TS11

CZTSIBO

AH E458B MC

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PRODUCT CODE:

AC-E457B-MC

PRODUCT NAME:

CZTSIBO TS11 CTRL LGC

MAINTAINER:

DIAGNOSTIC ENGINEERING

AUTHOR:

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USER DOCUMENTATION

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ACT	AUTOMATED COMPUTER TEST
APT	AUTOMATED PRODUCT TEST SYSTEM USED IN MANUFACTURING.
BYTE/RECORD/FILE COUNT BRF	IS STORED IN THE 4TH WORD OF THE COMMAND PACKET AND IT'S USE BY THE TSO4 DEPENDS ON THE TYPE OF COMMAND.
CMD	TSO4 COMMAND
COMMAND PACKET	FOUR WORD PACKET IN THE CPU MEMORY WHICH CONTAINS ALL INFORMATION NEEDED BY THE TSO4 TO EXECUTE A COMMAND.
EXTENDED STATUS	FOUR WORDS OF TSO4 STATUS WHICH ARE TRANSFERRED AS PART OF THE MESSAGE PACKET AT THE COMPLETION OF A COMMAND.
MESSAGE PACKET	SEVEN WORD PACKET IN THE CPU MEMORY INTO WHICH THE TSO4 STORES STATUS AT THE COMPLETION OF A COMMAND.
PC	PROGRAM COUNTER
PSW	PROCESSOR STATUS WORD
RESIDUAL FRAME COUNT RFC	THIS COUNT IS PART OF THE MESSAGE PACKET AND CONTAINS THE NUMBER OF BYTES/RECORDS /FILES REMAINING TO BE PROCESSED AT THE COMPLETION OF A COMMAND.
TERMINATION CLASS CODE	THREE BIT CODE IN THE TSSR WHICH INDI- CATES THE TYPE OF COMMAND TERMINATION.
TSBA	TAPE SYSTEM BUS ADDRESS REGISTER.
TSDB	TAPE SYSTEM DATA BUFFER REGISTER.
TSSR	TAPE SYSTEM STATUS REGISTER.
x510	EXTENDED STATUS REGISTER 0
XST1	EXTENDED STATUS REGISTER 1
x512	EXTENDED STATUS REGISTER 2
XST3	EXTENDED STATUS REGISTER 3
XXDP+	XXDP+ IS A "CATCH-ALL"NAME FOR A GROUP OF PDP-11 DIAGNOSTIC PACKAGES AVAILABLE ON MULTIMEDIA.

1.0 GENERAL INFORMATION

SEQ 0005

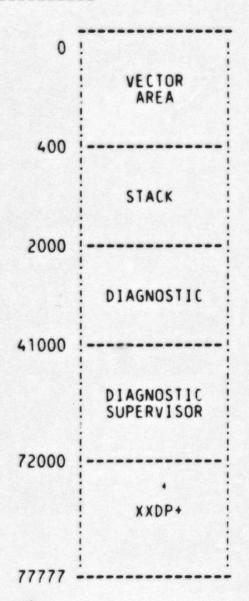
1.1 PROGRAM ABSTRACT

1.1.1 FUNCTIONAL DESCRIPTION

THIS PROGRAM PERFORMS CORRECTIVE MAINTENANCE BY EXECUTING TS11 AND TS04 WRAPAROUNDS FOR THE PURPOSE OF IDENTIFYING FAILED MODULES.

1.1.2 STRUCTURE OF PROGRAM

THIS DIAG IS A SINGLE PROGRAM FROM THE STANDPOINT OF THE USER, BUT IT CONTAINS A CONTROL MODULE RELEASED INDEPENDENTLY AS A DIAG SUPERVISOR.



FREE MEMO SPACE RESIDES BETWEEN THE DIAG AND THE SUPERVISOR.

1.1.4 DIAGNOSTIC INFORMATION

THIS DIAGNOSTIC TESTS ONE UNIT AT A TIME, BUT WILL SEQUENTIALLY TEST UP TO 4 UNITS. THE 4 UNITS ARE ASSIGNED LOGICAL UNIT NUMBERS 0 - 3 BY THE DIAGNOSTIC. THE UNITS DO NOT HAVE TO BE ON LINE AND A TAPE DOES NOT HAVE TO BE LOADED TO RUN THIS DIAGNOSTIC.

RECOMMANDATION:

IT IS RECOMMANDED TO RUN THIS DIAG WITH NO TAPE LOADED BECAUSE OF MUCH FASTER EXECUTION TIME (SEE 2.4).

1.2.1 HARDWARE REQUIREMENTS

PDP-11 PROCESSOR WITH 16K OR MORE OF MEMORY CONSOLE DEVICE (LA30, LA36, VT50, ETC.) PROGRAM LOAD DEVICE

1.2.2 SOFTWARE REQUIREMENTS

DIAGNOSTIC SUPERVISOR

1.3 RELATED DOCUMENTS AND STANDARDS

XXDP+ USERS MANUAL MD-11-CHQUS
DIAGNOSTIC SUPERVISOR PROGRAM LISTING
PDP-11 DIAGNOSTIC SUPERVISOR INTERFACE SPECIFICATION.
PDP-11 DIAGNOSTIC SUPERVISOR PROGRAMMER'S GUIDE
TS11/TS04 PROGRAMMING SPECIFICATION.
TS04/TS11 ENGINEERING SPECIFICATION.
TS11/TS04 COMMAND PACKET SPECIFICATION.

1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

THIS PROGRAM SHOULD BE RUN BEFORE ANY OTHER HOST CPU DIAGNOSTIC PROGRAM.

1.5 ASSUMPTIONS

THE HARDWARE OTHER THAN THE SUBSYSTEM BEING TESTED IS ASSUMED TO WORK PROPERLY. FALSE ERRORS MAY BE REPORTED IF THE PROCESSOR, MEMORY, ETC., DO NOT FUNCTION PROPERLY.

1.6 DIAGNOSTIC HISTORY

REV A - FEB 79

- ORIGINAL RELEASE

REV B - AUG 79

-ADDED AN INTERRUPT TEST

- -REVISED ALL TESTS BECAUSE OF AN HARDWARE ECO:
 WATCH FOR TAPE MOTION DURING A LOAD SEQUENCE RESULTING
 FROM AN INIT SENT TO THE TS11.
- -CONVERTED DIAG TO SUPERVISOR REV: C.
 ADDED SEVERAL SECTIONS: PROTECT TABLE, AUTO-DROP CODE,
 HARD CODED PARAMETER TABLE...

2.1 HARDWARE PARAMETERS

ON A START COMMAND, THE DIAG ASKS: "CHANGE HW?".

ON A "N" ANSWER, THERE SHALL BE NO HARDWARE DIALOGUE AND THE DIAG SHALL RUN ASSUMING A UNIT AT TSSR = 177522 WITH VECTOR OF 224.

ON A "Y" ANSWER TO "CHANGE HW?" QUESTION, THEN AND ONLY THEN, THE FOLLOWING QUESTIONS WILL BE ASKED ON A START COMMAND. THE VALUE LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN ON A CARRIAGE RETURN RESPONCE.

TSSR ADDRESS (172522) ?

VECTOR (224) ?

THE VALIDITY OF THESE PARAMETERS CAN BE CHECKED BEFORE RUNNING THE TESTS BY SETTING THE FLAG "ADR" ON A STA, RES, OR CON COMMAND. THE SO CALLED AUTO-DROP. CODE SHALL THEN BE EXECUTED AFTER THE INIT CODE AND BEFORE THE HARDWARE TESTS ARE RUN. THAT CODE FIRST TESTS THE ADDRESS OF THE TSSR. IF NO RESPONCE FROM THE INTERFACE, THE UNIT IS DROPPED IMMEDIATELY WITH THE FOLLOWING MESSAGE:

BUS TRAP AT XXXXXX
INTERFACE BAD OR NOT SETTO ABOVE AD

(XXXXXX = TSSR AD)

ON A RESPONSE FROM THE INTERFACE, THE READY STATUS OF THE UNIT IS CHECKED. IF NOT READY, THE UNIT IS DROPPED IMMEDIATELY.

2.2 SOFTWARE PARAMETERS

THE FOLLOWING QUESTION WILL BE ASKED ON REQUEST - I.E., ANSWERING "Y" TO "CHANGE SW (L)?" DUESTION - ON A START, RESTART OR CONTINUE COMMAND:

ENABLE DATA COMPARE ERROR PRINTS FOR TESTS 4-7(L) N ?

IF "Y" IS THE RESPONSE TO THIS SOFTWARE QUESTION, THEN WILL DATA COMPARE ERRORS BE PRINTED, PROVIDED IER FLAG IS RESET.

2.4 EXECUTION TIMES

2.4.1 SYSTEM CONFIGURATION

PDP11/70 MOS MEMORY LA36 TS11/TS04

2.4.2 TESTS EXECUTION TIMES

TAPE NOT LOADED: 40 SEC

TAPE LOADED, UNIT OFF-LINE: 90 SEC

TAPE LOADED, UNIT ON-LINE: 145 SEC

J 1

3.1 ERROR REPORTING

```
1 - COMMAND PACKET ADR NOT ON MODULO 4 BOUNDARY
 2 - TSO4 NOT READY-SSR NOT SET
 3 - PDP11-TS11 WRAP FAILURE
 4 - PDP11-TS11 WRAP FAILURE ON TSSR EXT ADDR BITS
 5 - PDP11-TS04 WRAP FAILURE-TSBA INCORRECT
6 - PDP11-TS04 WRAP FAILURE-TSSR INCORRECT
 7 - TRACK ACTIVE NOT O FOR 1 OR MORE TRACKS IN TEST4 SUB1
 8 - TRACK ACTIVE NOT O FOR 1 OR MORE TRACKS IN TEST4 SUB3
 9 - TRACK ACTIVE NOT 1 FOR 1 OR MORE TRACKS IN TEST4 SUB2
10 - TRACK ACTIVE NOT 1 FOR 1 OR MORE TRACKS IN TEST4 SUB4
11 - TRACK ACTIVE ERROR
12 - PE WRAP DATA ON O'S PATTERN
13 - PE WRAP DATA ERROR ON 1'S PATTERN
14 - PE WRAP DATA ERROR ON SHIFTING 1 PATTERN
15 - PE WRAP DATA ERROR ON SHIFTING O PATTERN
16 - PE SKEW ERROR
17 - PE DEAD TRACK ERROR
18 - ROM LOOKUP TABLE ERROR
19 - MICRO DIAGNOSTIC ERROR
20 - SET CHAR ERROR-TSSR. NBA NOT SET ON COMMANDS BEFORE
     SET CHAR ISSUED.
21 - SET CHAR ERROR-TSSR. NBA NOT CLEARED WHEN SET CHAR ISSUED
22 - SET CHAR ERROR-TSBA NOT POINTING PAST MSG PACKET
23 - SET CHAR ERROR-MSG PACKET CONTENTS IN DOUBT
24 - SET CHAR ERROR-1/O SEQ CROM PARITY ERR (FC=1)
25 - SET CHAR ERROR-SERIAL BUS PARITY ERR (FC=2)
26 - SET CHAR ERROR-SILO PARITY ERR (FC=2)
27 - SET CHAR ERROR-UP CROM PARITY ERROR OR FATAL MICRO
     ERROR HALTS (FC=2)
28 - SET CHAR ERROR-AC DETECTED LOW AT TSO4 (FC=3)
```

* = DEVICE FAIAL ERRORS - CALL BAD TS11 BOARD OR 10 BOARDS

29 - TS11 DID NOT DROP READY UPON COMMAND ISSUANCE

OTHER ERRORS ARE HARD ERRORS

30 - PE DATA ERROR 31 - NO INTERRUPT

NOTE: EXPECTED AND ACTUAL DATA AND/OR PRINTOUTS WILL OCCUR WITH SOME OF THE ABOVE MESSAGES WHEN APPLICABLE.

3.2 ERROR HALTS

ERROR HALTS ARE SUPPORTED PER DESCRIBED IN THE PREVIOUS SECTION WITH /FLAG: HOE. THERE ARE NO OTHER HALTS.

```
4.1 "DIAG" REGISTERS
```

```
THE FOLLOWING ARE REGISTER AND BIT DEFINITIONS FOR THE TSO4; REGISTERS OF INTEREST IN THIS DIAGNOSTIC.
```

;FMCTLO - FORMATTER MAJOR STATE CONTROL REG FMCTLO=4 ;WRITE REGISTER 4

NEO131ER

THIS REGISTER IS SET UP FOR THE PORTION OF THE RECORD WE ARE PRESENTLY READING

; WE ARE DOING NORMAL READ. IF O, WE DISABLE SOME ERROR FC.RD= 200 CORRECTION LOGIC SO WE'RE MORE DISCRIMINATING : FOR READ AFTER WRITE. SETING THIS BIT CAUSES .FMFLO ON BBUS TO BE TRUE FC.FL0=100 : (NEEDED BY THE RD PE ROUTINE) FC.DAT=10 :DATA MODE FC.PRE=4 : PREAMBLE MODE FC.VCO=2 : VCO SYNC MODE FC.NRZ=1 :NRZI MODE (FORCE SKEW WINDOW TO STAY OPEN) CAUSES FMTAUI TO BE CLRED WHEN YOU WRITE

; TO THE FMCLDO REGISTER.

;RDCTLO - READ CONTROL REGISTER RDCTLO=20

; WRITE

REGISTER 20

; THIS REGISTER CONTROLS THE FORMATTER MODE AND THRESHOLD.

RD.REV=200
RD.MAI=100
RD.SPC=40
RD.SPC=40
RD.SKP=20
RD.S

THE FOLLOWING THRESHOLDS ARE AVAILABLE:

RD.110=7

RD.90=6

RD.75=5

RD.68=4

RD.40=3

RD.40=3

HI PREAMP GAIN

LO PREAMP, BAD TAPE CLEAN

RESIDUAL ERASE CHK

FWD/REV AMP BALANCE

RD.20=2 ; NRZ RD, PE WRT RD.12=1 ; PE READ, NRZ ERR RECOV RD/WRT CROSSTALK RD.07=0 ; PE ERR RECOV ERASE FUNCTION

DATA PORTION ONLY

```
:10SCO - 1/O SEQUENCER SILO CONTROL BUFFER OUT
10SCO=14
:WRITE REGISTER 14
```

; THIS REGISTER CONTAINS THE SILO CONTROL BITS FOR DATA WRITTEN ; BY THE MAIN OR 1/O MICRO TO THE SILO. THE DATA IN THIS REG ; IS PAIRED WITH THE IOSDO REG AND PUT IN THE SILO WHENEVER ; THE IOSICO REG IS CLOCKED. THIS REGISTER NEED ONLY BE WRITTEN ; ONCE IF THE SAME OLD DATA IS OK TO BE WRITTEN IN THE SILO. ; NOTE THAT IF THE 1/O IS WRITING THE SILO, THE MAIN MUST PUT EVEN ; PARITY IN THE BITS 357 OR THE 1/O WILL WRITE PAR ERRS IN THE SILO. ; (THE IS.DAP BIT IS DON'T CARE HERE FOR I/O WRITING THE SILO)

IS.PAR = 200 ;ODD PAR BIT FOR ALL 16 BITS (CNRTL AND DATA) ;NOTE THAT THE BITS MASKED BY 357 MUST BE ;EVEN PARITY BECAUSE THE 9 DATA BITS ARE ODD

IS.IVP= 100 :INVERT CNTRL SILO PAR BIT BEFORE MOVING ;TO WRITE BOARD (WRITE EVEN PARITY ON TAPE)

IS.NRZ= 40 ; INVERT WRITE BUFFER BIT IF ASSOCIATED SILO ; DATA BIT IS A 1. (IF IS.NRZ=0, WE'RE IN PE MODE)

IS.DAP= 20 ;ODD PARITY FOR THE 8 DATA BITS IN 10SDO

IS.LRC= 10
IS.WRF= 4

; CAUSES SYNCRONOUS CLR ON WRT BOARD TO WRITE THE LRC CHAR
; THIS FLG BIT SHOWS UP AT THE WRITE BOARD
; WITH THE CORRESPONDING DATA. THE FUNCTION OF
; THE BIT WILL BE DEFINED BY THE WRITE BOARD.
; NOTE HOWEVER THAT IF THE WRITE BOARD SEES
; THE BIT 1, THE PA.WRF BIT IN THE
; PRATNI REG WILL ALSO BE 1 (IF ENABLED
; TO AFFECT THE ATTN REG).

THE 2 LOW BITS ARE WRITABLE AND AFFECT THE PARITY TREES BUT

4.2 GENERAL

THE TSO4 TAPE SUBSYSTEM CONSISTS OF A TS11 UNIBUS TO SERIAL BUS CONTROLLER CONNECTED TO A TS04 DRIVE. FROM A SOFTWARE VIEWPOINT THIS CONFIGURATION IS UNIQUE (FOR A UNIBUS DEVICE) IN A NUMBER OF WAYS:

- A. ONLY ONE REGISTER MAY BE WRITTEN TSDB (TAPE SYSTEM DATA BUFFER),
- B. TWO REGISTERS MAY BE READ TSSR AND TSBA (TAPE SYSTEM STATUS REGISTER AND TAPE SYSTEM BUS ADDRESS REGISTER),
- C. COMMANDS ARE NOT WRITTEN TO THE DRIVE; RATHER, COMMAND POINTERS ARE WRITTEN WHICH POINT TO COMMAND PACKETS SOME—WHERE IN CPU MEMORY. THE COMMAND POINTER IS USED BY THE TSO4 SUBSYSTEM TO FETCH THE WORD(S) WITHIN THE COMMAND PACKET. THE WORDS WITHIN THE COMMAND PACKET ARE:

- 1. COMMAND WORD
- 2. LOW ORDER BUFFER ADDRESS
 3. HIGH ORDER BUFFER ADDRESS
- 4. BYTE COUNT
- D. THE TSSR CONTAINS ALL THE INFORMATION WHICH WILL BE NEC-ESSARY TO DETERMINE WHETHER:
 - 1. THE DRIVE IS READY TO ACCEPT ANOTHER COMMAND,
 2. THE PREVIOUS COMMAND WAS EXECUTED WITHOUT ERROR.

 IF EITHER OF THE ABOVE CONDITIONS IS UNTRUE AT "JOB DONE"
 OR "COMMAND INITIATION" TIME, IT MAY BE NECESSARY
 TO GET THE EXTENDED STATUS REGISTERS TO DETERMINE WHAT
 ACTION IS TO BE TAKEN AND/OR LOG THE ERROR INFORMATION.
- E. EXTENDED STATUS REGISTERS ARE NOT READ DIRECTLY FROM DRIVE REGISTERS; RATHER, A "GET STATUS" COMMAND IS ISSUED WHICH WILL CAUSE THE TSO4 TO TRANSFER EXTENDED STATUS INFORMATION TO THE MEMORY AREA POINTED TO BY THE BUFFER ADDRESS OF THE "GET STATUS" COMMAND. THERE ARE FOUR EXTENDED STATUS REGISTERS. SEE 6.3.
- F. THE TSDB MUST BE WRITTEN WITH A DATO INSTRUCTION TO PROPERLY WRITE THE COMMAND POINTER. A DATOB WILL CAUSE A MAINTENANCE FUNCTION. A DATO TO THE TSSR WILL CAUSE SUBSYSTEM INIT.
- G. COMMAND PACKETS MUST RESIDE ON DIVIDE BY FOUR MEMORY BOUNDARIES (AS OPPOSED TO DIVIDE BY 2 OR WORD BOUNDARIES).

1511/	INT. VECTOR	UNIBUS ADDRESS	REGISTER
FIRST	224	772520 772522	TSBA/TSDB TSSR
SECOND	154	772524 772526	TSBA/TSDB TSSR
THIRD	160	772530 772532	TSBA/TSDB TSSR
FOURTH	164	772534 772536	TSBA/TSDB TSSR

4.4.1 TS11/TS04 REGISTER SUMMARY

	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
TSBA	A15	1A14	A13	A12	A11	A10	A09	!A08	A07	A06	1A05	A04	A03	1A02	A01	A00
TSDB	P15	!P14	P13	P12	!P11	P10	P09	!P08	P07	P06	P05	P04	P03	P02	P17	P16!
TSSR	SC	UPE	SPE	RMR	!NXM	NBA	A17	1A16	SSR	OFL	FC1	FCO	102	101	TCO	
		+		+	+		++							+		
KSTO	!TMK!	!RLS	LET	RLL	WLE	NEF	ILC	ILA	MOT	ONL	! IE	!VCK	PED!	!WLK	BOT	EOT
xST1	DLT		COR	CRS		DBF	SCK			SYN!			POS!	!POL		
xST2	OPM	SIP	BPE	CAF		WCF		DTP	D17	DT6	DT5	DT4	DT3:	DT2	DT1	DTO
xst3		11CRO	DIA	SNOST	IC ERI	ROR	CODE	*	LMX	OPI	REV	CRF	DCK	NOI	LXS	RIB
	++	+	+	+	+	+	++	+	+	++	+	+	++	+	+	++

TERMINATION CLASS CODES (TSSR TCO-TC2):

- 0 = NORMAL TERMINATION
- 1 = ATTENTION CONDITION
- 2 = TAPE STATUS ALERT 3 = FUNCTION REJECT
- 4 = RECOVERABLE ERROR TAPE POSITION = ONE RECORD
- DOWN TAPE FROM START OF FUNCTION
- 5 = RECOVERABLE ERROR TAPE NOT MOVED
- 6 = UNRECOVERABLE ERROR TAPE POSITION LOST
- 7 = FATAL CONTROLLER ERROR

FATAL CLASS CODES (TSSR FCO-FC1):

- O = MICRO DIAGNOSTIC FAILURE (DISPLAYED IN TSO4 OPERATOR PANEL AND XST3).
- 1 = 1/0 SEQUENCER CROM PARITY ERROR.
- 2 = MICROPROCESSOR CROM PARITY ERROR.
 - SILO PARITY ERROR.
 - SERIAL BUS PARITY ERROR DETECTED AT TS11 (SPE).
 - SERIAL BUS PARITY ERROR DETECTED AT 1504 (BPE).
- FATAL ERROR HALTS 1750-1777 IN TSO4 PROGRAM COUNTER DISPLAY.
- 3 = LOSS OF AC POWER HAS BEEN DETECTED.

4.4.2 TS11 STATUS REGISTER (TSSR)

UNIBUS	ADDRESS +	2 -	READ	ONLY
--------	-----------	-----	------	------

IBUS	IBUS ADDRESS + 2 - READ ONLY					
SC	UPE	SPE RMR	11 10 09 08 07 06 05 04 03 02 01 00 !NXM!NBA!A17! !A16!SSR!OFL! !FC1!FC0!TC2! !TC1!TC0!			
BIT	TELEVISION OF THE PARTY.	TCC	DEFINITION			
15	sc	S	SPECIAL CONDITION. WHEN SET, INDICATES THAT THE LAST COMMAND DID NOT COMPLETE WITHOUT INCIDENT. SPECIFICALLY, EITHER AN ERROR WAS DETECTED OR AN EXCEPTION CONDITION OCCURRED. EXCEPTION CONDITIONS CAN BE TAPE MARKS ON READ COMMANDS, REVERSE MOTION AND AT BOT, EOT WHILE WRITING, ETC. MAY ALSO BE SET BY THE ERROR JITS CONTAINED IN THE TSSR REGISTER: UPE, SPE, RMR, AND NXM. THE TERMINATION CLASS BITS ARE SOMETHING OTHER THAN O (UNLESS RMR IS THE ONLY ERROR - SEE RMR).			
14	UPE	4/5	UNIBUS PARITY ERROR. SET BY THE TS11 WHEN IT DETECTS A PARITY ERROR ON THE UNIBUS DATA WHEN TRANSFERRING TO OR FROM THE CPU'S MEMORY.			
13	SPE	7	SERIAL BUS PARITY ERROR. THIS BIT IS SET BY THE TS11 WHEN IT DETECTS A SERIAL BUS PARITY ERROR ON DATA RECEIVED FROM THE TS04.			
12	RMR	S	REGISTER MODIFICATION REFUSED. SET BY THE TS11 WHEN A COMMAND POINTER IS LOADED INTO TSDB AND SUB-SYSTEM READY (SSR) IS NOT SET. NOTE THAT THIS BIT CAUSES SPECIAL CONDITION BUT NO TERMINATION CLASS (IN FACT, THE TSO4 NEVER SEES THIS ERROR) BECAUSE ON A SYSTEM WITH NO BUGS, THIS BIT MAY COME UP ON AN ATTENTION MESSAGE. IF ATTNS ARE NOT ENABLED, THIS BIT COMING UP IS AN INDICATION OF EITHER A FATAL CONTROLLER ERROR OR A SOFTWARE BUG.			
11	NXM	4/5	NON-EXISTENT MEMORY. SET BY THE TS11 WHEN TRYING TO TRANSFER TO OR FROM A MEMORY LOCATION WHICH DOES NOT EXIST. MAY OCCUR WHEN FETCHING THE COMMAND PACKET, FETCHING OR STORING DATA, OR STORING THE MESSAGE PACKET.			
10	NBA	S	NEED BUFFER ADDRESS. WHEN SET, INDICATES THAT THE TSO4 NEEDS A MESSAGE BUFFER ADDRESS. THIS BIT IS CLEARED DURING THE SET CHARACTERISTICS COMMAND (IF A GOOD ADDRESS WAS GIVEN).			
09	A17	S	BUS ADDRESS BIT 17. A17 AND A16 (BIT 08) TRACK			

			REGISTER.
08	A16	5	BUS ADDRESS BIT 16. SEE A17 (BIT 09).
07	SSR	S	SUB-SYSTEM READY. WHEN SET, INDICATES THAT THE TS11/TS04 SUBSYSTEM IS NOT BUSY AND IS READY TO ACCEPT A NEW COMMAND POINTER.
06	OFL	\$,1,3	OFF-LINE. WHEN SET, INDICATES THAT THE TSO4 IS OFF-LINE AND UNAVAILABLE FOR ANY TAPE MOTION COMMANDS. THIS BIT CAN CAUSE A TERMINATION CLASS OF 1 (ON ATIN INTERRUPT) OR 3 (RESULTS IN NEF).
05	FC1	7	FATAL TERMINATION CLASS 01. FC1 AND FC0 (BIT 04) ARE USED TO INDICATE THE TYPE OF FATAL ERROR WHICH HAS OCCURRED ON THE TS04. THESE BITS ARE VALID ONLY WHEN SC IS SET AND THE TERMINATION CLASS CODE BITS ARE ALL SET (111).
04	FCO	7	FATAL TERMINATION CLASS 00. SEE FC1 (BIT 05).
03	102	S	TERMINATION CLASS BIT 02. THIS BIT, ALONG WITH THE TC1 AND TCO BITS, ACT AS AN OFFSET VALUE WHENEVER AN ERROR OR EXCEPTION CONDITION OCCURS ON A COMMAND. EACH OF THE EIGHT POSSIBLE VALUES OF THIS FIELD REPRESENT A PARTICULAR CLASS OF ERRORS OR EXCEPTIONS. THE CONDITIONS IN EACH CLASS HAVE SIMILAR SIGNIFICANCE AND, AS APPLICABLE, RECOVERY PROCEDURES. THE CODE PROVIDED IN THIS FIELD IS EXPECTED TO BE UTILIZED AS AN OFFSET INTO A DISPATCH TABLE FOR HANDLING OF THE CONDITION.
02	TC1	S	TERMINATION CLASS BIT 01. SEE TC2 (BIT 03).
01	TCO	S	TERMINATION CLASS BIT 00. SEE TC2 (BIT 03).
00	•		NOT USED.

UNIBUS ADDRESS + 2 - WRITE ONLY

SUBSYSTEM INITIALIZE

4.4.3 EXTENDED STATUS REGISTER 0 (XSTATO)

! TMK	! !RLS!	LET!RLL!	11 10 09 08 07 06 05 04 03 02 01 00 !WLE!NEF!ILC! !ILA!MOT!ONL! !IE !VCK!PED! !WLK!BOT!EOT!
BIT	NAME	100	DEFINITION
15	TMK	\$,2	TAPE MARK DETECTED. SET WHENEVER A TAPE MARK WAS DETECTED DURING A READ, SPACE, OR SKIP COMMAND AND AS A RESULT OF THE WRITE TAPE MARK OR WITE TAPE MARK RETRY COMMANDS.
14	RLS	2	RECORD LENGTH SHORT. THIS BIT INDICATES THAT EITHER THE RECORD'S LENGTH WAS SHORTER THAN THE BYTE COUNT ON READ OPERATIONS, A SPACE RECORD OPERATION ENCOUNTERED A TAPE MARK OR BOT BEFORE THE POSITION COUNT WAS EXHAUSTED, OR A SKIP TAPE MARKS COMMAND WAS TERMINATED BY ENCOUNTERING BOT OR A DOUBLE TAPE MARK (IF THAT OPERATIONAL MODE IS ENABLED, SEE LET) PRIOR TO EXHAUSTING THE POSITION COUNTER.
13	LET	2	LOGICAL END OF TAPE. SET ONLY ON THE SKIP TAPE MARKS COMMAND WHEN EITHER TWO CONTIGUOUS TAPE MARKS ARE DETECTED OR WHEN MOVING OFF OF BOT AND THE FIRST RECORD ENCOUNTERED IS A TAPE MARK. THE SETTING OF THIS BIT WILL NOT OCCUR UNLESS THIS MODE OF TERMINATION IS ENABLED THROUGH USE OF THE SET CHARACTERISTICS COMMAND.
12	RLL	2	RECORD LENGTH LONG. WHEN SET, THIS BIT INDICATES THAT THE RECORD READ WAS LONGER THAN THE BYTE COUNT SPECIFIED.
11	WLE	3,6	WRITE LOCK ERROR. WHEN SET, INDICATES THAT A WRITE OPERATION WAS ISSUED BUT THE MOUNTED TAPE DID NOT CONTAIN A WRITE ENABLE RING OR THE WRT LOCK SWITCH ACTIVATED DURING THE OPERATION.
10	NEF	3	NON-EXECUTABLE FUNCTION. WHEN SET, INDICATES THAT THE COMMAND COULD NOT BE EXECUTED DUE TO ONE OF THE FOLLOWING CONDITIONS:
			- THE COMMAND SPECIFIED REVERSE TAPE DIRECTION BUT THE TAPE WAS ALREADY POSITIONED AT BOT THE ISSUING OF ANY COMMAND, EXCEPT REWIND,

UNLOAD, OR A COMMAND WITH THE CLEAR VOLUME CHECK (CVC) BIT SET, WHEN THE VOLUME CHECK BIT SET. BIT SET. ANY COMMAND, EXCEPT GET STATUS OR DRIVE INITIALIZE, WHEN THE TSO4 IS OFF-LINE. ANY WRITE COMMAND WHEN THE TAPE DOES NOT CONTAIN A WRITE ENABLE RING (WRITE LOCK STATUS - WLS). OP ILC 3 ILLEGAL COMMAND. SET WHEN A COMMAND IS ISSUED AND EITHER ITS COMMAND FIELD OR ITS COMMAND MODE FIELD CONTAINS CODES WHICH ARE NOT SUPPORTED BY THE TSO4. OR ILA 3 ILLEGAL ADDRESS. (MORE THAN 18 BITS OR ODD WHEN AN EVEN ADDRESS IS REQUIRED.) OF MOT S TAPE IS MOVING. ON LINE. WHEN SET, INDICATES THAT THE TSO4 IS ON-LINE AND OPERABLE. ON LINE. WHEN SET, INDICATES THAT THE LAST COMMAND. OF VCK S VOLUME CHECK. WHEN SET, INDICATES THAT THE DRIVE HAS BEEN EITHER POWERED DOWN OR TURNED OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT CAN CAUSE A TERMINATION CLASS OF 5. OR PED S PHASE ENCODED DRIVE. WHEN SET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING DRLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING DRLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING DRLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 IS CAPABLE OF TAPE DOES NOT HAVE A WAITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. ON BOT S.3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. ON EOT S.2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE. ON EOT S.2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP IN THE REVERSE DIRECTION UNDER PROGRAM CONTROL.				(2) (그렇게 보고 있다면 하다 않는 것이 되는 것이 되었다면 하는 것이 되었다면 그 이렇게 보는데 뭐
AND EITHER IT'S COMMAND FIELD OR IT'S COMMAND MODE FIELD CONTAINS CODES WHICH ARE NOT SUPPORTED BY THE TSO4. 08 ILA 3 ILLEGAL ADDRESS. (MORE THAN 18 BITS OR ODD WHEN AN EVEN ADDRESS IS REQUIRED.) 07 MOT S TAPE IS MOVING. 06 ONL S ON LINE. WHEN SET, INDICATES THAT THE TSO4 IS ON-LINE AND OPERABLE. 05 IE S INTERRUPT ENABLE. REFLECTS THE STATE OF THE INTERRUPT ENABLE BIT SUPPLIED ON THE LAST COMMAND. 04 VCK S VOLUME CHECK. WHEN SET, INDICATES THAT THE DRIVE HAS BEEN EITHER POWERED DOWN OR TURNED OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT CAN CAUSE A TERMINATION CLASS OF 3. 03 PED S PHASE ENCODED DRIVE. WHEN SET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING ONLY 16000 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 HAS ONLY 800 BPI NRZI DATA CAPABILITIES. 02 WLK S,3 WRITE LOCKED. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. 01 BOT S,3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. 00 EOT S,2 END OF TAPE. THIS BIT IS SET WHENCER THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP ON THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE				CHECK (CVC) BIT SET, WHEN THE VOLUME CHECK BIT IS SET. - ANY COMMAND, EXCEPT GET STATUS OR DRIVE INITIALIZE, WHEN THE TSO4 IS OFF-LINE. - ANY WRITE COMMAND WHEN THE TAPE DOES NOT CONTAIN A WRITE ENABLE RING (WRITE LOCK
AN EVEN ADDRESS IS REQUIRED.) OF MOT S TAPE IS MOVING. ON LINE. WHEN SET, INDICATES THAT THE TSO4 IS ON-LINE AND OPERABLE. INTERRUPT ENABLE. REFLECTS THE STATE OF THE INTERRUPT ENABLE BIT SUPPLIED ON THE LAST COMMAND. OF VCK S VOLUME CHECK. WHEN SET, INDICATES THAT THE DRIVE HAS BEEN EITHER POWERED DOWN OR TURNED OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT CAN CAUSE A TERMINATION CLASS OF 3. OF PED S PHASE ENCODED DRIVE. WHEN SET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING ONLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 HAS ONLY 800 BPI NRZI DATA CAPABILITIES. OZ WLK S.3 WRITE LOCKED. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. OI BOT S.3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. OO EOT S.2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP ON THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	09	ILC	3	AND EITHER ITS COMMAND FIELD OR ITS COMMAND MODE FIELD CONTAINS CODES WHICH ARE NOT
O6 ONL S ON-LINE. WHEN SET, INDICATES THAT THE TSO4 IS ON-LINE AND OPERABLE. O5 IE S INTERRUPT ENABLE. REFLECTS THE STATE OF THE INTERRUPT ENABLE BIT SUPPLIED ON THE LAST COMMAND. O4 VCK S VOLUME CHECK. WHEN SET, INDICATES THAT THE DRIVE HAS BEEN EITHER POWERED DOWN OR TURNED OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT CAN CAUSE A TERMINATION CLASS OF 3. O3 PED S PHASE ENCODED DRIVE. WHEN SET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING ONLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 HAS ONLY 800 BPI NRZI DATA CAPABILITIES. O2 WLK S,3 WRITE LOCKED. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. O1 BOT S,3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. O0 EOT S,2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP ON THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	08	ILA	3	
ON-LINE AND OPERABLE. ON-LINE AND OPERABLE. INTERRUPT ENABLE. REFLECTS THE STATE OF THE INTERRUPT ENABLE BIT SUPPLIED ON THE LAST COMMAND. OUT WORK S. VOLUME CHECK. WHEN SET, INDICATES THAT THE DRIVE HAS BEEN EITHER POWERED DOWN OR TURNED OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT CAN CAUSE A TERMINATION CLASS OF 3. ON PED S. PHASE ENCODED DRIVE. WHEN SET, INDICATES THAT THE TSOURT THE TSOUR IS CAPABLE OF READING AND WRITING ONLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSOURT HAS ONLY 800 BPI NRZI DATA CAPABILITIES. ON WILK S.3 WRITE LOCKED. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. ON BOT S.3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. ON EOT S.2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP ON THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP IN THE	07	MOT	S	TAPE IS MOVING.
INTERRUPT ENABLE BIT SUPPLIED ON THE LAST COMMAND. O4 VCK S VOLUME CHECK. WHEN SET, INDICATES THAT THE DRIVE HAS BEEN EITHER POWERED DOWN OR TURNED OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT CAN CAUSE A TERMINATION CLASS OF 3. O5 PED S PHASE ENCODED DRIVE. WHEN SET, INDICATES THAT THE TSO4 IS CAPABLE OF READING AND WRITING ONLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 HAS ONLY 8UO BPI NRZI DATA CAPABILITIES. O2 WLK S,3 WRITE LOCKED. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. O1 BOT S,3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. O0 EOT S,2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	06	ONL	S	
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THE TSO4 IS CAPABLE OF READING AND WRITING ONLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 HAS ONLY 8U0 BPI NRZI DATA CAPABILITIES. O2 WLK S,3 WRITE LOCKED. WHEN SET, INDICATES THAT THE MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. O1 BOT S,3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. OO EOT S,2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	04	VCK	S	OFF-LINE. CLEARED BY THE CLEAR VOLUME CHECK (CVC) BIT IN THE COMMAND HEADER WORD. THIS BIT
MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS, THEREFORE, WRITE PROTECTED. O1 BOT S,3 BEGINNING OF TAPE. WHEN SET, INDICATES THAT THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. O0 EOT S,2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	03	PED	S	THE TSO4 IS CAPABLE OF READING AND WRITING ONLY 1600 BPI PHASE ENCODED DATA. WHEN RESET, INDICATES THAT THE TSO4 HAS ONLY 800 BPI NRZI
THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE TAPE. OO EOT 5.2 END OF TAPE. THIS BIT IS SET WHENEVER THE TAPE IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	02	WLK	5,3	MOUNTED REEL OF TAPE DOES NOT HAVE A WRITE-ENABLE RING INSTALLED. THE TAPE IS,
IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE	01	вот	S,3	THE TAPE IS POSITIONED AT THE LOAD POINT AS DENOTED BY THE BOT REFLECTIVE STRIP ON THE
	00	EOT	5,2	IS POSITIONED AT OR BEYOND THE END OF TAPE REFLECTIVE STRIP. DOES NOT RESET UNTIL THE TAPE PASSES OVER THE REFLECTIVE STRIP IN THE

4.4.4 EXTENDED STATUS REGISTER 1 (XSTAT1)

	+	+ +	13 12 11 10 09 08 07 06 05 04 03 02 01 00 !COR!CRS! !TIG!DBF!SCK! ! !IPR!SYN! !IPO!IED!POS! !POL!UNC!MTE! ! ! !NZO! ! ! !DRP! !ITM!LCO!NZN! !LRC!CRC!VPE!
BIT	NAME	100	DEFINITION
15	DLT	4	DATA LATE. SET WHEN THE 1/O SILO IS FULL ON A READ OR EMPTY ON A WRITE. THESE CONDITIONS OCCUR WHENEVER THE UNIBUS LATENCY EXCEEDS THE DATA TRANSFER RATE OF THE 1504.
14	-	•	NOT USED.
13	COR	5	CORRECTABLE DATA. IN PHASE ENCODED MODE, A CORRECTABLE DATA ERROR HAS BEEN ENCOUNTERED.
12	CRS	4	CREASE DETECTED. FOR NRZI, ALL DATA TRACKS DROPPED OUT FOR MORE THAN THREE CHARACTER TIMES BUT FOR LESS THAN .1 INCHES OF TAPE. FOR PE, EIGHT OUT OF NINE DATA TRACKS WENT DEAD FOR LESS THAN .1 INCHES BEFORE A VALID POSTAMBLE WAS DETECTED.
11	TIG	4	TRASH IN THE GAP. NON-ERASED DATA WAS DETECTED IN A GAP DURING A READ, WRITE, WRITE TAPE MARK, OR ERASE COMMAND.
10	DBF	4	EXCESSIVE SKEW. FOR NRZI, DATA OCCURRED BETWEEN THE 50% MARK AND THE 100% MARK OF THE NRZI DATA WINDOW. FOR PE, IT TOOK MORE THAN FIVE CHARACTERS IN READ-AFTER-WRITE OR TEN CHARACTERS IN READ TO PROPERLY CENTER THE WINDOWS OF THE FORMAT CHANNEL LOGIC.
	NZO	4	NRZ FIFO OVERRUN.
09	SCK '	4	SPEED CHECK. TAPE SPEED WAS OFF BY MORE THAN 5% DURING A WRITE DATA OPERATION. NOTE THAT SPEED AVERAGED OVER 8 TICKS AND THE AVERAGE MUST BE OFF 5% TO CAUSE THIS ERROR.
08	•	•	NOT USED.
07	1PR	5,4	INVALID PREAMBLE. SET ON A PE DRIVE IF THE PREAMBLE APPEARS TO BE SHORTER THAN 36 CHARACTERS OR LONGER THAN 44 CHARACTERS. ALSO SET IF THE PREAMBLE IS INCORRECTLY ENCODED BEYOND THE FIFTEENTH CHARACTER IN READ OR THE TENTH CHARCTER IN READ AFTER-WRITE.

