSTART	9363/STW	9555/LI	9604-SIO	9612/LI	9632/LI		
SURTEMP1	9784/STW	9785/MTW*	9787/CW*	9791/STW*	9871-DATA		
SURTM1	9274/STW	9281/BNEZ*	9321/B*	9996-DATA			
SUR0015	9984-DATA						
SUR0615	9730/STW	9747/LM	9983-RFS				
SWITCH	9544/STW	9556/STW	9583-BCR	9613/STW	9633/STW		
SWPRBT12	1908/STW	8382/LW	8387/CW	10358-DATA			
SWPRBT34	1917/STW	8391/LW	8396/CW	10359-DATA			
SYNOMISS	10401/STW	10532/MTW	10747/MTW	10864-DATA			
TABRIAS	4182/STW	4363/STW	5109/STW	7920/CW	7938/LW	7967/LW	7969/LW
	7973/LW	8035-DATA	10173/STW				
TABCHUNT	7972/STW	7977/CW	7989/MTW	7994/CW	8038-DATA		
TABDLY4	7993/RGF	7999-LW					
TABDPLY1	4174/STW	4265/STW	4326/STW	4981/STW	5072/STW	7950-DATA	
TABDPLY3	7974-CW	7995/RG	8012/E				
TABDPLY	7937/BNEZ	7940/RNE	7946-MTW				
TABDPLY2	7948/HNEZ	7961-BAL					
TABERROR	7905/STW	7922/MTW	7930/MTW	7936/MTW	10174/STW	10242-DATA	
TABINDEX	7907/MTW	7908/CW	7924/MTW	7925/CW	8037-DATA	10172/STW	
TABLEMAX							

7899/CW	7916/CW	10166/STW	10175/LW	10176/AWM	10241-DATA		
TABLE001							
4178/LD	4269/LD	4985/LD	8022-TEXT				
TABLE002							
4327/LD	5073/LD	8024-TEXT	8050/LD				
TABLE003							
4331/LD	5077/LD	8026-TEXT	8045/LD				
TABLE010							
4176/LM	8028-TEXT						
TABLE012							
4983/LM	8032-TEXT						
TABLE011							
4267/LM	8030-TEXT						
TABLE100							
4177/STM	4268/STM	4984/STM	7952/DATA	8013-TEXTC			
TABLE101							
4179/STW	4180/STW	4270/STH	4271/STW	4332/STH	4333/STW	4986/STH	
4987/STW	5078/STH	5079/STW	7955/STB	7957/DATA	8016-TEXTC		
TABLE102							
7959/DATA	8019-TEXTC						
TABPASS							
4183/STW	4273/STW	4346/STW	5010/STW	5081/STW	7947/MTW	7953/STW	
8034-DATA							
TABRTN							
7897/STW	7915/STW	7978/BLE*	8036-DATA				
TABUILD5							
4223/BAL	7896-STW						
TABUILD							
4308/BAL	4378/BAL	5053/BAL	5130/BAL	7914-STW			
TABUILD2							
7909/BLE	7926/BLE	7936-MTW					
TABUILD1							
7939-CH	7942/BL						
TCKCURR							
4303/SW	4305/LW	4337/LCW	4357/LCW	4375/LCW	4410/LCW	4530/LCW	
5014/LCW	5048/SW	5050/LW	5086/LCW	5124/LCW	6723/LCW	9465/LW	
10110/LCW	10115/SLS*	10374-DATA	10658/LW	10660/LCW	10781/LCW	11291/LW	
11293/LCW							
TCKLGTH							
10238-DATA							
TCKSF T01							
1762-SET							
TCKSF T02							
1768-SET	1862/LW						
TCKSHIFT							
1863/STW	1925/LW	10356-DATA					
TCKSHOT							
8099/LH*	10196/STW	10200/STW*	10201/LW	10234-DATA	10729/LH*	10788/STH*	
TCKUNVH							
4433/STW	7774-DATA						
TCKUNVL							
4404/STW	4434/MTW	4436/STW	4438/MTW	4443/DATA	6717/STW	7735/LI	
7773-DATA							
TCKWPVH1							
4459/STW	6761/STW	7776-DATA					
TCKWPVH							
4485/STW	6796/STW	7778-DATA					
TCKWPVL1							
4405/STW	4460/MTW	4462/STW	4464/MTW	4469/DATA	6718/STW	6762/MTW	
6764/STW	6766/MTW	6771/DATA	7775-DATA				
TCKWPVL							
4406/STW	4486/MTW	4488/STW	4490/MTW	4495/DATA	6719/STW	6797/MTW	
6799/STW	6801/MTW	6806/DATA	7777-DATA				
TDVFO							
7057/:TSEQ	7068/:TSEQ	7076/:TSEQ	7083/:TSEQ	7093/:TSEQ	7098/:TSEQ		
7104/:TSEQ	7115/:TSEQ	7125/:TSEQ	7131/:TSEQ	7137/:TSEQ	7144/:TSEQ		
7151/:TSEQ	7257/:TSEQ	11785-:TSEOFQU					
TDVF1							
11785-:TSEQEQU							
TDVF2							
7068/:TSEQ	7076/:TSEQ	7083/:TSEQ	7093/:TSEQ	7098/:TSEQ	7104/:TSEQ		

	7115/ITSEQ 7257/ITSEQ	7125/ITSEQ 11785-ITSEGEQU	7131/ITSEQ	7137/ITSEQ	7144/ITSEQ	7151/ITSEQ	
TDVF3	7057/ITSEQ 7104/ITSEQ 7151/ITSEQ	7068/ITSEQ 7115/ITSEQ 7257/ITSEQ	7076/ITSEQ 7125/ITSEQ 11785-ITSEGEQU	7083/ITSEQ 7131/ITSEQ	7093/ITSEQ 7137/ITSEQ	7098/ITSEQ 7144/ITSEQ	
TDVF4	11785-ITSEGEQU						
TDVFE	11785-ITSEGEQU						
TDVFE	11785-ITSEGEQU						
TDVF7	11785-ITSEGEQU						
TDVTC	7155/ITSEQ	11786-ITSEGEQU					
TDVT1	11786-ITSEGEQU						
TDVT2	7057/ITSEQ	11786-ITSEGEQU					
TDVT3	11786-ITSEGEQU						
TDVT4	11786-ITSEGEQU						
TDVT5	11786-ITSEGEQU						
TDVT6	11786-ITSEGEQU						
TDVT7	11786-ITSEGEQU						
TEMPSEK1	8400/STW	8418/LW	10360=DATA				
TEMPSEK2	8401/STW	8417/LW	10361=DATA				
TESTNEV	10335/STW	10365=8ET					
TGTNEV	1821/STW	2275/LW	9213/LW	10349=DATA			
TILT	1825/PAL 9591/PAL	5153/BAL 9597/BAL	7854/LW 9969/BAL	7900/BAL	7918/BAL	8762/PAL	9533/BAL
TILT1	7856/STW	7858=DATA	7862=TEXTC				
TIFFC	11779-ITSEGEQU						
TIFP1	7054/ITSEQ	11779-ITSEGEQU					
TIFP2	7054/ITSEQ	11779-ITSEGEQU					
TIFP3	11779-ITSEGEQU						
TIFP4	6975/ITSEQ 6992/ITSEQ 7016/ITSEQ 7038/ITSEQ 7112/ITSEQ 7144/ITSEQ	6977/ITSEQ 6996/ITSEQ 7019/ITSEQ 7044/ITSEQ 7115/ITSEQ 7148/ITSEQ	6979/ITSEQ 6999/ITSEQ 7022/ITSEQ 7047/ITSEQ 7122/ITSEQ 7151/ITSEQ	6981/ITSEQ 7005/ITSEQ 7025/ITSEQ 7062/ITSEQ 7128/ITSEQ 11779-ITSEGEQU	6986/ITSEQ 7008/ITSEQ 7031/ITSEQ 7065/ITSEQ 7131/ITSEQ	6990/ITSEQ 7013/ITSEQ 7034/ITSEQ 7068/ITSEQ 7140/ITSEQ	
TIFP5	7054/ITSEQ	11779-ITSEGEQU					
TIFP6	7054/ITSEQ	11779-ITSEGEQU					
TIFP7	11779-ITSEGEQU						
TIGTC	11780-ITSEGEQU						
TIGT1	7052/ITSEQ	11780-ITSEGEQU					
TIGT2	7052/ITSEQ	11780-ITSEGEQU					
TIGT3							

	11780-ITSEQUEU					
TI0T4	7055/:TSEQ	7057/:TSEQ	7060/:TSEQ	7061/:TSEQ	7134/:TSEQ	7137/:TSEQ
	7153/:TSEQ	7155/:TSEQ	11780-ITSEQUEU			
TI0T5	7052/:TSEQ	11780-ITSEQUEU				
TI0T6	7052/:TSEQ	11780-ITSEQUEU				
TI0T7	11780-ITSEQUEU					
TOTALS	10187/AI	10192/MI	10233-FDU	10689/MI		
TOTLSHPT	8226/LW	10188/STW	10236-DATA	10815/MTW*		
TRACE	1001C-DATA					
TRACE00T	9336/LI	9338/STW	10027-SET			
TRACE00P	9336/LI	10009-SET				
TRACE00	10011-DATA					
TRACE01	9548/MTW	10012-DATA				
TRACE02	9564/MTW	10013-DATA				
TRACE03	10014-DATA					
TRACE04	10015-DATA					
TRACE05	9827/MTW	10016-DATA				
TRACE06	9861/MTW	10017-DATA				
TRACE07	9745/MTW	10018-DATA				
TRACFOR	10019-DATA					
TRACE09	9637/MTW	10020-DATA				
TRACE10	9611/MTW	9669/MTW	10021-DATA			
TRACE11	9681/MTW	10022-DATA				
TRACE12	9701/MTW	10023-DATA				
TRACE13	9782/MTW	10024-DATA				
TRACE14	9903/MTW	10025-DATA				
TRACE15	9731/MTW	10026-DATA				
TSPREAD	8788/STW	8805/AW	9047-DATA			
TSSTART	1931/STW	10355-DATA				
TSSTARTC	2142/MTW	2144/MTW	3232/LW	3256/CW	3274/LW	3301/LW
	3379/LW	3406/CW	3422/LW	3450/LW	3508/LW	3534/CW
	3582/LW	3608/LW	10373-DATA			
TSTO	186/DATA	1603/:PRBCDIC	1969-LI	1988/B		
TSTOADDR	186-DATA					
TSTORCH	2150/EXU	2237-REZ				
TSTOFLAG	2019/STW	2030/STW	2148/LW	2232-DATA		
TST1	210/DATA	1604/:PRBCDIC	2018-LI	2025/B		
TST1ADDR						

