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SEQ 0001

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IDENTIFICATION

PRODUCT CODE: AC-T704B-MC
PRODUCT NAME: CZKDJ80 KDJ11 CPU DIAGNOSTIC
PRODUCT DATE: 15-MAR-84
MAINTAINER: DIAGNOSTIC ENGINEERING
AUTHORS: HENRY ENMAN, JIM PITTMAN, BARRY IRRGANG

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HISTORY

.REM 6

OCT-83 REV. A
FEB-84 REV. B

FIRST RELEASE

CORRECTIONS MADE TO:

1. CORRECT VECTOR AREA MAINTENANCE PROBLEM
2. SET APT SWR TO 2000 SO THAT DEFAULT IS TO NOT TEST BEVENT WHEN IN APT ENVIRONMENT.
3. PREVENT #TESTN FROM GETTING OUT OF SYNC WHEN SKIPPING DESELECTED TESTS.
4. PREVENT EXECUTION OF RESET INSTRUCTION TEST WHEN IN APT ENVIRONMENT.
5. CHANGE MARK INSTRUCTION TEST.
6. TURN CACHE MEMORY SYSTEM OFF DURING NON-CACHE TESTS.
7. ENSURE THAT CPU ERROR REGISTER IS CLEARED AFTER COMPLETION OF TEST THAT MIGHT CAUSE IT TO BE SET.
8. SAVE PC AND CONTENTS OF R6 ON UNEXPECTED INTERRUPTS

ADDITIONAL TESTS TO IMPROVE TEST COVERAGE INCLUDE:

1. RED ZONE TRAP TEST
2. I/O TIME OUT TRAP TEST
3. OOO ADDRESS TRAP TEST
4. PRE-FETCH BUFFER INVALIDATION TEST
5. TEST FOR SLOW C BIT ON ROR, ROL AND SXT INSTRUCTIONS
6. WAIT INSTRUCTION TEST WHEN BEVENT TEST IS SELECTED

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1.0 GENERAL INFORMATION

1.1 PROGRAM ABSTRACT

THIS IS AN APT COMPATIBLE VERSION OF THE KDJ11 CPU DIAGNOSTIC.
 IT FOCUSES ON TESTING THE KDJ11 BASIC INSTRUCTION SET INCLUDING
 EIS, TRAPS AND THE ALTERNATE REGISTER SET.

1.2 SYSTEM REQUIREMENTS

KDJ11-A PROCESSOR MODULE
 ENSURE THAT HALT TRAP OPTION IS DISABLED (JUMPER W9 INSTALLED)
 32KW MEMORY
 Q-22 BACKPLANE (18 BIT QBUS MAY BE USED WITH REDUCED TEST COVERAGE)
 SERIAL LINE UNIT AND CONSOLE TERMINAL (CONSOLE TERMINAL NOT REQUIRED FOR APT)

1.3 RELATED DOCUMENTS AND STANDARDS

KDJ11-A MODULE SPECIFICATION REV 2.2
 PDP11 MAINDEC SYSMAC PACKAGE
 J11 CONTROL CHIP SPECIFICATION 21-17679-00
 J11 DATA CHIP SPECIFICATION 21-17677-00

1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

NONE

1.5 ASSUMPTIONS

IT IS ASSUMED THAT THE DIAGNOSTIC OPERATOR IS FAMILIAR WITH
 THE XXDP+ OPERATING SYSTEM AND THE J11 MICRO-ODT.

2.0 OPERATING INSTRUCTIONS

2.1 LOADING AND STARTING PROCEEDURE

LOAD PROGRAM INTO MEMORY USING STANDARD XXDP+ PROCEEDURES.
 THE PROGRAM IS STARTED BY LOADING ADDRESS 200 AND USING
 THE J11 MICRO-ODT G COMMAND TO START. THE PROGRAM
 IDENTIFICATION MESSAGE WILL BE TYPED AFTER THE FIRST PASS
 OF THE COMPLETE PROGRAM.

2.2 PROGRAM OPTIONS

THE FOLLOWING ASSIGNMENTS HAVE BEEN MADE FOR THE KDJ11-A
 DIAGNOSTIC SWITCH REGISTER BITS:

BIT#15	14	13	12	11	10	9	8

					DON'T	18 BIT	EXTENDED
					TEST	ADDRESS	CACHE
					BEVENT	ONLY	TESTS

140
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DEFAULT SETTINGS ARE TO TEST BEVENT, THE OTHER BITS HAVE NO
EFFECT ON THE OPERATION OF THE CPU TEST.

TO CHANGE THE SWITCH REGISTER, HALT THE PROGRAM, LOAD THE SOFTWARE
SWITCH REGISTER (ADDRESS 176) WITH THE DESIRED OPTIONS AND RESTART
THE PROGRAM USING THE J11 MICRO OOT P COMMAND.

2.2 OPERATION UNDER APT

OPERATION IN THE APT ENVIRONMENT REQUIRES SOME SPECIAL CONSIDERA-
TIONS DUE TO THE ASYNCHRONOUS HALTS OF THE DIAGNOSTIC BY THE APT
MONITOR. IF THE EFFECTS OF THESE HALTS ARE NOT ANTICIPATED, FALSE
ERRORS MAY BE REPORTED. THEREFORE, WHEN OPERATING IN THE APT ENVIRON-
MENT THE FOLLOWING DIFFERENCES IN THE EXECUTION OF THE PROGRAM SHOULD
BE NOTED:

1. THE RESET INSTRUCTION TEST IS NOT EXECUTED
2. BIT 10 IN THE SOFTWARE SWITCH REGISTER IS SET SO THAT BEVENT
IS NOT TESTED UNDER APT.
3. THE SERIAL LINE UNIT INTERRUPT TEST IS EXECUTED ONLY ON THE
FIRST PASS OF THE PROGRAM.
4. RED ZONE TRAP TEST CHECKS FOR APT ENVIRONMENT BEFORE CALLING
ERROR ROUTINE. IF IN APT MODE AND AN ERROR OCCURS, IT WILL RETRY
TEST ONE MORE TIME. IF IT PASSES ON SECOND ATTEMPT, THEN FIRST
ERROR WILL BE CONSIDERED TO BE APT INDUCED.

3.0 ERROR INFORMATION

ALL ERRORS WILL HALT AFTER REPORTING TO APT. ERRORS RELATING
TO BOARD TESTS WILL PRINT THE FOLLOWING ERROR MESSAGE:

ERROR WHILE TESTING BOARD FUNCTIONS
ERROR # - (UNIQUE ERROR NUMBER)
ERROR PC - (PC AT TIME OF ERROR)

ERRORS RELATED TO CPU TESTS WILL PRINT THE FOLLOWING MESSAGE.

ERROR DURING CPU TESTS
ERROR # - (UNIQUE ERROR NUMBER)
ERROR PC - (PC AT TIME OF ERROR)

4.0 PROGRESS REPORT

AT THE END OF EACH PASS THE DIAGNOSTIC NAME AND PASS COUNT ARE PRINTED.

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PROGRAM HEADER AND TABLES
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SEQ 0006

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193 .TITLE PROGRAM HEADER AND TABLES
194 .SBTTL PROGRAM HEADER
195
196 .MCALL NEWTST,ERRDEF,,EQUAT,,KT11,,%OCAT,,%EOP,,%APTBL5,SETUP
197 .MCALL .%TYPE,,%TYPDEC,ERRDF,BGNTST,%ENDTST,BGNMOD,ENDMOD,CKLOOP
198 .MCALL .HEADER,,SETUP,,%TRAP,BGNSUB,ENDSUB,,%ACT11,,%APTHOR
199 .MCALL .%APTYPE,,%ERROR,,%TYPOCT,,%FEAD
200
201
202
203 .TITLE KDJ11-A CPU DIAGNOSTIC
204 ;*COPYRIGHT (C) OCTOBER,1983
205 ;*DIGITAL EQUIPMENT CORP.
206 ;*MAYNARD, MASS. 01754
207 ;*
208 ;*
209 ;*THIS PROGRAM WAS ASSEMBLED USING THE PDP-11 MAINDEC SYSMAC
210 ;*PACKAGE (MAINDEC-11-DZQAC-C3), JAN 19, 1977.
211 ;*
212 000001 $TJ=1
213 160000 $SWR=160000 ;;HALT ON ERROR, LOOP ON TEST, INHIBIT ERROR TYP0UT

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214 .TITLE GLOBAL AREAS
215 .SBTTL GLOBAL EQUATES SECTION
216
217 ***
218 ; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
219 ; ARE USED IN MORE THAN ONE TEST.
220 ;
221 .SBTTL BASIC DEFINITIONS
222
223 ;*INITIAL ADDRESS OF THE STACK POINTER *** 1000 ***
224 STACK= 1000
225 .EQUIV EMT,ERROR ;BASIC DEFINITION OF ERROR CALL
226 .EQUIV IOT,SCOPE ;BASIC DEFINITION OF SCOPE CALL
227
228 ;*MISCELLANEOUS DEFINITIONS
229 HT= 11 ;CODE FOR HORIZONTAL TAB
230 LF= 12 ;CODE FOR LINE FEED
231 CR= 15 ;CODE FOR CARRIAGE RETURN
232 CRLF= 200 ;CODE FOR CARRIAGE RETURN-LINE FEED
233 PS= 177776 ;PROCESSOR STATUS WORD
234 .EQUIV PS,PSW
235 STKLM= 177774 ;STACK LIMIT REGISTER
236 PIRQ= 177772 ;PROGRAM INTERRUPT REQUEST REGISTER
237 DSWR= 177570 ;HARDWARE SWITCH REGISTER
238 DISR= 177570 ;HARDWARE DISPLAY REGISTER
239
240 ;*GENERAL PURPOSE REGISTER DEFINITIONS
241 R0= #0 ;GENERAL REGISTER
242 R1= #1 ;GENERAL REGISTER
243 R2= #2 ;GENERAL REGISTER
244 R3= #3 ;GENERAL REGISTER
245 R4= #4 ;GENERAL REGISTER
246 R5= #5 ;GENERAL REGISTER
247 R6= #6 ;GENERAL REGISTER
248 R7= #7 ;GENERAL REGISTER
249 SP= #6 ;STACK POINTER
250 PC= #7 ;PROGRAM COUNTER
251
252 ;*PRIORITY LEVEL DEFINITIONS
253 PR0= 0 ;PRIORITY LEVEL 0
254 PR1= 40 ;PRIORITY LEVEL 1
255 PR2= 100 ;PRIORITY LEVEL 2
256 PR3= 140 ;PRIORITY LEVEL 3
257 PR4= 200 ;PRIORITY LEVEL 4
258 PR5= 240 ;PRIORITY LEVEL 5
259 PR6= 300 ;PRIORITY LEVEL 6
260 PR7= 340 ;PRIORITY LEVEL 7
261
262 ;*SWITCH REGISTER SWITCH DEFINITIONS
263 SW15= 100000
264 SW14= 40000
265 SW13= 20000
266 SW12= 10000
267 SW11= 4000
268 SW10= 2000
269 SW09= 1000

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SEQ 0008

270	000400	SW08=	400
271	000200	SW07=	200
272	000100	SW06=	100
273	000040	SW05=	40
274	000020	SW04=	20
275	000010	SW03=	10
276	000004	SW02=	4
277	000002	SW01=	2
278	000001	SW00=	1
279		.EQUIV	SW09,SW9
280		.EQUIV	SW08,SW8
281		.EQUIV	SW07,SW7
282		.EQUIV	SW06,SW6
283		.EQUIV	SW05,SW5
284		.EQUIV	SW04,SW4
285		.EQUIV	SW03,SW3
286		.EQUIV	SW02,SW2
287		.EQUIV	SW01,SW1
288		.EQUIV	SW00,SW0
289			
290		;*DATA BIT DEFINITIONS (BIT00 TO BIT15)	
291	100000	BIT15=	100000
292	040000	BIT14=	40000
293	020000	BIT13=	20000
294	010000	BIT12=	10000
295	004000	BIT11=	4000
296	002000	BIT10=	2000
297	001000	BIT09=	1000
298	000400	BIT08=	400
299	000200	BIT07=	200
300	000100	BIT06=	100
301	000040	BIT05=	40
302	000020	BIT04=	20
303	000010	BIT03=	10
304	000004	BIT02=	4
305	000002	BIT01=	2
306	000001	BIT00=	1
307		.EQUIV	BIT09,BIT9
308		.EQUIV	BIT08,BIT8
309		.EQUIV	BIT07,BIT7
310		.EQUIV	BIT06,BIT6
311		.EQUIV	BIT05,BIT5
312		.EQUIV	BIT04,BIT4
313		.EQUIV	BIT03,BIT3
314		.EQUIV	BIT02,BIT2
315		.EQUIV	BIT01,BIT1
316		.EQUIV	BIT00,BIT0
317			
318		;*BASIC "CPU" TRAP VECTOR ADDRESSES	
319	000004	ERRVEC=	4
320	000010	RESVEC=	10
321	000014	TBITVEC=	14
322	000014	TRTVEC=	14
323	000014	BPTVEC=	14
324	000020	IOTVEC=	20
325	000024	PWRVEC=	24

;;TIME OUT AND OTHER ERRORS
 ;;RESERVED AND ILLEGAL INSTRUCTIONS
 ;; "I" BIT
 ;;TRACE TRAP
 ;;BREAKPOINT TRAP (BPT)
 ;;INPUT/OUTPUT TRAP (IOT) **SCOPE**
 ;;POWER FAIL

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SEQ 0009

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326      000030      EMTVEC= 30      ;EMULATOR TRAP (EMT) **ERROR**
327      000034      TRAPVEC=34      ;"TRAP" TRAP
328      000060      TKVEC= 60      ;TTY KEYBOARD VECTOR
329      000064      TPVEC= 64      ;TTY PRINTER VECTOR
330      000240      PIRQVEC=240      ;PROGRAM INTERRUPT REQUEST VECTOR
331
332      .SBTTL MEMORY MANAGEMENT DEFINITIONS
333
334      ;*KT11 VECTOR ADDRESS
335      000250      MMVEC= 250
336
337      ;*KT11 STATUS REGISTER ADDRESSES
338
339      177572      SR0= 177572
340      177574      SR1= 177574
341      177576      SR2= 177576
342      172516      SR3= 172516
343
344      ;*USER "I" PAGE DESCRIPTOR REGISTERS
345
346      177600      UIPDR0= 177600
347      177602      UIPDR1= 177602
348      177604      UIPDR2= 177604
349      177606      UIPDR3= 177606
350      177610      UIPDR4= 177610
351      177612      UIPDR5= 177612
352      177614      UIPDR6= 177614
353      177616      UIPDR7= 177616
354
355      ;*USER "D" PAGE DESCRIPTOR REGISTERS
356
357      177620      UDPDR0= 177620
358      177622      UDPDR1= 177622
359      177624      UDPDR2= 177624
360      177626      UDPDR3= 177626
361      177630      UDPDR4= 177630
362      177632      UDPDR5= 177632
363      177634      UDPDR6= 177634
364      177636      UDPDR7= 177636
365
366      ;*USER "I" PAGE ADDRESS REGISTERS
367
368      177640      UIPAR0= 177640
369      177642      UIPAR1= 177642
370      177644      UIPAR2= 177644
371      177646      UIPAR3= 177646
372      177650      UIPAR4= 177650
373      177652      UIPAR5= 177652
374      177654      UIPAR6= 177654
375      177656      UIPAR7= 177656
376
377      ;*USER "D" PAGE ADDRESS REGISTERS
378
379      177660      UDPAR0= 177660
380      177662      UDPAR1= 177662
381      177664      UDPAR2= 177664

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382	177666	UDPAR3= 177666
383	177670	UDPAR4= 177670
384	177672	UDPAR5= 177672
385	177674	UDPAR6= 177674
386	177676	UDPAR7= 177676
387		
388		;*SUPERVISOR "I" PAGE DESCRIPTOR REGISTERS
389		
390	172200	SIPDR0= 172200
391	172202	SIPDR1= 172202
392	172204	SIPDR2= 172204
393	172206	SIPDR3= 172206
394	172210	SIPDR4= 172210
395	172212	SIPDR5= 172212
396	172214	SIPDR6= 172214
397	172216	SIPDR7= 172216
398		
399		;*SUPERVISOR "D" PAGE DESCRIPTOR REGISTERS
400		
401	172220	SDPDR0= 172220
402	172222	SDPDR1= 172222
403	172224	SDPDR2= 172224
404	172226	SDPDR3= 172226
405	172230	SDPDR4= 172230
406	172232	SDPDR5= 172232
407	172234	SDPDR6= 172234
408	172236	SDPDR7= 172236
409		
410		;*SUPERVISOR "I" PAGE ADDRESS REGISTERS
411		
412	172240	SIPAR0= 172240
413	172242	SIPAR1= 172242
414	172244	SIPAR2= 172244
415	172246	SIPAR3= 172246
416	172250	SIPAR4= 172250
417	172252	SIPAR5= 172252
418	172254	SIPAR6= 172254
419	172256	SIPAR7= 172256
420		
421		;*SUPERVISOR "D" PAGE ADDRESS REGISTERS
422		
423	172260	SDPAR0= 172260
424	172262	SDPAR1= 172262
425	172264	SDPAR2= 172264
426	172266	SDPAR3= 172266
427	172270	SDPAR4= 172270
428	172272	SDPAR5= 172272
429	172274	SDPAR6= 172274
430	172276	SDPAR7= 172276
431		
432		;*KERNEL "I" PAGE DESCRIPTOR REGISTERS
433		
434	172300	KIPDR0= 172300
435	172302	KIPDR1= 172302
436	172304	KIPDR2= 172304
437	172306	KIPDR3= 172306

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SEQ 0011

438	172310	KIPDR4= 172310	
439	172312	KIPDR5= 172312	
440	172314	KIPDR6= 172314	
441	172316	KIPDR7= 172316	
442			
443		; *KERNEL "D" PAGE DESCRIPTOR REGISTERS	
444			
445	172320	KDPDR0= 172320	
446	172322	KDPDR1= 172322	
447	172324	KDPDR2= 172324	
448	172326	KDPDR3= 172326	
449	172330	KDPDR4= 172330	
450	172332	KDPDR5= 172332	
451	172334	KDPDR6= 172334	
452	172336	KDPDR7= 172336	
453			
454		; *KERNEL "I" PAGE ADDRESS REGISTERS	
455			
456	172340	KIPAR0= 172340	
457	172342	KIPAR1= 172342	
458	172344	KIPAR2= 172344	
459	172346	KIPAR3= 172346	
460	172350	KIPAR4= 172350	
461	172352	KIPAR5= 172352	
462	172354	KIPAR6= 172354	
463	172356	KIPAR7= 172356	
464			
465		; *KERNEL "D" PAGE ADDRESS REGISTERS	
466			
467	172360	KDPAF0= 172360	
468	172362	KDPAF1= 172362	
469	172364	KDPAF2= 172364	
470	172366	KDPAF3= 172366	
471	172370	KDPAF4= 172370	
472	172372	KDPAF5= 172372	
473	172374	KDPAF6= 172374	
474	172376	KDPAF7= 172376	
475			
476		; THESE ARE FLOATING POINT ACCUMULATOR EQUATES	
477	000000	AC0=	%0
478	000001	AC1=	%1
479	000002	AC2=	%2
480	000003	AC3=	%3
481	000004	AC4=	%4
482	000005	AC5=	%5
483	000006	AC6=	%6
484	000007	AC7=	%7
485			
486	000244	FPVEC=	244
487			
488		; THESE ARE CACHE REGISTER EQUATES	
489	177746	CCR=	177746 ; CACHE CONTROL REGISTER
490	177744	MSER=	177744 ; MEMORY SYSTEM ERROR REGISTER
491	177752	HITHIS=	177752 ; HIT/MISS REGISTER
492	177766	CPEREG=	177766 ; CPU ERROR REGISTER
493			

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SEQ 0012

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494      ; MISCELLANEOUS DEFINITIONS
495      BEVENT= 177546      ; BEVENT CONTROL REGISTER
496      RCSR= 177560
497      RBUF= 177562
498      XCSR= 177564
499      XBUF= 177566
500      ERRTN= HALT
501      $TSTNC=1
502      ERRNUM= 1      ; INITIALIZE ERROR NUMBER COUNTER
503      AUSWR= 2000      ; SWR FOR APT--NO BEVENT TESTING
504
505
506      ; THIS EQUATE DEFINES THE BOTTOM OF THE PROGRAM STACK POINTER
507      STBOT= 1000
508      .ASECT
509      .SBTTL TRAP CATCHER
510
511      .=0
512      ; *ALL UNUSED LOCATIONS OF THE VECTOR AREA CONTAIN
513      ; *A ".+2, IOT" SEQUENCE TO CATCH AND PROCESS ILLEGAL
514      ; *TRAPS AND INTERRUPTS THAT MIGHT OCCUR.
515      ; *THE IOT TRAP WHICH IS TAKEN ON THE ILLEGAL TRAP/INT
516      ; *TRAPS TO THE $SCOPE ROUTINE WHICH (IF THE RETURN PC IS
517      ; *LESS THAN 1002) JUMPS TO THE $ERROR ROUTINE.
518      ; *THE $ERROR ROUTINE WILL REPORT THE ERROR AS FOLLOWS:
519      ; *   PC=YYYYYY UNEXPECTED TRAP TO XXX
520      ; *AND RETURN TO THE PROGRAM AT PC=YYYYYY+2
521      ; *WHERE XXX=LOCATION OF ILLEGAL TRAP
522      ; *   YYYYYY=PC AT TIME OF TRAP
523      ; *NOTE: IF THE PROCESSOR IS NOT AN 11/05 THE PROGRAM
524      ; *   CAN BE STARTED AT ADDRESS 0 AS WELL AS ADDRESS 200.
525
526      000000 000000      $40CAT: HALT      ; HALT
527      000002 000737      BR      .-100      ; BRANCH TO 177700 & TIME OUT (NOT ON
528      ; 11/05)
529      000004 001266      .WORD START      ; VECTOR TO STARTING ADDRESS
530      000006 000340      .WORD 340      ; WITH PRIORITY LEVEL 7
531      000174 000174      .=-174
532      000174 000000      DISPREG: .WORD 0      ; SOFTWARE DISPLAY REGISTER
533      000176 000000      SWREG: .WORD 0      ; SOFTWARE SWITCH REGISTER
534      .SBTTL STARTING ADDRESS(ES)
535      000200 000137 001266      JMP 8*START ; GO TO START OF PROGRAM
536      .SBTTL ACT11 HOOKS
537
538      ; *****
539      ; HOOKS REQUIRED BY ACT11
540      000204      $SVPC= .      ; SAVE PC
541      000046      .-46
542      000046 042016      $ENDAD      ; 1) SET LOC.46 TO ADDRESS OF $ENDAD IN . $EUP
543      000052      .-52
544      000052 000000      .WORD 0      ; 2) SET LOC.52 TO ZERO
545      000204      .=$SVPC      ; RESTORE PC
546      .SBTTL APT PARAMETER BLOCK
547
548      ; *****
549      ; SET LOCATIONS 24 AND 44 AS REQUIRED FOR APT

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550                                     ;*****
551                                     ;$X= .    ;SAVE CURRENT LOCATION
552                                     ;=24      ;SET POWER FAIL TO POINT TO START OF PROGRAM
553 000024 000200                       200      ;FOR APT START UP
554                                     ;=44      ;POINT TO APT INDIRECT ADDRESS PNTR.
555 000044 000204                       $APTHOR ;POINT TO APT HEADER BLOCK
556                                     ;=.$X      ;RESET LOCATION COUNTER
557                                     ;*****
558 ;SETUP APT PARAMETER BLOCK AS DEFINED IN THE APT-PDP11 DIAGNOSTIC
559 ;INTERFACE SPEC.
560
561 000204 $APTHD:
562 000204 000000 $HIBTS: .WORD 0      ;TWO HIGH BITS OF 18 BIT MAILBOX ADDR.
563 000206 001000 $MBADR: .WORD $MAIL  ;ADDRESS OF APT MAILBOX (BITS 0-15)
564 000210 000001 $TSTM: .WORD 1      ;RUN TIM OF LONGEST TEST
565 000212 000002 $PASTM: .WORD 2      ;RUN TIME IN SECS. OF 1ST PASS ON 1 UNIT (QUICK VERIFY)
566 000214 000000 $UNITM: .WORD 0      ;ADDITIONAL RUN TIME (SECS) OF 1 PASS FOR EACH ADDITIONAL UNIT
567 000216 000014 .WORD $ETEND-$MAIL/2 ;LENGTH MAILBOX-ETABLE(WORDS)
568                                     ;=.$X      ;SAVE CURRENT LOCATION COUNT
569                                     ;=2
570 000002 000000 0
571 000004 000006 6
572 000006 000004 4
573 000204 .=$X      ;SET UP SOME VECTORS
574 001000 .=$000     ;RESTORE LOCATION COUNT

```

```

575 .SBTTL GLOBAL DATA SECTION
576
577 ***
578 ; THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
579 ; IN MORE THAN ONE TEST.
580 ***
581 .SBTTL APT MAILBOX-ETABLE
582
583 ;*****
584 .EVEN
585 001000 $MAIL: ;APT MAILBOX
586 001000 000000 $MSGTY: .WORD AMSGTY ;MESSAGE TYPE CODE
587 001002 000000 $FATAL: .WORD AFATAL ;FATAL ERROR NUMBER
588 001004 000000 $TESTN: .WORD ATESTN ;TEST NUMBER
589 001006 000000 $PASS: .WORD APASS ;PASS COUNT
590 001010 000000 $DEVCT: .WORD ADEVCT ;DEVICE COUNT
591 001012 000000 $UNIT: .WORD AUNIT ;I/O UNIT NUMBER
592 001014 000000 $MSGAD: .WORD AMSGAD ;MESSAGE ADDRESS
593 001016 000000 $MSGLG: .WORD AMSGLG ;MESSAGE LENGTH
594 001020 $ETABLE: ;APT ENVIRONMENT TABLE
595 001020 000 $ENV: .BYTE .ENV ;ENVIRONMENT BYTE
596 001021 000 $ENVH: .BYTE AENVH ;ENVIRONMENT MODE BITS
597 001022 000000 $SWREG: .WORD ASWREG ;APT SWITCH REGISTER
598 001024 002000 $USMR: .WORD AUSMR ;USER SWITCHES
599 001026 000000 $CPUOP: .WORD ACPJOP ;CPU TYPE,OPTIONS
600 ;*
601 ;*
602 ;* 11/04-01,11/05-02,11/20-03,11/40-04,11/45-05
603 ;* 11/70-06,POQ-07,Q-10
604 ;* BIT 10-REAL TIME CLOCK
605 ;* BIT 9-FLOATING POINT PROCESSOR
606 ;* BIT 8-MEMORY MANAGEMENT
607 001030 $ETEND:
608 .MEXIT
609
610 ;THESE LOCATIONS ARE USED IN MORE THAN ONE TEST TO STORE VECTOR DATA
611 ;WHEN THE TEST NEEDS TO HAVE AN ERROR CONDITION RESPOND DIFFERENTLY
612 ;FROM THE DEFAULT RESPONSE.
612 001030 000000 SLOC00: .WORD 0
613 001032 000000 SLOC01: .WORD 0
614
615 ;THESE LOCATIONS ARE USED IN MORE THAN ONE TEST TO STORE WORKING DATA.
616 001034 000000 EXPDAT: .WORD 0 ;STORES EXPECTED (GOOD) DATA FOR COMPARISONS
617 001036 000000 RECDAT: .WORD 0 ;STORES RECIEVED DATA TO BE VERIFIED
618 001040 000000 COUNT: .WORD 0 ;ERROR INDICATOR FOR FLOATING POINT TESTS
619 001042 000000 FLAG: .WORD 0 ;USED TO STORE "FLAG" CONDITIONS
620 001044 000000 ERRCNT: .WORD 0 ;STORAGE FOR ERROR COUNT
621 001046 177570 SWR: .WORD DSWR ;STORAGE FOR SWITCH REGISTER ADDRESS
622 001050 177570 DISPLAY: .WORD DDISP ;STORAGE FOR DISPLAY REGISTER ADDRESS
623 001052 000000 $ERFLG: .WORD 0 ;ERROR FLAG
624
625 ;THESE LOCATIONS ARE USED BY MORE THAN ONE TEST AS LOOP COUNTERS
625 001054 000000 DCOUNT: .WORD 0
626 001056 000000 ALLCTR: .WORD 0
627 001060 000000 LOOPIN: .WORD 0
628 001062 000000 SAVSP1: .WORD 0 ;STORAGE FOR UNEXPECTED TRAP DATA
629 001064 000000 SAVSP2: .WORD 0 ;
630

```

C2

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 15
RDJ11A.MAC 22-FEB-84 15:12 ART MAILBOX-ETABLE

SEQ 0015

```
631
632
633
634
635 001066 000000      SEQ:  .WORD  0      ;STORES SEQUENCE NUMBER FOR JUMP TESTS
636 001070 000000      SPS:  .WORD  0      ;STORES STACK POINTER FOR JUMP TESTS
637 001072 000000      SPSJ: .WORD  0      ;STORES STACK POINTER FOR JUMP TESTS
638
639
640
641 001074 177777      WAITIN: .WORD  177777
642
643      ;!!!!!!THIS IS IT. THE PROGRAM TEST LOCATION AND WRITE BUFFER!!!!!!!!!!!!!!!!!!!!!!
644 001076
645 001076 000002      TSTLOC: .BLKW  2
```

D2

GLOBAL AREAS MACY11 308(1052) 15-MAR-84 13:28 PAGE 16
 R0J11A.MAC 22-EB-84 15:12 GLOBAL TEXT SECTION

SEQ 0016

```

646 .SBTTL GLOBAL TEXT SECTION
647
648
649 ;
650 ; THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
651 ; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
652 ; MORE THAN ONE TEST.
653 ;
654 ;
655 ; FORMAT STATEMENTS USED IN PRINT CALLS
656 ;
657
658 001102 005015 040503 044103 ERRMSG: .ASCIZ <CR><LF>/CACHE SYSTEM ERROR/
659 001110 020105 054523 052123
660 001116 046505 042440 051122
661 001124 051117 000
662 001127 015 042412 051122 CPUERR: .ASCIZ <CR><LF>/ERROR DURING CPU TESTS/
663 001134 051117 042040 051125
664 001142 047111 021107 050103
665 001150 020125 042524 052123
666 001156 000123
667 001160 005015 051105 047522 BRDERR: .ASCIZ <CR><LF>/ERROR WHILE TESTING BOARD FUNCTIONS/
668 001166 020122 044127 046111
669 001174 020105 042524 052123
670 001202 047111 020107 047502
671 001210 051101 020104 052506
672 001216 041516 044524 047117
673 001224 000123
674 001226 005015 051105 047522 ERR1: .ASCIZ <CR><LF>/ERROR # =/
675 001234 020122 020043 000075
676 001242 005015 051105 047522 ERR2: .ASCIZ <CR><LF>/ERROR PC =/
677 001250 020122 041520 036440
678 001256 000
679 001257 015 020012 020040 $CRLF: .ASCIZ <CR><LF>/ /
680 001264 000
681 001266 .EVEN

```

E2

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 17
KDJ11A.MAC 22-FEB-84 15:12 GLOBAL ERROR REPORT SECTION

SEQ 0017

682
683
684
685
686
687
688

.SBTTL GLOBAL ERROR REPORT SECTION

!++
; THE GLOBAL ERROR REPORT SECTION CONTAINS MESSAGE PRINTING AREAS
; USED BY MORE THAN TEST TO OUTPUT ADDITIONAL ERROR INFORMATION.
!--

F2

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 18
KDJ11A.MAC 22-FEB-84 15:12 GLOBAL SUBROUTINES SECTION

SEQ 0018

689
690
691
692
693
694

.SBTTL GLOBAL SUBROUTINES SECTION

!++
! THE GLOBAL SUBROUTINES SECTION CONTAINS THE SUBROUTINES
! THAT ARE USED IN MORE THAN ONE TEST
!--

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 19
 KDJ11A.MAC 22-FEB-84 15:12 GLOBAL SUBROUTINES SECTION

SEQ 0019

```

695 001266          START:
696 001266 012737 000014 177746      MOV    #14,0#CCR          ;SET CACHE TO FORCE MISS
697                                     .SBTTL INITIALIZE THE COMMON TAGS
698 001274 012706 001000      MOV    #STACK,SP          ;SETUP THE STACK POINTER
699                                     ;INITIALIZE A FEW VECTORS
700 001300 012737 043470 000030      MOV    #ERROR,0#EMTVEC ;EMT VECTOR FOR ERROR ROUTINE
701 001306 012737 000340 000032      MOV    #340,0#EMTVEC+2 ;LEVEL 7
702 001314 012737 043152 000034      MOV    #TRAP,0#TRAPVEC ;TRAP VECTOR FOR TRAP CALLS
703 001322 012737 000340 000036      MOV    #340,0#TRAPVEC+2 ;LEVEL 7
704 001330 005067 177452          CLR    #PASS          ;CLEAR THE PASS COUNT
705 001334 016767 040424 040414      MOV    #ENDCT,0#EOPCT ;SETUP END-OF-PROGRAM COUNTER
706 001342 105067 177504          CLR    #ERFLG         ;CLEAR THE ERROR FLAG
707                                     ;SIZE FOR A HARDWARE SWITCH REGISTER. IF NOT FOUND OR IT IS
708                                     ;EQUAL TO A "-1", SETUP FOR A SOFTWARE SWITCH REGISTER.
709 001346 013746 000004          MOV    0#ERRVEC,-(SP) ;SAVE ERROR VECTOR
710 001352 012737 001406 000004      MOV    #64,0#ERRVEC ;SET UP ERROR VECTOR
711 001360 012767 177570 177460      MOV    #DSWR,SWR ;SETUP FOR A HARDWARE SWICH REGISTER
712 001366 012767 177570 177454      MOV    #DDISP,DISPLAY ;AND A HARDWARE DISPLAY REGISTER
713 001374 022777 177777 177444      CMP    #-1,0#SWR ;TRY TO REFERENCE HARDWARE SWR
714 001402 001012          BNE    66$ ;BRANCH IF NO TIMEOUT TRAP OCCURRED
715                                     ;AND THE HARDWARE SWR IS NOT = -1
716 001404 000403          BR     65$ ;BRANCH IF NO TIMEOUT
717 001406 012716 001414      64$: MOV    #65,(SP) ;SET UP FOR TRAP RETURN
718 001412 000002          RTI
719 001414 012767 000176 177424      65$: MOV    #SWREG,SWR ;POINT TO SOFTWARE SWR
720 001422 012767 000174 177420      MOV    #DISPREG,DISPLAY
721 001430 012637 000004      66$: MOV    (SP)+,0#ERRVEC ;RESTORE ERROR VECTOR
722
723      .MACRO    ##SETMAIL    ?$ARG1
724          CLR    #PASS ;CLEAR PASS COUNT
725          BITB    #APTSIZE,0#ENV ;TEST USER SIZE UNDER APT
726          BEQ    #ARG1 ;YES,USE NON-APT SWITCH
727          MOV    #SWREG,SWR ;NO,USE APT SWITCH REGISTER
728
729      $ARG1:
730      .ENDM    ##SETMAIL
731          CLR    #PASS ;CLEAR PASS COUNT
732          BITB    #APTSIZE,0#ENV ;TEST USER SIZE UNDER APT
733          BEQ    67$ ;YES,USE NON-APT SWITCH
734          MOV    #SWREG,SWR ;NO,USE APT SWITCH REGISTER
735      67$:
736          MOV    #ERROR,0#IOTVEC ;SET UP IOT VECTORS
737          MOV    #340,0#IOTVEC+2 ;TO GO TO ERROR ROUTINE
738          CLR    0#177766 ;CLEAR CPU ERROR REGISTER
739      .RESTART: CLR    #TESTN ;RESET #TESTN TO ZERO
740          MOV    #14,0#CCR ;SET CACHE TO FORCE MISS
741
742      .SBTTL BASE INSTRUCTION SET TESTS
743      ;*****
744      ; BEGIN BASE INSTRUCTION SET TESTING
745      ;*****
746      ;*****
747 001510      FRSTST:
748      ;*****
749      ;*TEST 1 TEST BEQ BNE INSTRUCTIONS
750      ;*****

```

H2

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 20
 KDJ11A.MAC 22-FEB-84 15:12 T1 TEST BEQ BNE INSTRUCTIONS

SEQ 0020

```

751      ;THESE TWO INSTRUCTIONS ARE FUNDAMENTAL TO RECOGNIZING ERROR CONDITIONS
752      ;*****
753      TST1:
754      INC      $TESTN      ;INCREMENT TEST NUMBER
755      SCC
756      CLZ      ;CC=0100 - Z BIT CLEARED
757      BEQ      1$          ;*TEST INSTR - TRY TO CAUSE A BEQ ERROR
758      BNE      2$          ;BRANCH IF GOOD
759      ;THE Z FLAG DIDNT CLEAR OR BRANCH FAILED.
760      ;FAILURE AT THIS LOCATION
761      ;COULD MEAN A BUS PROBLEM, MICRO-CODE PROBLEM
762      ;CONDITION CODE PROBLEM OR JUST ABOUT ANYTHING
763      ;ELSE.
764      1$:
765      ERROR
766      .WORD    1           ;ALL ERRORS TO TRAP TO EMT VECTOR
767      .WORD    CPUERR      ;UNIQUE ERROR NUMBER
768      .WORD    CPUERR      ;ADDRESS OF ERROR MESSAGE
769      2$:
770      CCC
771      SEZ      ;COND CODES = 0100 (ZERO)
772      BNE      3$          ;*TEST INSTR* TRY TO BRANCH ON ZERO FLAG
773      BEQ      4$          ;*TEST INSTR* BRANCH IF GOOD
774      ;BRANCH FAILURE WITH Z BIT SET
775      3$:
776      ERROR
777      .WORD    2           ;ALL ERRORS TO TRAP TO EMT VECTOR
778      .WORD    CPUERR      ;UNIQUE ERROR NUMBER
779      .WORD    CPUERR      ;ADDRESS OF ERROR MESSAGE
780      4$:
781      M2:
782      ;*****
783      ;*TEST 2      TEST BRANCH ON CARRY
784      ;*****
785      ;THIS IS A TEST TO SEE IF THE MODULE FORM ANTICIPATED IS FEASIBLE.
786      ;*****
787      TST2:
788      INC      $TESTN      ;INCREMENT TEST NUMBER
789      CCC
790      BCC      2$          ;CC=0000
791      ;*TEST INSTR*
792      ;BRANCH CARRY CLEAR FAILED
793      1$:
794      ERROR
795      .WORD    3           ;ALL ERRORS TO TRAP TO EMT VECTOR
796      .WORD    CPUERR      ;UNIQUE ERROR NUMBER
797      .WORD    CPUERR      ;ADDRESS OF ERROR MESSAGE
798      2$:
799      SEC
800      BCS      4$          ;CC=1111
801      ;*TEST INSTR*
802      ;BRANCH CARRY SET FAILED
803      3$:
804      ERROR
805      .WORD    4           ;ALL ERRORS TO TRAP TO EMT VECTOR
806      .WORD    CPUERR      ;UNIQUE ERROR NUMBER
807      .WORD    CPUERR      ;ADDRESS OF ERROR MESSAGE
808      4$:
809      M3:
810      ;*****
811      ;*TEST 3      TEST DATA PATHS
812      ;*****

```

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 21
 KDJ11A.MAC 22-FEB-84 15:12 T3 TEST DATA PATHS

SEQ 0021

```

807 001600          TST3:
808 001600 005267 177200      INC      $TESTN      ; INCREMENT TEST NUMBER
809 001604 005000          CLR      R0
810 001606 001005          BNE      1$
811                                ; TRY TO INSURE WE ARE TESTING
812 001610 005010          CLR      (R0)          ; THE DATA PATH AND NOT THE "CLR R0" INSTRUCTION
813 001612 001003          BNE      1$          ; FORCE LOCATION TO ZERO
814 001614 005737 000000      TST      0$0
815 001620 001403          BEQ      2$          ; TRY TO INSURE 0=0
816                                ; AGAIN, TRY TO INSURE THAT 0=0
817 001622          1$:      ; BRANCH IF GOOD
818 001622 104000          ERROR          ; LOCATION 0 NOT SETUP PROPERLY
819 001624 000005          .WORD      5      ; ALL ERRORS TO TRAP TO EMT VECTOR
820 001626 001127          .WORD      CPUERR ; UNIQUE ERROR NUMBER
821 001630          2$:      ; ADDRESS OF ERROR MESSAGE
822
823 001630          M4:
824          ;*****
825          ;*TEST 4      TEST DATA PATHS - ONES AND ZEROS
826          ;*****
827 001630          TST4:
828 001630 005267 177150      INC      $TESTN      ; INCREMENT TEST NUMBER
829 001634 012737 125252 000000      MOV      0$125252,0$0 ; 0=125252
830 001642 022737 125252 000000      CMP      0$125252,0$0 ; SEE IF DATA MADE IT
831 001650 001403          BEQ      2$          ; BRANCH IF IF DATA IS GOOD
832                                ; ERROR! EITHER THE BUS IS BAD,
833                                ; OR THE MOV OR COMPARE
834                                ; INSTRUCTIONS FAILED
835 001652          1$:      ; ALL ERRORS TO TRAP TO EMT VECTOR
836 001652 104000          ERROR          ; UNIQUE ERROR NUMBER
837 001654 000006          .WORD      6      ; ADDRESS OF ERROR MESSAGE
838 001656 001127          .WORD      CPUERR ; END OF TEST
839 001660          2$:
840
841          ;
842 001660          M5:
843          ;*****
844          ;*TEST 5      TEST DATA PATHS - DATA 0'S AND 1'S
845          ;*****
846 001660          TST5:
847 001660 005267 177120      INC      $TESTN      ; INCREMENT TEST NUMBER
848 001664 012737 052525 000000      MOV      0$052525,0$0 ; SETUP DATA
849 001672 023727 000000 052525      CMP      0$0,0$052525 ; TEST FOR CORRECT DATA
850 001700 001403          BEQ      2$
851 001702          1$:      ; ALL ERRORS TO TRAP TO EMT VECTOR
852 001702 104000          ERROR          ; UNIQUE ERROR NUMBER
853 001704 000007          .WORD      7      ; ADDRESS OF ERROR MESSAGE
854 001706 001127          .WORD      CPUERR
855 001710          2$:
856
857          ;
858 001710          M6:
859          ;*****
860          ;*TEST 6      TEST DATA PATHS - 1'S
861          ;*****
862 001710          TST6:

```

J2

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 22
 KDJ11A.MAC 22-FEB-84 15:12 16 TEST DATA PATHS - 1'S

SEQ 0022

```

863 001710 005267 177070      INC      $TESTN      ;INCREMENT TEST NUMBER
864 001714 005037 000000      CLR      0000      ;
865 001720 005137 000000      COM      0000      ;SET UP MEMORY LOCATION 0 = 111111
866 001724 023727 000000 177777  CMP      000,0177777  ; TEST DATA
867 001732 001403          BEQ      2$      ;BRANCH IF NO ERROR
868 001734          1$:      ERROR          ;
869 001734 104000          .WORD      10      ;ALL ERRORS TO TRAP TO EMT VECTOR
870 001736 000010          .WORD      CPUERR  ;UNIQUE ERROR NUMBER
871 001740 001127          2$:      ;ADDRESS OF ERROR MESSAGE
872 001742
873
874
875 001742      ;
876      GPROTS:
877      ;*****
878      ;*TEST 7      R0 BIT TESTS
879      ;*****
880 001742 005267 177036      TST7:      INC      $TESTN      ;INCREMENT TEST NUMBER
881 001746 012700 177777      MOV      0177777,R0      ;R0=177777
882 001752 020027 177777      CMP      R0,0177777      ;DOES R0=177777
883 001756 001403          BEQ      1$      ;YES GO ON
884          ;NO GO TO ERROR
885 001760 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
886 001762 000011          .WORD      11      ;UNIQUE ERROR NUMBER
887 001764 001127          .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
888 001766 005000          1$:      CLR      R0      ;R0=0
889 001770 020027 000000      CMP      R0,00      ;DOES R0=0
890 001774 001403          BEQ      2$      ;YES GO ON
891          ;NO GO TO ERROR
892 001776 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
893 002000 000012          .WORD      12      ;UNIQUE ERROR NUMBER
894 002002 001127          .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
895 002004 012700 125252      2$:      MOV      0125252,R0      ;R0=125252
896 002010 020027 125252      CMP      R0,0125252      ;DOES R0=125252
897 002014 001403          BEQ      3$      ;YES GO ON
898          ;NO GO TO ERROR
899 002016 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
900 002020 000013          .WORD      13      ;UNIQUE ERROR NUMBER
901 002022 001127          .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
902 002024 012700 052525      3$:      MOV      052525,R0      ;R0=52525
903 002030 020027 052525      CMP      R0,052525      ;DOES R0=52525
904 002034 001403          BEQ      4$      ;YES GO ON
905          ;NO GO TO ERROR
906 002036 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
907 002040 000014          .WORD      14      ;UNIQUE ERROR NUMBER
908 002042 001127          .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
909 002044          4$:
910
911      ;
912 002044      GPR1TS:
913      ;*****
914      ;*TEST 10      R1 BIT TESTS
915      ;*****
916 002044          TST10:
917 002044 005267 176734      INC      $TESTN      ;INCREMENT TEST NUMBER
918 002050 012701 177777      MOV      0177777,R1      ;R1=177777

```

K2

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 23
 KDJ11A.MAC 22-FEB-84 15:12 T10 R1 BIT TESTS

SEQ 0023

```

919 002054 020127 177777      CMP      R1,#177777      ;DOES R1=177777
920 002060 001403              BEQ      1$           ;YES GO ON
921                                ;NO GO TO ERROR
922 002062 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
923 002064 000015              .WORD      15         ;UNIQUE ERROR NUMBER
924 002066 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
925 002070 005001              1$: CLR      R1         ;R1=0
926 002072 020127 000000      CMP      R1,#0        ;DOES R1=0
927 002076 001403              BEQ      2$           ;YES GO ON
928                                ;NO GO TO ERROR
929 002100 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
930 002102 000016              .WORD      16         ;UNIQUE ERROR NUMBER
931 002104 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
932 002106 012701 125252      2$: MOV      #125252,R1 ;R1=125252
933 002112 020127 125252      CMP      R1,#125252    ;DOES R1=125252
934 002116 001403              BEQ      3$           ;YES GO ON
935                                ;NO GO TO ERROR
936 002120 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
937 002122 000017              .WORD      17         ;UNIQUE ERROR NUMBER
938 002124 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
939 002126 012701 052525      3$: MOV      #52525,R1  ;R1=52525
940 002132 020127 052525      CMP      R1,#52525    ;DOES R1=52525
941 002136 001403              BEQ      4$           ;YES GO ON
942                                ;NO GO TO ERROR
943 002140 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
944 002142 000020              .WORD      20         ;UNIQUE ERROR NUMBER
945 002144 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
946 002146              4$:
947
948
949 002146              ;
950              GPR2TS:
951              ;*****
952              ;*TEST 11      R2 BIT TESTS
953              ;*****
954 002146              ST11:
955 002146 005267 176632      INC      $TESTN        ;INCREMENT TEST NUMBER
956 002152 012702 177777      MOV      #177777,R2    ;R2=177777
957 002156 020227 177777      CMP      R2,#177777    ;DOES R2=177777
958 002162 001403              BEQ      1$           ;YES GO ON
959                                ;NO GO TO ERROR
960 002164 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
961 002166 000021              .WORD      21         ;UNIQUE ERROR NUMBER
962 002170 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
963 002172 005002              1$: CLR      R2         ;R2=0
964 002174 020227 000000      CMP      R2,#0        ;DOES R2=0
965 002200 001403              BEQ      2$           ;YES GO ON
966                                ;NO GO TO ERROR
967 002202 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
968 002204 000022              .WORD      22         ;UNIQUE ERROR NUMBER
969 002206 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
970 002210 012702 125252      2$: MOV      #125252,R2 ;R2=125252
971 002214 020227 125252      CMP      R2,#125252    ;DOES R2=125252
972 002220 001403              BEQ      3$           ;YES GO ON
973                                ;NO GO TO ERROR
974 002222 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
975 002224 000023              .WORD      23         ;UNIQUE ERROR NUMBER

```

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 24
 KDJ11A,MAC 22-FEB-84 15:12 111 R2 BIT TESTS

SEQ 0024

```

975 002226 001127          .WORD CPUERR          ;ADDRESS OF ERROR MESSAGE
976 002230 012702 052525 3$: MOV    #52525,R2      ;R2=52525
977 002234 020227 052525    CMP    R2,#52525      ;DOES R2=52525
978 002240 001403          BEQ     4$              ;YES GO ON
979                                     ;NO GO TO ERROR
980 002242 104000          ERROR                  ;ALL ERRORS TO TRAP TO EMT VECTOR
981 002244 000024          .WORD    24             ;UNIQUE ERROR NUMBER
982 002246 001127          .WORD    CPUERR         ;ADDRESS OF ERROR MESSAGE
983 002250          4$:
984
985
986 002250          ;
987          GPR3TS:
988          ;*****
989          ;*TEST 12      R3 BIT TESTS
990          ;*****
991          TST12:
992          INC     $TESTN          ;INCREMENT TEST NUMBER
993          MOV     #177777,R3      ;R3=177777
994          CMP     R3,#177777      ;DOES R3=177777
995          BEQ     1$              ;YES GO ON
996                                     ;NO GO TO ERROR
997          ERROR                  ;ALL ERRORS TO TRAP TO EMT VECTOR
998          .WORD    25             ;UNIQUE ERROR NUMBER
999          .WORD    CPUERR         ;ADDRESS OF ERROR MESSAGE
1000 002276 020327 000000 1$: CLR     R3            ;R3=0
1001 002302 001403          CMP     R3,#0           ;DOES R3=0
1002          BEQ     2$              ;YES GO ON
1003                                     ;NO GO TO ERROR
1004          ERROR                  ;ALL ERRORS TO TRAP TO EMT VECTOR
1005          .WORD    26             ;UNIQUE ERROR NUMBER
1006          .WORD    CPUERR         ;ADDRESS OF ERROR MESSAGE
1007 002312 012703 125252 2$: MOV     #125252,R3     ;R3=125252
1008 002322 001403          CMP     R3,#125252      ;DOES R3=125252
1009          BEQ     3$              ;YES GO ON
1010                                     ;NO GO TO ERROR
1011          ERROR                  ;ALL ERRORS TO TRAP TO EMT VECTOR
1012          .WORD    27             ;UNIQUE ERROR NUMBER
1013          .WORD    CPUERR         ;ADDRESS OF ERROR MESSAGE
1014 002332 012703 052525 3$: MOV     #52525,R3      ;R3=52525
1015 002336 020327 052525    CMP     R3,#52525      ;DOES R3=52525
1016          BEQ     4$              ;YES GO ON
1017                                     ;NO GO TO ERROR
1018          ERROR                  ;ALL ERRORS TO TRAP TO EMT VECTOR
1019          .WORD    30             ;UNIQUE ERROR NUMBER
1020          .WORD    CPUERR         ;ADDRESS OF ERROR MESSAGE
1021          4$:
1022
1023          ;
1024          GPR4TS:
1025          ;*****
1026          ;*TEST 13      R4 BIT TESTS
1027          ;*****
1028          TST13:
1029          INC     $TESTN          ;INCREMENT TEST NUMBER
1030          MOV     #177777,R4      ;R4=177777
1031          CMP     R4,#177777      ;DOES R4=177777

```

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 KDJ11A.MAC 22-FEB-84 15:12 T13 R4 BIT TESTS

SEQ 0025

```

1031 002366 001403      BEQ      1$      ;YES GO ON
1032                                ;NO GO TO ERROR
1033 002370 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1034 002372 000031      .WORD      31      ;UNIQUE ERROR NUMBER
1035 002374 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
1036 002376 005004      CLR      R4      ;R4=0
1037 002400 020427 000000 1$:      CMP      R4,00      ;DOES R4=0
1038 002404 001403      BEQ      2$      ;YES GO ON
1039                                ;NO GO TO ERROR
1040 002406 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1041 002410 000032      .WORD      32      ;UNIQUE ERROR NUMBER
1042 002412 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
1043 002414 012704 125252 2$:      MOV      0125252,R4      ;R4=125252
1044 002420 020427 125252      CMP      R4,0125252      ;DOES R4=125252
1045 002424 001403      BEQ      3$      ;YES GO ON
1046                                ;NO GO TO ERROR
1047 002426 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1048 002430 000033      .WORD      33      ;UNIQUE ERROR NUMBER
1049 002432 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
1050 002434 012704 052525 3$:      MOV      052525,R4      ;R4=52525
1051 002440 020427 052525      CMP      R4,052525      ;DOES R4=52525
1052 002444 001403      BEQ      4$      ;YES GO ON
1053                                ;NO GO TO ERROR
1054 002446 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1055 002450 000034      .WORD      34      ;UNIQUE ERROR NUMBER
1056 002452 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
1057 002454      4$:
1058
1059      |
1060 002454      | GPR5TS:
1061      | ;*****
1062      | ;*TEST 14      R5 BIT TESTS
1063      | ;*****
1064 002454      | TST14:
1065 002454 005267 176324      INC      $TESTN      ;INCREMENT TEST NUMBER
1066 002460 012705 177777      MOV      0177777,R5      ;R5=177777
1067 002464 020527 177777      CMP      R5,0177777      ;DOES R5=177777
1068 002470 001403      BEQ      1$      ;YES GO ON
1069                                ;NO GO TO ERROR
1070 002472 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1071 002474 000035      .WORD      35      ;UNIQUE ERROR NUMBER
1072 002476 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
1073 002500 005005      CLR      R5      ;R5=0
1074 002502 020527 000000 1$:      CMP      R5,00      ;DOES R5=0
1075 002506 001403      BEQ      2$      ;YES GO ON
1076                                ;NO GO TO ERROR
1077 002510 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1078 002512 000036      .WORD      36      ;UNIQUE ERROR NUMBER
1079 002514 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE
1080 002516 012705 125252 2$:      MOV      0125252,R5      ;R5=125252
1081 002522 020527 125252      CMP      R5,0125252      ;DOES R5=125252
1082 002526 001403      BEQ      3$      ;YES GO ON
1083                                ;NO GO TO ERROR
1084 002530 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1085 002532 000037      .WORD      37      ;UNIQUE ERROR NUMBER
1086 002534 001127      .WORD      CPUERR  ;ADDRESS OF ERROR MESSAGE

```

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SEQ 0026

```

1087 002536 012705 052525      3$:  MOV    $52525,R5      ;R5=52525
1088 002542 020527 052525      CMP    R5,$52525    ;DOES R5=52525
1089 002546 001403              BEQ    4$           ;YES GO ON
1090                                ;NO GO TO ERROR
1091 002550 104000              ERROR                ;ALL ERRORS TO TRAP TO EMT VECTOR
1092 002552 000040              .WORD   40           ;UNIQUE ERROR NUMBER
1093 002554 001127              .WORD   CPUERR        ;ADDRESS OF ERROR MESSAGE
1094 002556                      4$:
1095
1096
1097 002556                      ;
1098                      GPR6TS:
1099                      ;*****
1100                      ;*TEST 15      R6 BIT TESTS
1101                      ;*****
1102 002556 005267 176222      TST15: INC    $TESTN      ;INCREMENT TEST NUMBER
1103 002562 012706 177777      MOV    $177777,R6      ;R6=177777
1104 002566 020627 177777      CMP    R6,$177777    ;DOES R6=177777
1105 002572 001403              BEQ    1$           ;YES GO ON
1106                                ;NO GO TO ERROR
1107 002574 104000              ERROR                ;ALL ERRORS TO TRAP TO EMT VECTOR
1108 002576 000041              .WORD   41           ;UNIQUE ERROR NUMBER
1109 002600 001127              .WORD   CPUERR        ;ADDRESS OF ERROR MESSAGE
1110 002602 005006              1$:  CLR    R6           ;R6=0
1111 002604 020627 000000      CMP    R6,$0        ;DOES R6=0
1112 002610 001403              BEQ    2$           ;YES GO ON
1113                                ;NO GO TO ERROR
1114 002612 104000              ERROR                ;ALL ERRORS TO TRAP TO EMT VECTOR
1115 002614 000042              .WORD   42           ;UNIQUE ERROR NUMBER
1116 002616 001127              .WORD   CPUERR        ;ADDRESS OF ERROR MESSAGE
1117 002620 012706 125252      2$:  MOV    $125252,R6      ;R6=125252
1118 002624 020627 125252      CMP    R6,$125252    ;DOES R6=125252
1119 002630 001403              BEQ    3$           ;YES GO ON
1120                                ;NO GO TO ERROR
1121 002632 104000              ERROR                ;ALL ERRORS TO TRAP TO EMT VECTOR
1122 002634 000043              .WORD   43           ;UNIQUE ERROR NUMBER
1123 002636 001127              .WORD   CPUERR        ;ADDRESS OF ERROR MESSAGE
1124 002640 012706 052525      3$:  MOV    $52525,R6      ;R6=52525
1125 002644 020627 052525      CMP    R6,$52525    ;DOES R6=52525
1126 002650 001403              BEQ    4$           ;YES GO ON
1127                                ;NO GO TO ERROR
1128 002652 104000              ERROR                ;ALL ERRORS TO TRAP TO EMT VECTOR
1129 002654 000044              .WORD   44           ;UNIQUE ERROR NUMBER
1130 002656 001127              .WORD   CPUERR        ;ADDRESS OF ERROR MESSAGE
1131 002660 012706 001000      4$:  MOV    $STBOT,R6      ;RESTORE SP
1132
1133                      ;
1134 002664                      PSW6TS:
1135                      ;*****
1136                      ;*TEST 16      PSW LOW BYTE BIT TESTS
1137                      ;*****
1138 002664                      TST16:
1139 002664 005267 176114      INC    $TESTN      ;INCREMENT TEST NUMBER
1140 002670 012737 000377 177776  MOV    $377,$0177776    ;PS=357 T BIT SHOULDN'T SET
1141 002676 022737 000357 177776  CMP    $357,$0177776    ;DOES PS=357
1142 002704 001403              BEQ    1$           ;YES GO ON

```

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 KDJ11A.MAC 22-FEB-84 15:12 T16 PSW LOW BYTE BIT TESTS

SEQ 0027

```

1143
1144 002706 104000 ERROR
1145 002710 000045 .WORD 45
1146 002712 001127 .WORD CPUERR
1147 002714 005037 177776 177776 1#: CLR 0#177776
1148 002720 022737 000000 177776 CMP 00,0#177776
1149 002726 001403 BEQ 2#
1150
1151 002730 104000 ERROR
1152 002732 000046 .WORD 46
1153 002734 001127 .WORD CPUERR
1154 002736 012737 000105 177776 2#: MOV 0105,0#177776
1155 002744 022737 000105 177776 CMP 0105,0#177776
1156 002752 001403 BEQ 3#
1157
1158 002754 104000 ERROR
1159 002756 000047 .WORD 47
1160 002760 001127 .WORD CPUERR
1161 002762 012737 000252 177776 3#: MOV 0252,0#177776
1162 002770 022737 000252 177776 CMP 0252,0#177776
1163 002776 001403 BEQ 4#
1164
1165 003000 104000 ERROR
1166 003002 000050 .WORD 50
1167 003004 001127 .WORD CPUERR
1168 003006 4#:
1169
1170
1171 003006 MSP0:
1172
1173 *****
1174 *TEST 17 TEST SINGLE OPERAND INSTRUCTIONS- MODE 0
1175 *****
1176 THE INC, COM, CLR, AND DECREMENT INSTRUCTIONS ARE VERIFIED.
1177 *****
1178 TST17:
1179 INC 0TESTN
1180 CLR R4
1181 COM R4
1182 CLR R4
1183 BEQ 2#
1184 1#:
1185 ERROR
1186 .WORD 51
1187 .WORD CPUERR
1188 2#: COM R4
1189 INC R4
1190 BEQ 4#
1191 3#:
1192 ERROR
1193 .WORD 52
1194 .WORD CPUERR
1195 4#:
1196
1197
1198 MSPB:

```

;NO GO TO ERROR
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;PS=0
 ;DOES PS=0
 ;YES GO ON
 ;NO GO TO ERROR
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;PS=105
 ;DOES PS=105
 ;YES GO ON
 ;NO GO TO ERROR
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;PS=252
 ;DOES PS=252
 ;YES GO ON
 ;NO GO TO ERROR
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

;INCREMENT TEST NUMBER
 ;INITIALIZE R4 WITH DATA
 ;
 ;*TEST INSTRUCTION
 ;BRANCH IF R4 CLEARED
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;*TEST COMPLIMENT INSTRUCTION
 ;*TEST INCREMENT INSTRUCTION
 ;BRANCH IF R4 =0
 ;COMPLIMENT OR INCREMENT FAILED
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

1199			
1200			
1201			
1202	003044		
1203	003044	005267	175734
1204	003050	005004	
1205	003052	005104	
1206	003054	105004	
1207	003056	001403	
1208			
1209	003060		
1210	003060	104000	
1211	003062	000053	
1212	003064	001127	
1213	003066	105304	
1214	003070	100002	
1215	003072	105104	
1216	003074	001403	
1217			
1218	003076		
1219	003076	104000	
1220	003100	000054	
1221	003102	001127	
1222	003104		
1223			
1224			
1225	003104		
1226			
1227			
1228			
1229	003104		
1230	003104	005267	175674
1231	003110	005004	
1232	003112	005014	
1233	003114	005114	
1234	003116	005014	
1235	003120	001403	
1236			
1237	003122		
1238	003122	104000	
1239	003124	000055	
1240	003126	001127	
1241	003130	005114	
1242	003132	001403	
1243	003134	100002	
1244	003136	005214	
1245	003140	001403	
1246			
1247	003142		
1248	003142	104000	
1249	003144	000056	
1250	003146	001127	
1251	003150		
1252			
1253			
1254	003150		

```

*****
; *TEST 20      TEST SINGLE OPS - EVEN BYTE OF CLRB, DECB, AND COMB
; *****
TST20:
    INC      #TESTN      ; INCREMENT TEST NUMBER
    CLR      R4
    COM      R4          ; SETUP TEST REGISTER
    CLRB     R4          ; *TEST CLEAR BYTE INSTRUCTION
    BEQ      2$          ; BRANCH IF GOOD
                     ; CLEAR EVEN BYTE FAILED

1$:
    ERROR    53          ; ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR      ; UNIQUE ERROR NUMBER
    .WORD    0           ; ADDRESS OF ERROR MESSAGE
2$:
    DECB     R4          ; *TEST DECREMENT BYTE
    BPL      3$          ; DECREMENT BYTE FAILED
    COMB     R4          ; *TEST COMPLIMENT BYTE
    BEQ      4$          ; BRANCH IF GOOD
                     ; COMPLIMENT OR DECREMENT FAILED TO WORK

3$:
    ERROR    54          ; ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR      ; UNIQUE ERROR NUMBER
    .WORD    0           ; ADDRESS OF ERROR MESSAGE
4$:

;
MSPC:
*****
; *TEST 21      TEST SINGLE OPS - MODE 1 CLRB, COMB, AND INCB
; *****
TST21:
    INC      #TESTN      ; INCREMENT TEST NUMBER
    CLR      R4
    CLR      (R4)
    COM      (R4)        ; SETUP TEST DATA
    CLR      (R4)        ; *TEST INSTRUCTION
    BEQ      2$          ; BRANCH IF GOOD
                     ; MODE 1 FAILED

1$:
    ERROR    55          ; ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR      ; UNIQUE ERROR NUMBER
    .WORD    0           ; ADDRESS OF ERROR MESSAGE
2$:
    COM      (R4)        ; *TEST INSTRUCTION
    BEQ      3$          ; (0) SHOULD = -1
    BPL      3$          ;
    INC      (R4)        ; *TEST INSTRUCTION
    BEQ      4$          ; BRANCH IF GOOD
                     ; COM OR INC FAILED TO ALTER LOC 0 CORRECTLY

3$:
    ERROR    56          ; ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR      ; UNIQUE ERROR NUMBER
    .WORD    0           ; ADDRESS OF ERROR MESSAGE
4$:

;
MSPD:

```

D3

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 KDJ11A.MAC 22-FEB-84 15:12 T22 TEST SINGLE OPS MODE1-EVEN BYTE-CLRB,COMB,INCB

SEQ 0029

```

1255
1256
1257
1258 003150
1259 003150 005267 175630
1260 003154 005004
1261 003156 005014
1262 003160 005114
1263 003162 105014
1264 003164 105014
1265 003166 001403
1266
1267 003170
1268 003170 104000
1269 003172 000057
1270 003174 001127
1271 003176 105214
1272 003200 100405
1273 003202 001404
1274 003204 105114
1275 003206 105214
1276 003210 105214
1277 003212 001403
1278
1279 003214
1280 003214 104000
1281 003216 000060
1282 003220 001127
1283 003222
1284
1285
1286 003222
1287
1288
1289
1290 003222
1291 003222 005267 175556
1292 003226 005004
1293 003230 005014
1294 003232 005114
1295 003234 005204
1296 003236 105014
1297 003240 001403
1298
1299 003242 104000
1300 003244 000061
1301 003246 001127
1302 003250 005304
1303 003252 005214
1304 003254 005204
1305 003256 105114
1306 003260 105214
1307 003262 100003
1308 003264 001402
1309 003266 105214
1310 003270 001403

*****
;*TEST 22 TEST SINGLE OPS MODE1-EVEN BYTE-CLRB,COMB,INCB
*****
TST22:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      CLR      R4
      CLR      (R4)
      COM      (R4)            ;SETUP TEST DATA
      CLRB     (R4)            ;*TEST INSTRUCTION
      CLRB     (R4)            ;*TEST INSTRUCTION
      BEQ      2$              ;BRANCH IF GOOD
                                ;CLEAR (0) EVEN BYTE FAILED
1$:
      ERROR    57              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
2$:
      INCB     (R4)            ;*TEST INSTRUCTION
      BMI      3$              ; TEST FLAGS
      BEQ      3$
      COMB     (R4)            ;*TEST INSTRUCTION
      INCB     (R4)
      INCB     (R4)
      BEQ      4$              ;BRAH 1 IF GOOD
                                ;COMB INCB FAILED
3$:
      ERROR    60              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
4$:
      MSPE0:
*****
;*TEST 23 TEST SINGLE OPS - ODD BYTE - CLRB, COMB, DECB
*****
TST23:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      CLR      R4
      CLR      (R4)
      COM      (R4)            ;SETUP TEST DATA
      INC      R4              ;POINT TO ODD BYTE
      CLRB     (R4)            ;*TEST INSTRUCTION
      BEQ      1$              ;BRANCH IF GOOD
                                ;CLEAR ODD BYTE FAILED
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
1$:
      DEC      R4              ;POINT TO EVEN BYTE
      INC      (R4)            ;LOC 0-1 0
      INC      R4              ;POINT TO ODD BYTE
      COMB     (R4)            ;*TEST INSTRUCTION
      INCB     (R4)            ;LOC 0-1 0
      BPL      2$              ;BRANCH IF ERROR
      BEQ      2$
      INCB     (R4)            ;*TEST INSTRUCTION
      BEQ      3$              ;BRANCH IF GOOD

```

E3

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 KDJ11A.MAC 22-FEB-84 15:12 T23 TEST SINGLE OPS - ODD BYTE - CLRB, COMB, DECB

SEQ 0030

```

1311                                     ;MODE 1, ODD BYTE FAILED
1312 003272 2#:
1313 003272 104000 ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
1314 003274 000062 .WORD 62                                     ;UNIQUE ERROR NUMBER
1315 003276 001127 .WORD CPUERR                               ;ADDRESS OF ERROR MESSAGE
1316 003300
1317
1318
1319 003300 ;
1320 MSPF:
1321 ;*****
1322 ;*TEST 24 TEST SINGLE OP - MODE 2 - CLRB, COMB, INC
1323 ;*****
1324 003300 TST24:
1325 003304 005267 175500 INC $TESTN ;INCREMENT TEST NUMBER
1326 003306 105104 CLR R4
1327 003310 005204 COMB R4
1328 003312 005014 INC R4 ;R4=400
1329 003314 005114 CLR (R4) ;400=0
1330 003316 005024 COM (R4) ;400=-1
1331 003320 001403 CLR (R4) ;*TEST INSTRUCTION
1332 BEQ 1# ;BRANCH IF GOOD
1333 003322 104000 ;MODE 2 CLEAR FAILED
1334 003324 000063 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1335 003326 001127 .WORD 63 ;UNIQUE ERROR NUMBER
1336 003330 005304 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1337 003332 005304 1#: DEC R4
1338 003334 005124 DEC R4 ;R4=400
1339 003336 100004 COM (R4) ;*TEST INSTRUCTION
1340 003340 005304 BPL 2# ;BRANCH IF FAILURE
1341 003342 005304 DEC R4
1342 003344 005224 INC (R4) ;R4=400
1343 003346 001403 BEQ 3# ;*TEST INSTRUCTION
1344 ;BRANCH IF GOOD
1345 003350 ;MODE 2 FAILURE
1346 003350 104000 2#:
1347 003352 000064 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1348 003354 001127 .WORD 64 ;UNIQUE ERROR NUMBER
1349 003356 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1350
1351
1352 003356 3#:
1353 ;
1354 MSPG:
1355 ;*****
1356 ;*TEST 25 TEST CLRB, COMB, DECB, MODE 2 - EVEN BYTE
1357 ;*****
1358 003356 TST25:
1359 003362 005267 175422 INC $TESTN ;INCREMENT TEST NUMBER
1360 003364 105104 CLR R4
1361 003366 005204 COMB R4
1362 003370 005014 INC R4 ;R4=400
1363 003372 005114 CLR (R4) ;400=-1
1364 003374 105024 COM (R4) ;*TEST INSTRUCTION
1365 003376 001403 CLRB (R4) ;BRANCH IF GOOD
1366 003400 104000 BEQ 1# ;MODE 2 EVEN BYTE FAILED
                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
                                     ERROR

```

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 KDJ11A.MAC 22-FEB-84 15:12 T25 TEST CLRB, COMB, DECB, MODE 2 - EVEN BYTE

SEQ 0031

```

1367 003402 000065      .WORD 65      ;UNIQUE ERROR NUMBER
1368 003404 001127      .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1369 003406 005304      1$: DEC R4      ;*TEST INSTRUCTION
1370 003410 105324      DECB (R4)+ ;BRANCH IF BAD
1371 003412 100003      BPL 2$      ;POINT TO EVEN BYTE
1372 003414 005304      DEC R4      ;*TEST INSTRUCTION
1373 003416 105124      COMB (R4)+ ;BRANCH IF GOOD
1374 003420 001403      BEQ 3$      ;MODE 2, EVEN BYTE FAILED
1375
1376 003422
1377 003422 104000      2$: ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1378 003424 000066      .WORD 66      ;UNIQUE ERROR NUMBER
1379 003426 001127      .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1380 003430
1381
1382
1383 003430      ;
1384      ;MSPH:
1385      ;*****
1386      ;*TEST 26      TEST CLRB, COMB, INCB MODE 2 - ODD BYTE
1387      ;*****
1388 003430 005267 175350 TST26: INC $TESTN ;INCREMENT TEST NUMBER
1389 003434 005004      CLR R4
1390 003436 105104      COMB R4
1391 003440 005204      INC R4      ;R4=400
1392 003442 005014      CLR (R4)
1393 003444 005114      COM (R4) ;400=-1 -1
1394 003446 005214      INC (R4) ;POINT TO ODD BYTE
1395 003450 105024      CLRB (R4)+ ;*TEST INSTRUCTION
1396 003452 001403      BEQ 1$      ;BRANCH IF GOOD
1397
1398 003454 104000      ERROR      ;MODE 2, ODD BYTE FAILED
1399 003456 000067      .WORD 67      ;ALL ERRORS TO TRAP TO EMT VECTOR
1400 003460 001127      .WORD CPUERR ;UNIQUE ERROR NUMBER
1401 003462 005304      1$: DEC R4      ;ADDRESS OF ERROR MESSAGE
1402 003464 005304      DEC R4      ;POINT TO ODD BYTE
1403 003466 105224      INCB (R4)+ ;400=1 0
1404 003470 105124      COMB (R4)+ ;*TEST INSTRUCTION
1405 003472 100003      BPL 2$      ;BRANCH IF MODE 2 FAILED
1406 003474 005304      DEC R4      ;POINT TO ODD BYTE
1407 003476 105224      INCB (R4)+
1408 003500 001403      BEQ 3$      ;BRANCH IF GOOD
1409
1410 003502
1411 003502 104000      2$: ERROR      ;MODE 2, ODD BYTE FAILED
1412 003504 000070      .WORD 70      ;ALL ERRORS TO TRAP TO EMT VECTOR
1413 003506 001127      .WORD CPUERR ;UNIQUE ERROR NUMBER
1414 003510
1415
1416
1417 003510      ;
1418      ;MSPI:
1419      ;*****
1420      ;*TEST 27      TEST CLR, COM, INC - MODE 3
1421      ;*****
1422 003510 005267 175270 TST27: INC $TESTN ;INCREMENT TEST NUMBER

```

G3

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 32
 KDJ11A.MAC 22-FEB-84 15:12 T27 TEST CLR, COM, INC - MODE 3

SEQ 0032

```

1423 003514 005004      CLR      R4
1424 003516 005014      CLR      (R4)
1425 003520 105114      COMB     (R4)
1426 003522 005214      INC      (R4)
1427 003524 005034      CLR      B(R4)
1428 003526 001403      BEQ      1$
1429
1430 003530 104000      ERROR
1431 003532 000071      .WORD     71
1432 003534 001127      .WORD     CPUERR
1433 003536 005304      1$: DEC      R4
1434 003540 005304      DEC      R4
1435 003542 005134      COM      B(R4)+
1436 003544 100004      BPL      2$
1437 003546 005304      DEC      R4
1438 003550 005304      DEC      R4
1439 003552 005234      INC      B(R4)+
1440 003554 001403      BEQ      3$
1441
1442 003556
1443 003556 104000      ERROR
1444 003560 000072      .WORD     72
1445 003562 001127      .WORD     CPUERR
1446 003564
1447
1448
1449 003564
1450
1451
1452
1453 003564
1454 003564 005267 175214
1455 003570 005004
1456 003572 005001
1457 003574 105101
1458 003576 005201
1459 003600 005011
1460 003602 005121
1461 003604 005011
1462 003606 105111
1463 003610 005014
1464 003612 105114
1465 003614 005214
1466 003616 105034
1467 003620 001403
1468
1469 003622 104000
1470 003624 000073
1471 003626 001127
1472 003630 005304
1473 003632 005304
1474 003634 105134
1475 003636 005304
1476 003640 005304
1477 003642 105234
1478 003644 001403

      CLR      R4
      CLR      (R4)
      COMB     (R4)
      INC      (R4)
      CLR      B(R4)
      BEQ      1$

      ERROR
      .WORD     71
      .WORD     CPUERR
1$: DEC      R4
   DEC      R4
   COM      B(R4)+
   BPL      2$
   DEC      R4
   DEC      R4
   INC      B(R4)+
   BEQ      3$

      ERROR
      .WORD     72
      .WORD     CPUERR
3$:

MSPJ:
*****
; *TEST 30      TEST CLRB, COMB, INCB - MODE 3, EVEN/ODD BYTE
*****
TST30:
      INC      $TESTN
      CLR      R4
      CLR      R1
      COMB     R1
      INC      R1
      CLR      (R1)
      COM      (R1)+
      CLR      (R1)
      COMB     (R1)
      CLR      (R4)
      COMB     (R4)
      INC      (R4)
      CLRB     B(R4)+
      BEQ      1$