06	SYN	4	SYNCH FAILURE. SET ON A PE DRIVE IF THE FORMATTER WAS UNABLE TO ACHIEVE SYNCHRONIZATION IN THE PREAMBLE.
	LRP	4	NRZ RECORD DROPPED A CHARACTER (THE NEXT CHARACTER WAS TO BE CONSIDERED CRC).
05	IPO	5.4	INVALID POSTAMBLE. SET ON A PE DRIVE DURING READ OR WRITE IF ANY OF THE FIRST 39 CHARACTERS OF THE POSTAMBLE ARE NOT READ CORRECTLY.
	ITM	5,4	ILLEGAL TAPE MARK FOR NRZ.
04	IED	4	INVALID END DATA. FOR PE, EIGHT OUT OF NINE TRACKS WENT DEAD BEFORE THE POSTAMBLE WAS DETECTED
	LRO	4	FOR NRZI, DATA WAS NOT DETECTED IN EITHER THE LRCC OR CRCC WINDOWS. (LRC WAS ZERO)
03	POS	5,4	POSTAMBLE SHORT. SET ON PE DRIVES DURING A READ OR WRITE WHEN LESS THAN 38 ALL-ZEROES CHARACTERS ARE READ FOLLOWING THE ALL-ONES CHARACTER.
	NZN	5,4	NRZ NOISE RECORD (FEWER THAN 13(10) FRAMES).
02	POL	4	POSTAMBLE LONG. SET ON PE DRIVES DURING READ OR WRITE OPERATIONS WHEN THE POSTAMBLE EXCEEDS 42 CHARACTERS.
	LRC	4	LRC ERROR. SET ON NRZI DRIVES WHEN THE LRCC CHARACTER WAS FOUND IN ERROR.
01	UNC	4	UNCORRECTABLE DATA. SET ON PE DRIVES WHEN A PARITY ERROR OCCURRED WITHOUT A CORRESPONDING DEAD TRACK INDICATION.
	CRC	4	CRC ERROR. SET ON NRZI DRIVES WHEN THE CRC CHARACTER WAS FOUND TO BE IN ERROR.
00	MTE	4	MULTI-TRACK ERROR. SET ON PE DRIVES WHEN MORE THAN ONE DEAD TRACK OCCURRED IN THE PREAMBLE OR IN THE DATA FIELD.
	VPE	4	VERTICAL PARITY ERROR. SET ON NRZI DRIVES WHEN A CHARACTER DID NOT CONTAIN AN ODD NUMBER OF ONE BITS.

SEQ 0021

	OPM	SIPBP	3 12 11 10 09 08 07 06 05 04 03 02 01 00 E:CAF: : :WCF: ::DTP:DT7:DT6: :DT5:DT4:DT3: :DT2:DT1:DT0:
BIT	NAME	TCC	DEFINITION
15	OPM	S	OPERATION IN PROGRESS. (TAPE MOVING)
14	SIP	7	SILO PARITY ERROR. CAUSES FATAL CLASS 2 BECAUSE THE ERROR MIGHT HAVE OCCURRED DURING THE TRANSMISSION OF THE MESSAGE PACKET.
13	BPE	7	SERIAL BUS PARITY ERROR AT DRIVE. SET BY THE TSO4 WHEN A PARITY ERROR IS DETECTED ON DATA TRANSMITTED FROM THE TS11 TO THE TS04. CAUSES FATAL CLASS 2 BECAUSE THE ERROR MIGHT HAVE OCCURRED DURING THE TRANSMISSION OF THE MESSAGE PACKET.
12	CAF	7	CAPSTAN ACCELERATION FAIL. AFTER ACCELERATING TAPE FOR .2 INCHES, THE TAPE SPEED WAS CHECKED AND FOUND TO BE OUT OF TOLERANCE BY MORE THAN 10%.
11	•	-	NOT USED.
10	WCF	7	DESKEW BUFFER FAIL. ONE OF THE DESKEW BUFFERS FAILED TO ASSERT "OUTPUT READY" WITHIN 20 MICROSECONDS AFTER BEING ENABLED. THE DEAD TRACK BITS WILL INDICATE ON WHICH TRACKS THIS FAILURE OCCURRED.
09	•	-	NOT USED.
08	DTP	S	DEAD TRACK PARITY. THE BITS DTP THROUGH DTO INDICATE WHICH TRACK(S) WENT DEAD, IF ANY, DURING THE LAST DATA TRANSFER OPERATION. IF DESKEW BUFFER FAIL (DBF) IS SET, THESE BITS INDICATE WHICH CHANNEL FAILED.
07	D17	S	DEAD TRACK 7. SEE DTP.
06	D16	S	DEAD TRACK 6. SEE DTP.
05	DT5	S	DEAD TRACK 5. SEE DTP.
04	D14	S	DEAD TRACK 4. SEE DTP.
03	D13	S	DEAD TRACK 3. SEE DTP.
02	DT2	S	DEAD TRACK 2. SEE DTP.

01 DT1 DEAD TRACK 1. SEE DIP. 5

DEAD TRACK O. SEE DTP. 00 DIO

NOTE: ON A SET CHARACTERISTICS COMMAND, THE UCODE LEVEL IS RETURNED IN DT7 THRU DTO. ON A GET STATUS COMMAND, THE RESIDUAL CAPSTAN TICK COUNT (INTERNALLY R7) IS RETURNED IN DT7 THRU DTO.

SEQ 0023

4.4.6 EXTENDED STATUS REGISTER 3 (XSTAT3)

		MICRO	3 12 11 10 09 08 07 06 05 04 03 02 01 00 DIAGNOSTIC ERROR CODE LMX OP1 REV CRF DCK NOI LXS RIB
BIT	NAME	TCC	DEFINITION
15 1	0 08		MICRO DIAGNOSTIC ERROR CODE. (SEE LIST OF CODES BELOW). ALL ERROR CODES IN THE TABLE WILL BE DISPLAYED ON THE TSO4 CONTROL PANEL BUT ONLY CODES HIGHER THAN 110 WILL BE AVAILABLE TO CPU DIAGNOSTICS FOR PRINTOUT IN THE MICRO DIAGNOSTIC ERROR CODE FIELD OF XSTAT3. THIS ERROR CODE FIELD IS VALID ONLY WHEN THE TERMINATION CLASS CODE IN THE TSSR EQUALS 7 AND THE FATAL CLASS CODE IN THE TSSR EQUALS 0, INDICATING AN INTERNAL DIAGNOSTIC FAILURE.
07	NTL	6	LIMIT EXCEEDED. SET WHEN THE TAPE TENSION ARMS HAVE EXCEEDED THEIR ALLOWABLE TRAVEL AND HAVE CAUSED THE ACTIVITATION OF THE LIMIT SWITCHES. NO TENSION EXISTS ON THE MOUNTED TAPE.
06	OP1	6	OPERATION INCOMPLETE. SET WHEN A READ, SPACE, OR SKIP OPERATION HAS MOVED 25 FEET OF TAPE WITHOUT DETECTING ANY DATA ON THE TAPE.
05	REV	S	DIRECTION OF CURRENT OPERATION WAS REVERSE (BUT IS O IF REWIND OR FORWARD)
04	CRF	7	CAPSTAN RESPONSE FAILURE. A MOTION COMMAND WAS GIVEN TO THE CAPSTAN BUT WE DID NOT GET A TICK BACK WITHIN A REASONABLE AMOUNT OF TIME.
03	DCK	\$,6	DENSITY CHECK. SET ON PE DRIVES WHEN A PE IDENTIFICATION BURST WAS NOT DETECTED WHEN MOVING OFF OF BOT. SET ON NRZI DRIVES WHEN A NON-NRZI IDENTIFICATION BURST WAS FOUND WHEN MOVING OFF OF BOT.
02	NOI	6	NOISE RECORD. SET DURING A READ OR SPACE OPERATION WHEN A BURST OF FLUX CHANGES, WHICH DO NOT QUALIFY AS A RECORD (BUT TOO MANY TO IGNORE), ARE DETECTED:
			NRZI: AT LEAST TWO CHARACTERS IN A ROW BUT LESS THAN TWELVE, FOLLOWED BY A CHARACTER IN EITHER THE CRCC OR LRCC WINDOWS.
			PE: AT LEAST 24 CHARACTERS IN A ROW THAT DO NOT QUALIFY AS A TAPE MARK OR A DATA PREAMBLE.

01	LXS	S	LIMIT EXCEEDED STATICALLY. THIS BIT IS SET ANY TIME THE LIMIT SWITCHES ARE EXCEEDED. THIS BIT CAN ONLY BE CLEARED BY MANUALLY LOADING THE TAPE.
00	RIB	2	REVERSE INTO BOT. A READ, SPACE, OR SKIP COMMAND ALREADY IN PROGRESS HAS ENCOUNTERED THE BOT MARKER WHEN MOVING TAPE IN THE REVERSE DIRECTION. TAPE MOTION WILL BE HALTED AT BOT.

4.4.7 MICRO DIAGNOSTIC ERROR CODES

FOLLOWING IS A LIST OF THE ERRORS WHICH ARE DISPLAYED IN THE MICRO DIAGNOSTIC ERROR CODE (XSTAT3 BITS 15 - 08) AND ALSO IN THE LIGHTS ON THE TSO4 CONTROL PANEL, DUE TO FAILURES ON THE CAPSTAN BOARD, I/O BOARDS, WRITE BOARD, READ BOARD, OR FORMATTER BOARD. THE MICRO WILL BE IN A TIGHT LOOP IN THE DISPM PROGRAM, WAITING FOR OPERATOR OR CPU INTERVENTION WHILE THE ERROR IS BEING DISPLAYED IN THE CONSOLE LIGHTS. IT IS APPARENT THAT AN ERROR IS BEING DISPLAYED IF THE "UOK" LIGHT IS NOT LIGHTED, THE PROCESSOR IS NOT STOPPED, AND AN OCTAL NUMBER (100-377) IS BEING DISPLAYED IN THE LIGHTS. TO SCOPE LOOP THESE TESTS, ENTER MAINTENANCE MODE (ON-LINE SWITCH TO "OFF" POSITION, MAINTENANCE SWITCH UP, PRESS RESET), ENTER THE OFF-LINE TEST NUMBER (SEE SCOPE LOOP COLUMN BELOW) IN THE OPERATOR CONSOLE LIGHTS (ENTER ONES WITH LEFT-MOST SWITCH, ENTER ZEROES WITH RIGHT-MOST SWITCH), AND PRESS ON-LINE BUTTON. TEST WILL LOOP UNTIL ON-LINE SWITCH IS RETURNED TO OFF-LINE POSITION, ERRORS WILL BE DISPLAYED CONTINUOUSLY.

ERROR (DISPL	PROGRAM AY)	ERROR DESCRIPTION	MODULE	LOOP
337	OPERATIONAL CODE	CAPSTAN RUNAWAY ERROR (H3.RNY). CAPSTA STOP WITHIN ACCEPTABLE WINDOW AFTER LA		ID.
100	IOTSM	BASIC I/O MICRO FAILURE (PARITY ERROR, IOATN, HANDSHAKING, AND DATA WINDOW TEST BETWEEN THE I/O AND MAIN MICROS.	M8967	14
		NOTE: CAN ALSO BE CAUSED BY THE SERIAL BUS .SHIN (SHIFT IN) STUCK ASSERTED.		
101	10TSM	ERROR IN 1/O CONTROL REGISTER TEST	M8966 M8967	15
102	IOTSM	FAILURE OF FRAME COUNTER TEST	M8966	15
103	IOTSM	FAILURE OF I/O SILO NON-PARITY ERROR DATA TEST OR THE WRITE FLAG.	M8966 M8963	16
104	IOTSM	FAILURE OF 1/0 SILO PARITY ERROR	M8966	17
		GREEN CONTROL OF THE		

		TEST OR DATA LATE TEST.	N	2
105	101SM	FAILURE OF SHIFT LOOP WITH ZEROES.	MOOVE	20
106	1015M		M8965	20
		FAILURE OF SHIFT LOOP WITH ONES.	M8965	21
107	IOTSM	FAILURE OF SHIFT LENGTH MUX.	M8965	55
110	IOTSM	FAILURE TO RECEIVE CORRECT OP-CODE FROM TS11 WHEN WE SENT DATA OVER THE SERIAL BUS.	M8965 TS11 MOTHER SBUS C	
111	CATSM	FAILURE OF 1 KHZ CLOCK TEST. TSTS TAC SYNC FLOP AND ATTN, TOO.	G159 CBUS C M8963	
112	CATSM	LIGHT REGISTER CHANGED WHEN MOTION REGISTER WAS CLEARED.	G159	3,4
113	CATSM	FWD OR MVG BITS WRONG AFTER 1 TICK OF SIMULATED COMMAND AND TACH PULSES.	G159	3,4
114	CATSM	FAILURE OF SIMULATED CAPSTAN SPEED TEST. THE CAPSTAN SPEED COUNTER WAS OUT OF RANGE WHEN TAPE MOTION AT SPEED WAS SIMULATED.	G159	3,4
115	CATSM	FAILURE OF SIMULATED SLOW CAPSTAN TEST. SPEED COUNTER DID NOT LATCH UP WITH MAX COUNT WHEN SLOW TACH TICKS WERE SIMULATED.	G159	3,4
116	CATSM	FAILURE OF SIMULATED CAPSTAN DECEL TEST. COUNTER NOT ZERO FOR FORWARD OR 377 FOR REVERSE WHILE DECELERATING, OR MVG BIT NOT 1.	G159	3,4
117	CATSM	FAILURE OF MOVING FLOP TO GO TO ZERO AFTER STOPPING (DIRECTION REVERSAL FOR ONE TACH TICK).	G159	3,4
120	PETSM	FAILURE OF WRITE BOARD TO TURN ON AND EMPTY THE SILO, OR DATA LATE BIT DOESN'T WORK.	M8929 M8966	23
121	PETSM	FAILURE OF WRITE BOARD TO EMPTY SILO AT CORRECT SPEED.	M8929	23
124	PETSM	FORMATTER FLAG DOESN'T WORK ON THE M8922.	M8922	24
125	PETSM	FORMATTER SILO FILLING AND DATA ERROR	M8922 M8923 M8924	24
126	PETSM	PEAK SHIFT TEST ERROR	M8922 M8923 M8924	25

SEQ 0026

B 3 M8922 26 M8923 M8924 SEQ 0027 127 FORMATTER TABLE LOOKUP ROM CHECKSUM TEST ERROR PETSM

5.1 TEST 1 - PDP-11/TS11 WRAP TEST

TEST TO INSURE PROPER COMMUNICATION BETWEEN THE PDP11 AND THE TS11 BY WRAPPING THE FOLLOWING PATTERNS:
A 1 IN A FIELD OF 0'S A 0 IN A FIELD OF 1'S.

WHEN DATA IS WRITTEN TO THE TSDB HI BYTE, THE DATA IS WRAPPED AROUND WINTIN THE TS11 AND APPEARS IN THE TSBA LO AND HI BYTES. THE 2 LOW ORDER BITS OF THE DATA WILL BE REFLECTED IN THE TSSR EXTENDED ADDRESS BITS.
R4 CONTAINS A COPY OF THE DATA SENT.
R3 CONTAINS THE EXPECTED TSBA RESULTS
R2 CONTAINS THE EXPECTED STATE OF THE TWO EXTENDED ADDRESS BITS IN THE TSSR.

5.2 TEST 2 - PDP-11/TSO4 WRAP TEST

TEST TO INSURE PROPER COMMUNICATION BETWEEN THE PDP11 AND THE TS04 BY WRAPPPING THE FOLLOWING PATTERN:
A 1 IN A FIELD OF 0'S: A 0 IN A FIELD OF 1'S

WHEN THE DATA IS WRITTEN TO THE TSDB LO BYTE, THE DATA IS SENT TO THE TSO4, VIA THE SERIAL LINE, WHERE IT IS WRAPPED AROUND BACK OVER THE SERIAL LINE TO THE TS11. THE DATA THEN APPEARS IN THE TSBA LO AND TSSR LO BYTES.

R4 CONTAINS THE EXPECTED TSBA RESULTS AND THE EXPECTED TSSR RESULTS.

5.3 TEST 3 - SET TSO4 CHARACTERISTIC

THE FUNCTION OF THIS TEST IS TO ISSUE A "SET CHARACTERISTIC" COMMAND TO TELL THE TSO4 WHERE IN CORE THE MESSAGE PACKET RESIDES AND TO VERIFY THAT A MESSAGE PACKET WAS STORED.

TESTS 4 - 7 PERFORM DATA WRAPS ON THE P.E. READ FORMATTER
BOARDS. COMMUNICATION BETWEEN THE PDP11 AND TS04 OCCURS BY USING
THE DIA (DIAGNOSTIC) COMMAND WHICH SENDS A COPY OF THE DIABLK TABLE,
RESIDING IN CORE, TO THE TS04 CONTROLLER. THE FORMAT OF THE DIABLK IS
SHOWN IN THE FOLLOWING TABLE. NOTE THAT THE TABLE IS FILLED IN REVERSE
ORDER, THAT IS, THE LAST LOGICAL ENTRY OF THE TABLE IS LABELED DIABLK,
WHILE THE FIRST LOGICAL ENTRY OF THE TABLE IS LABELED DIABLK,
WHILE THE FIRST LOGICAL ENTRY OF THE TABLE IS LABELED DIABLK+DIAEXT, WHERE
DIAEXT IS THE LENGTH (EXTENT) OF THE TABLE IN BYTES.

WHEN THE DIA COMMAND IS EXECUTED, THE DIABLK IS LOADED ONTO THE TSO4 STACK WITH THE FIRST LOGICAL ENTRY AT THE TOP OF THE STACK, AS SHOWN BELOW. THE TSO4 THEN JUMPS TO THE P.E. WRAP TASK, IN ROM, WHERE THE FUNCTION IS EXECUTED USING THE REMAINING STACK ENTRIES AS ARGUMENTS.

DIABLK+DIAEXT: TSO4 PE WRAP TASK ADDR LO TSO4 PE WRAP TASK ADDR HI

READ CONTROL (RDCTLO) FORMAT CONTROL (FMCTLO) DATA CONTROL (IOSCO) DATA CONTROL (IOSCO)

DIABLK:

5.4

.

TEST 4 CHECKS THAT THE TRACK ACTIVE FLOP CAN SET AND CLEAR IN NRZI MODE FOR ALL CHANNELS. IF THE DATA DOES NOT MAKE A TRANSITION WHEN THE WRITE FLAG IS UP, THE TRACK ACTIVE FLOP WILL CLEAR. HOWEVER. IT WILL SET IF THERE IS A DATA TRANSITION WHILE THE WRITE FLAG IS UP.

5.4.1.1 SUBTEST 1 - TRACK INACTIVE TEST

THIS TEST FORCES THE TRACK ACTIVE TO CLEAR BY WRITING ALL O'S DATA. THE PATTERN IS AS FOLLOWS FOR EACH CHANNEL:

DATA:

000000

WRTFLG:

011100 TRACK ACTIVE: SHOULD BE O FOR ALL TRACKS

5.4.1.2 SUBTEST 2 - TRACK ACTIVE TEST

THIS TEST FORCES TRACK ACTIVE TO SET BY WRITING THE FOLLOWING PATTERN ON EACH CHANNEL:

DATA: WRTFLG: 110000 011100

TRACK ACTIVE: SHOULD BE 1 FOR ALL TRACKS.

5.4.1.3 SUBTEST 3 - TRACK INACTIVE TEST

THIS TEST FORCES THE TRACK ACTIVE TO CLEAR BY WRITING THE FOLLOWING PATTERN ON EACH CHANNEL:

DATA:

111111

WRTFLG:

011100

TRACK ACTIVE: SHOULD BE O FOR ALL TRACKS

5.4.1.4 SUBTEST 4 - TRACK ACTIVE TEST

THIS TEST FORCES THE TRACK ACTIVE FLOP TO SET BY WRITING THE FOLLOWING PATTERN ON EACH CHANNEL:

DATA:

001111

WRTFLG:

011100

TRACK ACTIVE: SHOULD BE 1 FOR ALL TRACKS.

5.4.2 P.E. DATA TEST (TEST 5)

TEST 5 WRAPS A DATA PATTERN TO CHECK EACH TRACK FOR BIT PICKUPS AND DROPS.

REGISTER USAGE IS AS FOLLOWS:

R2 = PREAMBLE DATA FOR TRACKS 1-9 IN BIT POSITION 0-8.

R3 = 1ST BYTE OF DATA FOR TRACKS 1-9 IN BIT POSITION 0-8. THIS IS THE DATA INTEREST AFTER EXECUTING THE TSO4 DIA COMMAND.

R4 = 2ND BYTE OF DATA FOR TRACKS 1-9 IN BIT POSITION 0-8.

5.4.2.1 SUBTEST 1 - P.E. DATA TEST/O PATTERN.

THIS TEST WRAPS AN ALL O'S PATTERN.

5.4.2.2 SUBTEST 2 - P.E. DATA TEST/1 PATTERN.

THIS TEST WRAPS AN ALL 1'S PATTERN.

5.4.2.3 SUBTEST 3 - P.E. DATA TEST/SHIFTING 1 PATTERN.

THIS TEST RIPPLES A 1 IN A FIELD OF O'S.

5.4.2.4 SUBTEST 4 - P.E. DATA TEST/SHIFTING O PATTERN.

THIS TEST RIPPLES A O IN A FIELD OF 1'S.

5.4.3 TEST 6 SKEWS THE DATA ON A TRACK BY ONE BYTE WITH RESPECT TO ALL THE OTHER TRACKS. THAT IS, THE DATA IS ONE BYTE LATE ON THE ONE TRACK. EACH TRACK IS TESTED FOR SKEW IN THIS MANNER. REGISTER ASSIGNMENTS ARE AS FOLLOWS:

R2 = PREAMBLE DATA

R3 = BYTE 1 DATA (WITH THE EXCEPTION OF THE SKEWED TRACK.

THAT TRACK CONTAINS PREAMBLE DATA)

R4 = BYTE 2 DATA (WITH THE EXCEPTION OF THE SKEWED TRACK. THAT TRACK CONTAINS BYTE 1 DATA)

5.4.3.1 SUBTEST 1 - P.E. SKEW TEST

THIS TEST WRITE AN ALL 1'S PREAMBLE (SKEWED), AN ALL O'S BYTE 1 (SKEWED), AND AN ALL 1'S BYTE 2 DATA (SKEWED).

5.4.3.2 SUBTEST 2 - P.E. SKEW TEST

THIS TEST SENDS AN ALL 1'S PREAMBLE (SKEWED), AN ALL 1'S BYTE 1 DATA (SKEWED) AND AN ALL 0'S BYTE 2 DATA (SKEWED).

5.4.4 TEST 7 CHECKS THE DEAD TRACK LOGIC BY RIPPLING A
DEAD TRACK THRU A FIELD OF LIVE TRACKS AND ONE LIVE TRACK THRU
A FIELD OF DEAD TRACKS. ADDITIONALLY, EACH SUBTEST WILL SEND
1'S DATA AND O'S DATA IN ORDER TO TEST THE 1'S OR DEAD REGISTER
AND THE O'S OR DEAD REGISTER.

REGISTER USAGE:

R2 = PREAMBLE ALL 1'S CHARACTER

R3 = 1ST DATA BYTE (BITS 0-8)

R4 = 2ND DATA BYTE (BITS 0-8)

DIKIDN = DEAD TRACK DEFINED IN BITS 0-8 (C=LIVE TRK; 1=DEAD TRK)

THIS TEST RIPPLES A DEAD TRACK IN A FIELD OF LIVE TRACKS.

5.4.4.2 SUBTEST 2 - P.E. DEAD TRACK TEST

THIS TEST RIPPLES A LIVE TRACK IN A FIELD OF DEAD TRACKS.

5.5 TEST 8 - LOOKUP TABLE TEST

THIS TEST VERIFIES THAT THE CONTENTS OF THE ROM LOOKUP TABLE ARE CORRECT. THE ROM CONTENTS IN ADDRESSES 1777-0 ARE CHECKED.

DATA AND REGISTER USAGE:

ROMLKI = ROM LOOKUP TABLE ADDRESS.

ERRLFG = ERROR FLAG. R5 = DIABLK INDEX.

5.6 TEST 9 - INLINE MICRO DIAG TEST

ALLOWS INLINE MICRO DIAGS TO RUN, THEN CHECKS THE STATUS THEY RETURN.

5.7 TEST 10 - INIT MICRO DIAG TEST

ALLOWS INIT MICRO DIAGS TO RUN, THEN CHECKS THE STATUS THEY RETURN.

TEST 9: IN-LINE MICRO DIAGNOSTIC TEST

TEST 10: INIT MICRO DIAGNOSTIC TEST HARDWARE PARAMETER CODING SECTION SOFTWARE PARAMETER CODING SECTION

HARD CODED P-TABLE

4192

4217 4239 4277

4321

SEQ 0033

PARAMETER CODING MACY11 30(1046) 19-AUG-79 20:27 PAGE 1 NLISTF.P11 15-AUG-79 13:01

SEQ 0034

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MACY11 30(1046) 19-AUG-79 20:27 PAGE 6
PROGRAM HEADER AND TABLES
CZTSIB.P11
               19-AUG-79 20:26
                                             .TITLE PROGRAM HEADER AND TABLES
     3
                                            .SBITL PROGRAM HEADER
     5
                                                     .ENABL ABS, AMA
                 002000
                                                              2000
     6
     89
        002000
                                                     BGNMOD
    10
    11
                                            : THE PROGRAM HEADER IS THE INTERFACE BETWEEN
    12
                                            : THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
    14
    15
        002000
                                                     POINTER BGNAU, BGNDU, BGNSW, BGNSFT, BGNSETUP
    16
    17
    18
        002000
                                                     HEADER CZTSI, B.O. 25,0
    19
        002000
                                            L$NAME ::
                                                                       :DIAGNOSTIC NAME
    20
21
22
23
24
25
        002000
                     103
                                                                                                                   .ASCII /C/
                     132
                                                                                                                    .ASCII /Z/
        002001
                                                                                                                    .ASCII /T/
        002002
                     124
        002003
                     123
                                                                                                                    .ASCII /S/
                                                                                                                    .ASCII /1/
        002004
                     111
                                                                                                                    .BYTE
                                                                                                                            0
        002005
                     000
                                                                                                                            0
    26
27
28
29
30
        002006
                     000
                                                                                                                    .BYTE
                                                                                                                    .BYTE
                                                                                                                            0
        002007
                     000
                                            L$REV::
                                                                       : REVISION LEVEL
        002010
                                                                                                                   .ASCII
                                                                                                                            /B/
        002010
                     102
                                            L$DEPO::
                                                                       :0
        002011
    31
32
33
                                                                                                                   .ASCII /0/
        002011
                     060
        002012
                                            L$UNIT::
                                                                       ; NUMBER OF UNITS
                                                                                                                            T$PTHV
        002012
                 000001
                                                                                                                   . WORD
    34
                                                                       :LONGEST TEST TIME
        002014
                                            LSTIML ::
                                                                                                                            25
                                                                                                                    . WORD
        002014
                 000025
    36
37
        002016
                                            L$HPCP::
                                                                       : POINTER TO H.W. QUES.
                                                                                                                            L$HARD
                                                                                                                    . WORD
        002016
                 034066
                                                                       : POINTER TO S.W. QUES.
    38
        002020
                                            L$SPCP::
                                                                                                                            L$SOFT
    39
        002020
                 034140
                                                                                                                    . WORD
                                                                       :PTR. TO DEF. H.W. PTABLE
                                            L$HPTP::
    40
        002022
                                                                                                                            L SHW
                                                                                                                    . WORD
    41
        002022
                 002204
    42
                                            L$SPTP::
                                                                       ; PTR. TO S.W. PTABLE
        002024
                                                                                                                            L$SW
                                                                                                                    . WORD
        002024
                 002212
                                                                       :DIAG. END ADDRESS
         002026
                                            L$LADP::
                                                                                                                            L&LAST
        002026
                 034534
                                                                                                                    . WORD
                                            L$STA::
                                                                       RESERVED FOR APT STATS
         002030
                                                                                                                            0
                                                                                                                    . WORD
    47
         002030
                 000000
    48
        002032
                                            L$CO::
    49
                                                                                                                    . WORD
        002032
                 000000
                                                                       :DIAGNOSTIC TYPE
                                            LSDTYP::
    50
        002034
                                                                                                                            0
    51
        002034
                 000000
                                                                                                                    . WORD
    52
53
                                                                       : APT EXPANSION
         002036
                                            LSAPT::
                                                                                                                            0
                                                                                                                    . WORD
                 000000
         002036
    54
         002040
                                            L$DTP::
                                                                       :PTR. TO DISPATCH TABLE
    55
                                                                                                                    . WORD
                                                                                                                            L SDISPATCH
                 002124
        002040
                                                                       ; DIAGNOSTIC RUN PRIORITY
    56
                                            L$PRIO::
         002042
                                                                                                                            0
                                                                                                                    . WORD
        002042
                  000000
```

PROGRAM CZTS1B.F	11 1	AND TABLES 9-AUG-79 20:26	MACY11 30(1046) 19-AUG-79 PROGRAM HEADER	20:27 PAGE 7		SEQ 0036
58 59	002044	000000	LSEXP1::	;EXPANSION WORDS	.WORD	0
60	002046	000000	LSEXP2::		. WORD	0
62 63 64	002050 002050 002051	003 002	L\$MREV::	SVC REV AND EDIT #	.BYTE	CSREVISION CSEDIT
65 66 67	002052 002052 002054	000000 000000	L\$Ef::	;DIAG. EVENT FLAGS	.WORD	0
68 69	002056	000000	L\$SPC::		.WORD	0
70 71	002060	002174	L\$DEVP::	; POINTER TO DEVICE TYPE LIST	.WORD	L\$DVTYP
72	002062		L\$REPP::	;PTR. TO REPORT CODE		
73 74	002062 002064	000000	L\$EXP4::		.WORD	0
75 76	002064	000000	L\$EXP5::		.WORD	0
77	002066	000000		- 0.10 10 400 1111 0005	.WORD	0
78 79	002070 002070	030112	L\$AUT::	;PTR. TO ADD UNIT CODE	.WORD	L\$AU
80 81	002072	030074	L\$DUT::	;PTR. TO DROP UNIT CODE	.WORD	L\$DU
82	002074		L\$LUN::	; LUN FOR EXERCISERS TO FILL	.WORD	0
83 84	002074	000000	L\$DESP::	; POINTER TO DIAG. DESCRIPTION		
85 86	002076	002150	L\$LOAD::	GENERATE SPECIAL AUTOLOAD EMT	.WORD	L\$DESC
87 88	002100	104035	L\$ETP::	;POINTER TO ERRIBL	EMT	E\$LOAD
89	002102	000000			.WORD	0
90 91	002104	027316	L\$1CP::	;PTR. TO INIT CODE	.WORD	LSINIT
92 93	002106	030052	L\$CCP::	PTR. TO CLEAN-UP CODE	.WORD	L\$CLEAN
94	002110		L\$ACP::	PIR. TO AUTO CODE		
95 96	002110		L\$PRT::	PTR. TO PROTECT TABLE	.WORD	L\$AUTO
97 98	002112	027310	L\$TEST::	:TEST NUMBER	.WORD	L\$PROT
99	002114	000000	L\$DLY::	; PELAY COUNT	.WORD	0
100 101	002116	000000			.WORD	0
102 103 104	002120	000000	L\$HIME::	;PTR. TO HIGH MEM	.WORD	0

PROGRAM CZTSIB.	HEADER P11 1	AND TABL	ES 20:26	MACY11	30(1046) 19-AUG-79 DISPATCH TABLE	20:27	L 3 PAGE 8			SEQ 0037
105					.SBTTL DISPATCH T	ABLE				
106 107 108 109 110 111					THE DISPATCH TAB	LE CONTA E SUPERV	INS THE STARTING ADDR	ESS OF EACH TEST. ACH TEST.		
112	002122				DISPATCH 1	0		1.202		
113	002122	000012			LSDISPATCH::			.WORD	10	
115 116 117 118	002124 002126 002130 002132	030130 030464 030644 031336						.WORD .WORD .WORD .WORD .WORD	11 12 13 14 15	
119 120	002134 002136	032232 032674						.WORD	16	
121	002140	033256 033640						.WORD	17 18	
123 124	002144	033774 034042						.WORD	19 110	
125 126					.SBTTL DESCRIPTIV	E TEXT				
120 121 122 123 124 125 126 127 128 129 130 131					2 LINES OF TEXT P	RINTED T	O THE OPERATOR TO IDE	NTIFY THE DIAG AND THE D	EVICE	
132	002150				DESCRIPT	<0	ONTROL LOGIC TEST>			
133 134	002150	047503	052116	047522	L\$DESC::			.ASCIZ	/CONTROL	LOGIC T
135 136	002156	020114	047514 042524	044507 052123						
137 138 139	002172	000			201712		c11.	.EVEN		
140	002174				LSDVTYP::	<1	\$11>			
141	002174	051524 002202	030461	000				.ASCIZ .EVEN	/1511/	

PROGRAM CZTS1B.		AND TABLES 9-AUG-79 20:26	MACY11 30(1046) DEFAULT		M 3 5-79 20:27 PAGE 9 RE P-TABLE		SEQ 0038
143			.SBTTL	DEFAUL	HARDWARE P-TABLE		
143 144 145 146 147			:++ : THE 0	FFAGET I	HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF		
147			; THE T	EST-DEV	TO THE STRUCTURE OF THIS TABLE TO THE STRUCTURE OF THE RUN-TIME P-TABLE.		
148 149 150			;		THE STREET OF THE HOW TIME TO MAKE		
151	002202	000002		BGNHW	DFPTBL	.WORD	L10000-L\$HW/2
153	002204		L\$HW:: DFPTBL:				
155 156	002204	172522		172522	:ISSR ADDRESS		
157 158	002206	000224		224	; VECTOR ADDRESS		
159 160	002210		L10000:	ENDHW			

PROGRAM CZTS18.	HEADER P11	AND TABLES 19-AUG-79 20:26	MACY11 30(1046) 19-AUG SOFTWARE P-TABL	G-79 20:27 PAGE	10		SEQ 0039
161			.SBTTL SOFTWAR	RE P-TABLE			
161 162 163 164 165 166 167 168			: THE SOFTWARE : PARAMETERS IN	P-TABLE CONTAINS HAT CAN BE CHANGE	THE VALUES OF THE PROGRAM D BY THE OPERATOR.		
168	002210		BGNSW	SFPTBL			
170 171 172 173	002210 002212 002212	000001	L\$SW:: SFPTBL::	STATE		.word	L10001-L\$SW/2
174	002212	000	CMPFLG:: .BYTE	0	; ENABLE DATA COMPARE ERROR PRINT	FLAG	
175 176 177	002213	000	.BYTE	0	:0=DO NOT ENABLE IS DEFAULT :SPARE FLAG		
178 179	002214 002214		L10001:				
180 181	002214		ENDMOD				

```
PROGRAM HEADER AND TABLES
                                 MACY11 30(1046) 19-AUG-79 20:27 PAGE 11
                                                                                                                                 SEQ 0040
CZTSIB.P11
              19-AUG-79 20:26
                                          SOFTWARE P-TABLE
   182
183
                                          .TITLE GLOBAL AREAS
   184
                                          .SBITL GLOBAL EQUATES SECTION
   185
        002214
                                                  BGNMOD
   186
   187
                                          ; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
   188
                                          ; ARE USED IN MORE THAN ONE TEST.
   189
   190
   191
   192
        002214
                                                  EQUALS
   193
   194
                                           BIT DIFINITIONS
                                          BIT15== 100000
   196
                 100000
   197
                040000
                                          BIT14== 40000
   198
                020000
                                          BIT13== 20000
   199
                                          BIT12== 10000
                010000
   200
                004000
                                          BIT11== 4000
   201
202
203
                002000
                                          BIT10== 2000
                                          BIT09== 1000
                 001000
                000400
                                          BIT08== 400
   204
                                          BIT07== 200
                000200
                 000100
                                          BIT06== 100
   206
                000040
                                          B1105== 40
   207
                000020
                                          B1T04== 20
   208
                                          BIT03== 10
                000010
   209
                                          BIT02== 4
                000004
   210
                                          BIT01== 2
                000002
                                          BIT00== 1
                000001
  BIT9== BIT09
                001000
                000400
                                          BIT8 == BIT08
                                          B117== B1107
                000200
                                          B1T6== B1T06
                000100
                                          BIT5== BIT05
                000040
                 000020
                                          BIT4== BIT04
                                          B113== B1103
                 000010
                                          BIT2 == BIT02
                000004
                                          BIT1 == B1T01
                000002
                                          BIT0== BIT00
                000001
                                           EVENT FLAG DEFINITIONS
                                            EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION
                                          EF.START ==
                                                                                              START COMMAND WAS ISSUED
                000040
                                          EF.RESTART ==
                                                           31.
                                                                                              RESTART COMMAND WAS ISSUED
                 000037
                                                                                            ; CONTINUE COMMAND WAS ISSUED
                                          EF.CONTINUE ==
                                                           30.
                 000036
                                                           29.
                                                                                            ; A NEW PASS HAS BEEN STARTED
                 000035
                                          EF . NEW ==
                                                                                             : A POWER-FAIL / POWER-UP OCCURRED
                                                           28.
                 000034
                                          EF.PWR ==
                                            PRIORITY LEVEL DEFINITIONS
                 000340
                                          PR107== 340
                                          PR106== 300
                 000300
```

GLOBAL AREAS	MACY11 30(1046) 19-AUG-79 20:26	19-AUG-79 20:27 PAGE 12 GLOBAL EQUATES SECTION	SEQ 0041
238 239 240 241 242 243	000240 000200 000140 000100 000040 000000	PR105== 240 PR104== 200 PR103== 140 PR102== 100 PR101== 40 PR100== 0	
244		OPERATOR FLAG BITS	
246 247 248 249 250 251 252 253 254 255 256 257 258 259 260	000004 000010 000020 000040 000100 000200 000400 001000 002000 004000 010000 020000 040000 100000	EVL == 4 LOT == 10 ADR == 20 IDU == 40 ISR == 100 UAM == 200 BOE == 400 PNT == 1000 PRI == 2000 IXE == 4000 IBE == 10000 LOE == 40000 HOE == 100000	
261 262		BIT DEFINITIONS USED TO SPECIFY THE ROM ADDRESS LINES IN THE ROMLOK	
263 264 265 266 267 268	001000 000400 000200 000100 000040 000020 000010 000004 000002 000001	SUBROUTINE A9== 1000 A8== 400 A7== 200 A6== 100 A5== 40 A4== 20 A3== 10 A2== 4 A1== 2 A0== 1	
269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289	000005 000200 000000 000033	THE FOLLOWING DEFINITIONS MAY CHANGE ON MICRO-CODE REASSEMBLY: WRPLO==5 WRPHI==200 ;WRITE WRAP TASK ADR LO. POPJHI==0 ;TSO4 POPJ ADDRESS HI (RTS) POPJLO==35 ;TSO4 POPJ ADDRESS LO (RTS)	

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0 4
                 MACY11 30(1046) 19-AUG-79 20:27 PAGE 13
GLOBAL AREAS
               19-AUG-79 20:26
CZTSIB.P11
                                            GLOBAL EQUATES SECTION
   290
291
292
293
294
295
                                                     TSSR REGISTER BIT DEFINITIONS.
                  001000
                                             TS. XA1 == 1000
                                                                                 :EXTENDED ADDRESS BIT 1
                  000400
                                                                                 :EXTENDED ADDRESS BIT O
                                             TS. XA0==400
                  000200
                                             TS.SSR==200
                                                                                 : SUBSYSTEM READY BIT.
                                                                                 NEED BUFFER ADRESS-CLEARED BY SET CHAR
                  002000
                                             TS.NBA==2000
   296
297
298
                                                                                                      -SET BY COMD WITHOUT SET CHAR
                  020000
                                                                                 SERIAL BUS PARITY ERROR AT 1511
                                             TS.SPE == 20000
                  177717
                                             FCMASK == 177717
                                                                                 : FATAL CLASS CODE MASK
   299
                 177701
                                                                                 :TERMINATION AND FATAL CLASSES CODE MASK
                                             TCFCMK==177701
   300
                                             THE FOLLOWING ARE BIT DEFINITIONS FOR THE COMMAND WORD
   301
   302
   303
                  100000
                                                                                 : ACKNOWLEDGE BIT
                                             ACK . C == 100000
                                             CVC.C==40000
   304
                  040000
                                                                                 : CLEAR VOLUME CHECK.
   305
                  020000
                                             OPP.C==20000
                                                                                 : OPPOSITE BIT
   306
                  010000
                                             SWB. C == 10000
                                                                                 : SWAP BYTE BIT
   307
                                                                                 : MODE BIT 3
                                             MOD.C3 = = 4000
                  004000
                                                                                 : MODE BIT 2
                                             MOD.C2==2000
   308
                  002000
   309
                                             MOD. C1 == 1000
                                                                                 : MODE BIT 1
                  001000
                                                                                 : MODE BIT 0
   310
                  000400
                                             MOD.C0 = = 400
   311
                  000200
                                             IE.C==200
                                                                                 : INTERRUPT ENABLE
                                             FMT.C1==100
   312
                  000100
                                                                                 : FORMAT BIT 1
   313
                                             FMT. CO == 40
                                                                                 : FORMAT BIT O.
                  000040
   314
                  000020
                                             CMD. C4==20
                                                                                 : COMMAND BIT 4
   315
                                             CMD. C3 == 10
                                                                                 : COMMAND BIT 3
                  000010
                                             CMD. C2==4
                                                                                 : COMMAND BIT 2
   316
                  000004
   317
                  000002
                                             CMD. C1 == 2
                                                                                 : COMMAND BIT 1
   318
                                             CMD.CO==1
                                                                                 : COMMAND BIT O
                  000001
   319
   320
                                             : BIT DEFINITIONS FOR DEVICE CHARACTERISTICS.
   321
   322
323
                 000200
                                             CH.ESS == 200
                 000040
                                             CH.EAI == 40
   324
325
326
327
                 000020
                                             CH. ERI == 20
                                             : ROM LOOKUP TABLE BIT DEFINITIONS
   328
329
330
                                                                                 : MULT TRACKS
                 000200
                                             .MULT == 200
                                                                                 : READ FILE MARK PATTERN
                  000100
                                             .RDFMK == 100
                                                                                 : PREAMBLE
                  000040
                                             .PREAM==40
   331
332
333
                                                                                 :9 OF 9 TRACKS
                  000020
                                             .90F9==20
                                                                                 : NONE OF 9 TRACKS
                                             .00F9==10
                  000010
                                                                                 : CORRECTABLE DATA
                  000004
                                             .CORD==4
                                             .INCOR==2
                                                                                 : INCORRECTABLE DATA
   334
                  000002
   335
                                                                                 :8 OF 9 TRACKS
                                             .80F9==1
                  000001
   336
   337
                                                     MISCELLANEOUS DEFINITIONS.
   338
                                                                                 PRIORITY TO BE USED IN THE INTERRUPT STATE.
   339
                                             INTPRI==PRIO7
                  000340
                                                                                 :BUFFER LENGTH. (EVEN #)
   340
                  000010
                                             SCHEXT == 10
   341
342
343
344
345
                                                                                 : MESSAGE BUFFER LENGTH IN BYTES. (EVEN #)
                                             MSGEXT == 16
                  000016
                                                                                 :DIABLK EXTENT IN OCTAL.
                                             D1AEXT == 20
                  000020
                                             DIA==ACK.C!CMD.C2!CMD.C1
                                                                                 :DIA CMD WORD.
                  100006
                                             SCH==ACK.C!CVC.C!CMD.C2
                                                                                 ; SCH (SET CHAR) CMD WORD.
                  140004
                                             GES == ACK.C!CMD.CO!CMD.C1!CMD.C2!CMD.C3 ;GET STATUS COMMAND
                  100017
```

. SEQ 0042

GLOBAL AREAS	MACY11 30(1046) 19-AUG-79 20:26	19-AUG-79 20:27 PAGE 14 GLOBAL EQUATES SECTION	E 4
346 347 348 349	020000 040000 000200 177777	BPE = 20000 SIP = 40000 MOT = 200 ENDIBL = 177777	;XSTAT2, SERIAL BUS PARITY ERROR AT TSO4 ;XSTAT2, SILO PARITY ERROR ;XSTATO, TAPE MOVING ;END OF A TABLE FLAG
350 351 352 353		THE FOLLOWING INDICATES IN THE MESSAGE BUFFER.	THE RELATIVE POSITIONS OF THE STATUS WORDS
354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372	000004 000006 000010 000012 000014 000005 000007 000010 000011 000012 000013 000014 000001 000002 000004 000020 000040	MS\$RFC==4 MS\$XSO==6 MS\$XS1==10 MS\$XS2==12 MS\$XS3==14 C18\$OR==4 C18\$1D==5 C18\$TA==7 C18\$DA==10 C18\$TD==11 C18\$OD==12 ROM\$LK==13 PRCHST==14 CH9.OR==1 CH9.OR==1 CH9.TD==2 CH9.TA==4 CH9.DA==10 CH9.TD==20 CH9.OD==40	RESIDUAL FRAME COUNT. EXT STATUS REG 0 EXT STATUS REG 1 EXT STATUS REG 2 EXT STATUS REG 3 INDEX FOR OUTPUT READY INFO (CHAN 1-8). INDEX FOR 1 OR DEAD INFO (CHAN 1-8) INDEX FOR TRACK ACTIVE INFO. (CHAN 1-8) INDEX FOR DATA INFO. (CHAN 1-8) INDEX FOR TRACK DEAD INFO. (CHAN 1-8) INDEX FOR O OR DEAD INFO. (CHAN 1-8) INDEX FOR LOOKUP TABLE STATUS OF THE PARITY CHANNEL (CHANNEL 9) BIT POSITION FOR OUTPUT RDY FOR CHAN 9 BIT POS FOR 1 OR DEAD INFO FOR CHAN 9. BIT POS OF DATA INFO FOR CHAN 9. BIT POS OF DATA INFO FOR CHAN 9.
373 374 375 376 377 378 379 380 381	000000 000002 000004 000006	:THE FOLLOWING DEFINITION ;PACKET ENTRIES. CP\$CMD==0 CP\$ADL==2 CP\$ADH==4 CP\$CNT==6	CMDPKT+0==TSO4 COMMAND. CMDPKT+2==BUFFER ADDRESS LOW. CMDPKT+4==BUFFER ADDRESS HIGH. CMDPKT+6==BYTE/FILE/RECORD COUNT.

