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IDENTIFICATION

PRODUCT CODE: AC-E896C-MC
PRODUCT NAME: CXTRACC IP79F MODULE
PRODUCT DATE: SEPTEMBER 1978
MAINTAINER: DEC/X11 SUPPORT GROUP

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MAY BE REQUIRED FOR
PROGRAM TO OPERATE

1. ABSTRACT

TRA IS AN IOMDD THAT EXERCISES A TAPE DRIVE ON AN TR79F CONTROLLER. IT EXERCISES THE DRIVES BY DOING WRITES, BACKSPACES, READS, AND IN-CORE COMPARISONS. ALL ERRORS DETECTED ARE REPORTED ON THE CONSOLE TTY.

2. REQUIREMENTS

HARDWARE: 1 TAPE DRIVE WITH A TR79F CONTROLLER

STORAGE:: TRA REQUIRES:

- 1: DECIMAL WORDS: 1089
- 2: DECIMAL WORDS: 02101
- 3: OCTAL BYTES: 4202

3. PASS DEFINITION

CNE PASS OF THE TRA MODULE CONSISTS OF 512 CYCLES OF THE BASIC TEST SEQUENCE (WRITES, BACKSPACES, READ, DATA-CHECK). THE TEST SEQUENCE WRITES 1024 WORDS, BACKSPACES SAME, READS THE FIRST 256 WORDS, AND DATA-CHECKS SAME.

4. EXECUTION TIME

CNE PASS OF TRA RUNNING ALCNE ON A PDP-11/40 TAKES APPROXIMATELY 1 MINUTE.

5. CONFIGURATION REQUIREMENTS

DEFAULT PARAMETERS:

DEVADR: 16400, VECTOR: 170, BPI: 4, DEVCNT: 1

REQUIRED PARAMETERS:

NONE

DEVICE/OPTION SETUP

MAKE CERTAIN THAT ALL DRIVES ARE POWERED UP, WRITE ENABLED, AND READY

7. MODULE OPERATION

TEST SEQUENCE:

A. SETUP DEVICE REGISTER ADDRESSES AND MODULE VARIABLES
B. RESET ALL DRIVES CN-LINE AND DROP ALL THAT ARE NOT
C. GET A DRIVE ADDRESS
D. DO A WRITE ADDRESS
E. DO A BACKSPACE -- IF ERRORS, REPORT AND RETRY UP TO RETRY LIMIT
F. DO A READ -- IF ERRORS, REPORT AND RETRY UP TO RETRY LIMIT
G. DO A DATA CHECK -- IF ERRORS, REPORT AND CONTINUE
H. IF END OF DATA, GO TO C
I. IF END OF DRIVES, REPORT AND GO TO C
J. IF END OF TAPE, REMIND ALL DRIVES AND GO TO B
K. IF END OF TAPE, REMIND ALL DRIVES AND GO TO B

8. OPERATION OPTIONS

SPI BIT 0 SET(1):
IF THE RETRY LIMIT IS EXCEEDED ON ANY FUNCTION, A HARD ERROR
IS ASSUMED AND THE DRIVE IS DROPPED
SPI BIT 0 CLEAR(0):
IF THE RETRY LIMIT IS EXCEEDED, THE FUNCTION IS ABORTED AND
THE TESTING CONTINUES

9. NON-STANDARD PRINTOUTS

- A. MOST PRINTOUTS HAVE THE STANDARD FORMATS DESCRIBED IN THE DEC/X11 DOCUMENT
- B. ERROR MESSAGES DUMP THE CONTENTS OF THE 4 TR79F REGISTERS AND THE CYCLE COUNT IN THE FOLLOWING ORDER:
TRCR TRST TRWC TRRA CYCLE COUNT
- C. THE CYCLE COUNT LOCATION IN THE ERROR MESSAGE CONTAINS THE CYCLE COUNT AT THE TIME OF THE ERROR. THIS SHOULD AID IN NOTING ANY BAD SPOTS ON A TAPE.
IF THE OPERATOR IS REASONABLY SURE OF A BAD SPOT ON THE TAPE HE CAN ENTER THE CYCLE COUNT AND THE SUSPECTED BAD SPOT IN THE TABLE "BAD SPOTS" AND THE PROGRAM WILL TREAT IT AS BAD NOT AN ERROR. WITHOUT INDICATING AN ERROR. THESE BAD SPOTS SHOULD BE ENTERED IN THE TABLE. FROM THE TOP WITH A 17777 AS AN END OF THE ENTRIES. THERE IS ONLY ROOM FOR 16 ENTRIES. DO NOT WRITE OVER THE 17TH LOCATION IN THE TABLE.

NOTE: WHEN THE ENTRY IS MADE INTO THE BAD SPOT TABLE EACH ONE MUST BE MADE ONE AT A TIME. BE SURE TO RUN THE PROGRAM EACH TIME AN ENTRY IS MADE. BECAUSE THE CYCLE COUNT IS ALTERED BY TWO OR THREE ERRORS AT THE TIME THE TABLE HAS A NEW ENTRY. FOR EXAMPLE, IF 47 IS ENTERED IN THE TABLE AT CYCLE COUNTS 47, 64 AND 75, COUNTS WILL BE 65 AND 76. TWO CYCLE COUNTS WILL BE MADE ONE ENTRY THEN RUN THE PROGRAM TO DETERMINE THE PROPER CYCLE COUNT FOR THE NEXT RECORD. THE BEST WAY TO MAKE ONE ENTRY FOR THE NEXT RECORD IS TO TAKE ONE ENTRY THEN RUN THE PROGRAM TO DETERMINE THE PROPER CYCLE COUNT FOR THE NEXT RECORD. THE NATURE OF MAG TAPES THIS BAD SPOT TABLE MAY NOT BE TO TAPES WORK SINCE THE DRIVE MAY WRITE THE 64TH (OR WHICH-EVER) RECORD IN SLIGHTLY DIFFERENT PLACES EACH PASS DOWN THE TAPE.