      ERROR
      .WORD     73
      .WORD     CPUERR
1$: DEC      R4
   DEC      R4
   COMB     B(R4)+
   DEC      R4
   DEC      R4
   INCB     B(R4)+
   BEQ      3$

;0=0
;0=400
; *TEST INSTRUCTION
;BRANCH IF GOOD
;MODE 3 FAILED, 400 SHOULD=0
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;R4=0
; *TEST INSTRUCTION
;BRANCH IF BAD

;REPOSITION POINTER
; *TEST INSTRUCTION
;BRANCH IF GOOD
;MODE 3 FAILED

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;INCREMENT TEST NUMBER
;R4=0
;R1=400
;400=-1
;402=000 377
;0=400
; *TEST INSTRUCTION 400=377 000
;BRANCH IF MODE 3 EVEN BYTE CLEARED
;TEST INSTRUCTION FAILED
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;REPOSITION POINTER
; *TEST INSTRUCTION
;REPOSITION POINTER
; *TEST INSTRUCTION
;BRANCH IF GOOD

```

H3

GLOBAL AREAS MACY11 50A(1052) 15-MAR-84 13:28 PAGE 33
 KDJ11A.MAC 22-FEB-84 15:12 T30 TEST CLR8, COM8, INCB - MODE 3, EVEN/ODD BYTE

SEQ 0033

```

1479                                     ;MODE 3, EVEN BYTE FAILED
1480 003646                               2:
1481 003646 104000                       ERROR
1482 003650 000074                       .WORD 74
1483 003652 001127                       .WORD CPUERR
1484 003654 005304                       3: DEC R4
1485 003656 005304                       DEC R4
1486 003660 005214                       INC (R4)
1487 003662 105234                       INCB B(R4)+
1488 003664 001004                       BNE 4:
1489 003666 005304                       DEC R4
1490 003670 005304                       DEC R4
1491 003672 105034                       CLR8 B(R4)+
1492 003674 001403                       BEQ 5:
1493
1494 003676                               4:
1495 003676 104000                       ERROR
1496 003700 000075                       .WORD 75
1497 003702 001127                       .WORD CPUERR
1498 003704 005304                       5: DEC R4
1499 003706 005304                       DEC R4
1500 003710 105134                       COM8 B(R4)+
1501 003712 005304                       DEC R4
1502 003714 005304                       DEC R4
1503 003716 105234                       INCB B(R4)+
1504 003720 001403                       BEQ 7:
1505
1506 003722                               6:
1507 003722 104000                       ERROR
1508 003724 000076                       .WORD 76
1509 003726 001127                       .WORD CPUERR
1510 003730                               7:
1511
1512
1513 003730                               MSPL:
1514
1515 ;*****
1516 ;*TEST 31 TEST CLR, COM, DEC - MODE 4
1517 ;*****
1517 003730                               TST31:
1518 003730 005267 175050                 INC $TESTN
1519 003734 005004                       CLR R4
1520 003736 105104                       COM8 R4
1521 003740 005204                       INC R4
1522 003742 005014                       CLR (R4)
1523 003744 005124                       COM (R4)+
1524 003746 005014                       CLR (R4)+
1525 003750 005224                       INC (R4)+
1526 003752 005044                       CLR -(R4)
1527 003754 001403                       BEQ 1:
1528
1529 003756 104000                       ERROR
1530 003760 000077                       .WORD 77
1531 003762 001127                       .WORD CPUERR
1532 003764 005344                       1: DEC -(R4)
1533 003766 005114                       COM (R4)
1534 003770 001405                       BEQ 2:

```

;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

;R4=401
 ;*TEST INSTRUCTION
 ;BRANCH IF 402 NEQ 0

;R4=401
 ;401=0
 ;BRANCH IF GOOD
 ;ODD BYTE FAILED

;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

;R4=401
 ;403=377

;*TEST INSTRUCTION
 ;BRANCH IF GOOD
 ;MODE3 ODD BYTE FAILED.

;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

;INCREMENT TEST NUMBER

;R4=400
 ;
 ;400=-1
 ;
 ;402=1
 ;*TEST INSTRUCTION
 ;BRANCH IF GOOD
 ;MODE 4 FAILED

;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

;*TEST INSTRUCTION 400=-2
 ;400=1
 ;BRANCH IF BAD

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 34
 KDJ11A.MAC 22-FEB-84 15:12 T31 TEST CLR, COM, DEC - MODE 4

SEQ 0034

```

1535 003772 100404      BMI 2#          ;BRANCH IF BAD
1536 003774 005204      INC R4
1537 003776 005204      INC R4          ;R4=400
1538 004000 005344      DEC -(R4)       ;*TEST INSTRUCTION
1539 004002 001403      BEQ 3#          ;BRANCH IF GOOD
1540                                     ;MODE 4 FAILED
1541 004004      2#:
1542 004004 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
1543 004006 000100      .WORD 100      ;UNIQUE ERROR NUMBER
1544 004010 001127      .WORD CPUERR   ;ADDRESS OF ERROR MESSAGE
1545 004012      3#:
1546
1547
1548 004012      ;
1549      MSPM:
1550      ;*****
1551      ;*TEST 32      TEST COMB, INCB, CLR8 - MODE 4, ODD BYTE
1552      ;*****
1552 004012      TST32:
1553 004012 005267 174766 INC #TESTN      ;INCREMENT TEST NUMBER
1554 004016 005004      CLR R4
1555 004020 105104      CO#8 R4
1556 004022 005204      INC R4          ;R4=400
1557 004024 005044      CLR -(R4)       ;376=0
1558 004026 105114      COMB (R4)
1559 004030 005224      INC (R4)+       ;376=001 000
1560 004032 005014      CLR (R4)
1561 004034 005124      COM (R4)+       ;400=1
1562 004036 005204      INC R4          ;R4=403
1563 004040 105044      CLR8 -(R4)      ; TEST INST. CLEAR ODD BYTE (401)
1564 004042 001403      BEQ 2#          ;BRANCH IF GOOD
1565                                     ;MODE 4 BYTE FAILED
1566 004044      1#:
1567 004044 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
1568 004046 000101      .WORD 101      ;UNIQUE ERROR NUMBER
1569 004050 001127      .WORD CPUERR   ;ADDRESS OF ERROR MESSAGE
1570 004052 005204      2#: INC R4
1571 004054 005204      INC R4          ;R4=403
1572 004056 105144      COMB -(R4)      ; TEST INST. 401=377
1573 004060 005304      DEC R4
1574 004062 005304      DEC R4
1575 004064 105244      INCB -(R4)
1576 004066 001403      BEQ 4#          ; TEST INST. 401=0
1577                                     ;BRANCH IF GOOD
1578                                     ;MODE 4 ODD BYTE FAILED
1578 004070      3#:
1579 004070 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
1580 004072 000102      .WORD 102      ;UNIQUE ERROR NUMBER
1581 004074 001127      .WORD CPUERR   ;ADDRESS OF ERROR MESSAGE
1582 004076 105344      4#: DECB -(R4)
1583 004100 001403      BEQ 6#          ;*TEST INST.
1584                                     ;BRANCH IF GOOD
1585                                     ;MODE 4 DECREMENT ODD BYTE FAILED
1585 004102      5#:
1586 004102 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
1587 004104 000103      .WORD 103      ;UNIQUE ERROR NUMBER
1588 004106 001127      .WORD CPUERR   ;ADDRESS OF ERROR MESSAGE
1589 004110      6#:
1590

```

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 35
 KDJ11A.MAC 22-FEB-84 15:12 T32 TEST COMB, INCB, CLRB - MODE 4, ODD BYTE

SEQ 0035

```

1591
1592 004110
1593
1594
1595
1596 004110
1597 004110 005267 174670
1598 004114 005004
1599 004116 005014
1600 004120 105114
1601 004122 005224
1602 004124 005054
1603 004126 001403
1604
1605 004130 104000
1606 004132 000104
1607 004134 001127
1608 004136 005204
1609 004140 005204
1610 004142 005154
1611 004144 001407
1612 004146 005204
1613 004150 005204
1614 004152 005354
1615 004154 001403
1616 004156 005224
1617 004160 105254
1618 004162 001403
1619
1620 004164
1621 004164 104000
1622 004166 000105
1623 004170 001127
1624 004172
1625
1626
1627 004172
1628
1629
1630
1631 004172
1632 004172 005267 174606
1633 004176 005004
1634 004200 105104
1635 004202 005204
1636 004204 005001
1637 004206 105101
1638 004210 005301
1639 004212 005002
1640 004214 005012
1641 004216 005014
1642 004220 005114
1643 004222 005011
1644 004224 005454
1645 004226 001403
1646

MSPN:
*****
; *TEST 33      TEST CLR, COM, INC - MODE 5
*****
TST33:
      INC      $TESTN          ; INCREMENT TEST NUMBER
      CLR      R4
      CLR      (R4)
      COMB     (R4)
      INC      (R4)+
      CLR      8-(R4)
      BEQ      1$
; O=400
; *TEST INST. 400=0
; BRANCH IF GOOD
; MODE 5 FAILED
      ERROR    104              ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ; UNIQUE ERROR NUMBER
      .WORD    1$              ; ADDRESS OF ERROR MESSAGE
1$:   INC      R4
      INC      R4
      COM      9-(R4)
      BEQ      2$
      INC      R4
      INC      R4
      DEC      8-(R4)
      BEQ      2$
      INC      (R4)+
      INCB     8-(R4)
      BEQ      3$
; RESET POINTER TO 0
; *TEST INST. 376=1
; BRANCH IF BAD
      REPOSITION POINTER
; *TEST INST. 376=0
; BRANCH IF BAD
      O=401 R4=2
; *TEST INST., 400= 0 376
; BRANCH IF GOOD
; MODE 5 FAILED
2$:   ERROR    105              ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ; UNIQUE ERROR NUMBER
      .WORD    3$              ; ADDRESS OF ERROR MESSAGE
3$:

MSP0:
*****
; *TEST 34      TEST NEG MODE 5
*****
TST34:
      INC      $TESTN          ; INCREMENT TEST NUMBER
      CLR      R4
      COMB     R4
      INC      R4
      CLR      R1
      COMB     R1
      DEC      R1
      CLR      R2
      CLR      (R2)
      CLR      (R4)
      COM      (R4)
      CLR      (R1)
      NEG      8-(R4)
      BEQ      2$
; R4=400
; R1=376
; R2=0
; O=0
; 400=-1
; 376=0
; O=0
; BRANCH IF GOOD
; NEG FAILED

```

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GLOBAL AREAS MAC111 30A(1052) 15-MAR-84 13:28 PAGE 36
 KDJ11A.MAC 22-FEB-84 15:12 T34 TEST NEG MODE 5

SEQ 0036

```

1647 004230      1$:
1648 004230      104000      ERROR
1649 004232      000106      .WORD      106
1650 004234      001127      .WORD      CPUERR
1651 004236      005334      2$:      DEC      8(R4)+
1652 004240      005454      NEG      8-(R4)
1653 004242      001403      BEQ      3$
1654 004244      102402      BVS      3$
1655 004246      100401      BMI      3$
1656 004250      103403      BCS      4$
1657
1658 004252      3$:
1659 004252      104000      ERROR
1660 004254      000107      .WORD      107
1661 004256      001127      .WORD      CPUERR
1662 004260      005334      4$:      DEC      8(R4)+
1663 004262      001403      BEQ      6$
1664
1665 004264      5$:
1666 004264      104000      ERROR
1667 004266      000110      .WORD      110
1668 004270      001127      .WORD      CPUERR
1669 004272      105212      6$:      INCB      (R2)
1670 004274      005454      NEG      8-(R4)
1671 004276      001403      BEQ      7$
1672 004300      102402      BVS      7$
1673 004302      103001      BCC      7$
1674 004304      100403      BMI      8$
1675
1676 004306      7$:
1677 004306      104000      ERROR
1678 004310      000111      .WORD      111
1679 004312      001127      .WORD      CPUERR
1680 004314      105212      8$:      INCB      (R2)
1681 004316      001403      BEQ      10$
1682 004320      3$:
1683 004320      104000      ERROR
1684 004322      000112      .WORD      112
1685 004324      001127      .WORD      CPUERR
1686 004326      10$:
1687
1688
1689
1690 004326      NSPP:
1691
1692
1693
1694 004326      174452
1695 004326      005267
1696 004332      005004
1697 004334      005204
1698 004336      005204
1699 004340      005001
1700 004342      105101
1701 004344      005201
1702 004346      005011

      INC      $TESTN      ; INCREMENT TEST NUMBER
      CLR      R4
      INC      R4
      INC      R4      ; R4=2
      CLR      R1
      COMB      R1
      INC      R1      ; R1=400
      CLR      (R1)
  
```

; ALL ERRORS TO TRAP TO EMT VECTOR
 ; UNIQUE ERROR NUMBER
 ; ADDRESS OF ERROR MESSAGE
 ; 0=-1
 ; 0=1
 ; BRANCH IF BAD
 ; BRANCH IF BAD
 ; BRANCH IF BAD
 ; BRANCH IF GOOD
 ; NEG FAILED
 ; ALL ERRORS TO TRAP TO EMT VECTOR
 ; UNIQUE ERROR NUMBER
 ; ADDRESS OF ERROR MESSAGE
 ; TEST RESULT OF NEGATE
 ; BRANCH IF GOOD
 ; RESULT OF NEGATE BAD
 ; ALL ERRORS TO TRAP TO EMT VECTOR
 ; UNIQUE ERROR NUMBER
 ; ADDRESS OF ERROR MESSAGE
 ; 0=1
 ; 0=-1
 ;
 ;
 ; BRANCH IF GOOD
 ; BAD NEGATE
 ; ALL ERRORS TO TRAP TO EMT VECTOR
 ; UNIQUE ERROR NUMBER
 ; ADDRESS OF ERROR MESSAGE
 ; 0=0
 ; BRANCH IF GOOD
 ; ALL ERRORS TO TRAP TO EMT VECTOR
 ; UNIQUE ERROR NUMBER
 ; ADDRESS OF ERROR MESSAGE

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 37
 KDJ11A.MAC 22-FEB-84 15:12 T35 TEST CLR, COM, INC - MODE 6

SEQ 0037

```

1703 004350 005121 COM (R1)+ ;400=-1
1704 004352 005011 CLR (R1) ;R1=402
1705 004354 005211 INC (R1) ;402=1
1706 004356 005002 CLR R2 ;R2=0
1707 004360 005012 CLR (R2) ;0=0
1708 004362 005064 000376 CLR 376(R4) ;400=0
1709 004366 001403 BEQ 2# ;BRANCH IF GOOD
1710 004370 1# :
1711 004370 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1712 004372 000113 .WORD 113 ;UNIQUE ERROR NUMBER
1713 004374 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1714 004376 005364 000376 2# : DEC 376(R4) ;400=-1
1715 004402 005164 000400 COM 400(R4) ;402=-1
1716 004406 001405 BEQ 3# ;BRANCH IF BAD
1717 004410 005264 000400 INC 400(R4) ;402=-2
1718 004414 005264 000400 INC 400(R4)
1719 004420 001403 BEQ 4# ;BRANCH IF GOOD
1720 ;MODE 6 FAILED
1721 004422 3# :
1722 004422 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1723 004424 000114 .WORD 114 ;UNIQUE ERROR NUMBER
1724 004426 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1725 004430 005261 177776 4# : INC -2(R1) ;400=0
1726 004434 001403 BEQ 5# ;BRANCH IF GOOD
1727 ;ERROR! INC MODE 6 FAILED
1728 004436 5# :
1729 004436 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1730 004440 000115 .WORD 115 ;UNIQUE ERROR NUMBER
1731 004442 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1732 004444 6# :
1733 ;
1734 ;
1735 ;
1736 ;
1737 004444 MSPQ:
1738 ;*****
1739 ;*TEST 36 TEST NEG MODE 6
1740 ;*****
1741 004444 TST36:
1742 004444 005267 174334 INC #TESTN ;INCREMENT TEST NUMBER
1743 004450 005001 CLR R1 ;R1=0
1744 004452 005004 CLR R4
1745 004454 105104 COMB R4
1746 004456 005204 INC R4 ;R4=100
1747 004460 005014 CLR (R4)
1748 004462 005114 COM (R4) ;400=-1
1749 004464 005044 CLR -(R4) ;376=0
1750 004466 005044 CLR -(R4)
1751 004470 005224 INC (R4)+ ;374=1 R4=376
1752 004472 005464 000002 NEG 2(R4) ;400=1
1753 004475 001403 BEQ 1# ;NEGATE FAILED
1754 004500 102402 BVS 1#
1755 004502 100401 BMT 1#
1756 004504 103403 BCS 2# ;BRANCH IF GOOD
1757 ;NEGATE FAILED
1758 004506 1# :

```

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 38
 KDJ11A.MAC 22-FEB-84 15:12 736 TEST NEG MODE 6

SEQ 0038

```

1759 004506 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1760 004510 000116      .WORD      116      ;UNIQUE ERROR NUMBER
1761 004512 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
1762 004514 005364 000002 2$: DEC      2(R4)    ; TEST RESULT OF NEGATE
1763 004520 001403      BEQ      4$      ;BRANCH IF GOOD
1764                                     ;RESULT OF NEGATE FAILED
1765 004522                                     ;
1766 004522 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1767 004524 000117      .WORD      117      ;UNIQUE ERROR NUMBER
1768 004526 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
1769 004530 005464 000000 4$: NEG      0(R4)    ;+0=0
1770 004534 001403      BEQ      5$      ; BRANCH IF GOOD
1771                                     ;NEGATE FAILED
1772 004536 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1773 004540 000120      .WORD      120      ;UNIQUE ERROR NUMBER
1774 004542 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
1775 004544 105461 000374 5$: NEGR      374(R1)  ;374=0 377
1776 004550 102403      BVS      6$      ;
1777 004552 001402      BEQ      6$      ;
1778 004554 100001      BPL      6$      ;
1779 004556 103403      BCS      7$      ;BRANCH IF GOOD
1780                                     ;NEGATE FAILED
1781 004560                                     ;
1782 004560 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1783 004562 000121      .WORD      121      ;UNIQUE ERROR NUMBER
1784 004564 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
1785 004566 105261 000374 7$: INCB      374(R1)  ;374=0
1786 004572 001403      BEQ      9$      ;BRANCH IF GOOD
1787                                     ;NEGATE FAILED
1788 004574                                     ;
1789 004574 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
1790 004576 000122      .WORD      122      ;UNIQUE ERROR NUMBER
1791 004600 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
1792 004602 9$:                                     ;
1793                                     ;
1794                                     ;
1795 004602      ;MSPR:
1796      ;*****
1797      ;*TEST 37      TEST CLR, COM, INC - MODE 7
1798      ;*****
1799 004602      TST37:
1800 004602 005267 174176 INC      $TESTN      ;INCREMENT TEST NUMBER
1801 004606 005001      CLR      R1      ;R1=0
1802 004610 005004      CLR      R4      ;
1803 004612 105104      COMB      R4      ;
1804 004614 005204      INC      R4      ;R4=400
1805 004616 005011      CLR      (R1)
1806 004620 105111      COMB      (R1)
1807 004622 005211      INC      (R1)
1808 004624 005211      INC      (R1)
1809 004626 005211      INC      (R1)      ;+0=402
1810 004630 005014      CLR      (R4)      ;400=0
1811 004632 005064 000002 CLR      2(R4)      ;
1812 004636 005164 000002 COM      2(R4)      ;402=-1
1813 004642 005074 177400 CLR      8-400(R4)  ;402=0
1814 004646 001403      BEQ      2$      ;BRANCH IF GOOD

```

N3

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 39
KDJ11A.MAC 22-FEB-84 15:12 T37 TEST CLR, COM, INC - MODE 7

SEQ 0039

```

1815 004650 1$:
1816 004650 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1817 004652 000123 .WORD 123 ;UNIQUE ERROR NUMBER
1818 004654 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1819 ;INSTRUCTION FAILED
1820 004656 005171 000000 2$: COM 80(R1) ;402=-1
1821 004662 100403 BMI 4$ ;BRANCH IF GOOD
1822 004664
1823 004664 104000 3$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1824 004666 000124 .WORD 124 ;UNIQUE ERROR NUMBER
1825 004670 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1826
1827 004672 005104 4$: COM R4
1828 004674 005274 000401 INC 8401(R4) ;402=0
1829 004700 001403 BEQ 6$ ;BRANCH IF GOOD
1830 004702
1831 004702 104000 5$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1832 004704 000125 .WORD 125 ;UNIQUE ERROR NUMBER
1833 004706 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1834 ;MODE 7 FAILED
1835 004710 6$:
1836
1837 ;
1838 004710 ;ISPS:
1839 ;*****
1840 ;*TEST 40 TEST NEG MODE 7
1841 ;*****
1842 004710 TST40:
1843 004710 005267 174070 INC ;TESTN ;INCREMENT TEST NUMBER
1844 004714 005004 CLR R4
1845 004716 005014 CLR (R4) ;0=0
1846 004720 005002 CLR R2 ;
1847 004722 105102 COMB R2
1848 004724 005202 INC R2 ;R2=400
1849 004726 005012 CLR (R2) ;400=0
1850 004730 005472 177400 NEG 8-400(R2) ;NEG OF 0=0
1851 004734 103401 BCS 2$ ;****
1852 004736 001403 BEQ 2$ ;BRANCH IF GOOD
1853 004740
1854 004740 104000 1$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1855 004742 000126 .WORD 126 ;UNIQUE ERROR NUMBER
1856 004744 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1857
1858 004746 005314 2$: DEC (R4) ;0=-1
1859 004750 005474 000400 NEG 8+400(R4) ;0=1
1860 004754 001403 BEQ 3$ ;BRANCH IF ERROR
1861 004756 102402 BVS 3$ ;
1862 004760 100401 BMI 3$ ;
1863 004762 103403 BCS 4$ ;BRANCH IF GOOD
1864 004764
1865 004764 104000 3$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1866 004766 000127 .WORD 127 ;UNIQUE ERROR NUMBER
1867 004770 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1868 ;NEGATE MODE 7 FAILED
1869 004772
1870

```

B4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 40
 KDJ11A.MAC 22-FEB-84 15:12 T40 TEST NEG MODE 7

SEQ 0040

```

1871
1872 004772
1873
1874
1875
1876 004772
1877 004772 005267 174006
1878 004776 005004
1879 005000 105104
1880 005002 005204
1881 005004 005027
1882 005006 177777
1883 005010 001403
1884 005012
1885 005012 104000
1886 005014 000130
1887 005016 001127
1888 005020
1889
1890
1891
1892 005020
1893
1894
1895
1896 005020
1897 005020 005267 173760
1898 005024 005004
1899 005026 000277
1900 005030 000244
1901 005032 005704
1902 005034 103403
1903 005036 102402
1904 005040 100401
1905 005042 001403
1906 005044
1907 005044 104000
1908 005046 000131
1909 005050 001127
1910
1911 005052 005304
1912 005054 000277
1913 005056 000250
1914 005060 005704
1915 005062 103403
1916 005064 102402
1917 005066 001401
1918 005070 100403
1919 005072
1920 005072 104000
1921 005074 000132
1922 005076 001127
1923
1924 005100
1925
1926

;
MSPT:
;*****
;*TEST 41 TEST SINGLE OPERAND MODE 2 REG 7
;*****
TST41:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      CLR      R4
      COMB     R4
      INC      R4              ;R4=400
      CLR      (R7)+           ;CLEAR NEXT LOCATION
      .WORD    -1              ;SETUP INITIAL DATA
      BEQ      3$              ;BRANCH IF GOOD
2$:
      ERROR
      .WORD    130              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR           ;UNIQUE ERROR NUMBER
                                   ;ADDRESS OF ERROR MESSAGE
3$:
;
;
HSPU:
;*****
;*TEST 42 TEST TST MODE 0
;*****
TST42:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      CLR      R4              ;R4=0
      SCC
      CLZ
      TST      R4              ;CONDITION CODES =1111
      BCS      1$              ;CC=1011
      BVS      1$              ;*TEST INSTRUCTION
      BMI      1$              ;BRANCH IF ERROR
      BEQ      2$              ;BRANCH IF GOOD
1$:
      ERROR
      .WORD    131              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR           ;UNIQUE ERROR NUMBER
                                   ;ADDRESS OF ERROR MESSAGE
      TST MODE 0 FAILED
      R4=-1
2$:
      DEC      R4
      SCC
      CLN
      TST      R4              ;CC=0111
      BCS      3$              ;*TEST INSTRUCTION MODE 0
      BVS      3$              ;BRANCH IF ERROR
      BEQ      3$
      BMI      4$              ;BRANCH IF GOOD
3$:
      ERROR
      .WORD    132              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR           ;UNIQUE ERROR NUMBER
                                   ;ADDRESS OF ERROR MESSAGE
      TST FAILED
4$:
;

```

C4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 41
 KDJ11A.MAC 22-FEB-84 15:12 T42 TEST TST MODE 0

SEQ 004.

```

1927 005100 MSPV0:
1928 ;*****
1929 ;*TEST 43 TEST TST MODE 0 BYTE
1930 ;*****
1931 005100 TST43:
1932 005100 005267 173700 INC #TESTN ;INCREMENT TEST NUMBER
1933 005104 005004 CLR R4
1934 005106 105104 COMB R4 ;0=000 377
1935 005110 000277 SCC
1936 005112 000250 CLN ;CC=0111
1937 005114 105704 TSTB R4 ;*TEST INSTRUCTION ON EVEN BYTE
1938 005116 102403 BVS 1# ;BRANCH IF ERROR
1939 005120 103402 BCS 1#
1940 005122 102401 BVS 1#
1941 005124 100403 BMI 2# ;BRANCH IF GOOD
1942 005126
1943 005126 104000 1#: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1944 005130 000133 .WORD 133 ;UNIQUE ERROR NUMBER
1945 005132 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1946
1947 005134 005204 2#: INC R4 ;POINT TO 1
1948 005136 105704 TSTB R4 ;TEST INSTRUCTION
1949 005140 001403 BEQ 4# ;BRANCH IF GOOD
1950
1951 005142 104000 3#: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1952 005144 000134 .WORD 134 ;UNIQUE ERROR NUMBER
1953 005146 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1954 ;TST FAILED ON BYTE
1955 005150 4#:
1956
1957
1958 005150 ;
1959 MSPV:
1960 ;*****
1961 ;*TEST 44 TEST TST MODE 1
1962 ;*****
1963 005150 005267 173630 TST44:
1964 005154 005004 INC #TESTN ;INCREMENT TEST NUMBER
1965 005156 005014 CLR R4
1966 005160 000277 CLR (R4) ;0=0
1967 005162 000244 SCC
1968 005164 005714 CLZ ;CC=1011
1969 005166 103403 TST (R4) ;*TEST INSTRUCTION IN MODE 1
1970 005170 102402 BCS 1# ;BRANCH IF ERROR
1971 005172 100401 BVS 1#
1972 005174 001403 BMI 1#
1973 005176 1#: BEQ 2# ;BRANCH IF GOOD
1974 005176 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
1975 005200 000135 .WORD 135 ;UNIQUE ERROR NUMBER
1976 005202 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
1977
1978 005204 005214 2#: INC (R4) ;0=1
1979 005206 000277 SCC
1980 005210 005714 TST (R4) ;TEST INSTRUCTION
1981 005212 001403 BEQ 3# ;BRANCH IF ERROR
1982 005214 102402 BVS 3#

```

D4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 42
RDJ11A.MAC 22-FEB-84 15:12 TEST TST MODE 1

SEQ 0042

```

1983 005216 103401          BCS      3#
1984 005220 100003          BPL      4#          ;BRANCH IF GOOD
1985 005222          3#;
1986 005222 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
1987 005224 000136          .WORD      136          ;UNIQUE ERROR NUMBER
1988 005226 001127          .WORD      CPUERR          ;ADDRESS OF ERROR MESSAGE
1989          ;TST FAILED MODE 1
1990 005230          4#;
1991
1992
1993 005230          ;
1994          MSPX:
1995          ;*****
1996          ;*TEST 45          TEST TST MODE 1 BYTE
1997          ;*****
1998 005230          TST45:
1999 005234 005267 173550          INC      ;TESTN          ;INCREMENT TEST NUMBER
2000 005236 005014          CLR      R4          ;R4=0
2001 005240 105114          CLR      (R4)
2002 005242 005214          COMB      (R4)
2003 005244 000277          INC      (R4)          ;O=001 000
2004 005246 000244          SCC
2005 005250 105714          CLZ          ;CC=1011
2006 005252 103403          TSTB      (R4)          ;*TEST INSTRUCTION
2007 005254 102402          BCS      1#          ;BRANCH IF ERROR
2008 005256 100401          BVS      1#
2009 005260 001403          BMI      1#
2010 005262          BEQ      2#          ;BRANCH IF GOOD
2011 005262 104000          1#;
2012 005264 000137          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
2013 005266 001127          .WORD      137          ;UNIQUE ERROR NUMBER
2014          .WORD      CPUERR          ;ADDRESS OF ERROR MESSAGE
2015 005270 005204          2#;
2016 005272 000277          INC      R4          ;R4=1
2017 005274 105714          SCC
2018 005276 001403          TSTB      (R4)          ;TEST INSTRUCTION
2019 005300 100402          BEQ      3#          ;BRANCH IF ERROR
2020 005302 102401          BMI      3#
2021 005304 103003          BVS      3#
2022 005306          BEQ      4#          ;BRANCH IF GOOD
2023 005306 104000          3#;
2024 005310 000140          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
2025 005312 001127          .WORD      140          ;UNIQUE ERROR NUMBER
2026          .WORD      CPUERR          ;ADDRESS OF ERROR MESSAGE
2027 005314          ;
2028
2029
2030 005314          ;
2031          ;*****
2032          ;*TEST 46          TEST TST MODE 2
2033          ;*****
2034 005314          TST46:
2035 005314 005267 173464          INC      ;TESTN          ;INCREMENT TEST NUMBER
2036 005320 005004          CLR      R4
2037 005322 005024          CLR      (R4)          ;O=0
2038 005324 005014          CLR      (R4)

```

E4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 43
 KDJ11A.MAC 22-FEB-84 15:12 T46 TEST TST MODE 2

SEQ 0043

```

2039 005326 005114 COM (R4) ;2*-1
2040 005330 005004 CLR R4 ;R4=0
2041 005332 000277 SCC ;
2042 005334 000244 CLZ ;CC=1011
2043 005336 005724 TST (R4)+ ;TEST INSTRUCTION
2044 005340 103403 BCS 1# ;BRANCH IF ERROR
2045 005342 102402 BVS 1#
2046 005344 100401 BMI 1#
2047 005346 001403 BEQ 2# ;BRANCH IF GOOD
2048 005350 1# ;
2049 005350 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
2050 005352 000141 .WORD 141 ;UNIQUE ERROR NUMBER
2051 005354 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2052 ;MODE 2 TEST FAILED
2053 005356 005724 2# TST (R4)+ ;TST LOC2
2054 005360 103403 BCS 3#
2055 005362 102402 BVS 3#
2056 005364 001401 BEQ 3#
2057 005366 100403 BMI 4#
2058 005370 3# ;
2059 005370 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
2060 005372 000142 .WORD 142 ;UNIQUE ERROR NUMBER
2061 005374 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2062 ;MODE 2 FAILED
2063 005376 4# ;
2064 ;
2065 ;
2066 005376 ;
2067 HSPZ:
2068 ;*****
2069 ;TEST 47 TEST TST MODE 2 BYTE
2070 ;*****
2071 005376 005267 173402 TST47: INC #TESTN ;INCREMENT TEST NUMBER
2072 005402 005004 CLR R4
2073 005404 005024 CLR (R4)+ ;
2074 005406 105144 COMB -(R4) ;0=377 000
2075 005410 005304 DEC R4 ;R4=0
2076 005412 000277 SCC ;
2077 005414 000244 CLZ ;CC=1011
2078 005416 105724 TSTB (R4)+ ;
2079 005420 102403 BVS 1# ;BRANCH IF ERROR
2080 005422 103402 BCS 1#
2081 005424 100401 BMI 1#
2082 005426 001403 BEQ 2# ;BRANCH IF GOOD
2083 005430 1# ;
2084 005430 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
2085 005432 000143 .WORD 143 ;UNIQUE ERROR NUMBER
2086 005434 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2087 ;MODE 2 EVEN BYTE FAILED
2088 005436 000277 2# SCC ;
2089 005440 000250 CLN ;CC=0111
2090 005442 105724 TSTB (R4)+ ;
2091 005444 001403 BEQ 3# ;
2092 005446 103402 BCS 3#
2093 005450 102401 BVS 3#
2094 005452 100403 BMI 4# ;BRANCH IF GOOD

```

F4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 44
 KDJ11A.MAC 22-FEB-84 15:12 147 TEST TST MODE 2 BYTE

SEQ 0044

```

2095 005454
2096 005454 104000
2097 005456 000144
2098 005460 001127
2099
2100 005462
2101
2102
2103 005462
2104
2105
2106
2107 005462
2108 005462 005267 173316
2109 005466 005034
2110 005470 005014
2111 005472 105114
2112 005474 005214
2113 005476 005034
2114 005500 005004
2115 005502 000277
2116 005504 000244
2117 005506 005734
2118 005510 103403
2119 005512 102402
2120 005514 100401
2121 005516 001403
2122 005520
2123 005520 104000
2124 005522 000145
2125 005524 001127
2126
2127 005526 005304
2128 005530 005304
2129 005532 005334
2130 005534 005004
2131 005536 000277
2132 005540 000250
2133 005542 005734
2134 005544 103403
2135 005546 001402
2136 005550 102401
2137 005552 100403
2138
2139 005554
2140 005554 104000
2141 005556 000146
2142 005560 001127
2143 005562
2144
2145
2146 005562
2147
2148
2149
2150 005562

```

```

3$:
  ERROR
  .WORD 144
  .WORD CPUERR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;MODE 2 ODD BYTE FAILED

4$:
;MSPAA:
;*****
;TEST 50 TEST TST MODE 3
;*****
TST50:
  INC $TESTN ;INCREMENT TEST NUMBER
  CLR R4
  CLR (R4)
  COMB (R4)
  INC (R4)
  CLR B(R4)+ ;0=400
  CLR R4 ;400=0
  SCC ;R4=0
  CLZ ;CC=1011
  TST B(R4)+ ;TEST MODE 3
  BCS 1$ ;BRANCH IF ERROR
  BVS 1$
  BMI 1$
  BEQ 2$ ;BRANCH IF GOOD

1$:
  ERROR
  .WORD 145
  .WORD CPUERR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;MODE 3 FAILED

2$:
  DEC R4
  DEC R4 ;R4=0
  DEC B(R4)+ ;400=-1
  CLR R4
  SCC
  CLN
  TST B(R4)+ ;CC=0111
  BCS 3$ ;TEST INSTRUCTION
  BEQ 3$
  BVS 3$
  BMI 4$ ;BRANCH IF ERROR
  ;BRANCH IF GOOD
  ;ERROR MODE 3

3$:
  ERROR
  .WORD 146
  .WORD CPUERR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

4$:
;*****
;TEST 51 TEST TST MODE 3 AUTO-INC
;*****
TST51:

```

G4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-80 13:28 PAGE 45
 KDJ11A.MAC 22-FEB-84 15:12 TEST TST MODE 3 AUTO-INC

SEQ 0045

```

2151 005562 005267 173216      INC      $TESTN      ;INCREMENT TEST NUMBER
2152 005566 005004      CLR      R4
2153 005570 005014      CLR      (R4)      ;0=0
2154 005572 105114      COMB     (R4)      ;
2155 005574 005214      INC      (R4)      ;0=400
2156 005576 005001      CLR      R1
2157 005600 105101      COMB     R1
2158 005602 005201      INC      R1      ;R1=400
2159 005604 005011      CLR      (R1)      ;400=0
2160 005606 000277      SCC
2161 005610 005734      TST      B(R4)+    ;400=0
2162 005612 103403      BCS      1$      ;ERROR IF CARRY
2163 005614 102402      BVS      1$      ;ERROR IF OVERFLOW
2164 005616 100401      BMI      1$      ;ERROR IF MINUS
2165 005620 001403      BEQ      2$      ;ERROR IF NOT EQUAL
2166                                     ;CC SHOULD = 0100
2167 005622                                     1$:
2168 005622 104000      ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
2169 005624 000147      .WORD     147      ;UNIQUE ERROR NUMBER
2170 005626 001127      .WORD     CPUERR    ;ADDRESS OF ERROR MESSAGE
2171 005630 005304      2$:      DEC      R4
2172 005632 005304      DEC      R4
2173 005634 005704      TST      R4      ;SEE IF AUTO-INC WORKED
2174 005636 001403      BEQ      4$      ;ERROR IF R4 NE 0
2175                                     ;AUTO-INC FAILED
2176 005640                                     3$:
2177 005640 104000      ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
2178 005642 000150      .WORD     150      ;UNIQUE ERROR NUMBER
2179 005644 001127      .WORD     CPUERR    ;ADDRESS OF ERROR MESSAGE
2180 005646                                     4$:
2181
2182
2183 005646      ;
2184      ;*****
2185      ;*****
2186      ;*****
2187 005646 005267 173132      TSTB2:  INC      $TESTN      ;INCREMENT TEST NUMBER
2188 005652 005004      CLR      R4
2189 005654 005014      CLR      (R4)
2190 005656 105114      COMB     (R4)
2191 005660 005214      INC      (R4)
2192 005662 005214      INC      (R4)      ;0=401
2193 005664 005001      CLR      R1
2194 005666 105101      COMB     R1
2195 005670 005201      INC      R1      ;R1=400
2196 005672 005011      CLR      (R1)
2197 005674 005111      COMB     (R1)
2198 005676 105011      CLR      (R1)      ;400=377 000
2199 005700 105734      TSTB     B(R4)+    ;** TEST INSTRUCTION
2200 005702 001403      BEQ      1$      ;ERROR IF EQUAL
2201 005704 103402      BCS      1$      ;ERROR IF CARRY SET
2202 005706 102401      BVS      1$      ;ERROR IF OVERFLOW
2203 005710 100403      BMI      2$      ;BRANCH IF MINUS
2204                                     ;CC ERROR
2205
2206 005712                                     1$:

```

H4

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 46
 KDJ11A.MAC 22-FEB-84 15:12 TEST TST MODE 3 BYTE

SEQ 0046

```

2207 005712 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
2208 005714 000151          .WORD          151          ;UNIQUE ERROR NUMBER
2209 005716 001127          .WORD          CPUERR       ;ADDRESS OF ERROR MESSAGE
2210 005720 005304          2$: DEC          R4
2211 005722 005304          DEC          R4
2212 005724 001403          BEQ          4$              ;BRANCH IF AUTO-INC WORKED
2213                                     ;AUTO-INC FAILED
2214 005726
2215 005726 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
2216 005730 000152          .WORD          152          ;UNIQUE ERROR NUMBER
2217 005732 001127          .WORD          CPUERR       ;ADDRESS OF ERROR MESSAGE
2218 005734          4$:
2219
2220
2221 005734          ;
2222          ;*****
2223          ;TEST 53      TEST TST MODE 4
2224          ;*****
2225          TST53:
2226 005734 005267 173044    INC          $TESTN          ;INCREMENT TEST NUMBER
2227 005740 005004          CLR          R4
2228 005742 005014          CLR          (R4)          ,0=0
2229 005744 005204          INC          R4
2230 005746 005204          INC          R4          ;R4=2
2231 005750 000277          SCC
2232 005752 000244          CLZ
2233 005754 005744          YST          -(R4)          ;CC=1011
2234 005756 103403          UCS          1$          ;**TEST INTRUCTION
2235 005760 102402          BVS          1$          ;ERROR IF CARRY
2236 005762 100401          BMI          1$          ;ERROR IF OVERFLOW
2237 005764 001403          BEQ          2$          ;ERROR IF MINUS
2238                                     ;BRANCH IF GOOD
2239                                     ;ERROR! CC WRONG
2240 005766          1$:
2241 005770 000153          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
2242 005772 001127          .WORD          153          ;UNIQUE ERROR NUMBER
2243 005774 005704          .WORD          CPUERR       ;ADDRESS OF ERROR MESSAGE
2244 005776 001403          TST          R4
2245                                     ;INSURE CORRECT AUTO-DEC
2246                                     ;BRANCH IF GOOD AUTO-DEC
2247 006000          3$:
2248 006000 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
2249 006002 000154          .WORD          154          ;UNIQUE ERROR NUMBER
2250 006004 001127          .WORD          CPUERR       ;ADDRESS OF ERROR MESSAGE
2251
2252
2253 006006          ;
2254          ;*****
2255          ;TEST 54      TEST TST MODE 4 BYTE
2256          ;*****
2257          TST54:
2258 006006 005267 172772    INC          $TESTN          ;INCREMENT TEST NUMBER
2259 006012 005004          CLR          R4
2260 006014 005014          CLR          (R4)
2261 006016 005114          COM          (R4)
2262 006020 105114          COMB         (R4)          ;0=377 000

```

GLOBAL AREAS MACY11 30A(1052) 15-MAR-81 15:28 PAGE 47
 KDJ11A.MAC 22-FEB-84 15:12 754 TEST TST MODE 4 BYTE

SEQ 0047

```

2263 006022 000277      SCC
2264 006024 005204      INC      R4
2265 006026 005204      INC      R4
2266 006030 105744      TSTB     -(R4)
2267 006032 001403      BEQ      1$
2268 006034 103402      BCS      1$
2269 006036 102401      BVS      1$
2270 006040 100403      BMI      2$
2271
2272      006042      1$:
2273 006042 104000      ERROR
2274 006044 000155      .WORD    155
2275 006046 001127      .WORD    CPUERR
2276 006050 105744      2$:
2277 006052 001403      TSTB     -(R4)
2278      BEQ      4$
2279      006054      3$:
2280 006054 104000      ERROR
2281 006056 000156      .WORD    156
2282 006060 001127      .WORD    CPUERR
2283 006062
2284
2285 006062
2286
2287
2288
2289 006062 005267 172716 4$:
2290 006062 005267 172716 1$:
2291 006066 005004      ERROR
2292 006070 005024      .WORD    157
2293 006072 000277      .WORD    CPUERR
2294 006074 000244      2$:
2295 006076 005754      TST      0-(R4)
2296 006100 103403      BCS      1$
2297 006102 102402      BVS      1$
2298 006104 100401      BMI      1$
2299 006106 001403      BEQ      2$
2300
2301 006110      1$:
2302 006110 104000      ERROR
2303 006112 000157      .WORD    157
2304 006114 001127      .WORD    CPUERR
2305 006116 005704      2$:
2306 006120 001403      TST      R4
2307      BEQ      4$
2308      006122      3$:
2309 006122 104000      ERROR
2310 006124 000160      .WORD    160
2311 006126 001127      .WORD    CPUERR
2312 006130
2313
2314
2315 006130
2316
2317
2318

```

;R4=2
 ;**TEST INSTRUCTION
 ;ERROR IF EQUAL TO 0
 ;ERROR IF CARRY
 ;ERROR IF OVERFLOW
 ;BRANCH IF MINUS
 ;ERROR! CC SHOULD EQUAL 0100
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;**TEST EVEN BYTE
 ;BRANCH IF GOOD
 ;ERROR! CC SHOULD EQUAL 0100 AND R4=-1
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;*****
 ;TEST 55 TEST TST MODE 5
 ;*****
 ;TEST55:
 INC #TESTN ;INCREMENT TEST NUMBER
 CLR R4
 CLR (R4)+
 ;R4=0
 ;**TEST INSTRUCTION
 ;ERROR IF CARRY
 ;ERROR IF OVERFLOW
 ;ERROR IF MINUS
 ;BRANCH IF GOOD
 ;ERROR! CC WRONG, SHOULD = 0100
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;BRANCH IF AUTO-DEC WORKED
 ;ERROR! AUTO-DEC FAILED
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;*****
 ;TEST 56 TEST TST MODE 5 BYTE
 ;*****

Address	Offset	Hex Data	Symbol	Instruction	Comment
2319	006130		TST56:		
2320	006130	005267	172650	INC R4	INCREMENT TEST NUMBER
2321	006134	005004		CLR R4	
2322	006136	005014		CLR (R4)	
2323	006140	105114		COMB (R4)	
2324	006142	005214		INC (R4)	0-400
2325	006144	005034		CLR R4	400-0, R4=2
2326	006146	005154		COMB R4	
2327	006150	105134		COMB R4	400-377 000 R4=2
2328	006152	105754		TSTB R4	**TEST INSTRUCTION
2329	006154	103403		BCS 1	ERROR IF CARRY
2330	006156	100402		BVS 1	ERROR IF MINUS
2331	006160	102401		BVC 1	ERROR IF OVERFLOW
2332	006162	001403		BEQ 2	BRANCH IF GOOD
2333					ERROR! CC SHOULD = 0100
2334	006164		1:		
2335	006164	104000		ERROR	ALL ERRORS TO TRAP TO EMT VECTOR
2336	006166	000161		.WORD 161	UNIQUE ERROR NUMBER
2337	006170	001127		.WORD CPUERR	ADDRESS OF ERROR MESSAGE
2338	006172	005224	2:		
2339	006174	105754		INC (R4)	0-401
2340	006176	100403		TSTB R4	**TEST INSTRUCTION
2341				BMI 4	BRANCH IF GOOD
2342	006200		3:		EVEN BYTE FAILURE
2343	006200	104000		ERROR	ALL ERRORS TO TRAP TO EMT VECTOR
2344	006202	000162		.WORD 162	UNIQUE ERROR NUMBER
2345	006204	001127		.WORD CPUERR	ADDRESS OF ERROR MESSAGE
2346	006206		4:		
2347					
2348					
2349	006206				
2350					
2351					
2352					
2353	006206				
2354	006206	005267	172572	INC R4	INCREMENT TEST NUMBER
2355	006212	005004		CLR R4	
2356	006214	005014		CLR (R4)	0=0
2357	006216	105104		COMB R4	
2358	006220	005204		INC R4	R4=400
2359	006222	005014		CLR (R4)	
2360	006224	005114		COMB (R4)	400=-1
2361	006226	005764	177400	TST -400(R4)	**TEST LOCATION 0
2362	006232	103403		BCS 1	ERROR IF CARRY
2363	006234	102402		BVS 1	ERROR IF OVERFLOW
2364	006236	100401		BMI 1	ERROR IF MINUS
2365	006240	001403		BEQ 2	BRANCH IF ZERO
2366					ERROR! CC ARE WRONG
2367	006242		1:		
2368	006242	104000		ERROR	ALL ERRORS TO TRAP TO EMT VECTOR
2369	006244	000163		.WORD 163	UNIQUE ERROR NUMBER
2370	006246	001127		.WORD CPUERR	ADDRESS OF ERROR MESSAGE
2371	006250	005004	2:	CLR R4	
2372	006252	005764	000400	TST 400(R4)	**TEST LOCATION 400
2373	006256	001401		BEQ 3	ERROR IF EQUAL
2374	006260	100403		BMI 4	BRANCH IF MINUS

```

2375                                     ;ERROR! CC ERROR
2376 006262
2377 006262 104000
2378 006264 000164
2379 006266 001127
2380 006270
2381
2382
2383 006270
2384
2385
2386
2387 006270
2388 006270 005267 172510
2389 006274 005004
2390 006276 005014
2391 006300 005124
2392 006302 005014
2393 006304 005002
2394 006306 005004
2395 006310 105104
2396 006312 005204
2397 006314 005014
2398 006316 005774 177402
2399 006322 103403
2400 006324 102402
2401 006326 001401
2402 006330 100403
2403
2404 006332
2405 006332 104000
2406 006334 000165
2407 006336 001127
2408 006340 005222
2409 006342 005774 177402
2410 006346 100401
2411 006350 001403
2412
2413 006352
2414 006352 104000
2415 006354 000166
2416 006356 001127
2417 006360
2418
2419
2420
2421 006360
2422
2423
2424
2425 006360
2426 006360 005267 172420
2427 006364 005004
2428 006366 005001
2429 006370 005101
2430 006372 010104

3$:
    ERROR
    .WORD 164
    .WORD CPUERR
    ;ALL ERRORS TO TRAP TO EMT VECTOR
    ;UNIQUE ERROR NUMBER
    ;ADDRESS OF ERROR MESSAGE

4$:
    ;
MST7:
    ;*****
    ;*TEST 60 TEST TST MODE 7
    ;*****
TST60:
    INC $TESTN
    CLR R4
    CLR (R4)
    COM (R4)+
    CLR (R4)
    CLR R2
    CLR R4
    COM3 R4
    INC R4
    CLR (R4)
    TST 8-376(R4)
    BCS 1$
    RVS 1$
    BEQ 1$
    BMI 2$
    ;INCREMENT TEST NUMBER
    ;R4=400
    ;400=0
    ;**TEST LOCATION 0
    ;ERROR IF CARRY
    ;ERROR IF OVERFLOW
    ;ERROR IF ZERO
    ;BRANCH IF GOOD
    ;ERROR! ERROR IN CC

1$:
    ERROR
    .WORD 165
    .WORD CPUERR
    ;ALL ERRORS TO TRAP TO EMT VECTOR
    ;UNIQUE ERROR NUMBER
    ;ADDRESS OF ERROR MESSAGE

2$:
    INC (R2)+
    TST 8-376(R4)
    BMI 3$
    BEQ 4$
    ;R2=-2 R2=2
    ;** CHECK CONTENTS OF LOCATION 2
    ;ERROR IF MINUS
    ;BRANCH IF GOOD
    ;ERROR! CC SHOULD = 0100

3$:
    ERROR
    .WORD 166
    .WORD CPUERR
    ;ALL ERRORS TO TRAP TO EMT VECTOR
    ;UNIQUE ERROR NUMBER
    ;ADDRESS OF ERROR MESSAGE

4$:
    ;
MOMO:
    ;*****
    ;*TEST 61 TEST MOVE MODE 0
    ;*****
TST61:
    INC $TESTN
    CLR R4
    CLR R1
    COM R1
    MOV R1,R4
    ;INCREMENT TEST NUMBER
    ;R4=0
    ;R1=-1
    ;**TEST MOVE INSTRUCTION

```

```

2431 006374 001402      BEQ      1#      ;ERROR IF R4=0
2432 006376 102401      BVS      1#      ;ERROR IF OVERFLOW
2433 006400 100403      BMI      2#      ;BRANCH IF MINUS
2434                                     ;ERROR! CC SHOULD = 100-, R4 SHOULD=-1
2435 006402      1#:
2436 006402 104000      ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
2437 006404 000167      .WORD    167                               ;UNIQUE ERROR NUMBER
2438 006406 001127      .WORD    CPUERR                          ;ADDRESS OF ERROR MESSAGE
2439 006410 005204      2#:      INC      R4      ;R4 SHOULD =0
2440 006412 001373      BNE      1#      ;ERROR IF R4 NE 0
2441
2442
2443 006414      ;
2444      MDA0:
2445      ;*****
2446      ;*TEST 62      TEST ADD MODE 0
2447      ;*****
2448      TST62:
2449      INC      #TESTN      ;INCREMENT TEST NUMBER
2450      CLR      R4      ;R4=0
2451      CLR      R1
2452      COM      R1
2453      ADD      R1,R4      ;R1=-1
2454      BEQ      1#      ;** TEST ADD OF R1 TO R4
2455      BCS      1#      ;ERROR IF ZERO
2456      BVS      1#      ;ERROR IF CARRY
2457      BMI      2#      ;ERROR IF OVERFLOW
2458      1#:      ;BRANCH IF MINUS
2459      ERROR                                     ;ERROR! CC SHOULD = 1000 , R4=-1
2460 006440 104000      ;ALL ERRORS TO TRAP TO EMT VECTOR
2461 006442 000170      .WORD    170                               ;UNIQUE ERROR NUMBER
2462 006444 001127      .WORD    CPUERR                          ;ADDRESS OF ERROR MESSAGE
2463 006450 001403      2#:      INC      R4      ;R4 SHOULD =0
2464      BEQ      4#      ;BRANCH IF R4=0
2465      3#:      ;ERROR! R4 SHOULD = 0
2466 006452 104000      ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
2467 006454 000171      .WORD    171                               ;UNIQUE ERROR NUMBER
2468 006456 001127      .WORD    CPUERR                          ;ADDRESS OF ERROR MESSAGE
2469 006460      4#:
2470
2471      ;
2472 006460      ;
2473      MDS0:
2474      ;*****
2475      ;*TEST 63      TEST SUB MODE 0
2476      ;*****
2477      TST63:
2478      INC      #TESTN      ;INCREMENT TEST NUMBER
2479      CLR      R4
2480      CLR      R1
2481      INC      R1
2482      SUB      R1,R4      ;R1=1 R4=0
2483      BVS      1#      ;**TEST OF R4-R1, R4=-1
2484      BCC      1#      ;ERROR IF V SET
2485      BEQ      1#      ;ERROR IF NO CARRY
2486      BMI      2#      ;ERROR IF =0
2487      ;BRANCH IF MINUS
2488      ;ERROR! CC SHOULD = 1001

```

M4

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 KDJ11A.MAC 22-FEB-84 15:12 T63 TEST SUB MODE 0

SEQ 0051

```

2487 006504 1# :
2488 006504 104000 ERROR
2489 006506 000172 .WORD 172
2490 006510 001127 .WORD CPUERR
2491 006512 005101 2# : COM R1
2492 006514 005201 INC R1
2493 006516 160104 SUB R1,R4
2494 006520 001403 BEQ 4#
2495
2496 006522 3# :
2497 006522 104000 ERROR
2498 006524 000173 .WORD 173
2499 006526 001127 .WORD CPUERR
2500 006530 4# :
2501
2502
2503 006530 ;
2504 ;*****
2505 ;*TEST 64 TEST MOV MODE 27,00
2506 ;*****
2507 006530 TST64:
2508 006530 005267 172250 INC $TESTN
2509 006534 000257 CCC
2510 006536 012704 125252 MOV #125252,R4
2511 006542 001401 BEQ 1#
2512 006544 100403 BMI 2#
2513
2514 006546 1# :
2515 006546 104000 ERROR
2516 006550 000174 .WORD 174
2517 006552 001127 .WORD CPUERR
2518 006554 012701 052525 2# : MOV #052525,R1
2519 006560 100401 BMI 3#
2520 006562 001003 BNE 4#
2521
2522 006564 3# :
2523 006564 104000 ERROR
2524 006566 000175 .WORD 175
2525 006570 001127 .WORD CPUERR
2526 006572 060104 4# : ADD R1,R4
2527 006574 100403 BMI 6#
2528
2529 006576 5# :
2530 006576 104000 ERROR
2531 006600 000176 .WORD 176
2532 006602 001127 .WORD CPUERR
2533 006604 005204 6# : INC R4
2534 006606 001373 BNE 5#
2535
2536
2537 006610 ;
2538 ;MB100:
2539 ;*****
2540 ;*TEST 65 TEST BIC, BIS MODE 0,0
2541 ;*****
2541 006610 TST65:
2542 006610 005267 172170 INC $TESTN

```

```

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;R1=1
;GET TWO'S COMPLIMENT, R1=-1
;**TEST R4-R1 (1- 1= 0
;BRANCH IF ZERO
;ERROR! CC SHOULD = 0100

```

```

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

```

```

;INCREMENT TEST NUMBER
;CC=0000
;**TEST MOVE
;ERROR IF = 0
;BRANCH IF MINUS
;ERROR! CC SHOULD = 1000

```

```

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;**TEST MOVE
;ERROR IF MINUS
;BRANCH IF NE 0
;ERROR! CC SHOULD = 0000

```

```

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;R1+R4=-1
;BRANCH IF MINUS
;ERROR! MOV FAILED

```

```

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;R4+1=0
;ERROR IF NOT ZERO

```

```

;INCREMENT TEST NUMBER

```

N4

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 KDJ11A.MAC 22-FEB-84 15:12 T65 TEST BIC, BIS MODE 0,0

SEQ 0052

```

2543 006614 005004      CLR      R4
2544 006616 005104      COM      R4
2545 006620 012701 125252  MOV     #125252,R1
2546 006624 012702 052525  MOV     #052525,R2
2547 006630 000261      SEC
2548 006632 040104      BIC      R1,R4
2549 006634 103003      BCC      1$
2550 006636 102402      BVS      1$
2551 006640 001401      BEQ      1$
2552 006642 100003      BPL      2$
2553
2554 006644      1$:
2555 006644 104000      ERROR
2556 006646 000177      .WORD   177
2557 006650 001127      .WORD   CPUERR
2558 006652 020402      2$:  CMP     R4,R2
2559 006654 001403      BEQ      4$
2560
2561 006656      3$:
2562 006656 104000      ERROR
2563 006660 000200      .WORD   200
2564 006662 001127      .WORD   CPUERR
2565 006664 005301      4$:  DEC     R1
2566 006666 050201      BIS     R2,R1
2567 006670 100403      BMI     6$
2568
2569 006672      5$:
2570 006672 104000      ERROR
2571 006674 000201      .WORD   201
2572 006676 001127      .WORD   CPUERR
2573 006700 005201      6$:  INC     R1
2574 006702 005201      INC     R1
2575 006704 005201      INC     R1
2576 006706 001371      BNE     5$
2577
2578
2579 006710      ;
2580      M0C00:
2581      ;*****
2582      ;*TEST 66      TEST BIT, CMP MODE 0,0
2583      ;*****
2584 006710 005267 172070  TS166: INC     #TESTN
2585 006714 012701 125252  MOV     #125252,R1
2586 006720 012704 100000  MOV     #100000,R4
2587 006724 012702 052525  MOV     #052525,R2
2588 006730 030401      BIT     R4,R1
2589 006732 001401      BEQ     1$
2590 006734 100403      BMI     2$
2591
2592 006736      1$:
2593 006736 104000      ERROR
2594 006740 000202      .WORD   202
2595 006742 001127      .WORD   CPUERR
2596 006744 020401      2$:  CMP     R4,R1
2597 006746 001402      BEQ     3$
2598 006750 103001      BCC     3$

```

```

;R4=-1
;SETUP R1 TEST DATA
;R2=COMPLIMENT OF R1

;***TEST BIC WITH CARRY SET
;ERROR IF NO CARRY
;ERROR IF OVERFLOW
;ERROR IF 0
;BRANCH IF PLUS
;ERROR! CC SHOULD = 0001

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;COMPARE CONTENTS OF R4 AND R2
;BRANCH IF EQUAL
;ERROR! R4 AND R2 SHOULD BE EQUAL

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;R1=125251
;BIS 052525 AND 125251=177775
;BRANCH IF MINUS VALUE
;ERROR! BAD BIS OPERATION

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;R1=0
;ERROR IF NE 0

;INCREMENT TEST NUMBER
;R1=125252
;R4=100000
;R2=052525
;***TEST OF BIT ,CC=1000
;ERROR IF EQ 0
;BRANCH IF GOOD
;ERROR! CC SHOULD = 1000

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE
;*TEST 100000-125252=25252
;ERROR IF EQUAL 0
;ERROR IF CARRY CLEARED

```

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 KDJ11A.MAC 22-FEB-84 15:12 166 TEST BIT, CMP MODE 0,0

SEQ 0053

```

2599 006752 100403      BMI      4#      ;BRANCH IF GOOD
2600                                ;ERROR! CC SHOULD = 0010
2601 006754              3#:
2602 006754 104000      ERROR
2603 006756 000203      .WORD      203      ;ALL ERRORS TO TRAP TO EMT VECTOR
2604 006760 001127      .WORD      CPUERR  ;UNIQUE ERROR NUMBER
2605 006762 020104      4#:  CMP      R1,R4  ;ADDRESS OF ERROR MESSAGE
2606 006764 001403      BEQ      5#      ;125252-100000 = 25252
2607 006766 103402      BCS      5#      ;ERROR IF EQUAL
2608 006770 102401      BVS      5#      ;ERROR IF CARRY
2609 006772 100003      BPL      6#      ;ERROR IF OVERFLOW
2610                                ;BRANCH IF GOOD
2611 006774              5#:  ;ERROR! CC SHOULD =0001
2612 006774 104000      ERROR
2613 006776 000204      .WORD      204      ;ALL ERRORS TO TRAP TO EMT VECTOR
2614 007000 001127      .WORD      CPUERR  ;UNIQUE ERROR NUMBER
2615 007002 005004      6#:  CLR      R4      ;ADDRESS OF ERROR MESSAGE
2616 007004 005204      INC      R4      ;R4=1
2617 007006 000277      SCC
2618 007010 030401      BIT      R4,R1      ;R4 + R1 = 2
2619 007012 001403      BEQ      8#      ;BRANCH IF GOOD
2620                                ;ERROR! CC SHOULD = 0101
2621 007014              7#:
2622 007014 104000      ERROR
2623 007016 000205      .WORD      205      ;ALL ERRORS TO TRAP TO EMT VECTOR
2624 007020 001127      .WORD      CPUERR  ;UNIQUE ERROR NUMBER
2625 007022              8#:  ;ADDRESS OF ERROR MESSAGE
2626
2627
2628 007022      ;
2629      MM11:
2630      ;*****
2631      ;*TEST 67      TEST MOV, MOVB MODE 1,1 AND SIGN EXT ON MOVB TO GPR
2632      ;*****
2633      TST67:
2634      INC      #TESTN      ;INCREMENT TEST NUMBER
2635      MOV      #400,R4      ;R4=400
2636      MOV      #402,R1      ;R1=402
2637      CLR      (R4)
2638      COM      (R4)
2639      CLR      (R1)
2640      COMB      (R1)
2641      CLR      R2      ;402=000 377
2642      MOV      #405,R3      ;R2=0
2643      SCC      ;R3=405
2644      MOV      (R4),(R2)      ;CC=1111
2645      BEQ      1#      ;MOV 400 TO 0 ,0=-1
2646      BVS      1#      ;ERROR IF 0
2647      BCC      1#      ;ERROR IF OVERFLOW
2648      BMI      2#      ;ERROR IF NO CARRY
2649      ;BRANCH IF GOOD
2650      ;ERROR! CC SHOULD =1001
2651 007070              1#:
2652 007072 104000      ERROR
2653 007074 000206      .WORD      206      ;ALL ERRORS TO TRAP TO EMT VECTOR
2654 007100 001004      2#:  .WORD      CPUERR  ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
                                ;0=0
                                ;ERROR IF NOT 0

```

Address	Offset	Hex	Label	Instruction	Comment
2655	007102	000257		CCC	CC=0000
2656	007104	111113		MOVB	(R1),(R3)
2657	007106	001401		BEQ	30
2658	007110	100403		BMI	40
2659	007112		30:		
2660	007112	104000		ERROR	ALL ERRORS TO TRAP TO EMT VECTOR
2661	007114	000207		.WORD	207
2662	007116	001127		.WORD	CPUERR
2663	007120	105213			ADDRESS OF ERROR MESSAGE
2664	007122	001373			
2665			40:	INCB	(R3)
2666	007124	005002		BNE	30
2667	007126	111102			405=0
2668	007130	100005			ERROR IF 405 NOT 0
2669	007132	102404			
2670	007134	103403			CHECK THAT SIGN EXTENSION OCCURS ON A MOVB TO GENERAL REGISTER.
2671	007136	022702	177777	CLR	R2
2672	007142	001403		MOVB	(R1),R2
2673				BPL	50
2674				BVS	50
2675	007144			BCS	50
2676	007144	104000		CMP	#177777,R2
2677	007146	000210		BEQ	60
2678	007150	001127			INIT R2 TO ZERO.
2679	007152				MOVE 377 TO R2
2680					ERROR! BIT 15 SHOULD BE SET.
2681					V BIT SHOULD BE CLEARED
2682	007152				CARRY BIT SHOULD BE UNAFFECTED
2683					TEST R2
2684					SIGN EXTENDED THROUGH UPPER BYTE
2685					ERROR! BYTE SHOULD HAVE
2686	007152	005267	171626		SIGN EXTENDED THROUGH UPPER BYTE
2687	007152	012704	000400		
2688	007156	012701	000402		
2689	007162	012714	177753		
2690	007166	012711	000024		
2691	007172	061114			
2692	007176	001404			
2693	007200	103403			
2694	007202	100002			
2695	007204	005214			
2696	007206	001403			
2697	007210				
2698					
2699	007212				
2700	007212	104000			
2701	007214	000211			
2702	007216	001127			
2703	007220				
2704					
2705					
2706	007220				
2707					
2708					
2709					
2710	007220				

D5

GLOBAL AREAS MACY11 308(1052) 15-MAR-84 13:28 PAGE 55
 RDJ11A.MAC 22-FEB-84 15:12 T71 TEST SUB MODE 1,1

SEQ 0055

```

2711 007220 005267 171560      INC      $TESTN      ;INCREMENT TEST NUMBER
2712 007224 012704 000400      MOV      #400,R4      ;R4=400
2713 007230 012701 000404      MOV      #404,R1      ;R1=404
2714 007234 012714 000003      MOV      #3,(R4)      ;400=3
2715 007240 012711 000006      MOV      #6,(R1)      ;406=6
2716 007244 000277              SCC              ;CC=1111
2717 007246 161411              SUB      (R4),(R1)      ;6-3=3
2718 007250 001402              BEQ      1$          ;ERROR IF 0
2719 007252 100401              BMI      1$          ;ERROR IF MINUS
2720 007254 103003              BCC      2$          ;BRANCH IF GOOD
2721                                ;ERROR! CC SHOULD = 0000
2722 007256                                1$:
2723 007256 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
2724 007260 000212              .WORD      212          ;UNIQUE ERROR NUMBER
2725 007262 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
2726 007264 161411              2$: SUB      (R4),(R1)      ;3-3=0
2727 007266 001373              BNE      1$          ;ERROR IF NOT 0
2728
2729
2730 007270                                ;
2731                                ;*****
2732                                ;*TEST 72      TEST BJC, HIS MODE 1,1
2733                                ;*****
2734 007270                                TST72:
2735 007270 005267 171510      INC      $TESTN      ;INCREMENT TEST NUMBER
2736 007274 012704 000400      MOV      #400,R4      ;R4=400
2737 007300 012701 000402      MOV      #402,R1      ;R1=402
2738 007304 012714 052525      MOV      #052525,(R4) ;400=052525
2739 007310 012711 125252      MOV      #125252,(R1) ;402=125252
2740 007314 051411              BIS      (R4),(R1)      ;R4 V R1 = -1
2741 007316 001401              BEQ      1$          ;ERROR IF 0
2742 007320 100403              BMI      2$          ;BRANCH IF GOOD
2743                                ;ERROR! CC SHOULD = 1000
2744 007322                                1$:
2745 007322 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
2746 007324 000213              .WORD      213          ;UNIQUE ERROR NUMBER
2747 007326 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
2748 007330 005211              2$: INC      (R1)          ;402=0
2749 007332 001403              BEQ      4$          ;BRANCH IF GOOD
2750                                ;ERROR! CC SHOULD = 0100
2751                                3$:
2752 007334 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
2753 007336 000214              .WORD      214          ;UNIQUE ERROR NUMBER
2754 007340 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
2755 007342 005311              4$: DEC      (R1)          ;402=-1
2756 007344 041411              BIC      (R4),(R1)      ;R1=125252
2757 007346 001401              BEQ      5$          ;ERROR IF 0
2758 007350 100403              BMI      6$          ;BRANCH IF GOOD
2759                                ;ERROR! CC SHOULD = 1000
2760 007352                                5$:
2761 007352 104000              ERROR              ;ALL ERRORS TO TRAP TO EMT VECTOR
2762 007354 000215              .WORD      215          ;UNIQUE ERROR NUMBER
2763 007356 001127              .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
2764 007360 005111              6$: COM      (R1)          ;402=052525
2765 007362 041114              BIC      (R1),(R4)      ;400=0
2766 007364 001403              BEQ      8$          ;BRANCH IF GOOD

```


GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 58
 KDJ11A,MAC 22-FEB-84 15:12 T75 TEST SUB MODE 2,2

SEQ 0058

```

2879 007642 000225 .WORD 225 ;UNIQUE ERROR NUMBER
2880 007644 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2881 007646
2882
2883
2884 007646
2885
2886 ;*****
2887 ;*TEST 76 TEST BIC, BICB, BIS, BISB MODE 2,2
2888 ;*****
2889 007646 005267 171132 TST76: INC $TESTN ;INCREMENT TEST NUMBER
2890 007652 012704 000400 MOV #400,R4 ;R4=400
2891 007656 012701 000402 MOV #402,R1 ;R1=402
2892 007662 012702 000404 MOV #404,R2 ;R2=404
2893 007666 012714 141401 MOV #141401,(R4) ;400=303 001
2894 007672 012711 177405 MOV #177405,(R1) ;402=377 005
2895 007676 012722 000070 MOV #70,(R2)+ ;404=2070
2896 007702 012722 177777 MOV #-1,(R2)+ ;406=-1
2897 007706 042421 BIC (R4)+,(R1)+ ;402=074004
2898 007710 001401 BEQ 1$ ;ERROR IF ZERO
2899 007712 100003 BPL 2$ ;BRANCH IF GOOD
2900
2901
2902 007714 104000 1$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
2903 007716 000226 .WORD 226 ;UNIQUE ERROR NUMBER
2904 007720 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2905 007722 052421 2$: BIS (R4)+,(R1)+ ;404=074074
2906 007724 142421 BICB (R4)+,(R1)+ ;406=074
2907 007726 005301 DEC R1 ;R4=405 R1=406
2908 007730 152421 BISB (R4)+,(R1)+ ;406=-1 R4=406 R1=407
2909 007732 100403 BMI 4$ ;BRANCH IF GOOD
2910
2911
2912 007734 104000 3$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
2913 007736 000227 .WORD 227 ;UNIQUE ERROR NUMBER
2914 007740 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2915 007742 005214 4$: INC (R4) ;406 SHOULD=0
2916 007744 001403 BEQ 5$ ;BRANCH IF GOOD
2917
2918
2919 007746 104000 5$: ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
2920 007750 000230 .WORD 230 ;UNIQUE ERROR NUMBER
2921 007752 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
2922 007754
2923
2924
2925 007754
2926
2927 ;*****
2928 ;*TEST 77 TEST BIT, CMP MODE 2,2
2929 ;*****
2929 007754 TST77: INC $TESTN ;INCREMENT TEST NUMBER
2930 007754 005267 171024 MOV #400,R4 ;R4=400
2931 007760 012704 000400 MOV #402,R1 ;R1=402
2932 007764 012701 000402 MOV #125252,(R4) ;400=125252
2933 007770 012714 125252 MOV #100001,(R1)+ ;402=100001
2934 007774 012721 100001

```

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 59
 KDJ11A.MAC 22-FEB-84 15:12 T77 TEST BIT, CMP MODE 2,2

SEG 0059

```

2935 010000 012711 100002      MOV      #100002,(R1)      ;404=100002
2936 010004 005741              TST      -(R1)          ;R1=402
2937 010006 132421              BITB     (R4)+,(R1)+      ;**ANDED RESULT= 000
2938 010010 100401              BMI      1$           ;ERROR IF MINUS
2939 010012 001403              BEQ      2$           ;BRANCH IF GOOD
2940                                ;ERROR! CC SHOULD = 0100
2941 010014                                1$:
2942 010014 104000              ERROR                                ;ALL ERRORS TO TRAP TO EMT VECTOR
2943 010016 000231              .WORD    231                ;UNIQUE ERROR NUMBER
2944 010020 001127              .WORD    CPUERR           ;ADDRESS OF ERROR MESSAGE
2945 010022 132124              2$:      BITB     (R1)+,(R4)+      ;** ANDED RESULT = 200
2946 010024 001401              BEQ      3$           ;ERROR IF EQUAL
2947 010026 100403              BMI      4$           ;BRANCH IF GOOD
2948                                ;ERROR! CC SHOULD= 1000 R4=402 R1=404
2949 010030                                3$:
2950 010030 104000              ERROR                                ;ALL ERRORS TO TRAP TO EMT VECTOR
2951 010032 000232              .WORD    232                ;UNIQUE ERROR NUMBER
2952 010034 001127              .WORD    CPUERR           ;ADDRESS OF ERROR MESSAGE
2953 010036 022421              4$:      CMP      (R4)+,(R1)+      ;RESULT =+1
2954 010040 001402              BEQ      5$           ;ERROR IF EQUAL
2955 010042 103001              BCC      5$           ;ERROR IF NO CARRY
2956 010044 100403              BMI      6$           ;BRANCH IF GOOD
2957                                ;ERROR! CC SHOULD = 0000
2958 010046                                5$:
2959 010046 104000              ERROR                                ;ALL ERRORS TO TRAP TO EMT VECTOR
2960 010050 000233              .WORD    233                ;UNIQUE ERROR NUMBER
2961 010052 001127              .WORD    CPUERR           ;ADDRESS OF ERROR MESSAGE
2962 010054 005341              6$:      DEC      -(R1)          ;404=100001
2963 010056 005741              TST      -(R1)          ;R4=404 R1=402
2964 010060 022124              CMP      (R1)+,(R4)+      ;RESULT =0
2965 010062 001403              BEQ      8$           ;BRANCH IF GOOD
2966                                ;CC SHOULD = 0100 R1=404 R4=406
2967 010064                                7$:
2968 010064 104000              ERROR                                ;ALL ERRORS TO TRAP TO EMT VECTOR
2969 010066 000234              .WORD    234                ;UNIQUE ERROR NUMBER
2970 010070 001127              .WORD    CPUERR           ;ADDRESS OF ERROR MESSAGE
2971 010072                                8$:
2972
2973
2974 010072      MS33:
2975      ;*****
2976      ;*TEST 100      TEST SUB MODE 3,3
2977      ;*****
2978      TST100:
2979 010072 005267 170706      INC      #TESTN          ;INCREMENT TEST NUMBER
2980 010076 005004              CLR      R4
2981 010100 012701 000002      MOV      #2,R1          ;R4=0
2982 010104 012702 000400      MOV      #400,R2        ;R1=2
2983 010110 012714 000400      MOV      #400,(R4)       ;R2=400
2984 010114 012711 000402      MOV      #402,(R1)       ;0=400
2985 010120 012722 000203      MOV      #200,(R2)+      ;2=402
2986 010124 012712 054320      MOV      #54320,(R2)     ;400=200
2987 010130 163431              SUB      @R4)+,@R1)+     ;402=54320
2988 010132 001402              DEQ      1$           ;54320 - 200=54120
2989 010134 103401              BCS      1$           ;ERROR IF ZERO
2990 010136 100003              BPL      2$           ;ERROR IF CARRY
                                ;BRANCH IF GOOD

```

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 60
 KDJ11A.MAC 22-FEB-84 15:12 T100 TEST SUB MODE 3,3

SEQ 0060