GLOBAL AREAS CZTSIB.P11	MACY11 30(1046) 19-AUG-79 20:26	19-AUG-79 20:27 PAGE 15 GLOBAL EQUATES SECTION	F 4		
382 383		:THE FOLLOWING ARE REGISTERS OF INTEREST	ISTER AND BIT DEFINITIONS FOR THE TSO4 IN THIS DIAGNOSTIC.		
384 385 386 387 388 389 390	000004	; FMCTLO - FORM/ FMCTLO= ; WRITE	ATTER MAJOR STATE CONTROL REG ==4 REGISTER 4		
390 391 392 393		; THIS F ; RECORD	REGISTER IS SET UP FOR THE PORTION OF THE DIWE ARE PRESENTLY READING		
394 395 396 397	000200	FC.RD== 200	; WE ARE DOING NORMAL READ. IF 0, WE DISABLE SOME ERROR : CORRECTION LOGIC SO WE'RE MORE DISCRIMINATING : FOR READ AFTER WRITE.		
398	000100	FC.FL0==100	:SETING THIS BIT CAUSES .FMFLO ON BBUS TO BE TRUE :(NEEDED.BY THE RD PE ROUTINE)		
399 400 401 402 403 404 405	000010 000004 000002 000001	FC.DAT == 10 FC.PRE == 4 FC.VCO == 2 FC.NRZ == 1	; DATA MODE ; PREAMBLE MODE ; VCO SYNC MODE ; NRZI MODE (FORCE SKEW WINDOW TO STAY OPEN) ; CAUSES FMTAUI TO BE CLRED WHEN YOU WRITE ; TO THE FMCLDO REGISTER.		
406 407		, DOCTIO - DEAD	CONTROL DECISTED		
408 409 410 411	000020	RDCTLO= READ RDCTLO= ;WRITE	CONTROL REGISTER ==20 REGISTER 20		
412		;THIS REGISTER	CONTROLS THE FORMATTER MODE AND THRESHOLD.		
413 414 415 416	000200 000100	RD.REV==200 RD.MAI==100	:1 FOR REV MOTION, 0==FWD :1/O FORMATTER DATA WRAPAROUND		
417 418 419	000040	RD.SPC==40	:WE ARE SPACING RECORDS. (THIS BIT IS UNUSED IN :THE HARDWARE BUT IS A SOFTWARE FLAG IN THE READ CODE)		
420	000020	RD.SKP==20	:WE ARE SKIPPING FILES. (THIS BIT IS UNUSED IN :THE HARDWARE BUT IS A SOFTWARE FLAG IN THE READ CODE)		
421 422 423 424 425 426 427 428 429 430 431 432 433	000007 000006 000005 000004 000003 000002 000001	RD.110==7 RD.90==6 RD.75==5 RD.68==4 RD.40==3 RD.20==2 RD.12==1 RD.07==0	THE FOLLOWING THRESHOLDS ARE AVAILABLE: NORM USE DIAG USE HI PREAMP GAIN LO PREAMP, BAD TAPE CLEAN RESIDUAL ERASE CHK FWD/REV AMP BALANCE NRZ WRT NRZ RD, PE WRT PE READ, NRZ ERR RECOV RD/WRT CROSSTALK PE ERR RECOV ERASE FUNCTION DATA PORTION ONLY		

			G 4	
GLOBAL AREAS	MACY11 30(1046) 19-AUG-79 20:26	19-AUG-79 20:27 PAGE 16 GLOBAL EQUATES SECTION		SEQ 0045
435 436 437 438	000014	;10SCO - 1/0 SI 10SCO= ;WRITE		
439 440 441 442 443 444 445 446		;BY THE ;1S PA ;THE IO ;ONCE ;NOTE THAT IF ;PARITY IN THE	REGISTER CONTAINS THE SILO CONTROL BITS FOR DATA WRITTEN E MAIN OR 1/0 MICRO TO THE SILO. THE DATA IN THIS REGISTED WITH THE IOSDO REG AND PUT IN THE SILO WHENEVER OSICO REG IS CLOCKED. THIS REGISTER NEED ONLY BE WRITTEN IF THE SAME OLD DATA IS OK TO BE WRITTEN IN THE SILO. THE 1/0 IS WRITING THE SILO, THE MAIN MUST PUT EVEN BITS 357 OR THE 1/0 WILL WRITE PAR ERRS IN THE SILO. IT IS DON'T CARE HERE FOR 1/0 WRITING THE SILO)	
448 449 450 451	000200	IS.PAR==	200 ;OUD PAR BIT FOR ALL 16 BITS (CNRTL AND DATA) ;NOTE THAT THE BITS MASKED BY 357 MUST BE ;EVEN PARITY BECAUSE THE 9 DATA BITS ARE ODD	
452 453 454	000100	15.1vP==	100 ; INVERT CNTRL SILO PAR BIT BEFORE MOVING ; TO WRITE BOARD (WRITE EVEN PARITY ON TAPE)	
455 456 457	000040	I S . NR Z = =	; DATA BIT IS A 1. (IF IS.NRZ==0, WE'RE IN PE MODE)	
458 459	000020	15.DAP==	20 ;ODD PARITY FOR THE 8 DATA BITS IN 10SDO	
460 461 462 463 464	000010 000004	15.LRC== 15.WRF==	; CAUSES SYNCRONOUS CLR ON WRT BOARD TO WRITE THE ; THIS FLG BIT SHOWS UP AT THE WRITE BOARD ; WITH THE CORRESPONDING DATA. THE FUNCTION OF ; THE BIT WILL BE DEFINED BY THE WRITE BOARD.	LRC CHA

NOTE HOWEVER THAT IF THE WRITE BOARD SEES THE BIT 1, THE PA.WRF BIT IN THE PRATNI REG WILL ALSO BE 1 (IF ENABLED

;TG AFFECT THE ATTN REG).

;THE 2 LOW BITS ARE WRITABLE AND AFFECT THE PARITY TREES BUT
;OTHERWISE ARE UNIMPLEMENTED

```
H 4
GLOBAL AREAS
                MACY11 30(1046) 19-AUG-79 20:27 PAGE 17
CZTSIB.P11
              19-AUG-79 20:26
                                        GLOBAL DATA SECTION
                                        .SBITL GLOBAL DATA SECTION
   474
   475
  476
                                        : THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
                                        ; IN MORE THAN ONE TEST.
   478
   479
   480
                                                TSO4 REGISTER ADDRESSES.
   481
       002214
                                                                         : TSO4 DATA BUFFER ADDRESS.
   482
               000000
                                        TSDB:: 0
                                                                         : TSDB HI BYTE ADDRESS.
       002216
               000000
                                        1SDBH1:: 0
   483
   484
       002220
                000000
                                        TSBA:: 0
                                                                         : TSO4 BUFFER ADDRESS REG ADDRESS.
       002222
                000000
                                                                         :TSBA HI BYTE ADDRESS.
   485
                                        TSBAHI:: 0
                                                                         : TSO4 STATUS REGISTER ADDRESS.
       002224
                000000
                                        TSSR:: 0
   486
                                                                         : TSO4 VECTOR ADDRESS.
   487
       002226
               000000
                                        TSVCT:: 0
   488
   489
                                                THE FOLLOWING IS THE TSO4 COMMAND PACKET.
   490
                                                (MUST BE ON A MODULO 4 BOUNDARY)
   491
   492
                002230
                                                .=.+3&177774
                                                                         : FORCES CMD PKT ON MODULO 4 BOUNDARY.
   493
   494
       002230 000000
                                        CMDPKT::0
                                                                         :1ST WORD::
                                                                                         TS04 COMMAND
   495 002232
                                                                         :2ND WORD::
                                                                                         BUFFER LOW ADDR.
               000000
                                                0
                                                                                         BUFFER HIGH ADDR.
                                                                         :360 WORD ::
   496 002234
                000000
   497
       002236
               000000
                                                                         :4TH WORD::
                                                                                         BYTE/RECORD/FILE COUNT.
   498
   499
                                             :SET CHAR PACKET
   500
   501
                002240
                                                .=.+38177774
   502
                                                                         :SET CHAR COMD HEADER
   503
       002240 140004
                                        SCHPKT::SCH
   504
       002242 002276
                                                SCHBLK
                                                                         :SET CHAR BLK AD LO
  505
                                                                         :SET CHAR BLK AD HI
       002244
                                                000000
               000000
                                                                         :BPCR=LENGTH OF SCHAR BLOCK
   506
       002246 000010
                                                SCHEXT
   507
   508
                                                :DIAG PACKET
   509
   510
                002250
                                                .=.+38177774
   511
                                                                         :DIAG COMD HEADER
   512
       002250 100006
                                        DIAPKT::DIA
       002252 002316
                                                DIABLK
                                                                         :DIAG BLOCK AD LO
   513
                                                                         ; DIAG BLOCK AD HI
       002254
                                                000000
   514
                000000
                                                                         :BPCR=DIABLK LENGTH
   515
      002256
               000020
                                                DIAEXT
   516
   517
                                                THIS IS THE MESSAGE PACKET.
   518
                                                                         :1ST WORD::
   519
       002260
                000000
                                        MSGPKT:: 0
                                                                                         MESSAGE WORD.
                                                                         :2ND WORD::
                                                                                         DATA FIELD LENGTH
                                        MSGDFL:: 0
        002262
                000000
   520
                                                                         :3RD WORD::
                                                                                         RESIDUAL FRAME COUNT.
                                        RFC:: 0
   521
       002264
                000000
   522
523
524
525
526
527
                                                                                         EXTENDED STATUS REG O.
                                                                         :4TH WORD ::
       002266
                000000
                                        XSTATO:: 0
                                                                                         EXTENDED STATUS REG 1.
       002270
                                                                         :5TH WORD::
                000000
                                        XSTAT1:: 0
                                                                         :6TH WORD::
                                                                                         EXTENDED STATUS REG 2.
                                        XSTAT2:: 0
                000000
        002272
                                                                         :7TH WORD::
                                                                                         EXTENDED STATUS REG 3.
        002274
                000000
                                        XSTAT3:: 0
                                                                         : PAST MSG PKT POINTER
                                        MSGEND == .
                002276
   528
                                         : THE SET CHARACTERISTIC BLOCK.
```

GLOBAL CZTSIB		MACY11 30(1046) 19-AUG-79 20:26	19-AUG-79 20:27 PAGE 18 GLOBAL DATA SECTION	
529 530 531 532 533 534 535	002276 002300 002302 002304	000000 000016	SCHBLK:: MSGPKT ;1ST WORD:: MSGPKT ADDR LO. O ;2ND WORD MSGPKT ADDR HI. MSGEXT ;3RD WORD:: MSG BUFFER LENGTH(BYTES). O ;4TH WORD:: CHARACTERISTIC WORD. ; ADDRESSES OF INTERRUPT HANDLING ROUTINES.	
536 537 538 539 540	002306 002310 002312 002314	014400 014410	TS41NT:: TS41NO ;DEVICE 0. TS41N1 ;DEVICE 1. TS41N2 ;DEVICE 2. TS41N3 ;DEVICE 3.	
541 542 543 544 545 546 547 548			THE DIAGNOSTIC COMMAND BUFFER. WHEN A DIAG COMMAND IS EXECUTED, THE TSO4 PLACES THE CONTENTS OF THIS BUFFER ONTO THE TSO4 STACK IN REVERSE ORDER, THEN EXECUTES WHAT IS ON THE STACK BY PERFORMING A COMMAND SIMILAR TO AN RTS. THE BUFFER IS INITIALLY LOADED WITH THE TSO4 CODE FOR AN RTS COMMAND.	
549 550 551 552 553 554 555 556 557 558 560 561 562 563 564 565	002316 002317 002320 002321 002322 002324 002325 002326 002337 002331 002331 002333 002333	033 000 033 000 033 000 033 000 033 000 033 000	DIABLK:: .BYTE POPJHI .BYTE POPJHO	

1 4

GLOBAL AREAS MACY11 30(1046) 19-AUG-79 20:27 PAGE 19

```
K 4
GLOBAL AREAS
                MACY11 30(1046) 19-AUG-79 20:27 PAGE 20
CZTSIB.P11
              19-AUG-79 20:26
                                        GLOBAL TEXT SECTION
                                        .SBTTL GLOBAL TEXT SECTION
  616
  617
  618
                                        THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
  619
                                        ; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN MORE THAN
  620
                                        ONE TEST.
  621
  622
  623
                                                ASCII MESSAGES USED IN ERROR REPORT HEADERS.
  624
  625
                                                .NLIST BEX
        002440
                        032117
                                041440
                                        DESCM:: .ASCIZ /TSO4 CONTROL LOGIC TEST PROGRAM/
               051524
        002500
               047503
                        046515
                                047101
                                        MODUER:: .ASCIZ /COMMAND PACKET ADDR NOT ON MODULO 4 BOUNDARY: RELOAD!/
                        032060
        002566
               051524
                                047040
                                        SSROFF:: .ASCIZ /TSO4 NOT READY - SSR NOT SET/
                        030123
                                020064
                                        SSRON:: .ASCIZ /TSO4 DID NOT DROP READY ON COMD ISSUANCE-SSR NOT O/
        002623
                  124
        002706 042120
                        030520
                                020061
                                        WRPER1:: .ASCIZ /PDP11 - TS11 WRAP FAILURE/
                        030520
                                020061
                                        WRPER2:: .ASCIZ /PDP11 - TS11 WRAP FAIL ON TSSR EXT ADDR BITS/
        002740
               042120
                                030461
                                        WRPER3:: .ASCIZ /PDP11 - TS04 WRAP FAILURE/
        003015
                   120
                        050104
        003047
                   123
                        052105
                                        SCHERR:: .ASCIZ /SET CHARACTERISTIC ERROR/
                                041440
                                020113
                                        TAER1:: .ASCIZ /TRACK ACTIVE NOT 0 FOR 1 OR MORE TRACKS/
        003100 051124
                        041501
        003150
               051124
                        041501
                                020113
                                        TAER2:: .ASCIZ /TRACK ACTIVE NOT 1 FOR 1 OR MORE TRACKS/
        003220
               051124
                        041501
                                020113
                                        TAERR:: .ASCIZ /TRACK ACTIVE ERROR/
       003243
                  120
                        042456
                                020056
                                        DATER:: .ASCIZ /P.E. DATA WRAP ERROR/
                                        SKEWER:: . ASCIZ /P.E. SKEW ERROR/
               027120
                        027105
                                051440
               027120
                                        DDER:: .ASCIZ /P.E. DEAD TRACK ERROR/
        003310
                        027105
                                042040
                                        DASKDD:: .ASCIZ /DATA OR SKEW OR DEAD TRK ERR/
        003336
                                047440
               040504
                        040524
                        046517
                                046040
                                        ROMER:: .ASCIZ /ROM LOOKUP TABLE ERROR/
        003373
                  122
                                050117
                                        SPECON:: .ASCIZ /IMPROPER TERMINATION - SPECIAL CONDITION BIT SET/
        003422
               046511
                        051120
                                        NINTM:: . ASCIZ /NO INTERRUPT/
                                047111
        003503
                  116
                       020117
                               051122 UINTM:: .ASCIZ /INTERRUPT OCCURRED WHEN DISABLED/
        003520 047111 042524
                  115 041511 047522 MICROE:: .ASCIZ /MICRO DIAGNOSTIC ERROR TSSR:FC=0,TC=7/
        003561
                                                        BEX
                                                .LIST
                                                .EVEN
  626
```

047501 020513 CRMSG:: .ASCIZ /%AOK!%N/

.LIST

.EVEN

BEX

GLOBAL A	REAS	MACY11 :	30(1046)	19-AUG-79 20: GLOBAL		PORT SECTION			SEQ 0051
632				.SBTTL	GLOBAL E	ERROR REPORT SECTION			
632 633 634 635 636 637 638 639 640				: THAT	ARE USED	ROR REPORT SECTION CONTAINS THE PRI IN MORE THAN ONE TEST. IT ALSO IN BY THE PRINTB AND PRINTX CALLS	NTB AND PRINT)	CALLS II MESS	AGES
641 642 643 644 645 646					:ENTER I :MSG AD :PER MSG	ESSAGE PRINT SUBR WITH R1=AD OF MSG AD TABLE TABLE CONTAINS AD OF MSGS TO PRINT G. THE TABLE MUST END WITH .WORD OF TABLE FLAG	ONE .WORD ALENDIBL=177777)	
648	005774				BGNMSG	LONMSG			
649 650 651 652 653	005774 005774 005774 005774 006000		177777	LONMSG:		R1) NE #177777 DO	50000\$:	CMP BEQ	(R1),#177777 50001\$
654	006002	011137	006040		LET M	SGADR := (R1)		MOV	(R1),MSGADR
656	006006				PRINTE	B MSGADR		MOV	MSGADR,-(SP)
657 00 658 00 659 00 660 00	006006 006012 006016 006020 006022	06 013746 006040 12 012746 000001 16 010600 10 104414 12 062706 000004	000001					MOV MOV TRAP ADD	#1,-(SP) SP,RO C\$PNTB #4,SP
662	006026				LET R	1 := R1 + #2		ADD	#2,R1
664	006026 006032		000002		ENDDO			BR	50000\$
665	006032						50001\$:	DK	30000\$
667 668 669 670	006034 006034 006036 006040	000167 000002		MSGADR:	EXIT	MSG 0		.WORD	J\$JMP L10002-2
671	006042				ENDMSG				
672 673 674	006042			L10002:				TRAP	C\$MSG
675	006044				BGMASG	WRAPR1			
676 677	006044			WRAPR1:	PRINTB	#TS11BD			
678 679 680 681	006044 006050 006054 006056	012746 012746 010600 104414	005037					MOV MOV TRAP ADD	#TS11BD,-(SP) #1,-(SP) SP,RO C\$PNTB #4,SP
682 683	006064		000004		PRINTX	WEEM1A,R3,TEMP1,UNIT			
684 685 686	006064 006070 006074	013746	002422					MOV MOV MOV	UNIT,-(SP) TEMP1,-(SP) R3,-(SP) #EEM1A,-(SP)
687	006076	012746	006122					MUV	MCCHIN,-(SF)

CZTSIB.	AREAS P11 1	9-AUG-79	30(1046)	19-AUG	GLOBAL	27 PAGE ERROR RE	PORT SECTION		SEQ 0052
688 689 690 691 692 693	006102 006106 006110 006112 006116	012746 010600 104415 062706	000004			EXIT	MSG	MOV MOV TRAP ADD	#4,-(SP) SP,RO C\$PNTX #12,SP
693 694 695	006116 006120	000167 000074						.WORD	J\$JMP L10003-2
696	006122 006150	040445 040445	051524 051524	040502 040502	EEM1A:	.NLIST .ASCII .ASCIZ .LIST .EVEN	BEX /%ATSBA EXPECTED=%B16%N/ /%ATSBA ACTUAL=%S2%B16%S3%AUNIT:%D1%N2/ BEX		
698	006216	10//27			L10003:	ENDMSG			
699 700 701	006216	104423				BGNMSG	WRAPR2	TRAP	C\$MSG
702 703	006220				WRAPR2:				
704 705 706 707	006220 006224 006230 006232	012746 012746 010600 104414	005646 000001					MOV MOV MOV TRAP	#10BRD,-(SP) #1,-(SP) SP,RO C\$PNTB
708 709	006234	062706	000004			PRINTX	#EEM2A,R4,TEMP1,UNIT	ADD	#4,SP
710 711 712	006240 006244 006250	013746 013746 010446	002422					MOV MOV MOV	UNIT,-(SP) TEMP1,-(SP)
713 714 715 716	006252 006256 006262 006264	012746 012746 010600 104415	006276					MOV MOV TRAP	R4,-(SP) WEEM2A,-(SP) W4,-(SP) SP,RO C\$PNTX
717 718 719	006266 006272 006272	062706	000012			EXIT MS	G	ADD	#12,SP
720 721	006274	000072				.NLIST	BEX	.WORD	J\$JMP L10004-2
722 723	006276 006323	040445	051524 052101	040502 041123	EEM2A:	.ASCII .ASCIZ .LIST .EVEN	/%ATSBA EXPECTED=%B8%N/ /%ATSBA ACTUAL=%S2%B8%S3%AUNIT:%D1%N2/ BEX		
725	006370	10//23			L10004:	ENDMSG		7040	cence.
726	006370	104423				BGNMSG	WRAPR3	TRAP	C\$MSG
728 729	006372 006372				WRAPR3:				
724 725 726 727 728 729 730 731 732 733 734 735 736	006372 006376 006402 006404	012746 012746 010600 104414	005646 000001					MOV MOV TRAP	#IOBRD,-(SP) #1,-(SP) SP,RO C\$PNTB
734 735	006406	062706	000004			PRINTX	#EEM3A,R4,TEMP2,UNIT	ADD	#4,SP
736 737	006412 006416	013746 013746	002422					MOV	UNIT,-(SP) TEMP2,-(SP)

GLOBAL	AREAS	MACY11	30(1046)	19-AUG	-79 20:	27 PAGE	B 5		
738 739 740 741 742	006422 006424 006430 006434 006436	9-AUG-79 010446 012746 012746 010600 104415	006450 000004		GLOBAL	ERROR RE	PORT SECTION	MOV MOV MOV TRAP	SEQ 0053 R4,-(SP) WEEM3A,-(SP) W4,-(SP) SP,RO C\$PNTX
743 744 745 746	006444 006444 006446	062706 000167 000072	000012			EXIT	MSG	.WORD .WORD	#12,SP J\$JMP L10005-2
747	006450 006475	040445 045	051524 052101	051123 051523	EEM3A:	.NLIST .ASCII .ASCIZ .LIST	BEX /%ATSSR EXPECTED=%B8%N/ /%ATSSR ACTUAL=%S2%B8%S3%AUNIT:%D1%N2/ BEX		
748 749 750 751	006542 006542 006542	104423			L10005:	.EVEN ENDMSG		TRAP	C\$MSG
752 753 754	006544 006544				WRAPR4:	BGNMSG:	WRAPR4		
755 756 757 758	006544 006544 006550 006554	012746 012746 010600	005037 000001			PRINTB	#TS11BD	MOV MOV MOV	#TS11BD,-(SP) #1,-(SP) SP,R0
759 760	006560	104414 062706	000004			DDINTY	WEEMAA DO TEMPO HINTT	ADD	C\$PNTB #4,SP
761 762 763 764 765 766 767 768 769	006564 006570 006574 006576 006602 006606 006610 006612	013746 013746 010246 012746 012746 010600 104415 062706	002422 002434 006622 000004			PRINIX	#EEM4A,R2,TEMP2,UNIT	MOV MOV MOV MOV MOV TRAP ADD	UNIT,-(SP) TEMP2,-(SP) R2,-(SP) WEEM4A,-(SP) W4,-(SP) SP,R0 C\$PNTX W12,SP
770 771 772	006616 006616 006620	000167 000072				EXIT	MSG	.WORD	J\$JMP L10006-2
773	006622 006647	040445 045	051524 052101	051123 051523	EEM4A:	.NLIST .ASCII .ASCIZ .LIST .EVEN	BEX /%ATSSR EXPECTED=%B8%N/ /%ATSSR ACTUAL=%S2%B8%S3%AUNIT:%D1%N2/ BEX		
775 776 777 778	006714 006714 006714	104423			L10006:	ENDMSG		TRAP	C\$MSG
779	006716 006716				TAEM::	BGNMSG	TAEM		
780 781 782 783 784 785	006716 006716 006722 006726 006732	013746 012746 012746 010600	002422 007016 000002			PRINTX	#TAEMA,UNIT	MOV MOV MOV	UNIT,-(SP) #TAEMA,-(SP) #2,-(SP) SP,R0
786 787	006734 006736	104415 062706	000006					ADD	CSPNIX #6.SP

GLOBAL CZTSIB.	AREAS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: GLOBAL		C 5 PORT SECTION		SEQ 0054
788 789 790 791 792 793 794	006742 006746 006746 006752 006756 006760 006762	013746 012746 012746 010600 104415 062706	002342 007067 000002				#TAEMB, EXTRAC	MOV MOV MOV TRAP ADD	EXTRAC,-(SP) #TAEMB,-(SP) #2,-(SP) SP,RO C\$PNTX #6,SP
795 796 797 798 799 800 801	006766 006766 006772 006776 007002 007004 007006	013746 012746 012746 010600 104415 062706	002360 007123 000002			PRINTX		MOV MOV MOV TRAP ADD	ACTRAC,-(SP) MTAEMC,-(SP) M2,-(SP) SP,RO C\$PNTX M6,SP
802 803 804 805	007012 007012 007014	000167 000156	051137	0/1501	TAEMA.	.NLIST	MSG BEX /%ATRACK:%S9%S6%AP76543210%S3%AUNIT:%D1%N/	.WORD	J\$JMP L10007-2
806 807	007016 007067 007123	040445 045 045 007174	051124 052101 052101	041501 045522 045522	TAEMA: TAEMB: TAEMC:	.ASCIZ .ASCIZ .ASCIZ .LIST .EVEN ENDMSG	/AATRK ACT EXP DATA: %54%B9%N/ /%ATRK%S%AACT%S%AACTUAL%S%ADATA: %5%B9%N2/ BEX		
807 808 809 810 811	007174 007174 007176	104423			L10007:	BGNMSG	SKDAEM	TRAP	C\$MSG
812 813 814 815 816 817 818 819	007176 007176 007176 007202 007206 007212 007214 007216	013746 012746 012746 010600 104415 062706	002422 007406 000002		SKDAEM:		#DAEM,UNIT	MOV MOV MOV TRAP ADD	UNIT,-(SP) #DAEM,-(SP) #2,-(SP) SP,R0 C\$PNTX #6,SP
820 821 822 823 824 825	007222 007222 007226 007232 007234 007236	012746 012746 010600 104415 062706	007461 000001 000004				#DAEMA	MOV MOV MOV TRAP ADD	#DAEMA,-(SP) #1,-(SP) SP,RO C\$PNTX #4,SP
826 827 828 829 830 831 832 833 834	007242 007246 007252 007256 007262 007266 007272 007274	013746 013746 013746 013746 012746 012746 010600 104415 062706	002356 002340 002354 002336 007530 000005			PRINTX	#DAEMB, EXORDY, ACORDY, EXIDIR, ACIDIR	MOV MOV MOV MOV MOV MOV TRAP ADD	AC1DTR,-(SP) EX1DTR,-(SP) ACORDY,-(SP) EXORDY,-(SP) #DAEMB,-(SP) #5,-(SP) SP,RO (\$PNTX #14,SP
836 837 838 839	007302 007302 007306 007312	013746 013746 013746	002362 002344 002360			PRINTX	WDAEMC, EXTRAC, ACTRAC, EXDATA, ACDATA	MOV MOV MOV	ACDATA(SP) EXDATA(SP) ACTRAC(SP)

GLOBAL CZTSIB.	AREAS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG		27 PAGE ERROR RE	D 5 26 PORT SECTION		SEQ 0055
840 841 842 843 844	007316 007322 007326 007332 007334 007336	013746 012746 012746 010600 104415 062706	002342 007617 000005			201414	#DAEMD EVIDOD ACIDOD EVODID ACODID	MOV MOV MOV TRAP ADD	EXTRAC,-(SP) #DAEMC,-(SP) #5,-(SP) SP,R0 C\$PNTX #14,SP
846 847 848 849 850 851 852 853 854	007342 007346 007352 007356 007362 007366 007372 007374	013746 013746 013746 013746 012746 012746 010600 104415 062706	002366 002350 002364 002346 007701 000005			PRINTX	WDAEMD, EXTRDD. ACTRDD, EXODTR, ACODTR	MOV MOV MOV MOV MOV MOV TRAP ADD	ACODTR,-(SP) EXODTR,-(SP) ACTRDD,-(SP) EXTRDD,-(SP) #DAEMD,-(SP) #5,-(SP) SP,RO C\$PNTX #14,SP
856 857 858	007402 007402 007404	000167 000362				EXIT	MSG	.WORD	J\$JMP L10010-2
859	007406 007461 007530 007564 007617 007653 007701 007734	051445 045 040445 040445 045 045 045 045	022471 052101 052517 020061 052101 042101 052101 020060	032523 040522 050124 051117 040522 052101 040522 051117	DAEMA: DAEMB: DAEMC: DAEMC:	.NLIST .ASCIZ .ASCIZ .ASCII .ASCIZ .ASCII .ASCIZ .ASCII .ASCIZ	BEX /%S9%S5%AEXPECTED%S7%AACTUAL%S3%AUNIT:%D1%N/ /%ATRACK:%S8%AP76543210%S5%AP76543210%N/ /%AOUTPUT READY:%S%B9%S5%B9%N/ /%A1 OR DEAD:%S4%B9%S5%B9%N/ /%ATRACK ACTIVE:%S%B9%S5%B9%N/ /%ADATA:%S9%B9%S5%B9%N/ /%ATRACK DEAD:%S3%B9%S5%B9%N/ /%AO OR DEAD:%S4%B9%S5%B9%N2/ BEX		
860 861 862 863	007770 007770 007770	104423			L10010:	.EVEN ENDMSG		TRAP	C \$MSG
864 865 866	007772 007772				ROMEM::	BGNMSG	ROMEM		
867 868 869 870 871 872 873 874 875	007772 007772 007776 010002 010006 010012 010016 010022 010024 010026	013746 013746 013746 013746 012746 012746 010600 104415 062706	002422 002370 002352 002420 010036 000005			PRINTX	#ROMEMA, ROMLKI, EXROML, ACROML, UNIT	MOV MOV MOV MOV MOV TRAP ADD	UNIT,-(SP) A(ROML,-(SP) EXROML,-(SP) ROMLKI,-(SP) #ROMEMA,-(SP) #5,-(SP) SP,RO C\$PNTX #14,SP
877 878	010032 010032	000167	000014			EXIT	MSG	.WORD	J\$JMP L10011-2
879 880	010034 010036 010057 010077	000102 040445 045 045	042101 042501 040501	051104 050130 052103	ROMEMA:	.ASCII	BEX /%AADDRESS=%S%O4%N/ /%AEXPECTED=%O3%N/ /%AACTUAL=%S2%O3%S3%AUNIT:%D1%N2/	. #080	
881 882	010140	010140				.LIST .EVEN ENDMSG	BEX		

							E 5		
GLOBAL CZTSIB.	AREAS P11 1	MACY11 9-AUG-79	30(1046)	19-AUG	-79 20: GLOBAL	27 PAGE ERROR RE	PORT SECTION		SEQ 0056
883 884 885	010140 010140	104423			L10011:			TRAP	C\$MSG
886	010142	040445	051524	051123	TERMA:	.NLIST .ASCIZ .LIST	PEX /%ATSSR =%5%06%53%AUNIT:%D1%N/ BEX		
887 888 889		010200				.EVEN	AR ERR MSGS SCHER1-SCHETEMPO		
890 891	010200					BGNMSG			
892 893 894 895 896 897	010200 010200 010200 010204 010210 010212	012746 012746 010600 104414	005037 000001		SCHER1:		#TS11BD	MOV MOV MOV TRAP	#TS11BD,-(SP) #1,-(SP) SP,RO C\$PNTB
898 899	010214	062706	000004			PRINTX	#SCHERA	ADD	#4,SP
900 901 902 903 904	010220 010224 010230 010232 010234	012746 012746 010600 104415 062706	010244					MOV MOV MOV TRAP ADD	MSCHERA,-(SP) M1,-(SP) SP,RO C\$PNTX M4,SP
905 906 907	010240 010240 010242	000167 000064				EXIT	MSG	.WORD	J\$JMP L10012-2
908	010244	040445	051524	051123	SCHERA:	.NLIST .ASCIZ .LIST .EVEN	/%ATSSR NBA NOT SET ON COMD BEFORE SET CHAR BEX	ISSUED%N/	
910 911 912 913	010330 010330 010330	104423			L10012:	ENDMSG		TRAP	C\$MSG
914 915	010332 010332				SCHER2:		SCHER2		
916 917 918 919	010332 010332 010336 010342 010344 010346	012746 012746 010600 104414 062706	005037 000001 000004			PRINTB		MOV MOV MOV TRAP ADD	WISIIBD(SP) W1(SP) SP.RO C\$PNIB W4.SP
920 921 922 923 924 925 926 927 928 929 930 931	010352 010356 010366 010364 010366	012746 012746 010600 104415 062706	010376 000001 000004			PRINTX		MOV MOV TRAP ADD	#SCHERB(SP) #1(SP) SP.RO C\$PNTX #4.SP
928 929 930	010372 010372 010374	000167				EXIT	MSG	.WORD	J\$JMP L10013-2
	010376	040445	051524	051123	SCHERB:	.LIST	/%ATSSR NBA NOT CLEARED BY SET CHAR%N/ BEX		
932		010444				.EVEN			

033 010444 014423 010445 010445 010445 010445 010446 035037 010446 035037 010446 035037 010446 035037 010446 035037 010446 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406 035037 0350406										
935 010444 104423	GLOBAL CZTS1B.	AREAS P11 1	MACY11 19-AUG-79	30(1046) 20:26	19-AUG	-79 20: GLOBAL	27 PAGE ERROR RE	28		SEQ 005
950 010446 012746 000001 970 000001 970 000001 970 010452 012746 000001 974 010452 012746 000001 974 010452 012746 000001 974 010452 010414 944 010462 022706 000004 974 010460 012746 010512 945 010460 010414 974 010472 012746 000001 974 010472 012746 000001 974 010472 012746 000001 974 010472 012746 000001 974 010472 01047	933 934 935	010444	104423			L10013:	ENDMSG		TRAP	C\$MSG
940 010446 012746 000007	937 938 939	010446				SCHER3:	:			
944 010462 046704 0000004 9RINTX #SCHERC #SP #SCHERC #SCHE	940 941 942	010446 010452 010456	012746				TRINID	*131160	MOV	#1,-(SP) SP,RO
946 01042 012746 000001 947 010472 012746 000001 948 010470 010500 010415 950 010500 010415 950 010500 002706 000004 9510 010500 010415 9510 010500 010415 952 010506 000167 953 010510 000026 954 010510 000026 955 010540 010540 010540 957 010540 010540 010540 958 010540 010542 958 010540 010542 968 010542 010542 960 010542 010542 960 010552 010500 960 010552 010500 960 010554 010540 010704 960 010555 010540 000001 960 010550 002706 000004 960 010550 002706 000004 960 010550 002706 000004 960 010550 002706 000004 960 010550 002706 000004 960 010550 002706 000004 960 010550 002706 000004 960 010550 002706 000004 977 010500 000167 977 010500 000167 978 010500 000167 979 010500 000167 970 010500 000167 971 010500 000167 972 010570 000000	944	010462	062706	000004			PRINTY	MCCHEDO		
950 010506 000167	946 947 948	010466 010472 010476	012746				181818	# SCHERC	MOV	#1,-(SP) SP,R0
952 010506 000167 953 010510 000026 954 010512 040445 051515 020117 SCHERC: ASCIZ /XAMSG PKT IN DOUBTXN/ 955 010540	950	010502		000004				w		
010512 040445 051515 0201C7 SCHERC: ASCIZ /XAMSG PKT IN DOUBTXN/ LIST EVEN 955 010540 958 010540 104423	952 953	010506								
955 010540 010554 010640 010554 01065	954	010512	040445	051515	020107	SCHERC:	. ASCIZ	/%AMSG PKT IN DOUBT%N/		
957 010540	956		010540				.EVEN			
960	957 958		104423			L10014:			TRAP	C\$MSG
965 010542 012746 010606 965 010546 010606 970 010546 010552 010600 967 010552 010600 967 010554 00414 968 010556 062706 000001 971 010566 012746 010600 971 010566 012746 010600 972 010572 010600 973 010572 010600 973 010572 010600 973 010576 062706 000004 973 010576 010502 976 010602 977 010600 977 010600 978 010600 979 010600	960 961	010542 010542				SCHER4:		SCHER4		
965 010546 012746 000001 966 010552 010600 967 010554 104414 968 010556 062706 000004 969 010562 970 010562 012746 010634 971 010566 012746 000001 972 010572 010600 973 010576 062706 000004 974 010576 062706 000004 975 010602 976 010602 000167 977 010604 000076 978 010606 040445 040502 020104 SCHERN: ASCIZ /%ABAD M8967 SLOT 12%N/ 010634 040445 047511 051440 SCHERN: ASCIZ /%ABD M8967 SLOT 12%N/ 979 010704 980 010704 981 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 982 010704 983 010704 983 010704 984 010704 985 010704 985 010704 986 010704 987 010704 988 010704 988 010704 988 010704 989 010704 989 010704 989 010704 989 010704 989 010704 989 010704 989 010704 989 010704 989 010704 989 010704	963	010542	012746	010606				#SCHERN	MOV	#SCHERN,-(SP)
969 010562 970 010562 971 010566 012746 000001 972 010572 010600 973 010574 104415 974 010576 062706 000004 975 010602 976 010602 000167 977 010604 000076 010606 040445 040502 020104 SCHERN: .ASCIZ /%ABAD M8967 SLOT 12%N/ 010634 040445 047511 051440 SCHERD: .BEX 979 010704 980 010704 981 010704 982 010704 104425 PRINTX #SCHERD MOV #SCHERD(SP) ### ### ### ### ### ### ### ### ### ##	965 966 967	010546 010552 010554	010600						MOV TRAP	SP,RO C\$PNTB
971 010566 012746 000001 972 010572 010600 973 010574 104415 974 010576 062706 000004 975 010602 976 010602 977 010604 000076 010604 000076 010604 040445 040502 020104 SCHERN: ASCIZ /%ABAD M8967 SLOT 12%N/ 010634 040445 047511 051440 SCHERD: ASCIZ /%ABAD M8967 SLOT 12%N/ 979 010704 980 010704 981 010704 982 010704 104423 TRAP C\$MSG	969	010562					PRINTX	#SCHERD		
974 010576 062706 000004 975 010602 976 010602 000167 977 010604 000076 010606 040445 040502 020104 SCHERN: ASCIZ /%ABAD M8967 SLOT 12%N/ 010634 040445 047511 051440 SCHERD: ASCIZ /%AIO SEG CROM PARITY ERROR TSSR FC=1%N/ 010704 980 010704 981 010704 982 010704 104423 TRAP C\$MSG	971 972	010566	012746 010600						MOV MOV	#1,-(SP) SP,R0
976 010602 000167 977 010604 000076 978	974	010576		000004			E V 1 T	MCC		
010606 040445 040502 020104 SCHERN: .ASCIZ /%ABAD M8967 SLOT 12%N/ 010634 040445 047511 051440 SCHERD: .ASCIZ /%AIO SEG CROM PARITY ERROR TSSR FC=1%N/ .LIST BEX .LIST BEX .EVEN 980 010704 981 010704 982 010704 104423 TRAP C\$MSG	976 977	010602								
979 010704 EVEN 980 010704 ENDMSG 981 010704 L10015: 982 010704 104423 TRAP C\$MSG	9/8						.ASCIZ	/%ABAD M8967 SLOT 12%N/ /%AIO SEG CROM PARITY ERROR TSSR FC=1%N/		
981 010704 982 010704 104423 TRAP C\$MSG		010704	010704				.EVEN			
98 3	981	010704	104423			L10015:			TRAP	C\$MSG