210-DATA							
TST1DVFG	2106/STW	2233-DATA	2304/STW	7812/XW			
TST1END	2035/LI	2046/CI	2059/CI	2225-FGU			
TST1ERMG	2297/BAL	2339/RAL	2353/BAL	2384/BAL	2395/BAL	2412/RAL	2447/BAL
	2459/BAL	2477/BAL	2515/BAL	2526/BAL	2543/BAL	2598/RAL	2610/BAL
	2628/BAL	2645/BAL	2662/BAL	2679/BAL	2693/BAL	2715/RAL	2771/BAL
	2784/BAL	2798/BAL	2842/BAL	2860/BAL	2871/BAL	2884/BAL	2909/BAL
	2925/BAL	2938/BAL	2959/BAL	2981/BAL	3035/BAL	3053/RAL	3064/BAL
	3083/BAL	3116/RAL	3132/BAL	3146/BAL	3161/BAL	3174/BAL	3192/BAL
	3258/BAL	3400/BAL	3536/BAL	3691/BAL	3698/BAL	3847/RAL	3854/RAL
	3982/BAL	3989/BAL	4092/BAL	4134/BAL	4440/BAL	4466/RAL	4492/RAL
	4612/RAL	4622/BAL	4655/BAL	4748/BAL	4893/BAL	4951/RAL	5191/BAL
	5305/RAL	5366/BAL	5442/BAL	5520/BAL	5560/BAL	5757/RAL	5829/BAL
	5858/RAL	5959/BAL	6056/BAL	6084/BAL	6152/BAL	6211/BAL	6272/BAL
	6311/BAL	6377/BAL	6441/BAL	6512/BAL	6572/BAL	6768/RAL	6803/BAL
	7455/RAL	7486/BAL	7517/BAL	7548/BAL	7593/BAL	7618/RAL	7810-STH
	7949/BAL	8592/RAL	10521/BAL	11655/BAL	11676/BAL	11697/RAL	11894/BAL
	11952/BAL	11993/BAL					
TST1ERTN	7810/STH	7828/LW*	7840-B	7847/LH			
TST1ERC1	7813/PEZ	7826-BAL					
TST1ER03	7835-BAL						
TST1ER04	7834/FXU	7847-LH					
TST1ER02	7828-LW						
TST1MSG	7818/STP	7820/STH	7824/DATA	7841-TEXTC			
TST1MSG1	7830/STW	7832/STH	7836/STW	7839/DATA	7844-TEXTC		
TST1PEPR	2047/HG	2060/BG	2069-BAL				
TST1P9NT	2105/STW	2159/LW	2167/MTW	2168/LW	2231-DATA		
TST1RTN	2031/STW	2086/B*	2090/B*	2230-DATA			
TST1START	2035/LI	2046/CI	2059/CI	2149/MTW	2154/LW	2172-FGU	
TST1TEST	2073/STD	2104/LW	2169/CW	2235-DATA			
TST100	1971/HAL	2022/BAL	2030-STW				
TST1001	2040/PEZ	2065/BGE	2073-STD				
TST102	2077-LI						
TST103	2083-HIB	2170/BG					
TST104	2103-LW						
TST105	2110-LI	2162/B	2171/B				
TST106	2157/B	2167-MTW					
TST1115	3399/H	3405-LW					
TST1115A	3400-BAL	3407/BNE					
TST?	231/DATA	1605-IPROCDIC	8648-LW	8661/H			
TST2ADDR	231-DATA						
TST2DATA	2129/LW	5907/LM	5986/LH	8673/LM	9035-DATA		
TST2LEV2	1983/BAL	8658/BAL	8667-STW				

TST2LEV3	8681/BAL	8686-STW					
TST2LEV5	8710/BAL	8741-STW	8753/BFZ	8781/BEZ			
TST2LEV4	8694/BAL	8700-STW					
TST2LHPP	8689-MTW	8696/R					
TST2PAR	1980/STW	8651/STW	8676/LI	9039-DATA			
TST2RTN1	8667/STW	8671/R*	8682/B*	8755/R*	9043-DATA		
TST2RTN2	8686/STW	8690/BEZ*	9044-DATA				
TST2RTN3	8700/STW	8735/R*	9045-DATA				
TST2RTN4	8741/STW	8807/R*	9046-DATA				
TST3	246/DATA	1606/:PR0CDIC	9150-LI				
TST3ADDR	246-DATA						
TST3EXIT	5947/STW	6047/STW	9191/B*	9200-DATA	9298/R*		
TST3PARM	9166/STD 9211/LW*	9172/CLR*	9179/CLR*	9183/LW*	9190/LD	9199-DATA	9207/LW*
TST3PAT	5908/STM	5987/STM	8674/STM	9155/STM	9285/LM	9290/MTW	9979-DATA
TST3P1T1	9126-SET	9171/LI	9184/EXU				
TST3P1T2	9129-SET	9171/LI					
TST3P2T1	9132-SET	9178/LI	9215/EXU				
TST3P2T2	9138-SET	9178/LI					
TST3P3T1	9139-SET						
TST3P3T2	9141-SET						
TST3P4T1	9144-SET						
TST3P4T2	9147-SET						
TST3RAND	8677/BAL	9158/BAL	9166-STD				
TST31	9186/BNEZ	9189-LD					
TST32	9156-LI	9161/R					
T1ERFLAG	2126/STW	2229-DATA	2449/MTW	2461/MTW	2483/MTW	2484/MTW	2600/MTW
	2612/MTW	2635/MTW	2647/MTW	2669/MTW	2681/MTW	2699/MTW	2700/MTW
	2773/MTW	2786/MTW	2804/MTW	2805/MTW	2848/MTW	2862/MTW	2873/MTW
	2890/MTW	2911/MTW	2927/MTW	2944/MTW	2961/MTW	2983/MTW	2984/MTW
	3041/MTW	3055/MTW	3066/MTW	3085/MTW	3118/MTW	3134/MTW	3152/MTW
	3163/MTW	3180/MTW	3194/MTW	3196/MTW	4078/STW	4094/MTW	4109/MTW
	4111/MTW	4125/STW	4136/MTW	4151/MTW	4153/MTW	4596/STW	4603/MTW
	4614/MTW	4624/MTW	4625/MTW	4638/STW	4645/MTW	4654/MTW	4657/MTW
	7725/STW						
T1INTX	3113/LI	3116-BAL					
T1INT08	2992-DATA	2995/LPSD	2998/XPSD				
T1INT09	3093-DATA	3104/STW	3105/LPSD	3114/STW	3115/LPSD	3201/XPSD	
T1INT094	3096/BNEZ	3112-LI					
T1INT095	3103/LI	3125-LI					

T1INT098	3160/BCS	3170-BAL		
T1INT097	3145/P	3159-LCF		
T1INT096	3131/BCR	3142-BAL		
T1STDYLP	2264/STW	2268/MTW	2310-DATA	
T1STINTR	2282-DATA	2289/LPSD	2309/XPSD	
T1STXPSD	2253/LW	2309-XPSD		
T1STC1	2174/DATA	2252-LW		
T1STC105	2265-LI	2269/BLZ		
T1STC115	2260/LI	2303-STW		
T1STC119	2270/PAL	2272-LI	2296/BAL	
T1STC117	2288/BLZ	2296-BAL		
T1STC120	2286-MTW	2307/B	2308/B	
T1STC2	2175/DATA	2326-LW	2343/B	
T1STC211	2331/STCF	2338/BCS	2351-LCI	
T1STC3	2176/DATA	2369-HI0		
T1STC310	2382-LCF			
T1STC311	2383/HCR	2393-LCF		
T1STC312	2394/BCF	2404-LCF		
T1STC4	2177/DATA	2432-TI0		
T1STC410	2445-LCF			
T1STC411	2446/BCF	2457-LCF		
T1STC413	2474/B	2482/B	2484-MTW	
T1STC412	2458/BCF	2469-LCF		
T1STC5	2178/DATA	2500-TDV		
T1STC510	2513-LCF			
T1STC512	2525/HCR	2535-LCF		
T1STC511	2514/HCR	2524-LCF		
T1STC6	2179/DATA	2563-LW	2704/B	2723/B
T1STC610	2596-LCF			
T1STC611	2597/HCR	2608-LCF		
T1STC615	2656-PAL			
T1STC614	2644/BE	2648-STW		
T1STC613	2625/B	2643-CH		
T1STC612	2609/BCR	2620-LCF		
T1STC619	2701/BEZ	2711-BAL		
T1STC618				

	2692/B	2700-MTW		
T1STC617	2678/BCR	2689-BAL		
T1ST0616	2659/H	2676-STW		
T1ST07	2180/DATA	2737-LW		
T1STC710	2769-LCF			
T1STC712	2783/BE	2794-BAL		
T1STC711	2770/MCR	2781-LH		
T1STC713	2797/R	2805-MTW		
T1ST08	2181/DATA	2823-LW		
T1ST0810	2838-BAL			
T1ST0814	2883/B	2897-LW		
T1ST0813	2870/HCS	2880-BAL		
T1ST0812	2859/H	2869-LCF		
T1ST0819	2980/PEZ	2984-MTW		
T1ST0818	2958/B	2968-LI		
T1ST0817	2937/B	2951-LI		
T1STC816	2924/BCP	2934-BAL		
T1ST0815	2908/RNEZ	2918-TDV		
T1ST0811	2841/H	2856-BAL		
T1ST09	2182/DATA	3016-LW		
T1ST0910	3031-BAL			
T1ST0919	3173/H	3186-TIO		
T1ST0911	3034/B	3049-BAL		
T1ST0913	3063/BCS	3073-LW		
T1ST0912	3052/B	3062-LCF		
T1ST0920	3086/R	3191/B	3195-MTW	
T1ST10	2183/DATA	3214-LW	3244/B	3262/B
T1ST1010	3232-LW			
T1ST1015	3239/H	3252-BAL		
T1ST1020	3257/HE	3274-LW	3288/B	
T1ST1030	3283/H	3301-LW	3314/B	
T1ST1040	3310/B	3328-LW	3341/B	
T1ST11	2184/DATA	3359-LW	3390/B	3404/B
T1ST1110	3379-LW			
T1ST1115	3386/H	3398-BAL		
T1ST1120	3408/R	3422-LW	3435/B	