```

2991                                     ;ERROR! CC SHOULD =0001
2992 010140                               1$:
2993 010140 104000                       ERROR
2994 010142 000235                       .WORD 235
2995 010144 001127                       .WORD CPUERR
2996 010146 022712 054120               2$: CMP #54120,(R2)
2997 010152 001403                       BEQ 4$
2998
2999 010154                               3$:
3000 010154 104000                       ERROR
3001 010154 000236                       .WORD 236
3002 010160 001127                       .WORD CPUERR
3003 010162 005067 167612               4$: CLR 0
3004 010166 005067 167610               CLR 2
3005
3006
3007
3008 010172                               ;
3009                                     ;MCB44:
3010                                     ;*****
3011                                     ;*TEST 101 TEST CMP, BIT MODE 4,4
3012                                     ;*****
3012 010172                               TST101:
3013 010172 005067 170606               INC #TESTN
3014 010176 012704 000400               MOV #400,R4
3015 010202 012701 000402               MOV #402,R1
3016 010206 012721 125366               MOV #125366,(R1)+
3017 010212 012724 173001               MOV #173001,(R4)+
3018 010216 024441                       CMP -(R4),-(R1)
3019 010220 103401                       BCS 1$
3020 010222 100003                       BPL 2$
3021
3022 010224                               1$:
3023 010224 104000                       ERROR
3024 010226 000237                       .WORD 237
3025 010230 001127                       .WORD CPUERR
3026 010232 005204                       2$: INC R4
3027 010234 005201                       INC R1
3028 010236 000261                       SEC
3029 010240 134144                       BITB -(R1),-(R4)
3030 010242 103001                       BCC 3$
3031 010244 001403                       BEQ 4$
3032
3033 010246                               3$:
3034 010246 104000                       ERROR
3035 010250 000240                       .WORD 240
3036 010252 001127                       .WORD CPUERR
3037 010254 005724                       4$: TST (R4)+
3038 010256 005201                       INC R1
3039 010260 124441                       CMPB -(R4),-(R1)
3040 010262 001403                       BEQ 6$
3041
3042 010264                               5$:
3043 010264 104000                       ERROR
3044 010266 000241                       .WORD 241
3045 010270 001127                       .WORD CPUERR
3046 010272                               6$:

```

;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ; TEST R4 AUTO-INC AND RESULT
 ;BRANCH IF GOOD
 ;ERROR! CC SHOULD = 0100 R4=2 R1=4
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;RESTORE VECTORS
 ;
 ;
 ;INCREMENT TEST NUMBER
 ;R4=400
 ;R1=402
 ;402-125366 R1=404
 ;400-173001 R4=402
 ;173001 - 125366=045603 CC=0000
 ;ERROR IF CARRY
 ;BRANCH IF GOOD
 ;BAD COMPARE
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;R1=403
 ;SET CARRY
 ;173+1=0
 ;C SHOULD REMAIN SET
 ;BRANCH IF GOOD
 ;INCORRECT COMPARE R4=400 R1=402
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;R4=402
 ;R1=403
 ;173 - 173=0
 ;BRANCH IF GOOD
 ;BAD COMPARE
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 62
 KDJ11A.HAC 22-FEB-84 15:12 T103 TEST BIT, BITB MODE 6,6

SEQ 0062

```

3103 010420          1#:
3104 010420 104000      ERROR
3105 010422 000244      .WORD 244          ;ALL ERRORS TO TRAP TO EMT VECTOR
3106 010424 001127      .WORD CPUERR       ;UNIQUE ERROR NUMBER
3107 010426 136461 000405 177772 2#: BITB 405(R4),-6(R1) ;ADDRESS OF ERROR MESSAGE
3108 010434 001401      BEQ 3#             ;(405)+(400)=200
3109 010436 106403      BMT 4#             ;ERROR IF ZERO
3110                                     ;BRANCH IF GOOD
3111 010440          3#:                                     ;CC SHOULD = 1000
3112 010440 104000      ERROR
3113 010442 000245      .WORD 245          ;ALL ERRORS TO TRAP TO EMT VECTOR
3114 010444 001127      .WORD CPUERR       ;UNIQUE ERROR NUMBER
3115 010446          4#:                                     ;ADDRESS OF ERROR MESSAGE
3116
3117
3118 010446          !
3119          MS77:
3120          ;*****
3121          ;*TEST 104      TEST SUB MODE 7,7
3122          ;*****
3123 010446          TST104:
3124 010446 005267 170332      INC $TESTN          ;INCREMENT TEST NUMBER
3125 010452 012704 000400      MOV #400,R4
3126 010456 005001          CLR R1
3127 010460 012724 177776      MOV #-2,(R4)+      ;400=-2
3128 010464 012724 177777      MOV #-1,(R4)+      ;402=-1
3129 010470 012724 000400      MOV #400,(R4)+      ;404=400 R4=406
3130 010474 012711 000402      MOV #402,(R1)       ;0=402
3131 010500 005201          INC R1                 ;R1=1
3132 010502 167471 177372 000403      SUB #-406(R4),#403(R1) ;-2 - -1 = -1
3133 010510 001401      BEQ 1#                 ;ERROR IF ZERO
3134 010512 100403      BMT 2#                 ;BRANCH IF GOOD
3135                                     ;CC SHOULD=1000
3136 010514          1#:
3137 010514 104000      ERROR
3138 010516 000246      .WORD 246          ;ALL ERRORS TO TRAP TO EMT VECTOR
3139 010520 001127      .WORD CPUERR       ;UNIQUE ERROR NUMBER
3140 010522 167174 177777 177776 2#: SUB #-1(R1),#-2(R4) ;ADDRESS OF ERROR MESSAGE
3141 010530 001403      BEQ 4#             ;-1 - -1 = 0
3142                                     ;BRANCH IF GOOD
3143 010532          3#:                                     ;ERROR! ERROR ON SUBTRACT 400=0
3144 010532 104000      ERROR
3145 010534 000247      .WORD 247          ;ALL ERRORS TO TRAP TO EMT VECTOR
3146 010536 001127      .WORD CPUERR       ;UNIQUE ERROR NUMBER
3147 010540 005067 167234      CLR 0          ;ADDRESS OF ERROR MESSAGE
3148 010544 005067 167232      CLR 2          ;RESTORE VECTORS
3149                                     ;
3150
3151 010550          !
3152          MRLO:
3153          ;*****
3154          ;*TEST 105      TEST ROL, ROLB MODE 0
3155          ;*****
3156 010550          TST105:
3157 010550 005267 170330      INC $TESTN          ;INCREMENT TEST NUMBER
3158 010554 012704 125252      MOV #125252,R4      ;R4=125252
3159 010560 000277          SCC                 ;CC=1111

```

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 63
 KDJ11A.MAC 22-FEB-84 15:12 T105 TEST ROL, ROLB MODE 0

SEQ 0063

```

3159 010562 006104      ROL      R4      ;R4=052525 WITH CARRY SET
3160 010564 102004      BVC      1#      ;ERROR IF V CLEAR
3161 010566 103003      BCC      1#      ;ERROR IF CARRY CLEAR
3162 010570 022704 052525  CMP      #052525,R4 ;SEE IF R0 = EXPECTED
3163 010574 001403      BEQ      2#      ;ERROR IF R4 NE EXPECTED
3164                                     ;ERROR! ROL FAILED, CC SHOULD=0011
3165 010576                                     1#:
3166 010576 104000      ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
3167 010600 000250      .WORD    250                             ;UNIQUE ERROR NUMBER
3168 010602 001127      .WORD    CPUERR                          ;ADDRESS OF ERROR MESSAGE
3169 010604 012704 125252 2#: MOV      #125252,R4                  ;R4=125252
3170 010610 000257      CCC                                     ;CC=0000
3171 010612 106104      ROLB     R4      ;ROTATE EVEN BYTE
3172 010614 103005      BCC      3#      ;ERROR IF NO CARRY
3173 010616 102004      BVC      3#      ;ERROR IF NO OVERFLOW
3174 010620 100403      BMI      3#      ;ERROR IF MINUS
3175 010622 022704 125124  CMP      #125124,R4 ;SEE IF R4 = EXPECTED
3176 010626 001403      BEQ      4#      ;BRANCH IF GOOD
3177                                     ;ERROR! ROLB FAILED, CC SHOULD=1011, R4=125125
3178 010630                                     3#:
3179 010630 104000      ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
3180 010632 000251      .WORD    251                             ;UNIQUE ERROR NUMBER
3181 010634 001127      .WORD    CPUERR                          ;ADDRESS OF ERROR MESSAGE
3182 010636                                     4#:
3183
3184
3185 010636      ;
3186      MRLB1:
3187      ;*****
3188      ;*TEST 106      TEST ROL, ROLB MODE 1
3189      ;*****
3190      TST106:
3191      INC      #TESTN      ;INCREMENT TEST NUMBER
3192      CLR      R4          ;R4=0
3193      MOV      #52525,(R4) ;0=52525
3194      ROL      (R4)        ;**TEST INSTRUCTION, 0=125252
3195      BPL      1#          ;ERROR IF PLUS
3196      BVC      1#          ;ERROR IF NO OVERFLOW
3197      BCS      1#          ;ERROR IF CARRY
3198      CMP      (R4),#125252 ;SEE IF R4=EXPECTED
3199      BEQ      2#          ;BRANCH IF GOOD
3200                                     ;BAD ROL ,CC SHOULD=1010
3201 010666 104000      1#: ERROR                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
3202 010670 000252      .WORD    252                             ;UNIQUE ERROR NUMBER
3203 010672 001127      .WORD    CPUERR                          ;ADDRESS OF ERROR MESSAGE
3204 010674 012714 125252 2#: MOV      #125252,(R4)                  ;0=125252
3205 010700 005204      INC      R4          ;R4=1
3206 010702 000277      SCC                                     ;CC=1111
3207 010704 106114      ROLB     (R4)        ;**TEST INSTRUCTION
3208 010706 100406      BMI      3#          ;ERROR IF RESULT IS POSITIVE
3209 010710 103005      BCC      3#          ;ERROR IF NO CARRY
3210 010712 102004      BVC      3#          ;ERROR IF V CLEAR
3211 010714 005304      DEC      R4          ;R4=0
3212 010716 022714 052652  CMP      #52652,(R4) ;ERROR IF 0 NE EXPECTED
3213 010722 001403      BEQ      4#          ;BRANCH IF GOOD
3214                                     ;ERROR! BAD ROLB ODD BYTE,CC SHOULD=1011

```

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 64
 KDJ11A.MAC 22-FEB-84 15:12 T106 TEST ROL, ROLB MODE 1

SEQ 0064

```

3215 010724
3216 010724 104000
3217 010726 000253
3218 010730 001127
3219 010732
3220
3221
3222 010732
3223
3224
3225
3226 010732
3227 010732 005267 170046
3228 010736 005004
3229 010740 012714 100000
3230 010744 000257
3231 010746 006124
3232 010750 103002
3233 010752 102001
3234 010754 001403
3235
3236 010756
3237 010756 104000
3238 010760 000254
3239 010762 001127
3240 010764 005304
3241 010766 005304
3242 010770 001012
3243 010772 012714 004040
3244 010776 000241
3245 011000 106124
3246 011002 103405
3247 011004 102404
3248 011006 005304
3249 011010 022714 004100
3250 011014 001403
3251
3252 011016
3253 011016 104000
3254 011020 000255
3255 011022 001127
3256 011024
3257
3258
3259 011024
3260
3261
3262
3263 011024
3264 011024 005267 167754
3265 011030 005004
3266 011032 012714 052525
3267 011036 000277
3268 011040 006137 000000
3269 011044 100005
3270 011046 102004

3$:
      ERROR
      .WORD 253
      .WORD CPUERR
      ;ALL ERRORS TO TRAP TO EMT VECTOR
      ;UNIQUE ERROR NUMBER
      ;ADDRESS OF ERROR MESSAGE

4$:
      ;
      MRL2:
      ;*****
      ;*TEST 107      TEST ROL, ROLB MODE 2
      ;*****
      TST107:
      INC      $TESTN      ;INCREMENT TEST NUMBER
      CLR      R4           ;R4=0
      MOV      $100000,(R4) ;0=100000
      CCC      ;CC=0000
      ROL      (R4)+
      BCC      1$           ;*TEST INSTRUCTION
      BVC      1$           ;ERROR IF NO CARRY
      BVC      1$           ;ERROR IF NO OVERFLOW
      BEQ      2$           ;BRANCH IF GOOD
      ;ROL FAILED ,CCSHOULD= 0100

1$:
      ERROR
      .WORD 254
      .WORD CPUERR
      ;ALL ERRORS TO TRAP TO EMT VECTOR
      ;UNIQUE ERROR NUMBER
      ;ADDRESS OF ERROR MESSAGE

2$:
      DEC      R4
      DEC      R4
      BNE      3$           ;ERROR IN AUTO-DEC
      MOV      $4040,(R4)   ;0=4040
      CLC
      ROLB     (R4)+
      BCS      3$           ;**TEST INSTRUCTION
      BVS      3$           ;ERROR IF CARRY SET
      DEC      R4
      DEC      R4
      CMP      $04100,(R4)  ;SEE IF 0= EXPECTED RESULT
      BEQ      4$           ;BRANCH IF GOOD
      ;ERROR! BAD ROL

3$:
      ERROR
      .WORD 255
      .WORD CPUERR
      ;ALL ERRORS TO TRAP TO EMT VECTOR
      ;UNIQUE ERROR NUMBER
      ;ADDRESS OF ERROR MESSAGE

4$:
      ;
      MRL3:
      ;*****
      ;*TEST 110      TEST ROL, ROLB MODE 3
      ;*****
      TST110:
      INC      $TESTN      ;INCREMENT TEST NUMBER
      CLR      R4           ;R4=0
      MOV      $052525,(R4) ;0=52525
      SCC      ;CC=1111
      ROL      $00
      BPL      1$           ;**TEST INSTRUCTION MODE 3 WITH PC
      BPL      1$           ;ERROR IF PLUS
      BVC      1$           ;ERROR IF NO OVERFLOW

```

PC	OP	OP2	OP3	OP4	OP5	OP6	OP7	OP8	OP9	OP10	OP11	OP12	OP13	OP14	OP15	OP16	OP17	OP18	OP19	OP20	OP21	OP22	OP23	OP24	OP25	OP26	OP27	OP28	OP29	OP30	OP31	OP32	OP33	OP34	OP35	OP36	OP37	OP38	OP39	OP40	OP41	OP42	OP43	OP44	OP45	OP46	OP47	OP48	OP49	OP50	OP51	OP52	OP53	OP54	OP55	OP56	OP57	OP58	OP59	OP60	OP61	OP62	OP63	OP64	OP65	OP66	OP67	OP68	OP69	OP70	OP71	OP72	OP73	OP74	OP75	OP76	OP77	OP78	OP79	OP80	OP81	OP82	OP83	OP84	OP85	OP86	OP87	OP88	OP89	OP90	OP91	OP92	OP93	OP94	OP95	OP96	OP97	OP98	OP99	OP100	OP101	OP102	OP103	OP104	OP105	OP106	OP107	OP108	OP109	OP110	OP111	OP112	OP113	OP114	OP115	OP116	OP117	OP118	OP119	OP120	OP121	OP122	OP123	OP124	OP125	OP126	OP127	OP128	OP129	OP130	OP131	OP132	OP133	OP134	OP135	OP136	OP137	OP138	OP139	OP140	OP141	OP142	OP143	OP144	OP145	OP146	OP147	OP148	OP149	OP150	OP151	OP152	OP153	OP154	OP155	OP156	OP157	OP158	OP159	OP160	OP161	OP162	OP163	OP164	OP165	OP166	OP167	OP168	OP169	OP170	OP171	OP172	OP173	OP174	OP175	OP176	OP177	OP178	OP179	OP180	OP181	OP182	OP183	OP184	OP185	OP186	OP187	OP188	OP189	OP190	OP191	OP192	OP193	OP194	OP195	OP196	OP197	OP198	OP199	OP200	OP201	OP202	OP203	OP204	OP205	OP206	OP207	OP208	OP209	OP210	OP211	OP212	OP213	OP214	OP215	OP216	OP217	OP218	OP219	OP220	OP221	OP222	OP223	OP224	OP225	OP226	OP227	OP228	OP229	OP230	OP231	OP232	OP233	OP234	OP235	OP236	OP237	OP238	OP239	OP240	OP241	OP242	OP243	OP244	OP245	OP246	OP247	OP248	OP249	OP250	OP251	OP252	OP253	OP254	OP255	OP256	OP257	OP258	OP259	OP260	OP261	OP262	OP263	OP264	OP265	OP266	OP267	OP268	OP269	OP270	OP271	OP272	OP273	OP274	OP275	OP276	OP277	OP278	OP279	OP280	OP281	OP282	OP283	OP284	OP285	OP286	OP287	OP288	OP289	OP290	OP291	OP292	OP293	OP294	OP295	OP296	OP297	OP298	OP299	OP300	OP301	OP302	OP303	OP304	OP305	OP306	OP307	OP308	OP309	OP310	OP311	OP312	OP313	OP314	OP315	OP316	OP317	OP318	OP319	OP320	OP321	OP322	OP323	OP324	OP325	OP326	OP327	OP328	OP329	OP330	OP331	OP332	OP333	OP334	OP335	OP336	OP337	OP338	OP339	OP340	OP341	OP342	OP343	OP344	OP345	OP346	OP347	OP348	OP349	OP350	OP351	OP352	OP353	OP354	OP355	OP356	OP357	OP358	OP359	OP360	OP361	OP362	OP363	OP364	OP365	OP366	OP367	OP368	OP369	OP370	OP371	OP372	OP373	OP374	OP375	OP376	OP377	OP378	OP379	OP380	OP381	OP382	OP383	OP384	OP385	OP386	OP387	OP388	OP389	OP390	OP391	OP392	OP393	OP394	OP395	OP396	OP397	OP398	OP399	OP400	OP401	OP402	OP403	OP404	OP405	OP406	OP407	OP408	OP409	OP410	OP411	OP412	OP413	OP414	OP415	OP416	OP417	OP418	OP419	OP420	OP421	OP422	OP423	OP424	OP425	OP426	OP427	OP428	OP429	OP430	OP431	OP432	OP433	OP434	OP435	OP436	OP437	OP438	OP439	OP440	OP441	OP442	OP443	OP444	OP445	OP446	OP447	OP448	OP449	OP450	OP451	OP452	OP453	OP454	OP455	OP456	OP457	OP458	OP459	OP460	OP461	OP462	OP463	OP464	OP465	
----	----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--

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 KDJ11A.MAC 22-FEB-84 15:12 T112 TEST ROL MODE 5

SEQ 0066

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3327 011176 012734 123456      MOV      #123456,R4)
3328 011202 000277              SCC
3329 011204 006154              ROL      R-(R4)
3330 011206 100410              BMI      10
3331 011210 103007              BCC      10
3332 011212 102006              BVC      10
3333 011214 005704              TST      R4
3334 011216 001004              BNE      10
3335 011220 022737 047135 000400 CMP      #47135,R#400
3336 011226 001403              BEQ      20
3337
3338 011230              10:
3339 011230 104000              ERROR
3340 011232 000261              .WORD    261
3341 011234 001127              .WORD    CPUERR
3342 011236              20:
3343
3344
3345 011236              ;
3346              MRL6:
3347              ;*****
3348              ;*TEST 113      TEST ROL MODE 6
3349              ;*****
3350 011236 005267 167542      TST113:
3351 011242 012704 000400      INC      #TESTN
3352 011246 005001              MOV      #400,R4
3353 011250 012711 032525      CLR      R1
3354 011254 000277              MOV      #32525,(R1)
3355 011256 006164 177400      SCC
3356 011262 100405              ROL      -400(R4)
3357 011264 103404              BMI      10
3358 011266 102403              BCS      10
3359 011270 022711 065253      BVS      10
3360 011274 001403              CMP      #65253,(R1)
3361              BEQ      20
3362 011276              10:
3363 011276 104000              ERROR
3364 011300 000262              .WORD    262
3365 011302 001127              .WORD    CPUERR
3366 011304              20:
3367
3368
3369 011304              ;
3370              MRL7:
3371              ;*****
3372              ;*TEST 114      TEST ROL MODE 7
3373              ;*****
3374 011304 005267 167474      TST114:
3375 011310 012704 000400      INC      #TESTN
3376 011314 005037 000402      MOV      #400,R4
3377 011320 012737 100000 000000 CLR      #402
3378 011326 006174 000002      MOV      #100000,R#0
3379 011332 100406              ROL      #2(R4)
3380 011334 001005              BMI      10
3381 011336 103004              BNE      10
3382 011340 102003              BCC      10
3383              BVC      10

```

;400=123465, R4=2
 ;CC=1111
 ;**TEST INSTRUCTION
 ;ERROR IF RESULT IS MINUS
 ;ERROR IF NO CARRY
 ;ERROR IF NO OVERFLOW
 ;SEE IF AUTO-DEC WORKED
 ;ERROR OF AUTO-DEC
 ;SEE IF CORRECT RESULT
 ;BRANCH IF GOOD
 ;BAD ROL MODE 5
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;INCREMENT TEST NUMBER
 ;R4=400
 ;R1=0
 ;0=32525
 ;**TEST INSTRUCTION
 ;ERROR IF MINUS
 ;ERROR IF CARRY
 ;ERROR IF OVERFLOW
 ;SEE IF CORRECT RESULT
 ;BRANCH IF GOOD
 ;BAD ROL MODE 6
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;INCREMENT TEST NUMBER
 ;R4=400
 ;402=0
 ;0=100000
 ;**TEST INSTRUCTION
 ;ERROR IF MINUS
 ;ERROR IF NOT ZERO
 ;ERROR IF NO CARRY
 ;ERROR IF NO OVERFLOW

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 RDJ11A.MAC 22-FEB-84 15:12 T114 TEST ROL MODE 7

SEQ 0067

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3383 011342 005737 000000          TST      B#0          ;CHECK RESULT
3384 011346 001403                BEQ      2#          ;BRANCH IF GOOD
3385                                ;BAD ROL MODE 7
3386 011350
3387 011350 104000          1#:      ERROR
3388 011352 000263          .WORD      263          ;ALL ERRORS TO TRAP TO EMT VECTOR
3389 011354 001127          .WORD      CPUERR        ;UNIQUE ERROR NUMBER
3390 011356                2#:                      ;ADDRESS OF ERROR MESSAGE
3391
3392
3393 011356          ;
3394          ;MSW37:
3395          ;*****
3396          ;*TEST 115      TEST SWAB MODE 37
3397          ;*****
3398 011356          TST115:
3399 011362 005267 167422          INC      $TESTN          ;INCREMENT TEST NUMBER
3400 011366 012714 040700          MOV      #400,R4          ;R4=400
3401 011372 000337 000400          MOV      #40700,(R4)        ;400= 101 300
3402 011376 100406          SWAB      B#400          ;400 SHOULD = 300 101
3403 011400 022714 140101          BMI      1#          ;ERROR IF MINUS
3404 011404 001003          CMP      #140101,(R4)        ;SEE IF EXPECTED RESULT
3405 011406 000337 000400          BNE      1#          ;BRANCH IF BAD
3406 011412 100403          SWAB      B#400          ;400=101 300
3407          BMI      2#          ;BRANCH IF GOOD
3408          ;ERROR! BAD SWAB MODE 37
3409 011414 104000          1#:      ERROR
3410 011416 000264          .WORD      264          ;ALL ERRORS TO TRAP TO EMT VECTOR
3411 011420 001127          .WORD      CPUERR        ;UNIQUE ERROR NUMBER
3412 011422                2#:                      ;ADDRESS OF ERROR MESSAGE
3413
3414
3415 011422          ;
3416          ;MRR0:
3417          ;*****
3418          ;*TEST 116      TEST ROR MODE 0
3419          ;*****
3420 011422 005267 167356          TST116:
3421 011426 012704 052525          INC      $TESTN          ;INCREMENT TEST NUMBER
3422 011432 000257          MOV      #52525,R4          ;R4=52525
3423 011434 006004          CCC          ;CC=0000
3424 011436 103003          ROR      R4          ;R4 SHOULD = 25252 WITH CARRY
3425 011440 022704 025252          BCC      1#          ;ERROR IF NO CARRY
3426 011444 001403          CMP      #25252,R4          ;SEE IF R4= EXPECTED
3427          BEQ      2#          ;BRANCH IF GOOD
3428          ;ROR MODE 0 FAILED
3429 011446 104000          1#:      ERROR
3430 011450 000265          .WORD      265          ;ALL ERRORS TO TRAP TO EMT VECTOR
3431 011452 001127          .WORD      CPUERR        ;UNIQUE ERROR NUMBER
3432 011454                2#:                      ;ADDRESS OF ERROR MESSAGE
3433
3434
3435 011454          ;
3436          ;MRRB1:
3437          ;*****
3438          ;*TEST 117      TEST RORB MODE 1
3439          ;*****

```

```

3439 011454          TST117:
3440 011454 005267 167324      INC      #TESTN      ;INCREMENT TEST NUMBER
3441 011460 005004          CLR      R4              ;R4=0
3442 011462 012714 000001      MOV      #1,(R4)        ;O=1
3443 011466 000277          SCC      (R4)              ;CC=1111
3444 011470 106014          RORB      (R4)              ;O=000200, NO C
3445 011472 103004          BCC      1#                ;ERROR IF NO CARRY
3446 011474 100003          BPL      1#                ;ERROR IF PLUS
3447 011476 022714 000200      CMP      #200,(R4)       ;CHECK RESULT
3448 011502 001403          BEQ      2#                ;BRANCH IF GOOD
3449                                ;ERROR! BAD RESULT
3450 011504          1#:
3451 011504 104000          ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3452 011506 000266          .WORD      266              ;UNIQUE ERROR NUMBER
3453 011510 001127          .WORD      CPUERR           ;ADDRESS OF ERROR MESSAGE
3454 011512          2#:
3455
3456
3457
3458 011512          MJ:
3459                                ;*****
3460                                ;*TEST 120      TEST JMP - ALL MODES
3461                                ;*****
3462 011512          TST120:
3463 011512 005267 167266      INC      #TESTN      ;INCREMENT TEST NUMBER
3464 011516 012737 000001 001066  MOV      #1,#SEQ      ;SETUP TEST SEQUENCER
3465 011524 012701 011600      MOV      #MJU1,R1        ;SET MODE 1 JUMP ADDRESS
3466 011530 000111          JMP      (R1)              ;*JMP MODE 1
3467 011532 023727 001066 000002 MJU2:  CMP      #SEQ,#2    ;CHECK FOR CORRECT SEQUENCE
3468 011540 001403          BEQ      MJU2A             ;BRANCH IF GOOD
3469                                ;MODE 2 JUMP FAILED
3470 011542          1#:
3471 011542 104000          ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3472 011544 000267          .WORD      267              ;UNIQUE ERROR NUMBER
3473 011546 001127          .WORD      CPUERR           ;ADDRESS OF ERROR MESSAGE
3474
3475 011550 020127 011534      MJU2A:  CMP      R1,#MJU2+2  ;CHECK FOR AUTO-INCREMENT
3476 011554 001403          BEQ      MJU2B             ;BRANCH IF GOOD
3477                                ;ERROR! AUTO-INCR FAILED
3478 011556          2#:
3479 011556 104000          ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3480 011560 000270          .WORD      270              ;UNIQUE ERROR NUMBER
3481 011562 001127          .WORD      CPUERR           ;ADDRESS OF ERROR MESSAGE
3482
3483 011564 005237 001066      MJU2B:  INC      #SEQ      ;UPDATE TEST SEQUENCER
3484 011570 012701 011576      MOV      #MJ2,R1        ;SETUP MODE 3 JUMP
3485 011574 000131          JMP      B(R1)             ;JUMP MODE 3
3486 011576 011630          .WORD      MJU3            ;MODE 3 DESTINATION
3487 011600 023727 001066 000001 MJ2:  CMP      #SEQ,#1    ;TEST FOR CORRECT SEQUENCE
3488 011606 001403          BEQ      MJU1A             ;BRANCH IF GOOD
3489                                ;ERROR! JMP OUT OF SEQUENCE
3490 011610          3#:
3491 011610 104000          ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3492 011612 000271          .WORD      271              ;UNIQUE ERROR NUMBER
3493 011614 001127          .WORD      CPUERR           ;ADDRESS OF ERROR MESSAGE
3494

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3495	011616	005237	001066		MJU1A:	INC	0#SEQ	;	UPDATE SEQUENCE
3496	011622	012701	011532			MOV	#MJU2,R1	;	SETUP MODE 2 DESTINATION
3497	011626	000121				JMP	(R1)+	;	JUMP MODE 2
3498	011630	023727	001066	000003	MJU3:	CMP	0#SEQ,03	;	TEST FOR CORRECT SEQUENCE
3499	011636	001403				BEQ	MJU3A	;	BRANCH IF GOOD
3500								;	ERROR! JMP OUT OF SEQUENCE
3501	011640				4#:				
3502	011640	104000				ERROR		;	ALL ERRORS TO TRAP TO EMT VECTOR
3503	011642	000272				.WORD	272	;	UNIQUE ERROR NUMBER
3504	011644	001127				.WORD	CPUERR	;	ADDRESS OF ERROR MESSAGE
3505									
3506	011646	022701	011600		MJU3A:	CMP	#MJU2+2,R1	;	TEST AUTO-INCREMENT
3507	011652	001403				BEQ	MJU3B	;	BRANCH IF GOOD
3508								;	ERROR! AUTO-INCREMENT FAILED MODE 3
3509	011654				5#:				
3510	011654	104000				ERROR		;	ALL ERRORS TO TRAP TO EMT VECTOR
3511	011656	000273				.WORD	273	;	UNIQUE ERROR NUMBER
3512	011660	001127				.WORD	CPUERR	;	ADDRESS OF ERROR MESSAGE
3513									
3514	011662	005237	001066		MJU3B:	INC	0#SEQ	;	UPDATE SEQUENCER
3515	011666	012701	011746			MOV	#MJU4+2,R1	;	SETUP DESTINATION MODE 4
3516	011672	000141				JMP	-(R1)	;	EXECUTE JUMP MODE 4
3517	011674	000000			MJU5:	HALT			
3518	011676	022701	012012			CMP	#MJU5,R1	;	CHECK AUTO-DECREMENT
3519	011702	001403				BEQ	MJU5A	;	BRANCH IF GOOD AUTO-DEC
3520								;	ERROR! AUTO-DEC FAILED MODE 5
3521	011704				6#:				
3522	011704	104000				ERROR		;	ALL ERRORS TO TRAP TO EMT VECTOR
3523	011706	000274				.WORD	274	;	UNIQUE ERROR NUMBER
3524	011710	001127				.WORD	CPUERR	;	ADDRESS OF ERROR MESSAGE
3525									
3526	011712	023727	001066	000005	MJU5A:	CMP	0#SEQ,05	;	TEST CORRECT SEQUENCE
3527	011720	001403				BEQ	MJU5B	;	BRANCH IF GOOD SEQUENCE
3528								;	ERROR! JMP OUT OF SEQUENCE
3529	011722				7#:				
3530	011722	104000				ERROR		;	ALL ERRORS TO TRAP TO EMT VECTOR
3531	011724	000275				.WORD	275	;	UNIQUE ERROR NUMBER
3532	011726	001127				.WORD	CPUERR	;	ADDRESS OF ERROR MESSAGE
3533									
3534	011730	005237	001066		MJU5B:	INC	0#SEQ	;	UPDATE SEQUENCE COUNT
3535	011734	012701	012007			MOV	#MJU6-5,R1	;	SETUP DESTINATION MODE6
3536	011740	000161	000005			JMP	+5(R1)	;	JUMP MODE 6
3537					8#:				
3538	011744	000240			MJU4:	NOP		;	TEST AUTO-DECR
3539	011746	022701	011744			CMP	#MJU4,R1	;	BRANCH IF GOOD
3540	011752	001403				BEQ	MJU4A	;	ERROR! MODE 4 AUTO-DEC FAILED
3541									
3542	011754				9#:				
3543	011754	104000				ERROR		;	ALL ERRORS TO TRAP TO EMT VECTOR
3544	011756	000276				.WORD	276	;	UNIQUE ERROR NUMBER
3545	011760	001127				.WORD	CPUERR	;	ADDRESS OF ERROR MESSAGE
3546									
3547	011762	023727	001066	000004	MJU4A:	CMP	0#SEQ,04	;	TEST FOR CORRECT SEQUENCE
3548	011770	001403				BEQ	MJU4B	;	BRANCH IF CORRECT SEQUENCE
3549								;	ERROR! INCORRECT JMP SEQUENCE
3550	011772				9#:				

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 KDJ11A.MAC 22-FEB-84 15:12 T120 TEST JMP - ALL MODES

SEQ 0070

```

3551 011772 104000          ERROR          ; ALL ERRORS TO TRAP TO EMT VECTOR
3552 011774 000277          .WORD 277      ; UNIQUE ERROR NUMBER
3553 011776 001127          .WORD CPUERR    ; ADDRESS OF ERROR MESSAGE
3554
3555 012000 005237 001066    MJU4B: INC 8*SEQ ; UPDATE SEQUENCE
3556 012004 012701 012014    MOV  #MJ5+2,R1 ; SETUP MODE 5 POINTER
3557 012010 000151          JMP 8-(R1)      ; EXECUTE MODE 5 JMP
3558
3559 012012 011676          MJ5:  .WORD MJ5+2 ; POINTER MODE 5
3560
3561 012014 022737 000006 001066 MJU6: CMP 6*SEQ ; CHECK FOR CORRECT SEQUENCE
3562 012022 001403          BEQ MJU6A       ; BRANCH IF GOOD
3563                                     ; ERROR! INCORRECT SEQUENCE
3564
3565 012024 104000          104:  ERROR        ; ALL ERRORS TO TRAP TO EMT VECTOR
3566 012026 000300          .WORD 300        ; UNIQUE ERROR NUMBER
3567 012030 001127          .WORD CPUERR     ; ADDRESS OF ERROR MESSAGE
3568
3569 012032 005237 001066    MJU6A: INC 8*SEQ ; UPDATE SEQUENCER
3570 012036 012701 012056    MOV  #MJ7+10,R1 ; SETUP INDEX
3571 012042 000171 177770    JMP 8-10(R1)   ; EXECUTE MODE 7 JUMP
3572 012046 012052          MJ7:  .WORD MJU7  ; POINTER FOR MODE 7
3573 012050 000000          HALT
3574 012052 022737 000007 001066 MJU7: CMP 7*SEQ ; TEST FOR CORRECT SEQUENCE
3575 012060 001403          BEQ MJU7E       ; BRANCH IF GOOD SEQUENCE
3576                                     ; ERROR! TESTING OUT OF SEQUENCE
3577
3578 012062 104000          114:  ERROR        ; ALL ERRORS TO TRAP TO EMT VECTOR
3579 012064 000301          .WORD 301        ; UNIQUE ERROR NUMBER
3580 012066 001127          .WORD CPUERR     ; ADDRESS OF ERROR MESSAGE
3581
3582 012070          MJU7E:
3583
3584
3585
3586 ;*****
3587 ;*TEST 121 TEST THAT PRE-FETCH BUFFER CAN BE OVER WRITTEN
3588 ;*****
3589 012070 005267 166710    TST121: INC $TESTN ; INCREMENT TEST NUMBER
3590 012074 012701 012404    MOV  #128,R1   ; SET UP R1 WITH ADDRESS OF ERROR
3591                                     ; ROUTINE
3592 012100 012717          MOV  (PC)+,(PC)   ; WRITE THE NOP OVER THE JMP INSTRUCTION
3593 012102 000240          .WORD NOP         ; NOP INSTRUCTION
3594 012104 000111          644: .WORD 111    ; JMP (R1)
3595 012106 012717          MOV  (PC)+,(PC)   ; WRITE THE NOP OVER THE JMP INSTRUCTION
3596 012110 000240          .WORD NOP         ; NOP INSTRUCTION
3597 012112 000111          654: .WORD 111    ; JMP (R1)
3598 012114 012717          MOV  (PC)+,(PC)   ; WRITE THE NOP OVER THE JMP INSTRUCTION
3599 012116 000240          .WORD NOP         ; NOP INSTRUCTION
3600 012120 000111          664: .WORD 111    ; JMP (R1)
3601 012122 012717          MOV  (PC)+,(PC)   ; WRITE THE NOP OVER THE JMP INSTRUCTION
3602 012124 000240          .WORD NOP         ; NOP INSTRUCTION
3603 012126 000111          674: .WORD 111    ; JMP (R1)
3604 012130 012717          MOV  (PC)+,(PC)   ; WRITE THE NOP OVER THE JMP INSTRUCTION
3605 012132 000240          .WORD NOP         ; NOP INSTRUCTION
3606 012134 000111          684: .WORD 111    ; JMP (R1)

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3607	012136	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3608	012140	000240	.WORD	NOP	NOP INSTRUCTION
3609	012142	000111	69:	.WORD	111
3610	012144	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3611	012146	000240	.WORD	NOP	NOP INSTRUCTION
3612	012150	000111	70:	.WORD	111
3613	012152	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3614	012154	000240	.WORD	NOP	NOP INSTRUCTION
3615	012156	000111	71:	.WORD	111
3616	012160	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3617	012162	000240	.WORD	NOP	NOP INSTRUCTION
3618	012164	000111	72:	.WORD	111
3619	012166	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3620	012170	000240	.WORD	NOP	NOP INSTRUCTION
3621	012172	000111	73:	.WORD	111
3622	012174	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3623	012176	000240	.WORD	NOP	NOP INSTRUCTION
3624	012200	000111	74:	.WORD	111
3625	012202	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3626	012204	000240	.WORD	NOP	NOP INSTRUCTION
3627	012206	000111	75:	.WORD	111
3628	012210	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3629	012212	000240	.WORD	NOP	NOP INSTRUCTION
3630	012214	000111	76:	.WORD	111
3631	012216	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3632	012220	000240	.WORD	NOP	NOP INSTRUCTION
3633	012222	000111	77:	.WORD	111
3634	012224	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3635	012226	000240	.WORD	NOP	NOP INSTRUCTION
3636	012230	000111	78:	.WORD	111
3637	012232	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3638	012234	000240	.WORD	NOP	NOP INSTRUCTION
3639	012236	000111	79:	.WORD	111
3640	012240	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3641	012242	000240	.WORD	NOP	NOP INSTRUCTION
3642	012244	000111	80:	.WORD	111
3643	012246	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3644	012250	000240	.WORD	NOP	NOP INSTRUCTION
3645	012252	000111	81:	.WORD	111
3646	012254	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3647	012256	000240	.WORD	NOP	NOP INSTRUCTION
3648	012260	000111	82:	.WORD	111
3649	012262	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3650	012264	000240	.WORD	NOP	NOP INSTRUCTION
3651	012266	000111	83:	.WORD	111
3652	012270	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3653	012272	000240	.WORD	NOP	NOP INSTRUCTION
3654	012274	000111	84:	.WORD	111
3655	012276	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3656	012300	000240	.WORD	NOP	NOP INSTRUCTION
3657	012302	000111	85:	.WORD	111
3658	012304	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3659	012306	000240	.WORD	NOP	NOP INSTRUCTION
3660	012310	000111	86:	.WORD	111
3661	012312	012717	MOV	(PC)+,(PC)	WRITE THE NOP OVER THE JMP INSTRUCTION
3662	012314	000240	.WORD	NOP	NOP INSTRUCTION

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SEQ 0072

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3663 012316 000111      87#: .WORD 111      ; JMP (R1)
3664 012320 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3665 012322 000240      .WORD NOP      ; NOP INSTRUCTION
3666 012324 000111      88#: .WORD 111      ; JMP (R1)
3667 012326 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3668 012330 000240      .WORD NOP      ; NOP INSTRUCTION
3669 012332 000111      89#: .WORD 111      ; JMP (R1)
3670 012334 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3671 012336 000240      .WORD NOP      ; NOP INSTRUCTION
3672 012340 000111      90#: .WORD 111      ; JMP (R1)
3673 012342 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3674 012344 000240      .WORD NOP      ; NOP INSTRUCTION
3675 012346 000111      91#: .WORD 111      ; JMP (R1)
3676 012350 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3677 012352 000240      .WORD NOP      ; NOP INSTRUCTION
3678 012354 000111      92#: .WORD 111      ; JMP (R1)
3679 012356 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3680 012360 000240      .WORD NOP      ; NOP INSTRUCTION
3681 012362 000111      93#: .WORD 111      ; JMP (R1)
3682 012364 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3683 012366 000240      .WORD NOP      ; NOP INSTRUCTION
3684 012370 000111      94#: .WORD 111      ; JMP (R1)
3685 012372 012717      MOV (PC)+,(PC) ; WRITE THE NOP OVER THE JMP INSTRUCTION
3686 012374 000240      .WORD NOP      ; NOP INSTRUCTION
3687 012376 000111      95#: .WORD 111      ; JMP (R1)
3688 012400 000137 012412 JMP B#129# ; JUMP OVER ERROR CALL
3689 012404      128#:      ; ERROR! PRE-FETCH BUFFER WAS NOT
3690      ; OVER WRITTEN
3691 012404 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
3692 012406 000302      .WORD 302      ; UNIQUE ERROR NUMBER
3693 012410 001127      .WORD CPUERR ; ADDRESS OF ERROR MESSAGE
3694      ;
3695      ; NOW RESTORE THE OVER WRITTEN JMP INSTRUCTIONS FOR THE NEXT PASS.
3696      ;
3697 012412 012702 000040 129#: MOV #32,R2      ; SET UP R2 AS COUNTER
3698 012416 012703 012104      MOV #64,R3      ; SET UP R3 AS POINTER
3699 012422 012713 000111 130#: MOV #111,(R3) ; RESTORE OVER WRITTEN JUMPS
3700 012426 062703 000006      ADD #6,R3      ; POINT TO NEXT OVER WRITTEN ADDR.
3701 012432 077205      SOB R2,130# ; DO UNTIL R2=0
3702      ;
3703      ;
3704 012434      HJP:
3705      ; *****
3706      ; *TEST 122 TEST JMP MODES 17,27,37,67,77
3707      ; *****
3708 012434      TST122:
3709 012434 005267 166344      INC #TESTN      ; INCREMENT TEST NUMBER
3710 012440 012737 000000 001066      MOV #0,B#SEQ ; SETUP TEST SEQUENCER
3711 012446 000117      JMP (R7)      ; JUMP MODE 17(SHOULD BE IN-LINE)
3712      ;
3713 012450 005737 001066      HJP17: TST B#SEQ ; CHECK SEQUENCE
3714 012454 001403      BEQ 2#      ; BRANCH IF GOOD
3715      ; ERROR! BAD JUMP
3716 012456      1#:
3717 012456 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
3718 012460 000303      .WORD 303      ; UNIQUE ERROR NUMBER

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SEQ 0073

3719	012462	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
3720							
3721	012464	005237	001066	24:	INC	B#SEQ	; UPDATE SEQUENCE NUMBER
3722	012470	000127	000401		JMP	#401	; JUMP MODE 27
3723							; (THE #401=BR UPDATED PC+2)
3724							
3725	012474	000000			HALT		
3726							
3727	012476	023727	001066	000001	MJP27:	CMP	B#SEQ, #1
3728	012504	001403			BEQ	MJP27A	; CHECK IF CORRECT SEQUENCE
3729							; BRANCH IF IN SEQUENCE
3730	012506			14:			; ERROR! TEST OUT OF SEQUENCE
3731	012506	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
3732	012510	000304			.WORD	304	; UNIQUE ERROR NUMBER
3733	012512	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
3734							
3735	012514	005237	001066		MJP27A:	INC	B#SEQ
3736	012520	000137	012576		JMP	B#MJP37	; UPDATE SEQUENCER
3737	012524	023727	001066	000003	MJP67:	CMP	B#SEQ, #3
3738	012532	001403			BEQ	MJP67A	; JUMP MODE 37
3739							; CHECK FOR CORRECT SEQUENCE
3740	012534			24:			; BRANCH IF IN SEQUENCE
3741	012534	104000			ERROR		; ERROR! TEST OUT OF SEQUENCE
3742	012536	000305			.WORD	305	; ALL ERRORS TO TRAP TO EMT VECTOR
3743	012540	001127			.WORD	CPUERR	; UNIQUE ERROR NUMBER
3744							; ADDRESS OF ERROR MESSAGE
3745	012542	005237	001066		MJP67A:	INC	B#SEQ
3746	012546	000257			CCC		; UPDATE SEQUENCER
3747	012550	000177	000002		JMP	B#MJP67B	; INSURE ZBIT=0
3748							; JUMP MODE 7
3749	012554	000000			HALT		
3750							
3751	012556	012560			MJP67B:	.WORD	MJP77
3752							
3753	012560	023727	001066	000004	MJP77:	CMP	B#SEQ, #4
3754	012566	001416			BEQ	MJP77E	; TEST FOR CORRECT SEQUENCE
3755							; BRANCH IF IN SEQUENCE
3756	012570			34:			; ERROR! TEST OUT OF SEQUENCE
3757	012570	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
3758	012572	000306			.WORD	306	; UNIQUE ERROR NUMBER
3759	012574	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
3760							
3761	012576	023727	001066	000002	MJP37:	CMP	B#SEQ, #2
3762	012604	001403			BEQ	MJP37A	; TEST FOR CORRECT SEQUENCE
3763							; BRANCH IF IN SEQUENCE
3764	012606			44:			; ERROR! TEST OUT OF SEQUENCE
3765	012606	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
3766	012610	000307			.WORD	307	; UNIQUE ERROR NUMBER
3767	012612	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
3768							
3769	012614	005237	001066		MJP37A:	INC	B#SEQ
3770	012620	000167	177700		JMP	MJP67	; UPDATE SEQUENCER
3771							; JUMP MODE 6
3772							
3773	012624				MJP77E:		
3774							

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3775      ;
3776      ;
3777      012624      MJSR:
3778      ;*****
3779      ;*TEST 123      TEST JSR ALL MODES
3780      ;*****
3781      012624      TST123:
3782      012624      005267      166154      INC      #TESTN      ; INCREMENT TEST NUMBER
3783      012630      010637      001070      MOV      R6,#SPS      ; SAVE STACK POINTER LOCATION
3784      012634      010637      001072      MOV      R6,#SPSJ      ;
3785      012640      162737      000002      001072      SUB      #2,#SPSJ      ; SPSJ = R6 AFTER DECRIMENT
3786      012646      012737      000001      001066      MOV      #1,#SEQ      ; SETUP SEQUENCE COUNTER
3787      012654      012701      012760      MOV      #MJSR1,R1      ; SETUP INITIAL JUMP IN MODE 1
3788      012660      005004      CLR      R4      ;
3789      012662      005104      COM      R4      ; R4=-1 TO BE SAVED ON STACK
3790      012664      004411      JSR      R4,(R1)      ; JSR MODE 1
3791      ;
3792      012664      022737      000002      001066      MJSR2:  CMP      #2,#SEQ      ; TEST FOR CORRECT SEQUENCE
3793      012674      001403      BEQ      MJSR2A      ; BRANCH IF GOOD
3794      ;
3795      012676      54:      ; ERROR! MODE 2 JUMPED TO OUT OF SEQUENCE
3796      012676      104000      ;
3797      012700      000310      ; ALL ERRORS TO TRAP TO EMT VECTOR
3798      012702      001127      .WORD      310      ; UNIQUE ERROR NUMBER
3799      ; CPUERR      ; ADDRESS OF ERROR MESSAGE
3800      012704      023706      001072      MJSR2A:  CMP      #SPSJ,R6      ; VERIFY STACK DECRIMENT
3801      012710      001006      BNE      64      ; BRANCH IF STACK INCORRECT
3802      012712      021627      125252      CMP      (R6),#125252      ; VERIFY CONTENTS OF STACK
3803      012716      001003      BNE      64      ; BRANCH IF DATA ON STACK INCORRECT
3804      012720      022704      013050      CMP      #MJSR4,R4      ; SEE IF CORRECT RETURN ADDRESS
3805      012724      001403      BEQ      MJSR2B      ; BRANCH IF GOOD
3806      ;
3807      012726      64:      ; ERROR! JSR MODE 2 FAILED
3808      012726      104000      ;
3809      012730      000311      ; ALL ERRORS TO TRAP TO EMT VECTOR
3810      012732      001127      .WORD      311      ; UNIQUE ERROR NUMBER
3811      ; CPUERR      ; ADDRESS OF ERROR MESSAGE
3812      012734      005237      001066      MJSR2B:  INC      #SEQ      ; UPDATE SEQUENCE COUNTER
3813      012740      013706      001070      MOV      #SPS,R6      ; RELOAD STACK POINTER
3814      012744      012701      012756      MOV      #MJSR4,R1      ; SETUP JSR MODE 3
3815      012750      005004      CLR      R4      ; DIFFERENT DATA TO R4
3816      012752      004431      JSR      R4,(R1)      ; JSR MODE 3
3817      012754      000000      HALT      ;
3818      012756      013144      MJSR4:  .WORD      MJSR3      ; LITERAL FOR JUMP MODE 3
3819      ;
3820      012760      022737      000001      001066      MJSR1:  CMP      #1,#SEQ      ; TEST FOR CORRECT SEQUENCE
3821      012766      001403      BEQ      MJSR1A      ; BRANCH IF GOOD
3822      ;
3823      012770      74:      ; ERROR! MODE 1 JUMPED TO OUT OF SEQUENCE
3824      012770      104000      ;
3825      012772      000312      ; ALL ERRORS TO TRAP TO EMT VECTOR
3826      012774      001127      .WORD      312      ; UNIQUE ERROR NUMBER
3827      ; CPUERR      ; ADDRESS OF ERROR MESSAGE
3828      012776      023706      001072      MJSR1A:  CMP      #SPSJ,R6      ; VERIFY STACK DECRIMENT
3829      013002      001006      BNE      74      ; BRANCH IF STACK INCORRECT
3830      013004      021627      177777      CMP      (R6),#-1      ; VERIFY CONTENT OF STACK

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Address	Hex	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418
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 KDJ11A.MAC 22-FEB-84 15:12 T123 TEST JSR ALL MODES

SEQ 0077

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3943 013362 001003      BNE      164      ;BRANCH IF DATA ON STACK INCORRECT
3944 013364 022704 013140  CMP      @MJSRB-2,R4 ;SEE IF CORRECT RETURN ADDRESS
3945 013370 001403      BEQ      MJSR5B ;BRANCH IF GOOD
3946                                     ;ERROR! JSR MODE 5 FAILED
3947 013372      164:
3948 013372 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3949 013374 000323      .WORD     323 ;UNIQUE ERROR NUMBER
3950 013376 001127      .WORD     CPUERR ;ADDRESS OF ERROR MESSAGE
3951
3952 013400 005237 001066  MJSR5B: INC      @SEQ      ;UPDATE SEQUENCE COUNTER
3953 013404 013706 001070  MOV      @SPS,R6 ;RELOAD STACK POINTER
3954 013410 012704 123456  MOV      @123456,R4 ;SETUP DATA IN R4
3955 013414 012701 013246  MOV      @MJSR6+10,R1 ;SETUP JSR VECTOR
3956 013420 004461 177770  JSR      R4,-10(R1) ;JUMP MODE 6
3957
3958
3959 013424 022737 000007 001066 MJSR7: CMP      #7,@SEQ ;TEST FOR CORRECT SEQUENCE
3960 013432 001403      BEQ      MJSR7A ;BRANCH IF GOOD
3961                                     ;ERROR! MODE 7 JUMPED TO OUT OF SEQUENCE
3962 013434      174:
3963 013434 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3964 013436 000324      .WORD     324 ;UNIQUE ERROR NUMBER
3965 013440 001127      .WORD     CPUERR ;ADDRESS OF ERROR MESSAGE
3966
3967 013442 023706 001072  MJSR7A: CMP      @SPSJ,R6 ;VERIFY STACK DECREMENT
3968 013446 001006      BNE      184 ;BRANCH IF STACK INCORRECT
3969 013450 021627 177773  CMP      (R6),@-5 ;VERIFY CONTENTS OF STACK
3970 013454 001003      BNE      184 ;BRANCH IF DATA ON STACK INCORRECT
3971 013456 022704 013330  CMP      @MJSR5-2,R4 ;SEE IF CORRECT RETURN ADDRESS
3972 013462 001403      BEQ      MJSR7E ;BRANCH IF GOOD
3973                                     ;ERROR! JSR MODE 7 FAILED
3974      184:
3975 013464 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
3976 013466 000325      .WORD     325 ;UNIQUE ERROR NUMBER
3977 013470 001127      .WORD     CPUERR ;ADDRESS OF ERROR MESSAGE
3978
3979 013472      MJSR7E:
3980 013472 013706 001070  MOV      @SPS,R6 ;REPLACE STACK
3981
3982
3983 013476      MJRA:
3984      ;*****
3985      ;*TEST 124 TEST JSR MODES 27, 37, 67, 77
3986      ;*****
3987 013476      TST124:
3988 013476 005267 165302      INC      #TESTN ;INCREMENT TEST NUMBER
3989 013502 012737 000001 001066 MOV      @1,@SEQ ;SETUP SEQUENCER
3990 013510 010637 001070      MOV      R6,@SPS ;SAVE STACK ADDRESS
3991 013514 010637 001072      MOV      R6,@SPSJ ;SAVE STACK DECREMENT ADDRESS
3992 013520 162737 000002 001072 SUB      @2,@SPSJ ;
3993 013526 012704 177777      MOV      #-1,R4 ;SETUP R4 DATA
3994 013532 004427 000240      JSR      R4,@240 ;EXECUTE A JSR MODE 27
3995
3996 013536 022737 000001 001066 MJR27: CMP      @1,@SEQ ;VERIFY CORRECT TEST SEQUENCE
3997 013544 001011      BNE      14 ;INCORRECT TEST SEQUENCE
3998 013546 023706 001072      CMP      @SPSJ,R6 ;VERIFY STACK POINTER

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 KDJ11A.MAC 22-FEB-84 15:12 T124 TEST JSR MODES 27, 37, 67, 77

SEQ 0078

3999	013552	001006		BNE	1*		
4000	013554	021627	177777	CMP	(R6),*-1		;VERIFY R4 GOT LOADED ON THE STACK
4001	013560	001003		BNE	1*		;BRANCH IF INCORRECT STACK CONTENTS
4002	013562	020427	013536	CMP	R4,#MJR27		;VERIFY CORRECT RETURN ADDRESS
4003	013566	001403		BEQ	MJR27A		;BRANCH IF GOOD RETURN ADDRESS ON STACK
4004							;ERROR! MODE 27 FAILED
4005	013570			1*:			
4006	013570	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
4007	013572	000326		.WORD	326		;UNIQUE ERROR NUMBER
4008	013574	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
4009							
4010	013576	005237	001066	MJR27A: INC	@SEQ		;UPDATE SEQUENCER
4011	013602	012704	152525	MOV	@152525,R4		;SETUP R4 TEST DATA
4012	013606	013706	001070	MOV	@SPS,R6		;RESET STACK POINTER
4013	013612	004437	013704	JSR	R4,@MJR37		;JSR MODE 37
4014	013616	000000		MJR27B: HALT			
4015							
4016	013620	023727	001066	MJR67: CMP	@SEQ,@3		;VERIFY TEST SEQUENCE
4017	013626	001011		BNE	2*		;INCORRECT TEST SEQUENCE
4018	013630	023706	001072	CMP	@SPSJ,R6		;VERIFY STACK DECRIMENT
4019	013634	001006		BNE	2*		;INCORRECT STACK DECRIMENT
4020	013636	021627	000125	CMP	(R6),@125		;VERIFY STACK WAS LOADED
4021	013642	001003		BNE	2*		
4022	013644	020427	013764	CMP	R4,@MJR77		;VERIFY RETURN ADDRESS
4023	013650	001403		BEQ	MJR67A		;BRANCH IF GOOD
4024							;ERROR! MODE 67 FAILED
4025	013652			2*:			
4026	013652	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
4027	013654	000327		.WORD	327		;UNIQUE ERROR NUMBER
4028	013656	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
4029							
4030	013660	005237	001066	MJR67A: INC	@SEQ		;UPDATE SEQUENCER
4031	013664	013706	001070	MOV	@SPS,R6		;RESET STACK
4032	013670	012704	000001	MOV	@1,R4		;SETUP R4 DATA
4033	013674	004477	000002	JSR	R4,@MJR6B		;JSR MODE 77
4034	013700	000000		MJR6A: HALT			
4035	013702	013764		MJR6B: .WORD	MJR77		;DATA FOR MODE 77 JUMP
4036							
4037	013704	023727	001066	MJR37: CMP	@SEQ,@2		;VERIFY TEST SEQUENCE
4038	013712	001011		BNE	2*		;INCORRECT TEST SEQUENCE
4039	013714	023706	001072	CMP	@SPSJ,R6		;VERIFY STACK DECRIMENT
4040	013720	001006		BNE	2*		;INCORRECT STACK DECRIMENT
4041	013722	021627	152525	CMP	(R6),@152525		;VERIFY STACK WAS LOADED
4042	013726	001003		BNE	2*		
4043	013730	020427	013616	CMP	R4,@MJR27B		;VERIFY RETURN ADDRESS
4044	013734	001403		BEQ	MJR37A		;BRANCH IF GOOD
4045							;ERROR! MODE 37 FAILED
4046	013736			2*:			
4047	013736	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
4048	013740	000330		.WORD	330		;UNIQUE ERROR NUMBER
4049	013742	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
4050							
4051	013744	005237	001066	MJR37A: INC	@SEQ		;UPDATE SEQUENCER
4052	013750	013706	001070	MOV	@SPS,R6		;RELOAD STACK
4053	013754	012704	000125	MOV	@125,R4		;SETUP R4 TEST DATA
4054	013760	004467	177634	JSR	R4,MJR67		;JSR MODE 6

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 KDJ11A.MAC 22-FEB-84 15:12 1124 TEST JSR MODES 27, 37, 67, 77

SEQ 0079

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4055
4056 013764 023727 001066 000004 MJR77: CMP      @SEQ,@4      ;VERIFY TEST SEQUENCE
4057 013772 001011                BNE      21              ;INCORRECT TEST SEQUENCE
4058 013774 023706 001072                CMP      @SPSJ,R6      ;VERIFY STACK DECREMENT
4059 014000 001006                BNE      21              ;INCORRECT STACK DECREMENT
4060 014002 021627 000001                CMP      (R6),@1      ;VERIFY STACK WAS LOADED
4061 014006 001003                BNE      21
4062 014010 020427 013700                CMP      R4,@MJR6A      ;VERIFY RETURN ADDRESS
4063 014014 001403                BEQ      MJR77A          ;BRANCH IF GOOD
4064
4065 014016                21:
4066 014016 104000                ERROR
4067 014020 000331                .WORD    331
4068 014022 001127                .WORD    CPUERR
4069
4070 014024                MJR77A:
4071
4072 014024 013706 001070                MOV      @SPS,R6      ;RESET STACK
4073
4074
4075 014030                I
4076                RTS:
4077                ;*****
4078                ;*TEST 125      TEST RTS AND RTS R6
4079                ;*****
4080 014030 005267 164750                TST125:
4081 014034 012706 001000                INC      @TESTN      ;INCREMENT TEST NUMBER
4082 014040 012746 123456                MOV      @STBOT,R6    ;INSURE VALID STACK
4083 014044 012703 014060                MOV      @123456,-(R6) ;SETUP TEST REGISTER
4084 014050 000203                MOV      @RTS1,R3     ;SETUP TEST PC
4085 014052 104000                RTS      R3          ;**TEST INSTRUCTION
4086 014054 000332                ERROR
4087 014056 001127                .WORD    332
4088
4089                .WORD    CPUERR
4090 014060 022703 123456                RTS1:
4091 014064 001403                CMP      @123456,R3
4092                BEQ      RTS6
4093 014066 104000                ERROR
4094 014070 000333                .WORD    333
4095 014072 001127                .WORD    CPUERR
4096
4097                ;INCORRECT PC ON RTS
4098
4099                ;THIS TEST CHECKS AN UN-TESTED PLA TERM
4100 014074 010601 014114                RTS6:
4101 014076 012703                MOV      R6,R1
4102 014102 010506                MOV      @11,R5
4103 014104 000206                MOV      R5,R6
4104                RTS      R6
4105 014106 104000                ERROR
4106 014110 000334                .WORD    334
4107 014112 001127                .WORD    CPUERR
4108 014114 021506                11:
4109 014116 001403                CMP      (R5),R6
4110                BEQ      RTSE

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 RDJ11A.MAC 22-FEB-84 15:12 T125 TEST RTS AND RTS R6

SEQ 0080

4111	014120	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4112	014122	000335			.WORD	335		UNIQUE ERROR NUMBER
4113	014124	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4114	014126	010106			RTSE: MOV	R1,R6		RESTORE STACK
4115								
4116	014130				TSMUO:			
4117					*****			
4118					TEST 126	SETUP AND TEST KERNEL, SUPERVISOR AND USER STACKS		
4119					*****			
4120	014130				TST126:			
4121	014130	005267	164650		INC	\$TESTN		INCREMENT TEST NUMBER
4122	014134	012737	040000	177776	MOV	#40000,0#177776		SET PS TO SUP MODE
4123	014142	012706	177777		MOV	#177777,R6		INIT SUP STACK TO ALL ONES
4124	014146	022706	177777		CMF	#177777,R6		ARE ALL BITS SET
4125	014152	001403			BEQ	1#		YES GO ON
4126								NO GO TO ERROR
4127	014154	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4128	014156	000336			.WORD	336		UNIQUE ERROR NUMBER
4129	014160	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4130								
4131	014162	005006			1#:	CLR	R6	SET SUP STACK TO ALL ZEROES
4132	014164	022706	000000		CMF	#0,R6		ARE ALL BITS CLEARED
4133	014170	001403			BEQ	2#		YES GO ON
4134								NO GO TO ERROR
4135	014172	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4136	014174	000337			.WORD	337		UNIQUE ERROR NUMBER
4137	014176	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4138								
4139	014200	012706	125252		2#:	MOV	#125252,R6	SET SUP STACK TO ALTERNATING PATTERN
4140	014204	022706	125252		CMF	#125252,R6		IS SUP SP CORRECT
4141	014210	001403			BEQ	3#		YES GO ON
4142								NO GO TO ERROR
4143	014212	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4144	014214	000340			.WORD	340		UNIQUE ERROR NUMBER
4145	014216	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4146								
4147	014220	012706	052525		3#:	MOV	#52525,R6	SET SUP STACK TO ALTERNATING PATTERN
4148	014224	022706	052525		CMF	#52525,R6		IS SUP SP CORRECT
4149	014230	001403			BEQ	4#		YES GO ON
4150								NO GO TO ERROR
4151	014232	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4152	014234	000341			.WORD	341		UNIQUE ERROR NUMBER
4153	014236	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4154								
4155	014240	012706	000700		4#:	MOV	#700,R6	SETUP SUP SP
4156	014244	012737	140000	177776	MOV	#140000,0#177776		SET PS TO USER MODE
4157	014252	012706	177777		MOV	#177777,R6		INIT USER STACK TO ALL ONES
4158	014256	022706	177777		CMF	#177777,R6		ARE ALL BITS SET
4159	014262	001403			BEQ	5#		YES GO ON
4160								NO GO TO ERROR
4161	014264	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4162	014266	000342			.WORD	342		UNIQUE ERROR NUMBER
4163	014270	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4164								
4165	014272	005006			5#:	CLR	R6	SET USER STACK TO ALL ZEROES
4166	014274	022706	000000		CMF	#0,R6		ARE ALL BITS CLEARED

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 RDJ11A.MAC 22-FEB-84 15:12 T126 SETUP AND TEST KERNEL, SUPERVISOR AND USER STACKS

SEQ 0081

4167	014300	001403			BEQ	6:		YES GO ON
4168								NO GO TO ERROR
4169	014302	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4170	014304	000343			.WORD	343		UNIQUE ERROR NUMBER
4171	014306	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4172								
4173	014310	012706	125252	6:	MOV	#125252,R6		SET USER STACK TO ALTERNATING PATTERN
4174	014314	022706	125252		CMP	#125252,R6		IS USER SP CORRECT
4175	014320	001403			BEQ	7:		YES GO ON
4176								NO GO TO ERROR
4177	014322	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4178	014324	000344			.WORD	344		UNIQUE ERROR NUMBER
4179	014326	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4180								
4181	014330	012706	052525	7:	MOV	#52525,R6		SET USER STACK TO ALTERNATING PATTERN
4182	014334	022706	052525		CMP	#52525,R6		IS USER SP CORRECT
4183	014340	001403			BEQ	8:		YES GO ON
4184								NO GO TO ERROR
4185	014342	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4186	014344	000345			.WORD	345		UNIQUE ERROR NUMBER
4187	014346	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4188								
4189	014350	012706	000600	8:	MOV	#600,R6		SETUP USER SP
4190	014354	005037	177776		CLR	#177776		SET PS TO KER MODE
4191	014360	012706	001000		MOV	#STBOT,R6		SETUP KERNEL SP
4192	014364	005037	000700		CLR	#700		CLEAR FIRST WORDS OF SUP, KER, AND USE STACKS
4193	014370	005037	000600		CLR	#600		
4194	014374	005037	001000		CLR	#STBOT		
4195	014400	004767	000070		JSR	PC,CHECK		TEST KER, SUP, AND USE STACKS
4196	014404	012737	040000	177776	MOV	#40000,#177776		SET PSW TO SUP MODE
4197	014412	022706	000700		CMP	#700,R6		IS SUP SP CORRECT
4198	014416	001403			BEQ	1:		YES GO ON
4199								NO GO TO ERROR
4200	014420	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4201	014422	000346			.WORD	346		UNIQUE ERROR NUMBER
4202	014424	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4203								
4204	014426	012737	140000	177776	MOV	#140000,#177776		SET PSW TO USE MODE
4205	014434	022706	000500		CMP	#600,R6		IS USE SP CORRECT
4206	014440	001403			BEQ	2:		YES GO ON
4207								NO GO TO ERROR
4208	014442	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4209	014444	000347			.WORD	347		UNIQUE ERROR NUMBER
4210	014446	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4211								
4212	014450	005037	177776	2:	CLR	#177776		SET PSW TO KER MODE
4213	014454	022706	001000		CMP	#STBOT,R6		IS KER SP CORRECT
4214	014460	001403			BEQ	3:		YES GO ON
4215								NO GO TO ERROR
4216	014462	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4217	014464	000350			.WORD	350		UNIQUE ERROR NUMBER
4218	014466	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4219								
4220	014470			3:				
4221								
4222	014470	000167	000252		JMP	MTS0		

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 KDJ11A.MAC 22-FEB-84 15:12 T126 SETUP AND TEST KERNEL, SUPERVISOR AND USER STACKS

SEQ 0082

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4223
4224
4225
4226 014474 012737 040000 177776 CHECK: MOV #40000,B#177776 ;SET PSW TO SUP MODE
4227 014502 004767 000060 JSR PC,CHECK1 ; TEST SUP, KER, AND USE STACKS
4228 014506 022716 000000 RET2: CMP #0,(SP) ;IS SUP STACK CLEARED
4229 014512 001403 BEQ 1# ;YES GO ON
4230 ;NO GO TO ERROR
4231 014514 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
4232 014516 000351 .WORD 351 ;UNIQUE ERROR NUMBER
4233 014520 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
4234
4235 014522 012737 140000 177776 1#: MOV #140000,B#177776 ;SET PSW TO USE MODE
4236 014530 022716 000000 CMP #0,(SP) ;IS USE STACK CLEARED
4237 014534 001403 BEQ 2# ;YES GO ON
4238 ;NO GO TO ERROR
4239 014536 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
4240 014540 000352 .WORD 352 ;UNIQUE ERROR NUMBER
4241 014542 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
4242
4243 014544 005037 177776 2#: CLR B#177776 ;SET PSW TO KER MODE
4244 014550 022716 014404 CMP #RET1,(SP) ;DOES KER STACK HAVE CORRECT DATA
4245 014554 001403 BEQ 3# ;YES GO ON
4246 ;NO GO TO ERROR
4247 014556 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
4248 014560 000353 .WORD 353 ;UNIQUE ERROR NUMBER
4249 014562 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
4250
4251 014564 000207 3#: RTS PC ;RETURN
4252
4253 ;ROUTINE TO CHECK STACKS AFTER ONE RTS
4254
4255 014566 012737 140000 177776 CHECK1: MOV #140000,B#177776 ;SET PSW TO USE MODE
4256 014574 004767 000060 JSR PC,CHECK2 ; TEST KER, SUP, AND USE STACKS
4257 014600 022716 000000 RET3: CMP #0,(SP) ;IS USE STACK CLEARED
4258 014604 001403 BEQ 1# ;YES GO ON
4259 ;NO GO TO ERROR
4260 014606 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
4261 014610 000354 .WORD 354 ;UNIQUE ERROR NUMBER
4262 014612 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
4263
4264 014614 005037 177776 1#: CLR B#177776 ;SET PSW TO KER MODE
4265 014620 022716 014404 CMP #RET1,(SP) ;IS KER STACK CORRECT
4266 014624 001403 BEQ 2# ;YES GO ON
4267 ;NO GO TO ERROR
4268 014626 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
4269 014630 000355 .WORD 355 ;UNIQUE ERROR NUMBER
4270 014632 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
4271
4272 014634 012737 040000 177776 2#: MOV #40000,B#177776 ;SET PSW TO SUP MODE
4273 014642 022716 014506 CMP #RET2,(SP) ;IS SUP STACK CORRECT
4274 014646 001403 BEQ 3# ;YES GO ON
4275 ;NO GO TO ERROR
4276 014650 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
4277 014652 000356 .WORD 356 ;UNIQUE ERROR NUMBER
4278 014654 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE

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 KDJ11A.MAC 22-FEB-84 15:12 T126 SETUP AND TEST KERNEL, SUPERVISOR AND USER STACKS

SEQ 0083

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4279
4280 014656 000207      3:  RTS      PC      ;RETURN
4281
4282      ;ROUTINE TO CHECK STACKS AFTER ZERO RTS
4283
4284 014660 022716 014600  CHECK2: CMP      @RET3,(SP)      ;IS USE STACK CORRECT
4285 014664 001403      BEQ      1:      ;YES GO ON
4286
4287 014666 104000      ERROR      ;NO GO TO ERROR
4288 014670 000357      .WORD      357      ;ALL ERRORS TO TRAP TO EMT VECTOR
4289 014672 001127      .WORD      CPUERR      ;UNIQUE ERROR NUMBER
4290
4291 014674 012737 040000 177776 1:  MOV      @40000,B@177776      ;SET PSW TO SUP MODE
4292 014702 022716 014506      CMP      @RET2,(SP)      ;IS SUP STACK CORRECT
4293 014706 001403      BEQ      2:      ;YES GO ON
4294
4295 014710 104000      ERROR      ;NO GO TO ERROR
4296 014712 000360      .WORD      360      ;ALL ERRORS TO TRAP TO EMT VECTOR
4297 014714 001127      .WORD      CPUERR      ;UNIQUE ERROR NUMBER
4298
4299 014716 005037 177776      2:  CLR      B@177776      ;SET PSW TO KER MODE
4300 014722 022716 014404      CMP      @RET1,(SP)      ;IS KER STACK CORRECT
4301 014726 001403      BEQ      3:      ;YES GO ON
4302
4303 014730 104000      ERROR      ;NO GO TO ERROR
4304 014732 000361      .WORD      361      ;ALL ERRORS TO TRAP TO EMT VECTOR
4305 014734 001127      .WORD      CPUERR      ;UNIQUE ERROR NUMBER
4306
4307 014736 012737 140000 177776 3:  MOV      @140000,B@177776      ;SET PSW TO USE MODE
4308 014744 000207      RTS      PC      ;RETURN
4309
4310 014746      ;
4311 014746      ;M.TSO:
4312      ;MMVCC:
4313      ;*****
4314      ;*TEST 127      TEST MOV CONDITION CODES - **0-
4315      ;*****
4316 014746 005267 164032      TST127: INC      @TESTN      ;INCREMENT TEST NUMBER
4317 014752 000277      SCC
4318 014754 000244      CLZ
4319 014756 012704 000000      MOV      @0,R4      ;CC=1011
4320 014762 100403      BMI      1:      ;CC=0101, R4=0
4321 014764 102402      BVS      1:      ;ERROR IF N FLAG
4322 014766 103001      BCC      1:      ;ERROR IF V FLAG SET
4323 014770 001403      BEQ      2:      ;ERROR IF C FLAG CLEAR
4324
4325 014772      1:  ERROR      ;SKIP IF Z FLAG SET
4326 014772 104000      .WORD      362      ;CC SHOULD=0101
4327 014774 000362      .WORD      CPUERR      ;ALL ERRORS TO TRAP TO EMT VECTOR
4328 014776 001127      .WORD      CPUERR      ;UNIQUE ERROR NUMBER
4329
4330 015000 000277      2:  SCC
4331 015002 000251      .WORD      251      ;CC=0110
4332 015004 012704 100000      MOV      @100000,R4      ;R4=100000, CC=1000
4333 015010 001403      BEQ      3:      ;ERROR IF Z SET
4334 015012 102402      BVS      3:      ;ERROR IF V SET

```

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 KDJ11A.MAC 22-FEB-84 15:12 T127 TEST MOV CONDITION CODES - **0-

SEQ 0084

```

4335 015014 103401          BCS      3#          ;ERROR IF C SET
4336 015016 100403          BMI      4#          ;EXIT IF N SET
4337                                     ;ERROR! CC SHOULD= 1000
4338 015020          3#:
4339 015020 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
4340 015022 000363          .WORD      363      ;UNIQUE ERROR NUMBER
4341 015024 001127          .WORD      CPUERR   ;ADDRESS OF ERROR MESSAGE
4342
4343 015026          4#:
4344
4345
4346 015026          MBTCC:
4347          ;*****
4348          ;*TEST 130      TEST BIT CONDITION CODES - **0-
4349          ;*****
4350          TST130:
4351 015026 005267 163752          INC      $TESTN          ;INCREMENT TEST NUMBER
4352 015032 005004          CLR      R4
4353 015034 005104          COM      R4
4354 015036 000277          SCC
4355 015040 000244          CLZ          ;CC=1011
4356 015042 032704 000000          BIT      #0,R4          ;CC=0101
4357 015046 100403          BMI      1#          ;ERROR IF N FLAG
4358 015050 102402          BVS      1#          ;ERROR IF V FLAG SET
4359 015052 103001          BCC      1#          ;ERROR IF C FLAG CLEAR
4360 015054 001403          BEQ      2#          ;SKIP IF Z FLAG SET
4361                                     ;ERROR! CC SHOULD=0101
4362 015056          1#:
4363 015056 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
4364 015060 000364          .WORD      364      ;UNIQUE ERROR NUMBER
4365 015062 001127          .WORD      CPUERR   ;ADDRESS OF ERROR MESSAGE
4366
4367 015064 000277          2#:          SCC
4368 015066 000251          .WORD      251          ;CC=0110
4369 015070 032704 100000          BIT      #100000,R4      ;CC=1000
4370 015074 001403          BEQ      3#          ;ERROR IF Z SET
4371 015076 102402          BVS      3#          ;ERROR IF V SET
4372 015100 103401          BCS      3#          ;ERROR IF C SET
4373 015102 100403          BMI      4#          ;EXIT IF N SET
4374                                     ;ERROR! CC SHOULD= 1000
4375 015104          3#:
4376 015104 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
4377 015106 000365          .WORD      365      ;UNIQUE ERROR NUMBER
4378 015110 001127          .WORD      CPUERR   ;ADDRESS OF ERROR MESSAGE
4379
4380 015112          4#:
4381
4382
4383 015112          MBCCC:
4384          ;*****
4385          ;*TEST 131      TEST BIC CONDITION CODES - **0-
4386          ;*****
4387          TST131:
4388 015112 005267 163666          INC      $TESTN          ;INCREMENT TEST NUMBER
4389 015116 005004          CLR      R4
4390 015120 005104          COM      R4
4391                                     ;R4=-1

```

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 KDJ11A.MAC 22-FEB-84 15:12 T131 TEST BIC CONDITION CODES - **0-