GLOBAL CZTSIB	.P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG		27 PAGE ERROR RE	G 5 PORT SECTION		SEQ 0058
984 985 986	010706				SCHER5:	:	SCHER5		
987 988 989 990 991 992	010706 010706 010712 010716 010720 010722	012746 012746 010600 104414 062706	010752 000001 000004			PRINTB	#SCHERE	MOV MOV MOV TRAP ADD	#SCHERE,-(SP) #1,-(SP) SP.RO C\$PNTB #4,SP
993 994 995 996 997 998	010726 010726 010732	012746 012746 010600 104415 062706	011036 000001 000004			PRINTX	#SCHERF	MOV MOV MOV TRAP ADD	#SCHERF,-(SP) #1,-(SP) SP,RO C\$PNTX #4,SP
999 1000 1001	010746 010746 010750	000167 000146	000004			EXIT	MSG	.WORD	J\$JMP L10016-2
1002	010752 011036	040445 040445	051524 042523	030461 044522	SCHERE:	.LIST	/%ATS11 BOARD OR SERIAL BUS CABLE OR M8965 SLOT /%ASERIAL BUS PARITY ERROR SPE OR BPE TSSR FC= BEX		
1003 1004 1005 1006 1007	011120 011120 011120	104423			L10016:	.EVEN ENDMSG		TRAP	C\$MSG
1008	011122				SCHER6:		SCHER6		
1010 1011 1012 1013 1014 1015	011122 011126 011136 011134 011136	012746 012746 010600 104414 062706	011166 000001 000004			PRINTB	#SCHERG	MOV MOV TRAP ADD	MSCHERG,-(SP) M1,-(SP) SP,RO C\$PNTB M4,SP
1016 1017 1018 1019 1020 1021	011142 011146 011152 011154	104415	011210 000001 000004			PRINTX	#SCHERH	MOV MOV MOV TRAP ADD	#SCHERH,-(SP) #1,-(SP) SP,RO C\$PNTX #4,SP
1021 1022 1023 1024	0°1162 011162 011164	000167				EXIT	MSG	.WORD	J\$JMP L10017-2
1025	011166 011210		034115 044523	033071 047514		.NLIST : .ASCIZ : .ASCIZ .LIST	BEX /%AM8966 SLOT 14%N/ /%ASILO PARITY ERROR SIP TSSR FC=2%N/ BEX		
1026 1027 1028 1029 1030 1031	011256 011256 011256				L10017	.EVEN ENDMSG		TRAP	C\$MSG
1032	011260 011260				SCHER7		SCHER7		

ZTSIB.		9-AUG-79	30(1046)	19-AU	GLOBAL	ERROR RE	PORT SECTION			SEQ C
1034 1035 1036 1037 1038 1039	011260 011260 011264 011270 011272 011274	012746 012746 010600 104414 062706	000001				#SCHERI		MOV MOV MOV TRAP ADD	#SCHERI,-(SP) #1,-(SP) SP,R0 C\$PNIB #4,SP
1040 1041 1042	011300 011300 011304	012702	011436				:= #PCHLTB R2) NE #177777 DO		MOV	#PCHLTB,R2
1043 1044 1045	011304 011304 011310	021227	177777					50002\$:	CMP BEQ	(R2),#177777 50003\$
1046	011312	011237	011432				CHTAD := (R2)		MOV	(R2),PCHTAD
1048 1049 1050 1051 1052 1053 1054 1055	011316 011316 011322 011326 011330 011332	013746 012746 010600 104414 062706	011432 000001 000004			PRINT	B PCHTAD		MOV MOV TRAP ADD	PCHTAD, -(SP) #1, -(SP) SP,RO C\$PNTB #4,SP
1054 1055	011332 011336 011336	062702	000002			LET R	2 := R2 + #2		ADD	#2,R2
1056	011342	000760				ENDDO			BR	50002\$
1058 1059 1060 1061 1062	011344 011344 011344 011346	000167 000064				EXIT	MSG	50003\$:	.WORD	J\$JMP L10020-2
1063	011350	040445	051524.,	051123	SCHER1:	.NLIST .ASCIZ .LIST .EVEN	/%ATSSR FC=2 FATAL MICRO ERR HALTS PC= BEX	1750-1777	%N2/	
1064	011432	000000			PCHTAD:		0			
1066 1067	011434	104423			L10020:	Literiou			TRAP	C\$MSG
1068 1069 1070 1071 1072 1073 1074 1075 1076 1077	011436 011444 011452 011460 011466 011474 011502 011510 011516	011530 011736 012133 012342 012512 012702 013073 013275 013511	011624 012015 012215 012403 012554 012760 013141 013353 013600	011674 012057 012277 012444 012624 013025 013213 013435 013665	PCHLTB:	.WORD .WORD .WORD .WORD .WORD .WORD .WORD .WORD	PCHDR, PCHDRA, PCHDRB PCHT50, PCHT51, PCHT52 PCHT53, PCHT54, PCHT55 PCHT56, PCHT57, PCHT60 PCHT61, PCHT62, PCHT63 PCHT64, PCHT65, PCHT66 PCHT67, PCHT70, PCHT71 PCHT72, PCHT73, PCHT74 PCHT75, PCH75A, PCHT76, PCHT77			
1078 1079 1080	011524 011526	013747				.WORD	ENDTBL			
1081						.NLIST	BEX			
	011530 011624 011674 011736 012015	040445 051445 040445 040445	041520 031462 050040 033461 030501	042440 040445 022503 030065 032467	PCHDR: PCHDRA: PCHDRB: PCHT50: PCHT51:	.ASCIZ	/%APC ERROR HALTS BAD MODULES: M8962,1 /%S23%ASLOT: 8 11 9 12: /%A PC%S17%ACOMMENT%S13%AMODULE%N2/ /%A1750 OPERATION IO PROBLEM%S14%AM896 /%A1751 SPURIOUS ATTN%S22%AM8963%N/			3967%N/

GLOBAL CZTSIB.		MACY11 19-AUG-79	30(1046) 20:26	19-AUG		27 PAGE ERROR RE	I 5 31 PORT SECTION		SEQ 0060
	012057 012133 012215 012277 012342 012403 012444 012512 012554 012702 012760 013025 013025 013025 013141 013213 013213 013213 013435 013511 013600 013665 013747	045 045 045 040445 040445 040445 040445 040445 045 0	030501 030501 030501 030501 033461 033461 033461 033461 033461 033461 030501 030501 030501 030501 030501 030501 030501	032467 032467 032467 032467 033065 032466 031066 031466 032066 032466 033067 033467 033467 033467 033467 033467	PCHT53: PCHT54: PCHT55: PCHT56: PCHT60: PCHT61: PCHT62: PCHT63: PCHT64: PCHT65: PCHT65: PCHT70: PCHT71: PCHT71: PCHT72: PCHT73: PCHT74: PCHT75: PCHT75: PCHT76:	ASCIZ	/%A1754 STK PTR REG WON'T HOLD DATA M896 /%A1755 UTSTM - BRANCH%S21%AM8962%N/ /%A1756 UTSTM - ZBIT%S23%AM8962%N/ /%A1760 UTSTM - NOT Z BIT%S18%AM8962%N/ /%A1761 UTSTM - C BIT%S22%AM8962%N/ /%A1762 UTSTM - PCB LO TEST%S16%AM8962%N/ /%A1763 UTSTM - INTERNAL REG ERROR%S9%AM8962%N/ /%A1764 UTSTM - INTERNAL REG ERROR%S9%AM8962%N/ /%A1765 UTSTM - ADD TEST%S19%AM8962%N/ /%A1766 UTSTM - A SUBTEST%S18%AM8962%N/ /%A1767 UTSTM - BSUB TEST%S18%AM8962%N/ /%A1770 UTSTM - BSUB TEST%S18%AM8962%N/ /%A1771 UTSTM - LOGICAL:AND,OR,XOR,NAND M896 /%A1773 STAKM - STACK PARITY TEST%S10%AM8963%N/ /%A1774 STAKM - STACK UNDER-OVERFLOW M896 /%A1775 STAKM - STACK DATA TEST%S12%AM8963%N/ /%A1776 STAKM - CAPSTAN BUS DATA TEST /%ACHECK TACH PHASE,DECEL AND SPEED ADJUSTS ON /%A1776 STAKM - CBUS BRANCH TEST	2%N/ 3%N/ 33,G159%N	
1082 1083 1084	014032 014032	014032			SCHERO:	.LIST .EVEN BGNMSG	BEX SCHERO		
1085 1086 1087 1088 1089 1090	014032 014032 014036 014042 014044 014046	012746 010600 104414				PRINTB		MOV MOV TRAP ADD	#SCHERL,-(SP) #1,-(SP) SP,R0 C\$PNIB #4,SP
1091 1092 1093 1094 1095	014052 014052 014056 014062 014064 014066	012746 012746 010600 104415	014121 000001 000004			PRINTX	#SCHERM	MOV MOV TRAP ADD	#SCHERM,-(SP) #1,-(SP) SP.RO C\$PNTX #4,SP
1096 1097 1098 1099	014072 014072 014074	000167				EXIT	MSG	.WORD	J\$JMP L10021-2
1100	014076 014121 014140	040445 045 014140	041501 052101	046040 051523	SCHERL:	.NLIST : ASCIZ : ASCIZ .LIST .EVEN ENDMSG	BEX /%AAC LOW AT TSO4%N/ /%ATSSR FC=3%N/ BEX		
1102 1103 1104 1105	014140				L10021:			TRAP	C \$MSG
1106 1107 1108	014142				ROMLER		ROMLER		

CZTSIB.	.P11 1	9-AUG-79	30(1046)	19-AUG			PORT SECTION		SEQ 006
1109 1110 1111 1112	014142 014142 014146 014152	012746 012746 010600	005062 000001			PRINTB	WFMTCTR	MOV MOV MOV	#FMTCTR,-(SP) #1,-(SP) SP,RO
1113	014154 014156 014162	104414 C52706	000004			ENDMSG		TRAP	C\$PNTB #4,SP
1115 1116 1117 1118	014162	104423			L10022:			TRAP	C \$MSG
1119	014164				MICERR:		MICERR		
1121 1122 1123 1124	014164 014164 014170 014174 014176	012746 012746 010600 104414	014230 000001			PRINTB	MMICERA	MOV MOV MOV TRAP	#MICERA,-(SP) #1,-(SP) SP,RO C\$PNTB
1125 1126 1127	014200	062706	000004			PRINTX	#MICERB	ADD	#4,SP
1127 1128 1129 1130 1131 1132 1133 1134	014204 014210 014214	012746 012746 010600	014304 000001			1 11117	WHITEEND	MOV MOV MOV	WMICERB,-(SP) W1,-(SP) SP,R0
1131	014216	104415	000004			F × 1.7	were	ADD	CSPNTX #4,SP
11133	014224 014224 014226	000167 000136				EXIT	MSG	.WORD	J\$JMP L10023-2
1136	014230 014304	040445 040445	047525 047503	020113 042504	MICERA: MICERB:	. ASCIZ	BEX /%AUOK LIGHT OFF, XTAT3=OP PANEL=ERROR CODE%N/ /%ACODE%S10%AERROR%S28%AMODULE(SLOT) SCOPE LOOK BEX	2%N2/	
1137 1138 1139 1140 1141 1142 1143	014366 014366 014366	104423			L10023:	.LIST .EVEN ENDMSG	DC A	TRAP	C\$MSG

GLOBAL CZTSIB	AREAS .P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG	-79 20:27 PAG					
1144 1145 1146 1147 1148 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159					THE GLOBAL STHAT ARE USE	SUBROUTINES SECTION SUBROUTINES SECTION ED IN MORE THAN ONE ES TO HANDLE TSO4 IN V TS41NO	CONTAINS THE SUBROUTIN	ES		
1156 1157 1158 1159 1160	014370 014370 014370 014376 014376	112737	000001	002437		TLFLG :B= #1 V	SET INTERRUPT	OCCURRED	FLAG. MOVB	#1,CTLFLG
1161 1162 1163 1164 1165 1166 1167 1168 1169	014400	112737	000001	002437	TS4IN1::	V TS4IN1 TLFLG :B= #1 V	:DEVICE 1. :SET INTERRUPT	OCCURRED	FLAG. MOVB	#1,CTLFLG
1172 1173 1174 1175	014410 014410 014416 014416	112737	000001	002437	TS41N2::	V TS41N2 TLFLG :B= #1 V	;DEVICE 2. ;SET INTERRUPT	OCCURRED	FLAG. MOVB	#1,CTLFLG
1177 1178 1179 1180 1181 1182 1183 1184	014420 014420 014420 014420 014426 014426	112737	000001	002437	TS41N3::	V TS41N3 TLFLG :B= #1 V	;DEVICE 3. ;SET INTERRUPT	OCCURRED	FLAG. MOVB	#1,CTLFLG

GLOBAL CZTSIB.	AREAS P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG	-79 20:27 PAGE 35 GLOBAL SUBROUTINES SECTION			SEQ 0064
1241 1242 1243					: NEEDED AFTER AN INIT IS SENT TO TS11 TO WAIT TO COMPLETE. REPORT ERROR AND DROP UNIT IF TIME IS EXCEEDED.	FOR LOAD SI	EQ	
1244 1245 1246 1247 1248	014616 014616 014616 014624		000001	002426	WAITSR::BEGIN COUNTER1 INCR TIME FROM #1 TO #13 BY #1		MOV BR	#1.TIME 50005\$
1249 1250	014626	005237	002426			50006\$:	INC	TIME
1251 1252 1253	014632 014632 014640	023727	002426	000013		50005\$:	CMP BGT	TIME,#13 50007\$
1246 1247 1248 1249 1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260	014642 014642 014650	032777	000200	165354	IF #TS.SSR SETIN aTSSR THEN		BIT BEQ	WTS.SSR, aTSSR 50010\$
1257 1258	014652	000416			LEAVE COUNTER1		BR	50004\$
1259 1260 1261	014654 014654 014654				DELAY 1000.	50010\$:		
1262 1263 1264	014654 014660 014662	012727	001750 002116		DEENT 1000.		MOV .WORD MOV	#1000.,(PC)+ 0 L\$DLY,(PC)+
1265 1266 1267	014666 014670 014674	005367 001375	177772				.WORD DEC BNE	0 -6(PC) -4
1268 1269 1270 1271	014676 014702 014704	001367	177756		BREAK		DE C BNE	-22(PC) 20
1271 1272	014704	104422			END1F .	50011\$:	TRAP	C\$BRK
1274 1274 1275 1276	014706 014706 014706 014710	000747			ENDINC	50007\$:	BR	50006\$
1277 1278	014710 014710 014710				IF TIME GT #13 THEN	50004\$:		
1280 1281	014710	023727	002426	000013			CMP BLE	TIME,#13 50012\$
1272 1273 1274 1275 1276 1277 1278 1279 1280 1281 1282 1283 1284 1285 1286 1287 1288 1289 1290 1291 1292 1293 1294 1295	014720 014720 014724 014730	012746 012746 010600	015144 000001		PRINTF #WAITMR		VOM VCM VOM	#WAITMR,-(SP) #1,-(SP) SP,R0
1286 1287 1288	014732 014734 014740	062706	000004		BEGIN COUNTER2		ADD	C\$PNTF #4,SP
1289 1290 1291	014740 014740 014746	012737	000001	002426	INCR TIME FROM #1 TO #160 BY #1	500150.	MOV BR	#1,TIME 50014\$
1292	014750 014750 014754	005237	002426			50015\$: 50014\$:	INC	TIME
1295 1296	014754	023727	002426	000160		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	CMP BGT	TIME .#160 50016\$

014764 014764				IF #TS.SSR SETIN aTSSR THEN			
014772	032777	000200	165232			BIT	#TS.SSR, aTSSR 50017\$
014774 014774 014776	000416			LEAVE COUNTER2		BR	50013\$
14776				ELSE	50017\$:		
14776	012727	001750		DELAY 1000.		MOV	#1000.,(PC)+
015002	000000					. WORD	0
015010	000000					. WORD	LSDLY,(PC)+
15016	001375					BNE	-6(PC)
15020	005367	177756					-22(PC) 20
15026				BREAK			C\$BRK
15030	10112			ENDIF	500304	INAF	Capur
15030				ENDINC	50020\$:		
15030	000747				50016\$:	BR	50015\$
15032				END COUNTER2			
15032	027727	002/24	000140	IF TIME GT #160 THEN	700134.		
15040	003430	002420	000160			BLE	TIME,#160 50021\$
15042	017737	165156	002434	LET TEMP2 := aTSSR		MOV	aTSSR,TEMP2
15050	012701	014532		LET R1 := #TERMTB			#TERMTB,R1
15054		014752		ERRDF 2,SSROFF,LONMSG			
15056	000002					.WORD	C\$ERDF 2
15060	002566						SSROFF LONMSG
115064	013746	002422		PRINTX #TERMA, TEMP2, UNIT			UNIT,-(SP)
15070	013746	002434				MOV	TEMP2,-(SP)
15100	012746	000003				MOV	#TERMA,-(SP) #3,-(SP)
115106	104415					TRAP	SP,RO C\$PNTX
15110	062706 004737	000010		JSR PC.DROPU		ADD	#10.SP
15120				ELSE		00	50022\$
15122	000410			DDINTE ACDMCC	50021\$:	БК	300223
15122	012746	005763		PRINIF WCKMSG		MOV	#CRMSG(SP)
15126	012746	000001				MOV	#1,-(SP) SP,R0
117134	104417	000004		,		TRAP	CSPNTF #4,SP
	14776 14776 14776 15002 15004 15010 15010 15010 15020 15020 15030 15030 15030 15032 15032 15032 15032 15042 15050 15064 15064 15064 15106	14776 14776 14776 14776 14776 14776 15002 000000 15004 013727 15010 000000 15012 005367 15016 001375 15020 005367 15024 001367 15026 15026 15030 15030 15030 15030 15030 15032 15042 012746 15040 151064 151064 151064 104415 151060 104415 151100 012746 15106 104415 151100 012746 151100 012746 151100 012746 151100 104415 151100 104415 151100 104415 151100 104415 151100 104415 151100 104415 151100 104417 15136 000410	14776 14776 14776 14776 14776 15002 000000 15004 013727 002116 15012 005367 177772 15016 001375 15020 005367 1777756 15024 001367 15026 15026 104422 15030 15030 15030 15030 15030 15032 15032 15032 15032 15032 15032 15032 15032 15042 017737 165156 104455 15050 15050 012701 014532 15054 15054 104455 15056 000002 15060 002566 15062 005774 15064 15064 013746 002424 15076 013746 002434 15074 012746 010142 15100 012746 000003 15106 104415 15110 062706 000001 15114 004737 014570 15120 15120 000410 15122 15122 012746 000001 15134 104417 15136 062706 000004	14776 14776 14776 14776 15002 000000 15002 000000 15010 000000 15012 005367 177772 15016 001375 15020 005367 177756 15024 001367 15026 15026 15030 15030 15030 15030 15030 15030 15030 15032 15032 15032 15032 15032 15032 15032 15032 15032 15032 15032 15030 15040 15040 15050 15060 003430 15050 15050 15060 0012701 014532 15054 15056 104455 15056 105060 15060 002566 15062 005774 15064 15064 013746 002424 15074 013746 002434 15074 012746 010142 15100 012746 000003 15104 010600 15110 062706 000010 15110 062706 000010 151120 000410 151122 15122 15122 15122 15122 15132 010600 15134 000001	14776 14776 14776 14776 14776 14776 14776 14776 14776 14776 14777 15010 000000 002116 000000 15004 003567 15012 003567 15020 15020 15020 15020 15020 15020 15030 000747 15030 000747 15032 000747 15032 000747 15032 000747 15032 003430 15030 00747 15032 003430 15030 00747 15032 017737 165156 002434 015040 012701 014532 012701 014532 012701 014532 017737 165156 000002 002566 15060 012701 014532 017737 165156 000002 002566 000002 150600 012701 014532 017737 165150 000000 012704 013746 000000 012746 000000 012746 013746 014570 000010 0000010 000010 000010 000010 000010 000010 000010 000010 000010	14776 14776 14776 14776 14776 14776 14776 16702 15002 150000 150000 150000 150000 150000 150000 150000 150010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15010 15026 10422 177775 15020 15030 16030 160	14776 14776 14776 14776 14776 14776 14776 14776 14776 15002 150000 150000 150000 150000 150000 150000 150000 150000 150000 15001

ZTSIB.	P11 1	9-AUG-79	30(1046) 20:26	19-AUG	-79 20:27 PAG GLOBAL SUBROUT	INES SECTION			SEQ 0066
1353 1354 1355 1356 1357 1358	015142 015142 015142 015142	000207	040445	040527	ENDIF RTS PO	: /%n%awaiting for RDy	50	0022\$:	
1359 1360 1361 1362 1363 1364 1365	015152 015160 015166	052111 047506 027131 015174	047111 020122 027056	020107 042122 000	.EveN				

CLOBAL	ADCAC	MACVII	30/10/41	10-400	-70 20.27 PACE 79			
GLOBAL CZTS1B	.P11	19-AUG-79	30(1046)	19-AUG	GLOBAL SUBROUTINES SECTION			SEQ 0067
1366								
1367 1368 1369 1370 1371 1372 1373 1374 1375					SUBR TO WAIT FOR TAPE MOTION TO CEASE WHEN AN INCON-LINE TS11 INITIATED A LOAD SEQUENCE.	11 10 1	HE	
1370	015174	000240			WAITMT:: NOP			
1372	015176	000240			NOP NOP			
1373	015202	000240			NOP IF #MOT SETIN XSTATO THEN			
1375	015176 015200 015202 015204 015204 015212 015214	032737 001501	000200	002266			BIT	#MOT,XSTATO 50023\$
1377	015214	012746	015420		PRINTF #WAITMS		MOV	#WAITMS,-(SP)
1379	015220	012746	000001				MOV MOV	#1,-(SP) SP,RO
1381	015226	010600 104417					TRAP	C\$PNTF
1382	015230	062706	000004		BEGIN COUNTER		ADD	#4,SP
1384	015234	012777	000001	002/26	INCR TIME FROM #1 TO #160 BY #1		MOV	#1,TIME
1386	015224 015226 015230 015234 015234 015234	012737	000001	002426			BR	50025\$
1377 1378 1379 1380 1381 1382 1383 1384 1385 1386 1387 1388 1389 1390	015244 015244 015250	005237	002426			50026 \$:	INC	TIME
1390	015250 015256	023727	002426	000160		,002,3.	CMP	TIME #160
1391 1392	015256	003031			LET CMDPKT := #GES		BGT	50027\$
1 1393	015260 015266	012737	100017	002230	LET aTSDB := #CMDPKT		MOV	#GES,CMDPKT
1394 1395 1396	015266	012777	002230	164720			MOV	#CMDPKT, aTSDB
1396	015274 015274	012727	001750		DELAY 1000.		MOV	#1000.,(PC)+
1398 1399		000000 013727	002116				.WORD MOV	O LSDLY,(PC)+
1400	015306 015310	000000					.WORD	0
1401	015310	005367 001375	177772				DE C BNE	-6(PC)
1403	015314 015316 015322	005367	177756				DEC	-22(PC)
1404	015322	001367			BREAK		BNE	20
1406	015324	104422			IF #MOT NOTSETIN XSTATO THEN		TRAP	(\$BRK
1407	015326	032737	000200	002266	IF WHO! NO! SEITH ASTATO THEN		BIT	MMOT.XSTATO
1409	015334	001001			LEAVE COUNTER		BNE	50030\$
1408 1409 1410 1411 1412	015326 015326 015334 015336 015336	000401					BR	50024\$
1412	015340 015340				ENDIF	50030\$:		
1414	015340	000741			ENDINC		BR	50026\$
1415	015340 015342	000741				50027\$:		700200
1417 1418 1419 1420	015342 015342				END COUNTER	500245:		
1419	015342	007707	003/3/	000140	IF TIME GT #160 THEN		CMP	TIME,#160
1420	015342 015350	023727	002426	000160			BLE	500318

GLOBAL CZTSIB.	AREAS P11	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: GLOBAL	27 PAGE SUBROUTING	D 6 S SECTION			SEQ 0068
1422 1423 1424	015352 015356 015364 015364 015366 015372 015374 015374 015376	012746 012746 010600 104414 062706	015456 000001 000004			PRIN	TB #WAITEM		MOV MOV MOV TRAP ADD	#WAITEM,-(SP) #1,-(SP) SP,RO C\$PNTB #4,SP
1428	015372	104444				DOCLI	V .		TRAP	CSDCLN
1425 1426 1427 1428 1429 1430 1431 1432 1433 1434 1435 1436 1437 1440 1441 1442 1443	015402 015406 015410 015412 015416 015416 015416	02 012746 06 010600 10 104417 12 062706 16	6 005763 6 000001 0 7 6 000004			ELSE PRINT ENDIF ENDIF RTS PC	TF #CRMSG	50031 \$: 50032 \$: 50023 \$:	MOV MOV MOV TRAP ADD	50032\$ #CRMSG,-(SP) #1,-(SP) SP,R0 C\$PNTF #4,SP
1445 1446 1447 1448 1449 1450 1451 1452 1453 1454 1455 1456 1457 1458 1459 1460 1461 1462	015420 015426 015434 015442 015450 015456 015472 015477 015504 015512 015520 015520 015534 015542	040445 047111 020122 052040 050117 040445 052040 047117 045 041524 052111 046055 051040 052122 022507	040527 020107 040524 020117 027056 040527 047517 022507 051501 020110 047440 047111 051505 042040 000116	052111 047506 042520 052123 000056 052111 046040 116 044527 047125 043106 026105 040511		.ASC11	ZAWAITING FOR TAPE TO STOP			

GLOBAL CZTSIB		MACY11 9-AUG-79	30(1046) 20:26	19-AUG			40 NES SECTION		SEQ 0069
1463 1464 1465					; FOR WH	ICH YOU V	E AN EVEN OR ODD PAR BIT WISH TO HAVE PAR GEN. E OF TEMPO. CLOBBERREDS	. ENTER WITH R1 CONTAINING THE # XIT WITH THE PARITY BIT IN THE TEMPO	
1466 1467 1468 1469 1470 1471 1472 1473 1474 1475	015546 015554 015560 015564 015572 015576 015600 015602 015604 015610	005337 100405 006001 103773 005237	000001 015564 002430 000020 002434	002430 002434	ODDPAR: EVNPAR: PARGEN: 1\$:	JMP CLR	#1,TEMPO PARGEN TEMPO #20,TEMP2 TEMP2 2\$ R1 1\$ TEMPO 1\$; INIT THIS REG FOR ADD PAR. ; CONTINUE ; INIT THIS REG FOR EVEN PAR. ; INIT COUNTER ; DONE ALL BITS? ; BR IF SO ; ROTATE THE DATA. ; DO IT AGAIN	
1477 1478 1479 1480 1481	015612 015614		177776	002430	2\$:	ROR B1C	R1 #177776,TEMPO	ROTATE ONCE MORE TO GET ORIG CONTENTS; CLR ALL BUT LO ORDER BIT IN TEMPO.; LO ORDER BIT IS THE PAR BIT; RETURNED TO THE CALLING ROUTINE.	
1482 1483 1484 1485 1486 1487 1488 1489 1491 1491 1492 1493	015622 015624	000241 000207				T PARITY.	R3 DATA, R4 CONTROL, R	CLR CARRY BIT : RETURN BITS AND R4 (CONTROL) BITS WITH	
1496 1497 1498 1499	015630 015632 015634	001403 052704	000020		TALCAD:	: MOVB TST BEQ BIS BR	R3,-(R5) R3 1\$ #1S.DAP,R4 3\$;LOAD DATA; ;ALL O'S DATA? ;BR IF SO ;IF NOT, SET THE PARITY DATA ALSO IN R4 (;CONTINUE.	CNTRL W
1500 1501 1502 1503 1504 1505 1506	015642 015646 015650 015654 015660 015662	042704 010401 004737 005737 001402 052704	000020 015546 002430 000200		1\$: 3\$:	BIC MOV JSR IST BEQ BIS	WIS.DAP,R4 R4,R1 PC,ODDPAR TEMPO 2\$ WIS.PAR,R4	CLR THE PAR DATA BIT IN CNTRL WORD. SAVE IT. CALC CONTROL WORD PARITY. IS PARITY BIT SET? BR IF NOT IF SO, SET THE PAR BIT.	
1507 1508	015666	110445			2\$:	MOVB	R4,-(R5) PC	: RETURN.	

SF	a	007	0
JE		001	v

GLOBAL CZTSIB.		MACY11 19-AUG-79		19-AUG	-79 20:		41 NES SECTION	
1509 1510 1511					; S/R TO ; RECOGN	COMPLET	E FILLING THE DIABLE NUSED DIABLE LOCATION	WITH ENTRIES WHOSE FORMAT THE TSO4 S TO CONTAIN A TSO4 RTS COMMAND.
1512 1513 1514 1515	015672 015676 015700	001406	002317		FIXDIA:	EQ BMI	R5,#DIABLK+1 1\$ 2\$:ARE WE ON DIABLK ODD BOUNDARY? :BR IF SO :ARE WE ON DIABLK EVEN BOUNDARY? :BR IF SO-WE'RE DONE.
1516 1517 1518 1519 1520	015702 015706 015712	112745	000033			MOVB MOVB BR	#POPJLO,-(R5) #POPJHI,-(R5) FIXDIA	:LOAD TSO4 :RTS COMMAND. :REPEAT.
1521 1522 1523 1524	015714 015720	112745 000207	177777		1\$: 2\$:	MOVB	#-1,-(R5) PC	:MUST END ON AN EVEN BOUNDARY. ;RETURN.
1525 1526 1527 1528					:S/R TO :COMMAND).	HE TSO4 COMMAND PACKE WT4SSR SUBROUTINE.	T AND INITIATE EXECUTION OF THE DIA
1529 1530 1531 1532 1533 1534	015722 015726 015732 015740 015744	012777	014430 015772 002250 014430	164254	DIAEXE:	JSR JSR MOV JSR RTS	PC,WT4SSR PC,INITM #DIAPKT,aTSDB PC,WT4SSR PC	:SEE IF SSR IS SET. SHOULD BE :INITIALIZE THE MESSAGE PACKET. :INITIATE EXECUTION ;WAIT FOR SSR TO SET

GLOBAL CZTSIB.		MACY11 19-AUG-79	30(1046) 20:26	19-AUG	79 20:2 GLOBAL S	7 PAGE SUBROUTII	G 6 NES SECTION			SEQ 0071
1535 1536 1537 1538 1539					; COMMAND).	WT4SSR SUBROUTINE.	AN SCH COMMAND AND ISSUE	THE	
1540 1541 1542 1543 1544 1545 1546	015746 015752 015756 015764 015770	004737 012777 004737	014616 015772 002240 014616	164230	SCHEXE:	JSR JSR MOV JSR RTS	PC, WAITSR PC, INITM #SCHPKT, ATSDB PC, WAITSR PC	:WAIT FOR SSR BIT TO SET :INITIALIZE THE MESSAGE :INITIATE EXECUTION. :WAIT FOR SSR. :RETURN.	PACKET.	
1548 1549 1550					:S/R TO		IZE THE MESSAGE PACKET W RS USED: R1	WITH ALL ONES.		
1551 1552 1553	015772 015772 015774	005001			INITM:		:= #0 1 NE #MSGEXT DO	CLEAR LOCATION COUNTER	CLR	R1
1554 1555 1556 1557	015774 015774 016000 016002	020127 001406	000016			LET M	SGPKT(R1) := #-1	50033\$: ;INIT ONE LOCATION IN	CMP BEQ MSG PACT	R1,#MSGEXT 50034\$ IET,
1558 1559 1560	016002 016010 016010	012761	177777	002260		LET R	1 := R1 + #2	; UPDATE COUNTER	MOV	#-1,MSGPKT(R1) #2,R1
1561 1562 1563	016014 016014 016016	000767				ENDDO		:END OF INIT LOOP. 50034\$:	BR	50033\$
1564	016016	000207				RTS PC		RETURN.		

	^	0	77	5
3	u	171	11	1

GLOBAL CZTS1B	AREAS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: GLOBAL		H 6 NES SECTION			SEQ 0072
1565 1566 1567					:S/R TO	SHIFT B	YTE A 1 IN A FIELD O	F O'S. WHEN WE'RE THROUGH ELD OF 1'S.		
1568 1569 1570					:	INPUTS:		SHIFT. DATA.		
1571 1572 1573 1574 1575 1576	016024	006204 105704 100404 001005 012704 000402	177577		SHWRAP:	: ASR TSTB BMI BNE MOV BR	R4 R4 1\$ 2\$ #177577,R4 2\$;SHIFT THE DATA. ;SHIFTING A ! OR A O? ;BR IF SHIFTING A O. ;DONE SHIFTING A 1? BR IF NO ;IF SO, SETUP TO SHIFT O IN I ;CONTINUE.	I. FIELD OF 1'S.	
1577 1578 1579 1580 1581 1582 1583 1584 1585	016042	052704 000207	000200		1\$: 2\$:		#200,R4 PC OR TRACK ACTIVE ERRO :ACTRAC CONTAINS THE	;SET THE MSB.;RETURN.	O THRU 8	
1587 1588 1589 1590 1591 1592 1593 1594	016052 016052 016056 016062 016064	113737 113702 032702 001404 052737 000403	002267 002274 000004 000400	002360	TKACER:		MSGPKT+C18\$TA,ACTRA 2:B= MSGPKT+PRCHST #CH9.TA,R2 1\$ #BIT8,ACTRAC 3\$		CHAN 9 MSGPKT+PRCI	HST,R2
1595 1596 1597 1598 1599 1600 1601 1602	016110	042737 042737 023737 001402 105237 000207	177000 002342	002360 002360 002360	1\$: 3\$:	BIC BIC CMP BEQ INCB RTS	WBIT8, ACTRAC W177000, ACTRAC EXTRAC, ACTRAC 2\$ ERRFLG PC	CLEAR THE BIT IN "ACTUAL" RECORD GARBAGE. EXPECTED & ACTUAL DATA IDEN BR IF SO. SET THE ERR FLAG. RETURN.		

GLOBAL CZTSIB		MACY11 19-AUG-79	30(1046)	19-AUG-79 20:27 PAGE 44 GLOBAL SUBROUTINES SECTION	SEQ 0073
1603 1604		17-800-77	20.20	COMMON S/R USED BY THE PE DATA TESTS TO BUILD THE DIABLK	0075
1605 1606 1607 1608				INPUTS: R2 = PREAMBLE DATA. R3 = BYTE 1 DATA.	
1609 1610 1611		004737		DATBLD:: JSR PC, PEINIT ; GO SET THE WRAP TASK ADDR IN DIABLD ; AND INIT DIABLK INDEX.	
1612 1613 1614 1615	016140	010304 005104	177000	MOVB #FC.DAT!FC.VCO,-(R5) ;SET DATA & VCO MODE IN FMT CNTRL. MOV R3,R4 ;SETUP SECOND BYTE OF DATA. COM R4 ;COMPLEMENT THE BYTE 2 DATA. BIC #177000,R4 ;CLR GARBAGE BITS.	
1616 1617 1618	016146		016176	JSR PC, PEDATA ; LOAD THE PREAMBLE AND THE 2 DATA BYTES ; IN DIABLK ; RETURN.	
1620 1621 1622 1623				;S/R TO LOAD THE DIABLK WITH THE TSO4 WRAP TASK ADDRESS, ;AND SETUP THE READ CONTROL WORD (RDCTLO) FOR MAINTENANCE MODE.	
1624 1625 1626 1627				IMPLICIT INPUTS: DIABLK, DIAEXT, WRPLO, WRPHI OUTPUTS: R5=DIABLK INDEX.	
1628	016154	012705	002336	PEINIT:: MOV #DIABLK+DIAEXT,R5 ; SAVE ADR OF LAST WORD IN DIABLK ; SO WE CAN FILL DIABLK IN REVERSE ORDER.	
1630 1631 1632 1633 1634 1635 1636	016160 016160 016164 016170 016174	112745 112745 112745	000005 000200 000100	LET -(R5) :B= #WRPLO ;LOAD THE NEW WRAP TASK ADDR LO MOVB #WRPLO,-(R5) MOVB #WRPHI,-(R5) ;LOAD WRAP TASK ADDR HI. MOVB #RD.MAI,-(R5) ;SET MAINT MODE IN RDCTLO. RTS PC)

GLOBAL CZTSIB.		MACY11 9-AUG-79	30(1046)	19-AUG	-79 20: GLOBAL		J 6 NES SECTION	
1637 1638 1639 1640 1641 1642 1643					:S/R TO	LOAD TH A AND CO TER AND	E DIABLK WITH TH	1'S CHARACTER. DATA DATA
1645 1646 1647 1648 1649 1650 1651 1652 1653	016176 016202 016206 016212 016216 016222	010237 004737 010337 004737 010437 004737	002432 016334 002432 016334 002432 016334		PEDATA:	: MOV JSR MOV JSR MOV JSR	R2,TEMP1 PC,PELOAD R3,TEMP1 PC,PELOAD R4,TEMP1 PC,PELOAD HE EXPECTED RESU	SETUP TO LOAD DIABLK PREAMBLE DO IT SETUP TO LOAD DIABLK & 1ST DATA BYTE DO IT SETUP TO LOAD DIABLK WITH 2ND DATA BYTE DO IT
1655 1656 1657 1658 1659 1660 1661 1662 1663 1664 1665 1666 1667 1668 1669 1670	016226 016234 016240 016246 016254 016262 016266 016274 016302 016310 016316 016322 016324 016332	013737 005137 042737 013737 012737 010337 043737 050337 005103 013737 050337 005103 042737 000207	002416 002342 177000 002416 000777 002344 002416 002340 002350	002342 002346 002336 002336 002340 002350	48:	MOV COM BIC MOV MOV BIC MOV BIS COM MOV BIS COM BIS COM	DTKIDN, EXTRAC EXTRAC #177000, EXTRAC DTKIDN, EXTRDD #777, EXORDY R3, EXDATA DTKIDN, EXDATA DTKIDN, EXDATA DTKIDN, EXDATA R3, EXIDTR R3, EXODTR R3, EXODTR R3, EXODTR R3, EXODTR R3	TRACKS DEAD DEFINED IN DIKIDN REG. OUTPUT READY HI ON ALL TRACKS. EXPECTED DATA INFO (NOT SO FOR SKEW TEST) ZERO THE DATA CORRESPONDING TO THE DEAD TRACKS. EXPECTED ONES OR DEAD TRK INFO. COMPLEMENT DATA. EXPECTED O OR DEAD TRK INFO. RESTORE R3.

GLOBAL CZTSIB.			30(1046) 20:26	19-AUG		27 PAGE SUBROUT I	46 NES SECTION	
1671 1672 1673 1674					;BIT CE	LOAD CO	ONTENTS OF TEMP1 OATA AND CONTROL.	INTO THE DIABLE BY GENERATING THE TWO THE ROUTINE ALSO LOADS DATA TO SIMULATE
1675 1676 1677 1678						INPUT:	TEMP1=DATA TO L R5=DIABLK INDEX DTKIDN=DEAD TRA	
1679 1680					CLOBBE	RS TEMPO	,R1,TEMP1	
1681 1682						OUTPUT:	UPDATED DIABLK	DATA
1683						0011011	UPDATED DIABLE	
1685 1686 1687 1688 1689 1690					; LIKEWI ; THEREF ; LOGICA ; PASS (; LOADS	SE, THE ORE, A L AL O CONS OF THIS S BIT CELL	TSO4 INTERPRETS OGICAL 1 HAS A 1 SISTS OF A 0 BIT SUBROUTINE LOADS 2.	AT TO THE TSO4 AS A 1 TO 0 TRANSITION. A 0 TO 1 TRANSITION AS A LOGICAL 0. BIT CELL FOLLOWED BY A 0 BIT CELL, AND CELL FOLLOWED BY A 1 BIT CELL. THE FIRST THE FIRST BIT CELL, WHILE THE SECOND PASS
1691 1692					;DEAD	RACK BIT	CELLS ARE EITHE	R BOTH O OR BOTH 1. (NO TRANSITION.)
1693 1694	016334	012701 113745	000044		PELOAD:	:: MOV MOVB	#IS.NRZ!IS.WRF, TEMP1,-(R5)	R1 ; INIT CONTROL WORD STORAGE REG ; LOAD DATA WORD (BIT CELL)
1695 1696	016344	000301	002432			SWAB BISB	R1 TEMP1,R1	LOAD THE DATA WORD IN R1 ALSO TO
1697	016352	000301		002432		SWAB BIT	R1 #BIT8,TEMP1	GENERATE PARITY.
1698 1699	016362	001402		002432		BEQ	2\$:BR IF NOT
1701	016370	052701 004737	015546		2\$:	BIS JSR	PC,ODDPAR	: IF SO, SET THE BIT IN THE CNTRL WORD. :CALCULATE ODD PARITY. RESULT IN TEMPO BIT 1
1702 1703	016374	005737 001402	002430			TST BEQ	TEMPO 3\$; PARITY BIT SET? ; BR IF NOT
1704 1705	016402		000200			BIS	#IS.PAR,R1	: IF SO SET PARITY BIT FOR BOTH THE :DATA AND CONTROL WORD.
1706 1707	016406	110145	002432		3\$:	MOVB	R1,-(R5) TEMP1	:LOAD THE CNTRL WORD (BIT CELL) :DONE WITH PASS 2?
1708	016414	100432				BMI	45	BR IF SO LOOKING FOR ANY DEAD TRACKS?
1709 1710	016416 016422	005737 001424	002416			TST BEQ	DTKIDN 5\$	BR IF NOT.
1711 1712 1713 1714						:THE DE	AD TRACK BIT CEL	DEAD TRACKS SO NO TRANSITIONS OCCUR ON LLS. DT A)(B) = NOT(A + NOT B) + NOT(NOT A + B)
1715 1716	016424	013737	002432	002430		MOV	TEMP1, TEMPO	SAVE ARG A.
1717	016432	013701 005137	002416 002430			COM	DTKIDN,R1 TEMPO	: SAVE ARG B. : INVERT ARG A.
1719	016442	005101 053701	002432			COM BIS	R1 TEMP1,R1	:INVERT ARG B. :GENERATE (A) + (NOT B)
1721 1722 1723	016450	053737 005137	002416	002430		BIS	DTKIDN, TEMPO TEMPO	:GENERATE (NOT A) + (B) :INVERT
1723	016462	005101 053701	002430			COM BIS	R1 TEMPO,R1	OR THE TWO ARGUMENTS TO GIVE THE XOR.
1724 1725	016470	010137	002432		56.	MOV	R1, TEMP1 TEMP1	:TEMP1 = TEMP1 XOR DIKIDN :SET UP TO LOAD BIT CELL 2.
1726	016474	005137	002432		5\$:	COM	TENF 1	, set of to comb dir ceee 2.