NOTE: DUE TO THE TAPE DRIVE BEING ODD PARITY, THE WRITE BUFFER IS CONTAINED IN THE MODULE WITH AN ODD PARITY DATA PATTERN.

```

000000 - ICMOD <TRAC > 164000 170 4 0 0 512 125
000000 *MODULE 140000 TRAC 164000 170 4 0 0 512 125
          ; *TITLE TRAC DEC/78 SYSTEM EXERCISER MODULE
          ; *CXCOM VERSION 6 23-NOV-78
          ;*****LIST BIN*****
000000 *BEGIN:
000000 051124 C41501 040 *MODNAM: .ASCII /TRAC / ;MODULE NAME
000000 000000 *YFLAG: .BYTE OPEN ;USED TO KEEP TRACK OF WBOFF USAGE
000000 164000 *ADDR: 164000+0 ;1ST DEVICE ADDR
000000 000170 *VECTCR: 170+0 ;1ST DEVICE VECTOR.
000000 000120 *PRI: .BYTE PRTV4+0 ;1ST BR LEVEL.
000000 000130 *PR2: .BYTE PRTV0+0 ;2ND BR LEVEL.
000000 000140 *DVID1: C+1 ;DEVICE INDICATOR 1.
000000 000160 *SR1: OPEN ;SWITCH REGISTER 1.
000000 000180 *SR2: OPEN ;SWITCH REGISTER 2.
000000 000200 *SR3: OPEN ;SWITCH REGISTER 3.
000000 000220 *SR4: OPEN ;SWITCH REGISTER 4.
          ;*****
000026 *STAT: 140000 ;STATUS WCRD.
000030 *INIT: START ;MODULE START ADDR.
000032 *SPINT: WCDSP ;MODULE STACK POINTER.
000034 *PASCNT: C ;PASS COUNTER.
000036 *ICOUNT: 512. ;# OF ITERATIONS PER PASS=512.
000040 *SOFCNT: C ;LOC TO COUNT ITERATIONS.
000042 *HRDCNT: C ;LOC TO SAVE TOTAL SOFT ERRORS
000044 *SOPPAS: C ;LOC TO SAVE TOTAL HARD ERRORS
000046 *HRDPAS: C ;LOC TO SAVE SOFT ERRORS PER PASS
000048 *SVSCNT: C ;LOC TO SAVE HARD ERRORS PER PASS
000050 *FANNUM: C ;# OF SVR ERRORS ACCUMULATED
000052 *CONFIG: C ;HOLDS RANDOM # WHEN RAND MACRO IS CALLED
000054 *RES1: C ;RESERVED FOR MONITOR USE
000056 *RES2: C ;RESERVED FOR MONITOR USE
000058 *SVR0: OPEN ;LOC TO SAVE R0.
000060 *SVR1: OPEN ;LOC TO SAVE R1.
000062 *SVR2: OPEN ;LOC TO SAVE R2.
000064 *SVR3: OPEN ;LOC TO SAVE R3.
000066 *SVR4: OPEN ;LOC TO SAVE R4.
000068 *SVR5: OPEN ;LOC TO SAVE R5.
000070 *SVR6: OPEN ;LOC TO SAVE R6.
000072 *CSR4: OPEN ;ADDR OF CURRENT CSR.
000074 *ACSP: OPEN ;ADDR OF GOOD DATA, OR
000076 *WASADE: OPEN ;CONTENTS OF CSR.
000078 *ASAT: OPEN ;ADDR OF BAD DATA, OR
000080 *FRRTVF: OPEN ;STATUS REG CONTENTS.
000082 *ASB: OPEN ;TYPE OF ERROR
000084 *AWAS: OPEN ;EXPECTED DATA.
000086 *PSRPT: RFRPT ;ACTUAL DATA.
000088 *WDRD: OPEN ;RESTART ADDRESS AFTER END OF PASS
000090 *WDRF: OPEN ;WORDS TO MEMORY PER ITERATION
000092 *INTR: OPEN ;WORDS FRCH MEMORY PER ITERATION
000094 *IDNUM: 125 ;# OF INTERRUPTS PER ITERATION
          ;MODULE IDENTIFICATION NUMBER=125

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000040 ;*****
          ;REPT SPSIZ ;MODULE STACK STARTS HERE.
          ;*LIST
          ;*WORD 0
          ;*LIST
          ;*ENDE
000224 *WCDSP:
          ;*****

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221
222
223 000224 005767 177604 .GLOBL SR
224 000225 001076 RESTR: TST PASCNT ;ANY PASSES VET?
225 000226 000000 000000 BNE RESTR: 15 ;YES THIS IS 1 RESTART
226 000227 000000 000000 MOV #024,WDPR ;1024 WORDS FROM MEM/ITERATION
227 000228 000000 000000 MOV #256,WDTO ;256 WORDS TO MEM/ITERATION
228 000229 000000 000000 MOV #4,INTR ;4 INTERRUPTS/ITERATION
229 000230 000000 000000 CLR FLAG ;CLEAR FLAG
230 000231 000000 000000 MOV DVID,DRIVE ;GET DRIVE INDICATOR
231 000232 000000 000000 CLR ;ALSO SAVE IT IN DRIVE
232 000233 000000 000000 MOV DRYVE ;ZERO UNIT NUMBER
233 000234 000000 000000 MOV #400,DRVSFT ;INITIALIZE THE SHIFTED DRIVE #
234 000235 000000 000000 BITR #BIT14,@#41 ;IF TM IS THE LOAD MEDIUM THEN
235 000236 000000 000000 BFC 3S ;BEGIN
236 000237 000000 000000 MOVR #40,RO ;GET LOAD-DEVICE NUMBER
237 000238 000000 000000 MOV #1,R1 ;INITIALIZE TM REGS. AND ALL DRIVES
238 000239 000000 000000 TSTR R0 ;WHILE R0>0 DO
239 000240 000000 000000 BEQ 2S ;BEGIN
240 000241 000000 000000 ASL R1 ;SHIFT DEVICE MASK TO NEXT
241 000242 000000 000000 RCB R0 ;DOWNCOUNT DEVICE NUMBER
242 000243 000000 000000 RP 1S ;END
243 000244 000000 000000 BITB R1,DRIVE ;IF LOAD-DEVICE SELECTED THEN
244 000245 000000 000000 BEQ 1S ;BEGIN
245 000246 000000 000000 MOVB #40,DRYVE ;DRIVE LOAD-DEVICE NUMBER TO DRYVE
246 000247 000000 000000 JSR PC,DRCP ;DRCP LOAD-DEVICE
247 000248 000000 000000 MSGNS,BEGIN,DRP ;ASCII MESSAGE CALL WITH COMMON HEADER
248 000249 000000 000000 ;END
249 000250 000000 000000 ;END
250 000251 000000 000000 MOV #1,DRYVE ;INITIALIZE DRIVE COUNTER
251 000252 000000 000000 JSP PC,SETUP ;GENERATE REGISTER ADDRESSES
252 000253 000000 000000 JSR PC,REZET ;INITIALIZE TM REGS. AND ALL DRIVES
253 000254 000000 000000 TST DRYVE ;DRCP THE MODULE ?
254 000255 000000 000000 BNE 11S ;NO
255 000256 000000 000000 JMP FINI ;YES
256 000257 000000 000000 JSR PC,REWIND ;REWIND ALL DRIVES
257 000258 000000 000000 CLR CVCKNT ;ZERO TCTAL CYCLE COUNTER
258 000259 000000 000000 ;
259 000260 000000 000000 ;
260 000261 000000 000000 REST1: GETPAS,REGIN,IBUFVA ;GET PHYSICAL ADDRESS FROM 16-BIT IBUFVA
261 000262 000000 000000 MOV IPUSZ,WCNT2 ;SAVE READ BUFFER SIZE
262 000263 000000 000000 NEG WCNT2 ;GET THE 2'S COMPLEMENT
263 000264 000000 000000 ;
264 000265 000000 000000 ;
265 000266 000000 000000 STRT: GETPAS,REGIN,ORUFVA ;GET PHYSICAL ADDRESS FROM 16-BIT ORUFVA
266 000267 000000 000000 MOV ORUSZ,WCNT1 ;SAVE WRITE BUFFER SIZE
267 000268 000000 000000 NEG WCNT1 ;GET THE 2'S COMPLEMENT
268 000269 000000 000000 ;
269 000270 000000 000000 ;
270 000271 000000 000000 NEXT: JSE PC,DRVADR ;GET A DRIVE ADDRESS
271 000272 000000 000000 TST DRYVE ;ANY DRIVES LEFT ?
272 000273 000000 000000 BEQ FINI ;NO GO DRCP THE MODULE
273 000274 000000 000000 BITR #BIT3,FLAG ;ALL DRIVES DONE ?