T1ST1130	343C/H	3450-LW	3463/B	
T1ST112	2185/DATA	3484-LI	3521/B	3540/B
T1ST1210	353R-LW			
T1ST1215	3515/B	3530-RAL		
T1ST1220	3535/BE	3555-LW	3567/B	
T1ST1230	3562/B	3582-LW	3595/B	
T1ST1240	3591/B	360R-LW	3621/B	
T1ST113	2186/DATA	3638-LI	3675/B	3702/B
T1ST1310	3665-RAL			
T1ST1315	367C/B	3688-LW		
T1ST1317	3693/H	3700-RAL		
T1ST1316	369C/RNE	3694-LW		
T1ST1320	3697/H	3716-BAL	3726/B	
T1ST1330	3721/H	3739-RAL	3749/B	
T1ST1340	3744/H	3762-BAL	3772/B	
T1ST14	2187/DATA	3791-LW	3831/B	3858/B
T1ST1410	3821-RAL			
T1ST1417	3849/H	3856-RAL	3984/R	
T1ST1416	3846/PNF	3850-LW		
T1ST1415	3826/H	3844-LW		
T1ST1420	3853/H	3872-BAL	3883/B	
T1ST1430	3872/H	3896-RAL	3906/B	
T1ST15	2188/DATA	3924-LI	3966/B	3993/B
T1ST1510	3956-RAL			
T1ST1517	3991-RAL			
T1ST1516	3981/PNF	3985-LW		
T1ST1515	3961/H	3979-LW		
T1ST1520	3988/H	4007-RAL	4018/B	
T1ST1530	4012/H	4031-RAL	4041/B	
T1ST1540	4036/H	4054-BAL	4064/B	
T1ST16	2189/DATA	4077-LI	4116/B	4158/B
T1ST1610	4090-LCF			
T1ST1620	4091/RCS	4102-LI		
T1ST1625	4102/H	4111-MTW		
T1ST1630	4112/HEZ	4123-LI		
T1ST1640				

T1ST1645	4133/BCR	4144-LI				
T1ST17	4150/B	4153-MTW				
T1ST17IT	2190/DATA	4173-LI				
T1ST17JP	4235-DATA	4244/LPSD	4248/XPSD			
T1ST17LP	4236/DATA	4242-AIO				
T1ST17XP	4218/STW	4220/MTW	4243/MTW	4249-DATA		
T1ST1710	4190/LW	4248-XPSD				
T1ST1711	4195-LW	4228/B				
T1ST18	4215-LI	4225/R				
T1ST1810	2191/DATA	4264-LI				
T1ST1811	4288-LW	4313/R				
T1ST1820	4295-BAL	4310/R				
T1ST1821	4309/B	4325-LI				
T1ST1822	4367-LW	4380/R				
T1ST19	4354-LI	4383/B				
T1ST19RP	2192/DATA	4398-LW				
T1ST19RT	4442/BAL	4448/BAL	4494/BAL	6770/BAL	6805/BAL	7724-STW
T1ST19XF	7724/STW	7743/LW*	7762/R*	7763-DATA		
T1ST1908	4414/STW	4447/MTW	4473/MTW	4499/MTW	4503/MTW	4509/STW
T1ST1909	6727/STW	6775/MTW	6790/MTW	6810/MTW	6814/MTW	6820/STW
T1ST1910	4407-LI	4448/BEZ	4474/BEZ	4500/BEZ		4517-DATA
T1ST1911	4409-LCW	4446/B	4472/B	4498/B		
T1ST1920	4418-BAL	4508/BAL				
T1ST1921	4432/B	4438-MTW	4513/R			
T1ST1930	4437/B	4439/BEZ	4455-BAL			
T1ST1931	4458/B	4464-MTW				
T1ST1940	4463/B	4465/BEZ	4482-MTW			
T1ST20	4505-AI					
T1ST2010	4484/BGEZ	4490-MTW				
T1ST2020	4489/B	4491/BEZ	4503-MTW			
T1ST21	2193/DATA	4529-LCW	4553/R			
T1ST2111	4542-LW					
T1ST2112	4535/BNEZ	4549/B	4560-LW	4574/B		
T1ST2113	2194/DATA	4595-LI	4629/B			
T1ST2114	4602/B	4609-HIO				
T1ST2115	4611/PNE	4620-CI				

	4621/BE	4625-MTW				
T1ST2120	4626/BEZ	4637-LI	4661/B			
T1ST2121	4644/B	4651-HIO				
T1ST2123	4653/BE	4657-MTW				
T1ST22	2195/DATA	4667-EQU				
T1ST23	2196/DATA	4668-EQU				
T1ST24	2197/DATA	4669-EQU				
T1ST25	2198/DATA	4670-EQU				
T1ST26	2199/DATA	4671-EQU				
T1ST27	2200/DATA	4672-EQU				
T1ST28	2201/DATA	4673-EQU				
T1ST29	2202/DATA	4674-EQU				
T1ST30	2203/DATA	4675-EQU				
T1ST31	2204/DATA	4692-LW	4731/B	4752/B		
T1ST311C	4721-BAL					
T1ST3117	4750-BAL					
T1ST3115	4726/H	4746-BAL				
T1ST3120	4747/H	4767-BAL	4778/B			
T1ST3130	4773/B	4794-BAL	4805/B			
T1ST314C	4800/H	4821-BAL	4833/B			
T1ST32	2205/DATA	4848-LI				
T1ST32A	4856-HAL	4881/B	4897/B	4902/BL		
T1ST321C	4871-HAL					
T1ST3216	4892/H	4898-LH				
T1ST3215	4876/H	4890-BAL				
T1ST33	2206/DATA	4925-LW				
T1ST33A	4934-HAL	4946/B	4955/B	4965/BL		
T1ST331C	4936-HAL					
T1ST3316	4950/B	4959-LH				
T1ST3315	4941/H	4949-BAL				
T1ST34	2207/DATA	4980-LI				
T1ST34SV	4196/STW	4289/STW	4293/LW	4351/STW	4364/AW	4368/LW
	5041/LW	5043/LW	5102/STW	5110/AW	5114/LW	5120/LW
T1ST341C	5009-LI					5033/STW
T1ST3414	5028/HLF	5033-STW				7677-DATA
T1ST3411	5043-LW	5055/B				
T1ST3415						

5042/B	5045-BAL		
T1ST3412	5034-LI	5058/R	
T1ST3420	5054/B	5071-LI	
T1ST3424	5105-LI	5135/B	
T1ST3425	5119/R	5122-BAL	
T1ST3423	5113-LW	5132/B	
T1ST3421	5120-LW		
T1ST3430	5131/B	5146-LW	5173/B
T1ST3432	5149/BE	5157-LW	
T1ST3431	5148-CW	5152/BL	
T1ST35	2208/DATA	5187-LI	5196/B
T1ST3516	5213/STW	5235-DATA	
T1ST3511	5225/R	5249-STW	
T1ST3520	5190/B	5270-BAL	5284/R
T1ST36	2209/DATA	5301-LI	5309/R
T1ST3620	5304/B	5326-LI	
T1ST3621	5327-STH	5343/B	5347/BL
T1ST3622	5338/B	5344-LH	5401/B
T1ST37	2210/DATA	5362-LI	5370/R
T1ST3720	5365/B	5387-LW	
T1ST3722	5396/R	5402-LH	
T1ST3721	5389-STH	5407/BL	
T1ST38	2211/DATA	5434-LI	5446/B
T1ST3801	543R-BAL	5524/BL	5538/B
T1ST3802	5441-BAL	5525/B	
T1ST3820	5439/B	5456-LW	
T1ST3821	5467-BAL	5483/R	
T1ST3830	5478/B	5513-STW	
T1ST3831	5520/HGE	5528-LI	
T1ST39	2212/DATA	5554-LI	5564/B
T1ST3920	5559/B	5588-LI	
T1ST3921	5591-BAL	5607/R	
T1ST3930	5602/B	5627-BAL	5644/B
T1ST3940	5639/R	5665-BAL	5682/R
T1ST3950	5677/R	5703-LI	
T1ST3951	5705-BAL	5717/B	

T1873960						
5712/B	5726-LW					
T1873961						
5728-BAL	5740/B					
T18740						
2213/DATA	5753-LI	5761/B				
T1874022						
5756/B	5777-LI					
T1874021						
5777/LI	5799-BAL					
T1874025						
5806/B	5819-LH					
T1874020						
5786-LW	5811/B	5835/B	5864/B	5883/B	5891/B	
T1874035						
5824/B	5832/B	5842-LI				
T1874040						
5853/B	5861/B	5874-BAL				
T1874042						
5879/B	5887-LH					
T18741						
2214/DATA	5905-LCI					
T18741ER						
5921/STW	5946/STW	5989/STW	6044/STW	10522-DATA		
T1874110						
5915-LI	5935/B					
T1874111						
5931/BEZ	5943-LI	5965/B				
T187411Y						
5953/LI	5962-BAL					
T187411X						
5926/LI	5932-BAL					
T18742						
2215/DATA	5980-LI					
T187421Z						
5990/LI	6012/BNE	6019-CW	6032/B			
T1874213						
5992-LW						
T187421W						
6045/LI	6061-BAL					
T1874211						
6017/BLE	6041-LI	6063/B				
T1874214						
6013-LW	6027/BEZ	6033/B				
T18743						
2216/DATA	6080-LI	6088/B				
T1874320						
6083/B	6110-LI					
T1874322						
6119/B	6125-LH					
T1874321						
6113-BAL	6124/B	6131/BL				
T18744						
2217/DATA	6148-LI	6156/B				
T1874420						
6151/B	6169-LI					
T1874421						
6173-BAL	6187/B	6221/B				
T1874430						
6182/B	6199-LW					
T1874431						
6207-LB	6216/BLE					
T1874440						
6201/BNE	6234-LI	6251/B	6282/B			
T1874450						
6246/B	6261-LW					
T1874451						
6268-LB	6277/BLE					
T18745						
2218/DATA	6302-LW	6315/B				
T1874520						