SEQ 0085

```

4391 015122 000277      SCC
4392 015124 000244      CLZ
4393 015126 042704 177777 BIC      #177777,R4
4394 015132 100403      BMT      1#
4395 015134 102402      BVS      1#
4396 015136 103001      BCC      1#
4397 015140 001403      BEQ      2#
4398
4399 015142      1#:
4400 015142 104000      ERROR
4401 015144 000366      .WORD    366
4402 015146 001127      .WORD    CPUERR
4403
4404 015150 005104      2#:  COM      R4
4405 015152 000277      SCC
4406 015154 000251      .WORD    251
4407 015156 042704 077777 BIC      #77777,R4
4408 015162 001403      BEQ      3#
4409 015164 102402      BVS      3#
4410 015166 103401      BCS      3#
4411 015170 100403      BMT      4#
4412
4413 015172      3#:
4414 015172 104000      ERROR
4415 015174 000367      .WORD    367
4416 015176 001127      .WORD    CPUERR
4417
4418 015200      4#:
4419
4420
4421 015200      MBSCC:
4422      ;*****
4423      ;*TEST 132      TEST BIS CONDITION CODES
4424      ;*****
4425      TST132:
4426 015200 005267 163600 INC      #TESTN
4427 015204 005004      CLR      R4
4428 015206 000277      SCC
4429 015210 000246      .WORD    246
4430 015212 052704 000000 BIS      #0,R4
4431 015216 100403      BMT      1#
4432 015220 102402      BVS      1#
4433 015222 103001      BCC      1#
4434 015224 001403      BEQ      2#
4435
4436 015226      1#:
4437 015226 104000      ERROR
4438 015230 000370      .WORD    370
4439 015232 001127      .WORD    CPUERR
4440
4441 015234 000277      2#:  SCC
4442 015236 000241      CLC
4443 015240 052704 100076 BIS      #100076,R4
4444 015244 001403      BEQ      3#
4445 015246 102402      BVS      3#
4446 015250 103401      BCS      3#

;CC=1011
;CC=0101
;ERROR IF N FLAG
;ERROR IF V FLAG SET
;ERROR IF C FLAG CLEAR
;SKIP IF Z FLAG SET
;ERROR! CC SHOULD=0101

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;R4=-1

;CC=0110
;CC=1000
;ERROR IF Z SET
;ERROR IF V SET
;ERROR IF C SET
;EXIT IF N SET
;ERROR! CC SHOULD= 1000

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;INCREMENT TEST NUMBER
;R4=0

;CC=1001
;R4=0, CC=0101
;ERROR IF MINUS
;ERROR IF V SET
;ERROR IF C CLEAR
;BRANCH IF GOOD
;ERROR! BIS CC FAILED

;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;CC=1110
;R4=100076, CC=1000
;ERROR IF Z SET
;ERROR IF V SET
;ERROR IF C SET

```

```

4447 015252 100403          BMI      4#          ;BRANCH IF GOOD
4448                                ;ERROR! BAD BIS CC
4449 015254          3#:
4450 015254 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
4451 015256 000371          .WORD      371    ;UNIQUE ERROR NUMBER
4452 015260 001127          .WORD      CPUERR ;ADDRESS OF ERROR MESSAGE
4453
4454 015262          4#:
4455
4456
4457 015262          MOCCC:
4458          ;*****
4459          ;*TEST 133      TEST DEC, INC CONDITION CODES
4460          ;*****
4461 015262          TST133:
4462 015262 005267 163516    INC      #TESTN    ;INCREMENT TEST NUMBER
4463 015266 012704 077777    MOV      #77777,R4 ;R4=77777
4464 015272 000257          CCC
4465 015274 000261          SFC          ;CC=0001
4466 015276 005204          RNC      R4        ;R4=100000, CC=0011
4467 015300 001403          BEQ      1#        ;ERROR IF ZERO
4468 015302 100002          BPL      1#        ;ERROR IF POSITIVE
4469 015304 102001          BVC      1#        ;ERROR IF V CLEAR
4470 015306 103403          BCS      2#        ;BRANCH IF GOOD
4471                                ;ERROR! INC FAILED
4472 015310          1#:
4473 015310 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
4474 015312 000372          .WORD      372    ;UNIQUE ERROR NUMBER
4475 015314 001127          .WORD      CPUERR ;ADDRESS OF ERROR MESSAGE
4476
4477 015316 000257          2#:  CCC
4478 015320 005204          INC      R4        ;R4=100001, CC=1000
4479 015322 103413          BCS      3#        ;ERROR IF C SET
4480 015324 102412          BVS      3#        ;ERROR IF V SET
4481 015326 005304          DEC      R4        ;R4=100000, CC=1000
4482 015330 102410          BVS      3#        ;ERROR IF V SET
4483 015332 103407          BCS      3#        ;ERROR IF C SET
4484 015334 000277          SCC
4485 015336 000252          .WORD      252    ;CC=0101
4486 015340 005304          DEC      R4        ;R4=77777, CC=1011
4487 015342 001403          BEQ      3#        ;ERROR IF Z SET
4488 015344 102002          BVC      3#        ;ERROR IF V CLEAR
4489 015346 103001          BCC      3#        ;ERROR IF C CLEAR
4490 015350 100003          BPL      4#        ;BRANCH IF GOOD
4491                                ;ERROR! BAD CC
4492 015352          3#:
4493 015352 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
4494 015354 000373          .WORD      373    ;UNIQUE ERROR NUMBER
4495 015356 001127          .WORD      CPUERR ;ADDRESS OF ERROR MESSAGE
4496
4497 015360          4#:
4498
4499
4500 015360          MCTSCC:
4501          ;*****
4502          ;*TEST 134      TEST CLR, TST, SWAB CONDITION CODES

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 KDJ11A.MAC 22-FEB-84 15:12 T134 TEST CLR, TST, SWAB CONDITION CODES

SEQ 0087

```

4503
4504
4505
4506 015360
4507 015360 005267 163420
4508 015364 000277
4509 015366 000244
4510 015370 005004
4511 015372 100403
4512 015374 102402
4513 015376 103401
4514 015400 001403
4515
4516 015402
4517 015402 104000
4518 015404 000374
4519 015406 001127
4520
4521 015410 005104
4522 015412 000277
4523 015414 005704
4524 015416 001403
4525 015420 102402
4526 015422 103401
4527 015424 100403
4528
4529 015426
4530 015426 104000
4531 015430 000375
4532 015432 001127
4533
4534 015434 000277
4535 015436 000304
4536 015440 102402
4537 015442 103401
4538 015444 100403
4539
4540 015446
4541 015446 104000
4542 015450 000376
4543 015452 001127
4544
4545 015454
4546
4547
4548 015454
4549
4550
4551
4552 015454
4553 015454 005267 163324
4554 015460 012704 077777
4555 015464 012701 000001
4556 015470 000257
4557 015472 060401
4558 015474 102003

;*****
;0100 - **00 - **00
;*****
TST134:
      INC      #TESTN          ;INCREMENT TEST NUMBER
      SCC
      CLZ
      CLR      R4              ;CC=1011
      BMI      1#              ;R4=0, CC=0100
      BVS      1#              ;ERROR IF MINUS
      BCS      1#              ;ERROR IF V SET
      BEQ      2#              ;ERROR IF C SET
      BEQ      2#              ;BRANCH IF GOOD
      BEQ      2#              ;ERROR! BAD CC ON CLR
1#:
      ERROR
      .WORD    374              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ;UNIQUE ERROR NUMBER
      .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
2#:
      COM      R4              ;R4=-1
      SCC
      TST      R4              ;CC=1111
      BEQ      3#              ;CC=1000
      BVS      3#              ;ERROR IF Z SET
      BVS      3#              ;ERROR IF V SET
      BCS      3#              ;ERROR IF C SET
      BMI      4#              ;BRANCH IF GOOD
      BMI      4#              ;ERROR! BAD TST CC
3#:
      ERROR
      .WORD    375              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ;UNIQUE ERROR NUMBER
      .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
4#:
      SCC
      SWAB     R4              ;CC=1111
      BVS      5#              ;CC=1000
      BVS      5#              ;ERROR IF V SET
      BCS      5#              ;ERROR IF C SET
      BMI      6#              ;BRANCH IF GOOD
      BMI      6#              ;ERROR! BAD SWAB CC
5#:
      ERROR
      .WORD    376              ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ;UNIQUE ERROR NUMBER
      .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
6#:

MADCC:
;*****
;+TEST 135      TEST ADD CONDITION CODES - ****
;*****
TST135:
      INC      #TESTN          ;INCREMENT TEST NUMBER
      MOV      #77777,R4      ;R4=77777
      MOV      #1,R1          ;R1=1
      CCC
      ADD      R4,R1          ;CC=0000
      BVC      1#              ;77777 + 1 = 100000 IN R1
      BVC      1#              ;ERROR IF V CLEAR

```

Address	Hex	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418
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 KDJ11A.MAC 22-FEB-84 15:12 T136 TEST ADC CONDITION CODES - ****

SEQ 0089

4615	015614	100003	BPL	3:		ERROR IF PLUS
4616	015616	103402	BCS	3:		ERROR IF C SET
4617	015620	001401	BEQ	3:		ERROR IF ZERO
4618	015622	102403	BVS	4:		BRANCH IF GOOD
4619						ERROR! BAD ADC
4620	015624		3:			
4621	015624	104000	ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4622	015626	000403	.WORD	403		UNIQUE ERROR NUMBER
4623	015630	001127	.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4624						
4625	015632	000277	4:			CC=1111
4626	015634	000504	ADC	R4		R4=100000 CC=1000
4627	015636	102402	BVS	5:		ERROR IF V SET
4628	015640	103401	BCS	5:		ERROR IF C SET
4629	015642	100403	BMI	6:		BRANCH IF GOOD
4630						ERROR! BAD ADC CC SHOULD= 1000
4631	015644		5:			
4632	015644	104000	ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4633	015646	000404	.WORD	404		UNIQUE ERROR NUMBER
4634	015650	001127	.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4635						
4636	015652		6:			
4637						
4638						
4639	015652		MNCCCC:			
4640			*****			
4641			TEST 137			TEST NEG, CMP, COM CONDITION CODES
4642			*****			
4643	015652		TST137:			
4644	015652	005267	INC	TESTN		INCREMENT TEST NUMBER
4645	015656	012704	MOV	#077777,R4		R4=77777
4646	015662	000257	CCC			CC=0000
4647	015664	005404	NEG	R4		R4=100001 CC=1001
4648	015666	102403	BVS	1:		ERROR IF V SET
4649	015670	103002	BCC	1:		ERROR IF C CLEAR
4650	015672	001401	BEQ	1:		ERROR IF Z SET
4651	015674	100403	BMI	2:		BRANCH IF GOOD
4652						ERROR! BAD NEGATE
4653	015676		1:			
4654	015676	104000	ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4655	015700	000405	.WORD	405		UNIQUE ERROR NUMBER
4656	015702	001127	.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4657						
4658	015704	005004	2:			R4=0
4659	015706	000257	CCC			CC=0000
4660	015710	005404	NEG	R4		CC=0101
4661	015712	100403	BMI	3:		ERROR IF N SET
4662	015714	103402	BCS	3:		ERROR IF C SET
4663	015716	102401	BVS	3:		ERROR IF V SET
4664	015720	001403	BEQ	4:		BRANCH IF GOOD
4665						ERROR! BAD NEG
4666	015722		3:			
4667	015722	104000	ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4668	015724	000406	.WORD	406		UNIQUE ERROR NUMBER
4669	015726	001127	.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4670						

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 KDJ11A.MAC 22-FEB-84 15:12 T137 TEST NEG, CMP, COM CONDITION CODES

SEQ 0090

```

4671 015730 012704 077777      4$: MOV    077777,R4      ;R4=77777
4672 015734 012701 170000      MOV    0170000,R1      ;R1=170000
4673 015740 000257              CCC                ;CC=0000
4674 015742 020401              CMP     R4,R1        ;77777 - 170000 = 107777 CC= 1011
4675 015744 102003              BVC     5$          ;ERROR IF V CLEAR
4676 015746 103002              BCC     5$          ;ERROR IF C CLEAR
4677 015750 001401              BEQ     5$          ;ERROR IF ZERO
4678 015752 100403              BMI     6$          ;BRANCH IF GOOD
4679                                ;ERROR! BAD CMP
4680 015754                        5$:
4681 015754 104000              ERROR
4682 015756 000407              .WORD   407      ;ALL ERRORS TO TRAP TO EMT VECTOR
4683 015760 001127              .WORD   CPUERR    ;UNIQUE ERROR NUMBER
4684                                ;ADDRESS OF ERROR MESSAGE
4685 015762 000257      6$: CCC
4686 015764 005101              COM     R1        ;R1=7777
4687 015766 100403              BMI     7$          ;ERROR IF MINUS
4688 015770 001402              BEQ     7$          ;ERROR IF ZERO
4689 015772 103001              BCC     7$          ;ERROR IF CARRY
4690 015774 102003              BVC     8$          ;BRANCH IF GOOD
4691                                ;ERROR! BAD COM
4692 015776                        7$:
4693 015776 104000              ERROR
4694 016000 000410              .WORD   410      ;ALL ERRORS TO TRAP TO EMT VECTOR
4695 016002 001127              .WORD   CPUERR    ;UNIQUE ERROR NUMBER
4696                                ;ADDRESS OF ERROR MESSAGE
4697 016004 000277      8$: SCC
4698 016006 005101              COM     R1        ;R1=7777
4699 016010 100403              BMI     10$         ;BRANCH IF GOOD
4700                                ;ERROR! BAD COM
4701 016012                        9$:
4702 016012 104000              ERROR
4703 016014 000411              .WORD   411      ;ALL ERRORS TO TRAP TO EMT VECTOR
4704 016016 001127              .WORD   CPUERR    ;UNIQUE ERROR NUMBER
4705                                ;ADDRESS OF ERROR MESSAGE
4706 016020      10$:
4707
4708
4709 016020      MSBCC:
4710      ;*****
4711      ;*TEST 140      TEST SUB CONDITION CODES - *****
4712      ;*****
4713 016020      TST140:
4714 016020 005267 162760      INC     $TESTN      ;INCREMENT TEST NUMBER
4715 016024 012704 077775      MOV     077775,R4      ;R4=77775
4716 016030 000257              CCC                ;CC=0000
4717 016032 162704 137757      SUB     0137757,R4     ;77775 - 137757
4718                                ;TRY TO CAUSE AN ARITHMETIC OVERFLOW
4719 016036 102003              BVC     1$          ;ERROR IF V CLEAR
4720 016040 100002              BPL     1$          ;ERROR IF RESULT IS POSITIVE
4721 016042 001401              BEQ     1$          ;ERROR IF Z SET
4722 016044 103403              BCS     2$          ;BRANCH IF GOOD
4723                                ;ERROR! BAD SUBTRACT
4724 016046                        1$:
4725 016046 104000              ERROR
4726 016050 000412              .WORD   412      ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER

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SEQ 0091

4727	016052	001127		.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4728							
4729	016054	012704	000005	2\$:	MOV	#5,R4	R4=5
4730	016060	000257			CCC		CC=0000
4731	016062	162704	000012		SUB	#12,R4	5-12=-5 AND SETS CARRY
4732	016066	103003			BCC	3\$	ERROR IF CARRY CLEAR
4733	016070	102402			BVS	3\$	ERROR IF OVERFLOW
4734	016072	001401			BEQ	3\$	ERROR IF ZERO
4735	016074	100403			BMI	4\$	BRANCH IF GOOD
4736							ERROR! SUBTRACT FAILED
4737	016076			3\$:			
4738	016076	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
4739	016100	000413			.WORD	413	UNIQUE ERROR NUMBER
4740	016102	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
4741							
4742	016104			0\$:			
4743							
4744							
4745	016104						
4746							
4747							
4748							
4749	016104						
4750	016104	005267	162674		INC	\$TESTN	INCREMENT TEST NUMBER
4751	016110	012704	100000		MOV	#100000,R4	R4=100000
4752	016114	000257			CCC		CC=0000
4753	016116	005604			SBC	R4	TRY TO SET V
4754	016120	100006			BPL	1\$	ERROR IF N CLEAR
4755	016122	102405			BVS	1\$	ERROR IF V SET (HAVENT SET C YET)
4756	016124	000261			SEC		CC SHOULD = 1001
4757	016126	005604			SBC	R4	TRY AGAIN TO SET V
4758	016130	102002			BVC	1\$	ERROR IF V CLEAR
4759	016132	103401			BCS	1\$	ERROR IF C SET
4760	016134	100003			BPL	2\$	BRANCH IF GOOD
4761							ERROR! SBC FAILED
4762	016136			1\$:			
4763	016136	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
4764	016140	000414			.WORD	414	UNIQUE ERROR NUMBER
4765	016142	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
4766							
4767	016144	005004		2\$:	CLR	R4	R4=0
4768	016146	000277			SCC		
4769	016150	000241			CLC		CC=1110
4770	016152	005604			SBC	R4	TRY TO CAUSE C FLAG FAILURE
4771	016154	102410			BCS	3\$	ERROR IF C SET
4772	016156	102407			BVS	3\$	ERROR IF V SET
4773	016160	001006			BNE	3\$	ERROR IF NOT ZERO
4774	016162	000261			SEC		SET CARRY
4775	016164	005604			SBC	R4	NOW, 0 - CARRY = 177777
4776	016166	103003			BCC	3\$	ERROR IF CARRY CLEAR
4777	016170	102402			BVS	3\$	ERROR IF V SET
4778	016172	001401			BEQ	3\$	ERROR IF ZERO
4779	016174	100403			BMI	4\$	BRANCH IF GOOD
4780							ERROR! SBC FAILED
4781	016176			3\$:			
4782	016176	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR

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SEQ 0092

4783	016200	000415		.WORD	415			UNIQUE ERROR NUMBER	
4784	016202	001127		.WORD	CPUERR			ADDRESS OF ERROR MESSAGE	
4785									
4786	016204		41:						
4787									
4788									
4789	016204								
4790			MRLCC:						
4791			*****						
4792			TEST 142			TEST ROL CONDITION CODES - ****			
4793	016204		*****						
4794	016204	005267	TST142:						
4795	016210	012704		INC	TESTN			INCREMENT TEST NUMBER	
4796	016214	000257		MOV	#60000,R4			R4= 0110000000000000	
4797	016216	006104		CCC				CC=0000	
4798	016220	103402		ROL	R4			R4= 1100000000000000	
4799	016222	102001		BCS	11			ERROR IF CARRY	
4800	016224	100403		BVC	11			ERROR IF V CLEAR	
4801				BMI	21			BRANCH IF GOOD	
4802	016226							ERROR! ROL FAILED	
4803	016226	104000	11:	ERROR				ALL ERRORS TO TRAP TO EMT VECTOR	
4804	016230	000416		.WORD	416			UNIQUE ERROR NUMBER	
4805	016232	001127		.WORD	CPUERR			ADDRESS OF ERROR MESSAGE	
4806									
4807	016234	006104	21:	ROL	R4			R4= 1000000000000000	
4808	016236	103002		BCC	31			ERROR IF CARRY CLEAR	
4809	016240	102401		BVS	31			ERROR IF V SET	
4810	016242	100403		BMI	41			BRANCH IF GOOD	
4811								ERROR! BAD ROL	
4812	016244		31:						
4813	016244	104000		ERROR				ALL ERRORS TO TRAP TO EMT VECTOR	
4814	016246	000417		.WORD	417			UNIQUE ERROR NUMBER	
4815	016250	001127		.WORD	CPUERR			ADDRESS OF ERROR MESSAGE	
4816									
4817	016252	006104	41:	ROL	R4			R4 = 0000000000000001	
4818	016254	102003		BVC	51			ERROR IF V CLEAR	
4819	016256	103002		BCC	51			ERROR IF C CLEAR	
4820	016260	100401		BMI	51			ERROR IF MINUS	
4821	016262	001003		BNE	61			BRANCH IF GOOD	
4822								ERROR! BAD ROL	
4823	016264		51:						
4824	016264	104000		ERROR				ALL ERRORS TO TRAP TO EMT VECTOR	
4825	016266	000420		.WORD	420			UNIQUE ERROR NUMBER	
4826	016270	001127		.WORD	CPUERR			ADDRESS OF ERROR MESSAGE	
4827									
4828	016272	006104	61:	ROL	R4			R4=0000000000000011	
4829	016274	102402		BVS	71			ERROR IF V SET	
4830	016276	103401		BCS	71			ERROR IF C SET	
4831	016300	100003		BPL	81			BRANCH IF GOOD	
4832								ERROR! BAD ROL	
4833	016302		71:						
4834	016302	104000		ERROR				ALL ERRORS TO TRAP TO EMT VECTOR	
4835	016304	000421		.WORD	421			UNIQUE ERROR NUMBER	
4836	016306	001127		.WORD	CPUERR			ADDRESS OF ERROR MESSAGE	
4837									
4838	016310		81:						

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4839
4840
4841 016310
4842
4843
4844
4845 016310
4846 016310 005267 162470
4847 016314 012704 000003
4848 016320 000257
4849 016322 006004
4850 016324 103002
4851 016326 102001
4852 016330 100003
4853
4854 016332
4855 016332 104000
4856 016334 000422
4857 016336 001127
4858
4859 016340 006004
4860 016342 103002
4861 016344 102401
4862 016346 100403
4863
4864 016350
4865 016350 104000
4866 016352 000423
4867 016354 001127
4868
4869 016356 006004
4870 016360 102002
4871 016362 103401
4872 016364 100403
4873
4874 016366
4875 016366 104000
4876 016370 000424
4877 016372 001127
4878
4879 016374 006004
4880 016376 102402
4881 016400 103401
4882 016402 100003
4883
4884 016404
4885 016404 104000
4886 016406 000425
4887 016410 001127
4888
4889 016412
4890
4891
4892
4893
4894

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```

MRRCC:
;*****
;TEST 143      TEST ROR CONDITION CODES - ****
;*****
TST143:
    INC      $TESTN          ;INCREMENT TEST NUMBER
    MOV      $3,R4           ;R4= 0000000000000011
    CCC
    ROR      R4              ;R4= 0000000000000001
    BCC      1$              ;ERROR IF NO CARRY
    BVC      1$              ;ERROR IF V CLEAR
    BPL      2$              ;BRANCH IF GOOD
                                ;ERROR! ROR FAILED
1$:
    ERROR
    .WORD    422              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR          ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
2$:
    ROR      R4              ;R4= 1000000000000000
    BCC      3$              ;ERROR IF CARRY CLEAR
    BVS      3$              ;ERROR IF V SET
    BMI      4$              ;BRANCH IF GOOD
                                ;ERROR! BAD ROR
3$:
    ERROR
    .WORD    423              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR          ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
4$:
    ROR      R4              ;R4 = 1100000000000000
    BVC      5$              ;ERROR IF V
    BCS      5$              ;ERROR IF C SET
    BMI      6$              ;BRANCH IF GOOD
                                ;ERROR! BAD ROR
5$:
    ERROR
    .WORD    424              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR          ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
6$:
    ROR      R4              ;R4= 0110000000000000
    BVS      7$              ;ERROR IF V SET
    BCS      7$              ;ERROR IF C SET
    BPL      8$              ;BRANCH IF GOOD
                                ;ERROR! BAD ROR
7$:
    ERROR
    .WORD    425              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD    CPUERR          ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
8$:
;*****
;TEST 144      TEST C BIT WITH ROR/ROL

```

```

4895
4896
4897
4898
4899 016412
4900 016412 005267 162366
4901 016416 012701 052525
4902 016422 000241
4903 016424 006001
4904 016426 006001
4905 016430 006001
4906 016432 103403
4907 016434 104000
4908 016436 000426
4909 016440 001127
4910 016442 022701 045252
4911 016446 001403
4912 016450 104000
4913 016452 000427
4914 016454 001127
4915 016456 012701 125252
4916 016462 000241
4917 016464 006101
4918 016466 006101
4919 016470 006101
4920 016472 103403
4921 016474 104000
4922 016476 000430
4923 016500 001127
4924 016502 022701 052522
4925 016506 001403
4926 016510 104000
4927 016512 000431
4928 016514 001127
4929 016516
4930
4931
4932 016516
4933
4934
4935
4936 016516
4937 016516 005267 162262
4938 016522 012704 060000
4939 016526 000257
4940 016530 006304
4941 016532 103402
4942 016534 102001
4943 016536 100403
4944
4945 016540
4946 016540 104000
4947 016542 000432
4948 016544 001127
4949
4950 016546 006304

;*****
;THIS TEST IS TO CHECK FOR A SLOW C BIT PATH INTERNAL TO THE J11 DATA CHIP
;PROBLEM IS ONLY EXHIBITED ON EARLY MASK SETS (1590 AND 1593)
;*****
TST144:
    INC     $TESTN           ;INCREMENT TEST NUMBER
    MOV     $52525,R1        ;INIT R1 WITH DATA
    CLC
    ROR     R1               ;CLEAR THE C BIT
    ROR     R1               ;R1=052525, C BIT =1
    ROR     R1               ;R1=112525, C BIT =0
    ROR     R1               ;R1=045252, C BIT =1
    BCS     1$              ;BRANCH IF CARRY BIT SET
    ERROR   426              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR          ;UNIQUE ERROR NUMBER
    .WORD   045252,R1       ;ADDRESS OF ERROR MESSAGE
    CMP     $45252,R1       ;IS DATA IN R1 = TO EXPECTED DATA?
    BEQ     2$              ;BRANCH IF YES
    ERROR   427              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR          ;UNIQUE ERROR NUMBER
    .WORD   0125252,R1     ;ADDRESS OF ERROR MESSAGE
    MOV     $125252,R1      ;SET UP R1
    CLC
    ROL     R1               ;CLEAR THE CARRY BIT
    ROL     R1               ;R1=052524, C BIT =1
    ROL     R1               ;R1=125251, C BIT =0
    ROL     R1               ;R1=052522, C BIT =1
    BCS     3$              ;BRANCH IF CARRY SET
    ERROR   430              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR          ;UNIQUE ERROR NUMBER
    .WORD   0052522, R1    ;ADDRESS OF ERROR MESSAGE
    CMP     $052522, R1     ;IS DATA IN R1 = TO EXPECTED DATA?
    BEQ     4$              ;BRANCH IF YES
    ERROR   431              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR          ;UNIQUE ERROR NUMBER
    .WORD   0052522, R1    ;ADDRESS OF ERROR MESSAGE
    4$:
MALCC:
;*****
;TEST 145 TEST ASL CONDITION CODES - ****
;*****
TST145:
    INC     $TESTN           ;INCREMENT TEST NUMBER
    MOV     $60000,R4        ;R4= 0110000000000000
    CCC
    ASL     R4               ;CL=0000
    BCS     1$              ;C=0 R4= 1100000000000000
    BVC     1$              ;ERROR IF CARRY
    BMI     2$              ;ERROR IF V CLEAR
    1$:
    ERROR   432              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR          ;UNIQUE ERROR NUMBER
    .WORD   006304,R4      ;ADDRESS OF ERROR MESSAGE
    2$:
    ASL     R4               ;C=1 R4= 1000000000000000

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SEQ 0095

4951	016550	103002		BCC	3:		ERROR IF CARRY CLEAR
4952	016552	102401		BVS	3:		ERROR IF V SET
4953	016554	100403		BMI	4:		BRANCH IF GOOD
4954							ERROR! BAD ASL
4955	016556		3:				
4956	016556	104000		ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4957	016560	000433		.WORD	433		UNIQUE ERROR NUMBER
4958	016562	001127		.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4959							
4960	016564	006304	4:	ASL	R4		C=1 R4= 0000000000000000
4961	016566	102003		BVC	5:		ERROR IF V CLEAR
4962	016570	103002		BCC	5:		ERROR IF C CLEAR
4963	016572	100401		BMI	5:		ERROR IF MINUS
4964	016574	001403		BEQ	6:		BRANCH IF GOOD
4965							ERROR! BAD ASL
4966	016576		5:				
4967	016576	104000		ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4968	016600	000434		.WORD	434		UNIQUE ERROR NUMBER
4969	016602	001127		.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4970							
4971	016604	006304	6:	ASL	R4		C=0 R4= 0000000000000000
4972	016606	102402		BVS	7:		ERROR IF V SET
4973	016610	103401		BCS	7:		ERROR IF C SET
4974	016612	100003		BPL	8:		BRANCH IF GOOD
4975							ERROR! BAD ASL
4976	016614		7:				
4977	016614	104000		ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4978	016616	000435		.WORD	435		UNIQUE ERROR NUMBER
4979	016620	001127		.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
4980							
4981	016622		8:				
4982							
4983							
4984	016622						
4985							
4986							
4987							
4988	016622						
4989	016622	005267	162156	INC	#TESTN		INCREMENT TEST NUMBER
4990	016626	012704	000341	MOV	#341,R4		R4= 0000000011100001
4991	016632	000257		CCC			CC=0000
4992	016634	006204		ASR	R4		R4= 0000000001110000
4993	016636	103002		BCC	1:		ERROR IF NO CARRY
4994	016640	102001		BVC	1:		ERROR IF V CLEAR
4995	016642	100003		BPL	2:		BRANCH IF GOOD
4996							ERROR! ASR FAILED
4997	016644		1:				
4998	016644	104000		ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
4999	016646	000436		.WORD	436		UNIQUE ERROR NUMBER
5000	016650	001127		.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
5001							
5002	016652	052704	100001	BIS	#100001,R4		R4= 1000000001110001
5003	016656	006204		ASR	R4		R4= 1100000000111000
5004	016660	103002		BCC	3:		ERROR IF CARRY CLEAR
5005	016662	102401		BVS	3:		ERROR IF V SET
5006	016664	100403		BMI	4:		BRANCH IF GOOD

MARCC:

 ;*TEST 146 TEST ASR CONDITION CODES - ****
 ;*****
 TST146:

INC #TESTN ; INCREMENT TEST NUMBER
 MOV #341,R4 ; R4= 0000000011100001
 CCC ; CC=0000
 ASR R4 ; R4= 0000000001110000
 BCC 1: ; ERROR IF NO CARRY
 BVC 1: ; ERROR IF V CLEAR
 BPL 2: ; BRANCH IF GOOD
 ; ERROR! ASR FAILED

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SEQ 0096

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5007                                     ;ERROR! BAD ASR
5008 016666                             3$:
5009 016666 104000                       ERROR
5010 016670 000437                       .WORD 437
5011 016672 001127                       .WORD CPUERR
5012                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
5013 016674 006204                       ;UNIQUE ERROR NUMBER
5014 016676 102002                       ;ADDRESS OF ERROR MESSAGE
5015 016700 103401                       ;R4= 1110000000011100
5016 016702 100403                       ;ERROR IF V
5017                                     ;ERROR IF C SET
5018 016704                               ;BRANCH IF GOOD
5019 016704 104000                       ;ERROR! BAD ASR
5020 016706 000440                       5$:
5021 016710 001127                       ERROR
5022                                     .WORD 440
5023 016712 006204                       .WORD CPUERR
5024 016714 102005                       ;ALL ERRORS TO TRAP TO EMT VECTOR
5025 016716 103404                       ;UNIQUE ERROR NUMBER
5026 016720 100003                       ;ADDRESS OF ERROR MESSAGE
5027 016722 022704 170016               6$:
5028 016726 001403                       ASR R4
5029                                     BVC 7$
5030 016730                               BCS 7$
5031 016730 104000                       BPL 7$
5032 016732 000441                       CMP #170016,R4
5033 016734 001127                       BEQ 8$
5034                                     ;R4= 1111000000001110
5035 016736                               ;ERROR IF V CLEAR
5036                                     ;ERROR IF C SET
5037                                     ;ERROR IF PLUS
5038                                     ;SEE IF EXPECTED RESULT
5039                                     ;BRANCH IF GOOD
5040                                     ;ERROR! BAD ASR
5041                                     7$:
5042                                     ERROR
5043                                     .WORD 441
5044                                     .WORD CPUERR
5045                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
5046                                     ;UNIQUE ERROR NUMBER
5047                                     ;ADDRESS OF ERROR MESSAGE
5048                                     8$:
5049
5050 MSXTCC:
5051 ;*****
5052 ;*TEST 147 TEST SXT CONDITION CODES / -*0-
5053 ;*****
5054 TST147:
5055 INC $TESTN
5056 MOV #123456,R4
5057 MOV R4,R1
5058 CCC
5059 SXT R4
5060 BCS 1$
5061 BMI 1$
5062 BVS 1$
5063 BEQ 2$
5064                                     ;INCREMENT TEST NUMBER
5065                                     ;R4=123456
5066                                     ;SAVE CONTENTS
5067                                     ;CC=0000
5068                                     ;R4=0 CC=0100
5069                                     ;ERROR IF CARRY
5070                                     ;ERROR IF MINUS
5071                                     ;ERROR IF OVERFLOW
5072                                     ;BRANCH IF GOOD
5073                                     ;ERROR! BAD SXT
5074                                     1$:
5075                                     ERROR
5076                                     .WORD 442
5077                                     .WORD CPUERR
5078                                     ;ALL ERRORS TO TRAP TO EMT VECTOR
5079                                     ;UNIQUE ERROR NUMBER
5080                                     ;ADDRESS OF ERROR MESSAGE
5081                                     2$:
5082 MOV P1,R4
5083 SCC
5084 SXT R4
5085 BEQ 3$
5086 BPL 3$
5087                                     ;RESTORE R4
5088                                     ;CC=1111
5089                                     ;R4=-1 CC=1001
5090                                     ;ERROR IF ZERO
5091                                     ;ERROR IF PLUS

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5063	017004	103003		BCC	3#		;ERROR IF NO CARRY
5064	017006	102402		BVS	3#		;ERROR IF OVERFLOW
5065	017010	005104		COM	R4		;R4=0
5066	017012	001403		BEQ	4#		;BRANCH IF GOOD
5067							;ERROR! BAD SXT
5068	017014		3#:				
5069	017014	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
5070	017016	000443		.WORD	443		;UNIQUE ERROR NUMBER
5071	017020	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
5072							
5073	017022		4#:				
5074							
5075							
5076	017022			MXRCC:			
5077				;;*****			
5078				;*TEST 150	TEST XOR CONDITION CODES / **0-		
5079				;;*****			
5080	017022			TST150:			
5081	017022	005267	161756	INC	#TESTN		;INCREMENT TEST NUMBER
5082	017026	012704	123456	MOV	#123456,R4		;R4=123456
5083	017032	012701	052525	MOV	#52525,R1		;R1=52525
5084	017036	000257		CCC			;CC=0000
5085	017040	074104		XOR	R1,R4		;*TI* R4=171173
5086	017042	102403		BVS	1#		;ERROR IF OVERFLOW
5087	017044	001402		BEQ	1#		;ERROR IF ZERO
5088	017046	103401		BCS	1#		;ERROR IF CARRY
5089	017050	100403		BMI	2#		;BRANCH IF GOOD
5090							;ERROR! BAD XOR
5091	017052		1#:				
5092	017052	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
5093	017054	000444		.WORD	444		;UNIQUE ERROR NUMBER
5094	017056	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
5095							
5096	017060	012701	125252	2#:	MOV	#125252,R1	;R1=125252
5097	017064	000277		SCC			;CC=1111
5098	017066	074104		XOR	R1,R4		;R4=054321
5099	017070	100403		BMI	3#		;ERROR IF MINUS
5100	017072	001402		BEQ	3#		;ERROR IF ZERO
5101	017074	103001		BCC	3#		;ERROR IF CARRY CLEAR
5102	017076	102003		BVC	4#		;BRANCH IF GOOD
5103							;ERROR! BAD XOR
5104	017100		3#:				
5105	017100	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
5106	017102	000445		.WORD	445		;UNIQUE ERROR NUMBER
5107	017104	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
5108							
5109	017106	074404		4#:	XOR	R4,R4	;R4=0
5110	017110	102406		BVS	5#		;ERROR IF OVERFLOW
5111	017112	100405		BMI	5#		;ERROR IF MINUS
5112	017114	103004		BCC	5#		;ERROR IF NO CARRY
5113	017116	001003		BNE	5#		;ERROR IF NOT ZERO
5114	017120	022704	000000	CMP	#0,R4		;SEE IF EXPECTED RESULT
5115	017124	001403		BEQ	6#		;BRANCH IF GOOD
5116							;ERROR! BAD XOR
5117	017126		5#:				
5118	017126	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR

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 KDJ11A.MAC 22-FEB-84 15:12 T150 TEST XOR CONDITION CODES / **0-

SEQ 0098

5119	017130	000446		.WORD	446		;UNIQUE ERROR NUMBER
5120	017132	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
5121							
5122	017134		6#:				
5123							
5124							
5125							
5126	017134						
5127							
5128							
5129							
5130							
5131							
5132							
5133							
5134	017134						
5135	017134	005267	161644				
5136	017140	005004					
5137	017142	000257					
5138	017144	000271					
5139	017146	006704					
5140	017150	102405					
5141	017152	100004					
5142	017154	001403					
5143	017156	103002					
5144	017160	005204					
5145	017162	001403					
5146							
5147	017164						
5148	017164	104000					
5149	017166	000447					
5150	017170	001127					
5151	017172	000277					
5152	017174	000250					
5153	017176	005004					
5154	017200	012714	000055				
5155	017204	006714					
5156	017206	001005					
5157	017210	102404					
5158	017212	103403					
5159	017214	100402					
5160	017216	005714					
5161	017220	001403					
5162							
5163	017222						
5164	017222	104000					
5165	017224	000450					
5166	017226	001127					
5167							
5168							
5169							
5170	017230	012700	177777				
5171	017234	005004					
5172	017236	006700					
5173							
5174	017240	005700					

```

;MSXT:
;*****
;*TEST 151      TEST SXT (SIGN EXTEND INSTRUCTION)
;*****
;AN ADDITIONAL TEST IS INCLUDED TO CHECK FOR A SLOW N BIT PATH
;ON A TRANSITION FROM ZERO TO ONE INTERNAL TO THE J11 DATA CHIP
;THE PROBLEM IS ONLY EXHIBITED ON EARLY MASK SETS (1590 OR 1593)
;*****
TST151:
    INC     $TESTN           ;INCREMENT TEST NUMBER
    CLR     R4               ;TRASH R4
    CCC     CC=0000          ;CC=0000
    .WORD   271              ;CC=1001
    SXT     R4               ;*TEST INSTRUCTION
    BVS     1$               ;BRANCH IF OVERFLOW IS NOT CLEARED
    BPL     1$               ;BRANCH IF N BIT EFFECTED
    BEQ     1$               ;BRANCH IF Z BIT EFFECTED
    BCC     1$               ;BRANCH IF C BIT EFFECTED
    INC     R4
    BEQ     2$               ;BRANCH IF R4 =0
                                ;ERROR! CC SHOULD HAVE = 1101
1$:
    ERROR   447              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR           ;UNIQUE ERROR NUMBER
    .WORD   CPUERR           ;ADDRESS OF ERROR MESSAGE
2$:
    SCC     CC=0111          ;CC=0111
    CLN
    CLR     R4
    MOV     $55,(R4)         ;TRASH R4
    SXT     (R4)             ;*TEST INSTRUCTION
    BNE     3$               ;BRANCH IF BIT EFFECTED
    BVS     3$               ;BRANCH IF OVERFLOW
    BCS     3$
    BMI     3$               ;BRANCH IF N IS SET
    TST     (R4)             ;VERIFY INSTRUCTION WORKED
    BEQ     4$               ;BRANCH IF R4=0
                                ;ERROR! SXT FAILED
3$:
    ERROR   450              ;ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   CPUERR           ;UNIQUE ERROR NUMBER
    .WORD   CPUERR           ;ADDRESS OF ERROR MESSAGE
;
;NOW TEST FOR SLOW N BIT IN J11 DATA CHIP
4$:
    MOV     #-1,R0           ;R0=177777, N BIT = 1
    CLR     R4               ;CLEAT THE N BIT
    SXT     R0               ;***TEST INSTRUCTION***
                                ;TEST N BIT TRANSITION 1 TO 0
    TST     R0               ;R0 SHOULD = 0

```

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5175 017242 001403      BEQ      5#          ;BRANCH IF OK
5176 017244 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
5177 017246 000451      .WORD      451      ;UNIQUE ERROR NUMBER
5178 017250 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
5179 017252 005000      5#: CLR      R0          ;CLEAR R0, N BIT = 0
5180 017254 012704 177777 MOV      #-1,R4      ;SET N BIT
5181 017260 006700      SXT      R0          ;***TEST INSTRUCTION***
5182                                     ;TEST N BIT TRANSITION 0 TO 1
5183 017262 022700 177777 CMP      #-1,R0      ;R0 SHOULD = 177777
5184 017266 001403      BEQ      6#          ;BRANCH IF OK
5185 017270 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
5186 017272 000452      .WORD      452      ;UNIQUE ERROR NUMBER
5187 017274 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
5188 017276                                     6#:
5189
5190
5191 017276      ;
5192      ;MXOR:
5193      ;*****
5194      ;*TEST 152      TEST XOR
5195      ;*****
5196 017276      TST152:
5197 017276 005267 161502 INC      #TESTN      ;INCREMENT TEST NUMBER
5198 017302 012701 007643 MOV      #7643,R1      ;SETUP DATA
5199 017306 012704 133333 MOV      #133333,R4      ;SETUP DATA
5200 017312 000277      SCC
5201 017314 074401      XOR      R4,R1          ;*TEST INSTRUCTION
5202 017316 100006      BPL      1#          ;BRANCH IF PLUS TO ERROR
5203 017320 001405      BEQ      1#          ;ERROR IF ZERO
5204 017322 103004      BCC      1#          ;ERROR IF CARRY CLEAR
5205 017324 102403      BVS      1#          ;ERROR IF V SET
5206 017326 020127 134570 CMP      R1,#134570      ;VERIFY CORRECT RESULT
5207 017332 001403      BEQ      2#          ;BRANCH IF GOOD
5208 017334                                     ;ERROR! BAD XOR
5209 017334 104000      1#: ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
5210 017336 000453      .WORD      453      ;UNIQUE ERROR NUMBER
5211 017340 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
5212 017342 010102      2#: MOV      R1,R2
5213 017344 000257      CCC
5214 017346 074402      XOR      R4,R2          ;*TEST INSTRUCTION
5215 017350 100405      BMI      3#          ;ERROR IF MINUS
5216 017352 102404      BVS      3#          ;ERROR IF OVERFLOW
5217 017354 103403      BCS      3#          ;ERROR IF CARRY
5218 017356 020227 007643 CMP      R2,#7643
5219 017362 001403      BEQ      4#          ;BRANCH IF GOOD
5220                                     ;ERROR! BAD XOR
5221 017364      3#:
5222 017364 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
5223 017366 000454      .WORD      454      ;UNIQUE ERROR NUMBER
5224 017370 001127      .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
5225 017372      4#:
5226
5227
5228 017372      ;
5229      ;MS08:
5230      ;*****
      ;*TEST 153      TEST S08

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PC	OP	OP2	OP3	OP4	OP5	OP6	OP7	OP8	OP9	OP10	OP11	OP12	OP13	OP14	OP15	OP16	OP17	OP18	OP19	OP20	OP21	OP22	OP23	OP24	OP25	OP26	OP27	OP28	OP29	OP30	OP31	OP32	OP33	OP34	OP35	OP36	OP37	OP38	OP39	OP40	OP41	OP42	OP43	OP44	OP45	OP46	OP47	OP48	OP49	OP50	OP51	OP52	OP53	OP54	OP55	OP56	OP57	OP58	OP59	OP60	OP61	OP62	OP63	OP64	OP65	OP66	OP67	OP68	OP69	OP70	OP71	OP72	OP73	OP74	OP75	OP76	OP77	OP78	OP79	OP80	OP81	OP82	OP83	OP84	OP85	OP86	OP87	OP88	OP89	OP90	OP91	OP92	OP93	OP94	OP95	OP96	OP97	OP98	OP99	OP100	OP101	OP102	OP103	OP104	OP105	OP106	OP107	OP108	OP109	OP110	OP111	OP112	OP113	OP114	OP115	OP116	OP117	OP118	OP119	OP120	OP121	OP122	OP123	OP124	OP125	OP126	OP127	OP128	OP129	OP130	OP131	OP132	OP133	OP134	OP135	OP136	OP137	OP138	OP139	OP140	OP141	OP142	OP143	OP144	OP145	OP146	OP147	OP148	OP149	OP150	OP151	OP152	OP153	OP154	OP155	OP156	OP157	OP158	OP159	OP160	OP161	OP162	OP163	OP164	OP165	OP166	OP167	OP168	OP169	OP170	OP171	OP172	OP173	OP174	OP175	OP176	OP177	OP178	OP179	OP180	OP181	OP182	OP183	OP184	OP185	OP186	OP187	OP188	OP189	OP190	OP191	OP192	OP193	OP194	OP195	OP196	OP197	OP198	OP199	OP200	OP201	OP202	OP203	OP204	OP205	OP206	OP207	OP208	OP209	OP210	OP211	OP212	OP213	OP214	OP215	OP216	OP217	OP218	OP219	OP220	OP221	OP222	OP223	OP224	OP225	OP226	OP227	OP228	OP229	OP230	OP231	OP232	OP233	OP234	OP235	OP236	OP237	OP238	OP239	OP240	OP241	OP242	OP243	OP244	OP245	OP246	OP247	OP248	OP249	OP250	OP251	OP252	OP253	OP254	OP255	OP256	OP257	OP258	OP259	OP260	OP261	OP262	OP263	OP264	OP265	OP266	OP267	OP268	OP269	OP270	OP271	OP272	OP273	OP274	OP275	OP276	OP277	OP278	OP279	OP280	OP281	OP282	OP283	OP284	OP285	OP286	OP287	OP288	OP289	OP290	OP291	OP292	OP293	OP294	OP295	OP296	OP297	OP298	OP299	OP300	OP301	OP302	OP303	OP304	OP305	OP306	OP307	OP308	OP309	OP310	OP311	OP312	OP313	OP314	OP315	OP316	OP317	OP318	OP319	OP320	OP321	OP322	OP323	OP324	OP325	OP326	OP327	OP328	OP329	OP330	OP331	OP332	OP333	OP334	OP335	OP336	OP337	OP338	OP339	OP340	OP341	OP342	OP343	OP344	OP345	OP346	OP347	OP348	OP349	OP350	OP351	OP352	OP353	OP354	OP355	OP356	OP357	OP358	OP359	OP360	OP361	OP362	OP363	OP364	OP365	OP366	OP367	OP368	OP369	OP370	OP371	OP372	OP373	OP374	OP375	OP376	OP377	OP378	OP379	OP380	OP381	OP382	OP383	OP384	OP385	OP386	OP387	OP388	OP389	OP390	OP391	OP392	OP393	OP394	OP395	OP396	OP397	OP398	OP399	OP400	OP401	OP402	OP403	OP404	OP405	OP406	OP407	OP408	OP409	OP410	OP411	OP412	OP413	OP414	OP415	OP416	OP417	OP418	OP419
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5287	017534			24:	ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
5288	017534	104000			.WORD	461	; UNIQUE ERROR NUMBER
5289	017536	000461			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
5290	017540	001127					; VERIFY R5
5291	017542	022705	125252	34:	CMP	#125252,R5	; BRANCH IF GOOD
5292	017546	001403			BEQ	44	; ALL ERRORS TO TRAP TO EMT VECTOR
5293	017550	104000			ERROR		; UNIQUE ERROR NUMBER
5294	017552	000462			.WORD	462	; ADDRESS OF ERROR MESSAGE
5295	017554	001127			.WORD	CPUERR	
5296							
5297	017556	020627	001000	44:	CMP	SP,#STBOT	; VERIFY THAT STACK IS CORRECT
5298	017562	001403			BEQ	154	; BRANCH IF OK
5299							; ERROR! STACK WAS NOT CORRECT AFTER MARK
5300	017564	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
5301	017566	000463			.WORD	463	; UNIQUE ERROR NUMBER
5302	017570	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
5303							
5304	017572	012746	052525	154:	MOV	#52525,-(SP)	; SETUP EXPECTED R5
5305	017576	012746	006400		MOV	#6400,-(SP)	; MOVE MARK 0 INSTRUCTION ON STACK
5306	017602	010605			MOV	SP,R5	; R5=ADDRESS OF INSTRUCTION
5307	017604	004767	000004		JSR	PC,54	; LEAVE 64 ON STACK
5308	017610	000167	000012	64:	JMP	164	; MARK RETURNED CORRECTLY
5309							
5310	017614	000257		54:	CCC		; CLEAR THE CONDITION CODES
5311	017616	000205			RTS	R5	; RETURN TO MARK INSTRUCTION
5312							; NEXT INSTRUCTION ON STACK IS THE RETURN
5313							; FROM THE JSR
5314							; ERROR! BAD MARK SEQUENCE
5315	017620	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
5316	017622	000464			.WORD	464	; UNIQUE ERROR NUMBER
5317	017624	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
5318							
5319	017626	101402		164:	BLOS	74	; IS C OR Z BIT SET?
5320	017630	100401			BMI	74	; IS N BIT SET?
5321	017632	102003			BVC	84	; IS V BIT SET?
5322							; ERROR! CONDITIONS CODES INCORRECT
5323	017634			74:			
5324	017634	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
5325	017636	000465			.WORD	465	; UNIQUE ERROR NUMBER
5326	017640	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
5327							
5328	017642	020627	001000	84:	CMP	R6,#STBOT	; IS THE STACK CORRECT?
5329	017646	001403			BEQ	94	; BRANCH IF YES
5330							; ERROR! BAD STACK CLEANUP
5331	017650	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
5332	017652	000466			.WORD	466	; UNIQUE ERROR NUMBER
5333	017654	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
5334	017656	022705	052525	94:	CMP	#52525,R5	; VERIFY THAT R5 WAS LOADED PROPERLY.
5335	017662	001403			BEQ	104	; IF OK, GO TO NEXT TEST.
5336							; ERROR! R5 WAS NOT CORRECT AFTER MARK.
5337	017664	104000			ERROR		; ALL ERRORS TO TRAP TO EMT VECTOR
5338	017666	000467			.WORD	467	; UNIQUE ERROR NUMBER
5339	017670	001127			.WORD	CPUERR	; ADDRESS OF ERROR MESSAGE
5340	017672			104:			
5341							
5342							

```

5343 ;*****
5344 ;*TEST 155      TEST CCC (CLEAR CONDITION CODES) INSTRUCTION
5345 ;*****
5346 TST155:
5347     INC      $TESTN          ; INCREMENT TEST NUMBER
5348     MOV      #30017,$#177776 ; SETUP PSW
5349     CCC      ; TEST INSTRUCTION
5350     CMP      #30000,$#177776 ; DID IT CLEAR ALL CONDITION CODE BITS
5351     BEQ      1$              ; YES GO ON
5352                                ; NO GO TO ERROR
5353     ERROR     ; ALL ERRORS TO TRAP TO EMT VECTOR
5354     .WORD    470             ; UNIQUE ERROR NUMBER
5355     .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
5356 1$:
5357
5358
5359
5360 ;*****
5361 ;*TEST 156      TEST CLEAR C BIT INSTRUCTION
5362 ;*****
5363 TST156:
5364     INC      $TESTN          ; INCREMENT TEST NUMBER
5365     MOV      #30017,$#177776 ; SETUP PSW
5366     CLC      ; TEST INSTRUCTION
5367     CMP      #30016,$#177776 ; DID IT CLEAR CARRY BIT
5368     BEQ      1$              ; YES GO ON
5369                                ; C BIT NOT CLEAR GO TO ERROR
5370     ERROR     ; ALL ERRORS TO TRAP TO EMT VECTOR
5371     .WORD    471             ; UNIQUE ERROR NUMBER
5372     .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
5373 1$:
5374
5375
5376 TE102:
5377 ;*****
5378 ;*TEST 157      TEST CLN (CLEAR N BIT) INST
5379 ;*****
5380 TST157:
5381     INC      $TESTN          ; INCREMENT TEST NUMBER
5382     MOV      #30017,$#177776 ; SETUP PSW
5383     CLN      ; TEST INSTRUCTION
5384     CMP      #30007,$#177776 ; DID IT CLEAR NEGATIVE BIT
5385     BEQ      1$              ; YES GO ON
5386                                ; NO GO TO ERROR
5387     ERROR     ; ALL ERRORS TO TRAP TO EMT VECTOR
5388     .WORD    472             ; UNIQUE ERROR NUMBER
5389     .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
5390 1$:
5391
5392
5393 TE103:
5394 ;*****
5395 ;*TEST 160      TEST CLV (CLEAR V BIT) INST
5396 ;*****
5397 TST160:
5398     INC      $TESTN          ; INCREMENT TEST NUMBER

```

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 KDJ11A.MAC 22-FEB-84 15:12 T160 TEST CLV (CLEAR V BIT) INST

SEQ 0103

```

5399 020014 012737 030017 177776      MOV      030017,00177776      ;SETUP PSW
5400 020022 000242                      CLV                      ; TEST INSTRUCTION
5401 020024 022737 030015 177776      CMP      030015,00177776      ;DID IT CLEAR OVERFLOW BIT
5402 020032 001403                      BEQ      1$                      ;YES GO ON
5403                                     ;NO GO TO ERROR
5404 020034 104000                      ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
5405 020036 000473                      .WORD    473                      ;UNIQUE ERROR NUMBER
5406 020040 001127                      .WORD    CPUERR                     ;ADDRESS OF ERROR MESSAGE
5407 020042                                1$:
5408
5409
5410 020042                                ;
5411                                ;TE104:
5412                                ;*****
5413                                ;*TEST 161      TEST CLZ (CLEAR Z BIT) INST
5414                                ;*****
5415 020042                                TST161:
5416 020042 005267 160736                      INC      $TESTN                      ;INCREMENT TEST NUMBER
5417 020046 012737 030017 177776      MOV      030017,00177776      ;SETUP PSW
5418 020054 000244                      CLZ                      ; TEST INSTRUCTION
5419 020056 022737 030013 177776      CMP      030013,00177776      ;DID IT CLEAR ZERO BIT
5420 020064 001403                      BEQ      1$                      ;YES GO ON
5421                                     ;NO GO TO ERROR
5422 020066 104000                      ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
5423 020070 000474                      .WORD    474                      ;UNIQUE ERROR NUMBER
5424 020072 001127                      .WORD    CPUERR                     ;ADDRESS OF ERROR MESSAGE
5425 020074                                1$:
5426
5427 020074                                ;
5428                                ;TE105:
5429                                ;*****
5430                                ;*TEST 162      TEST SCC (SET CONDITION CODES) INST
5431                                ;*****
5432 020074                                TST162:
5433 020074 005267 160704                      INC      $TESTN                      ;INCREMENT TEST NUMBER
5434 020100 012737 030000 177776      MOV      030000,00177776      ;SETUP PSW
5435 020106 000277                      SCC                      ; TEST INSTRUCTION
5436 020110 022737 030017 177776      CMP      030017,00177776      ;DID IT SET ALL CONDITION CODE BITS
5437 020116 001403                      BEQ      1$                      ;YES GO ON
5438                                     ;NO GO TO ERROR
5439 020120 104000                      ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
5440 020122 000475                      .WORD    475                      ;UNIQUE ERROR NUMBER
5441 020124 001127                      .WORD    CPUERR                     ;ADDRESS OF ERROR MESSAGE
5442 020126                                1$:
5443
5444 020126                                ;
5445                                ;TE106:
5446                                ;*****
5447                                ;*TEST 163      TEST SEC (SET C BIT) INST
5448                                ;*****
5449 020126                                TST163:
5450 020126 005267 160652                      INC      $TESTN                      ;INCREMENT TEST NUMBER
5451 020132 012737 030000 177776      MOV      030000,00177776      ;SETUP PSW
5452 020140 000261                      SEC                      ; TEST INSTRUCTION
5453 020142 022737 030001 177776      CMP      030001,00177776      ;DID IT SET THE CARRY BIT
5454 020150 001403                      BEQ      1$                      ;YES GO ON
                                     ;NO GO TO ERROR

```

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 KDJ11A.MAC 22-FEB-84 15:12 T163 TEST SEC (SET C BIT) INST

SEQ 0104

```

5455 020152 004000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
5456 020154 000476          .WORD 476      ;UNIQUE ERROR NUMBER
5457 020156 001127          .WORD CPUERR    ;ADDRESS OF ERROR MESSAGE
5458 020160
5459
5460
5461 020160
5462
5463
5464
5465 020160
5466 020160 005267 160620          INC $TESTN          ;INCREMENT TEST NUMBER
5467 020164 012737 030000 177776  MOV $30000,0#177776 ;SETUP PSW
5468 020172 000270          SEN              ;TEST INSTRUCTION
5469 020174 022737 030010 177776  CMP $30010,0#177776 ;DID IT SET THE NEGATIVE BIT
5470 020202 001403          BEQ 1#          ;YES GO ON
5471
5472 020204 104000          ERROR          ;NO GO TO ERROR
5473 020206 000477          .WORD 477      ;ALL ERRORS TO TRAP TO EMT VECTOR
5474 020210 001127          .WORD CPUERR    ;UNIQUE ERROR NUMBER
5475 020212
5476
5477
5478 020212
5479
5480
5481
5482 020212
5483 020212 005267 160566          INC $TESTN          ;INCREMENT TEST NUMBER
5484 020216 012737 030000 177776  MOV $30000,0#177776 ;SETUP PSW
5485 020224 000262          SEV              ;TEST INSTRUCTION
5486 020226 022737 030002 177776  CMP $30002,0#177776 ;DID IT SET THE OVERFLOW BIT
5487 020234 001403          BEQ 1#          ;YES GO ON
5488
5489 020236 104000          ERROR          ;NO GO TO ERROR
5490 020240 000500          .WORD 500      ;ALL ERRORS TO TRAP TO EMT VECTOR
5491 020242 001127          .WORD CPUERR    ;UNIQUE ERROR NUMBER
5492 020244
5493
5494
5495 020244
5496
5497
5498
5499 020244
5500 020244 005267 160534          INC $TESTN          ;INCREMENT TEST NUMBER
5501 020250 012737 030000 177776  MOV $30000,0#177776 ;SETUP PSW
5502 020256 000264          SEZ              ;TEST INSTRUCTION
5503 020260 022737 030004 177776  CMP $30004,0#177776 ;DID IT SET THE ZERO BIT
5504 020266 001403          BEQ 1#          ;YES GO ON
5505
5506 020270 104000          ERROR          ;NO GO TO ERROR
5507 020272 000501          .WORD 501      ;ALL ERRORS TO TRAP TO EMT VECTOR
5508 020274 001127          .WORD CPUERR    ;UNIQUE ERROR NUMBER
5509 020276
5510

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5511
5512 020276
5513
5514
5515
5516 020276
5517 020276 005267 160502
5518 020302 012737 030000 177776
5519 020310 000277
5520 020312 000243
5521 020314 022737 030014 177776
5522 020322 001403
5523
5524 020324 104000
5525 020326 000502
5526 020330 001127
5527 020332 000277
5528 020334 000243
5529 020336 022737 030012 177776
5530 020344 001403
5531
5532 020346 104000
5533 020350 000503
5534 020352 001127
5535
5536 020354 000277
5537 020356 000246
5538 020360 022737 030011 177776
5539 020366 001403
5540
5541 020370 104000
5542 020372 000504
5543 020374 001127
5544
5545 020376 000277
5546 020400 000247
5547 020402 022737 030010 177776
5548 020410 001403
5549
5550 020412 104000
5551 020414 000505
5552 020416 001127
5553
5554 020420 000277
5555 020422 000251
5556 020424 022737 030006 177776
5557 020432 001403
5558
5559 020434 104000
5560 020436 000506
5561 020440 001127
5562
5563 020442 000277
5564 020444 000252
5565 020446 022737 030005 177776
5566 020454 001403

```

TEST 167 TEST MULTIPLE CLEARS OF CC [27]
 TST167:

INC	\$TESTN	INCREMENT TEST NUMBER
MOV	#30000, @177776	INIT PSW
SCC		SETUP PSW
.WORD	243	TEST CLC CLV
CMP	#30014, @177776	PSW CORRECT?
BEQ	11	YES GO ON
		NO GO TO ERROR
ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
.WORD	502	UNIQUE ERROR NUMBER
.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
SCC		SETUP PSW
.WORD	243	TEST CLC CLZ
CMP	#30012, @177776	PSW CORRECT?
BEQ	21	YES GO ON
		NO GO TO ERROR
ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
.WORD	503	UNIQUE ERROR NUMBER
.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
SCC		SETUP PSW
.WORD	246	TEST CLV CLZ
CMP	#30011, @177776	PSW CORRECT?
BEQ	31	YES GO ON
		NO GO TO ERROR
ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
.WORD	504	UNIQUE ERROR NUMBER
.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
SCC		SETUP PSW
.WORD	247	TEST CLC CLV CLZ
CMP	#30010, @177776	PSW CORRECT?
BEQ	41	YES GO ON
		NO GO TO ERROR
ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
.WORD	505	UNIQUE ERROR NUMBER
.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
SCC		SETUP PSW
.WORD	251	TEST CLN CLC
CMP	#30006, @177776	PSW CORRECT?
BEQ	51	YES GO ON
		NO GO TO ERROR
ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
.WORD	506	UNIQUE ERROR NUMBER
.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
SCC		SETUP PSW
.WORD	252	TEST CLN CLV
CMP	#30005, @177776	PSW CORRECT?
BEQ	61	YES GO ON

```

5567
5568 020456 104000 ERROR
5569 020460 000507 .WORD 507
5570 020462 001127 .WORD CPUERR
5571
5572 020464 000277 61: SCC
5573 020466 000253 .WORD 253
5574 020470 022737 030004 177776 CMP #30004,0#177776
5575 020476 001403 BEQ 71
5576
5577 020500 104000 ERROR
5578 020502 000510 .WORD 510
5579 020504 001127 .WORD CPUERR
5580
5581 020506 000277 71: SCC
5582 020510 000254 .WORD 254
5583 020512 022737 030003 177776 CMP #30003,0#177776
5584 020520 001403 BEQ 81
5585
5586 020522 104000 ERROR
5587 020524 000511 .WORD 511
5588 020526 001127 .WORD CPUERR
5589
5590 020530 000277 81: SCC
5591 020532 000255 .WORD 255
5592 020534 022737 030002 177776 CMP #30002,0#177776
5593 020542 001403 BEQ 91
5594
5595 020544 104000 ERROR
5596 020546 000512 .WORD 512
5597 020550 001127 .WORD CPUERR
5598
5599 020552 000277 91: SCC
5600 020554 000256 .WORD 256
5601 020556 022737 030001 177776 CMP #30001,0#177776
5602 020564 001403 BEQ 101
5603
5604 020566 104000 ERROR
5605 020570 000513 .WORD 513
5606 020572 001127 .WORD CPUERR
5607
5608 020574 101:
5609
5610
5611 020574
5612
5613
5614
5615 020574
5616 020574 005257 160204
5617 020600 012737 030000 177776
5618 020606 000263
5619 020610 022737 030003 177776
5620 020616 001403
5621
5622 020620 104000

*****
*TEST 170 TEST MULTIPLE SETS OF CC BITS
*****
TST170:
INC #TESTN
MOV #30000,0#177776
.WORD 263
CMP #30003,0#177776
BEQ 11
ERROR

;NO GO TO ERROR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;SETUP PSW
;TEST CLN CLC CLV
;PSW CORRECT?
;YES GO ON
;NO GO TO ERROR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;SETUP PSW
;TEST CLN CLZ
;PSW CORRECT?
;YES GO ON
;NO GO TO ERROR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;SETUP PSW
;TEST CLN CLC CLZ
;PSW CORRECT?
;YES GO ON
;NO GO TO ERROR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;SETUP PSW
;TEST CLN CLV CLZ
;SETUP PSW
;YES GO ON
;NO GO TO ERROR
;ALL ERRORS TO TRAP TO EMT VECTOR
;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

;INCREMENT TEST NUMBER
;INIT PSW
;TEST SEC SEV
;PSW CORRECT?
;YES GO ON
;NO GO TO ERROR
;ALL ERRORS TO TRAP TO EMT VECTOR

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SEQ 0107

5623	020622	000514			.WORD	514	UNIQUE ERROR NUMBER
5624	020624	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5625							
5626	020626	000257	1#:		CCC		SETUP PSW
5627	020630	000265			.WORD	265	TEST SEC SEZ
5628	020632	022737	030005	177776	CMP	#30005,0#177776	PSW CORRECT?
5629	020640	001403			BEQ	2#	YES GO ON
5630							NO GO TO ERROR
5631	020642	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5632	020644	000515			.WORD	515	UNIQUE ERROR NUMBER
5633	020646	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5634							
5635	020650	000257	2#:		CCC		SETUP PSW
5636	020652	000266			.WORD	266	TEST SEV SEZ
5637	020654	022737	030006	177776	CMP	#30006,0#177776	PSW CORRECT?
5638	020662	001403			BEQ	3#	YES GO ON
5639							NO GO TO ERROR
5640	020664	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5641	020666	000516			.WORD	516	UNIQUE ERROR NUMBER
5642	020670	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5643							
5644	020672	000257	3#:		CCC		SETUP PSW
5645	020674	000267			.WORD	267	TEST SEC SEV SEZ
5646	020676	022737	030007	177776	CMP	#30007,0#177776	PSW CORRECT?
5647	020704	001403			BEQ	4#	YES GO ON
5648							NO GO TO ERROR
5649	020706	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5650	020710	000517			.WORD	517	UNIQUE ERROR NUMBER
5651	020712	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5652							
5653	020714	000257	4#:		CCC		SETUP PSW
5654	020716	000271			.WORD	271	TEST SEN SEC
5655	020720	022737	030011	177776	CMP	#30011,0#177776	PSW CORRECT?
5656	020726	001403			BEQ	5#	YES GO ON
5657							NO GO TO ERROR
5658	020730	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5659	020732	000520			.WORD	520	UNIQUE ERROR NUMBER
5660	020734	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5661							
5662	020736	000257	5#:		CCC		SETUP PSW
5663	020740	000272			.WORD	272	TEST SEN SEV
5664	020742	022737	030012	177776	CMP	#30012,0#177776	PSW CORRECT?
5665	020750	001403			BEQ	6#	YES GO ON
5666							NO GO TO ERROR
5667	020752	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5668	020754	000521			.WORD	521	UNIQUE ERROR NUMBER
5669	020756	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5670							
5671	020760	000257	6#:		CCC		SETUP PSW
5672	020762	000273			.WORD	273	TEST SEN SEC SEV
5673	020764	022737	030013	177776	CMP	#30013,0#177776	PSW CORRECT?
5674	020772	001403			BEQ	7#	YES GO ON
5675							NO GO TO ERROR
5676	020774	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5677	020776	000522			.WORD	522	UNIQUE ERROR NUMBER
5678	021000	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE

E9

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 KDJ11A.MAC 22-FEB-84 15:12 T170 TEST MULTIPLE SETS OF CC BITS

SEQ 0108

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5679
5680 021002 000257      7:  CCC      ; SETUP PSW
5681 021004 000274      .WORD 274    ; TEST SEN SEZ
5682 021006 022737 030014 177776  CMP    #30014,0#177776 ; PSW CORRECT?
5683 021014 001403      BEQ    8:    ; YES GO ON
5684                                     ; NO GO TO ERROR
5685 021016 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
5686 021020 000523      .WORD 523    ; UNIQUE ERROR NUMBER
5687 021022 001127      .WORD CPUERR ; ADDRESS OF ERROR MESSAGE
5688
5689 021024 000257      8:  CCC      ; SETUP PSW
5690 021026 000275      .WORD 275    ; TEST SEN SEC SEZ
5691 021030 022737 030015 177776  CMP    #30015,0#177776 ; PSW CORRECT?
5692 021036 001403      BEQ    9:    ; YES GO ON
5693                                     ; NO GO TO ERROR
5694 021040 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
5695 021042 000524      .WORD 524    ; UNIQUE ERROR NUMBER
5696 021044 001127      .WORD CPUERR ; ADDRESS OF ERROR MESSAGE
5697
5698 021046 000257      9:  CCC      ; SETUP PSW
5699 021050 000276      .WORD 276    ; TEST SEN SEV SEZ
5700 021052 022737 030016 177776  CMP    #30016,0#177776 ; PSW CORRECT?
5701 021060 001403      BEQ    10:   ; YES GO ON
5702                                     ; NO GO TO ERROR
5703 021062 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
5704 021064 000525      .WORD 525    ; UNIQUE ERROR NUMBER
5705 021066 001127      .WORD CPUERR ; ADDRESS OF ERROR MESSAGE
5706
5707 021070      10:
5708
5709      ;
5710 021070      ; TE113A:
5711      ; *****
5712      ; *TEST 171      TEST SIGNED AND CONDITIONAL BRANCHES
5713      ; *****
5714      ; TST171:
5715 021070 005267 157710      INC    #TESTN      ; INCREMENT TEST NUMBER
5716 021074 000257      CCC      ; CLEAR ALL CC BITS IN PSW
5717 021076 002003      BGE    1:    ; BGE SHOULD BRANCH
5718                                     ; ERROR! DIDN'T BRANCH
5719 021100 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
5720 021102 000526      .WORD 526    ; UNIQUE ERROR NUMBER
5721 021104 001127      .WORD CPUERR ; ADDRESS OF ERROR MESSAGE
5722
5723 021106 003003      1:  BGT    2:    ; BGT SHOULD BRANCH
5724                                     ; ERROR! DIDN'T BRANCH
5725 021110 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
5726 021112 000527      .WORD 527    ; UNIQUE ERROR NUMBER
5727 021114 001127      .WORD CPUERR ; ADDRESS OF ERROR MESSAGE
5728
5729 021116 003401      2:  BLE    3:    ; BLE SHOULDN'T BRANCH
5730 021120 000403      BR      4:    ; BRANCH TO NEXT TEST
5731                                     ; ERROR! BLE SHOULD NOT HAVE BRANCHED
5732 021122      3:
5733 021122 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
5734 021124 000530      .WORD 530    ; UNIQUE ERROR NUMBER

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SEQ 0109

5735	021126	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5736						
5737	021130	002401	4#:	BLT	5#	BLT SHOULD NOT BRANCH
5738	021132	000403		BR	6#	BRANCH TO NEXT TEST
5739						ERROR; BLT SHOULD NOT HAVE BRANCHED
5740	021134		5#:			
5741	021134	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5742	021136	000531		.WORD	531	UNIQUE ERROR NUMBER
5743	021140	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5744						
5745	021142	000264	6#:	SEZ		SET THE Z BIT IN PSW
5746	021142	003403		BLE	7#	BLE SHOULD BRANCH
5747						ERROR; BLE DIDN'T BRANCH
5748	021146	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5749	021150	000532		.WORD	532	UNIQUE ERROR NUMBER
5750	021152	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5751						
5752	021154	003001	7#:	BGT	8#	BGT SHOULD NOT BRANCH
5753	021156	000403		BR	9#	BRANCH TO NEXT TEST
5754						ERROR; BGT SHOULD NOT HAVE BRANCHED
5755	021160		8#:			
5756	021160	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5757	021162	000533		.WORD	533	UNIQUE ERROR NUMBER
5758	021164	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5759						
5760	021166	000257	9#:	CCC		CLEAR ALL CC BITS IN PSW
5761	021170	000270		SEN		SET N BIT IN PSW
5762	021172	002403		BLT	10#	SHOULD BRANCH TO NEXT TEST
5763						ERROR; BLT SHOULD HAVE BRANCHED
5764	021174	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5765	021176	000534		.WORD	534	UNIQUE ERROR NUMBER
5766	021200	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5767						
5768	021202	003403	10#:	BLE	11#	SHOULD BRANCH TO NEXT TEST
5769						ERROR; BLE SHOULD HAVE BRANCHED
5770	021204	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5771	021206	000535		.WORD	535	UNIQUE ERROR NUMBER
5772	021210	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5773						
5774	021212	002001	11#:	BGE	12#	BGE SHOULD NOT BRANCH
5775	021214	000403		BR	13#	BRANCH TO NEXT TEST
5776						ERROR; BGE SHOULD NOT HAVE BRANCHED
5777	021216		12#:			
5778	021216	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5779	021220	000536		.WORD	536	UNIQUE ERROR NUMBER
5780	021222	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5781						
5782	021224	003001	13#:	BGT	14#	BGT SHOULD NOT BRANCH
5783	021226	000403		BR	15#	BRANCH TO NEXT TEST
5784						ERROR; BGT SHOULD NOT HAVE BRANCHED
5785	021230		14#:			
5786	021230	104000		ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
5787	021232	000537		.WORD	537	UNIQUE ERROR NUMBER
5788	021234	001127		.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
5789						
5790	021236	000257	15#:	CCC		CLEAR ALL CC BITS

PC	Instruction	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418
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 KDJ11A.MAC 22-FEB-84 15:12 T171 TEST SIGNED AND CONDITIONAL BRANCHES

SEQ 0111

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5847 021352 000547 .WORD 547 ;UNIQUE ERROR NUMBER
5848 021354 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
5849
5850 021356 27:
5851
5852 021356 TE114:
5853 ;*****
5854 ;*TEST 172 TEST NOP INST
5855 ;*****
5856 021356 TST172:
5857 021356 005267 157422 INC $TESTN ;INCREMENT TEST NUMBER
5858 021362 012737 030000 177776 MOV $30000,$177776 ;INIT PSW
5859 021370 012700 000001 MOV $1,R0 ;INIT R0
5860 021374 012701 000002 MOV $3,R1 ;INIT R1
5861 021400 012702 000003 MOV $3,R2 ;INIT R2
5862 021404 012703 000004 MOV $4,R3 ;INIT R3
5863 021410 012704 000005 MOV $5,R4 ;INIT R4
5864 021414 012705 000006 MOV $6,R5 ;INIT R5
5865 021420 010637 001030 MOV R6,$SLOC00 ;SAVE SP
5866 021424 012737 030017 001034 MOV $30017,$EXPDAT ;SETUP PSW
5867 021432 000277 SCC ;SET ALL CONDITION CODE BITS
5868 021434 000240 NOP ;TEST INSTRUCTION
5869 021436 000240 NOP ;TEST INSTRUCTION
5870 021440 000240 NOP ;TEST INSTRUCTION
5871 021442 004767 000056 JSR PC,T114 ;CHECK PSW, AND GPR'S
5872 021446 020637 001030 CMP R6,$SLOC00 ;CHECK SP
5873 021452 001403 BEQ 11 ;OK GO ON
5874 ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5875 021454 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
5876 021456 000550 .WORD 550 ;UNIQUE ERROR NUMBER
5877 021460 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
5878
5879 021462 012737 030000 001034 11: MOV $30000,$EXPDAT ;SETUP PSW
5880 021470 000257 CCC ;CLEAR ALL CONDITION CODE BITS
5881 021472 000260 .WORD 260 ;TEST FOR NOP OPERATION
5882 021474 000260 .WORD 260 ;TEST FOR NOP OPERATION
5883 021476 000260 .WORD 260 ;TEST FOR NOP OPERATION
5884 021500 004767 000020 JSR PC,T114 ;CHECK PSW, AND GPR'S
5885 021504 020637 001030 CMP R6,$SLOC00 ;CHECK SP
5886 021510 001403 BEQ 21 ;OK GO ON
5887 ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5888 021512 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
5889 021514 000551 .WORD 551 ;UNIQUE ERROR NUMBER
5890 021516 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
5891
5892 021520 24:
5893
5894 021520 000167 000140 JMP FINNOP
5895
5896 021524 023737 001034 177776 T114: CMF $EXPDAT,$177776 ;CHECK PSW
5897 021532 001407 BEQ TA114 ;OK GO ON
5898 021534 010067 156640 MOV R0,400 ;SAVE R0
5899 ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5900 021540 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
5901 021542 000552 .WORD 552 ;UNIQUE ERROR NUMBER
5902 021544 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE

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 KDJ11A.MAC 22-FEB-84 15:12 T172 TEST NOP INST

SEQ 0112

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5903
5904 021546 016700 156626      TA114: MOV    400,R0      ;RESTORE R0
5905 021552 022700 000001      TA114: CMP    #1,R0      ;CHECK R0
5906 021556 001403              TA114: BEQ    TB114      ;OK GO ON
5907
5908 021560 104000              ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5909 021562 000553              ;ALL ERRORS TO TRAP TO EMT VECTOR
5910 021564 001127              ;UNIQUE ERROR NUMBER
5911                                ;ADDRESS OF ERROR MESSAGE
5912 021566 022701 000002      TB114: CMP    #2,R1      ;CHECK R1
5913 021572 001403              TB114: BEQ    TC114      ;OK GO ON
5914
5915 021574 104000              ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5916 021576 000554              ;ALL ERRORS TO TRAP TO EMT VECTOR
5917 021600 001127              ;UNIQUE ERROR NUMBER
5918                                ;ADDRESS OF ERROR MESSAGE
5919 021602 022702 000003      TC114: CMP    #3,R2      ;CHECK R2
5920 021606 001403              TC114: BEQ    TD114      ;OK GO ON
5921
5922 021610 104000              ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5923 021612 000555              ;ALL ERRORS TO TRAP TO EMT VECTOR
5924 021614 001127              ;UNIQUE ERROR NUMBER
5925                                ;ADDRESS OF ERROR MESSAGE
5926 021616 022703 000004      TD114: CMP    #4,R3      ;CHECK R3
5927 021622 001403              TD114: BEQ    TF114      ;OK GO ON
5928
5929 021624 104000              ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5930 021626 000556              ;ALL ERRORS TO TRAP TO EMT VECTOR
5931 021630 001127              ;UNIQUE ERROR NUMBER
5932                                ;ADDRESS OF ERROR MESSAGE
5933 021632 022704 000005      TF114: CMP    #5,R4      ;CHECK R4
5934 021636 001403              TF114: BEQ    TG114      ;OK GO ON
5935
5936 021640 104000              ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5937 021642 000557              ;ALL ERRORS TO TRAP TO EMT VECTOR
5938 021644 001127              ;UNIQUE ERROR NUMBER
5939                                ;ADDRESS OF ERROR MESSAGE
5940 021646 022705 000006      TG114: CMP    #6,R5      ;CHECK R5
5941 021652 001403              TG114: BEQ    TH114      ;OK GO ON
5942
5943 021654 104000              ;ERROR; BLT SHOULD NOT HAVE BRANCHED
5944 021656 000560              ;ALL ERRORS TO TRAP TO EMT VECTOR
5945 021660 001127              ;UNIQUE ERROR NUMBER
5946                                ;ADDRESS OF ERROR MESSAGE
5947 021662 000207              TH114: RTS     PC          ;RETURN
5948
5949 021664                      ;FINNOP:
5950                      ;*****
5951                      ;*TEST 173      TEST ATERNATE REGISTER SET
5952                      ;*****
5953 021664                      TST173:
5954 021664 005267 157114          INC     #TESTN      ;INCREMENT TEST NUMBER
5955 021670 005000                  CLR     R0          ;-----CLEAR-----
5956 021672 005001                  CLR     R1          ;-----PRIMARY-----
5957 021674 005002                  CLR     R2          ;-----GENERAL-----
5958 021676 005003                  CLR     R3          ;-----PURPOSE-----

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PC	Instruction	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418
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6071	022236				ALROTS:		
6072					*****		
6073					TEST 174	ALTERNATE REGISTER SET R0 BIT TESTS	
6074					*****		
6075	022236				TST174:		
6076	022236	005267	156542		INC	\$TESTN	INCREMENT TEST NUMBER
6077	022242	012700	177777		MOV	\$177777,R0	R0=177777
6078	022246	020027	177777		CMP	R0,\$177777	DOES R0=177777
6079	022252	001403			BEQ	1\$	YES GO ON
6080							NO GO TO ERROR
6081	022254	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6082	022256	000577			.WORD	577	UNIQUE ERROR NUMBER
6083	022260	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6084	022262	005000			1\$: CLR	R0	R0=0
6085	022264	020027	000000		CMP	R0,\$0	DOES R0=0
6086	022270	001403			BEQ	2\$	YES GO ON
6087							NO GO TO ERROR
6088	022272	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6089	022274	000600			.WORD	600	UNIQUE ERROR NUMBER
6090	022276	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6091	022300	012700	125252		2\$: MOV	\$125252,R0	R0=125252
6092	022304	020027	125252		CMP	R0,\$125252	DOES R0=125252
6093	022310	001403			BEQ	3\$	YES GO ON
6094							NO GO TO ERROR
6095	022312	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6096	022314	000601			.WORD	601	UNIQUE ERROR NUMBER
6097	022316	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6098	022320	012700	052525		3\$: MOV	\$52525,R0	R0=52525
6099	022324	020027	052525		CMP	R0,\$52525	DOES R0=52525
6100	022330	001403			BEQ	4\$	YES GO ON
6101							NO GO TO ERROR
6102	022332	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6103	022334	000602			.WORD	602	UNIQUE ERROR NUMBER
6104	022336	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6105	022340				4\$:		
6106							
6107							
6108	022340				ALR1TS:		
6109					*****		
6110					TEST 175	ALTERNATE REGISTER SET R1 BIT TESTS	
6111					*****		
6112	022340				TST175:		
6113	022340	005267	156440		INC	\$TESTN	INCREMENT TEST NUMBER
6114	022344	012701	177777		MOV	\$177777,R1	R1=177777
6115	022350	020127	177777		CMP	R1,\$177777	DOES R1=177777
6116	022354	001403			BEQ	1\$	YES GO ON
6117							NO GO TO ERROR
6118	022356	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6119	022360	000603			.WORD	603	UNIQUE ERROR NUMBER
6120	022362	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6121	022364	005001			1\$: CLR	R1	R1=0
6122	022366	020127	000000		CMP	R1,\$0	DOES R1=0
6123	022372	001403			BEQ	2\$	YES GO ON
6124							NO GO TO ERROR
6125	022374	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6126	022376	000604			.WORD	604	UNIQUE ERROR NUMBER

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6127 022400 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6128 022402 012701 125252 2$: MOV    $125252,R1 ;R1=125252
6129 022406 020127 125252    CMP    R1,$125252 ;DOES R1=125252
6130 022412 001403    BEQ    3$      ;YES GO ON
6131      ;NO GO TO ERROR
6132 022414 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
6133 022416 000605      .WORD  605      ;UNIQUE ERROR NUMBER
6134 022420 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6135 022422 012701 052525 3$: MOV    $52525,R1 ;R1=52525
6136 022426 020127 052525    CMP    R1,$52525 ;DOES R1=52525
6137 022432 001403    BEQ    4$      ;YES GO ON
6138      ;NO GO TO ERROR
6139 022434 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
6140 022436 000606      .WORD  606      ;UNIQUE ERROR NUMBER
6141 022440 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6142 022442      4$:
6143      ;
6144      ;
6145 022442      ;ALR2TS:
6146      ;*****
6147      ;*TEST 176      ALTERNATE REGISTER SET R2 BIT TESTS
6148      ;*****
6149 022442      TST176:
6150 022442 005267 156336    INC    $TESTN      ;INCREMENT TEST NUMBER
6151 022446 012702 177777    MOV    $177777,R2 ;R2=177777
6152 022452 020227 177777    CMP    R2,$177777 ;DOES R2=177777
6153 022456 001403    BEQ    1$      ;YES GO ON
6154      ;NO GO TO ERROR
6155 022460 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
6156 022462 000607      .WORD  607      ;UNIQUE ERROR NUMBER
6157 022464 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6158 022466 005002 1$: CLR    R2      ;R2=0
6159 022470 020227 000000    CMP    R2,$0      ;DOES R2=0
6160 022474 001403    BEQ    2$      ;YES GO ON
6161      ;NO GO TO ERROR
6162 022476 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
6163 022500 000610      .WORD  610      ;UNIQUE ERROR NUMBER
6164 022502 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6165 022504 012702 125252 2$: MOV    $125252,R2 ;R2=125252
6166 022510 020227 125252    CMP    R2,$125252 ;DOES R2=125252
6167 022514 001403    BEQ    3$      ;YES GO ON
6168      ;NO GO TO ERROR
6169 022516 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
6170 022520 000611      .WORD  611      ;UNIQUE ERROR NUMBER
6171 022522 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6172 022524 012702 052525 3$: MOV    $52525,R2 ;R2=52525
6173 022530 020227 052525    CMP    R2,$52525 ;DOES R2=52525
6174 022534 001403    BEQ    4$      ;YES GO ON
6175      ;NO GO TO ERROR
6176 022536 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
6177 022540 000612      .WORD  612      ;UNIQUE ERROR NUMBER
6178 022542 001127      .WORD  CPUERR      ;ADDRESS OF ERROR MESSAGE
6179 022544      4$:
6180      ;
6181      ;
6182 022544      ;ALR3TS:

```

```

6183
6184
6185
6186 022544
6187 022544 005267 156234
6188 022550 012703 177777
6189 022554 020327 177777
6190 022560 001403
6191
6192 022562 104000
6193 022564 000613
6194 022566 001127
6195 022570 005003
6196 022572 020327 000000
6197 022576 001403
6198
6199 022600 104000
6200 022602 000614
6201 022604 001127
6202 022606 012703 125252
6203 022612 020327 125252
6204 022616 001403
6205
6206 022620 104000
6207 022622 000615
6208 022624 001127
6209 022626 012703 052525
6210 022632 020327 052525
6211 022636 001403
6212
6213 022640 104000
6214 022642 000616
6215 022644 001127
6216 022646
6217
6218
6219 022646
6220
6221
6222
6223 022646
6224 022646 005267 156132
6225 022652 012704 177777
6226 022656 020427 177777
6227 022662 001403
6228
6229 022664 104000
6230 022666 000617
6231 022670 001127
6232 022672 005004
6233 022674 020427 000000
6234 022700 001403
6235
6236 022702 104000
6237 022704 000620
6238 022706 001127

```

```

*****
*TEST 177 ALTERNATE REGISTER SET R3 BIT TESTS
*****
TST177:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      MOV      #177777,R3      ;R3=177777
      CMP      R3,#177777      ;DOES R3=177777
      BEQ      1$              ;YES GO ON
                                ;NO GO TO ERROR
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
      .WORD     613
      .WORD     CPUERR
1$:   CLR      R3
      CMP      R3,#0
      BEQ      2$              ;YES GO ON
                                ;NO GO TO ERROR
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
      .WORD     614
      .WORD     CPUERR
2$:   MOV      #125252,R3      ;R3=125252
      CMP      R3,#125252      ;DOES R3=125252
      BEQ      3$              ;YES GO ON
                                ;NO GO TO ERROR
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
      .WORD     615
      .WORD     CPUERR
3$:   MOV      #52525,R3       ;R3=52525
      CMP      R3,#52525      ;DOES R3=52525
      BEQ      4$              ;YES GO ON
                                ;NO GO TO ERROR
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
      .WORD     616
      .WORD     CPUERR
4$:
;
ALR4TS:
*****
*TEST 200 ALTERNATE REGISTER SET R4 BIT TESTS
*****
TST200:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      MOV      #177777,R4      ;R4=177777
      CMP      R4,#177777      ;DOES R4=177777
      BEQ      1$              ;YES GO ON
                                ;NO GO TO ERROR
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
      .WORD     617
      .WORD     CPUERR
1$:   CLR      R4
      CMP      R4,#0
      BEQ      2$              ;YES GO ON
                                ;NO GO TO ERROR
                                ;ALL ERRORS TO TRAP TO EMT VECTOR
                                ;UNIQUE ERROR NUMBER
                                ;ADDRESS OF ERROR MESSAGE
      .WORD     620
      .WORD     CPUERR

```

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 KDJ11A.MAC 22-FEB-84 15:12 T200 ALTERNATE REGISTER SET R4 BIT TESTS

SEQ 0118

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6239 022710 012704 125252      20:  MOV    #125252,R4      ;R4=125252
6240 022714 020427 125252      CMP    R4,#125252    ;DOES R4=125252
6241 022720 001403              BEQ     30             ;YES GO ON
6242                                ;NO GO TO ERROR
6243 022722 104000              ERROR    ;ALL ERRORS TO TRAP TO EMT VECTOR
6244 022724 000621              .WORD   621             ;UNIQUE ERROR NUMBER
6245 022726 001127              .WORD   CPUERR          ;ADDRESS OF ERROR MESSAGE
6246 022730 012704 052525      30:  MOV    #52525,R4      ;R4=52525
6247 022734 020427 052525      CMP    R4,#52525    ;DOES R4=52525
6248 022740 001403              BEQ     40             ;YES GO ON
6249                                ;NO GO TO ERROR
6250 022742 104000              ERROR    ;ALL ERRORS TO TRAP TO EMT VECTOR
6251 022744 000622              .WORD   622             ;UNIQUE ERROR NUMBER
6252 022746 001127              .WORD   CPUERR          ;ADDRESS OF ERROR MESSAGE
6253 022750
6254
6255
6256 022750
6257
6258
6259
6260 022750
6261 022750 005267 156030      TST201: INC    #TESTN      ;INCREMENT TEST NUMBER
6262 022754 012705 177777      MOV    #177777,R5    ;R5=177777
6263 022760 020527 177777      CMP    R5,#177777    ;DOES R5=177777
6264 022764 001403              BEQ     10             ;YES GO ON
6265                                ;NO GO TO ERROR
6266 022766 104000              ERROR    ;ALL ERRORS TO TRAP TO EMT VECTOR
6267 022770 000623              .WORD   623             ;UNIQUE ERROR NUMBER
6268 022772 001127              .WORD   CPUERR          ;ADDRESS OF ERROR MESSAGE
6269 022774 005005              CLR     R5            ;R5=0
6270 022776 020527 000000      10:  CMP    R5,#0        ;DOES R5=0
6271 023002 001403              BEQ     20             ;YES GO ON
6272                                ;NO GO TO ERROR
6273 023004 104000              ERROR    ;ALL ERRORS TO TRAP TO EMT VECTOR
6274 023006 000624              .WORD   624             ;UNIQUE ERROR NUMBER
6275 023010 001127              .WORD   CPUERR          ;ADDRESS OF ERROR MESSAGE
6276 023012 012705 125252      20:  MOV    #125252,R5    ;R5=125252
6277 023016 020527 125252      CMP    R5,#125252    ;DOES R5=125252
6278 023022 001403              BEQ     30             ;YES GO ON
6279                                ;NO GO TO ERROR
6280 023024 104000              ERROR    ;ALL ERRORS TO TRAP TO EMT VECTOR
6281 023026 000625              .WORD   625             ;UNIQUE ERROR NUMBER
6282 023030 001127              .WORD   CPUERR          ;ADDRESS OF ERROR MESSAGE
6283 023032 012705 052525      30:  MOV    #52525,R5      ;R5=52525
6284 023036 020527 052525      CMP    R5,#52525    ;DOES R5=52525
6285 023042 001403              BEQ     40             ;YES GO ON
6286                                ;NO GO TO ERROR
6287 023044 104000              ERROR    ;ALL ERRORS TO TRAP TO EMT VECTOR
6288 023046 000626              .WORD   626             ;UNIQUE ERROR NUMBER
6289 023050 001127              .WORD   CPUERR          ;ADDRESS OF ERROR MESSAGE
6290 023052 042767 004000 154716 40: BIC    #BIT11,P5    ;RETURN TO PRIMARY GEN PURPOSE REGS
6291
6292
6293 023060
6294

```

C10

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 119
 RDJ11A.MAC 22-FEB-84 15:12 T202 TEST MPFS (MOVE FROM PROCCESOR STATUS) INST

SEQ 0119

```

6295      1*TEST 202      TEST MPFS (MOVE FROM PROCCESOR STATUS) INST
6296      1*****
6297      1ST202:
6298      INC      #TESTN      ;INCREMENT TEST NUMBER
6299      CLR      R4          ;SETUP DESTINATION R4
6300
6301      MOV      #TE115A,R1   ;SETUP POINTERS TO TABLES
6302      MOV      #TE115B,R2   ;
6303      MOV      #TE115C,R3   ;
6304      MOV      (R1),#177776 ;SETUP PSW
6305      MFPS      R4          ; TEST INSTRUCTION
6306      CMP      #177776,(R2) ;CHECK PSW
6307      BEQ      21          ;OK GO ON
6308      ;NO GO TO ERROR
6309      ;ALL ERRORS TO TRAP TO EMT VECTOR
6310      .WORD      627        ;UNIQUE ERROR NUMBER
6311      .WORD      CPUERR     ;ADDRESS OF ERROR MESSAGE
6312
6313      21:      CMP      R4,(R3) ;CHECK R4
6314      BEQ      31          ;OK GO ON
6315      ;NO GO TO ERROR
6316      ;ALL ERRORS TO TRAP TO EMT VECTOR
6317      .WORD      630        ;UNIQUE ERROR NUMBER
6318      .WORD      CPUERR     ;ADDRESS OF ERROR MESSAGE
6319
6320      31:      CMP      (R1),#177777 ;ARE WE DONE
6321      BNE      11          ;NO GO TO 11
6322
6323
6324      MOV      #TE115A,R1   ;SETUP POINTERS TO TABLES
6325      MOV      #TE115B,R2   ;
6326      MOV      #TE115C,R3   ;
6327      MOV      R6,R5        ;SAVE STACK IN R5
6328      MOV      (R1),#177776 ;SETUP PSW
6329      MFPS      R6          ; TEST INSTRUCTION
6330      CMP      #177776,(R2) ;CHECK PSW
6331      BEQ      1021        ;OK GO ON
6332      ;NO GO TO ERROR
6333      ;ALL ERRORS TO TRAP TO EMT VECTOR
6334      .WORD      631        ;UNIQUE ERROR NUMBER
6335      .WORD      CPUERR     ;ADDRESS OF ERROR MESSAGE
6336
6337      1021:    CMP      R6,(R3) ;CHECK R6
6338      BEQ      1031        ;OK GO ON
6339      ;NO GO TO ERROR
6340      ;ALL ERRORS TO TRAP TO EMT VECTOR
6341      .WORD      632        ;UNIQUE ERROR NUMBER
6342      .WORD      CPUERR     ;ADDRESS OF ERROR MESSAGE
6343
6344      1031:    MOV      R5,R6   ;RESTORE STACK
6345
6346
6347      MOV      #TE115A,R1   ;SETUP POINTERS TO TABLES
6348      MOV      #TE115B,R2   ;
6349      MOV      #TE115C,R3   ;
6350      CLR      @EXPDAT      ;INIT EXPECTED DATA HOLDER.

```

D10

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 120
 KDJ11A.MAC 22-FEB-84 15:12 T202 TEST MTPS (MOVE FROM PROCCESOR STATUS) INST

SEQ 0120

```

6351 023240 012704 001034      4:  MOV    #EXPDAT,R4      ; SETUP POINTER TO TEST LOCATION
6352 023244 012137 177776      MOV    (R1)+,R4      ; SETUP PSW
6353 023250 106724      MFPS    (R4),R4      ; TEST INSTRUCTION
6354 023252 023722 177776      CMP     #177776,(R2)+    ; CHECK PSW
6355 023256 001403      BEQ     5:      ; OK GO ON
6356                                ; NO GO TO ERROR
6357 023260 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
6358 023262 000633      .WORD    633      ; UNIQUE ERROR NUMBER
6359 023264 001127      .WORD    CPUERR    ; ADDRESS OF ERROR MESSAGE
6360
6361 023266 020427 001035      5:  CMP     R4,EXPDAT+1    ; CHECK R4
6362 023272 001403      BEQ     6:      ; OK GO ON
6363                                ; NO GO TO ERROR
6364 023274 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
6365 023276 000634      .WORD    634      ; UNIQUE ERROR NUMBER
6366 023300 001127      .WORD    CPUERR    ; ADDRESS OF ERROR MESSAGE
6367
6368 023302 023723 001034      6:  CMP     6*EXPDAT,(R3)+    ; CHECK TEST LOCATION
6369 023306 001403      BEQ     7:      ; OK GO ON
6370                                ; NO GO TO ERROR
6371 023310 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
6372 023312 000635      .WORD    635      ; UNIQUE ERROR NUMBER
6373 023314 001127      .WORD    CPUERR    ; ADDRESS OF ERROR MESSAGE
6374 023316 021127 177777      7:  CMP     (R1),#177777    ; ARE WE DONE
6375 023322 001346      BNE     4:      ; NO GO TO 4:
6376
6377 023324 000167 000032      JMP     YE115F
6378
6379
6380
6381 023330 030207      |
6382 023332 030000      | TE115A: .WORD    30207
6383 023334 030057      | .WORD    30000
6384 023336 177777      | .WORD    30057
6385 023340 030211      | .WORD    177777
6386 023342 030004      | TE115B: .WORD    30211
6387 023344 030041      | .WORD    30004
6388 023346 177607      | .WORD    30041
6389 023350 000000      | TE115C: .WORD    177607
6390 023352 000057      | .WORD    0
6391 023354 000207      | .WORD    57
6392 023356 000000      | TE115D: .WORD    207
6393 023360 000057      | .WORD    0
6394 023362 000240      | .WORD    57
6395      | TE115F: NOP
6396 023364      |
6397      | TE116:
6398      | *****
6399      | *TEST 203      TEST MTPS (MOVE TO PROCESSOR STATUS) INST
6400      | *****
6401 023364 005267 155414      | TST203:
6402      | INC     #TESTN      ; INCREMENT TEST NUMBER
6403 023370 012737 030000 177776      MOV     #30000,R4      ; SET PSW TO KERNEL MODE
6404 023376 012701 023722      MOV     #TE116D,R1    ; SETUP POINTERS TO TABLES
6405 023402 012702 023700      MOV     #TE116B,R2
6406 023406 010103      MOV     R1,R3

```

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 121
 KDJ11A.MAC 22-FEB-84 15:12 T203 TEST MTPS (MOVE TO PROCESSOR STATUS) INST

SEQ 0121

6407	023410	004767	000142		JSR	PC,T116	TEST INSTRUCTION AND CHECK PSW AND SOURCE OPERAND
6408							
6409							
6410							
6411	023414	012737	140000	177776	MOV	#140000,B#177776	SET PSW TO USER MODE
6412	023422	012706	000600		MOV	#600,R6	SETUP USER STACK
6413	023426	012701	023722		MOV	#TE116D,R1	SETUP POINTERS TO TABLES
6414	023432	012702	023712		MOV	#TE116C,R2	
6415	023436	010103			MOV	R1,R3	
6416	023440	004767	000112		JSR	PC,T116	TEST INSTRUCTION AND CHECK PSW AND SOURCE OPERAND
6417							
6418							
6419							
6420	023444	012737	140000	177776	MOV	#140000,B#177776	SET PSW TO USER MODE AND CLEAR CC BITS
6421	023452	012701	023674		MOV	#TE116A,R1	SETUP POINTERS TO TABLES
6422	023456	012702	023712		MOV	#TE116C,R2	
6423	023462	012703	023722		MOV	#TE116D,R3	
6424	023466	010104			MOV	R1,R4	SAVE A COPY OF R1 INTO R4
6425	023470	004767	000124		JSR	PC,TA116	TEST INSTRUCTION AND CHECK PSW AND SOURCE OPERAND
6426							
6427							
6428							
6429	023474	012737	030000	177776	MOV	#30000,B#177776	SET PSW TO KERNEL MODE
6430	023502	012701	023674		MOV	#TE116A,R1	SETUP POINTERS TO TABLES
6431	023506	012702	023700		MOV	#TE116B,R2	
6432	023512	012703	023722		MOV	#TE116D,R3	
6433	023516	010104			MOV	R1,R4	SAVE A COPY OF R1 INTO R4
6434	023520	004767	000074		JSR	PC,TA116	TEST INSTRUCTION AND CHECK PSW AND SOURCE OPERAND
6435							
6436							
6437	023524	005037	177776		CLR	B#177776	SET PSW TO KERNEL MODE
6438	023530	106427	177412		MTPS	#177412	TEST INSTRUCTION
6439	023534	022737	000012	177776	CMF	#12,B#177776	IS PSW CORRECT
6440	023542	001403			BEQ	100#	YES GO ON
6441							NO GO TO ERROR
6442	023544	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6443	023546	000636			.WORD	636	UNIQUE ERROR NUMBER
6444	023550	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6445	023552			100#:			
6446							
6447	023552	000167	000154		JMP	FIN116	
6448							
6449	023556	012105			MOV	(R1)+,R5	MOVE TEST DATA TO R5
6450	023560	106405			MTPS	R5	TEST INSTRUCTION
6451	023562	023722	177776		CMF	B#177776,(R2)+	IS PSW CORRECT
6452	023566	001403			BEQ	1#	YES GO ON
6453							NO GO TO ERROR
6454	023570	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6455	023572	000637			.WORD	637	UNIQUE ERROR NUMBER
6456	023574	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
6457							
6458	023576	022305			CMF	(R3)+,R5	IS R5 CORRECT
6459	023600	001403			BEQ	2#	YES GO ON
6460							NO GO TO ERROR
6461	023602	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
6462	023604	000640			.WORD	640	UNIQUE ERROR NUMBER

F10

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 122
 KDJ11A.MAC 22-FEB-84 15:12 T203 TEST MTP5 (MOVE TO PROCESSOR STATUS) INST

SEQ 0122

```

6463 023606 001127          .WORD  CPUERR          ;ADDRESS OF ERROR MESSAGE
6464
6465 023610 021227 177777    2$:  CMP      (R2),#177777      ;ARE WE DONE
6466 023614 001360          BNE      T116                ;NO GO TO T116
6467 023616 000207          RTS      PC                  ;RETURN
6468
6469 023620 106421          !
6470 023622 023722 177776    TA116: MTPS      (R1)+          ; TEST INSTRUCTION
6471 023626 001403          CMP      8#177776,(R2)+        ;IS PSW CORRECT
6472                                BEQ      1#              ;YES GO ON
6473                                ERROR                                ;NO GO TO ERROR
6474                                .WORD      641            ;ALL ERRORS TO TRAP TO EMT VECTOR
6475                                .WORD      CPUERR          ;UNIQUE ERROR NUMBER
6476                                .WORD      CPUERR          ;ADDRESS OF ERROR MESSAGE
6477 023636 122423          1$:  CMPS      (R4)+,(R3)+      ;CHECK TEST LOCATION
6478 023640 001403          BEQ      2#                    ;OK GO ON
6479                                ERROR                                ;NO GO TO ERROR
6480                                .WORD      642            ;ALL ERRORS TO TRAP TO EMT VECTOR
6481                                .WORD      CPUERR          ;UNIQUE ERROR NUMBER
6482                                .WORD      CPUERR          ;ADDRESS OF ERROR MESSAGE
6483
6484 023650 020104          2$:  CMPS      R1,R4              ;IS SOURCE OPERAND CORRECT
6485 023652 001403          BEQ      3#                    ;YES GO ON
6486                                ERROR                                ;NO GO TO ERROR
6487                                .WORD      643            ;ALL ERRORS TO TRAP TO EMT VECTOR
6488                                .WORD      CPUERR          ;UNIQUE ERROR NUMBER
6489                                .WORD      CPUERR          ;ADDRESS OF ERROR MESSAGE
6490
6491 023662 005203          3$:  INC      R3                  ;POINT TO NEXT WORD
6492 023664 021227 177777    CMP      (R2),#177777      ;ARE WE DONE
6493 023670 001353          BNE      TA116                ;NO GO TO TA116
6494 023672 000207          RTS      PC                  ;RETURN
6495
6496 023674          377    !
6497 023675          000    TE116A: .BYTE      377
6498 023676          252    .BYTE      0
6499 023677          125    .BYTE      252
6500 023700 030357          .BYTE      125
6501 023702 030000          TE116B: .WORD      30357
6502 023704 030252          .WORD      30000
6503 023706 030105          .WORD      30252
6504 023710 177777          .WORD      30105
6505 023712 140017          .WORD      177777
6506 023714 140000          TE116C: .WORD      140017
6507 023716 140012          .WORD      140000
6508 023720 140005          .WORD      140012
6509 023722 177777          TE116D: .WORD      140005
6510 023724 177400          .WORD      177777
6511 023726 177652          .WORD      177400
6512 023730 177525          .WORD      177652
6513                                .WORD      177525
6514 023732          !
6515          !
6516 023732          !
6517          !
6518          !
;*****
;*TEST 204          TEST M'PT (MOVE FROM PROCESSOR TYPE)

```

G10

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 123
 KDJ11A.MAC 22-FEB-84 15:12 T204 TEST MFPT (MOVE FROM PROCESSOR TYPE)

SEQ 0123

```

6519
6520 023732
6521 023732 005267 155046
6522 023736 013746 000010
6523 023742 012737 024070 000010
6524 023750 012700 177777
6525 023754 012737 030000 177776
6526 023762 000007
6527 023764 022737 030000 177776
6528 023772 001403
6529
6530 023774 104000
6531 023776 000644
6532 024000 001127
6533 024002 020027 000005 11:
6534 024006 001403
6535
6536 024010 104000
6537 024012 000645
6538 024014 001127
6539
6540 024016 012700 177777 21:
6541 024022 000277
6542 024024 000007
6543 024026 022737 030017 177776
6544 024034 001403
6545
6546 024036 104000
6547 024040 000646
6548 024042 001127
6549
6550 024044 020027 000005 31:
6551 024050 001403
6552
6553 024052 104000
6554 024054 000647
6555 024056 001127
6556
6557 024060 012637 000010 41:
6558
6559 024064 000167 000006
6560
6561
6562 024070
6563 024070 104000
6564 024072 000650
6565 024074 001127
6566
6567
6568 024076
6569
6570 024076
6571
6572
6573
6574 024076

*****
TST204:
      INC      #TESTN          ; INCREMENT TEST NUMBER
      MOV      @#10, -(SP)     ; SAVE VECTOR
      MOV      #TE117A, @#10   ; SETUP VECTOR TO HANDLE POSSIBLE ILLEGAL INST TR
      MOV      @177777, R0     ; INIT R0
      MOV      @30000, @#177776 ; SETUP PSW
      .WORD    7               ; TEST INSTRUCTION
      CMP      @30000, @#177776 ; IS PSW CORRECT
      BEQ      11             ; YES GO ON
                                ; NO GO TO ERROR
                                ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    644             ; UNIQUE ERROR NUMBER
      .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
      CMP      R0, #5          ; IS R0 CORRECT
      BEQ      21             ; YES GO ON
                                ; NO GO TO ERROR
                                ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    645             ; UNIQUE ERROR NUMBER
      .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
      MOV      @177777, R0     ; INIT R0
      SCC
      .WORD    7               ; TEST INSTRUCTION
      CMP      @30017, @#177776 ; IS PSW CORRECT
      BEQ      31             ; YES GO ON
                                ; NO GO TO ERROR
                                ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    646             ; UNIQUE ERROR NUMBER
      .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
      CMP      R0, #5          ; IS R0 CORRECT
      BEQ      41             ; YES GO ON
                                ; NO GO TO ERROR
                                ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    647             ; UNIQUE ERROR NUMBER
      .WORD    CPUERR          ; ADDRESS OF ERROR MESSAGE
      MOV      (SP)+, @#10     ; RESTORE VECTOR
      JMP      FIN117
;
; ERROR! GO TO ERROR IF TRAP TAKES PLACE
      TE117A:
      ERROR
      .WORD    650             ; ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR          ; UNIQUE ERROR NUMBER
                                ; ADDRESS OF ERROR MESSAGE
;
; FIN117:
;
; TE120:
*****
; *TEST 205      TEST HALT (NOT KERNEL MODE)
*****
TST205:

```

H10

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 KDJ11A.MAC 22-FEB-84 15:12 T205 TEST HALT (NOT KERNEL MODE)

SEQ 0124

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6575 024076 005267 154702      INC    $TESTN      ; INCREMENT TEST NUMBER
6576 024102 005037 177766      CLR    B#177766    ; INIT CPU ERROR REG
6577 024106 005037 177776      CLR    B#177776    ; INIT PSW-SET KERNEL MODE
6578 024112 013746 000004      MOV    B#4,-(SP)    ; SAVE VECTOR
6579 024116 013746 000006      MOV    B#6,-(SP)    ; SAVE VECTOR
6580 024122 012737 024162      MOV    #TE120A,B#4    ; SET UP VECTOR TO HANDLE ILLEGAL HALT
6581 024130 005037 000006      CLR    B#6        ; SET UP VECTOR TO COME BACK IN KERNEL MODE
6582 024134 012767 140000      MOV    #140000,PS    ; SET IN USER MODE
6583 024142 012706 000600      MOV    #600,R6     ; INITIALIZE THE USER STACK POINTER
6584 024146 000000              HALT                ; TEST INSTRUCTION
6585                                     ; ERROR! IF NOTHING HAPPENED GO TO ERROR
6586 024150              PROCNT:
6587 024150 104000      ERROR    ; ALL ERRORS TO TRAP TO EMT VECTOR
6588 024152 000651      .WORD    651                ; UNIQUE ERROR NUMBER
6589 024154 001127      .WORD    CPUERR             ; ADDRESS OF ERROR MESSAGE
6590
6591 024156 000167 000064      JMP    FIN120          ;
6592
6593
6594 024162 022737 030000 177776 TE120A: CMP    #30000,B#177776 ; IS PSW CORRECT/PREVIOUS MODE = USER?
6595 024170 001403              BEQ    1#            ; YES GO ON
6596                                     ; NO, GO TO ERROR
6597 024172 104000      ERROR    ; ALL ERRORS TO TRAP TO EMT VECTOR
6598 024174 000652      .WORD    652                ; UNIQUE ERROR NUMBER
6599 024176 001127      .WORD    CPUERR             ; ADDRESS OF ERROR MESSAGE
6600
6601 024200 022737 000200 177766 1# : CMP    #200,B#177766    ; TEST CPU ERROR REGISTER
6602 024206 001403              BEQ    2#            ; YES GO ON
6603                                     ; NO, GO TO ERROR
6604 024210 104000      ERROR    ; ALL ERRORS TO TRAP TO EMT VECTOR
6605 024212 000653      .WORD    653                ; UNIQUE ERROR NUMBER
6606 024214 001127      .WORD    CPUERR             ; ADDRESS OF ERROR MESSAGE
6607
6608 024216 022627 024150      2# : CMP    (SP)+,#PROCNT    ; DOES STACK CONTAIN CORRECT PC
6609 024222 001403              BEQ    3#            ; YES GO ON
6610                                     ; NO GO TO ERROR
6611 024224 104000      ERROR    ; ALL ERRORS TO TRAP TO EMT VECTOR
6612 024226 000654      .WORD    654                ; UNIQUE ERROR NUMBER
6613 024230 001127      .WORD    CPUERR             ; ADDRESS OF ERROR MESSAGE
6614 024232 022627 140000      3# : CMP    (SP)+,#140000    ; DOES STACK CONTAIN CORRECT PSW
6615 024236 001403              BEQ    FIN120        ; YES GO ON
6616                                     ; NO GO TO ERROR
6617 024240 104000      ERROR    ; ALL ERRORS TO TRAP TO EMT VECTOR
6618 024242 000655      .WORD    655                ; UNIQUE ERROR NUMBER
6619 024244 001127      .WORD    CPUERR             ; ADDRESS OF ERROR MESSAGE
6620
6621 024246 005037 177766      FIN120: CLR    B#CPEREG    ; CLEAR CPU ERROR REGISTER
6622 024252 012637 000006      MOV    (SP)+,B#6        ; RESTORE VECTOR
6623 024256 012637 000004      MOV    (SP)+,B#4        ; RESTORE VECTOR
6624
6625
6626 024262      ;
6627      TE121:
6628      ; *****
6629      ; *TEST 206      TEST RESET
6630 024262      ; *****
        TST206:

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Address	Op Code	Op 1	Op 2	Op 3	Op 4	Op 5	Op 6	Op 7	Op 8	Op 9	Op 10	Op 11	Op 12	Op 13	Op 14	Op 15	Op 16	Op 17	Op 18	Op 19	Op 20	Op 21	Op 22	Op 23	Op 24	Op 25	Op 26	Op 27	Op 28	Op 29	Op 30	Op 31	Op 32	Op 33	Op 34	Op 35	Op 36	Op 37	Op 38	Op 39	Op 40	Op 41	Op 42	Op 43	Op 44	Op 45	Op 46	Op 47	Op 48	Op 49	Op 50	Op 51	Op 52	Op 53	Op 54	Op 55	Op 56	Op 57	Op 58	Op 59	Op 60	Op 61	Op 62	Op 63	Op 64	Op 65	Op 66	Op 67	Op 68	Op 69	Op 70	Op 71	Op 72	Op 73	Op 74	Op 75	Op 76	Op 77	Op 78	Op 79	Op 80	Op 81	Op 82	Op 83	Op 84	Op 85	Op 86	Op 87	Op 88	Op 89	Op 90	Op 91	Op 92	Op 93	Op 94	Op 95	Op 96	Op 97	Op 98	Op 99	Op 100	Op 101	Op 102	Op 103	Op 104	Op 105	Op 106	Op 107	Op 108	Op 109	Op 110	Op 111	Op 112	Op 113	Op 114	Op 115	Op 116	Op 117	Op 118	Op 119	Op 120	Op 121	Op 122	Op 123	Op 124	Op 125	Op 126	Op 127	Op 128	Op 129	Op 130	Op 131	Op 132	Op 133	Op 134	Op 135	Op 136	Op 137	Op 138	Op 139	Op 140	Op 141	Op 142	Op 143	Op 144	Op 145	Op 146	Op 147	Op 148	Op 149	Op 150	Op 151	Op 152	Op 153	Op 154	Op 155	Op 156	Op 157	Op 158	Op 159	Op 160	Op 161	Op 162	Op 163	Op 164	Op 165	Op 166	Op 167	Op 168	Op 169	Op 170	Op 171	Op 172	Op 173	Op 174	Op 175	Op 176	Op 177	Op 178	Op 179	Op 180	Op 181	Op 182	Op 183	Op 184	Op 185	Op 186	Op 187	Op 188	Op 189	Op 190	Op 191	Op 192	Op 193	Op 194	Op 195	Op 196	Op 197	Op 198	Op 199	Op 200	Op 201	Op 202	Op 203	Op 204	Op 205	Op 206	Op 207	Op 208	Op 209	Op 210	Op 211	Op 212	Op 213	Op 214	Op 215	Op 216	Op 217	Op 218	Op 219	Op 220	Op 221	Op 222	Op 223	Op 224	Op 225	Op 226	Op 227	Op 228	Op 229	Op 230	Op 231	Op 232	Op 233	Op 234	Op 235	Op 236	Op 237	Op 238	Op 239	Op 240	Op 241	Op 242	Op 243	Op 244	Op 245	Op 246	Op 247	Op 248	Op 249	Op 250	Op 251	Op 252	Op 253	Op 254	Op 255	Op 256	Op 257	Op 258	Op 259	Op 260	Op 261	Op 262	Op 263	Op 264	Op 265	Op 266	Op 267	Op 268	Op 269	Op 270	Op 271	Op 272	Op 273	Op 274	Op 275	Op 276	Op 277	Op 278	Op 279	Op 280	Op 281	Op 282	Op 283	Op 284	Op 285	Op 286	Op 287	Op 288	Op 289	Op 290	Op 291	Op 292	Op 293	Op 294	Op 295	Op 296	Op 297	Op 298	Op 299	Op 300	Op 301	Op 302	Op 303	Op 304	Op 305	Op 306	Op 307	Op 308	Op 309	Op 310	Op 311	Op 312	Op 313	Op 314	Op 315	Op 316	Op 317	Op 318	Op 319	Op 320	Op 321	Op 322	Op 323	Op 324	Op 325	Op 326	Op 327	Op 328	Op 329	Op 330	Op 331	Op 332	Op 333	Op 334	Op 335	Op 336	Op 337	Op 338	Op 339	Op 340	Op 341	Op 342	Op 343	Op 344	Op 345	Op 346	Op 347	Op 348	Op 349	Op 350	Op 351	Op 352	Op 353	Op 354	Op 355	Op 356	Op 357	Op 358	Op 359	Op 360	Op 361	Op 362	Op 363	Op 364	Op 365	Op 366	Op 367	Op 368	Op 369	Op 370	Op 371	Op 372	Op 373	Op 374	Op 375	Op 376	Op 377	Op 378	Op 379	Op 380</
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 KDJ11A.MAC 22-FEB-84 15:12 T206 TEST RESET

SEQ 0127

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6743 024706 000002      8: RTI                ;USER MODE HALT OCCURRED; GO TO ERROR.
6744
6745 024710 005037 177772      9: CLR      @177772      ;CLEAR PIRQ
6746 024714 005037 177776      CLR      @177776      ;CLEAR PSW
6747 024720 010237 000004      MOV      R2,@4        ;RESTORE VECTORS TO PREVIOUS STATE
6748 024724 010337 000006      MOV      R3,@6
6749 024730
6750
6751
6752 024730      FIN121:
6753      ;
6754      ;TE122:
6755      ;*****
6756 024730      ;*TEST 207      TEST SPL (SET PRIORITY LEVEL)
6757 024730 005267 154050      ;*****
6758      ;TST207:
6759      INC      $TESTN                ;INCREMENT TEST NUMBER
6760 024734 012705 000010      MOV      #8.,R5                ;INIT COUNTER
6761 024740 012701 025174      MOV      @T1228,R1            ;SETUP POINTER TO DATA
6762 024744 012737 030000 177776 1: MOV      @30000,@177776      ;INIT PSW
6763 024752 004767 000064      JSR      PC,T122A          ; TEST INSTRUCTION
6764 024756 022137 177776      CMP      (R1)+,@177776      ;IS PSW CORRECT
6765 024762 001403      BEQ      2:                ;YES GO ON
6766 024764 104000      ERROR                ;NO GO TO ERROR
6767 024766 000671      .WORD      671                ;ALL ERRORS TO TRAP TO EMT VECTOR
6768 024770 001127      .WORD      CPUERR            ;UNIQUE ERROR NUMBER
6769
6770 024772 077514      2: SOB      R5,1:                ;ADDRESS OF ERROR MESSAGE
6771
6772      ;REPEAT UNTIL ALL CASES ARE TESTED
6773 024774 012705 000010      MOV      #8.,R5                ;INIT COUNTER
6774 025000 012737 140000 177776 3: MOV      #140000,@177776      ;SETUP PSW TO USER MODE
6775 025006 012706 000600      MOV      #600,R6                ;SETUP USER STACK
6776 025012 004767 000024      JSR      PC,T122A          ; TEST INSTRUCTION
6777 025016 022737 140017 177776      CMP      @140017,@177776      ;IS PSW CORRECT
6778 025024 001403      BEQ      4:                ;YES GO ON
6779
6780 025026 104000      ERROR                ;NO GO TO ERROR
6781 025030 000672      .WORD      672                ;ALL ERRORS TO TRAP TO EMT VECTOR
6782 025032 001127      .WORD      CPUERR            ;UNIQUE ERROR NUMBER
6783
6784 025034 077517      4: SOB      R5,3:                ;ADDRESS OF ERROR MESSAGE
6785
6786      ;REPEAT UNTIL ALL CASES ARE TESTED
6787 025036 000167 000152      JMP      FIN122
6788
6789 025042 020527 000010      T122A: CMP      R5,@8.          ;FIND OUT WHAT COUNTER IS
6790 025046 001003      BNE      1:                ;IF NOT PRIORITY 0 GO TO 1:
6791 025050 000277      SCC                ;SET ALL CC BITS
6792 025052 000230      SPL      0                ;SET PRIORITY TO 0
6793 025054 000446      BR       8:                ;RETURN
6794 025056 020527 000007      1: CMP      R5,@7          ;FIND OUT WHAT COUNTER IS
6795 025062 001003      BNE      2:                ;IF NOT PRIORITY 1 GO TO 2:
6796 025064 000277      SCC                ;SET ALL CC BITS
6797 025066 000231      SPL      1                ;SET PRIORITY TO 1
6798 025070 000440      BR       8:                ;RETURN

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 128
 KDJ11A.MAC 22-FEB-84 15:12 T207 TEST SPL (SET PRIORITY LEVEL)

SEQ 0128

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6799 025072 020527 000006      2$:  CMP      R5,06      ;FIND OUT WHAT COUNTER IS
6800 025076 001003              BNE      3$      ;IF NOT PRIORITY 2 GO TO 3$
6801 025100 000277              SCC              ;SET ALL CC BITS
6802 025102 000232              SPL      2      ;SET PRIORITY TO 2
6803 025104 000432              BR       8$      ;RETURN
6804 025106 020527 000005      3$:  CMP      R5,05      ;FIND OUT WHAT COUNTER IS
6805 025112 001003              BNE      4$      ;IF NOT PRIORITY 3 GO TO 4$
6806 025114 000277              SCC              ;SET ALL CC BITS
6807 025116 000233              SPL      3      ;SET PRIORITY TO 3
6808 025120 000424              BR       3$      ;RETURN
6809 025122 020527 000004      4$:  CMP      R5,04      ;FIND OUT WHAT COUNTER IS
6810 025126 001003              BNE      5$      ;IF NOT PRIORITY 4 GO TO 5$
6811 025130 000277              SCC              ;SET ALL CC BITS
6812 025132 000234              SPL      4      ;SET PRIORITY TO 4
6813 025134 000416              BR       8$      ;RETURN
6814 025136 020527 000003      5$:  CMP      R5,03      ;FIND OUT WHAT COUNTER IS
6815 025142 001003              BNE      6$      ;IF NOT PRIORITY 5 GO TO 6$
6816 025144 000277              SCC              ;SET ALL CC BITS
6817 025146 000235              SPL      5      ;SET PRIORITY TO 5
6818 025150 000410              BR       8$      ;RETURN
6819 025152 020527 000002      6$:  CMP      R5,02      ;FIND OUT WHAT COUNTER IS
6820 025156 001003              BNE      7$      ;IF NOT PRIORITY 6 GO TO 7$
6821 025160 000277              SCC              ;SET ALL CC BITS
6822 025162 000236              SPL      6      ;SET PRIORITY TO 6
6823 025164 000402              BR       8$      ;RETURN
6824 025166 000277              7$:  SCC              ;SET ALL CC BITS
6825 025170 000237              SPL      7      ;SET PRIORITY TO 7
6826 025172 000207              8$:  RTS       PC      ;RETURN
6827
6828 025174 030017      Y1228:  .WORD     30017
6829 025176 030057          .WORD     30057
6830 025200 030117          .WORD     30117
6831 025202 030157          .WORD     30157
6832 025204 030217          .WORD     30217
6833 025206 030257          .WORD     30257
6834 025210 030317          .WORD     30317
6835 025212 030357          .WORD     30357
6836 025214
6837
6838 025214      FIN122:
6839
6840      TE123:
6841      ;*****
6842      ;*TEST 210      TEST TSTSET INSTRUCTION (MULTI PROCESSING INST)
6843      ;*****
6844      TST210:
6845      INC      $TESTN      ;INCREMENT TEST NUMBER
6846      CLR      00177776    ;INIT PSW
6847      MOV      010,,R3      ;INIT COUNTER
6848      MOV      0400,R1      ;SETUP DESTINATION
6849      MOV      0123A,R0     ;SETUP SOURCE
6850      MOV      (R0)+,(R1)+   ;RELOCATE TABLES
6851      SOB      R3,100$      ;ARE WE DONE
6852      MOV      0010,-(SP)    ;SAVE VECTOR
6853      MOV      0123D,0010    ;SETUP NEW VECTOR
6854      CLR      R0           ;INIT R0
6855      MOV      0400,R1      ;SETUP POINTERS TO TABLES
6856      MOV      0410,R2

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GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 129
 KDJ11A.MAC 22-FEB-84 15:12 T210 TEST TSTSET INSTRUCTION (MULTI PROCESSING INST)

SEQ 0129

6855	025270	012703	000416		MOV	#415,R3	:	
6856	025274	010104			MOV	R1,R4	:	
6857	025276	012737	030000	177776	1\$:	MOV	#30000,8#177776	: SETUP PSW
6858	025304	000262			SEV		:	: SET V BIT
6859	025306	007221			.WORD	7221	:	: TEST INSTRUCTION
6860	025310	022237	177776		CMP	(R2)+,8#177776	:	: IS PSW CORRECT
6861	025314	001403			BEQ	2\$	:	: YES GO ON
6862							:	: NO GO TO ERROR
6863	025316	104000			ERROR		:	: ALL ERRORS TO TRAP TO EMT VECTOR
6864	025320	000673			.WORD	673	:	: UNIQUE ERROR NUMBER
6865	025322	001127			.WORD	CPUERR	:	: ADDRESS OF ERROR MESSAGE
6866							:	
6867	025324	020013			2\$:	CMP	R0,(R3)	: IS R0 CORRECT
6868	025326	001403			BEQ	3\$	:	: YES GO ON
6869							:	: NO GO TO ERROR
6870	025330	104000			ERROR		:	: ALL ERRORS TO TRAP TO EMT VECTOR
6871	025332	000674			.WORD	674	:	: UNIQUE ERROR NUMBER
6872	025334	001127			.WORD	CPUERR	:	: ADDRESS OF ERROR MESSAGE
6873							:	
6874	025336	005204			3\$:	INC	R4	: SETUP EXPECTED DATA
6875	025340	005204			INC	R4	:	:
6876	025342	020401			CMP	R4,R1	:	: IS R1 CORRECT
6877	025344	001403			BEQ	4\$	:	: YES GO ON
6878							:	: NO GO TO ERROR
6879	025346	104000			ERROR		:	: ALL ERRORS TO TRAP TO EMT VECTOR
6880	025350	000675			.WORD	675	:	: UNIQUE ERROR NUMBER
6881	025352	001127			.WORD	CPUERR	:	: ADDRESS OF ERROR MESSAGE
6882							:	
6883	025354	052713	000001		4\$:	BIS	#1,(R3)	: SETUP EXPECTED DATA
6884	025360	022341			CMP	(R3)+,-(R1)	:	: IS TEST LOCATION CORRECT
6885	025362	001403			BEQ	5\$	:	: YES GO ON
6886							:	: NO GO TO ERROR
6887	025364	104000			ERROR		:	: ALL ERRORS TO TRAP TO EMT VECTOR
6888	025366	000676			.WORD	676	:	: UNIQUE ERROR NUMBER
6889	025370	001127			.WORD	CPUERR	:	: ADDRESS OF ERROR MESSAGE
6890							:	
6891	025372	005201			5\$:	INC	R1	: POINT TO NEXT TEST LOCATION
6892	025374	005201			INC	R1	:	:
6893	025376	021127	177777		CMP	(R1),#177777	:	: ARE WE DONE
6894	025402	001335			BNE	1\$	:	: NO GO TO 1\$
6895	025404	012737	025460	000010	MOV	#T123E,8#10	:	: SETUP NEW VECTOR
6896	025412	007201			.WORD	7201	:	: TEST INSTRUCTION ILLEGAL MODE
6897							:	: ERROR! GO TO ERROR IF DIDN'T TRAP
6898	025414	104000			ERROR		:	: ALL ERRORS TO TRAP TO EMT VECTOR
6899	025416	000677			.WORD	677	:	: UNIQUE ERROR NUMBER
6900	025420	001127			.WORD	CPUERR	:	: ADDRESS OF ERROR MESSAGE
6901							:	
6902	025422	000167	000036		JMP	T123F	:	
6903							:	
6904							:	
6905	025426	167604			T123A:	.WORD	167604	
6906	025430	000000			.WORD	0		
6907	025432	000001			.WORD	1		
6908	025434	177777			.WORD	177777		
6909	025436	030010			T123B:	.WORD	30010	
6910	025440	030004			.WORD	30004		

Address	Offset	Value	Label	Instruction	Comment
6911	025442	030001			
6912	025444	167604	T123C:	.WORD	167604
6913	025446	000000		.WORD	0
6914	025450	000001		.WORD	1
6915					;ERROR! GO TO ERROR IF TRAPPED
6916	025452		T123D:		
6917	025452	104000		ERROR	;ALL ERRORS TO TRAP TO EMT VECTOR
6918	025454	000700		.WORD	700
6919	025456	001127		.WORD	CPUERR
6920					;ADDRESS OF ERROR MESSAGE
6921	025460	005726	T123E:	TST	(SP)+
6922	025462	005726		TST	(SP)+
6923	025464	012637	T123F:	MOV	(SP)+,0010
6924					;RESTORE VECTOR
6925					
6926	025470		T124:		
6927					;*****
6928					;*TEST 211 TEST WRTCLK (WRITE LOCK MULTI PROCESSING INST)
6929					;*****
6930	025470		TST211:		
6931	025470	005267		INC	\$TESTN
6932	025474	005037		CLL	00177776
6933	025500	012703		MOV	010,R3
6934	025504	012701		MOV	0400,R1
6935	025510	012700		MOV	0T124A,R0
6936	025514	012021	100\$:	MOV	(R0)+,(R1)+
6937	025516	077302		SOB	R3,100\$
6938	025520	013746		MOV	0010,-(SP)
6939	025524	012737		MOV	0T124D,0010
6940	025532	012701		MOV	0400,R1
6941	025536	012702		MOV	0410,R2
6942	025542	012703		MOV	0416,R3
6943	025546	010204		MOV	R2,R4
6944	025550	012737	030000	MOV	030000,00177776
6945	025556	011100	1\$:	MOV	(R1),R0
6946	025560	020327		CM	R3,0416
6947	025564	001401		BR	2\$
6948	025566	000402		BR	3\$
6949	025570	000261	2\$:	SEC	
6950	025572	000401		RR	4\$
6951	025574	000241	3\$:	CLC	
6952	025576	000262	4\$:	SEV	
6953	025600	007322		.WORD	7322
6954	025602	022337	177776	CM	(R3)+,00177776
6955	025606	001403		BEQ	5\$
6956					;ERROR! NO GO TO ERROR
6957	025610	104000		ERROR	;ALL ERRORS TO TRAP TO EMT VECTOR
6958	025612	000701		.WORD	701
6959	025614	001127		.WORD	CPUERR
6960					;ADDRESS OF ERROR MESSAGE
6961	025616	021100	5\$:	CM	(R1),R0
6962	025620	001403		BEQ	6\$
6963					;YES GO ON
6964	025622	104000		ERROR	;ALL ERRORS TO TRAP TO EMT VECTOR
6965	025624	000702		.WORD	702
6966	025626	001127		.WORD	CPUERR
					;ADDRESS OF ERROR MESSAGE

B1.1

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 KDJ11A.MAC 22-FEB-84 15:12 T211 TEST WRTLOCK (WRITE LOCK MULTI PROCESSING INST)

SEQ 0131

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6967
6968 025630 003204      60:  INC      R4          ;SETUP EXPECTED DATA
6969 025632 003204      60:  INC      R4          ;
6970 025634 020204      60:  CMP      R2,R4        ;IS R2 CORRECT
6971 025636 001403      60:  BEQ      70          ;YES GO ON
6972                                ;NO GO TO ERROR
6973 025640 104000      60:  ERROR          ;ALL ERRORS TO TRAP TO ENT VECTOR
6974 025642 000703      60:  .WORD    705          ;UNIQUE ERROR NUMBER
6975 025644 001127      60:  .WORD    CPUERR        ;ADDRESS OF ERROR MESSAGE
6976
6977 025646 022142      70:  CMP      (R1),-(R2)      ;IS TEST LOCATION CORRECT
6978 025650 001403      70:  BEQ      80          ;YES GO ON
6979                                ;NO GO TO ERROR
6980 025652 104000      70:  ERROR          ;ALL ERRORS TO TRAP TO ENT VECTOR
6981 025654 000704      70:  .WORD    704          ;UNIQUE ERROR NUMBER
6982 025656 001127      70:  .WORD    CPUERR        ;ADDRESS OF ERROR MESSAGE
6983
6984 025660 003202      80:  INC      R2          ;POINT TO NEXT TEST LOCATION
6985 025662 003202      80:  INC      R2          ;
6986 025664 021127 177777 80:  CMP      (R1),#177777 ;ARE WE DONE
6987 025670 001327      80:  BNE      10          ;NO GO TO 10
6988 025672 012737 025746 000010 80:  MOV      #T124E,R#10 ;SETUP NEW VECTOR
6989 025700 007302      80:  .WORD    7302          ;TEST INSTRUCTION ILLEGAL MODE
6990                                ;GO TO ERROR IF DIDN'T TRAP
6991 025702 104000      80:  ERROR          ;ALL ERRORS TO TRAP TO ENT VECTOR
6992 025704 000705      80:  .WORD    705          ;UNIQUE ERROR NUMBER
6993 025706 001127      80:  .WORD    CPUERR        ;ADDRESS OF ERROR MESSAGE
6994
6995 025710 000167 000036 80:  JMP      T124F          ;
6996
6997
6998 025714 167604      T124A: .WORD    167604
6999 025716 000000      T124A: .WORD    0
7000 025720 000001      T124A: .WORD    1
7001 025722 177777      T124A: .WORD    177777
7002 025724 177777      T124B: .WORD    177777
7003 025726 177777      T124B: .WORD    177777
7004 025730 177777      T124B: .WORD    177777
7005 025732 030011      T124C: .WORD    30011
7006 025734 030004      T124C: .WORD    30004
7007 025736 030000      T124C: .WORD    30000
7008
7009 025740      T124D:                                ;GO TO ERROR IF TRAPPED
7010 025740 104000      T124D: ERROR          ;ALL ERRORS TO TRAP TO ENT VECTOR
7011 025742 000706      T124D: .WORD    706          ;UNIQUE ERROR NUMBER
7012 025744 001127      T124D: .WORD    CPUERR        ;ADDRESS OF ERROR MESSAGE
7013 025746 005726      T124E: TST      (SP)+          ;CLEAN UP STACK
7014 025750 005726      T124E: TST      (SP)+          ;
7015 025752 012637 000010 T124F: MOV      (SP)+,R#10      ;RESTORE VECTOR
7016
7017
7018 025756      TE125:
7019
7020
7021
7022 025756      ;*****
;TEST 212 TEST MUL (MULTIPLY INST)
;*****
TST212:

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 RDJ11A.MAC 22-FEB-84 15:12 T212 TEST PROC (MULTIPLY INST)

SEQ 0132

7023	025756	005267	153022		INC	#TESTN	INCREMENT TEST NUMBER
7024	025762	005037	177776		CLR	#177776	INIT PS
7025	025766	012701	026266		MOV	#TE125A,R1	SETUP POINTERS TO TABLES
7026							
7027	025772	010137	001034	1#:	MOV	R1,#EXPDAT	POINT TO SOURCE
7028	025776	062737	000002	001034	ADD	#2,#EXPDAT	INIT R3 TO A KNOWN STATE
7029	026004	012703	122222		MOV	#122222,R3	INIT DESTINATION REG
7030	026010	011102			MOV	(R1),R2	SET ALL CC BITS
7031	026012	000277			SCC		TEST INSTRUCTION
7032	026014	070261	000002		MUL	2(R1),R2	IS PS CORRECT
7033	026020	026137	000004	177776	CMP	4(R1),#177776	YES GO ON
7034	026026	001403			BEQ	2#	NO GO TO ERROR
7035							ALL ERRORS TO TRAP TO EMT VECTOR
7036	026030	104000			ERROR		UNIQUE ERROR NUMBER
7037	026032	000707			.WORD	707	ADDRESS OF ERROR MESSAGE
7038	026034	001127			.WORD	CPUERR	
7039							
7040	026036	026103	000006	2#:	CMP	6(R1),R3	IS R3 CORRECT
7041	026042	001403			BEQ	3#	YES GO ON
7042							NO GO TO ERROR
7043	026044	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
7044	026046	000710			.WORD	710	UNIQUE ERROR NUMBER
7045	026050	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
7046							
7047	026052	026102	000010	3#:	CMP	10(R1),R2	IS R2 CORRECT
7048	026056	001403			BEQ	4#	YES GO ON
7049							NO GO TO ERROR
7050	026060	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
7051	026062	000711			.WORD	711	UNIQUE ERROR NUMBER
7052	026064	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
7053							
7054	026066	026177	000002	152740	4#:	CMP	2(R1),#EXPDAT
7055	026074	001403			BEQ	5#	IS SOURCE LOCATION OK
7056							YES GO ON
7057	026076	104000			ERROR		NO GO TO ERROR
7058	026100	000712			.WORD	712	ALL ERRORS TO TRAP TO EMT VECTOR
7059	026102	001127			.WORD	CPUERR	UNIQUE ERROR NUMBER
7060							ADDRESS OF ERROR MESSAGE
7061	026104	062701	000012	5#:	ADD	#12,R1	GO TO NEXT TEST
7062	026110	020127	026514		CMP	R1,#FIN125	ARE WE FINISHED
7063	026114	001326			BNE	1#	NO GO TO 1#
7064							
7065							
7066							
7067							
7068							
7069	026116	012701	026266	6#:	MOV	#TE125A,R1	SETUP POINTERS TO TABLES
7070	026122			7#:			
7071							
7072	026122	010102			MOV	R1,R2	INIT R6 TO A KNOWN STATE
7073	026124	012706	001000		MOV	#5180T,R6	SETUP R4 VALUE
7074	026130	012704	000004		MOV	#4,R4	INIT DESTINATION REG
7075	026134	011105			MOV	(R1),R5	SET ALL CC BITS
7076	026136	000277			SCC		TEST INSTRUCTION
7077	026140	070561	000002		MUL	2(R1),R5	IS PS CORRECT
7078	026144	026137	000004	177776	CMP	4(R1),#177776	

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R0J11A.MAC 22-FEB-84 15:12 T212 TEST PROC (MULTIPLY INST)

SEQ 0133

7079	026152	001403		BEQ	8#		;YES GO ON
7080							;NO GO TO ERROR
7081	026154	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7082	026156	000713		.WORD	713		;UNIQUE ERROR NUMBER
7083	026160	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7084							
7085	026162	026105	000006	3#:	CMP	6(R1),R5	;IS R5 CORRECT
7086	026166	001403		BEQ	9#		;YES GO ON
7087							;NO GO TO ERROR
7088	026170	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7089	026172	000714		.WORD	714		;UNIQUE ERROR NUMBER
7090	026174	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7091							
7092	026176	020627	001000	9#:	CMP	R6,#STBOT	;IS R6 CORRECT
7093	026202	001405		BEQ	10#		;YES GO ON
7094	026204	012706	001000	MOV	#STBOT,R6		;RESTORE SP
7095							;NO GO TO ERROR
7096	026210	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7097	026212	000715		.WORD	715		;UNIQUE ERROR NUMBER
7098	026214	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7099							
7100	026216	005722		10#:	TST	(R2),	;POINT TO SOURCE OPERAND
7101	026220	021261	000002	CMP	(R2),2(R1)		;IS SOURCE LOCATION OK
7102	026224	001403		BEQ	11#		;YES GO ON
7103							;NO GO TO ERROR
7104	026226	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7105	026230	000716		.WORD	716		;UNIQUE ERROR NUMBER
7106	026232	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7107							
7108	026234	020427	000004	11#:	CMP	R4,#4	;IS R4 CORRECT
7109	026240	001403		BEQ	12#		;YES GO ON
7110							;NO GO TO ERROR
7111	026242	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7112	026244	000717		.WORD	717		;UNIQUE ERROR NUMBER
7113	026246	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7114							
7115	026250	062701	000012	12#:	ADD	#12,R1	
7116	026254	020127	026514	CMP	R1,#FIN125		;ARE WE FINISHED
7117	026260	001320		BNE	7#		;NO GO TO 7#
7118							
7119							
7120	026262	000167	000226	JMP	FIN125		
7121							
7122							
7123	026266	177777		TE125A:	.WORD	177777	;MULTIPLICAND
7124	026270	177777		.WORD	177777		;MULTIPLIER
7125	026272	000000		.WORD	0		
7126	026274	000001		.WORD	1		
7127	026276	000000		.WORD	0		
7128							
7129	026300	006772		.WORD	6772		;MULTIPLICAND
7130	026302	100000		.WORD	100000		;MULTIPLIER
7131	026304	000011		.WORD	11		
7132	026306	000000		.WORD	0		
7133	026310	174403		.WORD	174403		
7134							

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SEQ 0134

7135	026312	177777	.WORD	177777	;MULTIPLICAND
7136	026314	077777	.WORD	77777	;MULTIPLIER
7137	026316	000010	.WORD	10	
7138	026320	100001	.WORD	100001	
7139	026322	177777	.WORD	177777	
7140					
7141	026324	077777	.WORD	77777	;MULTIPLICAND
7142	026326	000456	.WORD	456	;MULTIPLIER
7143	026330	000001	.WORD	1	
7144	026332	177322	.WORD	177322	
7145	026334	000226	.WORD	226	
7146					
7147	026336	173210	.WORD	173210	;MULTIPLICAND
7148	026340	000000	.WORD	0	;MULTIPLIER
7149	026342	000004	.WORD	4	
7150	026344	000000	.WORD	0	
7151	026346	000000	.WORD	0	
7152					
7153	026350	000000	.WORD	0	;MULTIPLICAND
7154	026352	003251	.WORD	3251	;MULTIPLIER
7155	026354	000004	.WORD	4	
7156	026356	000000	.WORD	0	
7157	026360	000000	.WORD	0	
7158					
7159	026362	000000	.WORD	0	;MULTIPLICAND
7160	026364	000000	.WORD	0	;MULTIPLIER
7161	026366	000004	.WORD	4	
7162	026370	000000	.WORD	0	
7163	026372	000000	.WORD	0	
7164					
7165	026374	100000	.WORD	100000	;MULTIPLICAND
7166	026376	000001	.WORD	1	;MULTIPLIER
7167	026400	000010	.WORD	10	
7168	026402	100000	.WORD	100000	
7169	026404	177777	.WORD	177777	
7170					
7171	026406	077777	.WORD	77777	;MULTIPLICAND
7172	026410	000001	.WORD	1	;MULTIPLIER
7173	026412	000000	.WORD	0	
7174	026414	077777	.WORD	77777	
7175	026416	000000	.WORD	0	
7176					
7177	026420	000010	.WORD	10	;MULTIPLICAND
7178	026422	010000	.WORD	10000	;MULTIPLIER
7179	026424	000001	.WORD	1	
7180	026426	100000	.WORD	100000	
7181	026430	000000	.WORD	0	
7182					
7183	026432	001452	.WORD	1452	;MULTIPLICAND
7184	026434	034527	.WORD	34527	;MULTIPLIER
7185	026436	000001	.WORD	1	
7186	026440	066506	.WORD	66506	
7187	026442	000265	.WORD	265	
7188					
7189	026444	000007	.WORD	7	;MULTIPLICAND
7190	026446	000400	.WORD	400	;MULTIPLIER

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 KDJ11A,MAC 22-FEB-84 15:12 T212 TEST MUL (MULTIPLY INST)

SEQ 0135

7191	026450	000000		.WORD	0	
7192	026452	003400		.WORD	3400	
7193	026454	000000		.WORD	0	
7194						
7195	026456	000002		.WORD	2	;MULTIPLICAND
7196	026460	100000		.WORD	100000	;MULTIPLIER
7197	026462	000011		.WORD	11	
7198	026464	000000		.WORD	0	
7199	026466	177777		.WORD	177777	
7200						
7201	026470	100000		.WORD	100000	;MULTIPLICAND
7202	026472	077777		.WORD	77777	;MULTIPLIER
7203	026474	000011		.WORD	11	
7204	026476	100000		.WORD	100000	
7205	026500	140000		.WORD	140000	
7206						
7207	026502	000001		.WORD	1	;MULTIPLICAND
7208	026504	177777		.WORD	177777	;MULTIPLIER
7209	026506	000010		.WORD	10	
7210	026510	177777		.WORD	177777	
7211	026512	177777		.WORD	177777	
7212	026514					
7213						
7214	026514					
7215						
7216						
7217						
7218	026514					
7219	026514	005267	152264	INC	\$TESTN	;INCREMENT TEST NUMBER
7220	026520	005037	177776	CLR	\$R177776	;INIT PSW
7221	026524	005006		CLR	R6	;INIT SP
7222	026526	013705	000000	MOV	\$R0,R5	;SAVE VECTORS
7223	026532	013701	000002	MOV	\$R2,R1	
7224	026536	012737	000137	MOV	\$R137,\$R0	;SETUP NEW VECTORS
7225	026544	012737	026572	MOV	\$TE126A,\$R2	
7226	026552	000277		SCC		;SET ALL CC BITS
7227	026554	071627	000002	DIV	\$R2,R6	;TEST INSTRUCTION
7228	026560	012706	001000	A126: MOV	\$STBOT,R6	;RESTORE SP BEFORE GOING TO ERROR
7229						;IF R7 ISN'T CORRECT GO TO ERROR
7230	026564	104000		ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
7231	026566	000720		.WORD	720	;UNIQUE ERROR NUMBER
7232	026570	001127		.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
7233						
7234	026572	022737	000000	177776	TE126A: CMP	\$R0,\$R177776
7235	026600	001405			BEQ	1;
7236	026602	012706	001000		MOV	\$STBOT,R6
7237						;RESTORE SP BEFORE GOING TO ERROR
7238	026606	104000		ERROR		;NO GO TO ERROR
7239	026610	000721		.WORD	721	;ALL ERRORS TO TRAP TO EMT VECTOR
7240	026612	001127		.WORD	CPUERR	;UNIQUE ERROR NUMBER
7241						;ADDRESS OF ERROR MESSAGE
7242	026614	012704	026560	1#:	MOV	\$A126,R4
7243	026620	006204			ASR	R4
7244	026622	020406			CMP	R4,R6
7245	026624	001405			BEQ	2#
7246	026626	012706	001000		MOV	\$STBOT,R6
						;RESTORE SP BEFORE GOING TO ERROR

PC	Instruction	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464	Op46
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 KDJ11A.MAC 22-FEB-84 15:12 T213 TEST DIV (DIVIDE INST)

SEQ 0137

7303	027016	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7304								
7305	027020	012700	000004	8#:	MOV	#4,R0		INIT R0
7306	027024	012705	000010		MOV	#10,R5		INIT R5
7307	027030	005004			CLR	R4		INIT R4
7308	027032	000277			SCC			SET ALL CC BITS
7309	027034	071400			DIV	R0,R4		TEST INSTRUCTION
7310	027036	022737	000000	177776	CMP	#0,#177776		IS PS CORRECT
7311	027044	001407			BEQ	9#		YES GO ON
7312	027046	010067	151326		MOV	R0,400		SAVE R0
7313								NO GO TO ERROR
7314	027052	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7315	027054	000731			.WORD	731		UNIQUE ERROR NUMBER
7316	027056	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7317								
7318	027060	016700	151314		MOV	400,R0		RESTORE R0
7319	027064	022700	000004	9#:	CMP	#4,R0		IS R0 CORRECT
7320	027070	001403			BEQ	10#		YES GO ON
7321								NO GO TO ERROR
7322	027072	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7323	027074	000732			.WORD	732		UNIQUE ERROR NUMBER
7324	027076	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7325								
7326	027100	022704	000002	10#:	CMP	#2,R4		IS R4 CORRECT
7327	027104	001403			BEQ	11#		YES GO ON
7328								NO GO TO ERROR
7329	027106	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7330	027110	000733			.WORD	733		UNIQUE ERROR NUMBER
7331	027112	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7332								
7333	027114	022705	000000	11#:	CMP	#0,R5		IS R5 CORRECT
7334	027120	001403			BEQ	12#		YES GO ON
7335								NO GO TO ERROR
7336	027122	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7337	027124	000734			.WORD	734		UNIQUE ERROR NUMBER
7338	027126	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7339								
7340	027130	012705	000010	12#:	MOV	#10,R5		INIT R5
7341	027134	005004			CLR	R4		INIT R4
7342	027136	000277			SCC			SET ALL CC BITS
7343	027140	071427	000003		DIV	#3,R4		TEST INSTRUCTION
7344	027144	022737	000000	177776	CMP	#0,#177776		IS PS CORRECT
7345	027152	001403			BEQ	13#		YES GO ON
7346								NO GO TO ERROR
7347	027154	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7348	027156	000735			.WORD	735		UNIQUE ERROR NUMBER
7349	027160	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7350								
7351	027162	022704	000002	13#:	CMP	#2,R4		IS R4 CORRECT
7352	027166	001403			BEQ	14#		YES GO ON
7353								NO GO TO ERROR
7354	027170	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7355	027172	000736			.WORD	736		UNIQUE ERROR NUMBER
7356	027174	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7357								
7358	027176	022705	000002	14#:	CMP	#2,R5		IS R5 CORRECT

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SEQ 0138

7359	027202	001403		BEQ	15:		;YES GO ON
7360							;NO GO TO ERROR
7361	027204	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7362	027206	000737		.WORD	737		;UNIQUE ERROR NUMBER
7363	027210	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7364							
7365							
7366							
7367							
7368	027212	012701	027366	15:	MOV	#TE126B,R1	;SETUP POINTERS TO TABLES
7369							
7370	027216	010137	001034	16:	MOV	R1,#EXPDAT	;SAVE A COPY OF R1
7371	027222	011104			MOV	(R1),R4	;INIT R4
7372	027224	016103	000004		MOV	4(R1),R3	;SAVE SOURCE
7373	027230	016105	000002		MOV	2(R1),R5	;INIT R5
7374	027234	000277			SCC		;SET ALL CC BITS
7375	027236	071461	000004		DIV	4(R1),R4	;TEST INSTRUCTION
7376	027242	026137	000006	177776	CMP	6(R1),#177776	;IS PS CORRECT
7377	027250	001403			BEQ	17:	;YES GO ON
7378							;NO GO TO ERROR
7379	027252	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7380	027254	000740		.WORD	740		;UNIQUE ERROR NUMBER
7381	027256	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7382							
7383	027260	026105	000010	17:	CMP	10(R1),R5	;IS R5 CORRECT
7384	027264	001403			BEQ	18:	;YES GO ON
7385							;NO GO TO ERROR
7386	027266	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7387	027270	000741		.WORD	741		;UNIQUE ERROR NUMBER
7388	027272	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7389							
7390	027274	026104	000012	18:	CMP	12(R1),R4	;IS R4 CORRECT
7391	027300	001403			BEQ	19:	;YES GO ON
7392							;NO GO TO ERROR
7393	027302	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7394	027304	000742		.WORD	742		;UNIQUE ERROR NUMBER
7395	027306	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7396							
7397	027310	023701	001034	19:	CMP	#EXPDAT,R1	;IS R1 CORRECT
7398	027314	001405			BEQ	20:	;YES GO ON
7399							;NO GO TO ERROR
7400	027316	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7401	027320	000743		.WORD	743		;UNIQUE ERROR NUMBER
7402	027322	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7403							
7404	027324	013701	001034	20:	MOV	#EXPDAT,R1	;RESTORE CORRECT VALUE
7405	027330	026103	000004		CMP	4(R1),R3	;IS SOURCE CORRECT
7406	027334	001405			BEQ	21:	;YES GO ON
7407							;NO GO TO ERROR
7408	027336	104000		ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7409	027340	000744		.WORD	744		;UNIQUE ERROR NUMBER
7410	027342	001127		.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7411							
7412	027344	010361	000004	21:	MOV	R3,4(R1)	;TRY TO RESTORE CODE
7413	027350	062701	000014		ADD	#14,R1	;POINT TO NEXT LOCATION
7414	027354	021127	000333		CMP	(R1),#333	;ARE WE DONE

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 KDJ11A.MAC 22-FEB-84 15:12 T213 TEST DIV (DIVIDE INST)

SEQ 0139

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7415 027360 001316      BNE      16$      ;NO GO TO 16$
7416
7417
7418 027362 000167 000316      JMP      FIN126
7419
7420      ;
7421      ;TE126B: .WORD 177777 ;DIVIDEND
7422      .WORD 177777 ;INIT R5
7423      .WORD 177777 ;DIVISOR
7424      .WORD 0 ;PSW
7425      .WORD 0 ;R5 RESULT
7426      .WORD 1 ;R4 RESULT
7427
7428      .WORD 0 ;DIVIDEND
7429      .WORD 177777 ;INIT R5
7430      .WORD 177777 ;DIVISOR
7431      .WORD 12 ;PSW
7432      .WORD 177777 ;R5 RESULT
7433      .WORD 0 ;R4 RESULT
7434
7435      .WORD 177777 ;DIVIDEND
7436      .WORD 0 ;INIT R5
7437      .WORD 177777 ;DIVISOR
7438      .WORD 2 ;PSW
7439      .WORD 0 ;R5 RESULT
7440      .WORD 177777 ;R4 RESULT
7441
7442      .WORD 0 ;DIVIDEND
7443      .WORD 7642 ;INIT R5
7444      .WORD 7643 ;DIVISOR
7445      .WORD 4 ;PSW
7446      .WORD 7642 ;R5 RESULT
7447      .WORD 0 ;R4 RESULT
7448
7449      .WORD 0 ;DIVIDEND
7450      .WORD 137 ;INIT R5
7451      .WORD 177543 ;DIVISOR
7452      .WORD 4 ;PSW
7453      .WORD 137 ;R5 RESULT
7454      .WORD 0 ;R4 RESULT
7455
7456      .WORD 0 ;DIVIDEND
7457      .WORD 7643 ;INIT R5
7458      .WORD 7643 ;DIVISOR
7459      .WORD 0 ;PSW
7460      .WORD 0 ;R5 RESULT
7461      .WORD 1 ;R4 RESULT
7462
7463      .WORD 100000 ;DIVIDEND
7464      .WORD 4376 ;INIT R5
7465      .WORD 10021 ;DIVISOR
7466      .WORD 12 ;PSW
7467      .WORD 4376 ;R5 RESULT
7468      .WORD 100000 ;R4 RESULT
7469
7470      .WORD 177700 ;DIVIDEND

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 KDJ11A.MAC 22-FEB-84 15:12 T213 TEST DIV (DIVIDE INST)

SEQ 0140

7471	027514	170033	.WORD	170033	;INIT R5
7472	027516	010021	.WORD	10021	;DIVISOR
7473	027520	000010	.WORD	10	;PSW
7474	027522	171307	.WORD	171307	;R5 RESULT
7475	027524	176024	.WORD	176024	;R4 RESULT
7476					
7477	027526	177700	.WORD	177700	;DIVIDEND
7478	027530	170033	.WORD	170033	;INIT R5
7479	027532	167757	.WORD	167757	;DIVISOR
7480	027534	000000	.WORD	0	;PSW
7481	027536	171307	.WORD	171307	;R5 RESULT
7482	027540	001754	.WORD	1754	;R4 RESULT
7483					
7484	027542	000000	.WORD	0	;DIVIDEND
7485	027544	177777	.WORD	177777	;INIT R5
7486	027546	000001	.WORD	1	;DIVISOR
7487	027550	000002	.WORD	2	;PSW
7488	027552	177777	.WORD	177777	;R5 RESULT
7489	027554	000000	.WORD	0	;R4 RESULT
7490					
7491	027556	177777	.WORD	177777	;DIVIDEND
7492	027560	045716	.WORD	45716	;INIT R5
7493	027562	000001	.WORD	1	;DIVISOR
7494	027564	000012	.WORD	12	;PSW
7495	027566	045716	.WORD	45716	;R5 RESULT
7496	027570	177777	.WORD	177777	;R4 RESULT
7497					
7498	027572	000000	.WORD	0	;DIVIDEND
7499	027574	000002	.WORD	2	;INIT R5
7500	027576	177770	.WORD	177770	;DIVISOR
7501	027600	000004	.WORD	4	;PSW
7502	027602	000002	.WORD	2	;R5 RESULT
7503	027604	000000	.WORD	0	;R4 RESULT
7504					
7505	027606	177777	.WORD	177777	;DIVIDEND
7506	027610	177776	.WORD	177776	;INIT R5
7507	027612	000010	.WORD	10	;DIVISOR
7508	027614	000004	.WORD	4	;PSW
7509	027616	177776	.WORD	177776	;R5 RESULT
7510	027620	000000	.WORD	0	;R4 RESULT
7511					
7512	027622	000001	.WORD	1	;DIVIDEND
7513	027624	177777	.WORD	177777	;INIT R5
7514	027626	000001	.WORD	1	;DIVISOR
7515	027630	000002	.WORD	2	;PSW
7516	027632	177777	.WORD	177777	;R5 RESULT
7517	027634	000001	.WORD	1	;R4 RESULT
7518					
7519	027636	000001	.WORD	1	;DIVIDEND
7520	027640	000000	.WORD	0	;INIT R5
7521	027642	000002	.WORD	2	;DIVISOR
7522	027644	000002	.WORD	2	;PSW
7523	027646	000000	.WORD	0	;R5 RESULT
7524	027650	000001	.WORD	1	;R4 RESULT
7525					
7526	027652	000001	.WORD	1	;DIVIDEND

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 KDJ11A.MAC 22-FEB-84 15:12 T213 TEST DIV (DIVIDE INST)

SEQ 0141

7527	027654	000000		.WORD	0	;INIT R5
7528	027656	000003		.WORD	3	;DIVISOR
7529	027660	000000		.WORD	0	;PSW
7530	027662	000001		.WORD	1	;R5 RESULT
7531	027664	052525		.WORD	52525	;R4 RESULT
7532						
7533	027666	000023		.WORD	23	;DIVIDEND
7534	027670	016054		.WORD	16054	;INIT R5
7535	027672	016537		.WORD	16537	;DIVISOR
7536	027674	000000		.WORD	0	;PSW
7537	027676	010222		.WORD	10222	;R5 RESULT
7538	027700	000246		.WORD	246	;R4 RESULT
7539						
7540	027702	000333		.WORD	333	
7541	027704					
7542						
7543	027704					
7544						
7545						
7546						
7547	027704					
7548	027704	005267	151074	INC	1TESTN	;INCREMENT TEST NUMBER
7549	027710	005037	177776	CLR	00177776	;INIT PSW
7550	027714	012702	000001	MOV	01,R2	;SETUP OPERAND
7551	027720	000277		SCC		;SET ALL CC BITS
7552	027722	072202		ASH	R2,R2	;TEST INSTRUCTION
7553	027724	022737	000000 177776	CMP	00,00177776	;IS PS CORRECT
7554	027732	001403		BEQ	10	;YES GO ON
7555						;NO GO TO ERROR
7556	027734	104000		ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
7557	027736	000745		.WORD	745	;UNIQUE ERROR NUMBER
7558	027740	001127		.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
7559						
7560	027742	020227	000002	10:	CMP	R2,02
7561	027746	001403			BEQ	20
7562						
7563	027750	104000		ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
7564	027752	000746		.WORD	746	;UNIQUE ERROR NUMBER
7565	027754	001127		.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
7566						
7567	027756	012702	100000	20:	MOV	0100000,R2
7568	027762	012703	000001		MOV	01,R3
7569	027766	000257			CCC	
7570	027770	072203			ASH	R3,R2
7571	027772	022737	000007 177776		CMP	07,00177776
7572	030000	001403			BEQ	30
7573						
7574	030002	104000		ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
7575	030004	000747		.WORD	747	;UNIQUE ERROR NUMBER
7576	030006	001127		.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
7577						
7578	030010	020327	000001	30:	CMP	R3,01
7579	030014	001403			BEQ	40
7580						
7581	030016	104000		ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
7582	030020	000750		.WORD	750	;UNIQUE ERROR NUMBER

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 KDJ11A.MAC 22-FEB-84 15:12 T214 TEST ASH (ARITHMETIC SHIFT)

SEQ 0142

7583	030022	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7584								
7585	030024	020227	000000	4\$:	CMP	R2,#0		IS R2 CORRECT
7586	030030	001403			BEQ	5\$		YES GO ON
7587								NO GO TO ERROR
7588	030032	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7589	030034	000751			.WORD	751		UNIQUE ERROR NUMBER
7590	030036	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7591								
7592	030040	012701	030154	5\$:	MOV	#TE127A,R1		SETUP POINTERS TO TABLES
7593								
7594	030044	010103		6\$:	MOV	R1,R3		
7595	030046	016102	000002		MOV	2(R1),R2		SETUP R2
7596	030052	000277			SCC			SET ALL CC BITS
7597	030054	072211			ASH	(R1),R2		TEST INSTRUCTION
7598	030056	026137	000004 177776		CMP	4(R1),#0177776		IS PS CORRECT
7599	030064	001403			BEQ	7\$		YES GO ON
7600								NO GO TO ERROR
7601	030066	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7602	030070	000752			.WORD	752		UNIQUE ERROR NUMBER
7603	030072	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7604								
7605	030074	026102	000006	7\$:	CMP	6(R1),R2		IS R2 CORRECT
7606	030100	001403			BEQ	8\$		YES GO ON
7607								NO GO TO ERROR
7608	030102	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7609	030104	000753			.WORD	753		UNIQUE ERROR NUMBER
7610	030106	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7611								
7612	030110	020301		8\$:	CMP	R3,R1		IS R1 CORRECT
7613	030112	001404			BEQ	9\$		YES GO ON
7614								NO GO TO ERROR
7615	030114	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7616	030116	000754			.WORD	754		UNIQUE ERROR NUMBER
7617	030120	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7618	030122	010301			MOV	R3,R1		RESTORE R1
7619								
7620	030124	021311		9\$:	CMP	(R3),(R1)		IS SOURCE CORRECT
7621	030126	001403			BEQ	10\$		YES GO ON
7622								NO GO TO ERROR
7623	030130	104000			ERROR			ALL ERRORS TO TRAP TO EMT VECTOR
7624	030132	000755			.WORD	755		UNIQUE ERROR NUMBER
7625	030134	001127			.WORD	CPUERR		ADDRESS OF ERROR MESSAGE
7626								SOURCE LOOKS INCORRECT
7627	030136	062701	000010	10\$:	ADD	#10,R1		INCREMENT POINTER
7628	030142	020127	030414		CMP	R1,#FIN127		ARE WE DONE
7629	030146	001336			BNE	6\$		NO GO TO 6\$
7630								
7631								
7632	030150	000167	000240		JMP	FIN127		
7633								
7634								
7635	030154	177761		TE127A:	.WORD	177761		SOURCE
7636	030156	077777			.WORD	77777		DEST
7637	030160	000005			.WORD	5		
7638	030162	000000			.WORD	0		

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SEQ 0143

7639					
7640	030164	177700	.WORD	177700	;SOURCE
7641	030166	017777	.WORD	17777	;DEST
7642	030170	000000	.WORD	0	
7643	030172	017777	.WORD	17777	
7644					
7645	030174	177700	.WORD	177700	;SOURCE
7646	030176	100000	.WORD	100000	;DEST
7647	030200	000010	.WORD	10	
7648	030202	100000	.WORD	100000	
7649					
7650	030204	177777	.WORD	177777	;SOURCE
7651	030206	100000	.WORD	100000	;DEST
7652	030210	000010	.WORD	10	
7653	030212	140000	.WORD	140000	
7654					
7655	030214	177737	.WORD	177737	;SOURCE
7656	030216	177777	.WORD	177777	;DEST
7657	030220	000011	.WORD	11	
7658	030222	177777	.WORD	177777	
7659					
7660	030224	177706	.WORD	177706	;SOURCE
7661	030226	102000	.WORD	102000	;DEST
7662	030230	000007	.WORD	7	
7663	030232	000000	.WORD	0	
7664					
7665	030234	177710	.WORD	177710	;SOURCE
7666	030236	017777	.WORD	17777	;DEST
7667	030240	000013	.WORD	13	
7668	030242	177400	.WORD	177400	
7669					
7670	030244	177713	.WORD	177713	;SOURCE
7671	030246	000012	.WORD	12	;DEST
7672	030250	000000	.WORD	0	
7673	030252	050000	.WORD	50000	
7674					
7675	030254	177707	.WORD	177707	;SOURCE
7676	030256	170001	.WORD	170001	;DEST
7677	030260	000002	.WORD	2	
7678	030262	000200	.WORD	200	
7679					
7680	030264	177717	.WORD	177717	;SOURCE
7681	030266	000001	.WORD	1	;DEST
7682	030270	000012	.WORD	12	
7683	030272	100000	.WORD	100000	
7684					
7685	030274	177740	.WORD	177740	;SOURCE
7686	030276	017777	.WORD	17777	;DEST
7687	030300	000004	.WORD	4	
7688	030302	000000	.WORD	0	
7689					
7690	030304	177771	.WORD	177771	;SOURCE
7691	030306	150000	.WORD	150000	;DEST
7692	030310	000010	.WORD	10	
7693	030312	177640	.WORD	177640	
7694					

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 RDJ11A.MAC 22-FEB-84 15:12 T214 TEST ASH (ARITHMETIC SHIFT)

SEQ 0144

7695	030314	177742	.WORD	177742	!SOURCE
7696	030316	100000	.WORD	100000	!DEST
7697	030320	000011	.WORD	11	
7698	030322	177777	.WORD	177777	
7699					
7700	030324	177764	.WORD	177764	!SOURCE
7701	030326	100000	.WORD	100000	!DEST
7702	030330	000010	.WORD	10	
7703	030332	177770	.WORD	177770	
7704					
7705	030334	177750	.WORD	177750	!SOURCE
7706	030336	052525	.WORD	52525	!DEST
7707	030340	000004	.WORD	4	
7708	030342	000000	.WORD	0	
7709					
7710	030344	177760	.WORD	177760	!SOURCE
7711	030346	100000	.WORD	100000	!DEST
7712	030350	000011	.WORD	11	
7713	030352	177777	.WORD	177777	
7714					
7715	030354	177770	.WORD	177770	!SOURCE
7716	030356	100000	.WORD	100000	!DEST
7717	030360	000010	.WORD	10	
7718	030362	177600	.WORD	177600	
7719					
7720	030364	177712	.WORD	177712	!SOURCE
7721	030366	004367	.WORD	4367	!DEST
7722	030370	000013	.WORD	13	
7723	030372	156000	.WORD	156000	
7724					
7725	030374	177764	.WORD	177764	!SOURCE
7726	030376	017777	.WORD	17777	!DEST
7727	030400	000001	.WORD	1	
7728	030402	000001	.WORD	1	
7729					
7730	030404	177701	.WORD	177701	!SOURCE
7731	030406	110000	.WORD	110000	!DEST
7732	030410	000003	.WORD	3	
7733	030412	020000	.WORD	20000	
7734					

7735 030414
 7736
 7737 030414

7738
 7739
 7740

7741	030414			
7742	030414	005267	150364	
7743	030420	005037	177776	
7744	030424	012701	000023	
7745	030430	012705	052525	
7746	030434	005004		
7747	030436	000277		
7748	030440	073401		
7749	030442	023727	177776	000012
7750	030450	001403		

FIN127:

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TE130:

 !*TEST 215 TEST ASHC (ARITHMETIC SHIFT COMBINED)

TST215:

INC	!TESTN	!INCREMENT TEST NUMBER
CLR	B#177776	!INIT PSW
MOV	#23,R1	!SETUP R1
MOV	#52525,R5	!SETUP R5
CLR	R4	!SETUP R4
SCC		!SET ALL CC BITS
ASHC	R1,R4	!TEST INSTRUCTION
CHP	B#177776,#12	!IS PS CORRECT
BEG	11	!YES GO ON

7751									;NO GO TO ERROR
7752	030452	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7753	030454	000756			.WORD	756			;UNIQUE ERROR NUMBER
7754	030456	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7755									
7756	030460	020127	000023	14:	CMP	R1,#23			;IS R1 CORRECT
7757	030464	001403			BEQ	24			;YES GO ON
7758									;NO GO TO ERROR
7759	030466	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7760	030470	000757			.WORD	757			;UNIQUE ERROR NUMBER
7761	030472	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7762									
7763	030474	020427	125250	24:	CMP	R4,#125250			;IS R4 CORRECT
7764	030500	001403			BEQ	34			;YES GO ON
7765									;NO GO TO ERROR
7766	030502	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7767	030504	000760			.WORD	760			;UNIQUE ERROR NUMBER
7768	030506	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7769									
7770	030510	020527	000000	34:	CMP	R5,#0			;IS R5 CORRECT
7771	030514	001403			BEQ	44			;YES GO ON
7772									;NO GO TO ERROR
7773	030516	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7774	030520	000761			.WORD	761			;UNIQUE ERROR NUMBER
7775	030522	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7776									
7777	030524	012703	052525	44:	MOV	#52525,R3			;SETUP R3
7778	030530	005002			CLR	R2			;SETUP R2
7779	030532	012704	164731		MOV	#164731,R4			;SETUP R4
7780	030536	000277			SCC				;SET ALL CC BITS
7781	030540	073527	000025		ASHC	#23,R3			;TEST INSTRUCTION
7782	030544	023727	177776	000012	CMP	#177776,#12			;IS PS CORRECT
7783	030552	001403			BEQ	54			;YES GO ON
7784									;NO GO TO ERROR
7785	030554	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7786	030556	000762			.WORD	762			;UNIQUE ERROR NUMBER
7787	030560	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7788									
7789	030562	020227	000000	54:	CMP	R2,#0			;IS R2 CORRECT
7790	030566	001403			BEQ	64			;YES GO ON
7791									;NO GO TO ERROR
7792	030570	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7793	030572	000763			.WORD	763			;UNIQUE ERROR NUMBER
7794	030574	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7795									
7796	030576	020327	000000	64:	CMP	R3,#0			;IS R3 CORRECT
7797	030602	001403			BEQ	74			;YES GO ON
7798									;NO GO TO ERROR
7799	030604	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR
7800	030606	000764			.WORD	764			;UNIQUE ERROR NUMBER
7801	030610	001127			.WORD	CPUERR			;ADDRESS OF ERROR MESSAGE
7802									
7803	030612	020427	164731	74:	CMP	R4,#164731			;IS R4 CORRECT
7804	030616	001403			BEQ	84			;YES GO ON
7805									;NO GO TO ERROR
7806	030620	104000			ERROR				;ALL ERRORS TO TRAP TO EMT VECTOR

7807	030622	000765			.WORD	765		;UNIQUE ERROR NUMBER
7808	030624	001127			.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7809								
7810								
7811	030626	012701	030762	8:	MOV	#TE130A,R1		;SETUP POINTERS TO TABLES
7812								
7813	030632	010104		9:	MOV	R1,R4		;SAVE A COPY OF R1
7814	030634	016102	000002		MOV	2(R1),R2		;SETUP R2
7815	030640	016103	000004		MOV	4(R1),R3		;SETUP R3
7816	030644	000277			SCC			;SET ALL CC BITS
7817	030646	073211			ASHC	(R1),R2		;TEST INSTRUCTION
7818	030650	023761	177776	000006	CMP	#177776,6(R1)		;IS PS CORRECT
7819	030656	001403			BEQ	10:		;YES GO ON
7820								;NO GO TO ERROR
7821	030660	104000			ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7822	030662	000766			.WORD	766		;UNIQUE ERROR NUMBER
7823	030664	001127			.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7824								
7825	030666	026102	000010	10:	CMP	10(R1),R2		;IS R2 CORRECT
7826	030672	001403			BEQ	11:		;YES GO ON
7827								;NO GO TO ERROR
7828	030674	104000			ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7829	030676	000767			.WORD	767		;UNIQUE ERROR NUMBER
7830	030700	001127			.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7831								
7832	030702	026103	000012	11:	CMP	12(R1),R3		;IS R3 CORRECT
7833	030706	001403			BEQ	12:		;YES GO ON
7834								;NO GO TO ERROR
7835	030710	104000			ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7836	030712	000770			.WORD	770		;UNIQUE ERROR NUMBER
7837	030714	001127			.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7838								
7839	030716	020401		12:	CMP	R4,R1		;IS R1 CORRECT
7840	030720	001404			BEQ	13:		;YES GO ON
7841								;NO GO TO ERROR
7842	030722	104000			ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7843	030724	000771			.WORD	771		;UNIQUE ERROR NUMBER
7844	030726	001127			.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7845	030730	010401			MOV	R4,R1		
7846								
7847	030732	021114		13:	CMP	(R1),(R4)		;IS SOURCE CORRECT
7848	030734	001403			BEQ	14:		;YES GO ON
7849								;NO GO TO ERROR
7850	030736	104000			ERROR			;ALL ERRORS TO TRAP TO EMT VECTOR
7851	030740	000772			.WORD	772		;UNIQUE ERROR NUMBER
7852	030742	001127			.WORD	CPUERR		;ADDRESS OF ERROR MESSAGE
7853								;POSSIBLE SOURCE CODE CORRUPTION
7854	030744	062701	000014	14:	ADD	#14,R1		;GO TO NEXT TEST
7855	030750	020127	031372		CMP	R1,#FIN130		;ARE WE DONE
7856	030754	001326			BNE	9:		;NO GO TO 9:
7857								
7858								
7859	030756	000167	000410		JMP	FIN130		
7860								
7861								
7862	030762	177700			TE130A: .WORD	177700		;SOURCE

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SEQ 0147

7863	030764	100125	.WORD	100125	;DESTINATION WORD 1
7864	030766	177777	.WORD	177777	;DESTINATION WORD 2
7865	030770	000010	.WORD	10	;TEST PSW
7866	030772	100125	.WORD	100125	;RESULT WORD 1
7867	030774	177777	.WORD	177777	;RESULT WORD 2
7868					
7869	030776	177777	.WORD	177777	;SOURCE
7870	031000	000001	.WORD	1	;DESTINATION WORD 1
7871	031002	000000	.WORD	0	;DESTINATION WORD 2
7872	031004	000000	.WORD	0	;TEST PSW
7873	031006	000000	.WORD	0	;RESULT WORD 1
7874	031010	100000	.WORD	100000	;RESULT WORD 2
7875					
7876	031012	177701	.WORD	177701	;SOURCE
7877	031014	047777	.WORD	47777	;DESTINATION WORD 1
7878	031016	100000	.WORD	100000	;DESTINATION WORD 2
7879	031020	000012	.WORD	12	;TEST PSW
7880	031022	117777	.WORD	117777	;RESULT WORD 1
7881	031024	000000	.WORD	0	;RESULT WORD 2
7882					
7883	031026	177706	.WORD	177706	;SOURCE
7884	031030	004256	.WORD	4256	;DESTINATION WORD 1
7885	031032	177700	.WORD	177700	;DESTINATION WORD 2
7886	031034	000002	.WORD	2	;TEST PSW
7887	031036	025677	.WORD	25677	;RESULT WORD 1
7888	031040	170000	.WORD	170000	;RESULT WORD 2
7889					
7890	031042	177711	.WORD	177711	;SOURCE
7891	031044	065700	.WORD	65700	;DESTINATION WORD 1
7892	031046	000012	.WORD	12	;DESTINATION WORD 2
7893	031050	000013	.WORD	13	;TEST PSW
7894	031052	100000	.WORD	100000	;RESULT WORD 1
7895	031054	012000	.WORD	12000	;RESULT WORD 2
7896					
7897	031056	177737	.WORD	177737	;SOURCE
7898	031060	000000	.WORD	0	;DESTINATION WORD 1
7899	031062	000001	.WORD	1	;DESTINATION WORD 2
7900	031064	000004	.WORD	4	;TEST PSW
7901	031066	000000	.WORD	0	;RESULT WORD 1
7902	031070	000000	.WORD	0	;RESULT WORD 2
7903					
7904	031072	177736	.WORD	177736	;SOURCE
7905	031074	000000	.WORD	0	;DESTINATION WORD 1
7906	031076	000001	.WORD	1	;DESTINATION WORD 2
7907	031100	000000	.WORD	0	;TEST PSW
7908	031102	040000	.WORD	40000	;RESULT WORD 1
7909	031104	000000	.WORD	0	;RESULT WORD 2
7910					
7911	031106	177740	.WORD	177740	;SOURCE
7912	031110	100000	.WORD	100000	;DESTINATION WORD 1
7913	031112	000000	.WORD	0	;DESTINATION WORD 2
7914	031114	000011	.WORD	11	;TEST PSW
7915	031116	177777	.WORD	177777	;RESULT WORD 1
7916	031120	177777	.WORD	177777	;RESULT WORD 2
7917					
7918	031122	177725	.WORD	177725	;SOURCE

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SEQ 0148

7919	031124	177777	.WORD	177777	; DESTINATION WORD 1
7920	031126	174000	.WORD	174000	; DESTINATION WORD 2
7921	031130	000007	.WORD	7	; TEST PSW
7922	031132	000000	.WORD	0	; RESULT WORD 1
7923	031134	000000	.WORD	0	; RESULT WORD 2
7924					
7925	031136	177724	.WORD	177724	; SOURCE
7926	031140	177777	.WORD	177777	; DESTINATION WORD 1
7927	031142	174000	.WORD	174000	; DESTINATION WORD 2
7928	031144	000011	.WORD	11	; TEST PSW
7929	031146	100000	.WORD	100000	; RESULT WORD 1
7930	031150	000000	.WORD	0	; RESULT WORD 2
7931					
7932	031152	177733	.WORD	177733	; SOURCE
7933	031154	177777	.WORD	177777	; DESTINATION WORD 1
7934	031156	157023	.WORD	157023	; DESTINATION WORD 2
7935	031160	000012	.WORD	12	; TEST PSW
7936	031162	114000	.WORD	114000	; RESULT WORD 1
7937	031164	000000	.WORD	0	; RESULT WORD 2
7938					
7939	031166	177727	.WORD	177727	; SOURCE
7940	031170	000000	.WORD	0	; DESTINATION WORD 1
7941	031172	177777	.WORD	177777	; DESTINATION WORD 2
7942	031174	000013	.WORD	13	; TEST PSW
7943	031176	177600	.WORD	177600	; RESULT WORD 1
7944	031200	000000	.WORD	0	; RESULT WORD 2
7945					
7946	031202	177717	.WORD	177717	; SOURCE
7947	031204	177777	.WORD	177777	; DESTINATION WORD 1
7948	031206	000001	.WORD	1	; DESTINATION WORD 2
7949	031210	000011	.WORD	11	; TEST PSW
7950	031212	100000	.WORD	100000	; RESULT WORD 1
7951	031214	100000	.WORD	100000	; RESULT WORD 2
7952					
7953	031216	177741	.WORD	177741	; SOURCE
7954	031220	100000	.WORD	100000	; DESTINATION WORD 1
7955	031222	000000	.WORD	0	; DESTINATION WORD 2
7956	031224	000010	.WORD	10	; TEST PSW
7957	031226	177777	.WORD	177777	; RESULT WORD 1
7958	031230	177777	.WORD	177777	; RESULT WORD 2
7959					
7960	031232	177742	.WORD	177742	; SOURCE
7961	031234	037777	.WORD	37777	; DESTINATION WORD 1
7962	031236	177777	.WORD	177777	; DESTINATION WORD 2
7963	031240	000005	.WORD	5	; TEST PSW
7964	031242	000000	.WORD	0	; RESULT WORD 1
7965	031244	000000	.WORD	0	; RESULT WORD 2
7966					
7967	031246	177742	.WORD	177742	; SOURCE
7968	031250	077777	.WORD	77777	; DESTINATION WORD 1
7969	031252	177777	.WORD	177777	; DESTINATION WORD 2
7970	031254	000001	.WORD	1	; TEST PSW
7971	031256	000000	.WORD	0	; RESULT WORD 1
7972	031260	000001	.WORD	1	; RESULT WORD 2
7973					
7974	031262	177711	.WORD	177711	; SOURCE

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SEQ 0149

7975	031264	065600	.WORD	65600	;DESTINATION WORD 1
7976	031266	000012	.WORD	12	;DESTINATION WORD 2
7977	031270	000003	.WORD	3	;TEST PSW
7978	031272	000000	.WORD	0	;RESULT WORD 1
7979	031274	012000	.WORD	12000	;RESULT WORD 2
7980					
7981	031276	177740	.WORD	177740	;SOURCE
7982	031300	077777	.WORD	77777	;DESTINATION WORD 1
7983	031302	177777	.WORD	177777	;DESTINATION WORD 2
7984	031304	000004	.WORD	4	;TEST PSW
7985	031306	000000	.WORD	0	;RESULT WORD 1
7986	031310	000000	.WORD	0	;RESULT WORD 2
7987					
7988	031312	177737	.WORD	177737	;SOURCE
7989	031314	177777	.WORD	177777	;DESTINATION WORD 1
7990	031316	177774	.WORD	177774	;DESTINATION WORD 2
7991	031320	000011	.WORD	11	;TEST PSW
7992	031322	177777	.WORD	177777	;RESULT WORD 1
7993	031324	177777	.WORD	177777	;RESULT WORD 2
7994					
7995	031326	177747	.WORD	177747	;SOURCE
7996	031330	100000	.WORD	100000	;DESTINATION WORD 1
7997	031332	174000	.WORD	174000	;DESTINATION WORD 2
7998	031334	000010	.WORD	10	;TEST PSW
7999	031336	177777	.WORD	177777	;RESULT WORD 1
8000	031340	177700	.WORD	177700	;RESULT WORD 2
8001					
8002	031342	177753	.WORD	177753	;SOURCE
8003	031344	006324	.WORD	6324	;DESTINATION WORD 1
8004	031346	071002	.WORD	71002	;DESTINATION WORD 2
8005	031350	000001	.WORD	1	;TEST PSW
8006	031352	000000	.WORD	0	;RESULT WORD 1
8007	031354	000146	.WORD	146	;RESULT WORD 2
8008					
8009	031356	177765	.WORD	177765	;SOURCE
8010	031360	102351	.WORD	102351	;DESTINATION WORD 1
8011	031362	177231	.WORD	177231	;DESTINATION WORD 2
8012	031364	000011	.WORD	11	;TEST PSW
8013	031366	177760	.WORD	177760	;RESULT WORD 1
8014	031370	116477	.WORD	116477	;RESULT WORD 2
8015	031372				
8016	031372				
8017					
8018					
8019					
8020	031372				
8021	031372	005267	147406		
8022	031376	005006			
8023	031400	112667	147434		
8024	031404	022706	000002		
8025	031410	001403			
8026					
8027	031412	104000			
8028	031414	000773			
8029	031416	001127			
8030	031420	005006			

FIN130:			
HSPAU:			
;*****			
;+TEST 216 TEST THAT AUTO DEC/INC OPERATIONS USING SP ARE ON WORD BOUNDRIES			
;*****			
TST216:			
	INC	!TESTN	;INCREMENT TEST NUMBER
	CLR	R6	;CLEAR SP
	MOVB	(R6)+,COUNT	;TRY AUTOINC ON R6
	CMP	#2,R6	;VERIFY AUTO INC BY 2
	BEG	SPAU1	;BRANCH IF GOOD
			;BAD AUTO-INC
	ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
	.WORD	773	;UNIQUE ERROR NUMBER
	.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
SPAU1:	CLR	R6	;CLEAR R6

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 KDJ11A.MAC 22-FEB-84 15:12 T216 TEST THAT AUTO DEC/INC OPERATIONS USING SP ARE ON WORD BOUNDRIES

SEQ 0150

8031	031422	112667	147412		MOVB	(R6)+,COUNT	
8032	031426	112667	147406		MOVB	(R6)+,COUNT	;DOUBLE BYTE AUTO-INC
8033	031432	022706	000004		CMP	#4,R6	;VERIFY RESULT
8034	031436	001403			BEQ	SPAU2	;BRANCH IF GOOD
8035							;BAD DOUBLE AUTO-INC
8036	031440	104000			ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
8037	031442	000774			.WORD	774	;UNIQUE ERROR NUMBER
8038	031444	001127			.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
8039	031446	012706	001000	SPAU2:	MOV	#STBOT,R6	;LOAD R6
8040	031452	114667	147362		MOVB	-(R6),COUNT	;TEST AUTO-DEC
8041	031456	022706	000776		CMP	#776,R6	;VERIFY RESULT
8042	031462	001403			BEQ	SPAU3	;BRANCH IF GOOD
8043	031464	104000			ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
8044	031466	000775			.WORD	775	;UNIQUE ERROR NUMBER
8045	031470	001127			.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
8046	031472	012706	001000	SPAU3:	MOV	#STBOT,R6	;LOAD R6
8047	031476	114667	147336		MOVB	-(R6),COUNT	;TEST AUTO-DEC
8048	031502	114667	147332		MOVB	-(R6),COUNT	;TEST AUTO-DEC
8049	031506	022706	000774		CMP	#774,R6	;VERIFY RESULT
8050	031512	001403			BEQ	SPAU4	;BRANCH IF GOOD
8051	031514	104000			ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
8052	031516	000776			.WORD	776	;UNIQUE ERROR NUMBER
8053	031520	001127			.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
8054	031522	005006		SPAU4:	CLR	R6	;TEST AUTO-INC ON SOP
8055	031524	105726			TSTB	(R6)+	;TEST AUTO-INC
8056	031526	020627	000002		CMP	R6,#2	
8057	031532	001403			BEQ	SPAU5	;BRANCH IF GOOD
8058	031534	104000			ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
8059	031536	000777			.WORD	777	;UNIQUE ERROR NUMBER
8060	031540	001127			.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
8061	031542	012706	001000	SPAU5:	MOV	#STBOT,R6	;LOAD R6
8062	031546	105746			TSTB	-(R6)	;TEST AUTO-DEC
8063	031550	022706	000776		CMP	#776,R6	;VERIFY RESULT
8064	031554	001403			BEQ	SPAU6	;BRANCH IF GOOD
8065	031556	104000			ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
8066	031560	001000			.WORD	1000	;UNIQUE ERROR NUMBER
8067	031562	001127			.WORD	CPUERR	;ADDRESS OF ERROR MESSAGE
8068	031564	012706	001000	SPAU6:	MOV	#STBOT,R6	
8069							
8070							
8071	031570						
8072							
8073							
8074							
8075	031570						
8076	031570	005267	147210		INC	#TESTN	;INCREMENT TEST NUMBER
8077	031574	005067	146166		CLR	CPUERR	;INIT CPU ERROR REGISTER
8078	031600	012706	000150		MOV	#150,R6	;LOAD R6 WITH A VALUE THAT WILL
8079							;CAUSE A YELLOW STACK TRAP(IE. <400)
8080	031604	016767	146174	147216	MOV	4,SLOC00	;SAVE VECTOR
8081	031612	012767	031654	146164	MOV	#MTRYA,4	;SETUP THE STACK OVERFLOW TRAP POINTER
8082	031620	016701	146322		MOV	146,R1	;SAVE VECTOR
8083	031624	016702	146314		MOV	144,R2	;SAVE VECTOR
8084	031630	016703	146306		MOV	142,R3	;SAVE VECTOR
8085	031634	005067	146306		CLR	146	;JUST AS A PRECAUTION
8086	031640	005046			CLR	-(R6)	;CAUSE A STACK OVERFLOW TRAP

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 KDJ11A.MAC 22-FEB-84 15:12 T217 VERIFY YELLOW ZONE TRAP ON AUTO DEC OF R6

SEQ 0151

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8087 031642 012706 001000      MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8088                                ;OVERFLOW TRAP FAILED
8089 031646 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8090 031650 001001      .WORD      1001      ;UNIQUE ERROR NUMBER
8091 031652 001127      .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
8092 031654                                MTRYA:
8093 031654 022767 000010 146104      CMP      #BIT03,CPEREG      ;WAS CPU ERROR REG SET PROPERLY?
8094 031662 001003      BNE      1$      ;GO TO ERROR IF NOT
8095 031664 020627 000142      CMP      R6,#142      ;VERIFY CORRECT DECREMENT OF R6
8096 031670 001403      BEQ      MTRYB      ;BRANCH IF GOOD
8097                                ;ERROR! R6 IMPROPERLY DECREMENTED
8098                                ;OR CPU ERROR REGISTER NOT CORRECT
8099 031672                                1$:
8100 031672 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8101 031674 001002      .WORD      1002      ;UNIQUE ERROR NUMBER
8102 031676 001127      .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
8103 031700                                MTRYB:
8104 031700 005067 146062      CLR      CPEREG      ;CLEAR THE CPU ERROR REGISTER
8105 031704 016767 147120 146072      MOV      SLOC00,4      ;RESTORE VECTOR
8106 031712 010167 146230      MOV      R1,146      ;RESTORE VECTORS
8107 031716 010267 146222      MOV      R2,144      ;
8108 031722 010367 146214      MOV      R3,142      ;
8109 031726 012706 001000      MOV      #STBOT,R6      ;
8110
8111
8112                                ;
8113 031732                                MTRYM:
8114                                ;*****
8115                                ;*TEST 220      TEST STACK OVERFLOW TRAPS IN VARIOUS MODES
8116                                ;*****
8117                                TST220:
8118 031732 005267 147046      INC      $TESTN      ;INCREMENT TEST NUMBER
8119 031736 005067 146024      CLR      CPEREG      ;CLEAR CPU ERROR REGISTER
8120 031742 012706 000400      MOV      #40C,R6      ;SETUP OVERFLOW R6 DATA
8121 031746 016767 146032 147054      MOV      4,SLOC00      ;SAVE VECTOR
8122 031754 012767 032002 146022      MOV      #TRYMA,4
8123 031762 005067 146410      CLR      376      ;JUST AS A PRECAUTION
8124 031766 005046      CLR      -(R6)      ;CAUSE OVERFLOW TRAP
8125 031770 012706 001000      MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8126                                ;NO OVERFLOW TRAP
8127 031774 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8128 031776 001003      .WORD      1003      ;UNIQUE ERROR NUMBER
8129 032000 001127      .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
8130 032002                                TRYMA:
8131 032002 005067 145760      CLR      CPEREG      ;CLEAR CPU ERROR REGISTER
8132 032006 012705 001000      MOV      #1000,R5      ;SETUP R5 DATA
8133 032012 012706 000400      MOV      #400,R6      ;SETUP OVERFLOW R6 DATA
8134 032016 012767 032040 145760      MOV      #TRYMB,4
8135 032024 064645      ADD      -(R6),-(R5)      ;CAUSE OVERFLOW TRAP
8136 032026 012706 001000      MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8137                                ;NO OVERFLOW TRAP
8138 032032 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8139 032034 001004      .WORD      1004      ;UNIQUE ERROR NUMBER
8140 032036 001127      .WORD      CPUERR      ;ADDRESS OF ERROR MESSAGE
8141 032040                                TRYMB:
8142 032040 005067 145722      CLR      CPEREG      ;CLEAR CPU ERROR REGISTER

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8143 032044 012706 000150      MOV      #150,R6      ; SETUP OVERFLOW R6 DATA
8144 032050 012767 032072 145726  MOV      #TRYMC,4
8145 032056 044546      BIC      -(R5),-(R6)      ; CAUSE OVERFLOW TRAP
8146 032060 012706 001000      MOV      #STBOT,R6      ; RESTORE R6 FOR ERROR CALL
8147                                ; NO OVERFLOW TRAP
8148 032064 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
8149 032066 001005      .WORD      1005      ; UNIQUE ERROR NUMBER
8150 032070 001127      .WORD      CPUERR      ; ADDRESS OF ERROR MESSAGE
8151 032072 005067 145670  TRYMC:  CLR      CPUREG      ; CLEAR CPU ERROR REGISTER
8152 032076 016767 146726 145700  MOV      SLOCC0,4      ; RESTORE VECTOR
8153 032104 012706 001000      MOV      #STBOT,R6
8154
8155
8156                                ;
8157 032110      ; MILLO:
8158      ; *****
8159      ; *TEST 221      TEST STACK OVERFLOW ON ILLEGAL INST TRAP
8160      ; *****
8161 032110      TST221:
8162 032110 005267 146670      INC      #TESTN      ; INCREMENT TEST NUMBER
8163 032114 005067 145646      CLR      CPUREG      ; CLEAR CPU ERROR REGISTER
8164 032120 012706 000400      MOV      #400,R6      ; SETUP FOR OVERFLOW TRAP
8165 032124 016767 145660 146676  MOV      10,SLOCC0      ; SAVE VECTOR
8166 032132 012767 032160 145650  MOV      #MILLOA,10      ; SETUP ILLEGAL TRAP VECTOR
8167 032140 016767 145640 146664  MOV      4,SLOCC1      ; SAVE VECTOR
8168 032146 012767 032172 145630  MOV      #MILLOB,4      ; SETUP OVERFLOW TRAP VECTOR
8169 032154 000077      77      ; UNUSED INSTRUCTION TRAP
8170 032156 000240      NOP
8171 032160 012706 001000      MILLOA: MOV      #STBOT,R6      ; RESTORE R6 FOR ERROR CALL
8172                                ; UNUSED INSTRUCTION TRAP
8173 032164 104000      ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
8174 032166 001006      .WORD      1006      ; UNIQUE ERROR NUMBER
8175 032170 001127      .WORD      CPUERR      ; ADDRESS OF ERROR MESSAGE
8176 032172      MILLOB:
8177 032172 016767 146634 145604  MOV      SLOCC1,4      ; RESTORE VECTOR
8178 032200 016767 146624 145602  MOV      SLOCC0,10      ; RESTORE VECTOR
8179 032206 005067 145554      CLR      CPUREG      ; CLEAR CPU ERROR REGISTER
8180 032212 012706 001000      MOV      #STBOT,R6      ; RESTORE R6
8181
8182
8183
8184                                ;
8185 032216      ; MIOTO:
8186      ; *****
8187      ; *TEST 222      TEST STACK OVERFLOW ON IOT TRAP
8188      ; *****
8189 032216      TST222:
8190 032216 005267 146562      INC      #TESTN      ; INCREMENT TEST NUMBER
8191 032222 005067 145540      CLR      CPUREG      ; CLEAR CPU ERROR REGISTER
8192 032226 012706 000400      MOV      #400,R6      ; SETUP STACK FOR OVERFLOW
8193 032232 016767 145562 146570  MOV      20,SLOCC0      ; SAVE OLD IOT VECTOR
8194 032240 012767 032266 145552  MOV      #IOTOA,20      ; SETUP ERROR ACTION ON IOT
8195 032246 016767 145532 146556  MOV      4,SLOCC1      ; SAVE VECTOR
8196 032254 012767 032300 145522  MOV      #IOTOB,4      ; SETUP CORRECT TRAP VECTOR FOR
8197                                ; OVERFLOW
8198 032262 000004      IOT      ; TEST INSTRUCTION

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 KDJ11A.MAC 22-FEB-84 15:12 T222 TEST STACK OVERFLOW ON IOT TRAP

SEQ 0153

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8199 032264 000240
8200 032266 012706 001000      IOTOA:  NOP
8201                                MOV      #STBOT,R6
8202                                ERROR
8203                                .WORD    1007
8204 032276 001127                                .WORD    CPUERR
8205 032300                                IOTOB:
8206 032300 005067 145462                                CLR      CPREG
8207 032304 012706 001000                                MOV      #STBOT,R6
8208 032310 016767 146516 145466                                MOV      SLOC01,4
8209 032316 016767 146506 145474                                MOV      SLOC00,20
8210
8211
8212
8213 032324      MEMTO:
8214      ;*****
8215      ;*TEST 223      TEST STACK OVERFLOW ON EMT TRAP
8216      ;*****
8217 032324      TST223:
8218 032324 005267 146454                                INC      #TESTN
8219 032330 005067 145432                                CLR      CPREG
8220 032334 012706 000400                                MOV      #400,R6
8221 032340 016767 145464 146462                                MOV      30,SLOC00
8222 032346 012767 032374 145454                                MOV      #EMTOA,30
8223 032354 016767 145424 146450                                MOV      4,SLOC01
8224 032362 012767 032406 145414                                MOV      #EMTOB,4
8225
8226 032370 104000                                EMT
8227 032372 000240                                NOP
8228 032374 012706 001000      EMTOA:  MOV      #STBOT,R6
8229
8230 032400 104000                                ERROR
8231 032402 001010                                .WORD    1010
8232 032404 001127                                .WORD    CPUERR
8233 032406                                EMTOB:
8234 032406 016767 146416 145414                                MOV      SLOC00,30
8235 032414 016767 146412 145362                                MOV      SLOC01,4
8236 032422 005067 145340                                CLR      CPREG
8237 032426 012706 001000                                MOV      #STBOT,R6
8238
8239 032432      MTRPO:
8240      ;*****
8241      ;*TEST 224      TEST STACK OVERFLOW ON TRAP
8242      ;*****
8243 032432      TST224:
8244 032432 005267 146346                                INC      #TESTN
8245 032436 005067 145324                                CLR      CPREG
8246 032442 012706 000400                                MOV      #400,R6
8247 032446 016767 145362 146354                                MOV      34,SLOC00
8248 032454 012767 032502 145352                                MOV      #TRPOA,34
8249 032462 016767 145316 146342                                MOV      4,SLOC01
8250 032470 012767 032520 145306                                MOV      #TRPOB,4
8251
8252 032476 104400                                TRAP
8253 032500 000240                                NOP
8254 032502 010637 001062      TRPOA:  MOV      SP,#$SAVSP1