274 000275 000000 000000 BNE STRT ;YES, GO GET ANOTHER BLOCK
275 000276 000000 000000 BIC #1400,@MTC ;CLEAR OUT UNIT NUMBER
276 000277 000000 000000 RIS DRVSFT,@MTC ;LOAD SELECTED DRIVE NUMBER
    
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277 000524 003277 000004 003034 BIT #BIT2,@MTC ;WRITE PROTECTED ?
278 000525 000000 000000 BEQ 1S ;NO, CONTINUE
279 000526 000000 000000 JSR PC,DRCP ;YES, DROP THE DRIVE
280 000527 000000 000000 MSGNS,REGIN,DRP ;ASCII MESSAGE CALL WITH COMMON HEADER
281 000528 000000 000000 ;GO ON TO NEXT DRIVE
282 000529 000000 000000 BIT #BIT7,@MTC ;DRIVE READY ?
283 000530 000000 000000 BNE 2S ;YES, CONTINUE
284 000531 000000 000000 JSR PC,NOTRDY ;NO, WAIT FOR READY
285 000532 000000 000000 HP STRT ;TRY AGAIN
286 000533 000000 000000 CLR TRVI ;ZERO RETRY COUNTERS
287 000534 000000 000000 INC CVCKNT
    
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288
289
290 000576 004567 000322 RITE: JSR R5,WRITE ; WRITE SOME DATA
291 000602 000504 ; RETRV1 ; IF ERRORS, TRY IT AGAIN
292 000604 132767 000004 003176 BR BIT2,FLAG ; DID THE TAPE REACH EDT ?
293 000612 001416 BIC BACK ; NO, CONTINUE
294 000614 142767 000004 003166 BICR #BIT2,FLAG ; YES, CLEAR THE EDT FLAG
295 000622 004767 000466 JSR PC,REWIND ; REWIND ALL DRIVES
296 000626 005967 001722 CLR CTRKNT ; ZERO TOTAL CYCLE COUNTER
297 000632 000705 STRT ; START OVER AT BEGINNING OF TAPES
298 000634 004567 000316 BACK: JSR R5,BACKSP ; BACKSPACE THE DRIVE
299 000640 000240 NOP ; ERROR RETURN
300 000642 004567 000332 REED: JSR R5,READ ; READ THE DATA WRITTEN
301 000646 000504 BR R4,TRV2 ; IF ERRORS, TRY AGAIN
302 000650 010067 177206 DATCK: MOV R0,SVRO ; SAVE R0
303 000654 010167 177204 MOV R1,SVR1 ; SAVE R1
304 000658 015467 001644 CLR COUNT ; LOAD GOOD POINTER
305 000664 012700 004934* MCV #TRUP,R0 ; LOAD BAD POINTER
306 000670 012701 004120* MOV #TRUP,R1
307 000674 012777 002800 DAT1: CMP #TR10,RSR
308 000676 001904 BNE #3,COUNT
309 000678 002767 000003 001616 1S: CMB #3,COUNT
310 000679 003765 RLE ORX
311 000679 001011 CMP #0,@R1 ; DATA GOOD?
312 000679 001911 BCC #0,@R1 ; BR=YES
313 000679 005267 INC COUNT ; LOAD ERROR INFO
314 000679 011067 001604 MOV @R0,ASB
315 000679 011167 177154 MOV @R1,WAS
316 000679 011067 177142 MOV R0,SBADR
317 000679 011067 177130 MOV R1,WASADR
318 000679 016767 002820 177126 MOV #0,CSRA
319 *****
320 ***** ; DATA ERROR!!!
321 *****
322 *****
323 *****
324 *****
325 *****
326 *****
327 *****
328 *****
329 *****
330 *****
331 *****
332 *****
333 *****
334 *****
335 *****
336 *****
337 *****
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355 *****
356 *****

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344 001036 000657 1S: BR RITE ; GO TRY AGAIN
345 001040 000000 003754* MSGNS,REGIN,EXCED1 ; ASCII MESSAGE CALL WITH COMMON HEADER
346 001046 000413 BR NEXT ; GO ON TO NEXT DRIVE
347 -----
348 RETRY2: INCR TRV2 ; COUNT RETRY'S
349 001054 15267 002737 002731 CMPP #3,TRV2 ; LIMIT EXCEEDED ?
350 001058 001401 000003 BEQ 1S ; YES, GO REPORT IT
351 001062 000663 BR BACK ; NO, BACKUP TO TRY AGAIN
352 -----
353 1S: MSGNS,REGIN,EXCED2 ; ASCII MESSAGE CALL WITH COMMON HEADER
354 001066 104403 000000 003762* ; GO ON TO NEXT DRIVE
355 001074 000240 NCP ;
356

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357
358
359 001076 032767 000001 176712 NEXTA: BIT #R1TO,SRI ; DROP THE DRIVE ?
360 001104 001465 000000 000000 REQ 15 ; NO, SKIP TO NEXT DRIVE
361 001106 004767 000546 000000 JSR PC,DROP ; YES, DROP OFFENDING DRIVE
362 001112 104463 000000 003770 1S: MSGNS,BEGIN,DRP ;ASCII MESSAGE CALL WITH COMMON HEADER
363 001120 000167 177342 ; JMP NEXT ; GO ON TO NEXT DRIVE
364
365
366 ; ----- TM11 TAPE DRIVERS -----
367
368
369 001124 012767 000103 001402 WRITE: MOV #103,FUNC ; LOAD WRITE FUNCTION
370 001130 016777 001320 002432 MCV WCN1,@MTRC ; LOAD BYTE COUNT
371 001140 016777 002652 002426 MOV DRUFPA,@MTCMA ; LOAD BUFFER ADDRESS
372 001146 016767 002646 001362 MOV DRUFPA,XMEM ; LOAD EXTENDED MEMORY BITS
373 001154 000425 000111 001350 BACKSP: BP ; CONTINUE
374 001154 012767 001350 002400 MCV #111,FUNC ; LOAD BACKSPACE FUNCTION
375 001164 012767 001340 002400 MOV #1,@MTRC ; LOAD BYTE COUNT
376 001172 005067 001340 CLR XMEM ; CLEAR EXTENDED ADDRESS BITS
377 001176 000414 000111 002400 BP ; CONTINUE
378 001200 012767 000105 001326 READ: MCV #105,FUNC ; LOAD READ FUNCTION
379 001200 012767 001340 002352 MOV WCN2,@MTRC ; LOAD BYTE COUNT
380 001214 016777 002654 002352 MOV DRUFPA,@MTCMA ; LOAD BUFFER ADDRESS
381 001222 016767 002600 001306 MCV IRUFPA,XMEM ; LOAD EXTENDED MEMORY BITS
382
383
384 001230 012777 001274 176552 GOGO: MOV #NTRUPT,@VECTOR ; SET INTERRUPT ENTRY POINTER
385 001236 005767 001304 001276 RIS DRVSFT,FUNC ; LOAD DRIVE UNIT NUMBER
386 001244 000367 001266 001256 SWAB XMEM ; ADJUST FOR IR79
387 001250 005767 001256 001256 BIT XMEM,FUNC ; ADJUST FOR IR79
388 001256 005777 002304 CLR @MTC ; CLEAR INHIBIT
389 001262 016777 001246 002300 MCV @MTC,FUNC ; EXECUTE THE FUNCTION
390 001270 104460 000000 EXITS,REGIN ; EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.
391
392 001274 NTRUPT:
393 -----
394 001274 000004 000000 001302 ; PIRQS,REGIN,1S ; QUEUE UP TO CONTINUE AT 1S AND RTI
395 -----
396
397 001302 004577 000654 1S: JSR RE,FRPROS ; GO CHECK FOR ERRORS
398 001306 000000 000000 RTS ; ERRORS DETECTED, RETURN
399 001312 000000 000000 RTS ; RETURN, SKIP RETRY
400 001312 000000 000000 RTS ; RETURN OK
401

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402