6309/B	6327-LI		
T1ST4521			
6344-BAL	6355/B	6385/B	6393/BLF
T1ST4522			
6333/STW	6347-DATA	6391/MTW	
T1ST4527			
6350/H	6358-LW		
T1ST4539			
6360/BNE	6375/BNEZ	6386-LW	
T1ST4530			
6374-AND			
T1ST4542			
6407/STW	6423-DATA	6461/MTW	
T1ST4543			
6435-BAL			
T1ST4541			
6426/H	6432-LW		
T1ST4540			
6420-BAL	6431/B	6447/B	6464/BLF
T1ST4551			
6434/BNE	6439/BNEZ	6457-LW	
T1ST46			
2219/DATA	6485-LI		
T1ST4601			
6497-HIO	6517/B	6535/B	
T1ST4610			
6509-HIO			
T1ST4620			
6510/PCS	6525-BAL		
T1ST47			
2220/DATA	6547-LI		
T1ST4701			
6559-HIO	6577/B	6595/B	
T1ST4710			
6569-HIO			
T1ST4720			
6570/BCS	6585-BAL		
T1ST48			
2221/DATA	6616-LI	6635/B	
T1ST481D			
6618/BAL	6644/BAL	6661-LI	
T1ST481C			
6683-AI	6687/BLF		
T1ST4813			
6619/STW	6627-DATA		
T1ST482C			
6631/H	6643-LI	6657/B	
T1ST4823			
6645/STW	6649-DATA		
T1ST49			
2222/DATA	6713-LW		
T1ST4908			
6720-LI	6776/BEZ	6811/BEZ	
T1ST4909			
6722-LCW	6774/B	6809/B	
T1ST4910			
6743-BAL	6754/B	6819/BL	
T1ST4911			
6760/B	6766-MTW	6824/B	
T1ST4912			
6751/B	6756-BAL		
T1ST4920			
6765/H	6767/BEZ	6789-MTW	
T1ST4921			
6795/BGEZ	6801-MTW		
T1ST4930			
6800/B	6802/BEZ	6814-MTW	
UNVABLE			
7739/LM	7771-TEXT		
UNXINTR			
7624/DATA	7684-TEXTC		

WA	12113/LI 12154/LI	12115/LI 12160/LI	12127/LI	12132/LI	12138/LI	12145/LI	12147/LI
WATCHBRH	8536/LW	8608-B					
WATCHDGG	1689/XPSD	8525-DATA	8564/LW	8576/STW	8577/LPSD		
WATCHERR	1680/STW 8593-DATA	2133/STW 10220/LW	2579/MTW	2585/MTW	7188/LW	7231/LW	7287/LW
WATCHFLG	1676/STW	8528/MTW	8532/MTW	8601/STW	8607-DATA		
WATCHMSG	8567/STW	8569/STB	8599-DATA	8605-TEXTC			
WATCHRTN	8538/STW	8556/LW	8609-DATA				
WATCHSV	8531/STM	8603/LM	8610-RFS				
WATCH1	8534/RNEZ	8545-LI					
WATCH2	8544/R	8556-LW	8608/B				
WATCH3	8579/BEZ	8591-BAL					
WATCH4	8586/R	8587/R	8597-RAL				
WATCH6	8529/RNEZ	8536-LW					
WATCH7	8552/R	8558-LI					
WPCBGRTN	1671/STW	1688/R*	2136/STW	2261/STW	8584/STW	8604/R*	8611-DATA
WRITEDLY	9989-DATA						
WRITTEN	8583/LW	9335/STW	9489/BEZ*	9503/R*	9507/R*	9508/R*	9986-DATA
WRTDVRT	8823/RAL	8990-MTW					
WRTDVRT1	8995-AW	9030/B					
WRT9NLY	5928/RAL	6024/RAL	9134/RAL	9232-LI	9257/RAL		
WRTPTD	7734/LM	7770-TEXT					
WRTRED	9133/RAL	9255-STW					
WRTRED1	9260-LW						
XPSDATA	9546/LW	9551/LW	9998-XPSD				
XPSDCAL1	9350/LW	9999-XPSD					
XPSDCAL2	9352/LW	10000-XPSD					
XPSDCAL3	9354/LW	10001-XPSD					
XPSDFUCT	7425/LW	7686-XPSD					
XPSDSEFK	9348/LW	9554/LW	9925/LW	9997-XPSD			
XPSDT108	2897/LW	2998-XPSD					
XPSDT109	3073/LW	3201-XPSD					
XPSDWD	1678/LW	1689-XPSD					
*	1445/EQU 1646/EQU 1736/SET 1762/SET	1491/EQU 1648/EQU 1738/SET 1768/SET	1562/EQU 1656/EQU 1744/SET 1793/BL	1600/EQU 1660/EQU 1746/EQU 1849/BIR	1611/EQU 1663/EQU 1752/SET 1870/BLE	1629/EQU 1684/PEZ 1754/SET 1891/RNEZ	1637/EQU 1730/SET 1760/SET 1914/BG

1927/BEZ	1976/BNEZ	1984/R	1987/WAIT	2024/WAIT	2052/RNEZ	2143/BNEZ
2161/WAIT	2173/EQU	2225/EQU	2283/DATA	2306/WAIT	2342/WAIT	2575/B
2634/B	2668/B	2698/R	2703/WAIT	2720/B	2722/WAIT	2756/BIR
2761/B	2803/B	2829/RTR	2847/B	2889/B	2905/RDR	2922/B
2943/B	2974/BDR	2977/RDR	2993/DATA	3022/BIR	3040/R	3081/RDR
3094/DATA	3102/R	3127/RDR	3151/B	3179/R	3243/WAIT	3253/R
3254/B	3261/WAIT	3287/WAIT	3313/WAIT	3340/WAIT	3389/WAIT	3403/WAIT
3434/WAIT	3462/WAIT	3520/WAIT	3531/B	3532/R	3539/WAIT	3566/WAIT
3594/WAIT	3620/WAIT	3642/BE	3674/WAIT	3701/WAIT	3725/WAIT	3748/WAIT
3771/WAIT	3830/WAIT	3857/WAIT	3882/WAIT	3905/WAIT	3928/RE	3965/WAIT
3992/WAIT	4017/WAIT	4040/WAIT	4063/WAIT	4084/B	4115/WAIT	4124/RDR
4157/WAIT	4187/BE	4221/BEZ	4227/WAIT	4297/B	4300/R	4312/WAIT
4330/BE	4382/WAIT	4426/B	4428/B	4435/RNEZ	4445/WAIT	4461/RNEZ
4471/WAIT	4487/RNEZ	4497/WAIT	4552/WAIT	4573/WAIT	4628/WAIT	4660/WAIT
4730/WAIT	4751/WAIT	4777/WAIT	4804/WAIT	4832/WAIT	4880/WAIT	4896/WAIT
4945/WAIT	4954/WAIT	5019/RFZ	5040/B	5057/WAIT	5076/PE	5118/B
5134/WAIT	5172/WAIT	5195/WAIT	5238/B	5283/WAIT	5308/WAIT	5342/WAIT
5369/WAIT	5400/WAIT	5445/WAIT	5482/WAIT	5537/WAIT	5563/WAIT	5608/WAIT
5643/WAIT	5681/WAIT	5716/WAIT	5739/WAIT	5760/WAIT	5810/WAIT	5834/WAIT
5863/WAIT	5882/WAIT	5929/B	5934/WAIT	5956/B	5964/WAIT	6020/RG
6025/B	6031/WAIT	6051/B	6053/B	6062/WAIT	6087/WAIT	6123/WAIT
6155/WAIT	6186/WAIT	6204/R	6209/BEZ	6210/STW	6220/WAIT	6250/WAIT
6265/B	6270/BEZ	6271/STW	6281/WAIT	6314/WAIT	6340/RE	6354/WAIT
6362/B	6376/STW	6381/WAIT	6403/BE	6430/WAIT	6436/R	6440/STW
6446/WAIT	6516/WAIT	6518/R	6534/WAIT	6576/WAIT	6578/R	6594/WAIT
6621/B	6634/WAIT	6647/R	6656/WAIT	6669/RE	6682/R	6745/R
6753/WAIT	6763/BNEZ	6773/WAIT	6791/BNEZ	6793/B	6798/RNEZ	6808/WAIT
7199/WAIT	7242/WAIT	7293/BF	7305/WAIT	7396/B	7400/R	7413/PEZ
7415/BE	7417/BE	7435/RLEZ	7438/RDR	7454/STW	7465/RLEZ	7468/RDR
7485/STW	7516/STW	7524/STW	7527/B	7547/STW	7563/STW	7592/STW
7617/STW	7628/STW	7631/H	7636/STW	7729/RNE	7737/RNE	7825/R
7899/BLE	7904/BGE	7917/BLE	7921/BGE	7929/PLE	7960/R	7966/BIR
7983/BNE	7986/BNE	8048/BNE	8065/BEZ	8085/PCR	8215/RFZ	8450/BIR
8452/BE	8460/RDR	8462/RDR	8467/BCR	8468/B	8526/DATA	8539/B
8549/BDR	8551/BDR	8575/LI	8655/BIR	8660/WAIT	8702/R	8747/BEZ
8761/BNEZ	8764/BL	8785/RNEZ	8800/BEZ	8810/SET	8826/SET	8919/BNE
9006/RGFZ	9012/REZ	9052/SET	9065/SET	9126/SET	9127/RAL	9129/SET
9132/SET	9138/SET	9139/SET	9141/SET	9144/SET	9147/SET	9160/WAIT
9289/HNE	9339/BIR	9371/RNF	9457/BL	9472/RNF	9512/SET	9553/BEZ
9578/DATA	9644/R	9670/LI	9685/BEZ	9727/DATA	9780/DATA	9858/BNE
9863/PL	9915/R	9919/R	9958/BE	10009/SET	10027/SET	10037/BL
10170/RDR	10204/BIR	10209/BL	10347/SET	10357/SET	10362/SET	10365/SET
10405/BNE	10449/BE	10455/RFZ	10479/RDR	10482/BCS	10514/REZ	10519/BNE
10527/BE	10533/BEZ	10543/B	10653/BNE	10683/BNEZ	10705/RFZ	10707/BNE
10720/B	10725/BNE	10783/STW	10792/REZ	10844/EQU	10982/STW	10990/STW
11019/BE	11046/R	11061/BDR	11062/BDR	11078/B	11084/PLZ	11183/RDR
11252/BE	11269/BE	11331/BNE	11356/BNE	11358/BNE	11381/RDR	11396/WAIT
11449/BNE	11457/BE	11539/BIR	11559/WAIT	11602/BIR	11643/R	11652/BNEZ
11654/STW	11673/BNEZ	11675/STW	11685/RDR	11688/BDR	11694/RNEZ	11696/STW
11813/B	11820/R	11825/R	11834/R	11845/R	11893/RNEZ	11904/BCS
11938/B	11949/BNEZ	11951/STW	11990/BNEZ	11992/STW	12106/BIR	12107/BIR
12175/EQU						
1AIB	3099/RAL	3142/BAL	3148/RAL	3170/BAL	3176/BAL	7534/RAL
	7579/BAL	7598/RAL	8663/RAL	9677/RAL	9692/RAL	7553/BAL
1AIB1	10937-LI					10934-A1B
1BCDC	1498-EQU	1875/BAL*	1880/BAL*			
1BINC	1501-EQU	10484/RAL*	10486/RAL*	11077/RAL*	11377/BAL*	11999/RAL*
	12006/RAL*	12008/RAL*				12001/BAL*
1BINC0T1	11080-LI					
1BINC0T2	11082-SCS	11087/RGEZ				
1BINC0VT	11052/RAL	11057/BAL	11075-STD			
1BINDEXIT	11079/R	11088-LD				
1BINRTN						