```

;RESTORE R6 FOR ERROR CALL
 ;FAILURE OF STACK OVERFLOW
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;CLEAR CPU ERROR REGISTER
 ;RESTORE VECTOR
 ;RESTORE TRAP VECTOR
 ;INCREMENT TEST NUMBER
 ;CLEAR CPU ERROR REGISTER
 ;SETUP STACK FOR OVERFLOW
 ;SAVE OLD EMT VECTOR
 ;SETUP ERROR ACTION ON EMT
 ;SAVE VECTOR
 ;SETUP CORRECT TRAP VECTOR FOR
 ;OVERFLOW
 ; TEST INSTRUCTION
 ;RESTORE R6 FOR ERROR CALL
 ;FAILURE OF STACK OVERFLOW
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;RESTORE TRAP VECTOR
 ;RESTORE VECTOR
 ;CLEAR CPU ERROR REGISTER
 ;INCREMENT TEST NUMBER
 ;CLEAR CPU ERROR REGISTER
 ;SETUP STACK FOR OVERFLOW
 ;SAVE OLD TRP VECTOR
 ;SETUP ERROR ACTION ON TRP
 ;SAVE VECTOR
 ;SETUP CORRECT TRAP VECTOR FOR
 ;OVERFLOW
 ; TEST INSTRUCTION
 ;SAVE ERROR DATA

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 KDJ11A,MAC 22-FEB-84 15:12 T224 TEST STACK OVERFLOW ON TRAP

SEQ 0154

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8255 032506 012706 001000      MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8256                                ;FAILURE OF STACK OVERFLOW
8257 032512 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8258 032514 001011      .WORD      1011      ;UNIQUE ERROR NUMBER
8259 032516 001127      .WORD      CPUERR     ;ADDRESS OF ERROR MESSAGE
8260 032520
8261 032520 016767 146304 145306 TRP08:  MOV      SLOC00,34      ;RESTORE TRAP VECTOR
8262 032526 016767 146300 145250      MOV      SLOC01,4      ;RESTORE VECTOR
8263 032534 005067 145226      CLR      CPUREG      ;CLEAR CPU ERROR REGISTER
8264 032540 012706 001000      MOV      #STBOT,R6
8265
8266
8267
8268 032544      ;
8269      ;MBPT0:
8270      ;*****
8271      ;*TEST 225      TEST STACK OVERFLOW ON BPT
8272      ;*****
8273 032544 005267 146234      TST225:  INC      $TESTN      ;INCREMENT TEST NUMBER
8274 032550 005067 145212      CLR      CPUREG      ;CLEAR CPU ERROR REGISTER
8275 032554 012706 000400      MOV      #400,R6      ;SETUP STACK FOR OVERFLOW
8276 032560 016767 145230 146242      MOV      14,SLOC00      ;SAVE OLD BPT VECTOR
8277 032566 012767 032614 145220      MOV      #BPT0A,14      ;SETUP ERROR ACTION ON BPT
8278 032574 016767 145204 146230      MOV      4,SLOC01      ;SAVE VECTOR
8279 032602 012767 032632 145174      MOV      #BPT0B,4      ;SETUP CORRECT TRAP VECTOR FOR
8280                                ;OVERFLOW
8281 032610 000003      BPT      ;TEST INSTRUCTION
8282 032612 000240      NOP
8283 032614 010637 001062      BPT0A:  MOV      SP,#$SAVSP1      ;SAVE ERROR DATA
8284 032620 012706 001000      MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8285                                ;FAILURE OF STACK OVERFLOW
8286 032624 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8287 032626 001012      .WORD      1012      ;UNIQUE ERROR NUMBER
8288 032630 001127      .WORD      CPUERR     ;ADDRESS OF ERROR MESSAGE
8289 032632
8290 032632 005067 145130      BPT0B:  CLR      CPUREG      ;CLEAR CPU ERROR REGISTER
8291 032636 016767 146166 145150      MOV      SLOC00,14      ;RESTORE TRAP VECTOR
8292 032644 016767 146162 145132      MOV      SLOC01,4      ;RESTORE VECTOR
8293 032652 012706 001000      MOV      #STBOT,R6
8294
8295
8296
8297 032656      ;
8298      ;MILAO:
8299      ;*****
8300      ;*TEST 226      TEST STACK OVERFLOW AND ILLEGAL JMP INSTRUCTION
8301      ;*****
8302 032656 005267 146122      TST226:  INC      $TESTN      ;INCREMENT TEST NUMBER
8303 032662 005067 145100      CLR      CPUREG      ;CLEAR CPU ERROR REGISTER
8304 032666 012706 000400      MOV      #400,R6      ;SETUP STACK FOR OVERFLOW
8305 032672 016767 145112 146130      MOV      10,SLOC00      ;SAVE OLD ILLEGAL INST. VECTOR
8306 032700 012767 032730 145102      MOV      #ILAOB,10      ;SETUP ERROR ACTION ILLEGAL OPCODE
8307 032706 016767 145072 146116      MOV      4,SLOC01      ;SAVE VECTOR
8308 032714 012767 032742 145062      MOV      #ILBOB,4      ;SETUP CORRECT TRAP VECTOR FOR
8309                                ;OVERFLOW
8310 032722 005001      CLR      R1

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 KDJ11A,MAC 22-FEB-84 15:12 T226 TEST STACK OVERFLOW AND ILLEGAL JMP INSTRUCTION

SEQ 0155

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8311 032724 000101      JMP      R1          ; TEST INSTRUCTION
8312 032726 000240      NOP
8313 032730 012706 001000  ILA0A: MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8314                                     ;FAILURE OF STACK OVERFLOW
8315 032734 104000      ERROR                    ;ALL ERRORS TO TRAP TO EMT VECTOR
8316 032736 001013      .WORD    1013             ;UNIQUE ERROR NUMBER
8317 032740 001127      .WORD    CPUERR           ;ADDRESS OF ERROR MESSAGE
8318 032742                                     ;
8319 032742 016767 146064 145034  ILB0B: MOV      SLOC01,4      ;RESTORE VECTOR
8320 032750 016767 146054 145032  MOV      SLOC00,10     ;RESTORE TRAP VECTOR
8321 032756 005067 145004      CLR      CPUREG        ;CLEAR CPU ERROR REGISTER
8322 032762 012706 001000      MOV      #STBOT,R6
8323
8324
8325 032766      ;
8326      ;ILLB0:
8327      ;*****
8328      ;*TEST 227      TEST STACK OVERFLOW ON ILLEGAL JSR INST
8329      ;*****
8329 032766      TST227:
8330 032766 005267 146012      INC      $TESTN          ;INCREMENT TEST NUMBER
8331 032772 012706 000400      MOV      #400,R6         ;SETUP STACK FOR OVERFLOW
8332 032776 016767 145006 146024  MOV      10,SLOC00      ;SAVE OLD VECTOR
8333 033004 012767 033034 144776  MOV      #ILLB0A,10     ;SETUP ERROR ACTION ON ILL. OPCODE
8334 033012 016767 144766 146012  MOV      4,SLOC01      ;SAVE VECTOR
8335 033020 012767 033046 144756  MOV      #ILLB0B,4     ;SETUP CORRECT TRAP VECTOR FOR OVERFLOW
8336 033026 005001      CLR      R1
8337 033030 004501      JSR      R5,R1          ;*** TEST INSTRUCTION***
8338 033032 000240      NOP
8339 033034 012706 001000  ILLB0A: MOV      #STBOT,R6      ;RESTORE R6 FOR ERROR CALL
8340                                     ;ERROR!! FAILURE OF STACK OVERFLOW
8341 033040 104000      ERROR                    ;ALL ERRORS TO TRAP TO EMT VECTOR
8342 033042 001014      .WORD    1014             ;UNIQUE ERROR NUMBER
8343 033044 001127      .WORD    CPUERR           ;ADDRESS OF ERROR MESSAGE
8344 033046 005037 177766  ILLB0B: CLR      #CPUREG        ;CLEAR CPU ERROR REGISTER
8345 033052 016767 145752 144730  MOV      SLOC00,10     ;RESTORE TRAP VECTOR
8346 033060 016767 145746 144716  MOV      SLOC01,4     ;RESTORE VECTOR
8347 033066 012706 001000      MOV      #STBOT,R6
8348
8349
8350      ;
8351 033072      ;MST0:
8352      ;*****
8353      ;*TEST 230      TEST FOR FALSE STACK OVERFLOW
8354      ;*****
8355 033072      TST230:
8356 033072 005267 145706      INC      $TESTN          ;INCREMENT TEST NUMBER
8357 033076 016767 144702 145724  MOV      4,SLOC00      ;SAVE VECTOR
8358 033104 012767 033152 144672  MOV      #MSTOE,4     ;ANTICIPATE OVERFLOW ERROR
8359 033112 012706 001002      MOV      #1002,R6        ;SETUP LEGAL R6
8360 033116 005746      TST      -(R6)                ;TRY TO CAUSE STACK OVERFLOW
8361 033120 012706 002002      MOV      #2002,R6        ;SETUP LEGAL R6
8362 033124 005746      TST      -(R6)                ;TRY TO CAUSE STACK OVERFLOW
8363 033126 012706 004002      MOV      #4002,R6        ;SETUP LEGAL R6
8364 033132 005746      TST      -(R6)                ;TRY TO CAUSE STACK OVERFLOW
8365 033134 012706 010002      MOV      #10002,R6       ;SETUP LEGAL R6
8366 033140 005746      TST      -(R6)                ;TRY TO CAUSE STACK OVERFLOW

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8367 033142 012706 100402      MOV      #100402,R6      ;SETUP LEGAL R6
8368 033146 005746              TST      -(R6)          ;TRY TO CAUSE STACK OVERFLOW
8369 033150 000405              BR       MSTOREE        ;EXIT MODULE
8370 033152 012706 001000      MSTORE: MOV      #STBOT,R6    ;RESTORE R6 FOR ERROR CALL
8371                                ;ERROR!! INVALID STACK OVERFLOW ERROR
8372 033156 104000              ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
8373 033150 001015              .WORD    1015             ;UNIQUE ERROR NUMBER
8374 033162 001127              .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
8375 033164 016767 145640 144612 MSTOREE: MOV      SLOC00,4  ;RESTORE VECTOR
8376 033172 012706 001000      MOV      #STBOT,R6
8377
8378
8379
8380 033176                      ;
8381                      ; MTT:
8382                      ; *****
8383                      ; *TEST 231      TEST T-BIT TRAPS
8384                      ; *****
8385 033176 005267 145602      TST231: INC      #TESTN        ;INCREMENT TEST NUMBER
8386 033202 012706 001000      MOV      #STBOT,R6        ;SETUP STACK
8387 033206 016767 144602 145614 MOV      14,SLOC00    ;SAVE OLD T-BIT VECTOR
8388 033214 012746 000020      MOV      #20,-(R6)        ;PUSH T-BIT
8389 033220 012746 033242      MOV      #MTTA,-(R6)      ;SETUP ERROR TRAP VECTOR
8390 033224 012767 033250 144562 MOV      #MTTB,14    ;SETUP NEW T-BIT VECTOR
8391 033232 000002              RTI                      ;CAUSE A T BIT SET IN PSW
8392                                ;SHOULD NEVER BE EXECUTED
8393 033234 104000              ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
8394 033236 001016              .WORD    1016             ;UNIQUE ERROR NUMBER
8395 033240 001127              .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
8396                                ;DIDNT TAKE CORRECT TRAP
8397 033242                      MTTA:
8398 033242 104000              ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
8399 033244 001017              .WORD    1017             ;UNIQUE ERROR NUMBER
8400 033246 001127              .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
8401 033250 022706 000774      MTTB: CMP      #STBOT-4,R6 ;VERIFY SP DECIREMENT
8402 033254 001403              BEQ      MTTD             ;BRANCH IF GOOD
8403                                ;BAD SP
8404 033256 104000              ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
8405 033260 001020              .WORD    1020             ;UNIQUE ERROR NUMBER
8406 033262 001127              .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
8407 033264 021627 033242      MTTD: CMP      (R6),#MTTA  ;VERIFY PC SAVED ON STACK
8408 033270 001403              BEQ      MTTE             ;BRANCH IF GOOD
8409                                ;INCORRECT PC ON STACK
8410 033272 104000              ERROR                     ;ALL ERRORS TO TRAP TO EMT VECTOR
8411 033274 001021              .WORD    1021             ;UNIQUE ERROR NUMBER
8412 033276 001127              .WORD    CPUERR          ;ADDRESS OF ERROR MESSAGE
8413 033300                      MTTE:
8414 033300 016767 145524 144506 MOV      SLOC00,14    ;RESTORE VECTOR 14
8415 033306 012706 001000      MOV      #STBOT,R6
8416
8417
8418 033312                      ;
8419                      ; MTT2:
8420                      ; *****
8421                      ; *TEST 232      TEST T-BIT TRAPS WITH RTI
8422 033312                      ; *****
8422                      ; TST232:

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 RDJ11A.MAC 22-FEB-84 15:12 T232 TEST T-BIT TRAPS WITH RTT

SEQ 0157

8423	033312	005267	145466		INC	#TESTN	INCREMENT TEST NUMBER
8424	033316	012706	001000		MOV	#STBOT,R6	SETUP STACK
8425	033322	016767	144466	145509	MOV	14,SLOC00	SAVE OLD T-BIT VECTOR
8426	033330	012746	000020		MOV	#20,-(R6)	PUSH T-BIT
8427	033334	012746	033356		MOV	#MTTSA,-(R6)	SETUP ERROR TRAP VECTOR
8428	033340	012767	033366	144446	MOV	#MTTSB,14	SETUP NEW T-BIT VECTOR
8429	033346	000006			RTT		CAUSE A T BIT SET IN PSW
8430							SHOULD NEVER BE EXECUTED
8431	033350	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8432	033352	001022			.WORD	1022	UNIQUE ERROR NUMBER
8433	033354	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8434	033356	000240			MTTSA: NOP		RTT WILL EXECUTE THIS INSTRUCTION
8435							WITH A T-BIT TRAP
8436							DIDNT TAKE CORRECT TRAP
8437	033360				MTTSQ:		
8438	033360	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8439	033362	001023			.WORD	1023	UNIQUE ERROR NUMBER
8440	033364	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8441	033366	022706	000774		MTTSB: CMP	#STBOT-4,R6	VERIFY SP DECIMENT
8442	033372	001403			BEQ	MTTSD	BRANCH IF GOOD
8443							BAD SP
8444	033374	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8445	033376	001024			.WORD	1024	UNIQUE ERROR NUMBER
8446	033400	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8447	033402	021627	033360		MTTSD: CMP	(R6),#MTTSQ	VERIFY PC SAVED ON STACK
8448	033406	001403			BEQ	MTTSE	BRANCH IF GOOD
8449							INCORRECT PC ON STACK
8450	033410	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8451	033412	001025			.WORD	1025	UNIQUE ERROR NUMBER
8452	033414	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8453	033416				MTTSE:		
8454	033416	016767	145406	144370	MOV	SLOC00,14	RESTORE VECTOR 14
8455	033424	012706	001000		MOV	#STBOT,R6	
8456							
8457	033430				MTTR:		
8458					*****		
8459					TEST 233	TEST OLD STATUS ON T BIT TRAP	
8460					*****		
8461	033430				TST233:		
8462	033430	005267	145350		INC	#TESTN	INCREMENT TEST NUMBER
8463	033434	012706	001000		MOV	#STBOT,R6	SETUP STACK
8464	033440	016767	144350	145362	MOV	14,SLOC00	SAVE OLD VECTOR
8465	033446	012746	000020		MOV	#20,-(R6)	PUSH T-BIT
8466	033452	012746	033504		MOV	#MTTRA,-(R6)	SETUP ERROR TRAP VECTOR
8467	033456	012767	033512	144330	MOV	#MTTRB,14	SETUP NEW T-BIT VECTOR
8468	033464	012767	000357	144304	MOV	#357,PS	SET PRIORITY AND COND C
8469	033472	000277			SCC		
8470	033474	000002			RTI		
8471							SHOULD NEVER EXECUTE
8472	033476	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8473	033500	001026			.WORD	1026	UNIQUE ERROR NUMBER
8474	033502	001127			.WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8475							DIDNT TAKE CORRECT TRAP
8476	033504				MTTRA:		
8477	033504	104000			ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8478	033506	001027			.WORD	1027	UNIQUE ERROR NUMBER

8479	033510	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8480	033512	026727	145260	000020	MTTRB:	CMP	STBOT-2,#20	VERIFY PSW ON STACK
8481	033520	001403				BEQ	MTTRC	BRANCH IF CORRECT STATUS
8482								BAD STATUS ON STACK
8483	033522	104000				ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8484	033524	001030				WORD	1030	UNIQUE ERROR NUMBER
8485	033526	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8486	033530	012706	001000		MTTRC:	MOV	#STBOT,R6	SETUP STACK
8487	033534	012746	000377			MOV	#377,-(R6)	PUSH T-BIT
8488	033540	012746	033572			MOV	#MTTRD,(R6)	SETUP ERROR TRAP VECTOR
8489	033544	012767	033600	144242		MOV	#MTTRE,14	SETUP NEW T-BIT VECTOR
8490	033552	012767	000000	144216		MOV	#0,PS	CLEAR PRIORITY
8491	033560	000257				CCC		CLEAR CONDITION CODES
8492	033562	000002				RTI		
8493								SHOULD NEVER EXECUTE
8494	033564	104000				ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8495	033566	001031				WORD	1031	UNIQUE ERROR NUMBER
8496	033570	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8497								DIDNT TAKE CORRECT TRAP
8498	033572				MTTRD:			
8499	033572	104000				ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8500	033574	001032				WORD	1032	UNIQUE ERROR NUMBER
8501	033576	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8502	033600	026727	145172	000377	MTTRE:	CMP	STBOT-2,#377	VERIFY OLD PSW ON STACK
8503	033606	001403				BEQ	MTTRF	BRANCH IF GOOD
8504								OLD PSW INCORRECT
8505	033610	104000				ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8506	033612	001033				WORD	1033	UNIQUE ERROR NUMBER
8507	033614	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8508	033616				MTTRF:			
8509	033616	016767	145206	144170		MOV	SLOC00,14	RESTORE VECTOR
8510	033624	012706	001000			MOV	#STBOT,R6	
8511								
8512								
8513	033630				MRT:			
8514								
8515								
8516								
8517	033630							
8518	033630	005267	145150			INC	#TESTN	INCREMENT TEST NUMBER
8519	033634	012706	001000			MOV	#STBOT,R6	SETUP STACK
8520	033640	016767	144144	145162		MOV	10,SLOC00	SAVE OLD VECTOR
8521	033646	012767	033664	144134		MOV	#MTTB,10	SETUP NEW RESERVED VECTOR
8522	033654	000077				77		
8523								DIDNT TAKE CORRECT TRAP
8524	033656				MRTA:			
8525	033656	104000				ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8526	033660	001034				WORD	1034	UNIQUE ERROR NUMBER
8527	033662	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8528	033664	022706	000774		MRTB:	CMP	#STBOT-4,R6	VERIFY SP DECRIMENT
8529	033670	001403				BEQ	MRTF	BRANCH IF GOOD
8530								BAD PC ON STACK
8531	033672	104000				ERROR		ALL ERRORS TO TRAP TO EMT VECTOR
8532	033674	001035				WORD	1035	UNIQUE ERROR NUMBER
8533	033676	001127				WORD	CPUERR	ADDRESS OF ERROR MESSAGE
8534	033700	021627	033656		MRTF:	CMP	(R6),#MRTA	VERIFY PROPER PC ON STACK

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8535 033704 001403          BEQ      MRTF          ;BRANCH IF GOOD
8536                                     ;INCORRECT PC ON STACK
8537 033706 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
8538 033710 001036          .WORD      1036      ;UNIQUE ERROR NUMBER
8539 033712 001127          .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
8540 033714                                     ;
8541 033714 016767 145110 144066          MOV      SLOC00,10      ;RESTORE TRAP VECTOR
8542 033722 012706 001000          MOV      *STBOT,R6
8543
8544
8545
8546 033726          MRT0:
8547          ;*****
8548          ;*TEST 235      TEST OLD STATUS ON RESERVED INST TRAP
8549          ;*****
8550 033726          YST235:
8551 033726 005267 145052          INC      *TESTN          ;INCREMENT TEST NUMBER
8552 033732 012706 001000          MOV      *STBOT,R6      ;SETUP STACK
8553 033736 016767 144046 145064          MOV      10,SLOC00    ;SAVE OLD VECTOR
8554 033744 012767 033770 144036          MOV      *MRT0B,10    ;SETUP NEW VECTOR
8555 033752 005067 144020          CLR      PS              ;CLEAR PRIORITY AND COND C
8556 033756 000257          CCC
8557 033760 000077          77
8558                                     ;DIDNT TAKE CORRECT TRAP
8559 033762          MRT0A:
8560 033762 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
8561 033764 001037          .WORD      1037      ;UNIQUE ERROR NUMBER
8562 033766 001127          .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
8563 033770 026727 145002 000000          CMP      STBOT-2,*0    ;VERIFY PSW ON STACK
8564 033776 001403          BEQ      MRT0C          ;BRANCH IF CORRECT STATUS
8565                                     ;BAD STATUS ON STACK
8566 034000 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
8567 034002 001040          .WORD      1040      ;UNIQUE ERROR NUMBER
8568 034004 001127          .WORD      CPUERR    ;ADDRESS OF ERROR MESSAGE
8569 034006 012706 001000          MOV      *STBOT,R6      ;SETUP STACK
8570 034012 012767 034040 143770          MOV      *MRT0E,10    ;SET UP TRAP VECTOR
8571 034020 012767 000357 143750          MOV      *357,PS      ;SET PRIORITY
8572 034026 000277          SCC
8573 034030 000077          77          ;SET CONDITION CODES
8574                                     ;RESERVED INSTRUCTION
8575
8576          MRT0D:
8577 034032 104000          ERROR          ;DIDNT TAKE CORRECT TRAP
8578 034034 001041          .WORD      1041      ;ALL ERRORS TO TRAP TO EMT VECTOR
8579 034036 001127          .WORD      CPUERR    ;UNIQUE ERROR NUMBER
8580 034040 026727 144732 000357          CMP      STBOT-2,*357  ;ADDRESS OF ERROR MESSAGE
8581 034046 001403          BEQ      MRT0F          ;VERIFY OLD PSW ON STACK
8582                                     ;BRANCH IF GOOD
8583 034050 104000          ERROR          ;OLD PSW INCORRECT
8584 034052 001042          .WORD      1042      ;ALL ERRORS TO TRAP TO EMT VECTOR
8585 034054 001127          .WORD      CPUERR    ;UNIQUE ERROR NUMBER
8586 034056                                     ;ADDRESS OF ERROR MESSAGE
8587 034056 016767 144746 143724          MOV      SLOC00,10    ;RESTORE TRAP VECTOR
8588 034064 012706 001000          MOV      *STBOT,R6
8589
8590 034070          MTP:

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 KDJ11A.MAC 22-FEB-84 15:12 T236 TEST TRAP INST

SEQ 0160

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8591
8592
8593
8594 034070
8595 034070 005267 144710
8596 034074 012706 001000
8597 034100 016767 143730 144722
8598 034106 012767 034132 143720
8599 034114 005067 143656
8600 034120 000257
8601 034122 104400
8602
8603 034124
8604 034124 104000
8605 034126 001043
8606 034130 001127
8607 034132 022706 000774
8608 034136 001403
8609
8610 034140 103000
8611 034142 001044
8612 034144 001127
8613 034146 021627 034124
8614 034152 001403
8615
8616 034154 104000
8617 034156 001045
8618 034160 001127
8619 034162
8620 034162 016767 144642 143644
8621 034170 012706 001000
8622
8623
8624
8625 034174
8626
8627
8628
8629 034174
8630 034174 005267 144604
8631 034200 012706 001000
8632 034204 016767 143624 144616
8633 034212 012767 034236 143614
8634 034220 005067 143552
8635 034224 000257
8636 034226 104400
8637
8638 034230
8639 034230 104000
8640 034232 001046
8641 034234 001127
8642 034236 026727 144534 000000
8643 034244 001403
8644
8645 034246 104000
8646 034250 001047

;*****
;+TEST 236 TEST TRAP INST
;*****
TST236:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      MOV      $STBOT,R6       ;SETUP STACK
      MOV      34,SLOCC0       ;SAVE OLD VECTOR
      MOV      $MTPB,34        ;SETUP NEW TRAP VECTOR
      CLR      PS              ;CLEAR PRIORITY AND COND C
      CCC
      TRAP

;DIDNT TAKE CORRECT TRAP

MTPR:
      ERROR
      .WORD    1043            ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR         ;UNIQUE ERROR NUMBER
      .WORD    1043            ;ADDRESS OF ERROR MESSAGE
MTPB:
      CMP      $STBOT-4,R6     ;VERIFY SP DECRIMENT
      BEQ      MTPQ           ;BRANCH IF GOOD
      .WORD    1044            ;BAD PC ON STACK
      .WORD    CPUERR         ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    1044            ;UNIQUE ERROR NUMBER
      .WORD    1044            ;ADDRESS OF ERROR MESSAGE
MTPQ:
      CMP      (R6), $MTPR     ;VERIFY PROPER PC ON STACK
      BEQ      MTPF           ;BRANCH IF GOOD
      .WORD    1045            ;INCORRECT PC ON STACK
      .WORD    CPUERR         ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    1045            ;UNIQUE ERROR NUMBER
      .WORD    1045            ;ADDRESS OF ERROR MESSAGE
MTPF:
      MOV      SLOCC0,34       ;RESTORE VECTOR
      MOV      $STBOT,R6

;
;
MTP0:
;*****
;+TEST 237 TEST OLD STATUS SAVED ON TRAP
;*****
TST237:
      INC      $TESTN          ;INCREMENT TEST NUMBER
      MOV      $STBOT,R6       ;SETUP STACK
      MOV      34,SLOCC0       ;SAVE OLD VECTOR
      MOV      $MTP0B,34       ;SETUP NEW TRAP VECTOR
      CLR      PS              ;CLEAR PRIORITY AND COND C
      CCC
      TRAP

;DIDNT TAKE CORRECT TRAP

MTP0A:
      ERROR
      .WORD    1046            ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    CPUERR         ;UNIQUE ERROR NUMBER
      .WORD    1046            ;ADDRESS OF ERROR MESSAGE
MTP0B:
      CMP      STBOT-2,$0      ;VERIFY PSW ON STACK
      BEQ      MTP0C          ;BRANCH IF CORRECT STATUS
      .WORD    1047            ;BAD STATUS ON STACK
      .WORD    1047            ;ALL ERRORS TO TRAP TO EMT VECTOR
      .WORD    1047            ;UNIQUE ERROR NUMBER

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 KDJ11A.MAC 22-FEB-84 15:12 T237 TEST OLD STATUS SAVED ON TRAP

SEQ 0161

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8647 034252 001127          .WORD CPUERR          ; ADDRESS OF ERROR MESSAGE
8648 034254 012706 001000    MTPOC: MOV #STBOT,R6    ; SETUP STACK
8649 034260 012767 034306 143546 MOV #MTPOE,34    ; SET UP TRAP VECTOR
8650 034266 012767 000357 143502 MOV #357,PS      ; SET PRIORITY
8651 034274 000277          SCC                   ; SET CONDITION CODES
8652 034276 104400          TRAP                   ; ISSUE TRAP
8653                                     ; DIDNT TAKE CORRECT TRAP
8654 034300          MTPOD: ERROR                   ; ALL ERRORS TO TRAP TO EMT VECTOR
8655 034300 104000          .WORD 1050             ; UNIQUE ERROR NUMBER
8656 034302 001050          .WORD CPUERR           ; ADDRESS OF ERROR MESSAGE
8657 034304 001127          MTPOE: CMP STBOT-2,#357 ; VERIFY OLD PSW ON STACK
8658 034306 026727 144464 000357 BEQ MTPOF         ; BRANCH IF GOOD
8659 034314 001403          ERROR                  ; OLD PSW INCORRECT
8660                                     ; ALL ERRORS TO TRAP TO EMT VECTOR
8661 034316 104000          .WORD 1051             ; UNIQUE ERROR NUMBER
8662 034320 001051          .WORD CPUERR           ; ADDRESS OF ERROR MESSAGE
8663 034322 001127          MTPOF: MOV SLOC00,34    ; RESTORE TRAP VECTOR
8664 034324 016767 144500 143502 MOV #STBOT,R6
8665 034324 016767 144500 143502 MOV #STBOT,R6
8666 034332 012706 001000          ;
8667          ;
8668          ;
8669          ;
8670 034336          MTPA: *****
8671          ; *TEST 240 TEST ALL TRAP OPCODES - SELF MODIFYING
8672          ; *****
8673          TST240: INC #TESTN                     ; INCREMENT TEST NUMBER
8674 034336 005267 144442          CLR R3           ; SETUP REGISTER TO INDICATE OPCODE
8675 034336 005267 144442          MOV #STBOT,R6    ; SETUP STACK
8676 034342 005003          MOV 34,SLOC00           ; SAVE OLD VECTOR
8677 034344 012706 001000          MOV 4,SLOC01     ; SAVE IN CASE OF HALT
8678 034350 016767 143460 144452          MOV #MTPAH,4 ; SETUP HALT TRAP
8679 034356 016767 143422 144446          MOV #MTPAA,34 ; SETUP NEW TRAP VECTOR
8680 034364 012767 034420 143412          JMP MTPAA  ; GO INTO LOOPING CODE
8681 034372 012767 034426 143434          ;
8682 034400 000167 000022          ;
8683          ;
8684 034404 000000          MTPAL: HALT              ; SET TO A ZERO
8685          ;
8686 034406 104000          ERROR                   ; TRAP INSTRUCTION FAILED TO TRAP
8687 034410 001052          .WORD 1052             ; ALL ERRORS TO TRAP TO EMT VECTOR
8688 034412 001127          .WORD CPUERR           ; UNIQUE ERROR NUMBER
8689          ; ADDRESS OF ERROR MESSAGE
8690          ; EXAMINE OPCODE AT LOCATION MTPAL:
8691 034414 000167 000006          JMP MTPAA         ; ATTEMPT TO GO ON
8692          ;
8693          ;
8694 034420          MTPAH: ERROR                   ; ERROR, EITHER CANT MODIFY LOCATION MTPAL
8695 034420 104000          .WORD 1053             ; ALL ERRORS TO TRAP TO EMT VECTOR
8696 034422 001053          .WORD CPUERR           ; UNIQUE ERROR NUMBER
8697 034424 001127          .WORD CPUERR           ; ADDRESS OF ERROR MESSAGE
8698          ;
8699          ;
8700 034426          MTPAA: INC R3                  ; OR TRAP INSTRUCTION FAILED
8701 034426 005203          ; GET NEXT OPCODE
8702

```

G13

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 KDJ11A.MAC 22-FEB-84 15:12 T240 TEST ALL TRAP OPCODES - SELF MODIFYING

SEQ 0162