GLOBAL AREAS MACY11 30(1046) 19-AUG-79 20:27 PAGE 47 CZTSIB.P11 19-AUG-79 20:26 GLOBAL SUBROUTINES SECTION

1727 016500 000715 1728 016502 000207 1729

BR PELOAD PC 45:

;DO IT ;RETURN

							M 6					
GLOBAL CZTSIB	AREAS .P11	MACY11 19-AUG-79	30(1046)	19-AUG	-79 20: GLOBAL	27 PAGE SUBROUTI	NES SECTION					SEQ 0077
1730 1731					:S/R TO	RETRIEV TO SEE I	E THE TSO4 FORMA F THEY CONTAIN E	TTER AN	DATA.	TROL REGIS	TERS AND	
1731 1732 1733 1734 1735 1736 1737						INPUTS:	EXPECTED DATA P MSGPKT - TSO4 M			N PEDATA SI	UBROUTINE	
1736						OUTPUT:	ERROR FLAG, ACT	UAL DAT	A			
1737 1738					CLOBBE	RS R5,R1						
1739 1740	016504				PEERCK:	: INCR R	1 FROM #0 TO #12	BY #2				
1741	016504 016506	000402									CLR BR	R1 50035\$
1743	016510 016510	062701	000002								36\$: ADD	#2,R1
1745 1746	016514	020127	000012							500	35\$: CMP	R1,#12
1747 1748	016520	003003				LET A	CTTBL(R1) := #0		:CLEAR 6	LOC OF ACT	BGT UAL WRAP REG	50037 \$ TABLE
1749 1750	016522	005061	002354			ENDING					CLR	ACTTBL (R1)
1751 1752 1753	016526 016530	000770				Linvino				500	37\$:	50036\$
1754 1755 1756 1757 1758 1759 1760 1761 1762 1763 1764	016574 016602 016610	113737 113737 113737 113737 113737 012737 012737	002264 002265 002267 002270 002271 002272 002274 000006 002354	002354 002356 002360 002362 002364 002366		MOV MOV	MSGPKT+C18\$OR,A MSGPKT+C18\$1D,A MSGPKT+C18\$1A,A MSGPKT+C18\$DA,A MSGPKT+C18\$TD,A MSGPKT+C18\$0D,A MSGPKT+C18\$0D,A EMP2:B= MSGPKT+ #6,TEMP1 #ACTTBL,R1	CIDTR CTRAC CDATA CTRDD CODTR PRCHST ;INIT ;SET I ;WRITE	COUNTER NDEX OF THE CONTROL RE	OR DEAD T CK ACTIVE A INFO CK DEAD IN R DEAD TRA E TRK ACT FORMATTER G., TABLE.	RACK INFO. INFO FO CK INFO. DATA FOR CHA MOVB	N 9 MSGPKT+PRCHST,TE
1766 1767 1768	016620 016622	103003	002434		15:	ASR BCC BIS	TEMP2 2\$ #BIT8,(R1)+	:SHIFT :BR IF :IF DA	CHAN 9 DAT DATA WAS C TA WAS SET IN THE APPRO	A INTO CAR LR. THEN SET T	RY BIT HE CHAN 9	
1769 1770 1771 1772	016626 016630		000400		2\$:	BR BIC	3\$ #B1T8,(R1)+	; IF CL	R, THEN CLR	THE CHAN	9 BIT IN	
1773	016634	005337 001365	002432		3\$:	DE C BNE	TEMP1		CHECKING AL			
1775 1776 1777 1778							MPARE THE ACTUAL HAD AN INVALID C			ND SET THE	ERROR FLAG	
1779 1780 1781	016642	012737	002336 000006	002432	45:	MOV MOV LET R5	#EXPTBL,R1 #6,TEMP1 := (R1) XOR 16(R	; INIT	"ACTUAL" TA	BLE INDEX		
1782 1783	016654	011105	000016								MOV	(R1),R5 16(R1),-(SP)
1784 1785	016662	040516	000016								BIC	R5,(SP) 16(R1),R5

GLOBAL.			30(1046)	19-AUG-79 20:27		49	6					
CZTSIB	.P11	19-AUG-79	20:26	GLOBAL SUBR	ITUO	NES SECTION						SEQ 0078
1786 1787	016670	052605		16	R5 N	E #O THEN				BIS	(SP)+,R5	
1788 1789	016672 016674	001402				L WO THEN				TST BEQ	R5 50040\$	
1790 1791	016676 016702	005237	002436	END		RRFLG						
1792 1793	016702 016702			LET	34(R1) := 34(R1)	SET.BY R5		50040\$:			
1794 1795	016702 016706		000034	LET	R1	:= R1 + #2				BIS	R5,34(R1)	
1796 1797	016706	062701	000002							ADD	#2,R1	
1798 1799 1800	016712 016716 016720	005337 001356 000207	002432	DE C BNE RTS		TEMP1 4\$ PC	; DONE CHE ; BR IF NO	CKNING ALL DATA	?			

S	EQ	00	79

GLOBAL CZTSIB		MACY11 19-AUG-79	30(1046) 20:26	19-AUG	-79 20: GLOBAL	27 PAGE SUBROUTII	50 NES SECTION	
1801 1802 1803					:S/R TO	SETUP TO	HE DIABLK IN SUC OCATION, SPECIFI	H A WAY THAT WILL ENABLE THE ROM ED IN ROMLKI, TO BE EXAMINED.
1804 1805 1806 1807					: GRDER	ROM ADDRI	ESS BITS ARE GAT	O ADDRESS THE ROM FROM 0-1777. THE 9 LOW ED FROM THE TRACK ACTIVE DATA WHILE THE D FROM THE VERTICAL PARITY ERROR (VPE).
1808 1809 1810 1811					OR CLE	AR IN BY	TE 1 DEPENDING OF	AN ALL 1'S PREAMBLE; CAUSES A VPE TO SET N THE STATE OF ROMLKI (BIT 9); AND CAUSES NDING TO BITS 0-8 OF ROMLKI.
1812 1813 1814 1815 1816 1817	016726 016734 016740 016746	012737 004737 032737 001403	002416 000777 016334 001000	002432	ROMLOK:	MOV JSR BIT BEQ	DTKIDN #777,TEMP1 PC,PELOAD #B1T9,ROMLKI 1\$;LOAD PREAMBLE & CONTROL. ;MSB OF ROM ADDR SET? ;BR IF NOT
1818 1819 1820	016750 016754		002432			CLR BR	TEMP1 2\$; CAUSE VPE=1. ; CONTINUE
1821 1822 1823 1824 1825 1826 1827	016764	004737 005037 013737 005137	000777 016334 002432 002420 002416 177000	002432 002416 002416	1\$: 2\$:	MOV JSR CLR MOV COM BIC	#777,TEMP1 PC,PELOAD TEMP1 ROMLKI,DTKIDN DTKIDN #177000,DTKIDN	CAUSE VPE=0. ;LOAD BYTE 1 + CNTRL. ;INIT TEMP1. ;LOAD ROM ADDR IN DEAD TRACK REG. ;INVERT IT. ;CLR GARBAGE. MSB ADDRESS ;WAS TAKEN CARE OF IN BYTE 1.
1828 1829	017014 017020	004737 000207	016334			JSR RTS	PC PELOAD PC	: LOAD BYTE 2 DATA AND CONTROL. : RETURN.

	70			. c 7	
GLOBAL AREAS	MACY11 30(1046) 19-AUG-79 20:26			NES SECTION	
1830 1831			TO GENERAT	E THE EXPECTED ROM LOOKUP	TABLE OUTPUT FROM THE ADDRESS
1832 1833 1834 1835 1836 1837 1838 1839 1840			INPUTS: OUTPUTS CLOBBER	: EXPOML = EXPECTE	RESS D ROM LOOKUP TABLE OUTPUT.
1836 1837 1838		THE	ROM CONTEN	TS ARE SHOWN IN THE FOLLO	OWING TABLE:
1839 1840 1841 1842 1843		оит	PUT	ADDRESSES WHICH ASSERT* AAAAAAAAA 9876543210	COMMENTS
1844 1845 1846 1847		MUL	T (MSB)	x	X = DON'T CARE. MULT = 1 IF ANY 2 ADDRESS LINES (OTHER THAN A9) ARE 1.
1848 1849 1850		RDT	MK	XXX0100X11 X110X001XX	X = DON'T CARE.
1851 1852 1853 1854		PRE	AM	XAACBCCABB	X = DON'T CARE. MUST HAVE AT LEAST ONE OF A & B & C. MUST HAVE ALL OF A OR B OR C.
1855 1856 1857		9 0	F 9	x111111111	X = DON'T CARE.
1858		:0 0	F 9	x000000000	X = DON'T CARE.
1859 1860 1861 1862 1863 1864 1865 1866		COR	DATA	100000001 100000010 100000100 100001000 100010000 100100	
1868 1869		INC	OR DATA	100000000	
1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880		8 0	F9 (LSB)	X111111111 X111111110 X1111111011 X111110111 X111101111 X111011111 X110111111 X1011111111 X011111111	X = DON'T CARE.
1879 1880 1881 1882 1883 1884		* =	A8 = ML	X 2(0)-2(7) X PARITY TCHED PARITY ERROR	

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D 7
                MACY11 30(1046) 19-AUG-79 20:27 PAGE 52
GLOBAL AREAS
              19-AUG-79 20:26
CZTSIB.P11
                                          GLOBAL SUBROUTINES SECTION
        017022 005037 002352
  1885
                                          ROMEX:: CLR
                                                           EXROML
                                                                            :INIT. EXPECTED ROM REG.
  1886
  1887
                                                   : CHECK FOR 8 OF 9.
  1888
                                                                            : INIT O'S CNTR.
  1889
        017026
                                          x80F9:
                                                           #1,R2
                012702
                         000001
                                                  MOV
                012737
                                                           #11.TEMPO
                                                                                     :LOAD BIT CNTR. NOT INTERESTED IN BIT10.
  1890
        017032
                         000011
                                 002430
                                                   MOV
  1891
        017040
                013701
                         002420
                                                           ROMLKI,R1
                                                                            : SAVE ROM TABLE ADDRESS
                                                   MOV
                                                                            CLR CARRY TO PREPARE FOR SHIFT
  1892
        017044
                000241
                                          15:
                                                   CLC
                                                                            ; SHIFT IT. WAS IS A 1?
        017046
                 006201
  1893
                                                   ASR
        017050
                                                           2$
                                                                            :BR IF SO
  1894
                 103401
                                                  BCS
                                                           R2
                                                                            :DECR O CNTR.
  1895
        017052
                 005302
                                                   DEC
                005337
                                          25:
                                                           TEMPO
                                                                            :DECR BIT CNTR DONE?
  1896
        017054
                         002430
                                                   DEC
  1897
                                                                            :BR IF NOT
        017060
                001371
                                                   BNE
                                                           15
                                                           R2
                                                                            :8 OF 9?
  1898
                005702
        017062
                                                   TST
                                                           XCORDA
  1899
        017064
                100403
                                                                            ; BR IF NOT
                                                   BMI
        017066 052737
                                                           #.80F9, EXROML
                                                                            : IF SO, SET THE BIT
  1900
                         000001 002352
                                                  BIS
  1901
  1902
                                                   CHECK FOR CORRECTABLE DATA
  1903
  1904
        017074
                032737
                         001000 002420 XCORDA: BIT
                                                           #A9.ROMLKI
                                                                            COULD THIS BE CORRECTABLE DATA
  1905
        017102
                001427
                                                   BEQ
                                                           XINCOR
                                                                            :BR IF NOT
                                                                            COULD THIS BE CORRECTABLE DATA?
        017104
                032737
                                                           #A8, ROMLKI
  1906
                         000400
                                 002420
                                                   BIT
                                                                            :BR IF NOT.
  1907
        017112
                001023
                                                   BNE
                                                           XINCOR
                                                           #2,R2
                                                                            : INIT 1'S CNTR.
  1908
                012702
        017114
                         000002
                                                   MOV
                                                                                    ; LOAD BIT CNTR. NOT INTERESTED IN MSB.
  1909
                                 002430
                                                   MOV
                                                           #12, TEMPO
        017120
                012737
                         000012
                                                                            ; SAVE ROM TABLE ADDR.
  1910
        017126
                013701
                         002420
                                                   MOV
                                                           ROMLKI, R1
        017132
                                                                            : INIT CARRY TO PREPARE FOR SHIFT.
                                          15:
  1911
                000241
                                                   CLC
                                                                            ; SHIFT IT. WAS IT A 1?
        017134
                006201
                                                   ASR
                                                           R1
  1912
                                                           2$
                                                                            :BR IF NOT
  1913
        017136
                103001
                                                   BCC
                005302
                                                           R2
                                                                            ; DECR. 1'S CNTR.
  1914
        017140
                                                   DEC
                                                                            :DECR BIT CNTR. DONE?
                                                           TEMPO
  1915
        017142
                005337
                         002430
                                          2$:
                                                   DEC
  1916
                                                                            :BR IF NOT
        017146
                001371
                                                   BNE
                                                           15
                                                   TST
                                                           R2
                                                                            : CORRECTABLE DATA?
  1917
        017150
                005702
                                                           XINCOR
  1918
        017152
                001003
                                                  BNE
                                                                            :BR IF NOT
                                                           #.CORD, EXROML
                                                                            : IF SO, SET THE BIT.
  1919
        017154
                052737
                         000004
                                 002352
                                                  BIS
  1920
                                                   : CHECK FOR INCORRECTABLE DATA
  1921
  1922
  1923
        017162 022737
                         001000
                                 002420
                                          XINCOR: CMP
                                                           #1000, ROMLKI
                                                                            : INCORRECTABLE DATA?
                                                   BNE
                                                           XOOF 9
                                                                            :BR IF NOT
  1924
        017170
                001003
                                                                            : IF SO, SET THE "INCOR" BIT.
        017172 052737
  1925
                                                           #.INCOR.EXROML
                         000002
                                 002352
                                                   BIS
  1926
                                                   : CHECK FOR O OF 9
  1927
  1928
                                                           #777, ROMLKI
                                                                            :0 OF 9?
  1929
        017200
                032737
                         000777
                                  002420
                                          X00F9:
                                                   BIT
                                                           X90F9
                                                                            :BR IF NOT
                                                   BNE
  1930
        017206
                001003
                                                                            : IF SO, SET THE BIT.
                                                           #.OOF9.EXROML
  1931
        017210
                052737
                         000010
                                                   BIS
                                 002352
  1932
                                                   : CHECK FOR 9 OF 9
  1933
  1934
                                                                            :9 OF 9?
                                                           #777, ROMLKI
  1935
        017216
                022737
                         000777
                                  002420
                                          X90F9:
                                                   CMP
                                                                            :BR IF SO
                                                   BEQ
        017224
                 001404
                                                           15
  1936
                                                           #1777, ROMLKI
                                                                            :9 OF 9?
  1937
        017226
                 022737
                         001777
                                                   CMP
                                  002420
                                                                            : BR IF NOT
  1938
        017234
                 001003
                                                   BNE
                                                           XMULT
                         000020 002352 1$:
                                                           #.90F9, EXROML
                                                                            : SET THE BIT.
                 052737
                                                   BIS
        017236
  1939
  1940
```

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E 7
                MACY11 30(1046) 19-AUG-79 20:27 PAGE 53
GLOBAL AREAS
CZTSIB.P11
              19-AUG-79 20:26
                                         GLOBAL SUBROUTINES SECTION
                                                  : CHECK FOR MULTIPLE TRACKS
  1942
                012702
  1943
        017244
                         000001
                                          XMULT:
                                                  MOV
                                                          #1.R2
                                                                           :INIT 1'S CNTR.
        017250
                                 002430
                                                          #11, TEMPO
                                                                                   ; LOAD BIT CNTR.
  1944
                         000011
                                                  MOV
       017256
  1945
                013701
                                                                           : SAVE ROM TABLE ADDR
                                                          ROMLKI . R1
                         002420
                                                  MOV
                                                                           : INIT CARRY TO PREPARE FOR SHIFT.
  1946
        017262
                000241
                                          15:
                                                  CLC
  1947
        017264
                006201
                                                                           SHIFT IT WAS IT A 1?
                                                  ASR
  1948
        017266
                                                          2$
                                                                           :BR IF NOT
                103001
                                                  BCC
                                                          R2
                                                                           :DECR 1'S CNTR.
  1949
        017270
                005302
                                                  DEC
                                                                           :DECR BIT CNTR. DONE?
  1950
        017272
                005337
                         002430
                                         25:
                                                          TEMPO
                                                  DEC
  1951
        017276
                001371
                                                          15
                                                                           :BR IF NOT
                                                  BNE
        017300
                                                          R2
                                                                           :MULTIPLE TRACKS?
  1952
                005702
                                                  TST
  1953
        017302
                100003
                                                  BPL
                                                          XPREAM
                                                                           :BR IF NOT
                                                          #.MULT.EXROML
                                                                           : IF SO, SET BIT BIT
  1954
       017304
                052737
                         000200 002352
                                                  BIS
  1955
  1956
                                                  CHECK FOR PREAMBLE
                                                  :ADDR LINES 9876543210
  1957
  1958
                                                              XAACBCCABB
                                                  :PREAM=1 IF HAVE ONE OF A&B&C AND
  1959
                                                                                           x = 0 \text{ OR } 1.
                                                          ALL OF A OR B OR C.
  1960
  1961
                                         XPREAM: CLR
  1962
        017312
                005002
                                                          ROMLKI, R1
                                                                           ; SAVE ROM TABLE ADDRESS.
                         002420
        017314
                013701
  1963
                                                  MOV
        017320
                                                                                   :GENERATE THE
  1964
                010137
                         002430
                                                          R1.TEMPO
                                                  MOV
                                                                           : COMPLIMENT OF THE ADDR.
  1965
        017324
                005137
                         002430
                                                          TEMPO
                                                  COM
                                                          #A8!A7!A2, TEMPO ; ALL OF GROUP A?
  1966
        017330
                032737
                         000604
                                 002430
                                                  BIT
  1967
        017336
                001003
                                                  BNE
                                                          15
                                                                           :BR IF NOT
                                                                           :SET "ALL OF A" AND "1 OF A" INDICATION
                         000011
                                                          #BITO!BIT3,R2
  1968
                052702
                                                  BIS
        017340
  1969
        017344 000405
                                                  BR
  1970
       017346
017352
  1971
                032701
                                                          #A8!A7!A2,R1
                                                                           :1 OF GROUP A?
                         000604
                                         15:
                                                  BIT
                                                                           :BR IF NOT - NOT A PREAM
                001440
  1972
                                                  BEQ
                                                                           SET "1 OF A" INDICATION.
        017354
                052702
                                                          #BITO.R2
  1973
                         000001
                                                  BIS
                032737
                                 002430
                                                          #A5!A1!A0, TEMPO ; ALL OF GROUP B ACTIVE?
  1974
        017360
                         000043
                                                  BIT
  1975
                001003
                                                           3$
                                                                           :BR IF NOT
        017366
                                                  BNE
                                                                           : SET "ALL OF B" + "1 OF B".
  1976
        017370
                052702
                         000012
                                                  BIS
                                                          #BIT1!BIT3,R2
  1977
        017374
                000405
                                                                           : CONTINUE
                                                  BR
                                                          48
                                                                           :"1 OF B" ACTIVE.
                032701
                                                          #A5!A1!A0.R1
        017376
                         000043
                                          3$:
                                                  BIT
  1978
                                                                           BR IF NOT - NOT A PREAM.
  1979
                001424
                                                          7$
        017402
                                                  BEQ
                                                                           SET "1 OF B" INDICATION.
                052702
                                                          #BIT1,R2
  1980
        017404
                         000002
                                                  BIS
                032737
                                                          #A6!A4!A3, TEMPO ; ALL OF GROUP C ACTIVE?
                         000130
                                 002430
                                                  BIT
  1981
        017410
                                                                           ; BR IF NOT
        017416
                001003
                                                  BNE
  1982
        017420
                                                          #BIT2!E. 13, R2
                                                                           SET ALL OF C AND 1 OF C
  1983
                052702
                         000014
                                                  BIS
                                                                           ; INDICATION.
  1984
        017424
                000405
                                                  BR
                                                          #A6!A4!A3,R1
                                                                           :1 OF C?
  1985
                032701
                         000130
                                          55.
                                                  BIT
        017426
                                                                           ; BR IF NOT-NO PREAMBLE
                                                  BEQ
                                                          7$
  1986
        017432
                001410
                                                          #B112.R2
                                                                           :SET 1 OF C INDICATION.
  1987
        017434
                052702
                         000004
                                                  BIS
  1988
                                                  IN ORDER FOR THE PREAMBLE CONDITION TO BE TRUE, R2 MUST CONTAIN
  1989
                                                  :17 AT THIS POINT.
  1990
  1991
                                                           #17,R2
                                                                           ; PREAMBLE?
                                                  CMP
                022702
                         000017
                                          6$:
  1992
        017440
                                                  BNE
                                                                           :BR IF NOT
       017444
                001003
  1993
                                                          # . PREAM , EXROML
                                                                           : IF SO, SET THE PREAMBLE BIT IN
                         000040 002352
  1994
       017446 052737
                                                  BIS
                                                                           : EXPECTED LOOKUP TABLE REG.
  1995
                                          75:
                                                  NOP
       017454 000240
  1996
```

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F 7
                MACY11 30(1046) 19-AUG-79 20:27 PAGE 54
GLOBAL AREAS
CZTSIB.P11
              19-AUG-79 20:26
                                         GLOBAL SUBROUTINES SECTION
  1997
  1998
                                                 CHECK FOR READ FILE MARK PATTERN
  1999
                                                                 9876543210
                                                 : ADDR LINES
  2000
                                                                 XXX0100X11 - CONDITION 1
                                                 :RDFMK=1 IF
  2001
                                                          OR
                                                                 x110x001xx - CONDITION 2
                                                         IS TRUE.
  2002
  2003
                                                         x = 0 \text{ OR } 1
  2004
  2005
                                                                          : SAVE ROM TABLE ADDR.
       017456 013701
                        002420
                                         XRDFMK: MOV
                                                         ROMLKI,R1
               010137
005137
032701
                        002430
  2006
       017462
                                                                                  : GENERATE THE
                                                         R1.TEMPO
                                                 MOV
                                                                          COMPLIMENT OF THE ADDR.
  2007
                        002430
       017466
                                                 COM
                                                         TEMPO
  2008
       017472
                        000130
                                                 BIT
                                                         #A6!A4!A3,R1
  2009
                001013
                                                                          ;BR IF COND 1 AND COND 2 NOT TRUE
       017476
                                                 BNE
                                                         3$
                                                         #A5!A1!A0, TEMPO ; CHECK 1'S IN COND 1.
  2010
       017500
                032737
                        000043 002430
                                                 BIT
                                                                          :BR IF COND 1 IS TRUE
                001404
  2011
       017506
                                                 BEQ
  2012 017510
                032737
                        000604 002430
                                                 BIT
                                                         #A8!A7!A2, TEMPO ; CHECK 1'S IN CONDITION 2
  2013 017516
                                                                          :BR IF COND 2 IS FALSE
               001003
                                                 BNE
                                                         3$
                                                         W.RDFMK, EXROML ; WE ARE READING A FILE MARK.
  2014
       017520
                052737
                        000100 002352 2$:
                                                 BIS
                                                                         ; SET APPROPRIATE BIT.
  2015
                                                                        - ; RETURN
                                                 RTS
  2016 017526 000207
                                         35:
                                                         PC
```

GLOBAL AREAS MACY11 30(1046) 19-AUG CZTSIB.P11 19-AUG-79 20:26	-79 20:27 PAGE 55 GLOBAL SUBROUTINES SECT	G 7	SEQ 0084
2017 2018 2019 2020 2021 2022 2023 2024 2025	S/R TO RETRIEVE THE AC WITH THE EXPECTED OUTP INPUT:	EXROML - EXPECTED ROM OUTPUT. MSGPKT - TSO4 MESSAGE PACKET. ERRFLG - ERROR FLAG	
2024 2025 2026 2027 2028 017530 2029 017530 113737 002273 002370 2030 017536 123737 002370 002352 2031 017544 001402 2032 017546 005237 002436 2033 017552 000207	ROMCK:: LET ACROML :B CMPB ACROML, BEQ 1\$ INC ERRFLG 1\$: RTS PC	= MSGPKT+ROM\$LK ;GET THE ACTUAL ROM OUTPUT MOVB EXROML ;ARE THEY THE SAME. ;BR IF SO ;IF NOT SET THE ERROR FLAG	MSGPKT+ROMSLK,AC

GLOBAL AREAS MACY11 30(1046) CZTS1B.P11 19-AUG-79 20:26	19-AUG-79 20:27 PAGE 56 GLOBAL SUBROUTINES SECTION		SEQ 0085
2034 2035 2036 2037 2038 2039 2040 2041 2042	SUBROUTINES MSORT 1 AND MSORT2 SELECT BA TABLE BELOW WHERE: 22 = M8922 57 = G157 24 = M8924 23 = M8923	AD BOARDS FOR TESTS 4 - 7 PE	E R
2043	BAD BOARD SELECTION TABLE	!	
2045		PRINTB MSG	
2047 2048 2049 2050 2051 2052 2053 2054 2055	0 22/7/0-8 1 24/6/0,1,2 R2=7 2 24/5/3,4,5 R3=70 3 24/4/6,7,8 R4=700 400 57/2/0,1,5,6 R2=143 1000 57/1/2,3,4,7 R3=234 1400 23/3/8 R4=400	FMTCTR FMTCH6 FMTCH5 FMTCH4 RDCH2 RDCH1 RDCHP3	
2055 2056 2057	; TEST 4 MODULE SORT		
2058 2059 017554 005037 002432 2060 017560	MSORT1:: CLR TEMP1 LET R2 := R1 AND #7	TEPM1=BOADS 24 SELECTION FOR R2=BOARD 24/6 MASK	LAG
2061 017560 010102 2062 017562 010246 2063 017564 042716 000007 2064 017570 042602		MOV MOV BIC BIC	R2,-(SP) #7,(SP)
2065 017572 2066 017572 010103 2067 017574 010346 2068 017576 042716 000070 2069 017602 042603	LET R3 := R1 AND #70 ,	R3=BOARD 24/5 MASK MOV BIC BIC	R1,R3 R3,-(SP) #70,(SP) (SP)+,R3
2070 017604 2071 017604 010104 2072 017606 010446	LET R4 := R1 AND #700	R4=BOARD 24/4 MASK MOV MOV BIC BIC	R1,R4 R4,-(SP) #700,(SP) (SP)+,R4
2074 017614 042604 2075 017616 2076 017616 005005 2077 017620 004737 020372	LET R5 := #0	R5=BOARD 22/7 FLAG	R5
2073 017610 042716 000700 2074 017614 042604 2075 017616 2076 017616 005005 2077 017620 004737 020372 2078 017624	JSR PC.PAIRST IF R5 EQ #Ó THEN	SORT 22 AND 24 BOARDS, RESI	
2080 017626 001011 2081 017630 2082 017630 012746 005062 2083 017634 012746 000001		TST BNE 22 BOARD SELECTED, CALL BAI MOV MOV MOV	50041\$ D 22/7 #FMTCTR,-(SP)
2084 017640 010600 2085 017642 104414 2086 017644 062706 000004 2087 017650 2088 017650 000561 2089 017652	ELSE	TRAI ADD :24 BOARD SELECTED, CONTINUI BR 50041\$:	P C\$PNTB

GLOBAL CZTSIB.	AREAS P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG-79 20:27 PAGE 57 GLOBAL SUBROUTINES SECTION		SEQ 0086
2090 2091 2092 2093 2094 2095	017652 017652 017654 017656 017662 017664	010102 010246 042716	000143	LET R2 := R1 AND #143 ;R2=BOARD 57/2 MASK LET R3 := R1 AND #234 ;R3=BOARD 57/1 MASK	MOV MOV BIC BIC	R1,R2 R2,-(SP) #143,(SP) (SP)+,R2
2096 2097 2098 2099	017664 017666 017670 017674	010346 042716 042603	000234		MOV MOV BIC BIC	R1,R3 R3,-(SP) #234,(SP) (SP)+,R3
2100 2101 2102 2103 2104	017676 017676 017700 017702 017706	010104 010446 042716 042604	000400	LET R4 := R1 AND #400 ;R4=BOARD 23/3 MASK	MOV MOV BIC BIC	R1,R4 R4,-(SP) #400,(SP) (SP)+,R4
2105 2106 2107 2108	017710 017710 017712 017716	000305 004737	020372	JSR PC, PAIRST ;SORT 57 AND 23 BOARDS, LET R5 := SWAP R5 ;ANALYZE R5 LO BYTE		R5 IN R5 HI BYTE
2109 2110 2111	017716 017720 017720		000001	IF R5 EQ #1 THEN	SWAB	R5 R5,#1
2112 2113 2114 2115 2116 2117	017724 017726 017726 017732 017736 017740	001011 012746 012746 010600	005174 000001	PRINTB #FMTCH6 ; CALL BAD 24/6	MOV MOV MOV TRAP	50043\$ #FMTCH6,-(SP) #1,-(SP) SP,R0 C\$PNTB
2118 2119 2120 2121	017742 017746 017746 017750	062706	000004	ELSE 50043\$:	BR	#4,SP 50044\$
2122 2123 2124 2125	017750 017750 017754 017756	020527 001011	000002	PRINTB #FMTCH5 ; CALL BAD 24/5	CMP BNE	R5.#2 50045\$
2126 2127 2128 2129 2130	017756	012746 012746 010600 104414 062706	005251 000001 000004		MOV MOV TRAP ADD	WFMTCH5,-(SP) W1,-(SP) SP,R0 C\$PNIB W4,SP
2131 2132 2133	017776 017776 020000	000416	000004	ELSE 50045\$:	BR	50046\$
2134 2135 2136	020000 020000 020004	020527	000003	IF R5 EQ #3 THEN	CMP BNE	R5.#3 50047\$
2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143	020006 020006 020012 020016 020020 020022	012746	005326 000001 000004	PRINTB #FMTCH4; CALL BAD 24/4	MOV MOV MOV TRAP ADD	#FMTCH4(SP) #1(SP) SP.RO C\$PNTB #4.SP
2143 2144 2145	020026 020026 020030	000402		ELSE 50047\$:	BR	50050\$

GLOBAL CZTS1B	AREAS	MACY11 19-AUG-79	30(1046) 20:26	19-AUG-79 20:27 PAGE 58 GLOBAL SUBROUTINES SECTION			SEQ 0087
2146	020030	005237	002432	INC TEMP1	:TEPM1 NOT=0 WHEN NO BA	D 24 WER	RE CALLED
2148	020034 020034 020034 020034 020034			ENDIF	50056\$:		
2150	020034			END1F	50046\$:		
2152	020034			ENDIF	50044\$:		
2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160	020034 020034 020040		002432	IF TEMP1 NE #0 THEN			DNTINUE SORT TEMP1 50051\$
2156	020042	001403		LET R1 := ACTRK1 OR ACTRK3	: ANALYZE TRACK INACTIVE		
2157	020042	013701	002406	EET NI TO NOTHER		MOV BIS	ACTRK1,R1 ACTRK3,R1
2159	020046 020052			IF R1 NE #0 THEN	;R1 NOT=0, TRACK INACTI		
2160	020052 020054	005701 001430				TST BEQ	R1 50052\$
2161 2162	020056	001430		LET R1 := R5	; SAVE R5	DLU	300328
2163	020056	010501				MOV	R5,R1
2164	020060			LET R5 := R5 AND #3	:KEEP 2 LSB'S	MO	DE (CD)
2165	020060	010546	000003			MOV BIC	R5,-(SP) #3,(SP)
2166 2167	020066	042716 042605	000003			BIC	(SP)+,R5
2168	020070	004737	020440	JSR PC, FMTSEL PRINTB #FMTCTR ; CALL B	CALL APPROPRIATE BAD 2		
2169 2170	020074	012746	005062			MOV	WFMTCTR,-(SP)
2171	020100	012746	000001			VOM	#1,-(SP)
2172	020104 020106	010600 104414				TRAP	SP,RO C\$PNTB
2171 2172 2173 2174 2175 2176	020110	062706	000004			ADD	#4.SP
2175	020114			LET R5 := SWAP R1	FETCH R5 HI BYTE		
2176	020114	010105				MOV	R1,R5
2177	020116	000305		LET R5 := R5 AND #3	;KEEP 2 LSB'S	SWAB	R5
2178	020120 020120	010546		EET RY RY AND WY	. KEEF E ESS S	MOV	R5,-(SP)
2180	020122	042716	000003			BIC	#3,(SP)
2181	020126	042605		0. 00.00		BIC	(SP)+,R5
2182	020130 020134	004737	020562	JSR PC,RDCSEL ELSE	:CALL APPROPRIATE BAD 5	D NOT F	A11
2184	020134	000427		LLSL	, KI-O, INACK INACCITE DI	BR	50053\$
2185	020134 020136 020136 020136				50052\$:		
2186	020136			LET R1 := R5	; SAVE R5	MOV	05 01
2187	020136	010501		LET R5 := SWAP R5		MOV	R5,R1
2189	020140 020140 020142	000305				SWAB	R5
2190	020142			LET R5 := R5 AND #3	KEEP 2 LSB'S OF HI BYT		DE (CD)
2191	020142	010546	000007			MOV BIC	R5,-(SP) #3,(SP)
2192	020144 020150	042716	000003			BIC	(SP)+,R5
2194	020152	004737	020562	JSR PC, RDCSEL	: CALL APPROPRIATE BAD 5	7/23	
2195	020156			LET R5 := R1 AND #3	FETCH 2 LSB'S OF R5 LC		21 25
2196	020156	010105				MOV MOV	R1,R5 R5,-(SP)
2197	020160	010546	000003			BIC	#3,(SP)
2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2198 2199 2199 2200	020166	042605	00000			BIC	(SP)+.R5
2200	020170	004737	020440	JSR PC.FMTSEL	CALL APPROPRIATE BAD	4	
2201	020174			PRINTB #FMTCTR	CALL BAD 22		

GLOBAL AREAS	MACY11 19-AUG-79	30(1046)	19-AUG-79 20:27 PAGE 59 GLOBAL SUBROUTINES SECTION			SEQ 0088
2202 0201 2203 0202 2204 0202 2205 0202 2206 0202	00 012746 04 010600 06 104414 10 062706	000001			MOV MOV MOV TRAP ADD	#FMTCTR,-(SP) #1,-(SP) SP,RO C\$PNTB #4,SP
2207 0202 2208 0202	14		ENDIF	50053\$:		
2209 0202 2210 0202	14		ENDIF	50051\$:		
2211 0202 2212 0202 2213 0202	14		ENDIF RTS PC	50042\$:		

GLOBAL CZTSIB	AREAS	MACY11	30(1046)	19-AUG-79 20:27 PAGE 60 GLOBAL SUBROUTINES SECTION			SEQ 0089
		17-AUG-17	20.20	GLOBAL SUBROUTINES SECTION			324 0007
2214				; TEST 5 - 7 MODULE SORT			
2214 2215 2216 2217 2218 2219 2221 2221 2223 2224 2225 2226 2227 2228 2228 2231 2231 2231 2231 2231 2231	020216 020226 020226 020226 020226 020236 020236 020236	005701		MSORT2:: IF R1 NE #0 THEN	;ERROR FROM 24 BOARDS,	WHICH ON TST BEQ	R1 50054\$
2220	020222	010102		LET R2 := R1 AND #7	:R2=24/6 MASK	MOV	R1,R2
2222	020224	010246 042716 042602	000007			MOV BIC BIC	R2,-(SP) #7,(SP) (SP)+,R2
2225	020234	010103		LET R3 := R1 AND #70	;R3=24/5 MASK	MOV	R1.R3
2227	020236 020246 020244	OTELLO	000070			MOV BIC BIC	R3,-(SP) #70,(SP) (SP)+,R3
2230	020246	010105		LET R5 := R1 AND #700	;R4=24/4 MASK	MOV	R1,R5
2232	020250 020250 020250 020260 020260	010546 042716 042605	000700			MOV BIC BIC	R5,-(SP) #700,(SP) (SP)+,R5
2235	020260	005005		LET R5 := #0	;R5=22/7 FLAG	CLR	R5
2237	020266)	020372	JSR PC, PAIRST IF R5 EQ #0 THEN	SORT 22 AND 24 BOARDS	TST	R5
2240	020266 020270 020277	001011		PRINTB #FMTCTR ;CALL	22/7	BNE	50055\$
2242 2243 2244	020302	012746	005062 000001			MOV MOV MOV	#FMTCTR,-(SP) #1,-(SP) SP,RO
2244 2245 2246	020304	104414	000004	F1 CE	;24 SELECTED, WHICH ONE	ADD	C\$PNTB #4,SP
2248	020312	000404		ELSE	50055\$:	BR	50056\$
2250	020304 020306 020312 020314 020314 020326	004737	020440 020334	JSR PC,FMTSEL JSR PC,DTRCHK ENDIF	CALL APPROPRIATE 24 CHECK OR FUNCTION OF 2	2	
2253	020324				50056\$:		
2255	020324 020324 020324 020324	000402		ELSE	50054\$:	BR	50057\$
2256	020320	004737	020334	JSR PC,DTRCHK ENDIF	:NO ERROR FROM 24. CHEC	K OR FUN	NCTION OF 22
2259	020326 020326 020336 020336 020336	000207		RTS PC	50057\$:		
2261				CHECK DEAD TRACK ORING ON 22 BOARD			
2246 2247 2248 2249 2250 2251 2253 2254 2255 2256 2257 2261 2262 2263 2264 2265 2266 2267 2268	02033	4 013701	002374	DTRCHK: LET R1 := ORIDTR OR ORODTR	GET OR DATA	MOV BIS	ORIDIR,RI ORODIR,RI
2267	02034	4	002404	IF R1 NE #O THEN		151	R1
2268	02034	6 001410				BEQ	50060\$

GLOBAL CZTSIB	AREAS .P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG-79 20:27 PAGE 61 GLOBAL SUBROUTINES SECTION		SEQ 0090
2270 2271 2272 2273 2274 2275 2276 2277	020350 020350 020354 020362 020364 020370	0 012746 0 012746 0 010600 2 104414 0 062706	005062 000001 000004	PRINTB WFMTCTR ENDIF	OR DATA BAD, CALL 22 BOARS MOS MOS TRA	V WFMTCTR,-(SP) V #1,-(SP) V SP,RO AP (\$PNTB
2277	020370 020370)		RTS PC	50060\$:	

GLOBAL CZTSIB. 2279	AREAS P11	MACY11 19-AUG-79	30(1046)	19-AUG-79 20:27 PAGE 62 GLOBAL SUBROUTINES SECTION ; PAIR OF BOARDS SORTING SUBR				SEQ 0091
2280				;(R2)(R3) + (R2)(R4) + (R3)(R4) NEQ 0> R5=0				
2279 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2293 2294 2295 2298 2299 2300 2301 2305 2306 2307 2308 2309 2310				R2 NEQ 0> R5=1 R3 NEQ 0> R5=2 R4 NEQ 0> R5=3				
2287 2288 2289	020372 020372 020376 020376 020400 020402 020404 020406	005702		PAIRST: IF R2 NE #0 THEN		TST BEQ	R2 50061\$	
2290	020376	005703		IF R3 EQ #O AND R4 EQ #O THEN		TST	R3	
2292 2293 2294	020400 020402 020404	001004 005704 001002				BNE TST BNE	50062\$ R4 50062\$	
2295	020406	052705	000001	LET R5 := R5 SET.BY #1		BIS	#1,R5	
2297 2298	020412			END1F	50062\$:		*1,112	
2300 2301	020406 020412 020412 020412 020414 020414 020416 020420 020422 020424 020424	000411		ELSE	50061\$:	BR	50063\$	
2303	020414	005703 001405		IF R3 NE #0 THEN		TST BEQ	R3 50064\$	
2306	020420	005704 001002		IF R4 EQ #0 THEN		TST BNE	R4 50065\$	
2309	020430		000002	LET R5 := R5 SET.BY #2 ENDIF		BIS	#2,R5	
2311 2312 2313	020430	0004.02		ELSE	50065\$:	BR	50066\$	
2314	020432 020432 020432 020436 020436 020436	052705	000003	LET R5 := R5 SET.BY #3	50064\$:			
2317 2318	020436 020436	0)210)	000003	ENDIF	50066\$:	BIS	#3,R5	
2319 2320 2321	020436 020436	000207		RTS PC	50063\$:			
2322				FORMATTERS 24 SELECT				
2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2331 2332 2333 2334	020440 020440 020442 020444 020450	010546	000003	FMTSEL: SELECT R5 OF 3 VERIFY		MOV BLE CMP BLE	R5(SP) 50067\$ (SP).#3 50070\$	
2330 2331	020444 020450 020452 020452	012716	000004		50067\$:	MOV	#4.(SP)	
2333 2334	020456 020456 020460	006316			50070\$:	ASL	(SP) PC.(SP)	

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GLOBAL CZTSIB	AREAS .P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG-79 20:27 PAGE 63 GLOBAL SUBROUTINES SECTION			SEQ 0092
2775	020/63					ADD	a(SP)+,PC
2336 2337 2338 2339 2340 2341 2342 2343	020464 020464 020466 020470 020472	000010 000032 000054 000074			0071\$:	.WORD .WORD .WORD	50075\$-50071\$ 50074\$-50071\$ 50073\$-50071\$ 50072\$-50071\$
2341	020474				075\$:		
2343 2344 2345 2346 2347 2348 2350 2351 2352 2353	020474	012746 012746 010600 104414 062706	005174 000001 000004	PRINTB WFMTCH6		MOV MOV MOV TRAP ADD	WFMTCH6,-(SP) W1,-(SP) SP,RO C\$PNTB W4,SP
2349	020514 020514	000421		CASE 2		BR	50072\$
2351 2352	020516 020516			PRINTB #FMTCH5	0074\$:		
2353 2354 2355 2356 2357 2358 2359	020526 020530 020532	012746 012746 010600 104414 062706	005251 000001 000004			MOV MOV TRAP ADD	WFMTCH5,-(SP) W1,-(SP) SP,RO C\$PNTB W4,SP
2358 2359	020536 020536	000410		CASE 3		BR	50072\$
2300	020540 020540			PRINTB #FMTCH4	0073\$:		
2361 2362 2363 2364 2365 2366	020540 020544 020550 020552	012746 012746 010600 104414 062706	005326 000001			MOV MOV TRAP ADD	#FMTCH4,-(SP) #1,-(SP) SP,R0 C\$PNTB #4,SP
2367	020560 020560			ENDSELECT 50	0072\$:		
2369	020560	000207		RTS PC			
2371				READ CHANNEL 57/23 SELECT			
2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2376 2379 2381 2382 2383 2384 2385 2388 2388 2388	020562 020562 020564 020566 020572 020574	003403	000003	RDCSEL: SELECT R5 OF 3 VERIFY	00748.	MOV BLE CMP BLE	R5,-(SP) 50076\$ (SP),#3 50077\$
2378	020574	012716	000004		0076\$:	MOV	#4,(SP)
2380 2381 2382 2383	020600 020600 020602 020604	006316 060716 063607			0077\$:	ASL ADD ADD	(SP) PC,(SP) a(SP)+,PC
2384 2385 2386 2387 2388	020606 020606 020610 020612 020614 020616	000032 000054 000074		CASE 1	0100\$:	.WORD .WORD .WORD	50104\$-50100\$ 50103\$-50100\$ 50102\$-50100\$ 50101\$-50100\$
2390	020616			50	0104\$:		

GLOBAL CZTS1B	AREAS P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG-79 20:27 PAGE 64 GLOBAL SUBROUTINES	C 8			SEQ 0093
2391 2392 2393 2394 2395 2396 2397 2398	020616 020616 020622 020626 020630	012746 012746 010600 104414	005403 000001 000004	PRINTB	#RDCH2		MOV MOV MOV TRAP ADD	#RDCH2,-(SP) #1,-(SP) SP,RO C\$PNTB #4,SP
2397 2398 2399	020632 020636 020636 020640		000004	CASE 2		50103\$:	BR	50101\$
2401 2402 2403 2404 2405	020640 020644 020650 020652 020654	012746 012746 010600 104414 062706	005452 000001 000004		#RDCH1		MOV MOV MOV TRAP ADD	WRDCH1,-(SP) W1,-(SP) SP,R0 C\$PNTB W4,SP
2406 2407 2408	020660	000410		CASE 3	#DDC:::D7	50102\$:	BR	50101\$
2409 2410 2411 2412 2413 2414	020662 020662 020666 020672 020674 020676	012746 012746 010600 104414	005521 000001 000004	PRINTE	#RDCHP3		MCV MOV MOV TRAP ADD	WRDCHP3,-(SP) W1,-(SP) SP,R0 C\$PNTB W4,SP
2415 2416 2417	020702 020702 020702		000004	ENDSELECT RTS PC		50101\$:		

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GLOBAL CZTSIB	AREAS .P11	MACY11 19-AUG-79	30(1046)	19-AUG-79 20:27 PAGE 65 GLOBAL SUBROUTINES SECTION			SEQ
2418				; TEST 9, 10 MODULE SORT			
2421 2422 2423	020704 020704 020710	017701 042701	161314 177701	MSORT3:: LET R1 := aTSSR CLR.BY #TCFCMK		AL CLASS MOV BIC	S CODES atssr,r1 #tcfcmk,r1
2424 2425 2426	020714 020714 020720	020127 001075	000016	IF R1 EQ #16 THEN	;FC=0, TC=7	CMP BNE	R1,#16 50105\$
2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2430 2431 2432 2433	020722 020722 020724 020726 020730	104456 000023 003561 014164		ERRHRD 19,MICROE,MICERR		TRAP .WORD .WORD .WORD	CSERHRD 19 MICROE MICERR
2432 2433 2434	020736	013701 000301	002274	LET R1 := SWAP XSTAT3	;INPUT MICRO CODE ERROR	MOV SWAB	XSTAT3,R1
2434 2435 2436	020740 020740 020744	042701	177400	LET R1 := R1 CLR.BY #177400 IF R1 EQ #337 THEN	:KEEP 8 LSB'S	BIC	#177400,R1
2437 2438 2439	020744	020127 001011	000337			CMP BNE	R1,#337 50106\$
2440 2441 2442 2443 2444	020752 020756 020762 020764	012746 012746 010600 104414	027256 000001 000004	PRINTB #COD337		MOV MOV TRAP ADD	#COD337,-(SP) #1,-(SP) SP,RO C\$PNIB #4,SP
2445 2446 2447 2448	020766 020772 020772 020774	000450	000004	ELSE	50106\$:	BR	50107\$
2449	020774 020774	020127 101034	000127	IF R1 LOS #127 THEN		CMP BHI	R1.#127 50110\$
2451 2452 2453 2454 2455 2456 2457 2458 2459	021002 021002 021006	042701	177740	LET R1 := R1 CLR.BY #1777 LET R1 := R1 SHIFT 1	;R1x2 FOR WORD		
2455	021006 021010 021010		021116	LET R1 := R1 + #LOOKTB	:INDEX INTO LOOK-UP TBL	ASL	R1 #LOOKTB,R1
2458 2459 2460	021014 021014 021016	111102		LET R2 :B= (R1) SHIFT 1	GET WORD OFFSET INTO CO	DOTBL FRO MOVB ASLB	OM LOOKTB (R1),R2 R2
2460 2461 2462	021020	062702	021176	LET R2 := R2 + #CODTBL LET R3 := SWAP (R1)	; INDEX INTO CODTBL ; GET NO OF LINE	ADD	#CODTBL.R2
2463 2464 2465	021024	011103				MOV SWAB	(R1),R3 R3
2465 2466 2467 2468 2469	021030 021030 021032 021036	010346 042716	000377	LET R3 := R3 AND #377	; FROM LOOKTB	MOV BIC BIC	R3,-(SP) #377,(SP) (SP)+,R3
2469 2470 2471	021040			REPEAT	50111\$:		
2472 2473	021040			PRINTB (R2)	PRINT CURRENT	LINE	(R2),-(SP)

GLOBAL CZTSIB		MACY11 19-AUG-79		19-AUG-79 20:27 PAGE 66 GLOBAL SUBROUTINES SECTION		MOV	SEQ 0095
2474 2475 2476 2477	021046	012746 010600 104414 062706	000001	15T D2 D2 + #2	.THEN THE NEXT	MOV MOV TRAP ADD	#1,-(SP) SP,RO C\$PNIB #4,SP
2476 2477 2478 2480 2481 2482 2483 2484 2486 2487 2488 2489 2490	021062 021064 021064 021066 021070 021072 021072 021072 021074	005303 005703 001364 000411 010146 012746 012746	000002 027220 000002	LET R2 := P2 + #2 LET R3 := R3 - #1 UNTIL R3 EQ #0 ELSE PRINTB #CODXXX,R1	; THEN THE NEXT, ; IF ANY 50110\$:	ADD DEC TST BNE BR MOV MOV MOV MOV	#2,R2 R3 R3 50111\$ 50112\$ R1,-(SP) #CODXXX,-(SP) #2,-(SP) SP,R0
2492 2493 2494 2495 2496 2497 2498 2500 2501 2502	021114 021114 021114 021114	104414	000006	ENDIF ENDIF ENDIF RTS PC	50112\$: 50107\$: 50105\$:	TRAP	CSPNTB #6.SP

GLOBAL CZTSIB		MACY11 30	0(1046) 20:26	19-AUG-79 20:27 PAGE 67 GLOBAL SUBROUTINES SECTION
2503 2504 2505 2506				;MICRO DIAG ERROCR CODE LOOKUP TABLE ;CODOO THRU COD27 ;COD22, COD23, COD30 AND ABOVE, ARE UNDEFINED
2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2518 2521 2522 2523 2524 2523 2524 2527 2528 2527 2528 2528 2530 2531 2532 2533 2533 2533	0211120 021122 021124 021126 021136 021136 021136 021140 021146 021150 021152 021154 021166 021164 021166 021174	003 005 006 010 012 013 014 015 020 023 025 030 034 047 051 053 057 062	003 002 001 002 001 001 003 003 004 004 004 004 004 003 002 001 001 002 003 003	LOOKTB: .BYTE

GLOBAL CZTSIB	AREAS .P11	MACY11 19-AUG-79	30(1046) 20:26	19-AUG	-79 20:27 PAG GLOBAL SUBROUT	G 8 E 68 INES SECTION		
2535					;MICRO CODE ER			
2536 2537 2538 2539	021204	021633	021464 021732	021551	CODIBL: .WORD	CODOO,CODOOA,CODOOB CODO1,CODO1A	;0 ;3	3 2
2540 2541 2542 2543	021212 021216 021222 021224	022047 022233 022370 022467	022155 022341		.WORD	CODOO,CODOOA,CODOOB CODO1,CODO1A CODO2 CODO3,CODO3A CODO4,CODO4A CODO5 CODO6 CODO7 COD10,COD10A,COD10B COD11,COD11A,COD11B COD12,COD12A COD13,COD13A,COD13B COD14,COD14A,COD14B,COD14C	; 0 ; 3 ; 5 ; 6 ; 10 ; 12 ; 13	2
2544 2545 2546 2547	021226 021230 021236 021244	022655 023116 023365	022763 023201 023470	023065 023265	.WORD .WORD .WORD	COD10,COD10A,COD10B COD11,COD11A,COD11B COD12,COD12A	:14 :15 :20 :23	3 3 2 3
2548 2549	021250	023550	023647 024103	023721 024163	.WORD	COD13, COD13A, COD13B COD14, COD14A, COD14B, COD14C	:25	3
2550 2551 2552	021264 021266 021274	024316	024417	024503	.WORD	COD15,COD15A,COD15B,COD15C		4
2553 2554	021276	024637	024741	025021	.WORD	COD16,COD16A,COD16B,COD16C	:40	4
2555 2556 2557 2558	021306 021314 021320 021324	025163 025426 025634 025770	025267 025534 025742	025346	.WORD .WORD .WORD .WORD .WORD .WORD .WORD	COD17,COD17A,COD17B COD20,COD20A COD21,COD21A COD22	: 44 : 47 : 51 : 53 : 54 : 55 : 57	3 2 2 1
2559 2560 2561 2562 2563	021326 021330 021334 021342 021350	026062 026226 026505 026741	021041	021123	.WORD .WORD .WORD .WORD	COD17,COD17A,COD17B COD20,COD20A COD21,COD21A COD22 COD23 COD24,COD24A COD25,COD25A,COD25B COD26,COD26A,COD26B COD27,COD27A,COD27B	:55 :57 :62 :65	3 3 3
2564 2565 2566 2567					OFFSET INTO T NO OF .WORDS=	HIS TABLE < NO OF LINES TO PRINT <		

н 8 GLOBAL AREAS MACY11 30(1046) 19-AUG-79 20:27 PAGE 69 CZTS1B.P11 19-AUG-79 20:26 GLOBAL SUBROUTINES SECTION

2568			;MICI	O CODE EF	ROR MSGS						
2568 2569 2570	021633 021732 021754 021754 022047 022155 022233 022341 022370 022367 022564 022655 022763 023065 023116 0404 023201 023265	45 020040 45 020101 45 030501 45 030065 45 030061 45 030501 45 030501 45 030061 45 030061 45 030501 45 030501 45 030501 45 030501 45 032523	020060 CODO(020040 CODO(020040 CODO(030460 CODO(040445 CODO(031460 CODO(020062 CODO(020040 CODO(020065 CODO(020065 CODO(020067 CODO(020067 CODO(020067 CODO(020060 CODO(020061 CODO(020061 CODO(020061 CODO(.NL1S1): .ASC12): .ASC12 : .ASC12	BEX /%A100 /%A /%A101 /%S50%/ /%A102 /%A103 /%A /%A104 /%A105 /%A106 /%A107 /%A107 /%A110 /%A111 /%A /%A111 /%A	BASIC IO MICRO DATA WINDOW TE SERIAL BUS.SHI ERROR IN IO CO AM8967(12)%N/ FAILURE OF FRA FAILURE OF IO TEST OR THE WR FAILURE OF SHI TSTS TAC SYNC CK TACH PHASE,S LIGHT REG CHAN	ST BETWEEN IN (SHIFT IN) NTROL REGIST ME COUNTER TO SILO NON-PARTITE FLAG%S24 SILO PARITY %N/ FT LOOP WITH FT LENGTH MU EIVE CORRECT OVER THE SE LE%N/ Z CLOCK TEST FLOP AND ATT KEW, SPEED AD	O AND MAIN STUCK TRUE ER TEST%S13 EST%S17%AM8 ITY ERROR D %AM8963(11) ERROR TEST ZEROES%S15%A ONES%S15%A ONES%S15%A OP-CODE FR RIAL BUS%S1 %XS19%ACBUS JUSTS ON G1	MICROS.XN 2AM8966(1 966(14) ATA XN/ OR 2AM8965(15) 5(15) OM TS11 2XATS11,M S9%A2%N/ CABLEXN/ 59	1/ 15%N/ 15%N/ 15%N/ 15%N/ 18966(14) 15) 20%N/ 21%N/ 22%N/ 107HER BOARD%	
	023470 0404 023550 0404 023647 0 023721 0 024001 0 024103 0 024163 0 024236 0404 024236 0404 024316 0404 024503 0 024557 0 024557 0 024557 0 025021 0 025103 0 025163 0	45 044103 45 030461 45 020101 45 041501 45 020101 45 030501 45 030501	041505 COD13 020063 COD13 020040 COD13 032061 COD13 020040 COD14 020040 COD14 020040 COD14 020065 COD15 020065 COD15 020040 COD15 020040 COD15 033061 COD16 020040 COD16 020040 COD16 020040 COD16 020040 COD16 020040 COD16 033461 COD16 033461 COD16 033461 COD16 033461 COD16 033461 COD16 030040 COD16 041505 COD16 041505 COD16	A: .ASC12 A: .AS	/%ACHEC /%A113 /%A /%ACHEC /%A114 /%A /%ACHEC /%A115 /%A /%ACHEC /%A116 /%A /%ACHEC /%A117 /%ACHEC /%A120	LIGHT REG CHAN CK TACH PHASE,S FWD OR MVG BIT SIMULATED COMM CK TACH PHASE,S FAILURE OF SIM CAPSTAN SPEED TAPE MOTION AT CK TACH PHASE,S FAILURE OF SIM SPEED COUNTER WHEN SLOW TACK CK TACH PHASE,S FAILURE OF SIM COUNTER NOT ZE REVERSE WHILE CK TACH PHASE,S FAILURE OF MOV (DIRECTION REV CK TACH PHASE,S FAILURE OF WRI THE SILO OR	KEW, SPEED AD S WRONG AFTE AND AND TACH KEW, SPEED AD ULATED CAPST COUNTER OUT SPEED WAS S KEW, SPEED AD ULATED SLOW NOT LATCHED TICKS WERE KEW, SPEED AD ULATED CAPST RO FOR FORWA DECELERATING KEW, SPEED AD ING FLOP TO ERSAL FOR ON KEW, SPEED AD TE BOARD TO	JUSTS ON G1 R 1 TICK OF I PULSES%N/ JUSTS ON G1 AN SPEED TE OF RANGE WH IMULATED%N/ JUSTS ON G1 CAPSTAN TES UP WITH MAX SIMULATED%N JUSTS ON G1 AN DECEL TE RD OR 377 F OR MVG B JUSTS ON G1 RESET AFTER IE TACH TICK JUSTS ON G1 TURN ON AND	59%N/ %S9%AG159 59%N/ ST:%S6%AG EN%N/ 59%N/ T:%S7%AG1 COUNT%N/ / 59%N/ ST:%S6%AG OR%N/ IT=0%N/ 59%N/ STOP%S4%)%N/ 59%N/ EMPTY	9%S9%A3,4%N/ 6159%S9%A3,4% 159%S9%A3,4%N 6159%S9%A3,4%	(N/ (N/ (AN/ 23%N/
	025634 0404 025742 0404 025770 0404 026025 0	45 031061 45 020040 45 031061 45 030501	020061 COD2 020040 COD2 020062 COD2 031462 COD2	: .ASC12 A: .ASC12 A: .ASC12 A: .ASC12	/%A121 /%A /%A122 /%A123	FAILURE OF WRI CORRECT SPEED% UNDEFINED ERRO UNDEFINED ERRO	TE BOARD TO N/ R CODE%N/ R CODE%N/	EMPTY SILO	AT	M8929(13)	23%N/
	026062 0404 026170 0404 026226 0404 026334 0404 026410 0404 026505 0 026570 0404 026644 0404	45 044103 45 031061 45 044103 45 044103 45 030501 45 044103	041505 COD20 033062 COD20 041505 COD20	A: .ASC12 6: .ASC12 6A: .ASC12 6B: .ASC12	/%ACHE(/%A125 /%ACHE(/%ACHE(/%A126 /%ACHE(FORMATTER CTRL CK VCO ADJUST O FORMATTER SILO CK VCO ADJUST O CK SKEW, THRESH PEAK SHIFT TES CK VCO ADJUST O CK SKEW, THRESH	N M8922%N/ FILLING AND N M8922%S25% OLD ADJUSTS T ERROR%S25% N M8922%S25%	DATA ERROR (AM8923(3)%N ON M8923%S1 (AM8922(7)%S (AM8923(3)%N	/ 2%AM89240 5%A25%N/		24%N/ 24%N/

GLOBAL CZTSIB		MACY11 19-AUG-79	30(1046) 20:26	19-AUG		27 PAGE SUBROUTI		I 8							SEQ 0099
	026741 027047 027123		030501 041501 041501	033462 042510 042510	COD27A:	.ASC1Z : .ASC1Z : .ASC1Z	/%ACHEC	K VCO AD.	JUST ON	M8922%5	25%AM	8923(3)	%N/		52N/
	027220	047445	022463	020101	CODXXX	.ASCIZ	/%03%A	UNDEFINE	D ERROR	CODE	٧/				
2571	027256	040445 027310	031463	020067	COD337	.ASCIZ .LIST .EVEN	/%A337 BEX	CAPSTAN	RUNAWAY	%N/		•			
2572 2573 2574 2575 2576 2577 2578 2579 2580 2581	027310				.SBTTL ;++ ;TABLE ;AND TO	ENDMOD LOAD DE FOR SUPE WARN OP	RVISOR T	TION TABI O IDENTII HEN HE TI	Y P-18L	FOR LO	DAD DE	D DEVIC	:E		
2582 2583 2584 2585 2586 2587	027310 027310 027310 027312 027314 027316	000000 177777 177777			L\$PROT	BGNPRCT :: .WORD .WORD .WORD ENDPROT	-1			OFFSET	OF MA	SS BUS		NOT A M	

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GLOBAL CZTS1B	AREAS .P11 1	MACY11 9-AUG-79	30(1046)	19-AUG	-79 20 LOAD DE	27 PAG V PROTE	E 71 CTION TABLE			SEQ
2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601	027316				.SBTTL	INITIA BGNMOD		CODING THAT IS PERFORMED		
2596 2597 2598 2599	027316 027316				LSINIT	BGNINI	1			
2600 2601 2602 2603 2604 2605 2606 2607	027324 027326 027326 027330 027332 027334	032727 001421 104454 000001 002500 000000	000003	002230	1\$:	BIT BEQ ERRSF	#BITO!BIT1,#CMDPKT 2\$ 1,MODUER	:: IS CMD PKT ON A MODULE:: BR IF SO. OK. :: IF NOT, TELL HIM THE	PROGRAM TRAP .WORD .WORD .WORD	IS SCREWED UP. CSERSF 1 MODUER 0
2608 2609 2610 2611 2612 2613 2614 2615 2616 2617	027336 027336 027342 027344 027350 027356 027356 027360 027364	012727 000000 013727 000000 005367 001375 005367 001367	003720 002116 177772 177756			DELAY	1\$;GO TO THE SUPERVISOR,	MOV .WORD MOV .WORD DEC BNE DEC BNE	#2000.,(PC)+ 0 L\$DLY,(PC)+ 0 -6(PC) 4 -22(PC) 20
2618 2619 2620 2621 2622 2623 2624 2625 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2638	027370 027370 027374 027376 027376	012700 104447 103003 012737 012700 104447 103402 005237	177777 000034	027574	2\$: 3\$:	READEF BNCOMP LET LU READEF BCOMPL LET LU	#EF.NEW LETE 3\$ NIT := #-1 #EF.PWR ETE 4\$ NIT := LUNIT + #1	:IS THIS A NEW PASS? :BR IF NOT. :INIT THE LOGICAL UNIT :HAS THERE BEEN A POWER :BRANCH IF SO - KEEP CO. :UPDATE UNIT #.	MOV TRAP BCC MOV R FAILURE MOV TRAP URRENT UI BCS	WEF.NEW.RO C\$REFG 3\$
2633 2634 2635 2636 2638 2638 2640 2641 2642 2643	027436	013700 020027 003401 104444			45:	DOCL ENDIF	:= LUNIT GT #3 THEN N RO,RO	; PREPARE TO PASS # TO ; IF # IS PASS THE LIMI ; DO CLEANUP AND TERMIN 50113\$; SETUP TO RETRIEVE HRD	MOV T THEN: CMP BLE ATE PASS TRAP	C\$DCLN