11074/STW	11089/R*	11131-DATA				
:BINC405						
11075/STD	11088/LD	11130-DATA				
:CADRERS						
11479-DATA						
:CATALRG						
1547/DATA	1660-EQU					
:CCFRMA						
11099/DATA	11114-TEXTC					
:CCFRMB						
11100/DATA	11115-TEXTC					
:CCFRMC						
11101/DATA	11116-TEXTC					
:CCFRMD						
11102/DATA	11117-TEXTC					
:CCFRME						
11103/DATA	11118-TEXTC					
:CCFRMF						
11104/DATA	11119-TEXTC					
:CCFRM1						
11090/DATA	11105-TEXTC					
:CCFRM2						
11091/DATA	11106-TEXTC					
:CCFRM3						
11092/DATA	11107-TEXTC					
:CCFRM4						
11093/DATA	11108-TEXTC					
:CCFRM5						
11094/DATA	11109-TEXTC					
:CCFRM6						
11095/DATA	11110-TEXTC					
:CCFRM7						
11094/DATA	11111-TEXTC					
:CCFRM8						
11097/DATA	11112-TEXTC					
:CCFRM9						
11098/DATA	11113-TEXTC					
:CCFRM1						
10975/PCR	10981-LW					
:CCFRM2						
10976/PCR	10989-LW					
:CCFRM3						
10977/H	11015-LW					
:CCPRINT						
11016/STW	11021/STW*	11023-DATA				
:CCTEST						
10952/PHF	10962-CW					
:CCH						
1628/GEN	1628/GEN	1648-EQU	1779/LH	1783/CI	1788/LW	1790/LW
1811/LW	1845/LW	1868/LW				
:CCHEND						
1628/GEN	1656-EQU	1783/CI				
:CCHM						
1628/GEN	1637-EQU					
:CCHMEND						
1628/GEN	1646-EQU					
:CCHT						
1552/DATA	1553/DATA	1627-EQU				
:CCHTEND						
1553/DATA	1629-EQU					
:CLEAR						
5470/RAL	5800/RAL	11595-STD				
:CLPAADR						
5467/STW	5792/STW	11597/LW	11607-DATA			
:CLRSAVE						
11595/STD	11596/STW	11603/LD	11604/LW	11610-RES		
:CLRSIZE						
5459/STW	5788/STW	11598/AN	11599/LCW	11608-DATA		
:CLSMADDR						
10697/LW	10699/STW	10708/STW	10776/MTW	11238/STW	11283/MTW	11442/STW
11478-DATA						

:CBMDFRB	9427/STW	9434/LW*	11241/LW	11322/LW*	11323/LW*	11341/LW	11414/LW*
	11416/AW*	11471-DATA	11571/EQU				
:CBMBFPA	11240/LW	11470-DATA					
:CBMERME	10656/STW	11299/STW	11301/STW	11304/STW	11307/STW	11309/STW	11312/DATA
	11492-TEXTC						
:CBMERM3	11343/STW	11345/STW	11348/DATA	11482-TEXTC			
:CBMERM5	11365/LI	11368/DATA	11488-TEXT				
:CBMERM1	11480-TEXTC						
:CBMERM4	11353/STW	11360/LI	11363/DATA	11484-TEXT			
:CBMERT	10696/LW	10698/STW	10713/STW	10771/MTW	11236/STW	11258/MTW	11285/CW
	11333/MTW	11438/CW	11440/MTW	11474-DATA			
:CBMEXIT	11259/BEZ	11263-MTW	11281/BNEZ	11284/BEZ	11286/BNE	11289/BNE	11313/B
:CBMFLAG	2134/STW	5513/STW	5529/STW	5822/STW	5828/STW	5844/STW	5857/STW
	9346/STW	9424/STW	9910/STW	9920/STW	10435/MTW	10474/MTW	10506/MTW
	10528/MTW	10700/MTW	10718/XW	10721/XW	11280/MTW	11334/CW	11477-DATA
:CBMLEGT	11229-EQU	11230/LCI	11263/MTW	11264/LCI	11463/RES		
:CBMPADP	10784/LH	11295/LH	11305/LH	11441/STW	11473-DATA		
:CBMPARE	3252/BAL	3398/BAL	3530/BAL	3696/BAL	3852/BAL	3987/BAL	4746/BAL
	4891/BAL	4949/BAL	5514/BAL	5532/BAL	5823/BAL	5831/BAL	5852/BAL
	5860/BAL	9441/BAL	9918/BAL	10719/BAL	11230-LCI		
:CBMTEM1	11231/STW	11263/MTW	11265/LM	11463-RES			
:CBMTEM6	11317/STD	11327/LD	11335/BE*	11369/LD	11432/STW	11434/STW	11435/LW
	11454/BEZ*	11469-DATA					
:CBMTEM5	11472-DATA						
:CBMTEM4	11374/STD	11385/LD	11468-DATA				
:CBMTEM3	11237/STW	11337/MTW	11340/STW	11475-DATA			
:CBMTEM2	11244/STD	11251/CW*	11268/CW*	11364/LW*	11429/LW*	11456/CS*	11467-DATA
:CBMTYP2	11256/EXU	11392-LCFI					
:CBMWENT	8706/STW	8936/STW	9303/STW	11242/AW	11243/AW	11246/LCW	11318/LW
	11328/LW	11350/LW	11407/LW	11476-DATA	11532/LW	11534/LCW	11570/EQU
:CBM1	11250-CW	11257/PIR					
:CBM1R	11249/BE	11268-CW	11277/PIR				
:CBM12	11332/BAL	11406-LW					
:CBM2	11253/BAL	11270/BAL	11317-STD				
:CBM3	11338/BNEZ	11350-LW					
:CBM4	11361/BAL	11366/BAL	11374-STD	11384/BCS			
:CBM6	11256-EXU	11278/B	11325/BE				
:CBMARDM	11276-BIR	11431/BE	11433/LI	11443/B			
:CBM7	11260/B	11280-MTW					
:CBM91	11321/BG	11326-LD					

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ICOM92
ICOMP3 11453=MTW 11460/B
ICURHNT 11336/BL 11447=LW
:DAERM 1505=EQU
:DATA 10968/STW 10970/STB 11004/STW 11006/STB 11008/DATA 11020/LW
:DATADIR 11120=TEXTC
:DECC 276/DATA 1607/IPRRCDIC 8317=STW
:DEVAADR 1607=IPRRCDIC 8332/DATA
:DEVADER 1502=EQU 7745/BAL* 7751/BAL* 7829/BAL* 7980/BAL* 8073/BAL* 8079/BAL*
:DEVEXIT 8187/BAL* 8200/BAL* 10221/BAL* 10665/BAL* 10674/BAL* 11298/BAL* 11303/BAL*
:DIC 1683/MTW 1685/H10* 2084/H10* 2258/STW 2276/STW 2285/H10* 2286/MTW
:DICEND 2287/MTW 2328/STW 2330/H10* 2369/H10* 2370/H10* 2433/T10* 2501/TDV*
:DIRNAME 2571/S10* 2580/TDV* 2586/H10* 2754/S10* 2757/S10* 2762/H10* 2827/S10*
:DTLFLAG 2830/T10* 2918/TDV* 2953/H10* 2954/T10* 3020/S10* 3023/T10* 3187/T10*
:ERRADR1 3241/H10* 3285/H10* 3311/H10* 3338/H10* 3387/H10* 3432/H10* 3460/H10*
:ERRADR2 3518/H10* 3564/H10* 3592/H10* 3618/H10* 3672/H10* 3723/H10* 3746/H10*
:ERRADR3 3769/H10* 3828/H10* 3880/H10* 3903/H10* 3963/H10* 4015/H10* 4038/H10*
:ERRHITS 4061/H10* 4080/S10* 4113/H10* 4155/H10* 4219/S10* 4550/H10* 4571/H10*
:ERRHRC 4609/H10* 4651/H10* 4728/H10* 4775/H10* 4802/H10* 4830/H10* 4878/H10*
:ERRHRT# 4943/H10* 5170/H10* 5193/H10* 5239/T10* 5281/H10* 5340/H10* 5398/H10*
:ERRPARN 5480/H10* 5535/H10* 5604/H10* 5641/H10* 5679/H10* 5714/H10* 5737/H10*
:ERRRDR 5808/H10* 5826/H10* 5855/H10* 5880/H10* 6121/H10* 6184/H10* 6218/H10*
:ERRRDR1 6248/H10* 6279/H10* 6352/H10* 6379/H10* 6428/H10* 6444/H10* 6497/H10*
:ERRRDR2 6500/S10* 6509/H10* 6514/H10* 6532/H10* 6559/H10* 6562/S10* 6569/H10*
:ERRRDR3 6574/H10* 6592/H10* 6632/H10* 6654/H10* 7197/H10* 7240/H10* 7303/H10*
:ERRRDR4 7816/LW 8574/STW 8930/LW 9214/STW 9320/H10* 9362/LW 9468/LW
:ERRRDR5 9566/S10* 9854/LW 10367=DATA 10399/TDV* 10411/LW 10419/H10* 10481/T10*
:ERRRDR6 10902/S10* 10910/T10* 10918/H10* 10926/TDV* 10957/CW 10966/LW 11001/CW
:ERRRDR7 11710/LW
:ERRRDR8 10974=ECR 10985/B 10997=CI
:ERRRDR9 10993/B 11009=LD 11024/B 11034/3E 11071/B
:ERRRDR10 1549/DATA 1550/DATA 1600=EQU
:ERRRDR11 1550/DATA 1611=EQU 1627/EQU
:ERRRDR12 1524=EQU
:ERRRDR13 1523=EQU
:ERRRDR14 1557=EQU
:ERRRDR15 1519=EQU
:ERRRDR16 1496=EQU
:ERRRDR17 1559=EQU 1829/STW 2044/STW 2057/STW 2319/STW 2324/STW 2429/EQU
:ERRRDR18 9169/STW 9174/STW 9182/STW
:ERRRDR19 10981/LW 11090=DATA
:ERRRDR20 11015/LW 11100=DATA
:ERRRDR21 10989/LW 11095=DATA
:ERRRDR22 11856/STW 11880/LW 12077=DATA
:ERRRDR23 1506=EQU
:ERRRDR24 1514=EQU 7837/MTW
:ERRRDR25 4103/STW 4145/STW 7407/STW 7441/STW 11653/LW 11674/LW 11695/LW