```

8703 034430 012706 001000      MOV      #STBOT,R6      ;RESTORE STACK
8704 034434 020327 000400      CMP      R3,#400      ;SEE IF LAST OPCODE
8705 034440 001406              BEQ      MTPAE          ;BRANCH IF DONE
8706 034442 012767 104400 177734  MOV      #104400,MTPAL ;TRAP OPCODE INTO LOCATION
8707 034450 060367 177730      ADD      R3,MTPAL      ;FORM TEST OPCODE
8708 034454 000753              BR       MTPAL          ;EXECUTE TEST
8709 034456                      MTPAE:
8710
8711 034456 016767 144346 143350  MOV      SLOC00,34
8712 034464 016767 144342 143312  MOV      SLOC01,4      ;RESTORE VECTORS
8713
8714 034472 012706 001000      MOV      #STBOT,R6
8715
8716
8717
8718 034476                      ;
8719                      ;MIOT:
8720                      ;*****
8721                      ;*TEST 241      TEST IOT TRAP
8722                      ;*****
8723 034476 005267 144302      TST241: INC      $TESTN      ;INCREMENT TEST NUMBER
8724 034502 012706 001000      MOV      #STBOT,R6      ;SETUP STACK
8725 034506 016767 143306 144314  MOV      20,SLOC00 ;SAVE OLD VECTOR
8726 034514 012767 034532 143276  MOV      #MIOTB,20 ;SETUP NEW IOT VECTOR
8727 034522 000004              IOT          ;***TEST INSTRUCTION***
8728                      ;ERROR! DIDNT TAKE CORRECT TRAP
8729 034524                      MIOTA:
8730 034524 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8731 034526 001054      .WORD      1054 ;UNIQUE ERROR NUMBER
8732 034530 001127      .WORD      CPUERR ;ADDRESS OF ERROR MESSAGE
8733 034532 022706 000774      MIOTB: CMP      #STBOT-4,R6 ;VERIFY SP DECIMENT
8734 034536 001403      BEQ      MIOTD ;BRANCH IF GOOD
8735                      ;BAD PC ON STACK
8736 034540 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8737 034542 001055      .WORD      1055 ;UNIQUE ERROR NUMBER
8738 034544 001127      .WORD      CPUERR ;ADDRESS OF ERROR MESSAGE
8739 034546 021627 034524      MIOTD: CMP      (R6),#MIOTA ;VERIFY PROPER PC ON STACK
8740 034552 001403      BEQ      MIOTF ;BRANCH IF GOOD
8741                      ;INCORRECT PC ON STACK
8742 034554 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
8743 034556 001056      .WORD      1056 ;UNIQUE ERROR NUMBER
8744 034560 001127      .WORD      CPUERR ;ADDRESS OF ERROR MESSAGE
8745 034562 016767 144242 143230 MIOTF: MOV      SLOC00,20 ;RESTORE VECTOR
8746 034570 012706 001000      MOV      #STBOT,R6
8747
8748 034574                      MITO:
8749                      ;*****
8750                      ;*TEST 242      TEST OLD STATUS ON IOT TRAP
8751                      ;*****
8752 034574 005267 144204      TST242: INC      $TESTN      ;INCREMENT TEST NUMBER
8753 034574 012706 001000      MOV      #STBOT,R6      ;SETUP STACK
8754 034600 016767 143210 144216  MOV      20,SLOC00 ;SAVE OLD VECTOR
8755 034604 012767 034636 143200  MOV      #MITOB,20 ;SETUP NEW IOT VECTOR
8756 034612 005067 143152      CLR      PS          ;CLEAR PRIORITY AND COND C
8757 034620 000257      CCC
8758 034624

```

```

8759 034626 000004 IOT
8760
8761 034630 MITOA: ;DIDNT TAKE CORRECT TRAP
8762 034630 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
8763 034632 001057 .WORD 1057 ;UNIQUE ERROR NUMBER
8764 034634 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
8765 034636 026727 144134 000000 MITOB: CMP STBOT-2,#0 ;VERIFY PSW ON STACK
8766 034644 001403 BEQ MITOC ;BRANCH IF CORRECT STATUS
8767
8768 034646 104000 ERROR ;BAD STATUS ON STACK
8769 034650 001060 .WORD 1060 ;ALL ERRORS TO TRAP TO EMT VECTOR
8770 034652 001127 .WORD CPUERR ;UNIQUE ERROR NUMBER
8771 034654 012706 001000 MITOC: MOV #STBOT,R6 ;ADDRESS OF ERROR MESSAGE
8772 034660 012767 034706 143132 MOV #MITOE,20 ;SETUP STACK
8773 034666 012767 000357 143102 MOV #357,PS ;SET UP TRAP VECTOR
8774 034674 000277 SCC ;SET PRIORITY
8775 034676 000004 IOT ;SET CONDITION CODES
8776
8777 034700 MITOD: ;DIDNT TAKE CORRECT TRAP
8778 034700 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
8779 034702 001061 .WORD 1061 ;UNIQUE ERROR NUMBER
8780 034704 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
8781 034706 026727 144064 000357 MITOE: CMP STBOT-2,#357 ;VERIFY OLD PSW ON STACK
8782 034714 001403 BEQ MITOF ;BRANCH IF GOOD
8783
8784 034716 104000 ERROR ;OLD PSW INCORRECT
8785 034720 001062 .WORD 1062 ;ALL ERRORS TO TRAP TO EMT VECTOR
8786 034722 001127 .WORD CPUERR ;UNIQUE ERROR NUMBER
8787 034724 MITOF: ;ADDRESS OF ERROR MESSAGE
8788 034724 016767 144100 143066 MOV SLOC00,20 ;RESTORE VECTOR
8789 034732 012706 001000 MOV #STBOT,R6
8790
8791
8792 034736 ;
8793 MET:
8794 ;*****
8795 ;*TEST 243 TEST EMULATOR TRAP INSTRUCTION (EMT)
8796 ;*****
8797 034736 005267 144042 TST243: INC #TESTN ;INCREMENT TEST NUMBER
8798 034742 012706 001000 MOV #STBOT,R6 ;SETUP STACK
8799 034746 016767 143056 144054 MOV 30,SLOC00 ;SAVE OLD VECTOR
8800 034754 012767 035006 143046 MOV #METB,30 ;SETUP NEW EMT VECTOR
8801 034762 016767 143046 144042 MOV 34,SLOC01 ;SAVE TRAP VECTOR
8802 034770 012767 043470 143036 MOV #ERROR,34 ;SET UP TO HANDLE EMT ERROR
8803 034776 104000 EMT
8804
8805 035000 META: ;DIDNT TAKE CORRECT TRAP
8806 035000 104400 TRAP ;ERROR TRAP
8807 035002 001063 .WORD 1063 ;ERROR NUMBER
8808 035004 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
8809 035006 022706 000774 METB: CMP #STBOT-4,R6 ;VERIFY SP DECREMENT
8810 035012 001403 BEQ METD ;BRANCH IF GOOD
8811
8812 035014 104000 ERROR ;BAD PC ON STACK
8813 035016 001064 .WORD 1064 ;ALL ERRORS TO TRAP TO EMT VECTOR
8814 035020 001127 .WORD CPUERR ;UNIQUE ERROR NUMBER
;ADDRESS OF ERROR MESSAGE

```

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 KDJ11A.MAC 22-FEB-84 15:12 T243 TEST EMULATOR TRAP INSTRUCTION (EMT)

SEQ 0164

```

8815 035022 021627 035000      METD:  CMP      (R6),#META      ;VERIFY PROPER PC ON STACK
8816 035026 001403              BEQ      METF              ;BRANCH IF GOOD
8817                                ;INCORRECT PC ON STACK
8818 035030 104000              ERROR                      ;ALL ERRORS TO TRAP TO EMT VECTOR
8819 035032 001065              .WORD    1065              ;UNIQUE ERROR NUMBER
8820 035034 001127              .WORD    CPUERR            ;ADDRESS OF ERROR MESSAGE
8821 035036 016767 143770 142770 METF:  MOV      SLOC01,34      ;RESTORE VECTOR
8822 035044 016767 143760 142756      MOV      SLOC00,30      ;RESTORE VECTOR
8823 035052 012706 001000      MOV      #STBOT,R6
8824
8825
8826 035056                      ;
8827                      ;METO:
8828                      ;*****
8829                      ;*TEST 244      TEST OLD STATUS ON EMT TRAP
8830                      ;*****
8831 035056                      TST244:
8832 035056 005267 143722              INC      #TESTN          ;INCREMENT TEST NUMBER
8833 035062 012706 001000              MOV      #STBOT,R6      ;SETUP STACK
8834 035066 016767 142736 143734      MOV      30,SLOC00      ;SAVE OLD VECTOR
8835 035074 012767 035134 142726      MOV      #METOB,30      ;SETUP NEW EMT VECTOR
8836 035102 016767 142726 143722      MOV      34,SLOC01      ;SAVE TRAP VECTOR
8837 035110 012767 043470 142716      MOV      #ERROR,34      ;SET UP TRAP VECTOR
8838 035116 005067 142654              CLR      PS          ;CLEAR PRIORITY AND COND C
8839 035122 000257
8840 035124 104000              CCC
8841                                EMT
8842                                ;DIDNT TAKE CORRECT TRAP
8843 035126 104400              METOA:  TRAP
8844 035130 001066              .WORD    1066              ;ERROR TRAP
8845 035132 001127              .WORD    CPUERR            ;ERROR NUMBER
8846 035134 026727 143636 000000 METOB:  CMP      STBOT-2,#0      ;ADDRESS OF ERROR MESSAGE
8847 035142 001403              BEQ      METOC              ;VERIFY PSW ON STACK
8848                                ;BRANCH IF CORRECT STATUS
8849 035144 104000              ERROR                      ;BAD STATUS ON STACK
8850 035146 001067              .WORD    1067              ;ALL ERRORS TO TRAP TO EMT VECTOR
8851 035150 001127              .WORD    CPUERR            ;UNIQUE ERROR NUMBER
8852 035152 012706 001000              .WORD    CPUERR            ;ADDRESS OF ERROR MESSAGE
8853 035156 012767 035204 142644 METOC:  MOV      #STBOT,R6      ;SETUP STACK
8854 035164 012767 000357 142604      MOV      #METOE,30      ;SET UP TRAP VECTOR
8855 035172 000277              MOV      #357,PS          ;SET PRIORITY
8856 035174 104000              SCC
8857                                EMT                      ;SET CONDITION CODES
8858                                ;DIDNT TAKE CORRECT TRAP
8859 035176 104400              METOD:  TRAP
8860 035200 001070              .WORD    1070              ;ERROR TRAP
8861 035202 001127              .WORD    CPUERR            ;ERROR NUMBER
8862 035204 026727 143566 000357 METOE:  CMP      STBOT-2,#357      ;ADDRESS OF ERROR MESSAGE
8863 035212 001403              BEQ      METOF              ;VERIFY OLD PSW ON STACK
8864                                ;BRANCH IF GOOD
8865 035214 104000              ERROR                      ;OLD PSW INCORRECT
8866 035216 001071              .WORD    1071              ;ALL ERRORS TO TRAP TO EMT VECTOR
8867 035220 001127              .WORD    CPUERR            ;UNIQUE ERROR NUMBER
8868 035222 016767 143604 142604      .WORD    CPUERR            ;ADDRESS OF ERROR MESSAGE
8869 035230 016767 143574 142572      MOV      SLOC01,34      ;RESTORE VECTOR
8870 035236 012706 001000      MOV      SLOC00,30      ;RESTORE VECTOR
8871                                MOV      #STBOT,R6

```


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 KDJ11A.MAC 22-FEB-84 15:12 T246 TEST OLD STATUS ON BPT TRAP

SEQ 0166

```

8927 035414 001076 .WORD 1076 ;UNIQUE ERROR NUMBER
8928 035416 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
8929 035420 012706 001000 MBTOC: MOV $STBOT,R6 ;SETUP STACK
8930 035424 012767 035452 142362 MOV $MBTOE,14 ;SET UP TRAP VECTOR
8931 035432 012767 000357 142336 MOV $357,PS ;SET PRIORITY
8932 035440 000277 SCC ;SET CONDITION CODES
8933 035442 000003 BPT
8934 ;
8935 035444 MBTOD: ;DIDNT TAKE CORRECT TRAP
8936 035444 101000 ;ALL ERRORS TO TRAP TO EMT VECTOR
8937 035446 001077 .WORD 1077 ;UNIQUE ERROR NUMBER
8938 035450 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
8939 035452 026727 143320 000357 MBTOE: CMP STBOT-2,$357 ;VERIFY OLD PSW ON STACK
8940 035460 001403 BEQ MBTOF ;BRANCH IF GOOD
8941 ;
8942 035462 104000 ;OLD PSW INCORRECT
8943 035464 001100 .WORD 1100 ;ALL ERRORS TO TRAP TO EMT VECTOR
8944 035466 001127 .WORD CPUERR ;UNIQUE ERROR NUMBER
8945 035470 MBTOF: ;ADDRESS OF ERROR MESSAGE
8946 035470 016767 143334 142316 MOV SLOC00,14 ;RESTORE VECTOR
8947 035476 012706 001000 MOV $STBOT,R6
8948 ;
8949 ;
8950 ;
8951 035502 ;
8952 ;
8953 ;*****
8954 ;*TEST 247 TEST ILLEGAL JUMP INSTRUCTION TRAP
8955 ;*****
8956 035502 TST247: INC $TESTN ;INCREMENT TEST NUMBER
8957 035506 012706 001000 MOV $STBOT,R6 ;SETUP STACK
8958 035512 016767 142272 143310 MOV 10,SLOC00 ;SAVE OLD VECTOR
8959 035520 012767 035540 142262 MOV $MILB,10 ;SETUP NEW ILLEGAL VECTOR
8960 035526 005001 CLR R1
8961 035530 000101 JMP R1 ;**TEST INSTRUCTIO
8962 ;
8963 035532 MILA: ;DIDNT TAKE CORRECT TRAP
8964 035532 104000 ;ALL ERRORS TO TRAP TO EMT VECTOR
8965 035534 001101 .WORD 1101 ;UNIQUE ERROR NUMBER
8966 035536 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
8967 035540 022706 000774 MILB: CMP $STBOT-4,R6 ;VERIFY SP DECRIMENT
8968 035544 001403 BEQ MILD ;BRANCH IF GOOD
8969 ;
8970 035546 104000 ;BAD PC ON STACK
8971 035550 001102 .WORD 1102 ;ALL ERRORS TO TRAP TO EMT VECTOR
8972 035552 001127 .WORD CPUERR ;UNIQUE ERROR NUMBER
8973 035554 021627 035532 MILD: CMP (R6),$MILA ;ADDRESS OF ERROR MESSAGE
8974 035560 001403 BEQ MILF ;VERIFY PROPER PC ON STACK
8975 ;
8976 035562 104000 ;BRANCH IF GOOD
8977 035564 001103 .WORD 1103 ;INCORRECT PC ON STACK
8978 035566 001127 .WORD CPUERR ;ALL ERRORS TO TRAP TO EMT VECTOR
8979 035570 016767 143234 142212 MILF: MOV SLOC00,10 ;UNIQUE ERROR NUMBER
8980 035576 012706 001000 MOV $STBOT,R6 ;ADDRESS OF ERROR MESSAGE
8981 ;
8982 035602 MILO: ;RESTORE VECTOR

```

L13

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 167
 KDJ11A.MAC 22-FEB-84 15:12 T250 TEST OLD STATUS ON ILLEGAL JUMP TRAP

SEQ 0167

```

8983 ;*****
8984 ;*TEST 250 TEST OLD STATUS ON ILLEGAL JUMP TRAP
8985 ;*****
8986 TST250:
8987 INC #TESTN ;INCREMENT TEST NUMBER
8988 MOV #STBOT,R6 ;SETUP STACK
8989 MOV 10,SLOC00 ;SAVE OLD VECTOR
8990 MOV #MILOB,10 ;SETUP NEW ILLEGAL VECTOR
8991 CLR PS ;CLEAR PRIORITY AND COND C
8992 CCC
8993 CLR R1
8994 JMP R1
8995 ;DIDNT TAKE CORRECT TRAP
8996 MILOA:
8997 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
8998 .WORD 1104 ;UNIQUE ERROR NUMBER
8999 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9000 CMP STBOT-2,#4 ;VERIFY PSW ON STACK
9001 BEQ MILOC ;BRANCH IF CORRECT STATUS
9002 ;BAD STATUS ON STACK
9003 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9004 .WORD 1105 ;UNIQUE ERROR NUMBER
9005 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9006 MOV #STBOT,R6 ;SETUP STACK
9007 MOV #MILOE,10 ;SET UP TRAP VECTOR
9008 MOV #357,PS ;SET PRIORITY
9009 SCC ;SET CONDITION CODES
9010 JMP R1
9011 ;DIDNT TAKE CORRECT TRAP
9012 MILOD:
9013 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9014 .WORD 1106 ;UNIQUE ERROR NUMBER
9015 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9016 CMP STBOT-2,#357 ;VERIFY OLD PSW ON STACK
9017 BEQ MILOF ;BRANCH IF GOOD
9018 ;OLD PSW INCORRECT
9019 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9020 .WORD 1107 ;UNIQUE ERROR NUMBER
9021 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9022 MILOF:
9023 MOV SLOC00,10 ;RESTORE VECTOR
9024 MOV #STBOT,R6
9025
9026
9027
9028 MIALL:
9029 ;*****
9030 ;*TEST 251 TEST ILLEGAL JSR INSTRUCTION TRAP
9031 ;*****
9032 TST251:
9033 INC #TESTN ;INCREMENT TEST NUMBER
9034 MOV #STBOT,R6 ;SETUP STACK
9035 MOV 10,SLOC00 ;SAVE OLD VECTOR
9036 MOV #MIALL,10 ;SETUP NEW ILLEGAL VECTOR
9037 CLR R3
9038 JSR R3,R3

```

M13

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 168
 KD.J11A,MAC 22-FEB-84 15:12 T251 TEST ILLEGAL JSR INSTRUCTION TRAP

SEQ 0168

```

9039
9040 035776 MIALLA: DIDNT TAKE CORRECT TRAP
9041 035776 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9042 036000 001110 .WORD 1110 ;UNIQUE ERROR NUMBER
9043 036002 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9044 036004 022706 000774 MIALLB: CMP #STBOT-4,R6 ;VERIFY SP DECIMENT
9045 036010 001403 BEQ MIALLD ;BRANCH IF GOOD
9046 ;BAD PC ON STACK
9047 036012 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9048 036014 001111 .WORD 1111 ;UNIQUE ERROR NUMBER
9049 036016 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9050 036020 021627 035776 MIALLD: CMP (R6),#MIALLA ;VERIFY PROPER PC ON STACK
9051 036024 001403 BEQ MIALLF ;BRANCH IF GOOD
9052 ;INCORRECT PC ON STACK
9053 036026 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9054 036030 001112 .WORD 1112 ;UNIQUE ERROR NUMBER
9055 036032 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9056 036034 016767 142770 141746 MIALLF: MOV SLOC00,10 ;RESTORE VECTOR
9057 036042 012706 001000 MOV #STBOT,R6
9058
9059
9060
9061 036046 MJSI:
9062 ;*****
9063 ;*TEST 252 TEST OLD STATUS ON ILLEGAL JSR TRAP
9064 ;*****
9065 036046 TST252:
9066 036046 005267 142732 INC #TESTN ;INCREMENT TEST NUMBER
9067 036052 012706 001000 MOV #STBOT,R5 ;SETUP STACK
9068 036056 016767 141726 142744 MOV 10,SLOC00 ;SAVE OLD VECTOR
9069 036064 012767 036112 141716 MOV #MJSIB,10 ;SETUP NEW VECTOR
9070 036072 005067 141700 CLR PS ;CLEAR PRIORITY AND COND C
9071 036076 000257
9072 036100 005003
9073 036102 004303
9074
9075 036104 MJSIA: DIDNT TAKE CORRECT TRAP
9076 036104 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9077 036106 001113 .WORD 1113 ;UNIQUE ERROR NUMBER
9078 036110 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9079 036112 026727 142660 000004 MJSIB: CMP STBOT-2,#4 ;VERIFY PSW ON STACK
9080 036120 001403 BEQ MJSIC ;BRANCH IF CORRECT STATUS
9081 ;BAD STATUS ON STACK
9082 036122 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9083 036124 001114 .WORD 1114 ;UNIQUE ERROR NUMBER
9084 036126 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9085 036130 012706 001000 MJSIC: MOV #STBOT,R6 ;SETUP STACK
9086 036134 012767 036162 141646 MOV #MJSIE,10 ;SET UP TRAP VECTOR
9087 036142 012767 000357 141626 MOV #357,PS ;SET PRIORITY
9088 036150 000277 SCC ;SET CONDITION CODES
9089 036152 004303 JSR R3,R3
9090
9091 036154 MJSID: DIDNT TAKE CORRECT TRAP
9092 036154 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9093 036156 001115 .WORD 1115 ;UNIQUE ERROR NUMBER
9094 036160 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE

```

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 169
 KDJ11A.MAC 22-FEB-84 15:12 T252 TEST OLD STATUS ON ILLEGAL JSR TRAP

SEQ 0169

```

9095 036162 026727 142610 000357 MJSIE: CMP STBOT-2,#357 ;VERIFY OLD PSW ON STACK
9096 036170 001403 BEQ MJSIF ;BRANCH IF GOOD
9097 ;OLD PSW INCORRECT
9098 036172 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9099 036174 001116 .WORD 1116 ;UNIQUE ERROR NUMBER
9100 036176 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9101 036200 MJSIF:
9102 036200 016767 142624 141602 MOV SLOC00,10 ;RESTORE VECTOR
9103 036206 012706 001000 MOV @STBOT,R6
9104
9105
9106
9107 ;*****
9108 ;*TEST 253 I/O TIME OUT TEST
9109 ;*****
9110 036212 TST253:
9111 036212 005267 142566 INC $TESTN ;INCREMENT TEST NUMBER
9112 036216 005067 141544 CLR CPREG ;CLEAR CPU ERROR REGISTER
9113 036222 016767 141556 142600 MOV 4,SLOC00 ;SAVE VECTOR
9114 036230 012767 036256 141546 MOV @2$,4 ;SET UP VECTOR TO HANDLE NXH
9115 036236 012767 030000 141532 MOV @30000,PS ;INIT THE PSW TO A KNOWN STATE
9116 036244 005737 177700 TST @0177700 ;TRY TO ACCESS HARDWARE ADDRESS
9117 ;FOR GENERAL PURPOSE REG 0. THIS
9118 ;IS NOT IMPLEMENTED ON KDJ11
9119 ;SHOULD CAUSE TIME OUT.
9120 036250 1$:
9121 036250 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9122 036252 001117 .WORD 1117 ;UNIQUE ERROR NUMBER
9123 036254 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9124 036256 022767 000020 141502 2$: CMP @BIT04,CPREG ;IS CPU ERROR REGISTER CORRECT?
9125 036264 001403 BEQ 3$
9126 036266 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9127 036270 001120 .WORD 1120 ;UNIQUE ERROR NUMBER
9128 036272 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9129 036274 022627 036250 3$: CMP (SP)+,@1$ ;CHECK THAT STACK CONTAINS CORRECT ADDR.
9130 036300 001403 BEQ 4$
9131 036302 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9132 036304 001121 .WORD 1121 ;UNIQUE ERROR NUMBER
9133 036306 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9134 036310 022627 030000 4$: CMP (SP)+,@30000 ;IS THE PSW OK?
9135 036314 001403 BEQ 5$
9136 036316 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9137 036320 001122 .WORD 1122 ;UNIQUE ERROR NUMBER
9138 036322 001127 .WORD CPUERR ;ADDRESS OF ERROR MESSAGE
9139 036324 005067 141436 5$: CLR CPREG ;CLEAR THE CPU ERROR REGISTER
9140 036330 016767 142474 141446 MOV SLOC00,4 ;RESTORE VECTOR
9141
9142 ;*****
9143 ;*TEST 254 ODD ADDRESS/ILLEGAL INST FETCH TRAP TEST
9144 ;*****
9145 ;THIS PROGRAM GENERATES AN ODD ADDRESS IN THE PC. THE KDJ11 SHOULD
9146 ;TRAP THROUGH ADDR 4
9147 ;*****
9148 036336 TST254:
9149 036336 005267 142442 INC $TESTN ;INCREMENT TEST NUMBER
9150 036342 005067 141420 CLR CPREG ;INIT THE CPU ERROR REG

```

[illegible]

GLOBAL AREAS MACY11 30A(1052) 15-MAR-84 13:28 PAGE 171
 RDJ11A.RAC 22-FEB-84 15:12 T254 000 ADDRESS? ILLEGAL INST FETCH TRAP TEST

SEQ 0171

```

9207 036562 001403      BEQ      100      |
9208 036564 104000      ERROR      |ALL ERRORS TO TRAP TO EMT VECTOR
9209 036566 001132      .WORD     1132  |UNIQUE ERROR NUMBER
9210 036570 001127      .WORD     CPUERR |ADDRESS OF ERROR MESSAGE
9211 036572 022701 000340 100:    CMP      #340,R1 |WAS PSW LOADED PROPERLY ON TRAP?
9212 036573 001403      BEQ      110      |
9213 036600 104000      ERROR      |ALL ERRORS TO TRAP TO EMT VECTOR
9214 036602 001133      .WORD     1133  |UNIQUE ERROR NUMBER
9215 036604 001127      .WORD     CPUERR |ADDRESS OF ERROR MESSAGE
9216 036606 005067 141154 110:    CLR      CPEREG |CLEAR CPU ERROR REGISTER
9217 036612 016767 142212 141164  MOV      SLOC00,4 |RESTORE VECTOR
9218 036620 016767 142206 141160  MOV      SLOC01,6 |
9219
9220
9221
9222
9223
9224 036626      TST255:
9225 036626 005267 142152      INC      ITESTN |INCREMENT TEST NUMBER
9226 036632 013767 000004 142170  MOV      #04,SLOC00 |SAVE VECTOR
9227 036640 012737 036722 000004  MOV      #21,004 |SET UP VECTOR
9228 036650 005001      CLR      R1 |CLEAR R1 FOR USE AS A COUNTER
9229 036660 012706 000777 100:    MOV      #777,R6 |SET UP THE STACK WITH ODD ADDRESS.
9230 036654 005067 141106      CLR      CPEREG |CLEAR THE CPU ERROR REGISTER
9231 036660 005067 141112      CLR      PSW |CLEAR THE PSW
9232 036664 005737 177700      TST      #0177700 |ACCESS NON-EXISTANT I/O ADDRESS
9233 036670 012706 001000 100:    MOV      #STBOT,R6 |FIX STACK BEFORE ERROR
9234 036674 122737 000001 001020  CHPB     #APTENV,#0ENV |ARE WE IN APT MODE?
9235 036702 001004      BNE      110      |NO GO TO ERROR
9236 036704 005701      TST      R1 |HAVE WE BEEN THIS WAY BEFORE?
9237 036706 001002      BNE      110      |GO TO ERROR IF R1 NOT= 0
9238 036710 005201      INC      R1 |NO, GIVE IT ONE MORE CHANCE IN CASE
9239 036712 000756      BR       100      |APT MONITORED AND SCREWED THINGS UP
9240
9241 036714 104000 110:    ERROR      |ALL ERRORS TO TRAP TO EMT VECTOR
9242 036716 001134      .WORD     1134  |UNIQUE ERROR NUMBER
9243 036720 001160      .WORD     BROERR |ADDRESS OF ERROR MESSAGE
9244 036722 022706 000000 200:    CMP      #0,SP |IS R6 CORRECT?
9245 036726 001405      BEQ      300      |BRANCH IF YES
9246 036730 012706 001000      MOV      #STBOT,R6 |RESTORE R6 BEFORE ERROR
9247 036734 104000      ERROR      |ALL ERRORS TO TRAP TO EMT VECTOR
9248 036736 001135      .WORD     1135  |UNIQUE ERROR NUMBER
9249 036740 001160      .WORD     BROERR |ADDRESS OF ERROR MESSAGE
9250 036742 022726 036670 300:    CMP      #10,(SP) |IS DATA AT ADDR 0 CORRECT?
9251 036746 001405      BEQ      400      |BRANCH IF YES
9252 036750 012706 001000      MOV      #STBOT,R6 |RESTORE R6 BEFORE ERROR
9253 036754 104000      ERROR      |ALL ERRORS TO TRAP TO EMT VECTOR
9254 036756 001136      .WORD     1136  |UNIQUE ERROR NUMBER
9255 036760 001160      .WORD     BROERR |ADDRESS OF ERROR MESSAGE
9256 036762 022716 000000 400:    CMP      #0,(SP) |IS PSW DATA IN ADDR 2 CORRECT?
9257 036766 001405      BEQ      500      |BRANCH IF YES
9258 036770 012706 001000      MOV      #STBOT,R6 |RESTORE R6 BEFORE ERROR
9259 036774 104000      ERROR      |ALL ERRORS TO TRAP TO EMT VECTOR
9260 036776 001137      .WORD     1137  |UNIQUE ERROR NUMBER
9261 037000 001160      .WORD     BROERR |ADDRESS OF ERROR MESSAGE
9262 037002 022767 000124 140756 500:    CMP      #124,CPEREG |IS CPU ERROR REGISTER CORRECT?

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9263 037010 001403      BEQ      61          ;BRANCH IF YES
9264 037012 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
9265 037014 001140      .WORD      1140    ;UNIQUE ERROR NUMBER
9266 037016 001160      .WORD      BRDERR   ;ADDRESS OF ERROR MESSAGE
9267 037020 005067 140742 61:      CLR      CPUREG    ;CLEAR CPU ERROR REGISTER
9268 037024 012706 001000      MOV      @STBOT,SP ;RESTORE STACK
9269 037030 016737 141774 000004      MOV      SLOC00,@#4 ;RESTORE VECTOR
9270 037036 005037 000000      CLR      @#0      ;RESTORE ADDR 0
9271 037042 005037 000002      CLR      @#2      ;RESTORE ADDR 2
9272
9273
9274
9275
9276
9277
9278 037046      005267 141732      TST256:      ;*****
9279 037046 005267 141732      INC      TESTN      ;INCREMENT TEST NUMBER
9280 037052 016767 140726 141750      MOV      4,SLOC00 ;SAVE CONTENTS OF VECTORS
9281 037060 012767 037106 140716      MOV      @PIRQNX,4 ;SETUP INTERRUPT VECTOR
9282 037066 005067 140674      CLR      CPUREG    ;CLEAR CPU ERROR REGISTER
9283 037072 005737 177772      TST      @PIRQ      ;LOOK FOR REPLY FROM PIRQ
9284 037076 016767 141726 140700      MOV      SLOC00,4 ;RESTORE VECTORS
9285 037104 000403      BR      PIRTEX      ;IF IT RESPONDS, CONTINUE TESTING.
9286                                     ;ERROR! NO RESPONSE FROM PIRQ REG
9287 037106      PIRQNX:      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
9288 037106 104000      .WORD      1141    ;UNIQUE ERROR NUMBER
9289 037110 001141      .WORD      BRDERR   ;ADDRESS OF ERROR MESSAGE
9290 037112 001160
9291 037114
9292
9293
9294 037114      PIR1:
9295      ;*****
9296      ;+TEST 257      TEST PIRQ REGISTER DATA
9297      ;*****
9298      TST257:
9299 037114 005267 141664      INC      TESTN      ;INCREMENT TEST NUMBER
9300 037120 013767 000240 141702      MOV      @PIRQVEC,SLOC00 ;SAVE PIRQ VECTORS
9301 037126 013767 000242 141676      MOV      @PIRQVEC+2,SLOC01 ;
9302 037134 012737 037346 000240      MOV      @UNXPIR,@PIRQVEC ;SET UP PIRQ VECTOR FOR UNEXPECTED INTERRUPT
9303 037142 012737 000340 000242      MOV      @PR7,@PIRQVEC+2 ;
9304 037150 012703 001000      MOV      @1000,R3 ;PUT 1000 IN R3: START TESTING
9305                                     ;BITS IN PIRQ REG BY FLOATING
9306                                     ;A BIT THROUGH BITS 9-15.
9307 037154 012704 037230      MOV      @PIRTBL,R4 ;SET UP R4 AS A POINTER TO EXPECTED
9308                                     ;ENCODED PRIORITY LEVELS IN PIRTL
9309 037160 000237      19:      SPL      7      ;DON'T ALLOW INTERRUPTS.
9310 037162 005037 177772      CLR      @PIRQ      ;CLEAR OUT THE PIRQ
9311 037166 023724 177772      CMP      @PIRQ,(R4)+ ;IS PIRQ OK??
9312 037172 001403      BEQ      21      ;BRANCH IF OK
9313                                     ;ERROR! PIRQ REG. WAS NOT CLEAR
9314 037174 104000      ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
9315 037176 001142      .WORD      1142    ;UNIQUE ERROR NUMBER
9316 037200 001160      .WORD      BRDERR   ;ADDRESS OF ERROR MESSAGE
9317 037202 010337 177772      21:      MOV      R3,@PIRQ ;SET A BIT IN PIRQ REGISTER
9318 037206 023724 177772      CMP      @PIRQ,(R4)+ ;COMPARE THE ENCODED PRIORITY BITS

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SEQ 0173

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9319
9320 037212 001403          BEQ      3#
9321
9322
9323 037214 104000          ERROR
9324 037216 001143          .WORD    1143
9325 037220 001160          .WORD    BRDERR
9326 037222 006303          3#:  ASL      R3
9327 037224 103366          BCC      2#
9328 037226 000410          BR       EXPIR1
9329
9330 037230 000000          PIR1BL: .WORD    0
9331 037232 001042          .WORD    1042
9332 037234 002104          .WORD    2104
9333 037236 004146          .WORD    4146
9334 037240 010210          .WORD    10210
9335 037242 020252          .WORD    20252
9336 037244 040314          .WORD    40314
9337 037246 100356          .WORD    100356
9338
9339 037250
9340
9341
9342
9343 037250
9344
9345
9346
9347
9348
9349
9350
9351 03725C
9352 037250 005267 141530
9353 037254 000237
9354 037256 005037 177772
9355 037262 012703 177000
9356 037266 012704 037326
9357 037272 010337 177772
9358
9359 037276 023714 177772
9360
9361 037302 001403
9362
9363 037304 104000          ERROR
9364 037306 001144          .WORD    1144
9365 037310 001160          .WORD    BRDERR
9366 037312 006003          2#:  ROR      R3
9367 037314 042703 000777          BIC      #777,R3
9368 037320 005724          TST      (R4)+
9369 037322 001363          BNE      1#
9370 037324 000413          BR       PIR2EX
9371
9372 037326 177356 077314 037252 PITBL1: .WORD    177356,77314,37252,17210,7146,3104,1042,0
9373 037334 017210 007146 003104
9374 037342 001042 000000

```

WITH DATA IN THE TABLE (PIR1BL)
 BRANCH IF ITS OK
 ERROR; ENCODED PRIORITY LEVELS ARE
 NOT CORRECT
 ALL ERRORS TO TRAP TO ENT VECTOR
 UNIQUE ERROR NUMBER
 ADDRESS OF ERROR MESSAGE
 FLOAT A "1" THRU BITS 9-15
 IF CARRY BIT ISN'T SET, DO AGAIN.
 GO TO EXIT TEST.

PIR2:

 TEST 250 TEST PIRQ REGISTER LEVEL ENCODING

 THIS TEST IS TO CHECK THAT THE HIGHEST PRIORITY LEVEL SET IN THE
 PROGRAM INTERRUPT REQUEST BITS IS REFLECTED IN THE ENCODED PROGRAM
 INTERRUPT ACTIVE BITS.

 TST260:
 INC #TESTN ; INCREMENT TEST NUMBER
 SPI 7 ; SHUT OFF INTERRUPTS
 CLR #PIRQ ; CLEAR PIRQ REGISTER
 MOV #177000,R3 ; SET UP DESIRED PATTERN IN R3
 MOV #PITBL1,R4 ; SETUP R4 AS A TABLE POINTER
 1#: MOV R3,#PIRQ ; SET PATTERN IN PIRQ REGISTER
 CMP #PIRQ,(R4) ; COMPARE PATTERN IN PIRQ WITH PATTERN IN
 EXPECTED PATTERN TABLE.
 BEQ 2# ; GO TO ERROR IF NOT THE SAME
 ERROR; PATTERNS WERE NOT THE SAME
 ALL ERRORS TO TRAP TO ENT VECTOR
 UNIQUE ERROR NUMBER
 ADDRESS OF ERROR MESSAGE
 2#: ROR R3 ; SHIFT PATTERN TO RIGHT FOR NEXT TEST
 BIC #777,R3 ; STRIP OFF BITS 8-0
 TST (R4)+ ; WAS THE LAST PATTERN ZEROS?
 BNE 1# ; IF NOT = 0 GO DO THE NEXT PATTERN
 BR PIR2EX ; BRANCH IF DONE

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9375
9376 037346 UNXPIR: ;UNEXPECTED PIRQ INTERRUPT
9377 037346 104000 ;ALL ERRORS TO TRAP TO EMT VECTOR
9378 037350 001145 ;UNIQUE ERROR NUMBER
9379 037352 001160 ;ADDRESS OF ERROR MESSAGE
9380
9381 037354 PIR2EX:
9382
9383
9384 037354 PIR3:
9385 ;*****
9386 ;*TEST 261 TEST PIRQ INTERRUPTS
9387 ;*****
9388 ;THIS TEST CHECKS THAT EACH PROGRAM INTERRUPT OCCURS PROPERLY
9389 ;*****
9390 037354 TST261:
9391 037354 005267 141424 INC ;TESTN ;INCREMENT TEST NUMBER
9392 037360 012703 001000 MOV ;#1000,R3 ;SETUP R3 AS A WORKING REGISTER
9393 037364 012737 037432 000240 MOV ;PIRRTN,#PIRQVEC ;SET UP INTERRUPT ROUTINE AT PIR VECTOR
9394 037372 012737 000340 000242 MOV ;#340,#PIRQVEC+2 ;
9395 037400 005004 CLR R4 ;INITIALIZE R4 AS EXPECTED DATA HOLDER.
9396 037402 005724 PI1: TST (R4)+ ;INCREMENT R4 BY 2
9397 037404 050337 177772 BIS R3,#PIRQ ;SET PIRQ TO INTERRUPT
9398 037410 000230 SPL 0 ;ENABLE INTERRUPT TO OCCUR
9399 ;ERROR! INTERRUPT DID NOT OCCUR
9400 037412 104000 ;ALL ERRORS TO TRAP TO EMT VECTOR
9401 037414 001146 ;UNIQUE ERROR NUMBER
9402 037416 001160 ;ADDRESS OF ERROR MESSAGE
9403 037420 062706 000004 PI3: ADD ;#4,SP ;CLEAN UP THE STACK
9404 037424 006303 ASL R3 ;SHIFT R3 TO LEFT FOR NEXT INTERRUPT
9405 037426 103365 BCC PI1 ;END IF CARRY BIT IS SET
9406 037430 000415 BR PIR3EX ;ON TO THE NEXT TEST
9407
9408 037432 013705 177772 PIRRTN: MOV ;#PIRQ,R5 ;MOVE THE CONTENTS OF PIRQ REG TO R5
9409 037436 005037 177772 CLR ;#PIRQ ;KILL PIRQ INTERRUPT.
9410 037442 042705 177761 BIC ;#177761,R5 ;MASK OFF ALL BITS EXCEPT 1-4.
9411 037446 020405 CMP R4,R5 ;DID THE CORRECT LEVEL INTERRUPT OCCUR?
9412 037450 001403 BEQ PI2 ;IF YES RETURN FROM SUCCESSFUL
9413 ;INTERRUPT,GET READY FOR THE NEXT ONE.
9414 ;ERROR! INTERRUPT OCCURRED IN WRONG SEQUENCE
9415 037452 104000 ;ALL ERRORS TO TRAP TO EMT VECTOR
9416 037454 001147 ;UNIQUE ERROR NUMBER
9417 037456 001160 ;ADDRESS OF ERROR MESSAGE
9418 037460 000167 177734 PI2: JMP PI3 ;GET NEXT INTERRUPT
9419
9420 037464 PIR3EX:
9421
9422
9423
9424 037464 PIR4:
9425 ;*****
9426 ;*TEST 262 TEST PIRQ VS PSW INTERRUPT LEVEL
9427 ;*****
9428 ;THIS TEST IS TO ENSURE THAT PIRQ CANNOT INTERRUPT WHEN PSW INTERRUPT
9429 ;LEVEL IS SET TO BLOCK THEM OUT.
9430 ;*****

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9431 037464          TST262:
9432 037464 005267 141314      INC      $TESTN      ; INCREMENT TEST NUMBER
9433 037470 005037 177772      CLR      @PIRQ      ; CLEAR THE PIRQ
9434 037474 005037 177776      CLR      @PSW      ; CLEAR THE PSW.
9435 037500 000237          SPL      7      ; BLOCK INTERRUPTS FROM BEING SERVICED.
9436 037502 012703 001000      MOV      #1000,R3      ; USE R3 AS A WORKING REGISTER.
9437 037506 012737 037540 000240      MOV      #2,@PIRQVEC      ; SETUP INTERRUPT VECTORS
9438 037514 012737 000340 000242      MOV      #340,@PIRQVEC+2      ;
9439 037522 010337 177772 11:      MOV      R3,@PIRQ      ; SET INTERRUPT LEVEL IN PIRQ.
9440 037526 006303          ASL      R3      ; SHIFT A "1" LEFT TO INCREASE INTERRUPT
9441          ; PRIORITY LEVEL.
9442 037530 103374          BCC      11      ; IF C BIT NOT SET THEN DO IT AGAIN.
9443 037532 005037 177772      CLR      @PIRQ      ; ELSE CLEAR THE PIRQ
9444 037536 000405          BR       31      ; EXIT TEST.
9445
9446 037540 005037 177772 21:      CLR      @PIRQ      ; STOP PIRQ FROM INTERRUPTING.
9447          ; ERROR! NO INTERRUPTS SHOULD OCCUR.
9448 037544 104000          ERROR      ; ALL ERRORS TO TRAP TO EMT VECTOR
9449 037546 001150          .WORD      1150      ; UNIQUE ERROR NUMBER
9450 037550 001160          .WORD      BRDERR      ; ADDRESS OF ERROR MESSAGE
9451 037552 31:
9452
9453
9454
9455 037552          PIR5:
9456          ; *****
9457          ; *TEST 263      TEST PIRQ INTERRUPTS OCCUR AT PROPER LEVEL
9458          ; *****
9459          ; THIS TEST ENSURES THAT INTERRUPTS OCCUR AT THE PROPER LEVEL.
9460          ; THE PRIORITY LEVEL IS INITIALLY SET TO PRI6. THE PIRQ THEN STARTS INTERRUPTING
9461          ; AT PRI1. NO INTERRUPTS SHOULD OCCUR UNTIL THE INTERRUPTING LEVEL EXCEEDS THE
9462          ; PRIORITY LEVEL IN THE PSW. AFTER EACH LEVEL OF INTERRUPT HAS BEEN TRIED, THE
9463          ; PSW PRIORITY LEVEL IS LOWERED ONE NOTCH, AND THE CYCLE REPEATS UNTIL PSW
9464          ; PRIORITY LEVEL 0 IS REACHED. INTERRUPTS AT PSW PRIORITY LEVEL 0 HAVE BEEN DONE
9465          ; PREVIOUSLY.
9466          ; *****
9467          ; *****
9468 037552 005267 141226      TST263:      INC      $TESTN      ; INCREMENT TEST NUMBER
9469 037556 005037 177772      CLR      @PIRQ      ; CLR THE PIRQ
9470 037562 012737 037700 000240      MOV      #101,@PIRQVEC      ; SET UP INTERRUPT VECTORS
9471 037570 012737 000340 000242      MOV      #PR7,@PIRQVEC+2      ;
9472 037576 012705 037766      MOV      #PITBL2,R5      ; SETUP R5 AS A TABLE POINTER.
9473 037602 012737 000006 001054      MOV      #6,@DCOUNT      ; INIT LOCATION DCOUNT:
9474 037610 005004 11:      CLR      R4      ; INITIALIZE R4 AS A COUNTER.
9475 037612 012703 001000      MOV      #1000,R3      ; USE R3 AS A WORKING REGISTER.
9476 037616 012567 140154      MOV      (R5)+,PS      ; MOVE PRIORITY LEVEL TO PSW
9477 037622 005724 31:      TST      (R4)+      ; INCREMENT R4 BY 2
9478 037624 010337 177772      MOV      R3,@PIRQ      ; SET INTERRUPT LEVEL IN PIRQ.
9479          ; *****INTERRUPTS WILL HAPPEN HERE*****
9480 037630 013701 177776      MOV      @PS,R1      ; SAVE PS IN R1      ! ONLY EXECUTED
9481 037634 013702 177772      MOV      @PIRQ,R2      ; SAVE PIRQ IN R2      ! IF NO
9482 037640 042701 177437      BIC      #177437,R1      ; CLEAR EXTRANEOUS BITS      ! INTERRUPT
9483 037644 042702 177437      BIC      #177437,R2      ;      ! HAS
9484 037650 020102          CMP      R1,R2      ; R1 SHOULD BE >= R2      ! OCCURRED
9485 037652 002003          BGE      41      ; IF IT IS GO ON      !
9486          ; ERROR! SHOULD HAVE INTERRUPTED.

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```

9487 037654 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
9488 037656 001151          .WORD          1151          ;UNIQUE ERROR NUMBER
9489 037660 001160          .WORD          BRDERR         ;ADDRESS OF ERROR MESSAGE
9490 037662 006303          4$: ASL          R3           ;SHIFT A "1" LEFT UNTIL INTERRUPT LEVEL
9491                                     ;IS REACHED.
9492 037664 103356          BCC          3$           ;BRANCH BACK IF CARRY IS NOT SET.
9493 037666 005337 001054   DEC          0$DCOUNT        ;LOWER INTERRUPT PRIORITY LEVEL
9494 037672 001346          BNE          1$           ;IF DCOUNT= 0 , WE'RE DONE.
9495 037674 000167 000102   JMP          PIR5EX         ;JUMP TO END OF THIS TEST.
9496
9497 ;PIRQ INTERRUPT SERVICE ROUTINE
9498 ;
9499
9500 037700 013746 177772   10$: MOV          0$PIRQ, -(SP)      ;SAVE PIRQ DATA ON STACK
9501 037704 005037 177772   CLR          0$PIRQ          ;SHUT OFF PIRQ INTERRUPTS
9502 037710 016601 000004   MOV          4(SP),R1        ;GET OLD PSW. SAVE IN R1.
9503 037714 011602          MOV          (SP),R2        ;GET PIRQ FROM STACK.
9504 037716 042702 177437   BIC          0177437,R2      ;CLEAR UNWANTED BITS FROM R2
9505 037722 042701 177437   BIC          0177437,R1      ;CLEAR UNWANTED BITS FROM R1
9506 037726 020102          CMP          R1,R2          ;R2 SHOULD BE > R1.
9507 037730 100403          BMI          20$          ;GO CHECK SEQUENCE OF INTERRUPT.
9508                                     ;ERROR! PRIORITY OF INTERRUPT WAS NOT
9509                                     ;HIGH ENOUGH. SHOULDN'T HAVE OCCURRED.
9510 037732 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
9511 037734 001152          .WORD          1152          ;UNIQUE ERROR NUMBER
9512 037736 001160          .WORD          BRDERR         ;ADDRESS OF ERROR MESSAGE
9513 037740 012602          20$: MOV          (SP)+,R2      ;POP OLD PIRQ OFF THE STACK.
9514 037742 042702 177761   BIC          0177761,R2      ;CLEAR OFF EXTRANEIOUS BITS.
9515 037746 020402          CMP          R4,R2          ;SHOULD BE EQUAL.
9516 037750 001403          BEQ          21$          ;IF THEY ARE EQUAL, CLEAN UP STACK AND
9517                                     ;GET READY FOR THE NEXT INTERRUPT
9518                                     ;ELSE
9519                                     ;ERROR! INTERRUPT OCCURRED OUT OF SEQUENCE.
9520 037752 104000          ERROR          ;ALL ERRORS TO TRAP TO EMT VECTOR
9521 037754 001153          .WORD          1153          ;UNIQUE ERROR NUMBER
9522 037756 001160          .WORD          BRDERR         ;ADDRESS OF ERROR MESSAGE
9523 037760 012716 037662   21$: MOV          04$, (SP)      ;PUT RETURN ADDRESS ON THE STACK.
9524 037764 000002          RTI                     ;RETURN FROM INTERRUPT. RESTORE PSW.
9525
9526 037766 000300          PITBL2: .WORD          300          ;PRIORITY LEVEL 6
9527 037770 000240          .WORD          240          ;PRIORITY LEVEL 5
9528 037772 000200          .WORD          200          ;PRIORITY LEVEL 4
9529 037774 000140          .WORD          140          ;PRIORITY LEVEL 3
9530 037776 000100          .WORD          100          ;PRIORITY LEVEL 2
9531 040000 000040          .WORD          40           ;PRIORITY LEVEL 1
9532
9533 040002          PIR5EX:
9534
9535
9536
9537 040002          PIR6:
9538 ;*****
9539 ;*TEST 264      TEST THAT PIRQS ARE SERVICED IN CORRECT ORDER
9540 ;*****
9541 ;THIS TEST CHECKS THAT ALL PIRQ INTERRUPTS ARE SERVICED
9542 ;IN THE CORRECT DECENDING ORDER. I.E. IRQ6 IS NOT SERVICED

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T264

TEST THAT PIRQS ARE SERVICED IN CORRECT ORDER

SEQ 0177

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9543      BEFORE IRQ7 ETC. THE PIRQ IS LOADED WITH ALL INTERRUPTS SIMULTANEOUSLY
9544      TURNED ON. THE PSW PRIORITY LEVEL IS THEN LOWERED TO 0. EACH INTERRUPT
9545      SHOULD BE SERVICED IN DECENDING ORDER. EACH TIME AN INTERRUPT OCCURS, THE PSW
9546      IS LOADED WITH PRIORITY LEVEL 7 WHICH STOPS THE PIRQ FROM FURTHER INTERRUPTS.
9547      AFTER A CORRECT INTERRUPT, AN RTI IS EXECUTED, AND THE PSW PRIORITY LEVEL
9548      RETURNS TO ZERO ALLOWING THE NEXT LOWER INTERRUPT TO OCCUR.
9549      ;*****
9550      TST264:
9551      INC      $TESTN      ;INCREMENT TEST NUMBER
9552      CLR      $PIRQ      ;CLEAR OUT THE PIRQ
9553      SPL      7          ;NO INTERRUPTS WILL BE SERVICED.
9554      MOV      $101,$PIRQVEC ;SET UP VECTORS
9555      MOV      $PR7,$PIRQVEC+2
9556      MOV      $177000,R3   ;SETUP DESIRED PATTERN IN R3
9557      MOV      R3,$PIRQ    ;MOVE PATTERN IN R3 TO PIRQ.
9558      MOV      $16,R4      ;PRELOAD R4 AS A DECREMENTING COUNTER.
9559      SPL      0          ;LET THE PIRQ INTERRUPT
9560      ;*****INTERRUPTS OCCUR HERE!!!*****
9561      TST      R4          ;IS R4 ZERO? IT SHOULD BE. THIS
9562      ;INSTRUCTION SHOULDN'T BE EXECUTED
9563      ;UNTIL ALL INTERRUPTS HAVE OCCURRED.
9564      BEQ      PIR6EX      ;GO TO NEXT TEST.
9565      ;ERROR! ALL INTERRUPTS DID NOT OCCUR.
9566      ERROR    1154        ;ALL ERRORS TO TRAP TO EMT VECTOR
9567      .WORD    BRDERR      ;UNIQUE ERROR NUMBER
9568      .WORD    $PIRQ,R2    ;ADDRESS OF ERROR MESSAGE
9569      MOV      $177761,R2  ;SAVE THE PIRQ IN R2
9570      BIC      $177761,R2  ;STRIP OFF EXTRANEIOUS BITS.
9571      CMP      R4,R2      ;SHOULD BE EQUAL.
9572      BEQ      15$        ;SETUP FOR NEXT INTERRUPT.
9573      ;ERROR! INTERRUPT WAS SERVICED OUT OF ORDER
9574      ERROR    1155        ;ALL ERRORS TO TRAP TO EMT VECTOR
9575      .WORD    BRDERR      ;UNIQUE ERROR NUMBER
9576      .WORD    $PIRQ,R2    ;ADDRESS OF ERROR MESSAGE
9577      TST      -(R4)       ;DECREMENT R4 BY 2
9578      ROR      R3          ;CHANGE PATTERN IN R3; LOWER INTERRUPT PRIORITY
9579      BIC      $777,R3     ;STRIP OFF UNWFEDED BITS
9580      MOV      R3,$PIRQ    ;LOWER INTERRUPT PRIORITY LEVEL.
9581      RTI
9582
9583      PIR6EX: MOV      SLOC00,$PIRQVEC ;RESTORE VECTORS
9584      MOV      SLOC01,$PIRQVEC+2
9585
9586
9587
9588
9589      ;*****
9590      ;*TEST 265 SERIAL LINE UNIT INTERRUPT TEST
9591      ;*****
9592      TST265:
9593      INC      $TESTN      ;INCREMENT TEST NUMBER
9594      CMPB     $APTENV,$ENV ;ARE WE IN APT MODE
9595      BNE      2$          ;IF NOT THEN DO THIS TEST
9596      TST      $PASS      ;ELSE:SEE IF THIS IS THE FIRST PASS
9597      BNE      NOINTERRUPT ;IF NOT, SKIP THIS TEST
9598      MOV      $PR7,PS     ;SET PRIORITY LEVEL 7

```

9599	040164	013767	000064	140636		MOV	B#TPVEC,SLOC00	;SAVE TPVEC
9600	040172	013767	000066	140632		MOV	B#TPVEC+2,SLOC01	"
9601	040200	012767	040236	137656		MOV	#41,TPVEC	;LOAD TTY PRINTER INTERRUPT VEC
9602	040206	012767	000340	137652		MOV	#PR7,TPVEC+2	;LOAD TTY PRINTER INTERRUPT VEC
9603	040214	012767	000100	137342		MOV	#100,XCSR	;ENABLE XMIT CSR INTERRUPT
9604	040222	012737	000000	177776		MOV	#0,B#PSW	;CLEAR CONDITION CODES
9605								;SET PRIORITY LEVEL TO 0
9606								;ERROR! NO INTERRUPT OCCURRED
9607	040230				3#:			
9608	040230	104000				ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
9609	040232	001156				.WORD	1156	;UNIQUE ERROR NUMBER
9610	040234	001160				.WORD	BRDERR	;ADDRESS OF ERROR MESSAGE
9611	040236	005067	137522		4#:	CLR	XCSR	;DON'T ALLOW ANY MORE TTY INTERRUPTS
9612	040242	022716	040230			CMP	#31,(SP)	;IS OLD PC CORRECT IN SP?
9613	040246	001403				BEQ	5#	;BRANCH IF YES
9614								;ERROR! INCORRECT PC ON STACK
9615	040250	104000				ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
9616	040252	001157				.WORD	1157	;UNIQUE ERROR NUMBER
9617	040254	001160				.WORD	BRDERR	;ADDRESS OF ERROR MESSAGE
9618	040256	022766	000000	000002	5#:	CMP	#0,2(SP)	;IS OLD PSW CORRECT ON STACK?
9619	040264	001403				BEQ	6#	;BRANCH IF YES
9620								;ERROR! INCORRECT PSW ON STACK
9621	040266	104000				ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
9622	040270	001160				.WORD	1160	;UNIQUE ERROR NUMBER
9623	040272	001160				.WORD	BRDERR	;ADDRESS OF ERROR MESSAGE
9624	040274	062706	000004		6#:	ADD	#4,R6	;RESET SP
9625	040300	016737	140524	000064		MOV	SLOC00,B#TPVEC	;RESTORE VECTORS
9626	040306	016737	140520	000066		MOV	SLOC01,B#TPVEC+2	"
9627								
9628	040314					NOINTERRUPT:		
9629								
9630								
9631								
9632	040314					EVENT:		
9633						;;*****		
9634						;;TEST 266 TEST BEVENT REGISTER RESPONSE		
9635						;;*****		
9636						;;THIS TEST LOOKS FOR A REPLY FROM THE BEVENT CONTROL REGISTER.		
9637						;;IF NO REPLY IS RECEIVED A TIME OUT TRAP OCCURS THRU LOC 000004		
9638						;;*****		
9639	040314					TST266:		
9640	040314	005267	140464			INC	#TESTN	;INCREMENT TEST NUMBER
9641	040320	013701	000004		1#:	MOV	B#4,R1	;SAVE OLD VECTOR IN R1
9642	040324	013702	000006			MOV	B#6,R2	;SAVE LOC 6 IN R2
9643	040330	012737	040366	000004		MOV	#21,B#4	;SETUP TRAP THRU LOC 4
9644	040336	012737	000340	000006		MOV	#340,B#6	;IF BEVENT CTRL REG TIMES OUT
9645	040344	005067	137416			CLR	CPEREG	;CLEAR CPU ERROR REGISTER
9646	040350	005737	177546			TST	B#BEVENT	;TEST FOR REPLY FROM BEVENT REG
9647								;WILL TRAP THRU LOC 4 IF NO REPLY
9648	040354	010137	000004			MOV	R1,B#4	;RESTORE VECTORS
9649	040360	010237	000006			MOV	R2,B#6	"
9650	040364	000403				BR	3#	;GO TO NEXT TEST.
9651								;ERROR! NO REPLY FROM BEVENT REGISTER.
9652	040366				2#:			
9653	040366	104000				ERROR		;ALL ERRORS TO TRAP TO EMT VECTOR
9654	040370	001161				.WORD	1161	;UNIQUE ERROR NUMBER

```

9655 040372 001160          .WORD  BRDERR          ;ADDRESS OF ERROR MESSAGE
9656 040374          3$:
9657
9658
9659
9660
9661
9662
9663
9664
9665 040374
9666 040374 005267 140404          INC  $TESTN          ;INCREMENT TEST NUMBER
9667 040400 032767 000100 137140  BIT  #BIT06,BEVENT ;TEST BIT06 TO SEE IF CLEAR
9668 040406 001411          BEQ  1$
9669 040410 005067 137132          CLR  BEVENT          ;CLEAR BEVENT REGISTER
9670 040414 032767 000100 137124  BIT  #BIT06,BEVENT ;IS IT CLEARED NOW?
9671 040422 001403          BEQ  1$
9672
9673 040424 104000          ERROR
9674 040426 001162          .WORD  1162
9675 040430 001160          .WORD  BRDERR          ;ADDRESS OF ERROR MESSAGE
9676
9677 040432 000237          1$:  SPL  7          ;SET PSW TO PR7 TO BLOCK INTERRUPTS
9678 040434 013767 000100 140366  MOV  #0100,SLOC00 ;SAVE BEVENT VECTORS
9679 040442 013767 000102 140362  MOV  #0102,SLOC01
9680 040450 012737 040534 000100  MOV  #3$,00100
9681 040456 012737 000340 000102  MOV  #PR7,00102
9682 040464 052767 000100 137054  BIS  #BIT06,BEVENT ;SET BIT06 IN BEVENT CTRL REG TO ONE
9683 040472 032767 000100 137046  BIT  #BIT06,BEVENT ;TEST BIT06 TO BE SURE IT IS SET
9684 040500 001003          BNE  2$
9685
9686
9687 040502 104000          ERROR
9688 040504 001163          .WORD  1163
9689 040506 001160          .WORD  BRDERR          ;ADDRESS OF ERROR MESSAGE
9690 040510 005067 137032          CLR  BEVENT          ;CLEAR BEVENT REGISTER
9691 040514 032767 000100 137024  BIT  #BIT06,BEVENT ;IS IT CLEAR?
9692 040522 001407          BEQ  4$
9693
9694 040524 104000          ERROR
9695 040526 001164          .WORD  1164
9696 040530 001160          .WORD  BRDERR          ;ADDRESS OF ERROR MESSAGE
9697 040532 000403          BR  4$
9698
9699
9700 040534          3$:
9701 040536 001165          ERROR
9702 040540 001160          .WORD  1165
9703 040542 013737 001030 000100  .WORD  BRDERR          ;ADDRESS OF ERROR MESSAGE
9704 040550 013737 001032 000102  MOV  #0SLOC00,00100 ;RESTORE VECTORS
9705
9706
9707
9708
9709
9710

```

;*****
 ;*TEST 267 TEST BIT 06 IN LKS
 ;*****
 ;THIS TEST CHECKS TO SEE THAT BIT06 IN THE BEVENT CONTROL REGISTER
 ;CAN BE SET. PSW IS SET TO PRIORITY 7 SO THAT NO INTERRUPT OCCURS.
 ;*****
 TST267:
 ;*****
 ;SET PSW TO PR7 TO BLOCK INTERRUPTS
 ;SAVE BEVENT VECTORS
 ;
 ;SET UP VECTOR IN CASE WE GET AN
 ;UNEXPECTED INTERRUPT
 ;SET BIT06 IN BEVENT CTRL REG TO ONE
 ;TEST BIT06 TO BE SURE IT IS SET
 ;
 ;ERROR! BIT06 WAS SUPPOSED TO BE SET
 ;BUT WASN'T
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;CLEAR BEVENT REGISTER
 ;IS IT CLEAR?
 ;BRANCH IF IT IS
 ;ERROR! BIT06 WOULDN'T CLEAR OUT
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;RECOVER FROM ERROR
 ;ERROR! UNEXPECTED BEVENT INTERRUPT OCCURRED
 ;
 ;ALL ERRORS TO TRAP TO EMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;RESTORE VECTORS
 ;
 ;*****
 ;*TEST 270 TEST BEVENT INTERRUPT
 ;*****

```

9711      ;THIS TEST LOOKS FOR BEVENT TO INTERRUPT WHEN BIT6 IN THE BEVENT
9712      ;CONTROL REGISTER IS SET AND INTERRUPT PRIORITY LEVEL IS SET TO 5
9713      ;*****
9714      TST270:
9715      040556 005267 140222      INC      $TESTN      ;INCREMENT TEST NUMBER
9716      040562 032777 002000 140256      BIT      @BIT10,$SWR      ;IF BIT 10 IN SWR = 1
9717      040570 001405      BEQ      BEVENT      ;THEN DON'T DO BEVENT INTERRUPT TESTS
9718      040572 062737 000005 001004      ADD      $5,$$TESTN      ;ELSE: BUMP $TESTN AND
9719      040600 000167 000744      JMP      NOBEVENT      ;SKIP OVER BEVENT INTERRUPT TESTS
9720      040604 005067 136736      BEVENT: CLR      BEVENT      ;CLEAR BIT06 IN BEVENT CNTRL REG
9721      040610 000237      SPL      7      ;SET INTERRUPT LEVEL TO PRIORITY 7
9722      040612 013737 000100 001030      MOV      @100,$$SLOC00      ;SAVE BEVENT VECTORS
9723      040620 013737 000102 001032      MOV      @102,$$SLOC01      ;
9724      040626 012737 040666 000100      MOV      @2,$$100      ;SETUP BEVENT INTERRUPT VECTOR
9725      040634 012737 000340 000102      MOV      @340,$$102      ;
9726      040642 013701 001074      MOV      @WAITIN,R1      ;SET UP A TIMER TO WAIT FOR INTERRUPT
9727      ;APPROX. 20 MILLISECS. WORST CASE 50HZ
9728      040646 052767 000100 136672      BIS      @BIT06,BEVENT      ;ENABLE BEVENT TO INTERRUPT
9729      040654 000235      SPL      5      ;SET INTERRUPT LEVEL TO PRIORITY 5
9730      040656 077101      1$: SOB      R1,1$      ;DO OUR WAITING HERE
9731      ;INTERRUPT DIDN'T COME. IS LTC ON??
9732      040660 104000      ERROR      ;ALL ERRORS TO TRAP TO EMT VECTOR
9733      040662 001166      .WORD      1166      ;UNIQUE ERROR NUMBER
9734      040664 001160      .WORD      BRDERR      ;ADDRESS OF ERROR MESSAGE
9735      ;
9736      040666 005067 136654      2$: CLR      BEVENT      ;DISABLE BEVENT INTERRUPTS
9737      040672 062706 000004      ADD      $4,$P      ;CLEAN UP STACK AFTER INTERRUPT
9738      040676 013737 001030 000100      MOV      @$SLOC00,$$100      ;RESTORE VECTORS
9739      040704 013737 001032 000102      MOV      @$SLOC01,$$102      ;
9740      ;
9741      ;*****
9742      ;*TEST 271      TEST THAT BIT06 IN LKS CAN BE CLEARED
9743      ;*****
9744      ;THIS TEST CHECKS THAT BIT06 OF THE BEVENT CONTROL REGISTER CAN BE
9745      ;CLEARED. NO BEVENT INTERRUPTS SHOULD OCCUR AFTER BIT06 IS CLEARED
9746      ;*****
9747      TST271:
9748      040712 005267 140066      INC      $TESTN      ;INCREMENT TEST NUMBER
9749      040716 000237      SPL      7      ;SHUT OFF INTERRUPTS
9750      040720 052767 000100 136620      BIS      @BIT06,BEVENT      ;SET BIT06 OF BEVENT CNTRL REG
9751      040726 005067 136614      CLR      BEVENT      ;CLEAR BIT06 OF BEVENT CNTRL REG
9752      040732 032767 000100 136606      BIT      @BIT06,BEVENT      ;TEST TO SEE THAT IT CAN BE CLEARED
9753      040740 001403      BEQ      1$      ;RESULT OF BIT TEST SHOULD BE ZERO
9754      ;BIT06 OF BEVENT CNTRL REG WASN'T CLR
9755      ;ALL ERRORS TO TRAP TO EMT VECTOR
9756      040742 104000      ERROR      ;UNIQUE ERROR NUMBER
9757      040744 001167      .WORD      1167      ;ADDRESS OF ERROR MESSAGE
9758      040746 001160      .WORD      BRDERR
9759      040750      1$:
9760      ;*****
9761      ;*TEST 272      TEST THAT LKS CAN BLOCK BEVENT INTERRUPTS
9762      ;*****
9763      ;THIS TEST IS DESIGNED TO CHECK THAT BEVENT CANNOT INTERRUPT AFTER
9764      ;BIT06 IN THE BEVENT CNTRL REG HAS BEEN CLEARED.
9765
9766

```

```

9767
9768 040750
9769 040750 005267 140030
9770 040754 000237
9771 040756 005067 136564
9772 040752 013737 000100 001030
9773 040770 013737 000102 001032
9774 040776 012737 041024 000100
9775 041004 012737 000340 000102
9776 041012 012701 001074
9777
9778 041016 000235
9779
9780 041020 077101
9781 041022 000403
9782
9783 041024
9784 041024 104000
9785 041026 001170
9786 041030 001160
9787 041032 013737 001030 000100
9788 041040 013737 001032 000102
9789
9790
9791
9792
9793
9794
9795
9796
9797
9798
9799
9800
9801
9802 041046
9803 041046 005267 137732
9804 041052 000237
9805 041054 013737 000100 001030
9806 041062 013737 000102 001032
9807 041070 012737 041122 000100
9808
9809 041076 013701 001074
9810
9811
9812 041102 052767 000100 136436
9813 041110 077101
9814 041112 005067 136430
9815 041116 000235
9816
9817 041120 000403
9818
9819 041122
9820 041122 104000
9821 041124 001171
9822 041126 001160

;*****
TST272:
    INC     $TESTN           ; INCREMENT TEST NUMBER
    SPL     7                ; SHUT OFF INTERRUPTS
    CLR     BEVENT           ; DISABLE BEVENT INTERRUPT
    MOV     @0100,@SLOC00    ; SAVE BEVENT VECTORS
    MOV     @0102,@SLOC01    ;
    MOV     @21,@0100        ; SET UP BEVENT INTERRUPT VECTOR IN
    MOV     @340,@0102       ; CASE WE GET AN UNWANTED INTERRUPT
    MOV     @WAITIN,R1       ; SET UP A DELAY TO WAIT FOR POSSIBLE
    SPL     5                ; UNWANTED INTERRUPT.
    SOB     R1,1$            ; NOW LET'S SEE IF BEVENT CAN INTERRUPT.
    BR      3$              ; IT SHOULDN'T BE ABLE TO.
                                ; WE'LL WAIT ABOUT 20 MILLISECONDS
                                ; THEN GO ON TO NEXT TEST.
                                ; ERROR! INTERRUPT SHOULDN'T HAVE OCCURRED
1$:
2$:
    ERROR   1170             ; ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   BRDERR           ; UNIQUE ERROR NUMBER
    .WORD   BRDERR           ; ADDRESS OF ERROR MESSAGE
3$:
    MOV     @SLOC00,@0100    ; RESTORE VECTORS
    MOV     @SLOC01,@0102    ;
;*****

;*****
;TEST 273 TEST THAT OLD BEVENT INTERRUPTS NOT SERVICED
;*****
;THIS TEST CHECKS THAT BEVENT INTERRUPTS WHICH OCCUR WHILE THE
;PROCESSOR PRIORITY LEVEL IS SET TO SEVEN WILL NOT BE SERVICED WHEN
;BIT06 IN THE BEVENT CONTROL REGISTER IS CLEARED, AND THE PRIORITY LEVEL
;IS LOWERED. THIS IS DONE BY: FIRST, ENABLING BEVENT INTERRUPT WITH THE
;INTERRUPT PRIORITY LEVEL SET TO 7, ALLOWING TIME FOR BEVENT TO OCCUR,
;THEN DISABLING BEVENT INTERRUPT AND DROPPING THE INTERRUPT
;PRIORITY LEVEL TO 5. BEVENT INTERRUPT SHOULD NOT OCCUR.
;*****
TST273:
    INC     $TESTN           ; INCREMENT TEST NUMBER
    SPL     7                ; SET INTERRUPT LEVEL TO 7
    MOV     @0100,@SLOC00    ; SAVE BEVENT VECTORS
    MOV     @0102,@SLOC01    ;
    MOV     @21,@0100        ; SET UP BEVENT VECTOR TO HANDLE
    MOV     @WAITIN,R1       ; UNEXPECTED INTERRUPT.
    SET     @BIT06,BEVENT    ; SET UP TIMER TO ENSURE
    SOB     R1,1$            ; THAT THERE IS ENOUGH TIME TO
    CLR     BEVENT           ; ALLOW BEVENT TO INTERRUPT
    SPL     5                ; ENABLE BEVENT INTERRUPT
    BR      3$              ; WAIT HERE
                                ; DISABLE BEVENT INTERRUPT
                                ; DROP INTERRUPT LEVEL TO PRI 5
                                ; INTERRUPT SHOULD NOT OCCUR
                                ; GO TO END OF TEST
                                ; ERROR! BEVENT INTERRUPTED
1$:
2$:
    ERROR   1171             ; ALL ERRORS TO TRAP TO EMT VECTOR
    .WORD   BRDERR           ; UNIQUE ERROR NUMBER
    .WORD   BRDERR           ; ADDRESS OF ERROR MESSAGE

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SEQ 0182

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9823 041130 013737 001030 000100 3$: MOV B@SLOC00,B@100 ;RESTORE VECTORS
9824 041136 013737 001032 000102 MOV B@SLOC01,B@102 ;
9825
9826
9827 ;*****
9828 ;*TEST 274 TEST BEVENT INTERRUPT VS PSW PRIORITY LEVEL
9829 ;*****
9830 TST274:
9831 041144 005267 137634 INC $TESTN ;INCREMENT TEST NUMBER
9832 041150 005037 177776 CLR B@PS ;CLEAR THE PSW.
9833 041154 013737 000100 001030 MOV B@100,B@SLOC00 ;SAVE BEVENT VECTORS
9834 041162 013737 000102 001032 MOV B@102,B@SLOC01 ;
9835 041170 012737 041230 000100 MOV @INT4,B@100 ;SET UP INTERRUPT VECTORS
9836 041176 012737 000340 000102 MOV @340,B@102 ;
9837 041204 013701 001074 MOV B@WAITIN,R1 ;SET UP R1 AS A COUNTER
9838 041210 000234 SPL 4 ;SET INTERRUPT PRIORITY LEVEL=4
9839 041212 052767 000100 136326 BIS @BIT06,BEVENT ;ENABLE BEVENT INTERRUPT
9840 041220 077101 1$: SOB R1,1$ ;WAIT HERE FOR INTERRUPT TO OCCUR.
9841 ;ERROR! INTERRUPT DIDN'T OCCUR AT PR4
9842 041222 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9843 041224 001172 .WORD 1172 ;UNIQUE ERROR NUMBER
9844 041226 001160 .WORD BRDERR ;ADDRESS OF ERROR MESSAGE
9845 041230 005067 136312 INT4: CLR BEVENT ;DISABLE BEVENT INTERRUPT.
9846 041234 062706 000004 ADD @4,SP ;CLEAN UP THE STACK AFTER INTERRUPT.
9847 041240 012737 041272 000100 BEV5: MOV @INT5,B@100 ;SET UP BEVENT INTERRUPT VECTOR.
9848 041246 013701 001074 MOV B@WAITIN,R1 ;SETUP R1 AS A COUNTER.
9849 041252 000235 SPL 5 ;SET INTERRUPT PRIORITY LEVEL=5
9850 041254 052767 000100 136264 BIS @BIT06,BEVENT ;ENABLE BEVENT INTERRUPT
9851 041262 077101 2$: SOB R1,2$ ;WAIT HERE FOR INTERRUPT TO OCCUR.
9852 ;ERROR! INTERRUPT DIDN'T OCCUR AT PR5
9853 041264 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9854 041266 001173 .WORD 1173 ;UNIQUE ERROR NUMBER
9855 041270 001160 .WORD BRDERR ;ADDRESS OF ERROR MESSAGE
9856 041272 005067 135250 INT5: CLR BEVENT ;DISABLE BEVENT INTERRUPT.
9857 041276 062706 000004 ADD @4,SP ;CLEAN UP THE STACK AFTER INTERRUPT.
9858 041302 012737 041330 000100 BEV6: MOV @INT6,B@100 ;SET UP INTERRUPT VECTOR
9859 041310 013701 001074 MOV B@WAITIN,R1 ;SETUP R1 AS A COUNTER.
9860 041314 000236 SPL 6 ;SET INTERRUPT PRIORITY LEVEL=6
9861 041316 052767 000100 136222 BIS @BIT06,BEVENT ;ENABLE BEVENT INTERRUPT.
9862 041324 077101 3$: SOB R1,3$ ;WAIT HERE FOR POSSIBLE INTERRUPT.
9863 041326 000403 BR BEV7 ;GOOD! IT DIDN'T INTERRUPT. GO ON.
9864 ;ERROR! BEVENT SHOULDN'T INTERRUPT IF
9865 ;PRIORITY LEVEL=6 OR GREATER.
9866 041330 INT6:
9867 041330 104000 ERROR ;ALL ERRORS TO TRAP TO EMT VECTOR
9868 041332 001174 .WORD 1174 ;UNIQUE ERROR NUMBER
9869 041334 001160 .WORD BRDERR ;ADDRESS OF ERROR MESSAGE
9870 041336 005067 136204 BEV7: CLR BEVENT ;DISABLE BEVENT INTERRUPT.
9871 041342 012737 041370 000100 MOV @INT7,B@100 ;SETUP INTERRUPT VECTOR.
9872 041350 013701 001074 MOV B@WAITIN,R1 ;SETUP R1 AS A COUNTER.
9873 041354 000237 SPL 7 ;SET INTERRUPT PRIORITY LEVEL=7
9874 041356 052767 000100 136162 BIS @BIT06,BEVENT ;ENABLE BEVENT INTERRUPT
9875 041364 077101 4$: SOB R1,4$ ;WAIT HERE FOR POSSIBLE INTERRUPT
9876 041366 000403 BR INT0N ;GOOD! IT DIDN'T INTERRUPT. GO TO DONE.
9877 ;ERROR! BEVENT SHOULDN'T INTERRUPT IF
9878 ;PRIORITY LEVEL=7.

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SEQ 0183

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9879 041370          INT7:
9880 041370 104000      ERROR
9881 041372 001175      .WORD 1175
9882 041374 001160      .WORD BRDERR
9883 041376 005067 136144 INTDN: CLR BEVENT
9884 041402 013737 001030 000100 MOV B0SLOC00,B0100
9885 041410 013737 001032 000102 MOV B0SLOC01,B0102
9886
9887
9888
9889
9890
9891 041416          TST275:
9892 041416 005267 137362      INC #TESTN
9893 041422 013737 000100 001030 MOV B0100,B0SLOC00
9894 041430 013737 000102 001032 MOV B0102,B0SLOC01
9895 041436 012737 041476 000100 MOV #24,B0100
9896 041444 012737 000240 000102 MOV #240,B0102
9897 041452 012701 001074      MOV #WAITIN,R1
9898 041456 052767 000100 136062 BIS #BIT06,BEVENT
9899 041464 000235      SPL 5
9900 041466 077101      SOB R1,10
9901 041470 104000      ERROR
9902 041472 001176      .WORD 1176
9903 041474 001160      .WORD BRDERR
9904 041476 062706 000004 2#1 ADD #4,SP
9905 041502 012737 041520 000100 MOV #34,B0100
9906 041510 000001      WAIT
9907
9908
9909
9910
9911
9912
9913 041512 104000      ERROR
9914 041514 001177      .WORD 1177
9915 041516 001127      .WORD CPUERR
9916 041520 005067 136022 3#1 CLR BEVENT
9917 041524 005067 136246      CLR PS
9918 041530 062706 000004      ADD #4,SP
9919 041534 016737 137270 000100 MOV SLOC00,B0100
9920 041542 016737 137264 000102 MOV SLOC01,B0102
9921 041550          NOBEVENT:
9922
9923
9924
9925 041550          MAINTR:
9926
9927
9928
9929 041550          TST276:
9930 041550 005267 137230      INC #TESTN
9931 041554 013767 000004 137246 MOV B04,SLOC00
9932 041562 013767 000006 137242 MOV B06,SLOC01
9933 041570 012737 041604 000004 MOV #13,B04
9934 041576 013701 177750      MOV B0177750,R1