403
404 001314 016767 001220 001220 REWIND: MOV DVICE,DRIVE ; GET ACTIVE DRIVES
405 001322 012767 000004 001220 MCV #4,DVCNUM ; LOAD MAXIMUM NUMBER OF DRIVES
406 001330 016701 001214 MCV DVCNUM,R1 ; PUT IT INTO A COUNTER
407
408 1S: CLC ; MAKE SURE C-BIT IS CLEAR
409 001336 000000 001200 DEIVE ; CHECK FOR ACTIVE DRIVE
410 001342 103402 BCS 2C ; IT'S ACTIVE --- BRANCH
411 001348 000000 001200 DVCNUM ; NOT ACTIVE, SUBTRACT FROM TOTAL
412 001354 000000 001200 DEC R1 ; ALL 4 CHECKED ?
413 001362 000370 BCT 1S ; NO, CONTINUE
414
415 001354 012767 000062 002202 MOV #50,CLK1 ; LOAD THE 2ND TIMER
416 001362 012767 177777 001154 MOV #1,DRIVE ; INITIALIZE THE DRIVE COUNTER
417 001370 000000 001156 CLR DVCNT ; CLEAR DEVICE COUNTER FOR ISR
418 001374 016767 001142 001140 MCV DVICE,DRIVE ; RESTORE DRIVE INDICATOR
419 001382 012767 177403 001136 MCV #400,DRVSFT ; INITIALIZE SHIFTED DRIVE NUMBER
420 001390 000476 000302 3S: JSR DRVADR ; GO GET A DRIVE NUMBER
421 001400 000000 000000 002366 BIT #R13,FLAG ; ALL DRIVES DONE ?
422 001406 000000 000000 BNE ; YES, GO WAIT FOR COMPLETION
423 001414 000000 001024 JSR PC,WAIT1 ; CONTROLER READY ?
424 001422 000000 001400 BIC #1400,@MTC ; YES, CLEAR OUT OLD UNIT NUMBER
425 001430 016767 001104 001070 MCV DRVSFT,FUNC ; LOAD NEW UNIT NUMBER
426 001438 000000 002116 CLR @MTC ; CLEAR INHIBIT
427 001446 000000 002110 BIT #40,@MTC ; AT LOAD PT ALLREADY?
428 001454 001000 000000 BNE 33S ; YES DON'T REWIND
429 001462 000000 001046 BIS #21,FUNC ; LOAD REWIND FUNCTION
430 001470 016777 001042 MCV @MTC,FUNC ; EXECUTE THE REWIND
431 001478 000745 PR 3S ; GO ON FOR THE NEXT DRIVE
432
433 001476 012767 000000 002056 4S: MOV #77777,CLK ; SET THE TIMER
434 001484 004767 000206 5S: JSR PC,DRVADR ; GO GET A DRIVE NUMBER
435 001492 000000 000000 BIT #R13,FLAG ; ALL DRIVES DONE ?
436 001500 000000 000000 BNE 8S ; YES, GET OUT
437 001508 004777 001400 002042 BIC #1400,@MTC ; CLEAR OUT OLD UNIT NUMBER
438 001516 005777 001014 002034 BIS DRVSFT,@MTC ; LOAD NEW UNIT NUMBER
439
440 6S: BREAKS,BEGIN ; TEMPORARY RETURN TO MONITOR
441 001524 104407 000000 ; THEN CONTINUE AT NEXT INSTRUCTION.
442 001532 000000 000000 BIT #40,@MTC ; DRIVE AT BOT ?
443 001540 000000 000000 BIC #R17,@MTC ; NO GO WAIT
444 001548 000200 002006 BIT #R17,@MTC ; IS DRIVE READY?
445 001556 000142 000000 REG 66S ; NO GO WAIT!
446 001564 000000 001776 CLR @MTC ; CLEAR INHIBIT
447 001572 000000 000033 BIC #23,@MTC ; WRITE ICR
448 001580 000200 001764 61S: BIT #R17,@MTC ; WAIT FOR READY
449 001588 001774 REQ 61S
450 001596 000000 001764 66S: BR 6S ; GO CHECK THE NEXT DRIVE
451 001604 000347 001746 BCT CLK ; OUT OF TIME ?
452 001612 000347 001746 DEC 6S ; NO, WAIT SOME MORE
453 001620 000347 001742 DEC CLK1 ; YES, WANT ANOTHER 40 SECONDS ?
454 001628 001807 BEG 7S ; NO, TIME-OUT
455 001636 012767 000000 001730 MCV #77777,CLK ; RESET THE TIMER
456 001644 000740 BR 6S ; WAIT SOME MORE
457 001652 104463 000000 003750 MSGNS,REGIN,RWDERR ; ASCII MESSAGE CALL WITH COMMON HEADER

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458 001642 012767 000013 176236 7S:  MOV #13,FRRTYP ;REWIND ERROR
459 001644 016770 000000 000000 ;*****
460 001650 104405 000000 000000 ;RDERS,REGIN,NULL ;REWIND ERROR,REWIND NOT COMPLETE
461 ;*****
462 ;
463 001656 000207 8S:  RTS PC ;RETURN
464 ;
465 ;
466 ;
467 ;
468 001660 012701 000001 000001 DROP: MOV #1,R1 ;INITIALIZE DROP PICKER
469 001664 016770 000000 000000 ; GET THE DRIVE NUMBER
470 001670 001403 000000 000000 ; IF DRIVE 0 GO DROP IT
471 001672 006301 1S:  ASL R1 ;NO, AIM AT THE NEXT DRIVE
472 001674 005300 ; IS THIS THE ONE ?
473 001674 001378 ; NO, LOOK AGAIN
474 001700 000167 000000 000000 2S:  RLC PC,DRIVE ;DROP THE DRIVE
475 ;*****
476 ;CONVERT DRVVE TO ASCII AND
477 ;STORE AT ADRI
478 001704 104426 000000 002544 ;OTCAS,REGIN,DRVVE,ADRI
479 001712 000400 ;*****
480 ;
481 001714 000207 ;
482 ;
483 ;
484 ;
485 001716 005267 000022 000000 DRVADR: INC DRVVE ;COUNT A DRIVE
486 001720 016770 000000 000000 ; DRVVE,DRVVSFT ;DRIVE COUNT LINED UP WITH MTC
487 001722 012767 000010 000052 ; RLC #R13,FLAG ;CLEAR END OF DRIVES FLAG
488 001724 012767 000004 000000 ; CPL #4,DRVVE ;ALL DRIVES CHECKED ?
489 001744 001404 000000 000000 ; BCC 1S ;YES, GO FLAG END OF DRIVES
490 001746 000267 000000 000000 ; AND PC,DRVADR ;NO, IS NEXT DRIVE CHOSEN ?
491 001748 000361 ; RTS PC ;NO, GO TRY ANOTHER DRIVE
492 001754 000207 ; RETURN
493 ;
494 001756 152767 000010 002024 1S:  RISP #R13,FLAG ;SET END OF DRIVES FLAG
495 001764 012767 177777 000552 ; MOV #1,DRVVE ;RESET DRIVE COUNTER
496 001772 012767 177400 000546 ; MOV #-400,DRVVSFT ;ZERO THE SHIFTED DRIVE #
497 001780 016770 000534 000534 ; MOV DEVICE,DRIVE ;RESTORE CHOSEN DRIVES
498 ; RTS PC ;RETURN
499 ;
500 ;
501 ;
502 002010 012767 177777 000526 NOTRDY: MOV #-1,DRVVE ;START WITH FIRST DRIVE
503 002016 012767 177400 000522 ; MOV #-400,DRVVSFT ;
504 002024 012767 000510 000510 ; MOV DEVICE,DRIVE ;RESET DRIVE SELECT
505 002032 014767 177668 000010 ; JSF PC,DRVADR ;GET A DRIVE ADDRESS
506 002036 132767 000010 001744 1S:  RLC #R13,FLAG ;ALL DRIVES CHECKED ?
507 002044 011412 ; BCC 1S ;YES, RETURN
508 002046 016770 000474 001514 ; MOV DRVVSFT,DMTC ;NO, LOAD NEXT DRIVE ADDRESS
509 002054 032777 000200 001506 ; RLC #R17,DMTC ;IS THIS DRIVE READY ?
510 002062 001363 ; BCC 1S ;YES, CONTINUE
511 002064 0004767 000022 ; JSR PC,WAIT ;NO, WAIT FOR IT
512 002070 000760 ; BPC 1S ;GO CHECK REST OF DRIVES
513 002072 000207 ; RTS PC ;RETURN