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11895-DATA	11950/LW	11991/LW				
ERRORT 4106/BAL	4148/BAL	7525/BAL	7564/BAL	7629/MAL	7637/PAL	11798-LCI
ERRPAM 1520-EQU	2069/BAL*	8331/BAL*	8425/PAL*	9195/BAL*		
ERRTBCM 1194C/LD	12081-TEXT					
ERRTCAM 11937/LD	12082-TEXT					
ERRTFLG 11802/STW	11899/MTW	11978/MTW	11983/MTW	12012/MTW	12020-DATA	
ERRTMG1 1187R/STW	11882/STD	11884/STB	11887/STB	11891/STB	11897/DATA	
ERRTMG2 12074-TEXTC						
ERRTMP1 11941/STW	11942/STW	11943/STW	11947/STW	11955/DATA	12078-TEXTC	
ERRTMP3 11799/STM	11982/LM	12015-RES				
ERRTMP2 11807/STW	11869/LW	11874/LW	11876/LW	11900/LW	11930/LW	11944/LW
ERRTMP2 12017-DATA						
ERRTMSK 11853/STW	11861/MTW	11865/MTW	11885/LW	11888/LW	12016-DATA	
ERRTM1 11857/LB	12018-GEN					
ERRTM2 11988/STW	11996/DATA	12022-TEXTC				
ERRTM3 12000/STW	12002/STW	12004/DATA	12023-TEXTC			
ERRTNEG 12007/STW	12009/STW	12011/DATA	12024-TEXTC			
ERRTTB 11939/LW	12079-TEXT					
ERRTTBD 11879/LW	12075-DATA					
ERRTTBC 12050-TEXT	12076/DATA					
ERRTTBB 12042-TEXT	12075/DATA					
ERRTTBA 12034-TEXT	12075/DATA					
ERRTTBF 12026-TEXT	12075/DATA	12075/DATA	12075/DATA			
ERRTTBE 12066-TEXT	12076/DATA					
ERRTYPE 12058-TEXT	12076/DATA					
ERRTO 11877/LW	11987/LW	12021-DATA				
ERRT1 11803-LB	11872/R					
ERRT10 11809/RCS	11815-LW	11828/B	11837/B	11840/B		
ERRT11 11826/R	11835/R	11846/B	11899-MTW	11957/B		
ERRT11B 11811/RCS	11903-LW					
ERRT11A 11912/RCS	11916-MTW					
ERRT12 11910-SCD	11961/R					
ERRT13 11909/RCS	11959-LW					
ERRT14 11804/BCR	11963-LI	11980-B/R				
ERRT15 11965/BCR	11967/BCR	11980-B/R	12013/B			
ERRT2 11977/RCS	11979/RNEZ	11987-LW				
ERRT2 11818/RCS	11821-CI					

ERRT3	11822/RCS	11830-CI					
ERRT4	11831/BCB	11839-BAL					
ERRT5	11839/PAL	11842-STW	11905/BAL				
ERRT5X	11842/STW	11848/B*	11849-DATA				
ERRT6	11816/RCS	11851-LI					
ERRT7	11860/RCS	11865-MTW					
ERRT8	11862/BCR	11867/B	11869-LW				
ERRT8A	11871-MTW	11901/B	11914/BCS	11918/BCR			
ERRT9	11863/B	11866/BCR	11874-LW				
ERRT9A	11876-LW						
ERRT91A	11915/P	11930-LW					
ERRT91B	11932/BCR	11939-LW					
ERRT91C	11929/H	11940-LD					
ERRT92A	11920-LW						
ERRT92C	11922/BCR	11927-AW					
ERRT92B	11924/H	11936-BAL					
EXPDBS	11063/LW	11123-TEXT					
FAIEMSK	2123/STW	4277/STW	4409/STW	6304/STW	6625/STW	7561/AND	7606/AND
	7676-DATA						
FCTXINT	5874/HAL	6526/BAL	6586/BAL	7384-LCI			
FCTXINT	7374-LCI						
FTIEMSK	2121/STW	4275/STW	4406/STW	6623/STW	7494/AND	7675-DATA	
FUCTEST	3234/HAL	3278/PAL	3305/BAL	3332/BAL	3381/BAL	3425/PAL	3454/LAL
	3510/BAL	3557/BAL	3596/BAL	3612/BAL	3665/BAL	3716/PAL	3739/BAL
	3762/PAL	3821/PAL	3873/BAL	3896/BAL	3956/BAL	400R/PAL	4031/BAL
	4054/HAL	4544/BAL	4565/BAL	4597/BAL	4639/PAL	4721/PAL	4768/BAL
	4795/PAL	4822/BAL	4871/BAL	4936/BAL	5164/BAL	5233/PAL	5273/BAL
	5329/PAL	5391/BAL	5473/BAL	5597/PAL	5634/BAL	5672/PAL	5707/BAL
	5730/HAL	5801/BAL	6114/BAL	6177/BAL	6241/BAL	6345/PAL	6421/BAL
	6626/HAL	6648/PAL	6746/BAL	7191/BAL	7234/BAL	7297/PAL	7396-B
FUNCTION9	7380/B	7391/B	7425-LW				
FUNCTION2	7506/PLZ	7530-BAL					
FUNCTION1	7500/PEZ	7574-MTW					
FUNCTION0	7475/P	7493-LW					
FUNCTION4	7582/B	7601/B	7606-AND				
FUNCTION3	7575/PGEZ	7636-STW					
FUNCTION5	7537/H	7556/B	7561-AND				
FUNCTION10	7449/B	7462-SLS					
FUNCTION15	7612/PNEZ	7623-BAL					
FUNCTION14							

	7587/R*EZ	7598-BAL					
IFUNCT12	7511/BNEZ	7519-BAL					
IFUNCT11	7480/BNEZ	7488-BAL					
IFUNCT13	7542/BNEZ	7553-BAL					
IFUNEX	7647/BEZ	7654-LCI					
IFUNEXIT	7528/B	7557/R	7566/B	7568/R	7602/B	7632/P	7639/R
	7641-A10						
IFUNFLAG	4105/STW	4147/STW	7377/STW	7388/STW	7405/STW	7453/STW	7479/MTW
	7484/STW	7510/MTW	7515/STW	7541/MTW	7546/STW	7567/STW	7586/MTW
	7591/STW	7611/MTW	7616/STW	7640/STW	7646/MTW	7658/AW	7674-DATA
	11651/MTW	11657/STW	11672/MTW	11678/STW	11693/MTW	11699/STW	11892/MTW
	11900/STW	11948/MTW	11956/STW	11989/MTW	11997/STW		
IFUNSAVE	7375/STM	7386/STM	7403/STM	7440/LM*	7648/LW*	7656/LM	7672-RES
	7848/LH						
IMEXC	1503/EQU	7650/BAL*	7817/BAL*	7835/BAL*	7655/BAL*	8000/PAL*	8090/BAL*
	8114/BAL*	8566/BAL*	8568/BAL*	10412/BAL*	10563/BAL*	10627/PAL*	10633/BAL*
	10637/BAL*	10967/BAL*	11000/BAL*	11306/BAL*	11342/BAL*	11352/PAL*	11711/PAL*
	11936/BAL*	11946/BAL*					
IMIB	2371/BAL	2406/BAL	2414/BAL	2689/BAL	2695/BAL	9706/PAL	10508/PAL
	10540/BAL	10918-MIB	11668/BAL	11679/BAL	11823/PAL		
IMIB1	10921-LI						
INITIAL	1555/DATA	1773-STW					
IMERM1	11706/DATA	11721-TEXTC					
IMERM2	11712/STW	11714/STB	11716/DATA	11722-TEXTC			
IMERR1	11644/R	11668-BAL					
IMERR1A	11705-BAL	11717/B					
IMERR2	11646/BCR	11710-LW					
IMERR6	11650/B	11661/R	11663-LW				
IMEXEC	7421/BAL	10477/BAL	11637-STW				
IMEXEC1	11640-BAL	11662/B	11671/B	11682/B	11692/B	11703/P	11708/B
IMORTN	10945/STW	10946/LW*	10947/LW*	10953/CW*	10954/BAZ*	10958/RE*	10962/CW*
	10963/RANZ*	11011/B*	11028/LW*	11029/LW*	11044/LW*	11045/LW*	11132-DATA
IMOSAVE	11637/STW	11638/STW	11639/STD	11663/LW	11664/LW	11665/LD	11720-RES
IK	11187/AW	11200-DATA					
IKSRADR	1515-EQU						
ILGFLAG	1500-EQU						
ILOADIN	1513-EQU						
IMACHINE	1516-EQU						
IMEMLAST	1526-EQU	6679/CW	10161/LW	1018./LW	10202/SW	10203/STW*	
IMEMSIZE	1525-EQU						
IMLT	1491-EQU	1492/EQU	1493/EQU	1494/EQU	1495/EQU	1496/EQU	1497/EQU
	1498/EQU	1499/EQU	1500/EQU	1501/EQU	1502/EQU	1503/EQU	1504/EQU