```

;ALL ERRORS TO TRAP TO FMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;DISABLE BEVENT INTERRUPTS.
 ;RESTORE VECTORS
 ;
 ;*****
 ;*TEST 275 TEST WAIT INSTRUCTION
 ;*****
 ;INCREMENT TEST NUMBER
 ;SAVE BEVENT VECTORS
 ;
 ;SET UP BEVENT VECTOR
 ;
 ;SET UP R1 FOR DELAY TO BEVENT TIME
 ;TURN ON BEVENT
 ;ALLOW INTERRUPTS > PRI 5
 ;WAIT HERE FOR FIRST BEVENT
 ;ALL ERRORS TO TRAP TO FMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;VECTOR HERE ON 1ST BEVENT. CLEAN UP THE STACK
 ;SET UP VECTOR FOR TEST OF WAIT INST
 ;*****TEST INSTRUCTION*****
 ;HOLD HERE FOR SECOND BEVENT. IF IT DOESN'T COME WE LL BE STUCK HERE.
 ;ERROR!
 ;SOME THING GOT SCREWED UP WITH WAIT
 ;IN ORDER TO GET HERE.
 ;ALL ERRORS TO TRAP TO FMT VECTOR
 ;UNIQUE ERROR NUMBER
 ;ADDRESS OF ERROR MESSAGE
 ;VECTOR HERE ON 2ND BEVENT. TURN OFF LTC
 ;CLEAR THE PSW
 ;CLEAN UP THE STACK
 ;RESTORE VECTORS
 ;
 ;*****
 ;*TEST 276 MAINTENANCE REGISTER TEST
 ;*****
 ;INCREMENT TEST NUMBER
 ;SAVE VECTOR
 ;
 ;SET UP FOR NON EXISTANT MEMORY TRAP
 ;READ MAINT. REG

PC	OP	OP2	OP3	OP4	OP5	OP6	OP7	OP8	OP9	OP10	OP11	OP12	OP13	OP14	OP15	OP16	OP17	OP18	OP19	OP20	OP21	OP22	OP23	OP24	OP25	OP26	OP27	OP28	OP29	OP30	OP31	OP32	OP33	OP34	OP35	OP36	OP37	OP38	OP39	OP40	OP41	OP42	OP43	OP44	OP45	OP46	OP47	OP48	OP49	OP50	OP51	OP52	OP53	OP54	OP55	OP56	OP57	OP58	OP59	OP60	OP61	OP62	OP63	OP64	OP65	OP66	OP67	OP68	OP69	OP70	OP71	OP72	OP73	OP74	OP75	OP76	OP77	OP78	OP79	OP80	OP81	OP82	OP83	OP84	OP85	OP86	OP87	OP88	OP89	OP90	OP91	OP92	OP93	OP94	OP95	OP96	OP97	OP98	OP99	OP100	OP101	OP102	OP103	OP104	OP105	OP106	OP107	OP108	OP109	OP110	OP111	OP112	OP113	OP114	OP115	OP116	OP117	OP118	OP119	OP120	OP121	OP122	OP123	OP124	OP125	OP126	OP127	OP128	OP129	OP130	OP131	OP132	OP133	OP134	OP135	OP136	OP137	OP138	OP139	OP140	OP141	OP142	OP143	OP144	OP145	OP146	OP147	OP148	OP149	OP150	OP151	OP152	OP153	OP154	OP155	OP156	OP157	OP158	OP159	OP160	OP161	OP162	OP163	OP164	OP165	OP166	OP167	OP168	OP169	OP170	OP171	OP172	OP173	OP174	OP175	OP176	OP177	OP178	OP179	OP180	OP181	OP182	OP183	OP184	OP185	OP186	OP187	OP188	OP189	OP190	OP191	OP192	OP193	OP194	OP195	OP196	OP197	OP198	OP199	OP200	OP201	OP202	OP203	OP204	OP205	OP206	OP207	OP208	OP209	OP210	OP211	OP212	OP213	OP214	OP215	OP216	OP217	OP218	OP219	OP220	OP221	OP222	OP223	OP224	OP225	OP226	OP227	OP228	OP229	OP230	OP231	OP232	OP233	OP234	OP235	OP236	OP237	OP238	OP239	OP240	OP241	OP242	OP243	OP244	OP245	OP246	OP247	OP248	OP249	OP250	OP251	OP252	OP253	OP254	OP255	OP256	OP257	OP258	OP259	OP260	OP261	OP262	OP263	OP264	OP265	OP266	OP267	OP268	OP269	OP270	OP271	OP272	OP273	OP274	OP275	OP276	OP277	OP278	OP279	OP280	OP281	OP282	OP283	OP284	OP285	OP286	OP287	OP288	OP289	OP290	OP291	OP292	OP293	OP294	OP295	OP296	OP297	OP298	OP299	OP300	OP301	OP302	OP303	OP304	OP305	OP306	OP307	OP308	OP309	OP310	OP311	OP312	OP313	OP314	OP315	OP316	OP317	OP318	OP319	OP320	OP321	OP322	OP323	OP324	OP325	OP326	OP327	OP328	OP329	OP330	OP331	OP332	OP333	OP334	OP335	OP336	OP337	OP338	OP339	OP340	OP341	OP342	OP343	OP344	OP345	OP346	OP347	OP348	OP349	OP350	OP351	OP352	OP353	OP354	OP355	OP356	OP357	OP358	OP359	OP360	OP361	OP362	OP363	OP364	OP365	OP366	OP367	OP368	OP369	OP370	OP371	OP372	OP373	OP374	OP375	OP376	OP377	OP378	OP379	OP380	OP381	OP382	OP383	OP384	OP385	OP386	OP387	OP388	OP389	OP390	OP391	OP392	OP393	OP394	OP395	OP396	OP397	OP398	OP399	OP400	OP401	OP402	OP403	OP404	OP405	OP406	OP407	OP408	OP409	OP410	OP411	OP412	OP413	OP414	OP415	OP416	OP417	OP418	OP419
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9968      .MCALL IDMSG,ENDPAS
9969      .SBTTL  END OF PASS ROUTINE
9970
9971      ;;*****
9972      ;;*INCREMENT THE PASS NUMBER (#PASS)
9973      ;;*INDICATE END-OF-PROGRAM AFTER 1 PASSES THRU THE PROGRAM
9974      ;;*IF THERES A MONITOR GO TO IT
9975      ;;*IF THERE ISN'T JUMP TO RESTART
9976
9977      .EOP:
9978      .TST     #PASS
9979      .BNE     SKIPID
9980      .TYPE    ,MSG1
9981      .SKIPID:
9982      .INC     #PASS
9983      .BIC     #100000,#PASS
9984      .DEC     (PC)+
9985      .EOPCT:  .WORD 1
9986      .BGT     #DOAGN
9987      .MOV     (PC)+,(PC)+
9988      .ENDCT:  .WORD 1
9989      .EOPCT
9990      .TYPE    ,MSG2
9991      .MOV     #PASS,-(SP)
9992      .TYPDS   .TYPE    ,#NULL
9993      .GET42:  .MOV     #42,R0
9994      .BEQ     #DOAGN
9995      .RESET
9996      .ENDAD:  .JSR     PC,(R0)
9997      .NOP
9998      .NOP
9999      .NOP
10000      .DOAGN:
10001      .JMP     2(PC),RESTART
10002      .RTNAD:  .WORD    RESTART
10003      .ENULL:  .BYTE    -1,-1,0
10004      .EVEN
10005      .MSG1:  .ASCIZ   <CR><LF>/CZKDJ-B-0 KDJ11 CPU DIAGNOSTIC/
10006
10007      .MSG2:  .ASCIZ   <CR><LF>/CZKDJ-B END PASS #/
10008
10009      .EVEN
10010      .SBTTL  TYPE ROUTINE
10011
10012      ;;*****
10013      ;;*ROUTINE TO TYPE ASCIZ MESSAGE. MESSAGE MUST TERMINATE WITH A 0 BYTE.
10014      ;;*THE ROUTINE WILL INSERT A NUMBER OF NULL CHARACTERS AFTER A LINE FEED.
10015      ;;*NOTE1:  #NULL CONTAINS THE CHARACTER TO BE USED AS THE FILLER CHARACTER.
10016      ;;*NOTE2:  #FILLS CONTAINS THE NUMBER OF FILLER CHARACTERS REQUIRED.
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10024      ;*NOTE3:          ;FILLC CONTAINS THE CHARACTER TO FILL AFTER.
10025      ;*
10026      ;*CALL:
10027      ;+1) USING A TRAP INSTRUCTION
10028      ;*      TYPE      ,MESADR          ;MESADR IS FIRST ADDRESS OF AN ASCIZ STRING
10029      ;*OR
10030      ;*      TYPE
10031      ;*      MESADR
10032      ;*
10033
10034      042124 105767 000343      ;TYPE:  TSTB      ;TPFLG          ;IS THERE A TERMINAL?
10035      042130 100002          BPL      1;          ;BR IF YES
10036      042132 000000          HALT          ;HALT HERE IF NO TERMINAL.
10037      042134 000430          BR      3;          ;LEAVE
10038      042136 010046      1;:      MOV      R0,-(SP)          ;SAVE R0
10039      042140 017600 000002      MOV      @2(SP),R0          ;GET ADDRESS OF ASCIZ STRING
10040      042144 122767 000001 136646      CMPEB  @APTENV,@ENV          ;RUNNING IN APT MODE
10041      042152 001011          BNE      62;          ;NO,GO CHECK FOR APT CONSOLE
10042      042154 132767 000100 136637      BITB      @APTPOOL,@ENV          ;SPOOL MESSAGE TO APT
10043      042162 001405          BEQ      62;          ;NO,GO CHECK FOR CONSOLE
10044      042164 010067 000004          MOV      R0,61;          ;SETUP MESSAGE ADDRESS FOR APT
10045      042170 004767 001034          JSR      PC,@ATY3          ;SPOOL MESSAGE TO APT
10046      042174 000000      61;:      .WORD      0          ;MESSAGE ADDRESS
10047      042176 132767 000040 136615      62;:      BITB      @APTCSUP,@ENV          ;APT CONSOLE SUPPRESSED
10048      042204 001003          BNE      60;          ;YES,SKIP TYPE OUT
10049      042206 112046      2;:      MOVB      (R0)+,-(SP)          ;PUSH CHARACTER TO BE TYPED ONTO STACK
10050      042210 001005          BNE      4;          ;BR IF IT ISN'T THE TERMINATOR
10051      042212 005726          TST      (SP)+          ;IF TERMINATOR POP IT OFF THE STACK
10052      042214 012600      60;:      MOV      (SP)+,R0          ;RESTORE R0
10053      042216 062716 000002      3;:      ADD      @2,(SP)          ;ADJUST RETURN PC
10054      042222 000002          RTI          ;RETURN
10055      042224 122716 000011      4;:      CMPEB  @HT,(SP)          ;BRANCH IF <HT>
10056      042230 001430          BEQ      8;          ;
10057      042232 122716 000200          CMPEB  @CRLF,(SP)          ;BRANCH IF NOT <CRLF>
10058      042236 001006          BNE      5;          ;
10059      042240 005726          TST      (SP)+          ;POP <CR><LF> EQUIV
10060      042242 104401          TYPE          ;TYPE A CR AND LF
10061      042244 001257          ;CRLF
10062      042246 105067 000202          CLRB      @CHARCNT          ;CLEAR CHARACTER COUNT
10063      042252 000755          BR      2;          ;GET NEXT CHARACTER
10064      042254 004767 000056      5;:      JSR      PC,@TYPEC          ;GO TYPE THIS CHARACTER
10065      042260 126726 000206      6;:      CMPEB  @FILLC,(SP)+          ;IS IT TIME FOR FILLER CHARS.?
10066      042264 001350          BNE      2;          ;IF NO GO GET NEXT CHAR.
10067      042266 016746 000176          MOV      @NULL,-(SP)          ;GET # OF FILLER CHARS. NEEDED
10068          ;AND THE NULL CHAR.
10069      042272 105366 000001      7;:      DECB      1(SP)          ;DOES A NULL NEED TO BE TYPED?
10070      042276 002770          BLT      6;          ;BR IF NO--GO POP THE NULL OFF OF STACK
10071      042300 004767 000032          JSR      PC,@TYPEC          ;GO TYPE A NULL
10072      042304 105367 000144          DECB      @CHARCNT          ;DO NOT COUNT AS A COUNT
10073      042310 000770          BR      7;          ;LOOP
10074
10075      ;HORIZONTAL TAB PROCESSOR
10076
10077      042312 112716 000040      8;:      MOVB      @' ,(SP)          ;REPLACE TAB WITH SPACE
10078      042316 004767 000014      9;:      JSR      PC,@TYPEC          ;TYPE A SPACE
10079      042322 132767 000007 000124      BITB      @7,@CHARCNT          ;BRANCH IF NOT AT

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10080 042330 001572      BNE      9#          ;TAB STOP
10081 042332 005726      TST      (SP)+      ;POP SPACE OFF STACK
10082 042334 000724      BR       2#          ;GET NEXT CHARACTER
10083 042336              ;TYPEC:
10084 042336 105777 000116  TSTB     @TKS      ;CHAR IN KYBD BUFFER?      MJ0001
10085 042342 100022      BPL      10#         ;BR IF NOT                MJ0001
10086 042344 017746 000112  MOV      @TKB, -(SP) ;GET CHAR                  MJ0001
10087 042350 042716 177600  BIC      @177600, (SP) ;STRIP EXTRANEIOUS BITS    MJ0001
10088 042354 122716 000023  CMPB     @XOFF, (SP) ;WAS CHAR XOFF             MJ0001
10089 042360 001012      BNE      102#        ;BR IF NOT                MJ0001
10090 042362              101#:
10091 042362 105777 000072  TSTB     @TKS      ;WAIT FOR CHAR            MJ0001
10092 042366 100375      BPL      101#        ;BR IF NOT                MJ0001
10093 042370 117716 000066  MOVB     @TKB, (SP) ;GET CHAR                  MJ0001
10094 042374 042716 177600  BIC      @177600, (SP) ;STRIP IT                  MJ0001
10095 042400 122716 000021  CMPB     @XON, (SP) ;WAS IT XON?              MJ0001
10096 042404 001366      BNE      101#        ;BR IF NOT                MJ0001
10097 042406              102#:
10098 042406 005726      TST      (SP)+      ;FIX STACK                MJ0001
10099 042410              10#:
10100 042410 105777 000050  TSTB     @TPS      ;WAIT UNTIL PRINTER IS READY MJ0001
10101 042414 100375      BPL      10#         ;BR IF NOT                MJ0001
10102 042416 116677 000002 000042  MOVB     2(SP), @TPB ;LOAD CHAR TO BE TYPED INTO DATA REG.
10103 042424 122766 000015 000002  CMPB     @CR, 2(SP) ;IS CHARACTER A CARRIAGE RETURN?
10104 042432 001003      BNE      1#         ;BRANCH IF NO
10105 042434 105067 000014      CLRB     @CHARCNT ;YES--CLEAR CHARACTER COUNT
10106 042440 000406      BR       @TYPEX ;EXIT
10107 042442 122756 000012 000002 1#:  CMPB     @LF, 2(SP) ;IS CHARACTER A LINE FEED?
10108 042450 001402      BEQ      @TYPEX ;BRANCH IF YES
10109 042452 105227      INCB     (PC)+      ;COUNT THE CHARACTER
10110 042454 000000      @CHARCNT: .WORD 0 ;CHARACTER COUNT STORAGE
10111 042456 000207      @TYPEX: RTS      PC
10112
10113 042460 177560      @TKS: .WORD 177560 ;TTY KDB STATUS      MJ0001
10114 042462 177562      @TKB: .WORD 177562 ;TTY KBD BUFFER      MJ0001
10115 042464 177564      @TPS: .WORD 177564 ;TTY PRINTER STATUS REG. ADDRESS
10116 042466 177566      @TPB: .WORD 177566 ;TTY PRINTER BUFFER REG. ADDRESS
10117 042470 000      @NULL: .BYTE 0 ;CONTAINS NULL CHARACTER FOR FILLS
10118 042471 002      @FILLS: .BYTE 2 ;CONTAINS # OF FILLER CHARACTERS REQUIRED
10119 042472 012      @FILLC: .BYTE 12 ;INSERT FILL CHARS. AFTER A "LINE FEED"
10120 042473 000      @PFLG: .BYTE 0 ;"TERMINAL AVAILABLE" FLAG (BIT<07>*0=YES)
10121 042474 077      @QUES: .ASCII "?" ;QUESTION MARK
10122 042475 012 000      @LF: .ASCII <12> ;LINEFEED
10123 042500
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.SBTTL CONVERT BINARY TO DECIMAL AND TYPE ROUTINE
 ;*****
 ;THIS ROUTINE IS USED TO CHANGE A 16-BIT BINARY NUMBER TO A 5-DIGIT
 ;SIGNED DECIMAL (ASCII) NUMBER AND TYPE IT. DEPENDING ON WHETHER THE
 ;NUMBER IS POSITIVE OR NEGATIVE A SPACE OR A MINUS SIGN WILL BE TYPED
 ;BEFORE THE FIRST DIGIT OF THE NUMBER. LEADING ZEROS WILL ALWAYS BE
 ;REPLACED WITH SPACES.
 ;CALL:
 ;* MOV NUM, -(SP) ;PUT THE BINARY NUMBER ON THE STACK
 ;* TYPDS ;GO TO THE ROUTINE

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10136 042500          $TYPDS:
10137 042500 010046      MOV     R0,-(SP)      ;;PUSH R0 ON STACK
10138 042502 010146      MOV     R1,-(SP)      ;;PUSH R1 ON STACK
10139 042504 010246      MOV     R2,-(SP)      ;;PUSH R2 ON STACK
10140 042506 010346      MOV     R3,-(SP)      ;;PUSH R3 ON STACK
10141 042510 010546      MOV     R5,-(SP)      ;;PUSH R5 ON STACK
10142 042512 012746 020200 MOV     #20200,-(SP)  ;;SET BLANK SWITCH AND SIGN
10143 042516 016605 000020 MOV     20(SP),R5  ;;GET THE INPUT NUMBER
10144 042522 100004      BPL     1#           ;;BR IF INPUT IS POS.
10145 042524 005405      NEG     R5           ;;MAKE THE BINARY NUMBER POS.
10146 042526 112766 000055 000001 MOVB   #'-,1(SP)  ;;MAKE THE ASCII NUMBER NEG.
10147 042534 005000      CLR     R0           ;;ZERO THE CONSTANTS INDEX
10148 042536 012703 042714 MOV     #DBLK,R5  ;;SETUP THE OUTPUT POINTER
10149 042542 112723 000040 MOVB   #'',(R3)+  ;;SET THE FIRST CHARACTER TO A BLANK
10150 042546 005002      CLR     R2           ;;CLEAR THE BCD NUMBER
10151 042550 016001 042704 MOV     @DTBL(R0),R1  ;;GET THE CONSTANT
10152 042554 160105      SLE     R1,R5       ;;FORM THIS BCD DIGIT
10153 042556 002402      BLT     4#           ;;BR IF DONE
10154 042560 005202      INC     R2           ;;INCREASE THE BCD DIGIT BY 1
10155 042562 000774      BR      3#
10156 042564 060105      4#: ADD     R1,R5     ;;ADD BACK THE CONSTANT
10157 042566 005702      TST     R2           ;;CHECK IF BCD DIGIT=0
10158 042570 001002      BNE     5#           ;;FALL THROUGH IF 0
10159 042572 105716      TSTB   (SP)         ;;STILL DOING LEADING 0'S?
10160 042574 100407      BMI     7#           ;;BR IF YES
10161 042576 106316      5#: ASLB     (SP)     ;;MSD?
10162 042600 103003      BCC     6#           ;;BR IF NO
10163 042602 116663 000001 177777 MOVB   1(SP),-1(R3)  ;;YES--SET THE SIGN
10164 042610 052702 000060      BIS     #'0,R2  ;;MAKE THE BCD DIGIT ASCII
10165 042614 052702 000040      6#: BIS     #' ,R2  ;;MAKE IT A SPACE IF NOT ALREADY A DIGIT
10166 042620 110223      MOVB   R2,(R3)+  ;;PUT THIS CHARACTER IN THE OUTPUT BUFFER
10167 042622 005720      TST     (R0)+       ;;JUST INCREMENTING
10168 042624 020027 000010      CMP     R0,#10  ;;CHECK THE TABLE INDEX
10169 042630 002746      BLT     2#           ;;GO DO THE NEXT DIGIT
10170 042632 003002      BGT     8#           ;;GO TO EXIT
10171 042634 010502      MOV     R5,R2       ;;GET THE LSD
10172 042636 000764      BR      6#
10173 042640 105726      8#: TSTB   (SP)+     ;;GO CHANGE TO ASCII
10174 042642 100003      BPL     9#           ;;WAS THE LSD THE FIRST NON-ZERO?
10175 042644 116663 177777 177776 MOVB   1(SP), 2(R3)  ;;BR IF NO
10176 042652 105013      9#: CLRB   (R3)     ;;YES--SET THE SIGN FOR TYPING
10177 042654 012605      MOV     (SP)+,R5  ;;SET THE TERMINATOR
10178 042656 012603      MOV     (SP)+,R5  ;;POP STACK INTO R5
10179 042660 012602      MOV     (SP)+,R3  ;;POP STACK INTO R3
10180 042662 012601      MOV     (SP)+,R2  ;;POP STACK INTO R2
10181 042664 012600      MOV     (SP)+,R1  ;;POP STACK INTO R1
10182 042666 104401 042714      MOV     (SP)+,R0  ;;POP STACK INTO R0
10183 042672 016666 000002 000004 TYPE   ,DBLK  ;;NOW TYPE THE NUMBER
10184 042700 012616      MOV     2(SP),4(SP)  ;;ADJUST THE STACK
10185 042702 000002      MOV     (SP)+,(SP)
10186 042704 023420      RTI
10187 042706 001750      $DTBL: 10000,
10188 042710 000144      1000,
10189 042712 000012      100,
10190 042714 000004      10,
10191          $DBLK: ,BLKW 4
          $SBTTL BINARY TO OCTAL (ASCII) AND TYPE

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10216 042724 017646 000000
10217 042730 116667 000001 000211
10218 042736 112667 000207
10219 042742 062716 000002
10220 042746 000406
10221 042750 112767 000001 000171
10222 042756 112767 000006 000165
10223 042764 112767 000005 000154
10224 042772 010346
10225 042774 010446
10226 042776 010546
10227 043000 116704 000145
10228 043004 005404
10229 043006 062704 000006
10230 043012 110467 000132
10231 043016 116704 000125
10232 043022 016605 000012
10233 043026 005003
10234 043030 006105
10235 043032 000404
10236 043034 006105
10237 043036 006105
10238 043040 006105
10239 043042 010503
10240 043044 006103
10241 043046 105367 000076
10242 043052 100016
10243 043054 042703 177770
10244 043060 001002
10245 043062 005704
10246 043064 001403
10247 043066 005204

;*****
;THIS ROUTINE IS USED TO CHANGE A 16-BIT BINARY NUMBER TO A 6-DIGIT
;OCTAL (ASCII) NUMBER AND TYPE IT.
;#TYP0S---ENTER HERE TO SETUP SUPPRESS ZEROS AND NUMBER OF DIGITS TO TYPE
;CALL:
;#      MOV      NUM,-(SP)      ;NUMBER TO BE TYPED
;#      TYP0S      ;CALL FOR TYPEOUT
;#      .BYTE      N      ;N=1 TO 6 FOR NUMBER OF DIGITS TO TYPE
;#      .BYTE      M      ;M=1 OR 0
;#                               ;1=TYPE LEADING ZEROS
;#                               ;0=SUPPRESS LEADING ZEROS
;#
;#TYP0N---ENTER HERE TO TYPE OUT WITH THE SAME PARAMETERS AS THE LAST
;#TYP0S OR #TYP0C
;CALL:
;#      MOV      NUM,-(SP)      ;NUMBER TO BE TYPED
;#      TYP0N      ;CALL FOR TYPEOUT
;#
;#TYP0C---ENTER HERE FOR TYPEOUT OF A 16 BIT NUMBER
;CALL:
;#      MOV      NUM,-(SP)      ;NUMBER TO BE TYPED
;#      TYP0C      ;CALL FOR TYPEOUT
;#
;#TYP0S: MOV      0(SP),-(SP)      ;PICKUP THE MODE
;#      MOV      1(SP),#0FILL      ;LOAD ZERO FILL SWITCH
;#      MOV      (SP)+,#MODE+1      ;NUMBER OF DIGITS TO TYPE
;#      ADD      #2,(SP)      ;ADJUST RETURN ADDRESS
;#      BR      #TYP0N
;#TYP0C: MOV      #1,#0FILL      ;SET THE ZERO FILL SWITCH
;#      MOV      #6,#MODE+1      ;SET FOR SIX(6) DIGITS
;#TYP0N: MOV      #5,#CNT      ;SET THE ITERATION COUNT
;#      MOV      R3,-(SP)      ;SAVE R3
;#      MOV      R4,-(SP)      ;SAVE R4
;#      MOV      R5,(SP)      ;SAVE R5
;#      MOV      #MODE+1,R4      ;GET THE NUMBER OF DIGITS TO TYPE
;#      NEG      R4
;#      ADD      #6,R4      ;SUBTRACT IT FOR MAX. ALLOWED
;#      MOV      R4,#MODE      ;SAVE IT FOR USE
;#      MOV      #0FILL,R4      ;GET THE ZERO FILL SWITCH
;#      MOV      12(SP),R5      ;PICKUP THE INPUT NUMBER
;#      CLR      R5      ;CLEAR THE OUTPUT WORD
;#      ROL      R5      ;ROTATE MSB INTO "C"
;#      BR      3#      ;GO DO MSB
;#      ROL      R5      ;FORM THIS DIGIT
;#      ROL      R5
;#      ROL      R5
;#      MOV      R5,R3
;#      ROL      R3      ;GET LSB OF THIS DIGIT
;#      DECB      #MODE      ;TYPE THIS DIGIT?
;#      BPL      7#      ;BR IF NO
;#      BIC      #177770,R3      ;GET RID OF JUNK
;#      BNE      4#      ;TEST FOR 0
;#      TST      R4      ;SUPPRESS THIS 0?
;#      BEQ      5#      ;BR IF YES
;#      INC      R4      ;DON'T SUPPRESS ANYMORE 0'S

```

```

10248 043070 052703 000060
10249 043074 052703 000040
10250 043100 110367 000040
10251 043104 104401 043144
10252 043110 105367 000032
10253 043114 003347
10254 043116 002402
10255 043120 005204
10256 043122 000744
10257 043124 012605
10258 043126 012604
10259 043130 012603
10260 043132 016666 000002 000004
10261 043140 012616
10262 043142 000002
10263 043144 000
10264 043145 000
10265 043146 000
10266 043147 000
10267 043150 000000
10268
10269
10270
10271
10272
10273
10274
10275
10276 043152 010046
10277 043154 016600 000002
10278 043160 005740
10279 043162 111000
10280 043164 006300
10281 043166 016000 043206
10282 043172 000200
10283
10284
10285
10286
10287 043174 011646
10288 043176 016566 000004 000002
10289 043204 000002
10290
10291
10292
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10299
10300
10301
10302
10303

5$: BIS #0,R3 ;MAKE THIS DIGIT ASCII
    RIS #1,R3 ;MAKE ASCII IF NOT ALREADY
    MOVB R3,R4 ;SAVE FOR TYPING
    TYPE ,R4 ;GO TYPE THIS DIGIT
7$: DECB $OCNT ;COUNT BY 1
    BGT 2$ ;BR IF MORE TO DO
    BLT 6$ ;BR IF DONE
    INC R4 ;INSURE LAST DIGIT ISN'T A BLANK
    BR 2$ ;GO DO THE LAST DIGIT
6$: MOV (SP)+,R5 ;RESTORE R5
    MOV (SP)+,R4 ;RESTORE R4
    MOV (SP)+,R3 ;RESTORE R3
    MOV 2(SP),4(SP) ;SET THE STACK FOR RETURNING
    MOV (SP)+,(SP)
    RTI ;RETURN
8$: .BYTE 0 ;STORAGE FOR ASCII DIGIT
    .BYTE 0 ;TERMINATOR FOR TYPE ROUTINE
$OCNT: .BYTE 0 ;OCTAL DIGIT COUNTER
$OFILL: .BYTE 0 ;ZERO FILL SWITCH
$OMODE: .WORD 0 ;NUMBER OF DIGITS TO TYPE
.SBTL TRAP DECODER

;*****
;THIS ROUTINE WILL PICKUP THE LOWER BYTE OF THE "TRAP" INSTRUCTION
;AND USE IT TO INDEX THROUGH THE TRAP TABLE FOR THE STARTING ADDRESS
;OF THE DESIRED ROUTINE. THEN USING THE ADDRESS OBTAINED IT WILL
;GO TO THAT ROUTINE.
$TRAP: MOV R0,-(SP) ;SAVE R0
    MOV 2(SP),R0 ;GET TRAP ADDRESS
    TST -(R0) ;BACKUP BY 2
    MOVB (R0),R0 ;GET RIGHT BYTE OF TRAP
    ASL R0 ;POSITION FOR INDEXING
    MOV $TRPAD(R0),R0 ;INDEX TO TABLE
    RTS R0 ;GO TO ROUTINE

;THIS IS USE TO HANDLE THE "GETPR" MACRO
$TRAP2: MOV (SP)+,(SP) ;MOVE THE PC DOWN
    MOV 4(SP),2(SP) ;MOVE THE PSW DOWN
    RTI ;RESTORE THE PSW

.MACRO SETTRAP A,B,MSG
    ##SET A,B,$TRAP+$TRP,$TRP,MSG
.MLIST
$TRP=$TRP+1
.LIST
.ENDM SETTRAP
.MACRO ##SET A,B,C,D,COMNT
    IF EQ $TRP-1
.SBTL TRAP TABLE

;THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
;BY THE "TRAP" INSTRUCTION.

```

```

10304      ROUTINE
10305      -----
10306      $TRPAD: .WORD    $TRAP2
10307      .ENDC
10308      .IIF NOF GNS,.NLIST
10309      A=      C
10310      .IIF NOF GNS,.LIST
10311      D      CALL=A      TRAP=D(C)      COMNT
10312      .ENDM      $SET
10313      .MACRO      TRMTRP
10314      $TERM=.-$TRPAD
10315      .ENDM      TRMTRP
10316      .SBTTL      TRAP TABLE
10317
10318      ;*THIS TABLE CONTAINS THE STARTING ADDRESSES OF THE ROUTINES CALLED
10319      ;*BY THE "TRAP" INSTRUCTION.
10320
10321      ROUTINE
10322      -----
10323      $TRPAD: .WORD    $TRAP2
10324      $TYPE      ;;CALL=TYPE      TRAP+1(104401)      TTY TYPEOUT ROUTINE
10325      $TYPOC      ;;CALL=TYPOC      TRAP+2(104402)      TYPE OCTAL NUMBER (WITH LEADING ZEROS)
10326      $TYPOS      ;;CALL=TYPOS      TRAP+3(104403)      TYPE OCTAL NUMBER (NO LEADING ZEROS)
10327      $TYPON      ;;CALL=TYPON      TRAP+4(104404)      TYPE OCTAL NUMBER (AS PER LAST CALL)
10328      $TYPDS      ;;CALL=TYPDS      TRAP+5(104405)      TYPE DECIMAL NUMBER (WITH SIGN)
10329
10330
10331      .SBTTL      APT COMMUNICATIONS ROUTINE
10332
10333      ;*****
10334      043222 112767 000001 000236 $ATY1: MOVB    $1,$FFLC      ;;TO REPORT FATAL ERROR
10335      043230 112767 000001 000226 $ATY3: MOVB    $1,$HFLG      ;;TO TYPE A MESSAGE
10336      043236 000403                BR      $ATYC
10337      043240 112767 000001 000220 $ATY4: MOVB    $1,$FFLC      ;;TO ONLY REPORT FATAL ERROR
10338      043246                $ATYC:
10339      043246 010046                MOV     R0,-(SP)      ;;PUSH R0 ON STACK
10340      043250 010146                MOV     R1,-(SP)      ;;PUSH R1 ON STACK
10341      043252 105767 000206                TSTB    $HFLG      ;;SHOULD TYPE A MESSAGE?
10342      043256 001450                BEQ     5$           ;;IF NOT: BR
10343      043260 122767 000001 135532      CNPB    $APTENV,$ENV      ;;OPERATING UNDER APT?
10344      043266 001031                BNE     3$           ;;IF NOT: BR
10345      043270 132767 000100 135523      BITB    $APTSPOOL,$ENVM      ;;SHOULD SPOOL MESSAGES?
10346      043276 001425                BEQ     3$           ;;IF NOT: BR
10347      043300 017600 000004                MOV     $4(SP),R0      ;;GET MESSAGE ADDR.
10348      043304 062766 000002 000004      ADD     $2,4(SP)      ;;BUMP RETURN ADDR.
10349      043312 005767 135462      1$:      TST     $MSGTYPE      ;;SEE IF DONE W/ LAST XMISSION?
10350      043316 001375                BNE     1$           ;;IF NOT: WAIT
10351      043320 010067 135470                MOV     R0,$MSGAD      ;;PUT ADDR IN MAILBOX
10352      043324 105720      2$:      TSTB    (R0)+      ;;FIND END OF MESSAGE
10353      043326 001375                BNE     2$           ;;IF NOT: BR
10354      043330 166700 135460                SUB     $MSGAD,R0      ;;SUB START OF MESSAGE
10355      043334 006200                ASR     R0           ;;GET MESSAGE LGTH IN WORDS
10356      043336 010067 135454                MOV     R0,$MSGLG      ;;PUT LENGTH IN MAILBOX
10357      043342 012767 000004 135430      MOV     $4,$MSGTYPE      ;;TELL APT TO TAKE MSG.
10358      043350 000413                BR      5$           ;;IF NOT: BR
10359      043352 017667 000004 000016      3$:      MOV     $4(SP),4$      ;;PUT MSG ADDR IN JSR LINKAGE

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 KDJ11A.MAC 22-FEB-84 15:12 APT COMMUNICATIONS ROUTINE

SEQ 0192

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10360 043360 062766 000002 000004      ADD    #2,4(SP)      ;;BUMP RETURN ADDRESS
10361 043366 016746 134404      MOV    177776,-(SP)  ;;PUSH 177776 ON STACK
10362 043372 004767 176526      JSR    PC,#TYPE    ;;CALL TYPE MACRO
10363 043376 000000      4$:    .WORD    0
10364 043400      5$:
10365 043400 105767 000062      10$:   TSTB    $FFLG      ;;SHOULD REPORT FATAL ERROR?
10366 043404 001416      BEQ    12$      ;;IF NOT: BR
10367 043406 005767 135406      TST    $ENV        ;;RUNNING UNDER APT?
10368 043412 001413      BEQ    12$      ;;IF NOT: BR
10369 043414 005767 135360      11$:   TST    $MSGTYPE    ;;FINISHED LAST MESSAGE?
10370 043420 001375      BNE    11$      ;;IF NOT: WAIT
10371 043422 017667 000004 135352      MOV    04(SP),#FATAL  ;;GET ERROR #
10372 043430 062766 000002 000004      ADD    #2,4(SP)      ;;BUMP RETURN ADDR.
10373 043436 005267 135336      INC    $MSGTYPE    ;;TELL APT TO TAKE ERROR
10374 043442 105067 000020      12$:   CLRB    $FFLG      ;;CLEAR FATAL FLAG
10375 043446 105067 000013      CLRB    $LFLG      ;;CLEAR LOG FLAG
10376 043452 105067 000006      CLRB    $MFLG      ;;CLEAR MESSAGE FLAG
10377 043456 012601      MOV    (SP)+,R1    ;;PCP STACK INTO R1
10378 043460 012600      MOV    (SP)+,R0    ;;POP STACK INTO R0
10379 043462 000207      RTS     PC        ;;RETURN
10380 043464      000      $MFLG: .BYTE    0      ;;MESSG. FLAG
10381 043465      000      $LFLG: .BYTE    0      ;;LOG FLAG
10382 043466      000      $FFLG: .BYTE    0      ;;FATAL FLAG
10383      043470      .EVEN
10384      000200      APTSIZE=200
10385      000001      APTENV=001
10386      000100      APTSPOOL=100
10387      000040      APTCSUP=040
10388      ;*****
10389      ;THIS ROUTINE WILL INCREMENT THE ERROR COUNT AND THEN PASS THE UNIQUE
10390      ;ERROR NUMBER TO THE APT ERROR ROUTINE TO BE REPORTED TO THE APT SYSTEM.
10391
10392 043470 005267 135356      $ERROR: INC    $ERFLG      ;;INCREMENT ERROR FLAG
10393 043474 001775      BEQ    $ERROR      ;;DON'T LET IT GO TO ZERO
10394 043476 005267 135342      INC    ERRCNT      ;;INCREMENT THE ERROR COUNT
10395 043502 021627 001002      CMP    (SP), #1002  ;;IS ERROR FROM VECTOR AREA
10396 043506 101010      BHI    1$          ;;IF YES THEN
10397 043510 012767 007777 000106      MOV    #7777, 3$    ;;REPORT AN UNEXPECTED TRAP
10398 043516 012637 001062      MOV    (SP)+,#$SAVSP1 ;;SAVE UNEXPECTED TRAP DATA
10399 043522 012637 001064      MOV    (SP)+,#$SAVSP2 ;;AND RESTORE SP
10400 043526 000430      BR     2$          ;;ELSE
10401 043530 017667 000000 000066 1$:   MOV    0(SP), 3$    ;;REPORT UNIQUE ERROR NUMBER TO APT
10402 043536 011667 000072      MOV    (SP),101$    ;;SAVE ERROR PC
10403 043542 062716 000002      ADD    #2, (SP)     ;;GET OVER UNIQUE ERROR NUMBER FOR RETURN
10404 043546 017637 000000 043556 100$: MOV    0(SP),0#102$
10405 043554 104401      TYPE      ;;TYPE ERROR MESSAGE
10406 043556 000000      102$:   .WORD    0
10407 043560 062716 000002      ADD    #2,(SP)     ;;GET OVER ERROR MESSAGE
10408 043564 104401 001226      TYPE    ,ERR1      ;;
10409 043570 016746 000030      MOV    3$,-(SP)    ;;PUSH UNIQUE ERROR NUMBER ON THE STACK
10410 043574 104402      TYPDC    ;;TYPE CATAL ERROR NUMBER
10411 043576 104401 001242      TYPE    ,ERR2      ;;
10412 043602 016746 000026      MOV    101$,-(SP)  ;;PUSH ERROR PC ON THE STACK
10413 043606 104402      TYPDC    ;;TYPE THE ERROR PC
10414 043610 122767 000001 135202 2$:   CMPB    $APTENV,$ENV  ;;CHECK TO MAKE SURE WE'RE IN APT MODE
10415 043616 001004      BNE    5$          ;;IF YES THEN

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 KDJ11A.MAC 22-FEB-84 15:12 APT COMMUNICATIONS ROUTINE

SEQ 0193

10416	043620	004767	177414		JSR	PC,	0ATY4		
10417	043624	000000		3\$:	.WORD	0			
10418	043626	000777		4\$:	BR	4\$			
10419	043630	000000		5\$:	HALT				
10420	043632	000002			RTI				
10421	043634	000000		101\$:	.WORD	0			
10422	043636			\$PATCH\$:					
10423	043636	000010			.BLKW	10			
10424		000001		.END					

GO REPORT ERROR TO APT
 STORAGE FOR ERROR NUMBER
 LOOP HERE AFTER REPORTING ERROR TO APT
 IF NOT APT THEN HALT
 ALLOW RECOVERY FROM HALT

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 KDJ11A.MAC 22-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0194

ABASE = 000000	584	
ACCC = ***** U	4592	
ACDW1 = 000000	584	
ACDW2 = 000000	584	
ACPUOP = 000000	584	599
ADCC = ***** U	4548	
ADDW0 = 000000	584	
ADDW1 = 000000	584	
ADDW10 = 000000	584	
ADDW11 = 000000	584	
ADDW12 = 000000	584	
ADDW13 = 000000	584	
ADDW14 = 000000	584	
ADDW15 = 000000	584	
ADDW2 = 000000	584	
ADDW3 = 000000	584	
ADDW4 = 000000	584	
ADDW5 = 000000	584	
ADDW6 = 000000	584	
ADDW7 = 000000	584	
ADDW8 = 000000	584	
ADDW9 = 000000	584	
ADEVCT = 000000	584	590
ADEVN = 000000	584	
AENV = 000000	584	595
AENVN = 000000	584	596
AFATAL = 000000	584	587
ALCC = ***** U	4932	
ALLCTR = 001056	6260	
ALROTS = 022236	60710	
ALR1TS = 022340	61080	
ALR2TS = 022442	61450	
ALR3TS = 022544	61820	
ALR4TS = 022646	62190	
ALR5TS = 022750	62560	
ALTREG = ***** U	5950	
ALTR1 = ***** U	6108	
ALTR2 = ***** U	6145	
ALTR3 = ***** U	6182	
ALTR4 = ***** U	6219	
ALTR5 = ***** U	6256	
AMADR1 = 000000	584	
AMADR2 = 000000	584	
AMADR3 = 000000	584	
AMADR4 = 000000	584	
AMAMS1 = 000000	584	
AMAMS2 = 000000	584	
AMAMS3 = 000000	584	
AMAMS4 = 000000	584	
AMSGAD = 000000	584	592
AMSGLG = 000000	584	593
AMSGTY = 000000	584	586
AMTYP1 = 000000	584	
AMTYP2 = 000000	584	
AMTYP3 = 000000	584	
AMTYP4 = 000000	584	

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KDJ11A.MAC 22-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0195

[illegible]

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 KDJ11A.MAC 22 FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0196

BI00 - ***** U	2537													
BOARDT- ***** U	1	546	641	667	674	9587								
BPT0 - ***** U	8268													
BPT0A 032614	8277	8283*												
BPT0B 032632	8279	8289*												
BPTVEC- 000014	323*													
BRDERR 001160	667*	9243	9249	9255	9261	9266	9290	9316	9325	9365	9379	9402	9417	
	9450	9489	9512	9522	9568	9576	9610	9617	9623	9655	9675	9689	9696	
	9702	9734	9758	9786	9822	9844	9855	9869	9882	9903	9940	9945	9960	
BSCC - ***** U	4421													
BT - ***** U	8374													
BTC - ***** U	4346													
BTO - ***** U	8906													
BVENT - ***** U	9651													
B66 - ***** U	3081													
CACMET- 000001	1*	193	196	214	546	631	645	658	674	695	738	9967	10016	
	10268													
CBIT - ***** U	4892													
CR44 - ***** U	3008													
CCR - 177746	489*	696*	739*											
CHECK 014474	4195	4226*												
CHECK1 014566	4227	4255*												
CHECK2 014660	4256	4284*												
COUNT 001040	618*	8023*	8031*	8032*	8040*	8047*	8048*							
CPEREG- 177766	492*	6621*	8077*	8093	8104*	8119*	8151*	8142*	8151*	8163*	8179*	8191*	8206*	
	8219*	8236*	8245*	8263*	8274*	8290*	8305*	8321*	8344*	9112*	9124*	9139*	9150*	
	9163	9178*	9195	9216*	9230*	9262	9267*	9282*	9645*					
CPUErr 001127	662*	767	775	793	800	820	838	854	871	887	894	901	908	
	924	931	938	945	961	968	975	982	998	1005	1012	1019	1035	
	1042	1049	1056	1072	1079	1086	1093	1109	1116	1123	1130	1146	1153	
	1160	1167	1186	1194	1212	1221	1240	1250	1270	1282	1301	1315	1335	
	1348	1368	1379	1400	1413	1432	1445	1471	1483	1497	1509	1531	1544	
	1569	1581	1588	1607	1623	1650	1661	1668	1679	1685	1713	1724	1731	
	1761	1768	1774	1784	1791	1818	1825	1833	1856	1867	1887	1909	1922	
	1945	1953	1976	1988	2013	2025	2051	2061	2086	2098	2125	2142	2170	
	2179	2209	2217	2242	2249	2275	2282	2304	2311	2337	2345	2370	2379	
	2407	2416	2438	2461	2468	2490	2499	2517	2525	2532	2557	2564	2572	
	2595	2604	2614	2624	2652	2662	2678	2702	2725	2747	2754	2763	2771	
	2793	2803	2812	2839	2848	2871	2880	2904	2914	2921	2944	2952	2961	
	2970	2995	3002	3025	3036	3045	3069	3077	3106	3114	3138	3145	3168	
	3181	3203	3218	3239	3255	3278	3289	3315	3341	3365	3389	3411	3431	
	3453	3473	3481	3493	3504	3512	3524	3532	3545	3553	3567	3580	3693	
	3719	3733	3743	3759	3767	3798	3810	3826	3838	3853	3865	3882	3894	
	3910	3922	3938	3950	3965	3977	4008	4028	4049	4068	4087	4095	4107	
	4113	4129	4137	4145	4153	4163	4171	4179	4187	4202	4210	4218	4233	
	4241	4249	4262	4270	4278	4289	4297	4305	4328	4341	4365	4378	4402	
	4416	4439	4452	4475	4495	4519	4532	4543	4568	4577	4587	4609	4623	
	4634	4656	4669	4683	4695	4704	4727	4740	4765	4784	4805	4815	4826	
	4836	4857	4867	4877	4887	4909	4914	4923	4928	4948	4958	4969	4979	
	5000	5011	5021	5033	5056	5071	5094	5107	5120	5150	5166	5178	5187	
	5211	5224	5250	5256	5262	5281	5290	5295	5302	5317	5326	5333	5339	
	5355	5372	5389	5406	5423	5440	5457	5474	5491	5508	5526	5534	5543	
	5552	5561	5570	5579	5588	5597	5606	5624	5633	5642	5651	5660	5669	
	5678	5687	5696	5705	5721	5727	5735	5743	5750	5758	5766	5772	5780	
	5788	5796	5802	5810	5818	5826	5832	5840	5848	5877	5890	5902	5910	
	5917	5924	5931	5938	5945	5967	5981	5987	5993	5999	6005	6011	6017	

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SEQ 0197

		6038	6044	6050	6056	6062	6067	6083	6090	6097	6104	6120	6127	6134
		6141	6157	6164	6171	6178	6194	6201	6208	6215	6231	6238	6245	6252
		6268	6275	6282	6289	6311	6318	6335	6342	6359	6366	6373	6444	6456
		6163	6475	6482	6489	6532	6538	6548	6555	6565	6589	6599	6606	6613
		6619	6645	6653	6661	6670	6679	6686	6693	6715	6725	6733	6741	6768
		6782	6865	6872	6881	6889	6900	6919	6959	6966	6975	6982	6993	7012
		7038	7045	7052	7059	7083	7090	7098	7106	7113	7232	7240	7250	7264
		7271	7278	7289	7296	7303	7316	7324	7331	7338	7349	7356	7363	7381
		7398	7395	7402	7410	7558	7565	7576	7583	7590	7603	7610	7617	7625
		7754	7761	7768	7775	7787	7794	7801	7808	7823	7830	7837	7844	7852
		8029	8038	8045	8053	8060	8067	8091	8102	8129	8140	8150	8175	8204
		8232	8259	8288	8317	8343	8374	8395	8400	8406	8412	8433	8440	8446
		8452	8474	8479	8485	8496	8501	8507	8527	8533	8539	8562	8568	8579
		8585	8606	8612	8618	8641	8647	8657	8663	8688	8697	8732	8738	8744
		8764	8770	8780	8786	8808	8814	8820	8844	8850	8860	8866	8888	8894
		8900	8922	8928	8938	8944	8966	8972	8978	8999	9005	9015	9021	9043
		9049	9055	9078	9084	9094	9100	9123	9128	9133	9138	9162	9167	9172
		9177	9193	9200	9205	9210	9215	9915						
CPUTST=	***** U	1	203	546	635	662	741	10006						
CR	= 000015	231#	658	662	667	674	676	679	10006	10012	10103	10115		
CKLF	= 000200	232#	10057	10115										
CTSCC	= ***** U	4500												
C121A	024346	6641	6647#											
C121B	024372	6649	6655#											
C121C	024416	6657	6663#											
DATRAM	= 000001	1#	738											
DAO	= ***** U	2443												
DCCC	= ***** U	4457												
DCOUNT	001054	625#	9473#	9493#										
DDISP	= 177570	238#	622	712										
DISPLA	001050	622#	712#	720#										
DISPRE	000174	532#	720											
DNO	= ***** U	2421												
DM27	= ***** U	2503												
DSMR	= 177570	237#	621	711										
DSO	= ***** U	2472												
EMTO	= ***** U	8213												
EMTOA	032374	8222	8228#											
EMTUB	032406	8224	8233#											
EMTVEC	= 000050	626#	700#	701#										
ERRCNT	001044	620#	10394#											
ERRMSG	001102 G	658#												
ERRNUM	= 001203	502#	764	768#	773	777#	790	794#	797	801#	817	821#	835	839#
		851	855#	868	872#	885	888#	892	895#	899	902#	906	909#	922
		925#	929	932#	936	939#	943	946#	959	962#	966	969#	973	976#
		950	983#	996	999#	1003	1006#	1010	1013#	1017	1020#	1033	1036#	1040
		1043#	1047	1050#	1054	1057#	1070	1073#	1077	1080#	1084	1087#	1091	1094#
		1107	1110#	1114	1117#	1121	1124#	1128	1131#	1144	1147#	1151	1154#	1158
		1161#	1165	1168#	1183	1187#	1191	1195#	1209	1213#	1218	1222#	1237	1241#
		1247	1251#	1267	1271#	1279	1283#	1299	1302#	1312	1316#	1333	1336#	1345
		1349#	1366	1369#	1376	1380#	1398	1401#	1410	1414#	1430	1433#	1442	1446#
		1469	1472#	1480	1484#	1494	1498#	1506	1510#	1529	1532#	1541	1545#	1566
		1570#	1578	1582#	1585	1589#	1605	1608#	1620	1624#	1647	1651#	1658	1662#
		1665	1669#	1676	1680#	1682	1686#	1710	1714#	1721	1725#	1728	1732#	1758
		1762#	1765	1769#	1772	1775#	1781	1785#	1788	1792#	1815	1819#	1822	1826#
		1830	1834#	1853	1857#	1864	1868#	1884	1888#	1906	1910#	1919	1923#	1942

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KDJ11A.MAC 22-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0198

1946#	1950	1954#	1973	1977#	1985	1989#	2010	2014#	2022	2026#	2048	2052#
2058	2062#	2083	2087#	2095	2099#	2122	2126#	2139	2143#	2167	2171#	2176
2180#	2206	2210#	2214	2218#	2239	2243#	2246	2250#	2272	2276#	2279	2283#
2301	2305#	2308	2312#	2334	2338#	2342	2346#	2367	2371#	2376	2380#	2404
2408#	2413	2417#	2435	2439#	2451	2462#	2465	2469#	2487	2491#	2496	2500#
2514	2518#	2522	2526#	2529	2533#	2554	2558#	2561	2565#	2569	2573#	2592
2596#	2601	2605#	2611	2615#	2621	2625#	2649	2653#	2659	2663#	2675	2679#
2699	2703#	2722	2726#	2744	2748#	2751	2755#	2760	2764#	2768	2772#	2790
2794#	2800	2804#	2809	2813#	2836	2840#	2845	2849#	2868	2872#	2877	2881#
2901	2905#	2911	2915#	2918	2922#	2941	2945#	2949	2953#	2958	2962#	2967
2971#	2992	2996#	2999	3003#	3022	3026#	3033	3037#	3042	3046#	3066	3070#
3074	3078#	3103	3107#	3111	3115#	3135	3139#	3142	3146#	3165	3169#	3178
3182#	3200	3204#	3215	3219#	3236	3240#	3252	3256#	3275	3279#	3286	3290#
3312	3316#	3338	3342#	3362	3366#	3386	3390#	3408	3412#	3428	3432#	3450
3454#	3470	3474#	3478	3482#	3490	3494#	3501	3505#	3509	3513#	3521	3525#
3529	3533#	3542	3546#	3550	3554#	3564	3568#	3577	3581#	3691	3694#	3716
3720#	3730	3734#	3740	3744#	3756	3760#	3764	3768#	3795	3799#	3807	3811#
3825	3829#	3835	3839#	3850	3854#	3862	3866#	3879	3883#	3891	3895#	3907
3911#	3919	3923#	3935	3939#	3947	3951#	3962	3966#	3974	3978#	4005	4009#
4025	4029#	4046	4050#	4065	4069#	4085	4088#	4093	4096#	4105	4108#	4111
4114#	4127	4130#	4135	4138#	4143	4146#	4151	4154#	4161	4164#	4169	4172#
4177	4180#	4185	4188#	4200	4203#	4208	4211#	4216	4219#	4231	4234#	4239
4242#	4247	4250#	4260	4263#	4268	4271#	4276	4279#	4287	4290#	4295	4298#
4303	4306#	4325	4329#	4338	4342#	4362	4366#	4375	4379#	4399	4403#	4413
4417#	4436	4440#	4449	4453#	4472	4476#	4492	4496#	4516	4520#	4529	4533#
4540	4544#	4563	4567#	4574	4578#	4584	4588#	4606	4610#	4620	4624#	4631
4635#	4653	4657#	4666	4670#	4680	4684#	4692	4696#	4701	4705#	4724	4728#
4737	4741#	4762	4766#	4781	4785#	4802	4806#	4812	4816#	4823	4827#	4833
4837#	4854	4858#	4864	4868#	4874	4878#	4884	4888#	4907	4910#	4912	4915#
4921	4924#	4926	4929#	4945	4949#	4955	4959#	4966	4970#	4976	4980#	4997
5001#	5008	5012#	5018	5022#	5030	5034#	5053	5057#	5068	5072#	5091	5095#
5104	5108#	5117	5121#	5147	5151#	5163	5167#	5176	5179#	5185	5188#	5208
5212#	5221	5225#	5247	5251#	5253	5257#	5260	5263#	5279	5282#	5287	5291#
5293	5296#	5300	5303#	5315	5318#	5327	5327#	5331	5334#	5337	5340#	5353
5356#	5370	5373#	5387	5390#	5404	5407#	5421	5424#	5438	5441#	5455	5458#
5472	5475#	5489	5492#	5506	5509#	5524	5527#	5532	5535#	5541	5544#	5550
5553#	5559	5562#	5568	5571#	5577	5580#	5586	5589#	5595	5598#	5604	5607#
5622	5625#	5631	5634#	5640	5643#	5649	5652#	5658	5661#	5667	5670#	5676
5679#	5685	5688#	5694	5697#	5703	5706#	5719	5722#	5725	5728#	5732	5736#
5740	5744#	5748	5751#	5755	5759#	5764	5767#	5770	5773#	5777	5781#	5785
5789#	5794	5797#	5800	5803#	5807	5811#	5815	5819#	5824	5827#	5830	5833#
5837	5841#	5845	5849#	5875	5878#	5888	5891#	5900	5903#	5908	5911#	5915
5918#	5922	5925#	5929	5932#	5936	5939#	5943	5946#	5965	5968#	5979	5982#
5985	5988#	5991	5994#	5997	6000#	6003	6006#	6009	6012#	6015	6018#	6036
6039#	6042	6045#	6048	6051#	6054	6057#	6060	6063#	6065	6068#	6081	6084#
6088	6091#	6095	6098#	6102	6105#	6118	6121#	6125	6128#	6132	6135#	6139
6142#	6155	6158#	6162	6165#	6169	6172#	6176	6179#	6192	6195#	6199	6202#
6206	6209#	6213	6216#	6229	6232#	6236	6239#	6243	6246#	6250	6253#	6266
6269#	6273	6276#	6280	6283#	6287	6290#	6309	6312#	6316	6319#	6333	6336#
6340	6343#	6357	6360#	6364	6367#	6371	6374#	6442	6445#	6454	6457#	6461
6464#	6473	6476#	6480	6483#	6487	6490#	6530	6533#	6536	6539#	6546	6549#
6553	6556#	6562	6566#	6586	6590#	6597	6600#	6604	6607#	6611	6614#	6617
6620#	6643	6646#	6651	6654#	6659	6662#	6668	6671#	6677	6680#	6684	6687#
6691	6694#	6713	6716#	6723	6726#	6731	6734#	6739	6742#	6766	6769#	6780
6783#	6803	6806#	6870	6873#	6879	6882#	6887	6890#	6898	6901#	6916	6920#
6957	6960#	6964	6967#	6973	6976#	6980	6983#	6991	6994#	7009	7013#	7036

		7039#	7043	7046#	7050	7053#	7057	7060#	7081	7084#	7086	7091#	7096	7099#
		7104	7107#	7111	7114#	7230	7233#	7238	7241#	7248	7251#	7262	7265#	7269
		7272#	7276	7279#	7287	7290#	7294	7297#	7301	7304#	7314	7317#	7322	7325#
		7329	7332#	7336	7339#	7347	7350#	7354	7357#	7361	7364#	7379	7382#	7386
		7389#	7393	7396#	7400	7403#	7408	7411#	7356	7559#	7563	7566#	7574	7577#
		7581	7584#	7588	7591#	7601	7604#	7608	7611#	7615	7618#	7623	7626#	7752
		7755#	7759	7762#	7766	7769#	7773	7776#	7785	7788#	7792	7795#	7799	7802#
		7806	7809#	7821	7824#	7828	7831#	7835	7838#	7842	7845#	7850	7853#	8027
		8030#	8036	8039#	8043	8046#	8051	8054#	8058	8061#	8065	8068#	8089	8092#
		8099	8103#	8127	8130#	8138	8141#	8148	8151#	8173	8176#	8202	8205#	8230
		8233#	8257	8260#	8286	8289#	8315	8318#	8341	8344#	8372	8375#	8393	8396#
		8397	8401#	8404	8407#	8410	8413#	8431	8434#	8437	8441#	8444	8447#	8450
		8453#	8472	8475#	8476	8480#	8483	8486#	8494	8497#	8498	8502#	8505	8508#
		8524	8528#	8531	8534#	8537	8540#	8559	8563#	8566	8569#	8576	8580#	8583
		8586#	8603	8607#	8610	8613#	8616	8619#	8638	8642#	8645	8648#	8654	8658#
		8661	8664#	8686	8689#	8694	8698#	8729	8733#	8736	8739#	8742	8745#	8761
		8765#	8768	8771#	8777	8781#	8784	8787#	8805	8809#	8812	8815#	8818	8821#
		8841	8845#	8848	8851#	8857	8861#	8864	8867#	8885	8889#	8892	8895#	8898
		8901#	8919	8923#	8926	8929#	8935	8939#	8942	8945#	8963	8967#	8970	8973#
		8976	8979#	8996	9000#	9003	9006#	9012	9016#	9019	9022#	9040	9044#	9047
		9050#	9053	9056#	9075	9079#	9082	9085#	9091	9095#	9098	9101#	9120	9124#
		9126	9129#	9131	9134#	9136	9139#	9159	9163#	9165	9168#	9170	9173#	9175
		9178#	9190	9194#	9198	9201#	9203	9206#	9208	9211#	9213	9216#	9240	9244#
		9247	9250#	9253	9256#	9259	9262#	9264	9267#	9287	9291#	9314	9317#	9323
		9326#	9363	9366#	9377	9380#	9400	9403#	9415	9418#	9448	9451#	9487	9490#
		9510	9513#	9520	9523#	9566	9569#	9574	9577#	9607	9611#	9615	9618#	9621
		9624#	9652	9656#	9673	9676#	9687	9690#	9694	9697#	9699	9703#	9732	9735#
		9756	9759#	9783	9787#	9819	9823#	9842	9845#	9853	9856#	9866	9870#	9879
		9883#	9901	9904#	9913	9916#	9937	9941#	9943	9946#	9958	9961#		
ERRIN =	000000	500#												
ERRVEC =	000004	319#	709	710#	721#									
ERR1	001226	674#	10408											
ERR2	001242	676#	10411											
ET	= ***** U	8792												
ETO	= ***** U	8826												
EVENT	040314	9632#												
EXPDAT	001034	516#	5866#	5879#	5896	6350#	6351	6361	6368	7027#	7028#	7054	7370#	7397
		7404												
EXPIR1	037250	9328	9339#											
FINNOP	021664	5894	5949#											
FIN116	023732	6447	6514#											
FIN117	024076	6559	6568#											
FIN120	024246	6591	6615	6621#										
FIN121	024730	6634	6749#											
FIN122	025214	6787	6836#											
FIN125	026514	7062	7116	7120	7212#									
FIN126	027704	7418	7541#											
FIN127	030214	7628	7632	7735#										
FIN130	031372	7855	7859	8015#										
FLAG	001042	619#												
FPP1ST =	000001	1#	193	203	214	546	633	645	646	667	674	695	9966	10006
		10016												
FPVEC =	000244	486#												
FRSTST	001510	747#												
GNS	= ***** U	531	10324	10325	10326	10327	10328							
GPROTS	001742	875#												

[illegible]

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 RDJ11A.MAC 12-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SET 0202

MD4	=	***** U	823	
MD5	=	***** U	842	
MD6	=	***** U	858	
MEMTO		032324	82130	
MEY		034736	87920	
META		035000	88030	8815
METH		035006	8800	88090
METD		035022	8810	88150
METF		035036	8816	88210
METO		035056	88260	
METOA		035126	88410	
METOB		035134	8834	88450
METOC		035152	8846	88510
METOD		035176	88570	
METOE		035204	8852	88610
METOF		035222	8862	88670
ME100	=	***** U	5343	
ME101	=	***** U	5360	
ME102	=	***** U	5376	
ME103	=	***** U	5393	
ME104	=	***** U	5410	
ME105	=	***** U	5427	
ME106	=	***** U	5444	
ME107	=	***** U	5461	
ME110	=	***** U	5478	
ME111	=	***** U	5495	
ME112	=	***** U	5512	
ME113	=	***** U	5611	
ME113A	=	***** U	5710	
ME114	=	***** U	5852	
ME115	=	***** U	6293	
ME116	=	***** U	6396	
ME117	=	***** U	6516	
ME120	=	***** U	6570	
ME121	=	***** U	6626	
ME122	=	***** U	6752	
ME123	=	***** U	6838	
ME124	=	***** U	6926	
ME125	=	***** U	7018	
ME126	=	***** U	7214	
ME127	=	***** U	7543	
ME130	=	***** U	7737	
MIAL		035746	90280	
MIAL		035776	90400	9050
MIALB		036004	9036	90440
MIALD		036020	9045	90500
MIALF		036034	9051	90560
MIL		035502	89510	
MILA		035532	89630	8973
MILAO		035656	82970	
MILB		035540	8959	89670
MILD		035554	8968	89730
MILF		035570	8974	89790
MILIBO		032766	83250	
MILLO		032110	81570	
MILLOA		032160	8166	81710

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SEQ 0203

MILOB	032172	8168	8176	
MILO	035602	8982		
MILOA	035640	8996		
MILOB	035646	8990	9000	
MILOC	035664	9001	9006	
MILOD	035710	9012		
MILOE	035716	9007	9016	
MILOF	035734	9017	9022	
MIOT	034476	8718		
MIOTA	034524	8729	8739	
MIOTB	034532	8726	8733	
MIOTD	034546	8734	8739	
MIOTF	034562	8740	8745	
MIOTO	032216	8185		
MITO	034574	8748		
MITOA	034630	8761		
MITOB	034636	8756	8765	
MITOC	034654	8766	8771	
MITOD	034700	8777		
MITOE	034706	8772	8781	
MITOF	034724	8782	8787	
MJ	011512	3458		
MJP	012434	3704		
MJP17	012450	3713		
MJP27	012476	3727		
MJP27A	012514	3728	3735	
MJP37	012576	3736	3761	
MJP37A	012614	3762	3769	
MJP67	012524	3737	3770	
MJP67A	012542	3738	3745	
MJP67B	012556	3747	3751	
MJP77	012560	3751	3753	
MJP77E	012624	3754	3773	
MJRA	013476	3983		
MJR27	013536	3996	4002	
MJR27A	013576	4003	4010	
MJR27B	013616	4014	4043	
MJR37	013704	4013	4037	
MJR37A	013744	4044	4051	
MJR6A	013700	4034	4062	
MJR6B	013702	4033	4035	
MJR67	013620	4016	4054	
MJR67A	013660	4023	4030	
MJR77	013764	4022	4035	4056
MJR77A	014024	4063	4070	
MJSI	036046	9061		
MJSIA	036104	9075		
MJSIB	036112	9069	9079	
MJSIC	036130	9080	9085	
MJSID	036154	9091		
MJSIE	036162	9086	9095	
MJSIF	036200	9096	9101	
MJSR	012624	3777		
MJSRA	012756	3814	3818	3888
MJSRB	013147	3870	3873	3944
MJSRC	013330	3927	3929	

MJSR1	012760	3787	3820*
MJSR1A	012776	3821	3820*
MJSR1B	013026	3833	3840*
MJSR2	012666	3792*	3832
MJSR2A	012704	3793	3800*
MJSR2B	012734	3805	3812*
MJSR3	013144	3818	3876*
MJSR3A	013162	3877	3884*
MJSR3B	013212	3889	3896*
MJSR4	013050	3804	3847*
MJSR4A	013066	3848	3855*
MJSR4B	013116	3860	3867*
MJSR5	013332	3873	3932*
MJSR5A	013350	3933	3940*
MJSR5B	013400	3945	3952*
MJSR6	013236	3859	3904*
MJSR6A	013254	3905	3912*
MJSR6B	013304	3917	3924*
MJSR7	013424	3916	3929
MJSR7A	013442	3960	397*
MJSR7E	013472	3972	3979*
MJU1	011600	3465	3487*
MJU1A	011616	3488	3495*
MJU2	011532	3467*	3475
MJU2A	011550	3468	3475*
MJU2B	011564	3476	3483*
MJU3	011630	3486	3498*
MJU3A	011646	3499	3506*
MJU3B	011662	3507	3514*
MJU4	011744	3515	3538*
MJU4A	011762	3540	3547*
MJU4B	012000	3548	3555*
MJU5	011674	3517*	3559
MJU5A	011712	3519	3526*
MJU5B	011730	3527	3534*
MJU6	012014	3535	3561*
MJU6A	012032	3562	3569*
MJU7	012052	3572	3574*
MJU7E	012070	3575	3582*
MJ2	011576	3484	3486*
MJ5	012012	3518	3556
MJ7	012046	3570	3572*
MARK	017466	5266*	
MRL5	011164	3319*	
MUTST-	000001	1*	
		10016	193
		10268	203
			214
			546
			632
			658
			667
			674
			695
			738
			9966
			10006
MUTSO=	***** U	4116	
MVCC	014746	4311*	
MVLC =	000250	335*	
MH11	007022	2628*	
MH22	007474	2816*	
MNCCC	015652	4639*	
MRL B1	010636	3185*	
MRL CC	016204	4789*	
MRL O	010550	3151*	
MRL2	010732	3222*	

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 KD011A.MAC 22-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0205

MRL3	011024	32590	
MRL4	011114	32930	
MRL5	***** U	3319	
MRL6	011236	33450	
MRL7	011304	33690	
MRRB1	011454	34350	
MRRCC	016310	48410	
MRR0	011422	34150	
MRT	033630	85130	
MRTA	033656	85240	8534
MRTB	033664	8521	85280
MRTF	033700	8529	85340
MRTF	033714	8535	85400
MRTU	033726	85460	
MRT0A	033762	85590	
MRT0B	033770	8554	85630
MRT0C	034006	8564	85690
MRT0D	034032	85760	
MRT0E	034040	8570	85800
MRT0F	034056	8581	85860
MRTS	014030	40750	
MSBCC	016020	47090	
MSBCCC	016104	47450	
MSER	177744	4900	
MSG1	042036	9980	100060
MSG2	042077	9990	100120
MS0B	017372	52280	
MSPAA	005462	21030	
MSPAU	031372	80160	
MSPB	003044	11980	
MSPBB	005562	21460	
MSPC	003104	12250	
MSPD	003150	12540	
MSPE0	005222	12860	
MSPF	003300	13190	
MSPG	003356	13520	
MSPH	003430	13830	
MSPI	003510	14170	
MSPJ	003564	14490	
MSPK	003730	15130	
MSPM	004012	15480	
MSPN	004110	15920	
MSP0	004172	16270	
MSPP	004326	16900	
MSPQ	004444	17370	
MSPR	004602	17950	
MSPS	004710	18380	
MSPT	004772	18720	
MSPU	005020	18920	
MSPV	005150	19580	
MSPV0	005100	19270	
MSPX	005230	19930	
MSPY	005314	20300	
MSPZ	005376	20600	
MSP0	003006	11710	
MSTB3	005646	21830	

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 KDJ11A,MAC 22-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0206

MST0	033072	83510			
MST0E	033152	8358	83700		
MST0EE	033164	8369	83750		
MST4	005734	22210			
MST4B	006006	22530			
MST5	006062	22850			
MST5B	006130	23150			
MST6	006206	23490			
MST7	006270	23830			
MSW37	011356	33930			
MSXT	017134	51260			
MSXTCC	016736	50380			
MS11	007220	27060			
MS22	007562	28520			
MS33	010072	29740			
MS77	010446	31180			
MTP	034070	85900			
MTPA	034336	86700			
MTPAA	034426	8681	8682	8691	87000
MTPAE	034456	8705	87090		
MTPAH	034420	8680	86940		
MTPAL	034404	86840	87060	87070	8708
MTPB	034132	8598	86070		
MTPF	034162	8614	86190		
MTPD	034174	86250			
MTPDA	034230	86380			
MTPDB	034236	8633	86420		
MTPDC	034254	8643	86460		
MTPDD	034300	86540			
MTPDE	034306	8649	86580		
MTPDF	034324	8659	86640		
MTPG	034146	8608	86130		
MTPR	034124	86030	8613		
MTRPD	032432	82350			
MTRY	031570	80710			
MTRYA	031654	8081	80920		
MTRYB	031700	8096	81030		
MTRYM	031732	81130			
MTSO	014746	4222	43100		
MTT	033176	83800			
MTTA	033242	8389	83970	8407	
MTTB	033250	8390	84010		
MTTD	033264	8402	84070		
MTTE	033300	8408	84130		
MTTR	033430	84570			
MTTRA	033504	8466	84760		
MTTRB	033512	8467	84800		
MTTRC	033530	8481	84860		
MTTRD	033572	8488	84980		
MTTRE	033600	8489	85020		
MTTRF	033616	8503	85080		
MTTS	033312	84180			
MTTSA	033356	8427	84340		
MTTSB	033366	8428	84410		
MTTSD	033402	8442	84470		
MTTSE	033416	8448	84530		

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KDJ11A.MAC 22-FEB-84 15:12 CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0207

[illegible]

KDJ11A.MAC	22-FEB...B1	KDJ11A.MAC	22-FEB...B5	KDJ11A.MAC	22-FEB...B9	KDJ11A.MAC	22-FEB...B13
KDJ11A.MAC	22-FEB...C1	KDJ11A.MAC	22-FEB...C5	KDJ11A.MAC	22-FEB...C9	KDJ11A.MAC	22-FEB...C13
KDJ11A.MAC	22-FEB...D1	KDJ11A.MAC	22-FEB...D5	KDJ11A.MAC	22-FEB...D9	KDJ11A.MAC	22-FEB...D13
KDJ11A.MAC	22-FEB...E1	KDJ11A.MAC	22-FEB...E5	KDJ11A.MAC	22-FEB...E9	KDJ11A.MAC	22-FEB...E13
KDJ11A.MAC	22-FEB...F1	KDJ11A.MAC	22-FEB...F5	KDJ11A.MAC	22-FEB...F9	KDJ11A.MAC	22-FEB...F13
KDJ11A.MAC	22-FEB...G1	KDJ11A.MAC	22-FEB...G5	KDJ11A.MAC	22-FEB...G9	KDJ11A.MAC	22-FEB...G13
KDJ11A.MAC	22-FEB...H1	KDJ11A.MAC	22-FEB...H5	KDJ11A.MAC	22-FEB...H9	KDJ11A.MAC	22-FEB...H13
KDJ11A.MAC	22-FEB...I1	KDJ11A.MAC	22-FEB...I5	KDJ11A.MAC	22-FEB...I9	KDJ11A.MAC	22-FEB...I13
KDJ11A.MAC	22-FEB...J1	KDJ11A.MAC	22-FEB...J5	KDJ11A.MAC	22-FEB...J9	KDJ11A.MAC	22-FEB...J13
KDJ11A.MAC	22-FEB...K1	KDJ11A.MAC	22-FEB...K5	KDJ11A.MAC	22-FEB...K9	KDJ11A.MAC	22-FEB...K13
KDJ11A.MAC	22-FEB...L1	KDJ11A.MAC	22-FEB...L5	KDJ11A.MAC	22-FEB...L9	KDJ11A.MAC	22-FEB...L13
KDJ11A.MAC	22-FEB...M1	KDJ11A.MAC	22-FEB...M5	KDJ11A.MAC	22-FEB...M9	KDJ11A.MAC	22-FEB...M13
KDJ11A.MAC	22-FEB...N1	KDJ11A.MAC	22-FEB...N5	KDJ11A.MAC	22-FEB...N9	KDJ11A.MAC	22-FEB...N13