```

```

514 ;
515 ;
516 ;
517 ;
518 002174 016767 001466 175776 EPSUP1: MOV MTS,CSRA ;LOAD ADF. OF CURRENT CSR
519 002182 017767 001460 175772 ; MOV @MTS,ACSR ;LOAD CONTENTS OF CURRENT CSR
520 002110 000207 ; RTS PC ;RETURN
521 ;

```

```
522  
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527  
002112 012767 077777 001442 WAIT: MOV #77777,CLK ; SET THE TIMER  
528 002120 104407 000000 1S: BREAKS,BEGIN ; TEMPORARY RETURN TO MONITOR.....  
529 002124 104407 000000 BREAKS,BEGIN ; THEN CONTINUE AT NEXT INSTRUCTION.  
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002162 004767 177706 001372 ERRORS: JSR PC,ERSUB1 ; LOAD ERROR INFORMATION  
002166 032777 000200 BIT #BIT7,@MTC ; AT END OF TAPE ?  
002176 152767 000004 BIT #BIT2,FLAG ; NO CHECK FOR ERROR  
002204 005777 001360 1S: TST @MTC ; YES, SET EOT FLAG  
002210 100055 BPL 4S ; ANY ERRORS?  
; BR = NO  
002212 012767 003706 22S: MCV #PADSPT,R1 ; SET BAD POINTER  
002216 021167 000332 CMP (R1),CYCRNT ; MATCH?  
002222 001463 BFC 33S ; YES  
002258 008723 TST (R1)+ ; NO TRY AGAIN  
002260 008723 BPL 22S ; NO TRY AGAIN  
002260 000414 RP 25S ; NEW ERROR  
002262 012777 004000 33S: MOV #BIT11,@MTC ; POWER CLEAR  
002266 104407 000000 BREAKS,BEGIN ; TEMPORARY RETURN TO MONITOR.....  
002268 104407 000000 BREAKS,BEGIN ; THEN CONTINUE AT NEXT INSTRUCTION.  
002268 005677 001312 CLP @MTC ; CLEAR INHIBIT  
002268 226266 CMP (SP)+,(SP)+ ;  
002268 008723 JMP NEXT ;  
002262 012767 000001 175616 2S: MOV #1,ERRTPV ; DATA ERROR  
*****  
002270 104406 000000 003566 SCFERS,BEGIN, TABLE ;  
*****  
002276 012777 004000 001264 MOV #BIT11,@MTC ; ISSUE A POWER CLEAR  
002304 104407 000000 BREAKS,BEGIN ; TEMPORARY RETURN TO MONITOR.....  
002314 104407 000000 BREAKS,BEGIN ; THEN CONTINUE AT NEXT INSTRUCTION.  
002314 005677 001246 CLP @MTC ; CLEAR INHIBIT  
002320 006412 RP 5S ; RETURN TO DO (RETRY)  
002322 012777 004000 001240 3S: MOV #BIT11,@MTC ; ISSUE A POWER CLEAR  
002338 104407 000000 BREAKS,BEGIN ; TEMPORARY RETURN TO MONITOR.....  
002338 104407 000000 BREAKS,BEGIN ; THEN CONTINUE AT NEXT INSTRUCTION.  
002340 005777 001222 CLP @MTC ; CLEAR INHIBIT
```

```
578 002344 005725 4S: TST (R5)+ ; SKIP THE RETRY  
579 002346 007275 5S: PTS R5 ; RETURN  
580 ----- ;
```