1505/EQU	1506/EQU	1507/EQU	1508/EQU	1509/EQU	1510/EQU	1511/EQU
1512/EQU	1513/EQU	1514/EQU	1515/EQU	1516/EQU	1517/EQU	1518/EQU
1519/EQU	1520/EQU	1521/EQU	1522/EQU	1523/EQU	1524/EQU	1525/EQU
1526/EQU	1527/EQU	1528/EQU	1529/EQU			
:MLTEND						
1529-EQU	1533/EQU					
:MLTEND1						
1535-EQU						
:MLT1END						
1533-EQU						
:MBNIBBF						
1527-EQU						
:MBNITAR						
1499-EQU	1989/B*	2026/B*	2071/B*	7859/B*	8329/P*	8333/B*
8413/B*	8427/B*	8471/B*	8473/B*	8663/B*	9162/P*	9197/B*
:MBNPNBF						
1528-EQU						
:MBNWAIT						
1509-EQU						
:MRECOVR						
1510-EQU						
:MSGADDR						
2033/STW	8679/STW	9168/STW	10216/LW*	10392/LW*	10433/CW	10460/CW
10517/LW	10526/CW	10861-DATA				
:MSGIN						
1512-EQU						
:MSGOUT						
1511-EQU	8451/MTB	8456/STB*	8463/TTB*	8465/HIB*	8466/TTB*	
:M1						
11177/STW	11182/MTW	11188/EOR	11197-DATA			
:M2						
11178/STW	11184/MTW	11189/EOR	11198-DATA			
:PATABLE						
11538/EXU	11555-AI					
:PATBFR						
2141/STW	2568/STW	2742/STW	3219/STW	3367/STW	3493/STW	3652/STW
3803/STW	3938/STW	4697/STW	4855/STW	4930/STW	4996/STW	5220/STW
5462/STW	5791/STW	5847/STW	6489/STW	6551/STW	11533/AW	11550/STW*
11571-EQU						
:PATID						
2130/STD	3689/CW	3694/LW	3845/CW	3850/LW	3980/CW	3985/LW
4998/STD	5222/STD	5466/STD	5557/STW	5590/STD	5704/STD	5727/STW
5795/STD	5843/STD	6170/STD	6236/STD	6328/STD	6395/STW	6487/STD
6549/STD	8722/STW	8937/STW	9287/STW	9369/STW	9370/CW	9372/STW
9432/CW	9435/STW	9470/STW	9471/CW	9477/STW	9853/STW	9855/STW
9856/LW	9857/CW	9859/STW	11245/LW	11247/LW	11248/CW	11288/CW
11330/CW	11355/CW	11359/LW	11394/AW	11401/SCS*	11430/CW	11450/LW
11530/LW	11531/LW	11535/CW	11548/STW	11549/LW	11557/AW	11564/SCS*
11569-DATA						
:PATTERN						
2145/RAL	2569/BAL	2743/BAL	3220/BAL	3368/BAL	3494/PAL	3654/BAL
3805/RAL	3940/RAL	4699/BAL	4857/BAL	4935/BAL	4999/PAL	5230/BAL
5468/RAL	5592/RAL	5629/BAL	5667/BAL	5706/BAL	5729/PAL	5797/BAL
6174/RAL	6238/BAL	6330/BAL	6397/BAL	6495/BAL	6557/PAL	9450/BAL
11527-LW						
:PATWC						
2139/STW	2566/STW	2740/STW	3217/STW	3365/STW	3491/STW	4650/STW
3801/STW	3936/STW	4695/STW	4853/STW	4928/STW	4994/STW	5218/STW
5460/STW	5789/STW	5821/STW	5846/AW	5851/STW	6493/STW	6555/STW
11570-EQU						
:PITEND						
1563-EQU	1564/DB	1572/EQU				
:PITLAST						
1562-EQU	1564/DB	1570/EQU				
:PITX						
1570-EQU						
:PITY						
1572-EQU						
:PITC						
1547-DATA	1563/EQU					
:PITI						

IPIT10	1548=DATA						
IPIT11	1558=DATA	1559/EQU					
IPIT12	1560=DATA						
IPIT2	1561=DATA	1831/STW	1837/STW				
IPIT3	1549=DATA						
IPIT4	1550=DATA						
IPIT5	1551=DATA						
IPIT6	1552=DATA						
IPIT7	1553=DATA						
IPIT8	1554=DATA						
IPIT9	1555=DATA						
IPK	1556=DATA	1557/EQU					
	11233/STW	11274/XW	11275/AW	11413/STW	11417/XW	11418/AW	11422/XW
	11423/AW	11427/XW	11428/AW	11529/STW	11545/XW	11546/AW	11572=DATA
IPK1	11234/STW	11271/STW	11273/AW	11419/STW	11421/AW	11424/STW	11426/AW
	11573=DATA						
IPRINT	1507=EQU	7457/PAL*	7488/PAL*	7519/PAL*	7623/PAL*	7652/PAL*	7755/PAL*
	7821/PAL*	7823/PAL*	7826/PAL*	7838/PAL*	7857/PAL*	7951/PAL*	7956/PAL*
	7958/PAL*	7961/PAL*	8009/PAL*	8042/PAL*	8053/PAL*	8059/PAL*	8164/PAL*
	8169/PAL*	8173/PAL*	8177/PAL*	8216/PAL*	8235/PAL*	8237/PAL*	8239/PAL*
	8241/PAL*	8243/PAL*	8245/PAL*	8247/PAL*	8249/PAL*	8251/PAL*	8253/PAL*
	8469/PAL*	8598/PAL*	9219/PAL*	9498/PAL*	9500/PAL*	10229/PAL*	10515/PAL*
	10523/PAL*	10534/PAL*	10536/PAL*	10983/PAL*	10991/PAL*	11007/PAL*	11022/PAL*
	11039/PAL*	11067/PAL*	11311/PAL*	11347/PAL*	11362/PAL*	11367/PAL*	11705/PAL*
	11715/PAL*	11896/PAL*	11954/PAL*	11995/PAL*	12003/PAL*	12010/PAL*	
IPROCDIC	1473=CNAME						
IPROGID	1548=DATA	1663=FQU					
IPSW	1497=EQU						
IP1	1492=EQU	1975/LW	2020/LW	8322/CLR	8326/LM	8378/LW	8648/LW
	9151/LI						
IP2	1493=EQU	1979/LW	2021/LW	8373/CW	8384/AW	8650/LW	
IP3	1494=EQU	8379/LW					
IP4	1495=EQU	8376/CW	8393/AW				
IRANDBM	8744/BAL	11180=STW					
IRANDBMX	11182=MTW						
IRANDBMY	11177=STW						
IRECOVER	1551=DATA	1670=STW	1774/BAL				
IREGC405	10964/STD	11009/LD	11127=DATA				
IREGC607	11041/STD	11070/LD	11128=DATA				
IREG1213	10965/STD	11010/LD	11129=DATA				
IRELBIAS	1517=EQU						
IRLOADER							

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1518=EGU
:RESETDIR
1609=:PRBCDIC
:SAVCOM1
11923/LW      11933/LW      11959/LW      12189-DATA
:SAVEAID
7562/BAL      7607/BAL      12143-STD
:SAVEALL
12114/BAL     12116/BAL     12128/BAL     12133/BAL     12139/BAL     12146/PAL     12148/BAL
12155/BAL     12161/BAL     12165-5TW
:SAVECLR
1686/BAL      12102-STD
:SAVEHID
6511/BAL      6525/BAL      6571/BAL      6585/BAL      11827/BAL     12126-STD
:SAVESID
12137-STD
:SAVESSA
12153-STD
:SAVESSB
12159-STD
:SAVETAB
11815/LW      11870/STW     11875/STW     11903/LW      11945/LW      11964/LW      11970/STW
12105/STW     12113/LI      12115/LI      12118/STW     12120/STW     12121/STW     12122/STW
12127/LI      12132/LI      12138/LI      12145/LI      12147/LI      12154/LI      12160/LI
12175=EGU
:SAVEDV
11836/BAL      12131-STD
:SAVETIB
4025/BAL      4130/BAL      7495/BAL      11847/BAL     12111-STD
:SAVETMP
12102/STD     12108/LD      12111/STD     12112/STW     12117/LW      12123/LD      12126/STD
12129/LD     12131/STD     12134/LD     12137/STD     12140/LD      12143/STD     12144/STW
12149/LW     12150/LD     12153/STD     12156/LD     12159/STD     12162/LD     12165/STW
12172/B*     12188-DATA
:ISCT
1521=EGU
:ISCTLEN
1522=EGU
:ISEED
8728/LW      11180/STW     11185/LW      11190/STW     11199-DATA
:ISSEKDIR
1608=:PRBCDIC  8426/DATA
:ISSEKEXT
7187/STW     7196/B*       7201/B*       7250-DATA
:ISSEKMD2
7191-PAL      7200/B
:ISSEKMBD
3653/PAL      3804/BAL      3939/BAL      4296/BAL      4370/BAL      4425/PAL      4698/BAL
4767/PAL      4794/BAL      4821/BAL      4856/BAL      4934/BAL      5039/PAL      5117/BAL
5162/PAL      5229/BAL      5232/BAL      5270/BAL      5328/BAL      5390/PAL      5467/BAL
5471/PAL      5591/BAL      5594/BAL      5628/BAL      5633/BAL      5666/PAL      5671/BAL
5705/PAL      5728/BAL      5796/BAL      5799/PAL      6113/BAL      6173/PAL      6176/BAL
6237/PAL      6240/PAL      6329/BAL      6344/BAL      6396/BAL      6420/PAL      6494/BAL
6498/PAL      6556/BAL      6560/BAL      6620/BAL      6646/BAL      6744/PAL      7187-STW
:ISENSE
1508=EGU      1986/BAL*     2023/BAL*     2160/PAL*     2305/BAL*     2341/PAL*     2702/BAL*
2721/PAL*     3242/BAL*     3260/BAL*     3286/PAL*     3312/BAL*     3339/PAL*     3388/BAL*
3402/BAL*     3433/BAL*     3461/PAL*     3519/PAL*     3538/BAL*     3565/PAL*     3593/BAL*
3619/PAL*     3673/PAL*     3700/PAL*     3724/BAL*     3747/BAL*     3770/PAL*     3829/BAL*
3856/PAL*     3881/PAL*     3904/BAL*     3964/PAL*     3991/PAL*     4016/PAL*     4039/BAL*
4062/PAL*     4114/PAL*     4156/BAL*     4226/PAL*     4311/PAL*     4381/PAL*     4444/PAL*
4470/PAL*     4496/PAL*     4551/BAL*     4572/PAL*     4627/BAL*     4659/PAL*     4729/BAL*
4750/PAL*     4776/PAL*     4803/BAL*     4831/PAL*     4879/BAL*     4895/PAL*     4944/BAL*
4953/PAL*     5056/PAL*     5133/BAL*     5171/PAL*     5194/BAL*     5282/PAL*     5307/BAL*
5341/PAL*     5368/PAL*     5399/BAL*     5444/PAL*     5481/BAL*     5536/PAL*     5562/BAL*
5605/PAL*     5642/BAL*     5680/BAL*     5715/BAL*     5738/BAL*     5759/PAL*     5809/BAL*
5833/PAL*     5862/BAL*     5881/BAL*     5933/BAL*     5963/BAL*     6030/PAL*     6061/BAL*
6086/PAL*     6122/BAL*     6154/BAL*     6185/PAL*     6219/BAL*     6249/PAL*     6280/BAL*
6313/PAL*     6353/BAL*     6380/BAL*     6429/BAL*     6445/PAL*     6515/PAL*     6533/BAL*
6575/PAL*     6593/PAL*     6633/BAL*     6655/PAL*     6752/BAL*     6772/PAL*     6807/BAL*
7198/BAL*     7241/PAL*     7304/BAL*     8659/BAL*     9159/BAL*