```
MISCELLANEOUS SECTIONS MACY11 30(1046) 19-AUG-79 20:27 PAGE 72
CZTSIB.P11 19-AUG-79 20:26 INITIALIZE SECTION
                                                                                                                         SEQ 0101
                                                                                                      TRAP
                                                                                                              CSGPHRD
  2644 027436 104442
                                               BNCOMPLETE 38 ;BR IF THIS UNIT HAS BEEN DROPPED.
  2645 027440
  2646
      027440
               103362
                                                                                                      BCC
                                                                              GET THE TSSR ADDR.
               011037
                       002224
                                                       (RO),TSSR
  2647
       027442
                               002214
  2648
               013737
                       002224
                                                       TSSR, TSDB
                                                                               : CALCULATE THE
       027446
                                               MOV
  2649
       027454
                162737
                       000002
                               002214
                                               SUB
                                                       #2.TSDB
                                                                               : TSDB ADDRESS.
                               002222
002222
002222
               013737
  2650
                       002214
                                                                              :LOAD TSBA ADDRESS.
       027462
                                               MOV
                                                       TSDB, TSBA
                                                                               : CALCULATE THE TSBA
               013737
  2651
       027470
                                               MOV
                                                       TSBA, TSBAHI
                                                                              ;HI BYTE ADDRESS.
  2652
       027476
               062737
                       000001
                                               ADD
                                                       #1,TSBAHI
  2653
       027504
                               002216
                                               MOV
                                                                              : CALCULATE THE
               013737
                       002214
                                                       TSDB.TSDBHI
                                                       #1,TSDBHI
2(RO),TSVCT
                                                                              :TSDB HI BYTE ADDR.
                               002216
                                               ADD
  2654
       027512
               062737
                       000001
                                                                             GET THE VECTOR ADDRESS.
  2655
       027520
               016037
                       000002
                               002226
                                               MOV
                                               LET R5 := LUNIT SHIFT 1 ;GET LOGICAL UNIT # X 2.
  2656
       027526
  2657
                       027574
                                                                                                              LUNIT, R5
       027526
               013705
                                                                                                              R5
  2658
       027532
               006305
                                                                                                      ASL
  2659
                                              SETVEC TSVCT.TS41NT(R5),#INTPRI ;SET UP INTERRUPT PROCESSING CONDITIONS.
       027534
                                                                                                              #INTPRI .- (SP)
                       000340
                                                                                                      MOV
               012746
  2660
       027534
                                                                                                      MOV
                                                                                                              TS41NT(R5),-(SP)
  2661
       027540
               016546
                       002306
  2662
       027544
               013746
                       002226
                                                                                                      MOV
                                                                                                              TSVCT,-(SP)
                                                                                                      MOV
                                                                                                              #3,-(SP)
  2663
       027550
               012746
                       000003
                                                                                                      TRAP
                                                                                                              C$SVEC
  2664
       027554
               104437
  2665
       027556
               062706
                       000010
                                                                                                       ADD
                                                                                                              #10.SP
                                              LET UNIT := LUNIT ;SET UP UNIT # FOR PRINTOUTS.
  2666
       027562
                                                                                                              LUNIT, UNIT
               013737 027574 002422
                                                                                                      MOV
  2667
       027562
  2668
       027570
                                              EXIT INIT
                                                                                                      TRAP
                                                                                                              CSEXIT
  2669
       027570
               104432
                                                                                                      . WORD
                                                                                                            L10031-.
  2670
       027572
               000004
  2671
                                     ; LOCAL STORAGE THAT IS USED ONLY DURING THE INITIALIZE SECTION.
  2672
  2673
                                                            CURRENT LOGICAL UNIT #.
                       LUNIT: .WORD 0
       027574 000000
  2674
  2675
                                               .EVEN
  2676
  2677
       027576
  2678
                                               ENDINIT
                                       L10031:
  2679
       027576
                                                                                                     TRAP
                                                                                                              C$INIT
  2680
       027576 104411
                                       .SBITL AUTO DROP SECTION
  2681
  2682
  2683
                                       SECTION EXECUTED AFTER THE INIT CODE WHEN "ADR" FLAG IS SET BY OPERATOR
  2684
                                       SECTION CHECKS FOR A VALID INTERFACE LOCATION. DROPS UNIT IF NO RESPONSE
  2685
                                       : FROM INTERFACE
  2686
  2687
                                       :--
  2688
  2689
       027600
                                               BGNAUTO
  2690
                                     L$AUTO::
       027600
  2691
  2692
       027600
                                               LET TRAPD4 :B= #0
                                                                                                              TRAPD4
                                                                                                      CLRB
  2693
       027600
               105037 030050
  2694
                                               SETVEC #4, #TRAP4, #PR107
       027604
                                                                                                              #PRIO7,-(SP)
                                                                                                      MOV
  2695
       027604
               012746 000340
                                                                                                              #TRAP4,-(SP)
                                                                                                      MOV
               012746
                       030042
  2696
       027610
                                                                                                       MOV
                                                                                                              #4,-(SP)
       027614
                       000004
  2697
               012746
                                                                                                              #3,-(SP)
                                                                                                       MOV
  2698
       027620
               012746
                       000003
                                                                                                      TRAP
                                                                                                              CSSVEC
       027624
               104437
  2699
```

MISCELL CZTSIB.	ANEOUS P11	SECTIONS 19-AUG-79	MACY11 20:26	30(1046)	19-AUG- AUTO DRO	-79 20:2 P ECTIO	7 PAGE 73 L	8			SEQ 0102
2700	027626	062706	000010				- 27770			ADD	#10,SP
2702	027632	017701	152366			LET R1 :				MOV	atssr,R1
2704 2705	027626 027632 027632 027636 027636	012700 104436	000004			CLRVEC #				MOV TRAP	#4,RO C\$CVEC
2707 2708	027644 027644 027650 027652 027652	105737 001415	030050				D4 NE #0 THEN			TSTB BEQ	TRAPD4 50114\$
2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2721 2723 2724 2725 2726 2727 2728 2729 2730	027662 027666 027666 027670	012746 012746 010600 104417	002224 027746 000002				#AUTODM,TSSR			MOV MOV MOV TRAP ADD	TSSR,-(SP) #AUTODM,-(SP) #2,-(SP) SP,R0 C\$PNTF #6,SP
2717	027676	004737	014570			ELSE	,DROPU			00	50115\$
2719	027704	000420				15 476	CCD NOTCETIN	STEED THEN	5011.\$:	BR	30113\$
2721 2722	027676 027702 027702 027704 027704 027704 027712	032777 001014	000200	152312			.SSR NOTSETIN TF #SSROFF,UN			BNE	#TS.SSR,@TSSR 50116\$
2724 2725 2726 2727 2728	027720 027724 027730 027732	012746 012746 012746 010600 104417	002422 002566 000002			FRIN	Tr #35kOrr,ON			MOV MOV MOV TRAP	UNIT,-(SP) #SSROFF,-(SP) #2,-(SP) SP,R0 C\$PNTF
	027734	062706 004737	000006 014570				PC,DROPU			ADD	#6.SP
2731	027744 027744 027744					ENDIF			50116\$:		
2734	027744					ENDIF			50115\$:		
2736	027744				. 10072.	ENDAUTO					
2732 2733 2734 2735 2736 2737 2738 2739 2740	027744 027744	104461			L10032:					TRAP	C\$AUTO
2740 2741 2742	027746 027754 027762	051124	052502 050101 047445	040440	AUTODM:	.ASC11	/%ABUS TRAP A	T %06%N/			
2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754	027770 027771 027776 030004 030012 030020 030026 030034	045 045 051105 041040 020122 042523 040440	044501 040506 042101 047516 020124 047502 022504	052116 042503 047440 020124 047524 042526 000116			/%AINTERFACE	BAD OR NOT SET TO A	ABOVE AD%N/		
2751						.EVEN	UC TOAD HAND	E D			
2753 2754 2755						OUTPUT:	TRAPD4 BYTE	1: TRAPED AT 4 0: NO TRAP			

MISCEL CZTSIB	LANEOUS .P11	SECTIONS 19-AUG-79	MACY11 20:26	30(1046)	19-AUG	-79 20: CODING	27 PAGE 75 SECTION	N 8					
2764 2765					.SBTTL	CLEANUF	CODING SEC	TION					
2766 2767 2768 2769 2770 2771 2772 2773					THE CI	LEANUP (E END OF	ODING SECTI EACH PASS.	ON CONTAINS 1	HE CODING	THAT	IS PERFO	RMED	
2771 2772 2773	030052 030052				L\$CLEAN	BGNCLN::							
2774 2775 2776	030052 030052 030056 030060	013700	002226			CLRVEC			;RELEASE	THE	INTERRUPT	VECTOR. MOV TRAP	TSVCT,RO C\$CVEC
2778 2779 2780	030060 030064	013700	000340			SEIFKI	PRIO?					MOV TRAP	PRIO7,RO C\$SPRI
2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787	030066 030066 030070	104432				EXIT	CLN					TRAPWORD	C\$EXIT L10033
2786			1			.EVEN							
2788 2789	030072				L10033:	ENDCLN							
2790	030072	104412										TRAP	CSCLEAN

MISCELL CZTSIB.	ANEOUS P11	SECTIONS MA	ACY11 30(1046) 0:26	19-AUG	-79 20:2 IT SECTIO	27 PAGE 76 B 9		SEQ 0105
2791				.SBTTL	DROP UN	IT SECTION		4
2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803				: THE DF	ROP-UNIT LONGER E	SECTION CONTAINS THE CODING THAT CAUSES A DEVICE BE TESTED.		
2798 2799 2800	030074 030074			L\$DU::	BGNDU			
2801 2802 2803 2804 2805 2806	030074 030076 030100 030102	000240			NOP NOP NOP			
2806 2807 2808 2809 2810 2811 2812 2813	030104 030104 030106	000167			EXIT		. WORD . WORD	J\$JMP L10034-2
2812					.EVEN			
2813 2814 2815 2816	030110 030110 030110			L10034:	ENDDU		TRAP	C\$DU

MISCELL CZTSIB.	ANEOUS P11	SECTIONS 19-AUG-79	MACY11 20:26	30(1046)	19-AUG ADD UNI	-79 20: T SECTIO	27 PAGE 77 N		SEQ 0106
2817					.SBTTL	ADD UNI	T SECTION		
2817 2818 2819 2820 2821 2822 2823 2824 2825 2826 2827 2828 2829					THE AL	DD-UNIT E (A) TE AUNIT''!	SECTION CONTAINS THE CODING THAT CAUSES A DEVICE STED FOR THE FIRST TIME, OR (B) RESUMED IN TESTING. I S SET, THE UNIT WILL BE TESTED AS A NEW UNIT.	•	
2825	030112				L\$AU::	BGNAU			
2827 2828									
2829 2830	030112 030114 030116	000240				NOP NOP			
2832	030120	000240				NOP			
2830 2831 2832 2833 2834 2835	030122 030122	000167				EXIT	AU .WORD	J\$JMP	
2836	030124	000000					. WORD	L10035-2-	
2836 2837 2838 2839 2840						.EVEN			
2841	030126				. 10075.	ENDAU			
2842	030126 030126	104452			L10035:		TRAP	C\$AU	
2844 2845 2846	030130					ENDMOD			

ENDSUB

2902 030210

			*****		20 20			E 9				
CZTSIB	RE TESTS	MACY11 9-AUG-79	20:26	19-AUG	-79 20: TEST 1:	PDP11/T	S11 WRAP	TEST.				SEQ 0108
2903 2904	030210 030210	104403			L10037:		#200 P/				RAP	C\$ESUB
2905 2906 2907	030212	012704	000200		TIDATA:	MOV ; REPEAT CLR		NG UNTIL DATA	ALL SHIFTED ;R2 WILL HOLD			
2908 2909	030220 030224	032704 001402	000001		TIVATA.	BIT	#BITO,R	4	BET O SET IN	N DATA?		
2910	030226 030232 030236	052702	000400		15:	BIS BIT BEQ	#TS.XAO #BIT1,R		BIT 1 SET IN	HE BIT. N DATA?		
2912 2913 2914	030240	0C1402 052702	001000			BIS	#TS.XA1	,R2	; IF SO SET THE	HE BIT. AINS THE EX A	DDR BIT	rs
2915 2916	030244	005003 150403			2\$:	CLR BISB	R3 R4,R3		; EXPECTED IN ; CLR TSBA EXP	THE TSSR. P RESULTS REG		
2917 2918 2919	030246 030250 030252	000303				SWAB	R3 R4,R3		;BR IF NOT. ;IF SO SET TH ;R2 NOW CONT/ ;EXPECTED IN ;CLR TSBA EXF ;SETUP R3 TO ;THE TSBA (E) ;R3 NOW CONT/	XPECTED RESUL	TS). EXPECT	TED RESULTS.
2920 2921	030254 030254				11.2:	BGNSU	В					
2922 2923	030254 030256	104402			11.2.	BGN	SEG				RAP	C\$BSUB
2924	030256 030260	104404	014616			J	SR	PC,WAITSR R SETIN aTSSR	;60 V	WAIT FOR SSR	RAP BIT TO	C\$BSEG SET.
2926 2927 2928	030264 030264 030272	032777	000200	151732		,	r #13.33	K SEIIN WISSK	THEN		IIT IEQ	#TS.SSR, aTSSR 50120\$
2927 2928 2929 2930 2931	030274	004737	030332				JSR NDIF	PC,T1WRAP		501204.		
2932 2933	030300 030300					END	SEG			50120\$:		
2934	030300 030300				10000\$:						RAP	C\$ESEG
2935 2936	030302 030306	005077				CLR	atssr L	WAITSR	SUBSYSTEM II			
2937 2938 2939	030306 030312	004737	014616			CAL	L	SHWRAP			SR	PC, WAITSR
2939 2940	030312 030316	004737	016020		. 100/0-	ENDSU	В			J	SR	PC,SHWRAP
2942	030316	104403	000377		L10040:	CMPB	R4,#377			1	RAP	C\$ESUB
2940 2941 2942 2943 2944 2945	030320 030324	120427	000377			BNE	TIDATA					
2946	030326 030326 030330	104432 000132				EXIT	151		,		RAP	C\$EX11 L10036
2948 2949 2950 2951 2952 2953 2954 2955 2956 2957	030332	110477	151660		T1WRAP:	:TEST 1	MOVB	WRAP AND CHE	; SENI	D THE DATA.		
2952 2953	030336 030336	012727	000012				DELAY	10.	:60		IOV	#10.,(PC)+
2954	030342	000000	002116								WORD	USDLY.(PC)+
2956 2957 2958	030344 030350 030352 030356	000000 005367 001375	177772							0	WORD EC SNE	0 -6(PC)
2770	030370	00.313										

										_
HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046) 20:26	19-AUG-79 20:	27 PAGE PDP11/1	F 9 S11 WRAP TEST.				•
2959 2960 2961	030360 030364 030366	005367 001367 017737	177756 151626	002432		MOV aTSBA, TEMP1 IF R3 NE TEMP1 THEN	; SAVE THE TSBA	DEC BNE REG.	-22(PC) 20	
2962 2963 2964	030374 030374 030400	020337 001406	002432					CMP BEQ	R3, TEMP1 50121\$	
2965 2966 2967 2968 2969	030402 030402 030404 030406 030410	104455 000003 002706 006044				ERRDF 3,WRPER1,WR	APRI	TRAP .WORD .WORD .WORD	CSERDF 3 WRPER1 WRAPR1	
2970 2971 2972 2973	030412 030412 030416 030416	004737	014570			CALL DROPU ENDIF	50121\$	JSR	PC,DROPU	
2974 2975 2976	030416 030424 030430	017737 012701 005101	151602 001400	002434		MOV aTSSR, TEMP2 MOV #TS.XAO!TS.XA1 COM R1	;GET TSSR.	KADDR BIT	TS.	
2977 2978 2979 2980	030432 030436 030436 030442	040137 020237 001406	002434			BIC R1, TEMP2 IF R2 NE TEMP2 THEN		CMP BEQ	R2,TEMP2 50122\$	
2981 2982 2983 2984 2985	030444 030444 030450 030452	104455 000004 002740 006544				ERRDF 4,WRPER2,WR	APR4	TRAP .WORD .WORD .WORD	CSERDF 4 WRPER2 WRAPR4	
2986 2987 2988	030454 030454 030460	004737	014570			CALL DROPU ENDIF	501226	JSR	PC,DROPU	
2989 2990 2991 2992 2993 2994 2995 2996 2997 2998 2999 3000 3001	030460 030460	000207			RTS	PC	50122\$			
2996 2997 2998 2999	030462 030462	10//01	•	L10036:	.EVEN ENDIST			TRAP	C\$E1S1	
3001	030462	104401						INAL	CDETST	

HARDWARE CZTSIB.P	TESTS	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: TEST 2:	27 PAGE PDP11/T	81 504 WRAP	G 9 TEST.				SEQ 0110
3002								SO4 WRAP TEST.				
3003 3004 3005 3006					!	THE TSO	4 BY WRA	PROPER COMMUNICATION PPPING THE FOLLOWING OF O'S; A O IN A F	ON BETWEEN THE PDP1 IG PATTERN: IELD OF 1'S	1 AND		
3007 3008 3009 3010 3011 3012 3013 3014						AROUND I APPEARS R4 CONT	BACK OVE	4, VIA THE SERIAL L R THE SERIAL LINE 1 TSBA LO AND TSSR LO EXPECTED TSBA RESU	DB LO BYTE, THE DAT INE, WHERE IT IS W TO THE TS11. THE D D BYTES. JLTS AND THE	A IS RAPPED ATA THEN		
3015	030464 030464				12::	BGNTST						
	030464	012704	000200			MOV . REPEAT	#200,R4	NG UNTIL DATA ALL S	NIT THE DATA.			
3020	030470 030474	005077	151530		T2WRAP:	CLR	aTSSR WAITSR	NO DIVITE DATA ALL S	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
3022 3023 3024	030474 030500 030506 030510	004737 032777 001452	014616 000200	151516		BIT	#TS.SSR T2SHFT	,atssr		JSR	PC, WAITSR	
3026 3027 3028	030510 030510 030512 030516	104402 110477	151476		12.1:		MOVB DELAY	R4,aTSDB	SEND DATA.	TRAP	C\$BSUB	
3030 3031 3032 3033 3034 3035 3036	030516 030522 030524 030530 030532 030536 030540	000000 013727 000000 005367 001375 005367	000012 002116 177772 177756							MOV .WORD MOV .WORD DEC BNE DEC BNE	#10.,(PC)+ 0 L\$DLY,(PC)- 0 -6(PC) 4 -22(PC) 20	
3038 3039 3040	030544 030546 030554 030554	001367 017737 123704	151446 002432	002432			MOV IFB TEM	atsba, temp1 P1 NE R4 THEN	;SAVE TSBA.	(MP9	TEMP1,R4	
3042 3043 3044 3045	030560 030562 030562 030564 030566 030570 030572	001406 104455 000005 003015 006220						5, WRPER3, WRAPR2		TRAP .WORD .WORD .WORD	CSERDF S WRPER3 WRAPR2	
3048 3049	030572	004737	014570				ENDIF	DROPU	5012	JSR	PC.DROPU	
3050 3051	030576	017737	151422	002434			MOV LER TEM	atssr, temp2 P2 NE R4 THEN	SAVE TSSR.			
3053 3054	030604 030604 030610 030612	123704 001406	002434					6, WRPER3, WRAPR3		CMPB BEQ	TEMP2.R4 50124\$	
3056	030612	104455 000006					CHRUI	C/am cho/amh ho		TRAP .WORD	CSERDF 6	

HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046)	19-AUG-79 20:27 PAGE 82 TEST 2: PDP11/TS04 WRAF	H 9 P TEST.				SEQ
3058 3059 3060	030616 030620 030622	003015 006372		CALL	DROPU		.WORD	WRPER3 WRAPR3	
3061 3062	030622 030626 030626	004737	014570	ENDIF	DROPO	50124\$:	JSR	PC , DROPU	
3063 3064 3065	030626 030626	10//07		L10042:		701243.	TRAP	C\$ESUB	
3066 3067 3068	030626 030630 030630	104403	016020	CALL	SHWRAP		JSR	PC , SHWRAP	
3069 3070 3071	030634 030640	120427	000377	T2SHFT: CMPB R4,#377 BNE T2WRAP					
3072 3073 3074	070443			.EVEN					
3075 3076 3077	030642 030642 030642	104401		L10041:			TRAP	CSETST	

HADDUADE	TECTO	MACV11	30(10/6)	19-446	-79 20.	27 PAGE 83		
CZTSIB.	11 1	9-AUG-79	20:26	17-400	TEST 3:	SET TSO4 CHARACTERISTIC VERIFICATION.		SEQ 0112
3078 3079					.SBTTL	TEST 3: SET TSO4 CHARACTERISTIC VERIFICATION.		
3080 3081 3082 3083					:	THE FUNCTION OF THIS TEST IS TO ISSUE A "SET CHARACTER! TO TELL THE TSO4 WHERE IN CORE THE MESSAGE PACKET RESID	STIC" COM	MAND
3083 3084 3085	030644 030644				13::	BGNTST		
3086 3087 3088	030644 030644 030644	104402			13.1:	BGNSUB	TRAP	C\$BSUB
3089 3090 3091	030646 030652 030656	105037 005077 004737	002437 151346 014616			CLRB CTLFLG CLR atssr ;INIT TS11-TS04 JSR PC, WAITSR		
3092 3093 3094	030662 030662 030670	032777	002000	151334		IF #TS.NBA NOTSETIN aTSSR THEN ; NBA SHOULD BE SET SINC	BIT	#TS.NBA, aTSSR 50125\$
3095 3096 3097 3098 3099	030672 030672 030674 030676 030700	104455 000024 003047 010200				ERRDF 20,SCHERR,SCHER1 ; WAS ISSUED WITHOUT SET	CHAR ISS TRAP .WORD .WORD .WORD	SUED FIRST CSERDF 20 SCHERR SCHER1
3100 3101	030702	004737	014570			CALL DROPU ; IF NBA NOTSET, THEN CA		
3102 3103 3104	030706 030706 030706	004737	011370			ENDIF ENDSUB 50125\$:		
3105 3106 3107	030706 030706	104403			L10044:		TRAP	C\$ESUB
3108	030710 030710				13.2:	BGNSUB		
3110	030710	104402			13.2.	CALL SCHEXE	TRAP	C\$BSUB
3111 3112 3113	030712	004737	015746			IF #TS.NBA SETIN OTSSR THEN	JSR	PC,SCHEXE
3113 3114 3115 3116 3117	030716 030724 030726	032777 001406	002000	151300			BIT BEQ	#TS.NBA, aTSSR 50126\$
3117 3118 3119 3120	030726 030726 030730 030732 030734	104455 000025 003047 010332				ERRDF 21,SCHERR,SCHER2	TRAP .WORD .WORD .WORD	CSERDF 21 SCHERR SCHER2
3121	030736 030736	004737	014570			CALL DROPU	JSR	PC DROPU
3123	030742					END1F 50126\$:		
3125 3126 3127	030742 030742 030742 030750	027727	151252	002276		IF atsba ne #MSGEND THEN	CMP BEQ	aTSBA.#MSGEND 50127\$
3118 3119 3120 3121 3122 3123 3124 3125 3126 3127 3128 3129 3130 3131 3132 3133	030750 030752 030752 030754 030756 030760 030762	104455 000026 003047 010446				CALL DROPU	TRAP .WORD .WORD .WORD	CSERDF 22 SCHERR SCHERS

HARDUAL	F TESTS	MACY11	30(1046)	19-4116-79	20.27 PAGE 84			
	P11 1	9-AUG-79	20:26	TE	20:27 PAGE 84 ST 3: SET TSO4 CHARACTERISTIC VERIFICATION.			SEQ 0113
3134 3135 3136 3137 3138 3139 3140	030762	004737	014570		END1F		JSR	PC.DROPU
3136	030766 030766 030766				IF MSGPKT EQ #177777 OR MSGDFL EQ #177777 THEN	50127\$:		
3138	030766	023727	005560	177777	IT HOURT EX WITHIT ON HOUSE EX WITHIT THEN		CMP BEQ	MSGPKT, #177777 50130\$
3140	030774 030776 031004 031006	023727	002262	177777			CMP BNE	MSGDFL ,#177777 50131\$
3141 3142 3143 3144	031006 031006	001000			ERRDF 23,SCHERR,SCHER3	50130\$:		
3144	031006 031010	104455			ENNOT ES, CONERN, CONERS		TRAP. WORD	C\$ERDF 23
3146	031012	003047					.WORD	SCHERR SCHER3
3148	031016		014570		CALL DROPU		JSR	PC.DROPU
3150	031022	001131	0.13.0		ENDIF	50131\$:		
3146 3147 3148 3149 3150 3151 3152 3153 3154 3155 3156	031016 031016 031022 031022 031022 031022 031026 031032	017701	151176		LET R1 := aTSSR CLR.BY #FCMASK		MOV	atssr,R1
3154	031026	042701	177717		LET R1 := R1 SHIFT -4		BIC	WF CMASK, R1
3156	031032	006201 006201					ASR ASR	R1 R1
3157 3158 3159	031036 031040	006201 006201					ASR ASR	R1 R1
3159 3160 3161	031042	010146			SELECT R1 OF 3 VERIFY		MOV	R1,-(SP)
3162 3163	031044	003403 021627	000003				BLE	50132\$ (SP),#3 50133\$
3164 3165	031052 031054	003402				50132\$:	BLE	
3166 3167 3168	031054 031060	012716	000004			50133\$:		#4,(SP)
3168 3169	031060 031062	006316 060716					ASL	(SP) PC.(SP)
3170 3171	031064	063607				50134\$:		a(SP)+,PC
3172	031066 031070	000010					. WORD	50140\$-50134\$ 50137\$-50134\$
3174	031072 031074	000110					.WORD	50136\$-50134\$ 50135\$-50134\$
3176 3177	031076 031076 031076 031076 031100 031102				CASE 1	50140\$:		
3178 3179	031076	104455			ERRDF 24, SCHERR, SCHER4		TRAP	CSERDF
3180 3181	031100	000030					.WORD	SCHERR
3183	031104	010542			CASE 2		.WORD	SCHER4 50135\$
3169 3170 3171 3172 3173 3174 3175 3176 3177 3178 3180 3181 3182 3183 3184 3185 3186 3187 3188	031106	000437			IF #15.SPE SETIN aTSSR OR #BPE SETIN XSTAT2	501378:	BR	301338
3187	031110	032777	020000	151106	IT WIS. SEE SEIIN WISSN UN WERE SEIIN XSTATZ	THEN	BIT BNE	#15.SPE.@ISSR 501418
3189	031116 031120	001004	020000	002272			B11	MBPE.XSTAT2

SIB.P11	19-AUG-79	20:26		9 20:27 PAGE 85 EST 3: SET TSO4 CHARACTERISTIC VERIFICATION.			SEQ 01
190 031126	001405				50141\$:	BEQ	50142\$
3190 031126 3191 031136 3192 031136 3193 031136 3194 031136 3195 031136 3196 031146 3198 031146 3200 031146 3201 031146 3202 031156 3203 031156 3204 031156 3205 031156 3206 031156 3210 031166 3211 031166 3212 031166 3213 031166 3214 031176 3215 031176 3216 031176 3217 031176 3218 031176 3219 031176 3219 031176 3219 031176 3219 031176 3210 031176 3211 031176 3212 031176 3213 031176 3214 031176 3215 031176 3216 031176 3217 031176 3218 031176 3219 031176 3210 <	104455 2 000031 003047			ERRDF 25,SCHERR,SCHER5		TRAP .WORD .WORD .WORD	CSERDF 25 SCHERR SCHERS
3197 031140 3198 031140	010706			ELSE		BR BR	50143\$
199 03114				IE MOID CETIN VOTATO THEN	50142\$:		
3200 03114 3201 03114 3202 03115	032737	040000	002272	IF #SIP SETIN XSTAT2 THEN		BIT	#SIP, XSTAT2 50144\$
3203 03115	104455			ERROF 26, SCHERR, SCHER6		TRAP	CSERDF
3205 031156 3206 031156	000032					.WORD	26 SCHERR
207 03116	011122			ELCE		. WORD	SCHER6
3208 03116 3209 03116 3210 03116	000404			ELSE	50144\$:	BR	50145\$
211 03116				ERRDF 27, SCHERR, SCHER7		TRAP	C\$ERDF
3212 031164 3213 031166	000033					. WORD	27
3214 031176 3215 031176	003047					.WORD	SCHERR SCHER7
216 03117				ENDIF	50145\$:		
217 031174 3218 031174				ENDIF			
3219 031174 3220 031174				CASE 3	50143\$:		
	000404				50136\$:	BR	50135\$
3222 031176 3223 031176				ERRDF 28, SCHERR, SCHERO	70130\$.		
3224 031176 3225 031200	104455					TRAP .WORD	C\$ERDF 28
3226 03120	003047					.WORD	SCHERR
3227 031204 3228 031204	014032			ENDSELECT		.WORD	SCHERO
3228 031200 3229 031200					50135\$:		
3230 031200 3231 031200 3232 031200				ENDSUB .10045:			
3232 031200 3233 031210	104403			SETPRI #PRIOO		TRAP	C\$ESUB
3221 031174 3222 031176 3223 031176 3224 031176 3225 031206 3226 031206 3228 031206 3229 031206 3230 031206 3231 031206 3232 031216 3233 031216 3234 031216 3235 031216 3236 031216 3237 031216 3238 031226 3240 031236 3241 031236 3242 031236 3243 031236 3244 031236 3245 031246 3245 031246 3245 031246	104441	000000				MOV TRAP	#PRIOD,RO C\$SPRI
236 03121 237 03121	105037	002437		LET CTLFLG :B= #0		CLRB	CTLFLG
238 03122 239 03122 3240 03123 3241 03123 3242 03123 3244 03124	052737		002240	LET SCHPKT := SCHPKT SET.BY #IE.C		BIS	#1E.C.SCHPKT
3240 03123	012777	002240	150756	LET aTSDB := #SCHPKT		MOV	#SCHPKT, aTSDB
242 03123	001777		170170	CALL WAITSR			
3244 03124	004/3/	014616		IFB CTLFLG EQ #O THEN		JSR	PC .WAITSR
3245 03124	105737	002437				TSTB	CTLFLG

HARDWAR CZTSIB.	E TESTS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: TEST 3:	27 PAGE 86 SET TSO4 CHARACTERISTIC VERIFICATION.		SEQ 0115
3246	031246	001014				FRANC #71 NINIM	BNE	50146\$
3246 3247 3248 3249 3250 3251 3252 3253 3254 3255 3256 3257 3268 3261 3262 3263 3264 3265 3266 3267 3268 3269 3270 3271 3272 3273 3274	031246 031250 031250 031252 031254 031256 031260	104455 000037 003503 000000				ERROF #31,NINTM	TRAP .WORD .WORD .WORD	CSERDF 31 NINTM 0
3252	031200	012746	005646			PRINTB #10BRD	MOV	#10BRD,-(SP)
3254 3255	031264 031270	012746	000001				MOV	#1,-(SP) SP,R0
3256 3257	031272	104414 062706	000004				TRAP	C\$PNTB #4,SP
3258	031272 031274 031300 031300 031300	002.00	000004			END1F 50146		44,5
3260	031300	0/ 2777	000300	002240		LET SCHPKT := SCHPKT GLR.BY #1E.C		HIE C CCUDYI
3262	031300 031306	042737	000200	002240		SETPRI #PRIO7	BIC	WIE.C,SCHPKT
3263 3264	031306 031312	012700 104441	000340				MOV TRAP	#PRIO7,RO C\$SPRI
3265 3266 3267 3268	031314 031314 031322	013737 042737	002272 177400	002424 002424		LET TS4CL := MSGPKT+MS\$XS2 CLR.BY #177400 ;SAVE MICE	RO-CODE REV MOV BIC	LEVEL. MSGPKT+MS\$XS2.TS #177400,TS4CL
3270	031330 031330	104432				EXIT TST	TRAP	C\$EXIT
3272	031332	000002					.WORD	L10043
3274						.EVEN		
3275 3276 3277 3278 3279	031334 031334 031334	104401			L10043:	ENDIST	TRAP	C\$ETST

HARDWARE TESTS MACY11 30(1046) 19-AUG-79 20:27 PAGE 87 CZTSIB.P11 19-AUG-79 20:26 TEST 4: TRACY INACTIVE/ACTIVE TEST.

SEQ 0116

; TESTS 4 - 7 PERFORM DATA WRAPS ON THE P.E. READ FORMATTER
; BOARDS. COMMUNICATION BETWEEN THE PDP11 AND TS04 OCCURS BY USING
; THE DIA (DIAGNOSTIC) COMMAND WHICH SENDS A COPY OF THE DIABLK TABLE,
; RESIDING IN CORE, TO THE TS04 CONTROLLER. THE FORMAT OF THE DIABLK IS
; SHOWN IN THE FOLLOWING TABLE. NOTE THAT THE TABLE IS FILLED IN REVERSE
; ORDER, THAT IS, THE LAST LOGICAL ENTRY OF THE TABLE IS LABELED DIABLK,
; WHILE THE FIRST LOGICAL ENTRY OF THE TABLE IS LABELED DIABLK+DIAEXT, WHERE
; DIAEXT IS THE LENGTH (EXTENT) OF THE TABLE IN BYTES.

.SBITL TEST 4: TRACK INACTIVE/ACTIVE TEST.

D!ABLK:

; WHEN THE DIA COMMAND IS EXECUTED, THE DIABLK IS LOADED ONTO THE TSO4 STACK ; WITH THE FIRST LOGICAL ENTRY AT THE TOP OF THE STACK, AS SHOWN BELOW. ; THE TSO4 THEN JUMPS TO THE P.E. WRAP TASK, IN ROM, WHERE THE FUNCTION IS ; EXECUTED USING THE REMAINING STACK ENTRIES AS ARGUMENTS.

DIABLK+DIAEXT: TSO4 PE WRAP TASK ADDR LO TSO4 PE WRAP TASK ADDR HI READ CONTROL (RDCTLO) FORMAT CONTROL (FMCTLO) DATA CONTROL (IOSCO) DATA CONTROL (IOSCO) DATA CONTROL (10SCO)DATA CONTROL (10SCO)DATA CONTROL (IOSCO)

:TEST 4 CHECKS THAT THE TRACK ACTIVE FLOP CAN SET AND CLEAR :IN NRZI MODE FOR ALL CHANNELS. IF THE DATA DOES NOT MAKE A TRANSITION :WHEN THE WRITE FLAG IS UP, THE TRACK ACTIVE FLOP WILL CLEAR. :HOWEVER, IT WILL SET IF THERE IS A DATA TRANSITION WHILE THE :WRITE FLAG IS UP.

DATA

CONTROL

(10SCO)

3314

3315

3316 3317 3318

3319

3320 3321

3322

3280

3281 3282 3283

3284

HARDWAR CZTSIB.	E TESTS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG-79 2	0:27 P	AGE 88	N 9 E/ACTIVE TEST.				SEQ 0117
3323 3324	031336 031336			14::	BGNT	17				*	
3326 3327	031336 031336	004737	015746		CALL	SCHEX		;SET CHAR	JSR	PC,SCHEXE	
3329	031342 031342	004737	015174		CALL	MTIAW	ı		JSR	PC,WAITMT	
3331 3332 3333					THIS ALL	SUBTEST 'S DATA.	FORCES THE TRACK	ACTIVE TO CLEAR BY WRITINGS FOLLOWS FOR EACH CHAN	NG NEL:		
3323 3324 3325 3326 3327 3328 3332 3333 3331 3333 3335 3336 3337 3338 3339					DATA WRTFI TRACI		000000 011100 SHOULD BE 0 FOR	R ALL TRACKS			
3338					;INI	TIALIZATT	ON				
3340 3341 3342	031346 031346 031346	104402		14.1:	BGNS	JB			TRAP	C\$BSUB	
3343 3344	031350	004737	016154		JSR	PC,PE	INIT	GO LOAD DIABLE INDEX			.
3345	031354	112745	000001		MOVB		RZ,-(R5)	GO LOAD DIABLK INDEX SET NRZ1 MODE IN FMT	INTRL.	TASK ADDRES	3
3346 3347 3348					; SETI	P DATA &	CONTROL WORDS IN	DIABLK.			
3349 3350 3351 3352 3353 3354	031360 031362 031366 031372 031376 031402 031406 031412 031416 031422 031426	005003 012704 004737 012704 004737 004737 012704 004737 004737	000040 015626 000044 015626 015626 015626 000040 015626 015626		CLR MOV JSR MOV JSR JSR MOV JSR JSR JSR JSR	#IS.NI PC,TAI	LOAD RZ!IS.WRF,R4 LOAD LOAD LOAD RZ,R4 LOAD LOAD	SETUP DATA FOR WORD 1 SETUP CONTROL WORD 1 LOAD IT. SET WRITE FLAG IN CONSLOAD DATA & CNTRL WORD LOAD DATA & CNTRL WORD LOAD DATA & CNTRL WORD SETUP CNTRL WORD 5 LOAD DATA & CNTRL WORD LOAD DATA & CNTRL WORD EXECUTE THE CMD.	3 4	2	
3361 3362					; NOW	CHECK FO	R ERRORS.				
3363 3364 3365	031432 031436 031442 031446	005037 005037 004737	002436 002342 016044		CLR CLR JSR	ERRFLO EXTRAC PC,TK	ACER	CLR THE ERROR FLAG. TRACK ACTIVE O FOR ALI CHECK FOR ERRORS.	CHAN		
3366 3367	031446	013737	002360	002406		CTRK1 :=		#0 TUEN	MOV	ACTRAC, ACT	RK1
3368 3369 3370 3371 3372	031454 031454 031460 031462 031466	105737 001407 105737 001404	002436				#O ANDB CMPFLG NE	WU THEN	TSTB BEQ TSTB BEQ	ERRFLG 50147\$ CMPFLG 50147\$	
3373 3374 3375 3376 3377 3378	031470 031470 031472 031474 031476 031500	104456 000007 003100 006716			ENDIF		AER1,TAEM		TRAP .WORD .WORD .WORD	CSERHRD 7 TAER1 TAEM	

			- 10			
HARDWARE TESTS MACY11 30(1046) 19-AUG CZTSIB.P11 19-AUG-79 20:26	-79 20:2 TEST 4:	7 PAGE 8	B 10 ACTIVE/ACTIVE TEST.			SEQ 0
3379 031500				50147\$:		
3380 3381 031500 3382 031500 3383 031500 104403	L10047:	ENDSUB			TRAP	C\$ESUB
3385 3386		BTEST FOR		T BY WRITING THE FOLLOWIN	NG	
3381 031500 3382 031500 3383 031500 104403 3384 3385 3386 3387 3388 3389 3390 3391 3392 031502 3393 031502	: 1	DATA: WRTFLG: TRACK ACT	110000 011100 TIVE: SHOULD BE 1 FOR	ALL TRACKS.		
3392 031502 3393 031502 3394 031502 104402	14.2:	BGNSUB			TRAP	C\$BSUB
3394 031502 104402 3395 3396	;	INITIALIZ	ZATION			
3397 3398 031504 004737 016154 3399 031510 112745 000001 3400			PC,PEINIT VFC.NRZ,-(R5)	NRZI MODE		
3401 3402		SET UP D	DATA & CNTRL WORDS IN D	IABLK		
3403 031514 012703 177777 3404 031520 012704 000040 3405 031524 004737 015626 3406 031530 012704 000044 3407 031534 004737 015626 3408 031540 005003 3409 031542 004737 015626 3410 031546 004737 015626 3411 031552 012704 000040 3412 031556 004737 015626 3413 031562 004737 015626 3414 031566 004737 015626		MOV JSR F MOV A JSR F CLR F JSR F F	W-1,R3 WIS.NRZ,R4 PC,TALOAD WIS.NRZ!IS.WRF,R4 PC,TALOAD PC,TALOAD WIS.NRZ,R4 PC,TALOAD PC,TALOAD PC,TALOAD PC,TALOAD PC,TALOAD PC,TALOAD PC,TALOAD PC,TALOAD	; WORD 1 DATA ; WORD 1 CONTROL ; LOAD IT ; WORD 2 CONTROLWRT FL/ ; LOAD IT WORD 2 (DATA & ; WORD 3 DATA. ; LOAD DATA & CNTRL - WORD ; LOAD DATA & CNTRL - WORD ; CLR WRITE FLAG IN WORD ; LOAD DATA & CNTRL WORD ; LOAD DATA & CNTRL WORD ; LOAD DATA & CNTRL WORD ; DO THE TSO4 WRAP.	CONTROL)
3416 3417		CHECK FO	OR ERRORS			
3418 031572 005037 002436 3419 031576 012737 000777 002342 3420 031604 004737 016044 3421 031610		MOV A	ERRFLG #777,EXTRAC PC,TKACER K2 := COMP ACTRAC	;INIT ERROR FLAG. ;SHOULD BE DATA. ;CHECK FOR ERRORS		
3422 031610 013737 002360 002410					VCM MO3	ACTRAC, ACTRK2
3424 031622 3425 031622 042737 177000 002410			K2 := ACTRK2 CLR.BY #17		BIC	#177000,ACTRK2
3426 031630 3427 031630 105737 002436 3428 031634 001407 3429 031636 105737 002212 3430 031642 001404			LG NE #0 ANDB CMPFLG NE	MO THEN	TSTB BEQ TSTB BEQ	ERRFLG 50150\$ CMPFLG 50150\$
3431 031644 3432 031644 104456 3433 031646 000011 3434 031650 003150		ERRHRD	9,TAER2,TAEM		TRAP .WORD .WORD	CSERHRD 9 TAER2

HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046)	19-AUG	-79 20:	27 PAGE	90	C 10	12:			SEQ 011
3435 3436		006716	20.20		1651 4.	ENDIF	INACTIV	TACTIVE TO		5015	. WORD	
3437 3438 3439 3440 3441	031654 031654 031654	104403			L10050:	ENDSUB					TRAP	C\$E SUB
3442 3443 3444 3445						N ON EA		NEL:	ACTIVE TO	O CLEAR BY WRITING TH	E FOLLOW	ING
3446 3447 3448 3449					:	DATA: WRTFLG TRACK	: ACTIVE:	111111 011100 SHOULD	BE O FOR	ALL TRACKS		
3450 3451	031656 031656 031656	104402			14.3:	BGNSUB					TRAP	C\$BSUB
3452 3453 3454 3455 3456	031660	004737	016154		:	INITIA JSR	PC,PE					
3457 3458 3459	031664	112745	000001			SET U		RZ,-(R5) AND CONTRO	WORDS	;NRZI MODE. IN DIABLK.		
3460 3461 3462 3463 3464 3465 3466 3467 3468 3469 3470 3471	031670 031674 031700 031704 031710 031714 031720 031724 031730 031734 031740	012703 012704 004737 012704 004737 004737 004737 004737 004737	177777 000040 015626 000044 015626 015626 015626 015626 015626 015626			MOV JSR MOV JSR JSR MOV JSR JSR JSR	#-1,R3 #IS.NF PC.TAL #IS.NF PC.TAL PC.TAL #IS.NF PC.TAL PC.TAL	RZ,R4 LOAD RZ!IS.WRF, LOAD LOAD RZ,R4 LOAD LOAD	84	SET UP DATA. SET UP CNTRL WORD. LOAD DATA & CNTRL W WORD 2 CONTRL LOAD DATA - CNTRL W LOAD DATA - CNTRL W CNTRL WORD 5 LOAD DATA - CNTRL W CNTRL WORD 5 LOAD DATA - CNTRL W LOAD DATA - CNTRL W DO THE WRAP.	ORD 2 ORD 3 ORD 4	
3472 3473 3474 3475	031744	005037	002436			;CHECK	FOR ERF			; INIT ERROR FLAG.		
3476 3477 3478	031750 031754 031760	005037 004737	002342 016044	002/12		CLR JSR	EXTRAC PC,TK/ TRK3 :=	ACER		:SHOULD BE DATA=0. :CHECK FOR ERRORS	MOV	ACTRAC ACTRAS
3479 3480	031760 031766	013737		002412		IFB ER	RFLG NE	#O ANDB C	MPFLG NE	#0 THEN	MOV	ACTRAC, ACTRK3
3481 3482 3483 3484	031766 031772 031774 032000	105737 001407 105737 001404	002436				nn 0 •	ACD1 TACM			TSTB BEQ TSTB BEQ	50151\$
3485 3486 3487 3488 3489 3490	032002 032002 032004 032006 032010 032012	104456 000010 003100 006716				ENDIF	8,1,	AER1,TAEM			TRAP .WOR .WOR	D 8 D TAER1

ERRHRD 10, TAER2, TAEM

3543

3544

3545

032154

032156

032156

3546 032160 000012

001404

104456

BEQ

TRAP

. WORD

50152\$

CSERHRD

HARDWAR CZTS1B.	E TESTS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG-79 20:7	27 PAGE 92 TRACK INACTIV	E 10 E/ACTIVE TEST.					SEQ 0121
3547 3548 3549 3550	032162 032164 032166 032166	003150 006716			ENDIF			50152\$:	.WORD	TAER2 TAEM	
3552 -3553 3554 -3555	032166 032166 032166	104403		L10052:	ENDSUB				TRAP	C\$E SUB	
3557 3558 3559 3560	032170 032170 032174 032200	013701 053701 053701	002406 002410 002412		LET R1 := ACT	RK1 OR ACTRK2 OR ACTRK3	•		MOV BIS BIS	ACTRK1,R1 ACTRK2,R1 ACTRK3,R1	
3562 3563 3564 3565	032204 032210 032210 032212	053701 005701 001406	002414		IF R1 NE #0 T	HEN			BIS IST BEQ	ACTRK4,R1 R1 50153\$	
3547 3548 3549 3551 3555 3555 3555 3556 3566 3566 3566	032170 032174 032200 032204 032210 032210 032212 032214 032214 032216 032220 032222 032224 032224	104456 000013 003220 000000			ERRHRD	11,TAERR			TRAP .WORD .WORD	CSERHRD 11 TAERR 0	
3571 3572 3573 3574 3575	032224 032224 032230 032230	004737	017554		CALL MSORT			50153\$:	JSR	PC,MSORT1	
3576 3577 3578 3579 3580 3581	032230 032230 032230	104401		L10046:	.EVEN ENDTST				TRAP	CSETST	

ERRHRD 12, DATER, SKDAEM

TRAP

. WORD

CSERHRD

3634 032334

3636 032336

3637 032340

032336

3635

001404

104456

HARDWAR CZTSIB.	E TESTS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG-79 20: TEST 5:	27 PAGE P.E. DA	94 TA TEST.				
3638 3639 3640 3641	032342 032344 032346 032346	003243 007176			ENDIF			50157\$:	.WORD	DATER SKDAEM
3642 3643 3644 3645	032346 032346 032346	104403		L10054:	ENDSUB				TRAP	C\$ESUB
3646 3647 3648 3649 3650	032350 032350 032350	104402		15.2:	BGNSUB				TRAP	C\$BSUB
3651				;THIS S	UBTEST W	RAPS AN ALL 1'S	PATTERN.			
3651 3652 3653 3654 3655 3656 3657	032352 032356 032362 032366 032372	005037 012702 012703 004737 004737	002416 000777 000777 016126 015722		CLR MOV MOV JSR JSR	DTKIDN #777,R2 #777,R3 PC,DATBLD PC,DIAEXE	CLR DEAD TRK LOAD PREAMBLE BYTE 1 DATA. BUILD THE DIA EXECUTE IT.	E REG.		
3658 3659					: CHECK	FOR ERRORS.				
3660 3661 3662 3663	032376 032402 032406	005037 004737	002436 016504		CLR	ERRFLG PC,PEERCK FLG NE #0 ANDB CI	;INIT ERROR FI ;CHECK FOR ERI	LAG. RORS.		
3664 3665 3666 3667	032406 032412 032414 032420	105737 001407 105737 001404	002436						TSTB BEQ TSTB BEQ	ERRFLG 50160\$ CMPFLG 50160\$
3668 3669 3670 3671	032422 032422 032424 032426 032430	104456 000015 003243 007176			ERRHR	D 13,DATER,SKDAI	M		TRAP .WORD .WORD .WORD	CSERHRD 13 DATER SKDAEM
3672 3673 3674 3675	032432 032432	001110			ENDIF			50160\$:		
3675 3676 3677 3678 3679	032432 032432 032432	104403		L10055:	ENDSUB				TRAP	C\$ESUB
3680 3681 3682 3683	032434 032434 032434	104402		15.3:	BGNSUB				TRAP	C\$BSUB
3684 3685				;THIS S	UBTEST R	IPPLES A 1 IN A	FIELD OF O'S.			
3686 3687 3688 3689 3690 3691 3692 3693	032436 032442 032446 032452 032456 032462	005037 012702 012703 005037 004737 004737	002416 000777 000400 002416 016126 015722	15:	CLR MOV MOV CLR JSR JSR	DTKIDN #777,R2 #400,R3 DTKIDN PC,DATBLD PC,DIAEXE	CLR DEAD TRK IDN REG SETUP THE PREAMBLE D SETUP 1ST BYTE OF DA NO DEAD TRACKS DESIR BUILD THE DIAG BLOCK EXECUTE THE DATA WRA	ATA IN R2 TA. ED.	BITS 0-8	3.

HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046)	19-AUG-79 20: TEST 5:	P.E. D	E 95 ATA TEST.	10			
3694					; CHECK	FOR ERRORS & RI	PORT IF ANY			
3695 3696 3697 3698 3699 3700 3701 3702	032466 032472 032476 032476 032502 032504 032510	005037 004737 105737 001407 105737 001404	002436 016504 002436 002212				; INIT ERROR FLAG. ; CHECK FOR ERRORS CMPFLG NE #0 THEN		TSTB BEQ TSTB BEQ	ERRFLG 50161\$ CMPFLG 50161\$
3699 3700 3701 3702 3703 3704 3705 3706 3707 3708 3709	032512 032514 032514 032516 032520 032522 032522	104456 000016 003243 007176			ERRHI	RD 14,DATER,SKI	DAEM	50161\$:	TRAP .WORD .WORD .WORD	CSERHRD 14 DATER SKDAEM
3710 3711					; IF NO	T DONE, SHIFT TO	HE 1 AND DO IT AGAIN.			
3712 3713 3714 3715 3716 3717 3718	032522 032524 032526	000241 006203 103353			CLC ASR BCC	R3 1\$	CLEAR THE CARRY BIT; SHIFT THE DATA; BRANCH IF THE SHIFT; BEEN SHIFTED INTO TO; YET.	ING '1' HAS HE CARRY PC	SN°T OSITION	
3718 3719 3720 3721 3722 3723	032530 032530 032530	104403		L10056:	ENDSUB				TRAP	C\$ESUB
3725	032532 032532 032532	104402		15.4:	BGNSUB				TRAP	C\$BSUB
3726 3727					; THIS	SUBTEST RIPPLES	A O IN A FIELD OF 1'S.			
3728 3729 3730 3731 3732 3733	032534 032540 032544 032550 032554	005037 012702 012703 004737 004737	002416 000777 000377 016126 015722	1\$:	CLR MOV MOV JSR JSR	DTKIDN #777,R2 #377,R3 PC,DATBLD PC,DIAEXE	CLR DEAD TRK IDN RESETUP THE PREAMBLE SETUP 1ST BYTE OF DEBUTED THE DIABLE.	DATA IN R2 ATA.	BITS 0-8	3.
3734 3735 3736					; CHECK	FOR ERRORS & R	EPORT IF ANY.			
3736 3737 3738 3739	032560 032564 032570	005037 004737	002436 016504		CLR JSR IFB ER	ERRFLG PC,PEERCK RFLG NE #O ANDB	:INIT ERROR FLAG. :CHECK FOR ERRORS CMPFLG NE #0 THEN			
3740 3741 3742 3743	032570 032574 032576 032602	105737 001407 105737 001404	002436						TSTB BEQ TSTB BEQ	ERRFLG 50162\$ CMPFLG 50162\$
3744 3745 3746 3747 3748	032604 032604 032606 032610 032612	104456 000017 003243 007176			ERRH	RD 15,DATER,SK	DAEM		TRAP .WORD .WORD .WORD	CSERHRD 15 DATER SKDAEM
3749	032614				F 140 11					

HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046)	19-AUG-79 20: TEST 5:	27 PAGE P.E. DA	96 TA TEST.	10			
3750 3751	032614							50162\$:		
3753					; IF NOT	DONE, SHIFT	THE O AND DO IT AGAIN.			
3755 3756	032614 032620	052703 006203	001000		BIS	#B119,R3 R3	;PREPARE FOR SHIFT. ;SHIFT THE DATA. H	IAS THE SHIFIT	NG 0	
3758	032622	103752			BCS	1\$	REACHED THE CARRY	BII AFIS		
3751 3752 3753 3754 3755 3756 3757 3758 3760 3761 3762 3763 3764 3765	032624 032624 032624	104403		L10057:	ENDSUB				TRAP	C\$ESUB
3764 3765 3766 3767 3768	032626 032626 032632 032636	013701 053701 053701	002372 002376 002400			Y OR ORTRAC O	RORDATA		MOV BIS BIS	CRORDY,R1 ORTRAC,R1 ORDATA,R1
3769 3770	032642 032642	053701	002402		:= R1 OR				BIS	ORTROD,R1
3772 3773	032646 032646 032650	005701 001406			IE #0 THE				1ST BEQ	R1 50163\$
3766 3767 3768 3769 3770 3771 3772 3773 3774 3775 3776 3777 3778 3779 3780	032652 032652 032654 032656 032660	104456 000036 003243 000000		ERRHR		30,DATER			TRAP .WORD .WORD	CSERHRD 30 DATER 0
3781	032662 032662 032666	004737	020216	END I F	MSORT2				JSR	PC,MSORT2
3782 3783	032666							50163\$:		
3782 3783 3784 3785 3786 3787 3788 3789 3790	032666 032666 032670	104432 000002			EXIT	TST			TRAP. WORD	C\$EXIT L10053
3788 3789 3790 3791	032672 032672 032672	104401		L10053:	ENDIST				TRAP	C \$ ETST

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HARDWARE TESTS MACY11 30(1046) 19-AUG-79 20:27 PAGE 97
CZTSIB.P11
              19-AUG-79 20:26
                                         TEST 6: P.E. SKEW TEST
                                         .SBTTL TEST 6: P.E. SKEW TEST
  3793
                                         THE NEXT TWO SUBTESTS SKEW THE DATA ON A TRACK BY ONE BYTE WITH RESPECT TO ALL
  3794
  3795
                                         THE OTHER TRACKS. THAT IS, THE DATA IS ONE BYTE LATE ON THE ONE TRACK.
  3796
                                         : EACH TRACK IS TESTED FOR SKEW IN THIS MANNER. REGISTER ASSIGNMENTS
  3797
                                         : ARE AS FOLLOWS:
  3798
  3799
                                                 R2=PREAMBLE DATA
  3800
                                                 R3=BYTE 1 DATA (WITH THE EXCEPTION OF THE SKEWED TRACK. THAT
  3801
                                                     TRACK CONTAINS PREAMBLE DATA)
  3802
                                                 R4=BYTE 2 DATA (WITH THE EXCEPTION OF THE SKEWED TRACK. THAT
                                                     TRACK CONTAINS BYTE 1 DATA)
  3803
  3804
  3805
       032674
                                                 BGNTST
  3806
       032674
                                         16::
  3807
  3808
       032674
                                                 CALL
                                                         SCHEXE
  3809
       032674
                                                                                                           JSR
                                                                                                                   PC, SCHEXE
                004737 015746
       032700
  3810
                                                 CALL
                                                         WAITMT
                                                                                                                   PC.WAITMT
  3811
       032700
                                                                                                           JSR
                004737 015174
  3812
       032704
                                                 INCR R1 FROM #0 TO #12 BY #2
                                                                                                           CLR
  3813
       032704
                005001
                                                                                                                   50164$
  3814
       032706
                                                                                                           BR
                000402
                                                                                                  50165$:
  3815
        032710
        032710
                                                                                                                   #2.R1
  3816
                062701 000002
                                                                                                  501645:
  3817
       032714
                                                                                                           CMP
                                                                                                                   R1.#12
  3818
       032714
               U20127
                        000012
                                                                                                                   50166$
                                                                                                           BGT
  3819
       032720
                003003
                                                                                CLEAR 6 LOC OF ORED WRAP REG TABLES
                                                 LET ORDTBL (R1) := #0
  3820
       032722
                                                                                                                   ORDIBL (R1)
       032722
  3821
                005061 002372
       032726
032726
  3822
                                                 ENDING
                                                                                                                   50165$
  3823
                000770
                                                                                                  50166$:
  3824
        032730
  3825
                                                 BGNSUB
  3826
       032730
  3827
       032730
                                         16.1:
                                                                                                           TRAP
                                                                                                                   C$BSUB
        032730 104402
  3828
  3829
                                                 :THIS SUBTEST WRITES AN ALL 1'S PREAMBLE (SKEWED), AN ALL O'S
  3830
                                                 BYTE ! DATA (SKEWED), AND AN ALL 1'S BYTE 2 DATA (SKEWED).
  3831
  3832
                                                                          :CLR DEAD TRK IDN REG.
  3833
       032732
                                                 CLR
                                                         DIKIDN
                005037
                        002416
       032736
032742
                012702
004737
                                                                          ; SET UP PREAMBLE DATA. START BY SKEWING TRK 9.
                                                         #377,R2
                        000377
                                                 MOV
  3834
                                                                          SET WRAP TASK ADDR IN DIABLK AND INIT INDEX.
                                                         PC.PEINIT
  3835
                        016154
                                         15:
                                                 JSR
                                                         #FC.DAT!FC.VCO,-(R5) ;SET DATA & VCO MODE IN FORMAT CNTRL.
                                                 MOVB
        032746
                112745
  3836
                        000012
                                                                          : SETUP BYTE 1 DATA
                                                 MOV
                                                         R2,R3
  3837
        032752
                010203
                                                                          :=0
        032754
                                                 COM
                                                         R3
  3838
                005103
                                                         #177000,R3
                                                                          :CLR GARBAGE BITS
  3839
        032756
                042703
                       177000
                                                 BIC
                                                                          ; SETUP BYTE 2 DATA=1.
        032762
                010204
                                                 MOV
                                                         R2,R4
  3840
                                                                          :LOAD DATA IN DIABLK
                004737
                                                         PC PEDATA
  3841
        032764
                        016176
                                                 JSR
                                                                          THE EXPECTED DESKEWED DATA IN EXDATA IS O
                005037
                                                 CLR
                                                         EXDATA
  3842
        032770
                        002344
                                                                          THE EXPECTED DESKEWED DATA IN EXODIR IS
                                                          #777,EXODTR
                012737
                                 002350
       032774
                        000777
                                                 MOV
  3843
                                                                          :1 FOR EACH TRACK.
  3844
                                                                          THE EXPECTED DESKEWED DATA IN EXIDIR IS O
                                                CLR
                                                         EX1DTR
  3845
                005037
                        002340
        033002
                                                 JSR
                                                          PC DIAEXE
                                                                          : EXECUTE THE DATA WRAP.
        033006 004737 015722
  3846
  3847
```

HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: TEST 6:	27 PAGE P.E. SK	98	K 10				SEQ 0127
3848 3849						: CHECK	FOR ERRORS A	ND REPORT IF ANY				
3850 3851 3852 3853	033012 033016 033022 033022	005037 004737 105737	002436 016504 002436			CLR JSR IFB ERR	ERRFLG PC, PEERCK FLG NE #0 AN	; INIT ERROR FLAG. ; CHECK FOR ERRORS IDB CMPFLG NE #0 THEN		TSTB	ERRFLG	
3854 3855 3856 3857	033026 033030 033034 033036 033036	001407 105737 001404	002212			ERRHR	D 16,SKEWER	SKDAFM		BEQ TSTB BEQ	50167\$ CMPFLG 50167\$	
3858 3859 3860 3861 3862 3863 3864 3865	033036 033040 033042 033044 033046	104456 000020 003270 007176				END1F	TO, SKEWER	, JADAEII	50167\$:	TRAP .WORD .WORD .WORD	CSERHRD 16 SKEWER SKDAEM	
3864 3865						;SHIFT	THE SKEW TO	THE NEXT TRACK AND REP	EAT.			
3866 3867 3868	033046 033052	052702 006202	001000			BIS ASR	#B119,R2 R2	PREPARE FOR SHIFT SHIFT THE PREAMBI TRACKS BEEN SKEW	T OF SKEWED TRI LE DATA. HAVE	K. ALL THE		
3869 3870 3871	033054	103732				BCS	1\$	BR IF NOT. CONTI	NUE.			
3872 3873 3874 3875	033056 033056 033056	104403			L10061:	ENDSUB				TRAP	C\$ESUB	
3876 3877 3878	033060 033060 033060	104402			16.2:	BGNSUB				TRAP	C\$BSUB	
3879 3880 3881 3882						;THIS S ;BYTE 1	DATA (SKEWE	AN ALL 1'S PREAMBLE (D) AND AN ALL 0'S BYTE	SKEWED), AN AL 2 DATA (SKEWE	L 1'S D).		
3883 3884 3885 3886 3887 3888	033062 033066 033072 033076 033102 033106	005037 012702 004737 112745 012703 010204	002416 000377 016154 000012 000777		15:	CLR MOV JSR MOVB MOV MOV	#///,R5 R2,R4	;CLR DEAD TRK IDE ;SET UP PREAMBLE ;SET WRAP TASK AD ;VCO,-(R5) ;SET DATA & ;SETUP BYTE 1 DAT ;SETUP BYTE 2 DAT	DATA. START W R IN DIABLK & VCO MODE IN F A=1	INIT IND	EX.	
3889 3890 3891 3892 3893 3894 3895	033110 033112 033116 033122 033130 033134 033142	005104 042704 004737 012737 005037 012737 004737	177000 016176 000777 002350 000777 015722	002344 J02340		COM B1C JSR MOV CLR MOV JSR	R4 #177000,R4 PC,PEDATA #777,EXDATA EXODTR #777,EX1DTE PC,DIAEXE	; LOAD THE DATA IN ; THE EXPECTED DES ; THE EXPECTED 'O	KEWED DATA IS OR DEAD'' DATA= KEWED ''1 OR DE	1 FOR EA	CH TRACK. =1 FOR ALL	TRACKS
3896 3897						; CHECK	FOR ERRORS					
3898 3899 3900 3901	033146 033152 033156	005037 004737	002436 016504			CLR JSR IFB ERR	ERRFLG PC.PEERCK RFLG NE #0 AM	; INIT ERROR FLAG. ; CHECK FOR ERRORS NDB CMPFLG NE #0 THEN				
3902 3903	033156 033162	105737 001407	002436							151B BEQ	50170 \$	

HARDWAR CZTSIB.	P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AUG-79 20:27 PAGE 99 TEST 6: P.E. SKEW TEST				SEQ 0128
3904 3905	033164	105737 001404	002212	ERRHRD 16, SKEWER, SKDAEM		TSTB BEQ	CMPFLG 50170\$	
3905 3906 3907 3908 3909 3910 3911	033164 033170 033172 033172 033174 033176 033200 033202	104456 000020 003270 007176		ENDIF		TRAP .WORD .WORD .WORD	CSERHRD 16 SKEWER SKDAEM	
3911 3912 3913 3914 3915 3916	033202			SHIFT THE SKEW TO THE NEXT TRACK AND REP	50170\$:			
3915								
3916 3917 3918	033202 033206 033210	052702 006202 103730	001000	BIS #BIT9,R2 ;PREPARE TO SHIFT ASR R2 ;SKEW THE NEXT TRA BCS 1\$;BR IF NOT.	SKEWED TRK.	ONE YET?		
3917 3918 3919 3920 3921 3922 3923	033212 033212 033212	104403		L10062:		TRAP	C\$E SUB	
3925 3926	033214 033214 033220 033224	013701 053701 053701	002372 002376 002400	LET R1 := ORORDY OR ORTRAC OR ORDATA		MOV BIS BIS	ORORDY,R1 ORTRAC,R1 ORDATA,R1	
3928	033230	053701	002402	LET R1 := R1 OR ORTRDD		BIS	ORTRDD,R1	
3927 3928 3929 3930 3931 3932 3933 3934	033224 033230 033230 033234 033234 033236	005701 001406		IF R1 NE #0 THEN		TST BEQ	R1 50171\$	
3933 3934 3935 3936 3937 3938 3939	033240 033242 033244 033246 033250 033250	104456 000020 003270 000000		ERRHRD 16,SKEWER		TRAP .WORD .WORD	CSERHRD 16 SKEWER 0	
3938	033250		020214	CALL MSORT2		JSR	PC.MSORT2	
3940 3941 3942 3943 3944 3945 3946	033254	004737	020216	ENDIF	50171\$:		re, risonie	
3942				.EVEN				
3944								
3945 3946 3947 3948	033254 033254 033254	104401		L10060:		TRAP	CSETST	

JSR

CLR

JSR

PC, DIAEXE

CHECK FOR ERRORS AND REPORT IF ANY.