684 003744 177777
 685 003744 177777
 686
 687 003750 003602
 688 003752 177777
 689 003754 003670
 690 003756 003647
 691 003760 177777
 692 003762 003677
 693 003764 003677
 694 003766 177777
 695 003770 003522
 696 003772 003654
 697 003774 003654
 698 003776 177777
 699 004000 000065
 700 004005 000000
 701 004006 000000
 702 004010 000000
 703 004012 004012
 704 004013 000000
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 708 004014 004034
 709 004012 000000
 710 004020 000000
 711 004022 004120
 712 004024 000000
 713 004026 000000
 714
 715 004030 000031
 716 004032 000031
 717
 718 004034 000001
 719 004036 000002
 720 004040 000004
 721 004042 000010
 722 004044 000020
 723 004046 000040
 724 004050 000100
 725 004052 000200
 726 004054 000652
 727 004056 000525
 728 004060 000525
 729 004062 000525
 730 004064 000625
 731 004066 000525
 732 004070 000625
 733 004072 000625
 734 004074 000400
 735 004076 000400
 736 004100 000400
 737 004102 000400
 738 004104 000777
 739 004106 000777

-1
 RWDERR: MESS1
 EXCD1: MESS4
 EXCD2: MESS6
 DRP: MESS2
 ADDR: .BLKB 5
 NUMR: .BYTE 0
 FLAG: .WCRD 0
 FLAG: .BYTE 0
 TRV1: .EVEN 0
 TRV2: .BYTE 0
 TRV2: .EVEN
 GRUFA: GRUF
 GRUFA: 000
 GRUFA: 000
 TRUFA: TRUF
 TRUFA: 000
 TRUFA: 000
 GRUSZ: 25
 TRUSZ: 25
 CRUF: 1 ;OUTPUT BUFFER
 2
 4
 10
 20
 40
 100
 100
 652
 525
 525
 525
 625
 525
 525
 625
 525
 625
 400
 400
 400
 400
 777
 777