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ISENSEMOD	4299/BAL	4372/BAL	4427/BAL	5045/BAL	5122/BAL	6203/PAL	6264/BAL
	6361/PAL	6435/BAL	6792/BAL	7285-STD			
:SI0	2572/BAL	2622/BAL	2631/BAL	2758/BAL	2794/BAL	2800/PAL	9966/BAL
	10902=SI0	11647/BAL	11658/BAL				
:SI01	10905=LI						
:SKERRNO	7190/STW	7193-DATA					
:SNSERNO	7289/STW	7299-DATA					
:SNSMD2	7297=BAL	7306/B					
:SNSSAVE	7286/STD	7296/LW	7302/B*	7307/B*	7312-DATA		
:SNSWORD	4222/LB	4301/LB	4373/LH	4483/MTW	4512/STW	5046/LB	5123/LH
	6207/LB	6268/LB	6363/LR	6437/LB	6794/MTW	6823/STW	7314/GEN
	7316-DATA						
:STATEM1	11036/XW	11038/STB	11040/DATA	11121-TEXTC			
:STATEM2	11054/STH	11058/STB	11064/XW	11066/STB	11068/DATA	11122-TEXTC	
:STATERR	10998/BNE	11002/RE	11028-LW				
:STATERR1	11049-LW	11069/BDR					
:STATEST	10906/B	10914/R	10922/B	10930/B	10938/B	10944=STW	
:STATTYP	11035/LW	11125-TEXT					
:STATUSCC	2382/LCF	2393/LCF	2404/LCF	2445/LCF	2457/LCF	2469/LCF	2513/LCF
	2524/LCF	2535/LCF	2596/LCF	2608/LCF	2620/LCF	2649/STW	2676/STW
	2677/LCF	2769/LCF	2869/LCF	2923/LCF	3062/LCF	3130/LCF	3159/LCF
	4090/LCF	4132/LCF	4511/STW	6822/STW	10390/LW	10505/STW	10539/STW
	10546/STW	10801/STW	10903/STW	10904/STCF	10911/STW	10912/STCF	10919/STW
	10920/STCF	10927/STW	10928/STCF	10935/STW	10936/STCF	10950/AND	10971/LCF
	11032/AND	11049/LW	11134-DATA				
:TDV	2502/BAL	2537/BAL	2545/BAL	2656/BAL	2665/BAL	2919/PAL	2934/PAL
	2940/BAL	4429/BAL	4455/BAL	6757/BAL	10926-TDV	11832/PAL	
:TDV1	10929=LI						
:TI0	2434/BAL	2471/BAL	2479/BAL	2711/BAL	2717/BAL	2838/PAL	2844/BAL
	2856/BAL	2880/BAL	2886/BAL	2955/PAL	3031/BAL	3037/PAL	3049/BAL
	3188/BAL	4081/BAL	4126/BAL	7446/PAL	7472/BAL	9504/PAL	9702/BAL
	9710/BAL	10910-TI0	11640/BAL	11689/BAL	11700/BAL	11843/PAL	
:TI01	10913=LI						
:TSEQ	1443=CNAME						
:TSEQEQU	1456=CNAME						
:TSTODIR	1603=IPROCDIC						
:TST1DIR	1604=IPROCDIC	2032/LI	2070/DATA	10218/CW	10518/CI		
:TST2DIR	1605=IPROCDIC	8678/LI	10432/LI	10459/LI	10525/LI		
:TST3DIR	1606=IPROCDIC	9167/LI	9196/DATA				
:ITYPE	10944/STW	10972/LW	11133-DATA				
:WRTRNO	7233/STW	7236-DATA					
:WRTEXT	5778/STW	7228/STW	7239/B*	7244/B*	7251-DATA		
:WRVMD2							

	7234-BAL	7243/B					
#WRTM0D	5044/BAL	5121/BAL	5163/BAL	5231/BAL	5469/BAL	5593/BAL	5632/BAL
	5670/BAL	6175/BAL	6239/BAL	6331/BAL	6398/BAL	6496/PAL	6558/BAL
	722R-STW						
#WPTM0D1	5798/BAL	7231-LW					
#1RYTEIN	1504-EQU						
#CHKWRT	10597/LI	10854-TEXT					
#DLTADR3	2115/LCI	5923/LCI	5950/LCI	5993/LCI	10333/LCI	10357-SET	
#DDTADR2	10329/MI	10362-SET	10363/RES				
#DLTADR1	2115/LCI	5923/LCI	5950/LCI	5993/LCI	10329/MI	10332/AI	10333/LCI
	10347-SET	10363/RES					
#DDTKIAS	1803/STW	1820/LW	2114/LW	2274/LW	4334/LW	5082/LW	5211/LW
	5922/LW	5949/LW	5992/LW	6013/LW	6028/LW	8370/LW	8415/LW
	8669/STW	8703/LW	9212/LW	9261/LW	10330/STW	10331/LW	10343-DATA
#DCTEXIT	10327/BGE	10337-LCI					
#DDTICMT	1824/BAL	2085/BAL	6050/BAL	8368/BAL	8412/BAL	9209/PAL	10321-LCI
#DLTLGTH	1805/STW	1839/STW	10316/DW	10326/CW	10342-DATA		
#DCTP	1802/STW	1838/LW	2079/STW	6049/MTW	8367/STW	8410/STW	9206/STW
	10323/LW	10325/STW	10341-DATA				
#DCTHADM	8701/BAL	10311-LCI					
#DLTSAVE	10312/STW	10322/STW	10336/MTW	10338/LM	10364-EQU		
#DDT1	10315/BEZ	10318/B	10325-STW				
#MSENSE	10476/LI	10841-GEN					
#MSGERR9	7962/DATA	9499/DATA	10516/DATA	10826-TEXTC			
#MSGERR2	10387-LCI						
#MSGERR6	10425/BE	10499-BAL					
#MSGERR	8585/BAL	9689/BAL	9914/BAL	9963/BAL	10383/B	10384-STW	
#MSGERR1	10393/STW	10398/STB	10413/STH	10415/STB	10462/LB	10464/STB	10470/STM
	10488/LB	10493/STM	10494/LR	10496/STR	10524/DATA	10655/STB	10666/STB
	10668/STH	10675/STH	10827-TEXTC				
#MSGERR8	10503/HNF	10512-MTW					
#MSGERR3	10392-LW						
#MSGERR7	10473/HNF	10475/BEZ	10480/B	10497-BAL			
#MSGERR4	10436/BEZ	10438/BEZ	10440/BE	10442/BE	10458-LI		
#MSGERR5	10434/HNF	10461/BNE	10471-LW				
#MSGERR10	10468/LM	10830-TEXT					
#MSGERR11	10485/STW	10487/STW	10492/LW	10832-TEXT			
#MSGERR12	10537/DATA	10564/STW	10619/STW	10620/STW	10628/STW	10634/STH	10636/STH
	10639/STH	10834-TEXTC					
#MSGERR13	10535/DATA	10837-TEXTC					
#MSGERR41							

5918/STW	5930/MTW	5944/STW	5957/MTW	5981/STW	6026/MTW	6042/STW
6054/MTW	6065=DATA	10520/MTW	10799/STW			
#MSGEXIT						
10529/BEZ	10531/BE	10544=LW				
#MSGI0CD						
10498/BAL	10561=STW					
#MSGLEVL						
1982/STW	2088/STW	5917/STW	5948/STW	5982/STW	6048/STW	8581/STW
8457/STW	9157/STW	10184/CW	10502/CW	10858=DATA		
#MSGN0SP						
9502/BAL	10380=XW					
#MSGPTFG						
9491/STW	9688/STW	9912/STW	9962/STW	10857=DATA		
#MSGRTN						
10561/STW	10640/B*	10863=DATA				
#MSGSCC						
10391/STW	10545/LW	10551=DATA	10693/LH	10800/LW		
#MSGTYPE						
10575/BEZ	10581/BE	10587/BE	10593/BE	10599/BE	10605/RE	10611/RE
10617=LD						
#MSG00						
7849/LH	10364/EQU	10388/STM	10548/LM	10803/LM	10859=RES	
#MSNSEFT						
10407/STW	10483/LB	10682/MTB	10684/STB	10727/LB	10841/GFN	10862=DATA
11239/STW	11458/STS					
#N0MATCH						
10615/LI	10856=TEXT					
#PRINTFG						
10380/XW	10382/XW	10385/STW	10513/MTW	10860=DATA		
#RED02						
10585/LI	10850=TEXT					
#RED12						
10591/LI	10849=TEXT					
#SEEK						
10609/LI	10855=TEXT					
#SEFKCVT						
10501/BAL	10648=LCI					
#SEEKRTN						
10649/STW	10677/LM	10820=RES				
#SENSE						
10603/LI	10848=TEXT					
#SHIFT1						
10661/STW	10663=SCD					
#SHIFT2						
10659/STW	10672=SCD					
#STRP						
10573/LI	10845=TEXT					
#TYPE						
10466/LD	10844=EGU					
#WRT0UR						
10579/LI	10853=TEXT					



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