740 004110 000777
 741 004112 000777
 742 004114 000523
 743 004116 000000
 744
 745 004120 000000
 746 004202 004202
 747
 748 000001
 749

777
 777
 523
 GRUFA: 000 ;OUTPUT BUFFER END
 TRUF: 000 ;INPUT BUFFER
 .-+48.
 .END

DIAGNOSTIC ENGINEERING



DECO DEPO SUBMISSION

NEW CHANGE DELETE

FOR RELEASE ENG. USE

PRODUCT IDENTIFICATION

LIBRARY	PRODUCT NUMBER	REV	PATCH	ECO TALLY	PRODUCT DATE	STATUS	DISTRIBUTION	1ST COPY - RIGHT YEAR	LAST COPY - RIGHT YEAR
MD	CXTRA	C	1	DI	NOV 78	OBSOLETE	X G R	1976	1978

FILE CXTRAC1 TR79F MODULE

AUTHOR D. BUTENHOF MAINTENANCE GROUP GRP MAINTAINED D. BUTENHOF SUBMITTING ENGINEER D. BUTENHOF

PRODUCT COMPONENTS

CK	DESCRIPTION	PRODUCT NO.	REV	CK	DESCRIPTION	PRODUCT NO.	REV
	DOCUMENT				INDEX		
	LISTING				SOURCE MEDIA		
	OBJECT MEDIA				TEST MEDIA		
X	De.PD	AF-E896C-M1					

PRODUCTS OBSOLETE (other than previous version)

LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV
MD			MD			MD		

PRODUCT CHARACTERISTICS

PROCESSORS PRODUCT OPERATES WITH (Enter all applicable 2-digit codes representing the Processor the product operates with. See separate instructions.)

03 04 05 10 20 21 34 35 40 50 55 60 70

OPERATIONAL CODES (Enter all applicable 2-digit codes that describe the product. See separate instructions.)

02 03 04 06 50

ACT/APT/XXDP EXT ACT SEQ NUMBER ACT/XXDP COMPATIBLE? APT COMPATIBLE? 1ST PASS RUN TIME SUBSEQUENT PASS RUN TIME

INFORMATION FIELD 1133 X Y N X Y N SECONDS SECONDS

DECO/DEPO INFORMATION

PROBLEM REPORTS CLOSED:

DEVICE AFFECTED DEC/X11 MULTIMEDIA AFFECTED? YES NO

T NUMBERS ZJ130-RB ZJ129-RZ,FR

PROBLEM:

DOES BIT TEST FOR LOAD MEDIA CHECK INSTEAD OF COMPARE; WILL DROP SELF IF ACTUAL LOAD MEDIA SETS IT'S DESIGNATED BIT.

UNCONDITIONAL PATCH

SOLUTION:

PATCH BIT TEST TO COMPARE BYTE

DEPO PATCH AREA

CHANGE LOC	FROM	TO	CHANGE LOC	FROM	TO
306	132737	122737			
308	400000	100			

SMITHING ENGINEER	MANUFACTURING ENGINEER	SUPPORT ENGINEER	CHARGE DECO/DEPO TO DISCRETE PROJECT NUMBER
DATE: 8-NOV-78	DATE: 29-NOV-78	DATE:	Q98-05314
MAINTENANCE	FIELD SERVICE	WAIVERING MANAGER	COORDINATION NO.
DATE: 8-NOV-78	DATE:	DATE:	MC#2504

DIAGNOSTIC ENGINEERING

digital

DECO DEPO SUBMISSION

FOR RELEASE ENG. USE

NEW CHANGE DELETE

PRODUCT IDENTIFICATION													
V.I.D.	LIBRARY	PRODUCT NUMBER	REV	PATCH	ECO TALLY	PRODUCT DATE			STATUS	DISTRIBUTION		1ST COPY - RIGHT YEAR	LAST COPY - RIGHT YEAR
	ZZ	CXTRA	C	2	62	DD	MMM	YY	<input type="checkbox"/> OBSOLETE	<input checked="" type="checkbox"/> G	<input type="checkbox"/> R	1976	1978

TITLE **CXTRAC2 TR79F MODULE**

AUTHOR **D. BUTENHOF** MAINTAINING GROUP **DEC/X11 SPT** MAINTAINER **D. BUTENHOF** SUBMITTING ENGINEER **D. BUTENHOF**

PRODUCT COMPONENTS							
CK	DESCRIPTION	PRODUCT NO.	REV	CK	DESCRIPTION	PRODUCT NO.	REV
	DOCUMENT				INDEX		
	LISTING				SOURCE MEDIA		
	OBJECT MEDIA				TEST MEDIA		
X		AF-E896C-M2					

PRODUCTS OBSOLETE (other than previous version)											
LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV
MD			MD			MD					

PROCESSORS PRODUCT OPERATES WITH (Enter all applicable 2-digit codes representing the Processor the product operates with. See separate instructions.)

03 04 05 10 20 21 34 35 40 45 50 55 60 70

OPERATIONAL CODES (Enter all applicable 2-digit codes that describe the product. See separate instructions.)

02 03 04 06 50

ACT/APT/XXDP	EXT	ACT SEQ NUMBER	ACT/XXDP COMPATIBLE?	APT COMPATIBLE?	1ST PASS RUN TIME	SUBSEQUENT PASS RUN TIME
INFORMATION FIELD			<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	SECONDS	SECONDS

DECO/DEPO INFORMATION

PROBLEM REPORTS CLOSED: _____

VOICE AFFECTED **DEC/X11** MULTIMEDIA AFFECTED? YES NO

KIT NUMBERS **ZJ130-RB** **ZJ129-RZ,FR**

PROBLEM:

WHEN PREVIOUS PATCH CHANGED BIT TEST TO COMPARE, BRANCH CONDITIONS WERE LEFT UNCHANGED, RESULTING IN DROP UNLESS MEDIA IS LOAD MEDIA

SOLUTION:

PATCH BEQ TO BNE

DEPO PATCH AREA					
CHANGE LOC	FROM	TO	CHANGE LOC	FROM	TO
314	1424	1024			

SUBMITTING ENGINEER <i>[Signature]</i> DATE: 30 1 79	MANUFACTURING ENGINEER <i>[Signature]</i> DATE: 30 1 79	SUPPORT ENGINEER DATE:	CHARGE DECO/DEPO TO DISCRETE PROJECT NUMBER Q98-05314
MAINTAINER DATE: 30 DEC 78	FIELD SERVICE DATE:	WAIVERING MANAGER DATE:	COORDINATION NO. MC 2787

DIAGNOSTIC ENGINEERING



DECO DEPO SUBMISSION

FOR RELEASE ENG. USE
 NEW CHANGE DELETE

PRODUCT IDENTIFICATION

LIBRARY	PRODUCT NUMBER	REV	PATCH	ECO TALLY	PRODUCT DATE	STATUS	DISTRIBUTION	1ST COPY - RIGHT YEAR	LAST COPY - RIGHT YEAR
D	ZZ	CXTRA	C	3	18 DEC 78	OBsolete	K G R	1976	1978

TITLE CXTRAC3 TR79F MODULE

AUTHOR D. BUTENHOF MAINTENANCE SPT GRP MAINTAINER D. BUTENHOF SUBMITTER D. BUTENHOF

PRODUCT COMPONENTS

CK	DESCRIPTION	PRODUCT NO	REV	CK	DESCRIPTION	PRODUCT NO.	REV
	DOCUMENT				INDEX		
	LISTING				SOURCE MEDIA		
	OBJECT MEDIA				TEST MEDIA		
X		AF-E896C-M3					

PRODUCTS OBSOLETE (other than previous version)

LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV	LIBRARY	PRODUCT NUMBER	REV
MD			MD					

PRODUCT CHARACTERISTICS

PROCESSORS PRODUCT OPERATES WITH (Enter all applicable 2-digit codes representing the Processor the product operates with. See separate instructions.)

03 04 05 10 20 21 34 35 40 45 50 55 60 70

OPERATIONAL CODES (Enter all applicable 2-digit codes that describe the product. See separate instructions.)

02 03 04 06 50

ACT/APT/XXDP	EXT	ACT SEQ NUMBER	ACT/XXDP COMPATIBLE?	APT COMPATIBLE?	1ST PASS RUN TIME	SUBSEQUENT PASS RUN TIME
INFORMATION FIELD			<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	SECONDS	SECONDS

DECO/DEPO INFORMATION

PROBLEM REPORTS CLOSED

PRICE AFFECTED MULTIMEDIA AFFECTED? YES NO

KIT NUMBERS	ZJ130-RB	ZJ129-RZ, FR				
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PROBLEM: CXTRAC does an illegal global reference to the old monitor switch register. It also hangs on a tape badspot.

SOLUTION: Install the following patch

DEPO PATCH AREA

CHANGE LOC	FROM	TO	CHANGE LOC	FROM	TO
674	22777	240			
676	2000	240			
700	(undefined)	240			
702	1004	240			
1022	3	2			
1056	3	2			
2276	12777	205			

DATE: 18 Dec 78	MANUFACTURING ENGINEER: [Signature]	SUPPORT ENGINEER: [Signature]	CHARGE DECO/DEPO TO DISCRETE PROJECT NUMBER: Q9805460
	FIELD SERVICE: [Signature]	WAIVERING MANAGER: [Signature]	COORDINATION NO: mc# 2805
18 Dec 78	DATE:	DATE:	