PC.PEERCK

IFB ERRFLG NE #O ANDB CMPFLG NE #O THEN

:EXECUTE IT.

: INIT ERROR FLAG.

: CHECK FOR ERRORS.

3998

3999

4000

4002

4004

033350

033364

004737

033354 005037 002436

4003 033360 004737 016504

HARDWAR CZTSIB.	E TESTS P11 1	MACY11 9-AUG-79	30(1046) 20:26	19-AU	5-79 20: TEST 7:	27 PAGE P.E. DE	N 10 AD TRACK TEST.			
4005 4006 4007 4008	033364 033370 033372 033376 033400	105737 001407 105737 001404	002436 002212			EDDUG	D 17 DDED CYDAEM		TSTB BEQ TSTB BEQ	ERRFLG 50175\$ CMPFLG 50175\$
4007 4008 4009 4010 4011 4012 4013	033400 033402 033404 033406 033410	104456 000021 003310 007176				ERRHR	D 17,DDER,SKDAEM		TRAP .WORD .WORD .WORD	CSERHRD 17 DDER SKDAEM
4015	033410					CNUIT		501755	:	
4016 4017 4018						;SHIFT	THE DEAD TRACK AND REPEA	1.		
4014 4015 4016 4017 4018 4019 4020 4021	033410 033412 033416	000241 006237 103346	002416			CLC ASR BCC	DTKIDN 2\$	CLR CARRY TO PREPARE SHIFT DEAD TRACK BR IF ALL TRACKS NOT		
4023						; CHANGE	THE DATA AND REPEAT.			
4022 4023 4024 4025 4026 4027 4028 4029 4030 4031 4032 4033	033420 033422 033424 033426 033432	105703 001404 005003 012704 000735	000777			TSTB BEQ CLR MOV BR	R3 4\$ R3 #777,R4 1\$:DONE? :BR IF SO. :BYTE 1 DATA. :BYTE 2 DATA. :REPEAT TEST WITH COMP	LEMENTED	DATA.
4030 4031 4032	033434 033434 033436	104432 000002			4\$:	EXIT	SUB		TRAP .WORD	C\$EXIT L10064
4034	033440				. 100//	ENDSUB				
4035 4036 4037	033440	104403			L10064:				TRAP	C\$ESUB
4038	033442				17.2:	BGNSUB				
4040	033442	104402			17.2.				TRAP	C\$BSUB
4042						;THIS S	UBTEST RIPPLES A LIVE TR	ACK IN A FIELD OF DEAD	TRACKS.	
4044	033444	012702 012703	000777 000777			MOV MOV	#777,R2 #777,R3	:PREAMBLE. :BYTE 1 DATA.		
4046 4047 4048 4049 4050 4051 4052	033454 033456 033464 033470 033474 033500	005004 012737 004737 112745 004737 004737	000377 016154 000012 016176 015722	002416	1\$: 2\$:	CLR MOV JSR MOVB JSR JSR	#377,DTKIDN PC,PEINIT #FC.DAT!FC.VCO,-(R5) PC,PEDATA PC,DIAEXE	BYTE 2 DATA. SETUP TO SHIFT 1 LIVE SET WRAP TSK ADR AND SET DATA AND VCO MODE LOAD DIABLD AND GENER DO IT.	IN FMT	CNTRL.
4053						: CHECK	FOR ERRORS.			
4054 4055 4056	033504	005037 004737	002436 016504			CLR JSR	ERRFLG PC, PEERCK	:INIT ERROR FLAG. :CHECK FOR ERRORS.		1.
4057 4058 4059	033514 033514 033520	105737	002436			ILR EKK	FLG NE #0 ANDB CMPFLG NE	WU THEN	TSTB BEQ	ERRFLG 50176\$
4060	033522	105737	002212						ISTB	CMPFLG

HARDWAR CZTSIB.	TESTS	MACY11 9-AUG-79	30(1046) 20:26	19-AUG	-79 20: TEST 7:	27 PAGE P.E. DE	B 11 102 AD TRACK TEST.				SEQ 0131
4061	033526	001404							BEQ	50176\$	
4062 4063 4064 4065 4066 4067	033530 033530 033532 033534 033536 033540	104456 000021 003310 007176				ERRHRI	D 17,DDER,SKDAEM		TRAP .WORD .WORD .WORD	CSERHRD 17 DDER SKDAEM	
4068 4069	033540							50176\$:			
4070						; SHIFT	THE LIVE TRACK AND REPE	AT.			
4071 4072 4073 4074 4075	033540 033546 033552	052737 006237 103744	001000 002416	002416		BIS ASR BCS	#BIT9,DTKIDN DTKIDN 2\$;PREPARE FOR DATA SHIFT ;SHIFT IT. DONE? ;BR IF NOT, CONTINUE.			
4076						; CHANGE	DATA AND REPEAT				
4077 4078 4079 4080 4081 4082 4083	033554 033556 033560 033562 033566	105703 001404 005003 012704 000733	000777			TSTB BEQ CLR MOV BR	R3 4\$ R3 #777,R4 1\$:DONE? :BR IF SO. :BYTE 1 DATA. :BYTE 2 DATA. :CONTINUE.			
4084 4085 4086 4087	033570 033570 033572	104432 000002			4\$:	EXIT	SUB		TRAP .WORD	C\$EXIT L10065	
4088 4089 4090 4091	033574 033574 033574	104403			L10065:	ENDSUB			TRAP	C\$E SUB	
4092 4093 4094 4095 4096	033576 033576 033602 033606	013701 053701 053701	002372 002376 002400				Y OR ORTRAC OR ORDATA		MOV BIS BIS	ORORDY,R1 ORTRAC,R1 ORDATA,R1	
4097	033612	053701	002402		LET R1	:= R1 OR	ORTRDD		BIS	ORTRDD,R1	
4099 4100 4101	033616	005701 001406				E #0 THE			TST BEQ	R1 50177\$	
4102 4103 4104 4105 4106	033620 033622 033622 033624 033626 033630	104456 000021 003310 000000			ERRHR		17,DDER		TRAP .WORD .WORD .WORD	CSERHRD 17 DDER 0	
4107	033632 033632	004737	020216		CALL	MSORT2			JSR	PC,MSORT2	
4109	033636				ENDIF			50177\$:			
4109 4110 4111 4112	033030					.EVEN					
4113	077474					ENDIST					
4114 4115 4116	033636 033636 033636	104401			L10063:				TRAP	CSE1S1	

ROMLKI :DECR ROM ADDRESS - DONE? DEC

BPL 15 : BR IF NOT. IFB CTLFLG NE #0 THEN

4168

4169

4170

4171

033746

033750

033750

4172 033754

033742 005337 002420

100343

001404

105737 002437

CTLFLG ISTB 50202\$ BEQ

HARDWAR CZTSIB.	E TESTS P11 1	MACY11 30(1046) 9-AUG-79 20:26	19-AUG-79 20: TEST 8:	D 1 27 PAGE 104 LOOKUP TABLE TEST	11			SEQ 0133
4173 4174 4175 4176 4177 4178 4179 4180 4181	033756 033756 033760 033762 033764 033766 033766	104456 000022 003373 014142		ERRHRD 18, ROMER, ROMER BONDIF		TRAP .WORD .WORD .WORD	CSERHRD 18 ROMER ROMLER	
4181 4182 4183 4184 4185 4186 4187	033766 033766 033770	104432 000002		EXIT TST		TRAP .WORD	C\$EXIT L10066	
4188 4189 4190	033772 033772 033772	104401	L10066:	ENDTST		TRAP	CSETST	

HARDWAR CZTSIB.	E TESTS	MACY11 9-AUG-79	30(1046)	19-AUG-79 20: TEST 8:	27 PAGE	E 11 105 TABLE TEST			SEQ 0134
4191 4192 4193 4194 4195	033774 033774	~		19::			MICRO DIAGNOSTIC TEST		
4196 4197 4198 4199 4200 4201	033774 033774 034000 034000 034004	004737			CALL CALL DELAY	SCHEXE WAITMT 500.		JSR JSR	PC,SCHEXE PC,WAITMT
4202 4203 4204 4205 4206 4207	034004 034010 034012 034016 034020 034024	012727 000000 013727 000000 005367 001375	000764 002116 177772					MOV .WURD MOV .WORD DEC BNE	#500.,(PC)+ 0 L\$DLY,(PC)+ 0 -6(PC)
4204 4205 4206 4207 4208 4209 4210 4211 4212	034026 034032 034034 034034	005367 001367 004737	020704		CALL	MSORT3		DE C BNE JSR	-22(PC) 20 PC,MSORT3
4213 4214 4215	034040 034040 034040	104401		L10067:	ENDIST			TRAP	CSETST

CZIZIB.	E TESTS	MACY11 9-AUG-79	30(1046)	19-AUG-79 20: TEST 9:	27 PAGE IN-LINE	F 11 106 MICRO DIAGNOSTIC TEST		SEQ 0135
4216 4217 4218 4219 4220 4221	034042 034042			110::	.SBTTL BGNTST	TEST 10: INIT MICRO DIAGNOSTIC TEST		
4222 4223 4224 4225 4226 4227 4228 4229 4230 4231	034042 034046 034046 034052 034052 034056 034056	004737	146156 014616 015746 020704		CALL CALL CALL	atssr Waltsr Schexe Msort3	JSR JSR JSR	PC,WAITSR PC,SCHEXE PC,MSORT3
4230 4231 4232 4233 4234 4235 4236	034062 034062 034062 034064	104401		L10070:	ENDTST		TRAP	C\$ETST

PARAME!	TER CODIN	G 9-AUG-79	MACY11 20:26	30(1046)		G 11 -79 20:27 PAGE 107 : INIT MICRO DIAGNOSTIC TEST		SEQ 0136
4237					.TITLE	PARAMETER CODING		
4238 4239					.SBTTL	HARDWARE PARAMETER CODING SECTION		
4240	034064					BGNMOD		
4242					; ++ ; THE H	ARDWARE PARAMETER CODING SECTION CONTAINS MACROS ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE		
4244 4245 4246 4247 4248 4249 4250 4251					: MACRO : INTER : MACRO	S ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE PRETED BY THE SUPERVISOR AS DATA STRUCTURES. THE S ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS THE OPERATOR.		
4252 4253 4254 4255	034064 034064 034066	000024			L\$HARD:	BGNHRD:	.WORD I	10071-L\$HARD/2
4256 4257 4258 4259 4260	034066 034066 034070 034072 034074	000031 034112 160002 177564			GPRMA	TS4ADR,0,0,160002,177564,YES	.WORD .WORD .WORD .WORD	T\$CODE TS4ADR T\$LOLIM T\$HILIM
4261 4262 4263 4264 4265 4266	034076 034076 034100 034102 034104 034106	001032 034127 000777 000060 000776			GPRMD	TS4VCT,2,0,777,60,776,YES	.WORD .WORD .WORD .WORD	TSCODE TS4VCT 777 TSLOLIM TSHILIM
4267 4268 4269 4270 4271	034110 034110	013004				EXIT HRD	.WORD	T\$CODE
4272	034112 034127	051524 126	051123 041505	040440 047524	TS4ADR: TS4VCT:			
4273 4274 4275 4276	034136 034136				L10071:	ENDHRD	.EVEN	

ARAMET	ER CODIN	G 9-AUG-79	MACY11 20:26	30(1046)		20:27 PAGE 108 RAMETER CODING SECTION		SEQ 0137
4277					.SBTTL SOFT	WARE PARAMETER CODING SECTION		
4278 4279 4280 4281 4282 4283 4284 4285 4286					:TO BUILD SO :BY THE SUPE	S MACRO THAT ARE USED BY THE SUPERVISOR OFT P-YABLES. THE MACROS ARE INTERPRETED ERVISOR AS DATA STRUCTURES. THE MACROS SUPERVISOR TO COMMUNICATE WITH THE OPERATOR.		
4286	034136				BGNS	SF1		10070 . 4004
4287	034136	000034			L\$SOFT::		WORD	L10072-L\$SOF1/2
4287 4288 4289 4290 4291 4292 4293 4294	034140 034140 034142 034144	000130 034150 000001			GPRML ENBM	그리즘 가장 가장 보고 있는 것이 되었다. 그 사람들은 사고 있다고 있는 것이다.	WORD WORD WORD	T\$CODE ENBMSG
4294 4295 4296 4297	034146 034146	031004			EXIT		WORD	T\$CODE
4298	034150	047105	041101	042514	ENBMSG: .ASC	IST BEX IIZ /ENABLE DATA COMPARE ERROR PRINTS FOR TESTS 4-7/ ST BEX		
4299		034230			.EVE	N .		
4301	034230				ENDS	SFT		
4303	034230				L10072:		EVEN	
4305	0.54250				210072.			
4306						***************************************		
4308					: PATC	CH AREA		
4310	034230	000140			PATCH:: .BLK	(W 96.		
4312								
4314	034530				LAST		EVEN	
4315	034530	034552						T\$FREE T\$SIZE
4316 4317 4318 4319	034534				L\$LAST::			
4319	034534				ENDM	10D		
4320					.SBTTL HARD	CODED P-TABLE		
4320 4321 4322 4323 4324 4325 4326 4327 4328 4329					DIAG IS PR	RE-PARAMETERIZED PER TBL		
4327	034534					SETUP 1		
4328	034534	000000			BG	SNPTAB .	WORD	0
4330	034536	000000					WORD	Ō

PARAME!	ER CODI	NG 19-AUG-79	30(1046)	19-AUG-79 HARD CODED		PAGE	The same of the sa	11
4331 4332 4333 4334	034540 034544 034544	000000		L10073:				
4335 4336 4337 4338	034546 034550 034552 034552	172522			172522 224 NDPTAB			
4339 4340 4341	034552				DSETUP			

.WORD 0 .WORD 0 .WORD L10075-./2-1

CZTSIB.I ACDATA	P11 19-AUG-79 002362 G	581#	837	1758*	EFERENCE	TABLE -	- USEK 2	AMBOL 2						SEQ 0139
ACK.C = ACORDY ACROMI ACTRAC ACTRAD ACTRK1 ACTRK2 ACTRK3 ACTRK4 ACTIBL ACODTR ACODTR ACODTR ACODTR ACODTR	100000 G 002354 G 002370 G 002360 G 002364 G 002406 G 002410 G 002412 G 002414 G 002354 G 002356 G 002356 G	303# 578# 584# 582# 594# 595# 596# 597# 577# 583# 579# 249#	837 343 829 869 796 849 2157 3422* 2158 3535* 1749* 847	344 1755* 2029* 839 1759* 3367* 3423* 3479* 3536* 1764 1760* 1756*	345 2030 1588* 3558 3425* 3560 3538*	1593 • 3559 3562	1596*	1597*	1598	1757*	3367	3422	3479	3535
A1 = A2 = A3 = A4 = A5 = A6	027746 000001 G 000002 G 000010 G 000020 G 000100 G 000200 G 000400 G 001000 G 000001 G 000001 G 000002 G 000002 G 000004 G 000004 G 000000 G	2711 274# 273# 272# 271# 270# 268# 265# 265# 211# 210# 209# 208# 205# 205# 203#	2740# 1974 1974 1966 1981 1981 1974 1981 1966 1904 1968 222 221 220 219 218 217 216 215 214	1978 1978 1971 1985 1985 1978 1985 1971 1966	2010 2010 2012 2008 2008 2010 2008 2012 1971 2601	2012 2908								
BIT1 = BIT10 = BIT11 = BIT12 = BIT13 = BIT14 =	001000 G 000002 G 002000 G 004000 G 010000 G 020000 G	202# 221# 201# 200# 199# 198# 197#	213 1976	1980	2601	2911								
8112 = 8113 = 8114 = 8115 = 8116 =	100000 G 000004 G 000010 G 000020 G 000040 G	196# 220# 219# 218# 217# 216#	1983 1968	1987 1976	1983		•							
3118 = 3119 =	000200 G 000400 G 001000 G	215# 214# 213#	1593 1816	1596 3755	1698 3867	1768 3916	1771 4072							
BOE = BPE = H.EAI=	000400 G 020000 G 000040 G 000020 G	253N 346N 323N 324N	3189											

CZTSIB.		MACY11 20:26	30(1046)	CROSS R	-79 20: EFERENCE	TABLE -	- USER S	AMBOLZ						SEQ 014
H9.DA= H9.OR= H9.TA= H9.TD= H9.OD=	000200 G 000010 G 000001 G 000004 G 000020 G 000040 G 000002 G	322N 370N 367N 369N 371N 372N 368N	1591											
MDPKT MD.CO= MD.C1=	002230 G 000001 G 000002 G 000004 G	494N 318N 317N 316N	1393* 345 343 343 345	1395 345 344	2601 345									
MD.C3=	000010 G 00CJ20 G 00CZ12 G	315# 314# 174#	345 3371	3429	3483	3542	3633	3666	3701	3742	3855	3904	4007	4060
ODTBL ODXXX ODOO ODOOA ODOOB ODOO1 ODOO1 ODOO3 ODOO3 ODOO3 ODOO3 ODOO3 ODOO O ODOO O ODOO O ODOO ODOO ODOO ODOO ODOO ODOO ODOO ODOO ODOO ODOO ODOO ODOO ODO	021176 027220 021356 021464 021551 021633 021732 021754 022047 022155 022233 022341 022370 022467 022655 02365 023116 023265 023365 023470 023265 023365 023470 023550 023647 024001 024103 024163 024163 024163 024236 024316	4162 2437 2537 2538 2538 2541 2545 2546 2546 2546 2547 2548 2549 2555 2555 2555 2555 2555 2555 2555	2537N 2570N											

ARAMETE ZTSIB.P	R CODING 11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG	79 20:	TABLE -	113 USER S1	MBOLS						SEQ 014
0D20A 0D21A 0D21A 0D22 0D23 0D24A 0D25 0D25A 0D25B 0D26A 0D26B 0D26B 0D27A 0D27B 0D27B 0D27B 0D27B 0D27B 0D27B 0D27B 0D27B 0D27B	025426 025534 025634 025742 025770 026025 026062 026170 026226 026334 026410 026505 026570 026644 026741 027047 027123 027256 050024 000004 G	2556 2557 2557 2557 2558 2559 2560 2561 2561 2561 2562 2562 2563 2563 2563 2441 1246# 379# 378#	2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N 2570N	1278	1289#	1301	1321	1384#	1411	1418				
P\$CMD= P\$CNT= RMSG TLFLG VC.C = BAU = BAUTO= BBRK =	000000 G 000006 G 005763 G 002437 G 040000 G 000052 000061 000022	377# 380# 629# 614# 304# 4# 4#	1347 1157* 344 2843 2738 1190	1434 1165*	1173*	1181*	3089*	3237*	3245	4152*	4171			
BBSEG= BBSUB= BCEFG= BCLCK=	000002 000045	3725 4# 4#	2876 2874 3828	2924 2922 3878	3027 3987	3088 4040	3110	3342	3394	3452	3507	3616	3649	3682
CLEA= CLOS= CLP1=	000012 000035	4#	2790											
CVEC= BDCLN= BDODU= BDRPT=	000036 000044 000051	4#	2705 1236 1228	2776 1429	2639									
BDU = BEDIT= BERDF= BERHR=	000053 000002 000055	4# 4# 3193 4#	2816 64 1198 3204 2428	1330 3212 3374	2883 3224 3432	2966 3248 3486	2982 3545 4157	3043 3567 4174	3056 3636	3096 3669	3117 3704	3129 3745	3144 3775	3179 3858
SERRO= SERSF= SERSO= SESCA=	000054 000057 000010	3907 4# 4# 4#	3934 2604	4010	4063	4103	4121	3113	4					
SESEG= SESUB=	000003	3762	2899 2904 3874	2934 2942 3922	3066 4036	3106 4091	3232	3383	3441	3495	3554	3645	3678	3721
SETST= SEXIT=		4#	3000 2669	3077 2782	3277 2947	3580 3271	3791 3785	3948 4031	4116	4190	4215	4233		

ZTSIB.P11 19-AUG-7	4#		CKUSS K	EFERENCE	IABLE -	- USEK 2	IMBUL 2						SEQ 014
\$GETW= 000027 \$GMAN= 000043 \$GPHR= 000042 \$GPLO= 000030	4#	1231	2644										
\$GPR1= 000040 \$INIT= 000011 \$INLP= 000020 \$MAN1= 000050	4#	2680											
\$MEM = 000031 \$MSG = 000023	1006	673 1029	699 1067	725 1104	751 1117	777 1140	809	863	884	912	935	958	982
\$OPEN= 000034 \$PNTB= 000014 \$PNTF= 000017	1052 2347 4#	660 1089 2356 1286	681 1113 2365 1350	707 1125 2395 1381	733 1426 2404 1437	759 2085 2413 2714	897 2117 2444 2728	920 2129 2476	943 2141 2493	967 2173 2891	991 2205 3256	1014 2245	1038 2274
\$PNTS= 000016 \$PNTX= 000015	4# 875	690 903	716 926	742 949	768 973	786 997	793 1020	800 1095	818 1131	824 1208	834 1340	844	854
\$Q10 = 000377 \$RDBU= 000007 \$REFG= 000047 \$RESE= 000033 \$REVI= 000003 \$RFLA= 000021	~# ~# ~#	2621 2878 63	2628										
\$RPT = 000025 \$SEFG= 000046 \$SPRI= 000041 \$SVEC= 000037	C# C#	2779 2664	3235 2699	3264									
\$TPRI = 000013 18\$DA = 000010 G 18\$OR = 000004 G 18\$TA = 000007 G 18\$TD = 000011 G 18\$OD = 000012 G 18\$1D = 000005 G AEM 007406 AEMA 007461 AEMB 007530 AEMC 007617 AEMD 007701	362# 359# 361# 363# 364# 360# 815 821 831 841 851	1758 1755 1588 1759 1760 1756 859# 859# 859# 859#	1757										
ASKDD 003336 G ATBLD 016126 G ATER 003243 G DER 003310 G ESCM 002440 G	625 N 1610 N 625 N 625 N	3623 3638 4012	3656 3671 4065	3691 3706 4105	3732 3747	3777							
FPTBL 002204 G IA = 100006 G IABLK 002316 G IAEXE 015722 G	154# 343# 513 1530#	512 550# 3359	1512 3414	1628 3471	3527	3624	3657	3692	3733	3846	3895	3998	4051
IAEXT = 000020 G	342#	515	1628										
IAGMC = 000000 IAPKT 002250 G ROPU 014570 G	512#	1532 1226#	1342	2716	2730	2894	2971	2987	3048	3061	3101	3122	3134

PARAMET CZTS1B.	ER CODING P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG	-79 20:	Z7 PAGE TABLE -	N 11 115 - USER S	YMBOLS						SEQ 0143
EF.NEW= EF.PWR=	002416 G 020334 006122 006276 006450 006622 000036 G 000035 G 000037 G	3149 599# 3620* 2251 687 713 739 765 229# 230# 231# 228#	1655 3653* 2257 695# 721# 747# 773# 2620 2627	1658 3687* 2264#	1661 3690*	1662 3729•	1665 3833*	1709 3883*	1717 3994*	1721 4020*	1813* 4047*	1824* 4072*	1825* 4073*	1826*
EF.STA= ENBMSG ENDTBL= ERRFLG	000040 G 034150 177777 G 002436 G	227# 4292 349# 613# 3631 4055* 247#	4298# 1079 1600* 3661* 4058	1222 1790* 3664 4145*	2032* 3696* 4150	3363* 3699	3369 3737*	3418* 3740	3427 3850*	3475* 3853	3481 3899*	3531 * 3902	3540 4002*	3628* 4005
VNPAR XDATA XORDY	015560 002344 G 002336 G	1469# 572# 569#	838 830	1660* 1659*	1661*	3842*	3892*							
XPTBL XROML EXTRAC EXTRDD	002336 G 002352 G 002342 G 002346 G	568# 575# 571# 573#	1779 870 789 850	1885* 840 1658*	1900* 1598	1919* 1655*	1925* 1656*	1931* 1657*	1939* 3364*	1954* 3419*	1994* 3476*	2014* 3532*	2030	
XODTR X1DTR SEND =	002350 G 002340 G 002100	574# 570# 4#	848 828	1665* 1662*	1666* 1663*	1668* 3845*	3843* 3894*	3893*						
C.DAT=	000035 177717 G 000010 G 000100 G	298# 400#	87 3154 1612	3836	3886	3996	4049							
C.NRZ= C.PRE=	000001 G 000004 G 000200 G	398n 403n 401n 394n	3345	3399	3457	3512	4139							
C.VCO=	000002 G 015672 G 000004 G	402N 1512N 387N	1612 1518	3836	3886	3996	4049	4139						
MTCH4 MTCH5 MTCH6 MTCTR MTSEL MT.CO=	005326 G 005251 G 005174 G 005062 G 020440 000040 G	629# 629# 629# 629# 2168 313#	2138 2126 2114 1110 2200	2362 2353 2344 2082 2250	2170 2325#	2202	2242	2271						
MT.C1= \$AU = \$AUTO= \$BGN =	000100 G 000015 000020	312# 4# 4# 773 962 1155	2826 2690 9 780 978 1163 2826	2842 2737 182 805 986 1171 2837	186 812 1002 1179 2846	649 859 1009 2574 2851	670 866 1025 2583 2870	676 880 1033 2592 2873	695 892 1062 2598 2876	702 908 1084 2669 2903	721 915 1100 2690 2921	728 931 1108 2772	747 938 1120 2782 2941	754 954 1136 2799 2947
		2810 2999 3341 3677	3016 3382 3681	3026 3393 3720	3065 3440 3724	3076 3451 3761	3084 3494 3785	3087 3506 3790	3105 3553 3806	3109 3579 3827	3231 3594 3873	2924 3271 3615 3877	3276 3644 3921	3324 3648 3947

CZTSIB.	ER CODING P11 19-AUG-79		30(1046)	CROSS R	-79 20: EFERENCE	27 PAGE	116 - USER S	YMBOLS						SEQ 014
SCLEA=		3965 4220 4#	3986 4232 2772	4031 4236 2789	4035 4242	4039 4253	4086 4269	4090 4287	4115 4296	4130 4320	4184 4328	4189 4329	4195 4338	4214 4340
SHARD=	000004 000013	778 976 1161 2835 2947 3109 3451 3677 3873 4086 4232 4#	2799 803 983 1169 2844 2999 3231 3494 3679 3875 4090 4234 4253 152	2815 182 810 1000 1177 2846 3001 3233 3496 3681 3877 4092 4236 4269 160	186 857 1007 1185 2851 3016 3271 3506 3720 3921 4115 4242 4275	668 864 1023 2574 2870 3026 3276 3553 3722 3923 4117 4269 4296	674 878 1030 2592 2873 3065 3278 3555 3724 3947 4130 4277	693 885 1060 2669 2900 3067 3324 3579 3761 3949 4184 4296	700 906 1068 2681 2903 3076 3341 3581 3763 3965 4189 4305	719 913 1098 2739 2905 3078 3382 3594 3785 3986 4191 4320	726 929 1105 2782 2921 3084 3384 3615 3790 4031 4195 4328	745 936 1118 2791 2935 3087 3393 3644 3792 4035 4214 4329	752 952 1134 2808 2941 3105 3440 3646 3806 4037 4216 4338	771 959 1141 2817 2943 3107 3442 3648 3827 4039 4220 4340
SINIT=	000006 000050	1000	2598 668 1023	2679 693 1060	719 1098	745 1134	771 2669	803 2782	857 2808	878 2835	906 2947	929 3271	952 3785	976 4031
SMSG = SPROT=	000021	4086 4# 812 1005 4#	4184 9 649 862 1009 2583	4269 182 672 866 1028 2588	4296 186 676 883 1033	2574 698 892 1066	2592 702 911 1084	2846 724 915 1103	2851 728 934 1108	4236 750 938 1116	4242 754 957 1120	4320 776 962 1139	780 981	808 986
\$RPT = \$SEG = \$SOFT= \$SRV =	000017 000012 000003 000005 000010 000002	4# 4# 4# 4# 4# 3394	2876 4287 1155 2874 3440	2898 4296 1159 2903 3452	2924 4303 1163 2922 3494	2933 1167 2941 3507	1171 3027 3553	1175 3065 3616	1179 3088 3644	1183 3105 3649	3110 3677	3231 3682	3342 3720	3382 3725
	000014 000001	3761	3828 170 2871	3873 179 2999	3878	3921 3076	3987 3085	4035 3276	4040 3325	4090 3579	3595	3790	3807	3947
SCNTO= SDISP= SEXCP= SHIL1= SLOL1=		3966 345# 4# 4# 4# 4#	4115 1393	4131	4189	4196	4214	4221	4232					
SOFFS= SOFSI= SPRMA= SPRMD= SPRML= SRADA=	000000 000400 000376 000001 000002 000000 000140 000000	4	4257 4257 4257 4262 4291	4262 4262	4291 4291									
\$RADD= \$RADL= \$RADO=	000040 000120 000020 000004	48	4291 4257 4269	4262 4296										

. .

PARAMETER ZTSIB.P1	CODING 1 19-AUG-79	MACY11 20:26	30(1046)	19-AUG	79 20:2	7 PAGE	C 12 117 - USER S1	MBOLS						SEQ 014
S\$YES = 0	00010	2# 2774 4256	4257 4 2785 4271	4262 17 2801	4291 105 2811	126 2828	156 2838	182# 2848#	290 2867	616 2868	641 2993	642	2588# 3002	2600 4238#
BE = 0 DU = 0	00000 G 10000 G 00040 G 20000 G	260# 257# 250# 258#												
E.C = 0	00200 G 15772 00340 G	311# 1531 339#	3239 1541 2660	3261 1551#										
OBRD O	05646 G 00014 G	629N 437N	704	730	3253									
SR = 0 S.DAP= 0 S.1VP= 0	00100 G 00020 G 00100 G	251# 459# 453#	1498	1501	1700									
S.LRC= 0		461# 456# 3524	1693	3350	3352	3356	3404	3406	3411	3462	3464	3468	3517	3519
S.PAR= 0	00004 G	449#	1506 1693	1704 3352	3406	3464	3519							
\$AU = 0 \$AUTO= 0 \$CLN = 0 \$DU = 0	00041 00041	256# 4# 4# 4#	2826# 2690# 2772# 2799#	2844# 2739# 2782 2817#	2791#									
\$HRD = 00 \$1N1T = 00 \$MOD = 00	00041	4253#	4277# 2598# 9#	2669 182#	2681# 186#	2574#	2592#	2846#	2851#	4236#	4242#	4320#		
\$MSG = 0	00041	812# 1007#	649# 864# 1009#	674# 866# 1030#	676# 885# 1033#	700# 892# 1068#	702# 913# 1084#	726# 915# 1105#	728# 936# 1108#	752# 938# 1118#	754# 959# 1120#	778# 962# 1141#	780# 983#	810# 986#
\$PROT = 0 \$PTAB = 0 \$PWR = 0 \$RPT = 0	00041 00041	4 # 4 # 4 #	2583# 4329#	4338#										
\$SEG = 0	00041	3324 3965	2870 3341 3986	2873 3393 4039	2876# 3451 4130	2900# 3506 4195	2921 3594 4220	2924# 3615	2935# 3648	3016 3681	3026 3724	3084 3806	3087 3827	3109 3877
\$SETU= 0 \$SFT = 0 \$SRV = 0	00041	4287#	4328# 4305# 1155#	4329	4340#	1169#	1171#	1177#	1179#	1185#				
\$SUB = 0		3087# 3451# 3681#	2870 3105# 3494# 3720#	2873# 3107# 3496# 3722#	2903# 3109# 3506# 3724#	2905# 3231# 3553# 3761#	2921# 3233# 3555# 3763#	2941# 3324 3594 3806	2943# 3341# 3615# 3827#	3016 3382# 3644# 3873#	3026# 3384# 3646# 3875#	3065# 3393# 3648# 3877#	3067# 3440# 3677# 3921#	3084 3442# 3679# 3923#
\$TST = 0	000041	3965 4# 3109 3648	3986# 2870# 3271 3681	4031 2873 3276# 3724	4035# 2921 3278# 3785	4037# 2947 3324# 3790#	4039# 2999# 3341 3792#	4086 3001# 3393 3806#	4090# 3016# 3451 3827	4092# 3026 3506 3877	4130 3076# 3579# 3947#	4195 3078# 3581# 3949#	4220 3084# 3594# 3965#	3087 3615 3986
SJMP = 0	000167	1000	4115# 668 1023	4117# 693 1060	4130# 719 1098	4184 745 1134	4189# 771 2808	4191# 803 2835	4195# 857	4214# 878	4216# 906	4220# 929	4232# 952	976
	040000 G 05774 G 021116	259# 649# 2457	1201 2507#	1333										

PARAMET CZTSIB.	ER CODING P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG- CROSS RE	79 20:	27 PAGE	D 12 118 - USER S			SEQ 0146
LSACP	000010 G 027574 002110 G	248# 1227 94#	1230	2625*	2632*	2634	2657	2667	2674#	
LSAPT LSAU	002036 G 030112 G	52# 79	2826#							
LSAUT	002070 G	78#								
L\$AUTO	027600 G 002106 G	95 92#	2690#							
L&CLEA	030052 G	93	2772#							
L\$CO L\$DEPO	002032 G 002011 G	48# 30#								
LSDESC LSDESP	002150 G 002076 G	85 84#	133#							
LSDE VP	002060 G	70#								
LSDISP LSDLY	002124 G 002116 G	100#	114#	1307	1399	2611	2955	3032	4204	
L\$DTP	002040 G	54#	1204	1301	13//	2011	2,,,,	3032		
LSDTYP LSDU	002034 G 030074 G	50# 81	2799#							
LSDUT	002072 G	80#								
LSDVTY	002174 G 002052 G	71 65#	140#							
LSETP.	002102 G	88#								
LSEXP1	002044 G 002046 G	58# 50#								
LSEXP4	002064 G	74#								
LSEXP5	002066 G 034066 G	76# 37	4253	4254#						
LSHIME LSHPCP	002120 G 002016 G	102# 36#								
LSHPTP	002022 G	40#								
LSHW LSTCP	002204 G 002104 G	90#	152	153#						
L\$ICP L\$INIT	027316 G	91	2598#							
L\$LADP L\$LAST	002026 G 034534 G	44#	4317#	4340						
L\$LOAD	003100 6	86#								
L\$LUN L\$MREV	002074 G 002050 G	82# 62#								
L\$NAME	002000 G	19#								
LSPRIO LSPROT	002074 G 002050 G 002000 G 002042 G 027310 G 002112 G 002062 G 002010 G 034140 G	56# 97	2583#							
LSPRT	002112 G	96#								
L\$REPP L\$REV	002010 G	72# 28#								
L\$SOFT	034140 G	39 68#	4287	4288#						
L\$SPCP		38#								
L\$SPTP L\$STA	002020 G 002024 G 002030 G 002212 G 002114 G	42#								
LSSW LSTEST	002212 6	43	170	171#						
ILSTIML	002114 G	98# 34#								
LSUNIT	002012 6	32#	140#							
L\$UNIT L10000 L10001	002014 G 002012 G 002210 002214	152 170	160#							

SEQ 0147

PARAMETER CODING 2151B.P11 19-AUG-7	MACY11 9 20:26	30(1046)	19-AUG	79 20:	7 PAGE	120 USER S							SEQ 0148
10073 034546 10075 034552 11CERA 014230 11CERB 014304 11CERR 014164 G 11CROE 003561 G 10DUER 002500 G 10D.C0= 000400 G 10D.C1= 001000 G 10D.C2= 002000 G	4334# 4333 1122 1128 1120# 625# 625# 310# 309# 308#	4338# 1136# 1136# 2431 2430 2606											
IOD.C3= 004000 G IOT = 000200 G ISGADR 006040 ISGDFL 002262 G ISGEND= 002276 G	307# 348# 655* 520# 526#	1375 657 3140 3126	1408 670#										
ISGEXT = 000016 G ISGPKT 002260 G	341# 519# 3138	532 530 3267	1555 1558*	1588	1590	1755	1756	1757	1758	1759	1760	1762	2029
ISORT1 017554 G ISORT2 020216 G ISORT3 020704 G IS\$RFC= 000004 G IS\$XSO= 000006 G	2059# 2217# 2421# 354# 355#	3572 3780 4211	3939 4228	4108									
IS\$X\$1= 000010 G IS\$X\$2= 000012 G IS\$X\$3= 000014 G	356# 357# 358#	3267											
INTM 003503 G DDDPAR 015546 G DNEFIL= 000001	625# 1467# 2#	3250 1503 5	1701 182#	185	2588#	2847	2848#	2851	4237	4238#	4240		
OPP.C = 020000 G ORDATA 002400 G ORDTBL 002372 G ORTRAC 002376 G ORTRAD 002402 G ORODTR 002404 G OROTR 002374 G ORATS = 000000	305# 590# 586# 587# 589# 591# 592# 588#	3768 3609* 3766 3767 3770 2266 2265	3927 3821* 3925 3926 3929	4096 3980* 4094 4095 4098									
\$AU = 000001 \$BGNR= 000000 \$BGNS= 000001	4#	16# 72 16#	78 38										
\$DU = 000001 \$ERRT= 000000 \$GNSW= 000001	4#	16# 88 16#	80 42										
\$POIN= 000001 \$SETU= 000001 AIRST 020372 ARGEN 015564	2077 1468	16# 16# 2107 1470#	104 32 2237	4315 2287#									
PATCH 034230 G PCHDR 011530 PCHDRA 011624 PCHDRB 011674 PCHLTB 011436 PCHTAD 011432 PCHT50 011736 PCHT51 012015	4310# 1069 1069 1069 1041 1047* 1070	1081# 1081# 1081# 1069# 1049 1081# 1081#	1064#										

PARAMETER CODING	MACY11 20:26	30(1046)	19-AUG	-79 20:	27 PAGE	G 12 121 - USER S						SEQ 014
PCHT52 012057 PCHT53 012133 PCHT54 012215 PCHT55 012277 PCHT56 012342 PCHT57 012403 PCHT60 012444 PCHT61 012512 PCHT62 012554 PCHT63 012624 PCHT64 013025 PCHT66 013025 PCHT70 013141 PCHT71 013213 PCHT72 013275 PCHT73 013353 PCHT74 013435 PCHT75 013511 PCHT76 013665 PCHT77 013747 PCHT76 013665 PCHT77 013747 PCHT78 013600 PEDATA 016176 G PEDATA 016154 G PEDATA 016154 G PEDATA 01616504 G PEDATA 016154 G PEDATA 016154 G PEDATA 01616504 G PEDATA 016334 G PCHT75 010000 G PCPJL0= 000033 G PCHST= 000000 G PCPJL0= 000000 G	1070 1071 1071 1071 1072 1072 1073 1073 1074 1074 1075 1075 1075 1076 1076 1077 1077 1077 1077 1077 1077	1081# 1081#	3841 3662 3344 1651 552 553 1762	3891 3697 3398 1693# 554 555	3997 3738 3456 1727 556 557	4050 3851 3511 1815 558 559	3900 3835 1822 560 561	4003 3885 1828 562 563	4056 3995 564 565	4048 1517 1516	4138	
PRIOT = 000040 G PRIOZ = 000100 G PRIOZ = 000140 G PRIOZ = 000240 G PRIOZ = 000240 G PRIOZ = 000340 G PRIOZ = 000340 G PRIOZ = 000340 G PRIOZ = 000340 G PRIOZ = 005403 G PRIOZ = 005403 G PRIOZ = 000020 G PRIOZ = 000020 G PRIOZ = 000040 G PRIOZ = 000040 G PRIOZ = 000040 G PRIOZ = 000007 G PRIOZ = 000007 G PRIOZ = 000007 G PRIOZ = 000003 G PRIOZ = 0000003 G PRIOZ = 000003 G PRIOZ = 0000003 G PRIOZ = 0000000 G PRIOZ = 000000 G PRIOZ = 00000 G PRIOZ = 000000	240# 240# 239# 238# 238# 238# 629# 629# 2182 409# 415# 420# 431# 425# 428# 427#		2695 2373#	2778	3263							

PARAMETER CODING	MACY11	30(1046)	19-AUG	-79 20:	27 PAGE	122 ^H 12							
CZTSIB.P11 19-AL	JG-79 20:26		CROSS RI	EFERENCE	27 PAGE TABLE -	- USER S	AMBOLS						SEQ 0150
RD.90 = 000006 G RFC 002264 G ROMCK 017530 G ROMEM 007772 G ROMEMA 010036 ROMER 003373 G ROMEX 017022 G ROMLER 014142 G ROMLKI 002420 G	426# 521# 2028# 866# 672 625# 1885# 1108#	4147 4160 880# 4159 4146 4177 871	4176 1816	1824	1891	1904	1906	1910	1923	1929	1935	1937	1945
ROMLOK 016722 G ROM\$LK = 000013 G SCH = 140004 G SCHBLK 002276 G SCHERA 010244 SCHERB 010376 SCHERC 010512 SCHERC 010512 SCHERE 010752 SCHERF 011036 SCHERF 011036 SCHERF 0111350 SCHERL 014076 SCHERL 014076 SCHERM 014121	1963 1813# 365# 344# 504 900 923 946 970 988 994 1011 1017 1035 1086 1092	2005 4140 2029 503 530# 908# 931# 954# 978# 1002# 1002# 10025# 1062# 1100# 1100#	4137*	4168*									
SCHERN 010606 SCHERR 003047 G SCHERO 014032 G SCHER1 010200 G SCHER2 010332 G SCHER3 010446 G SCHER4 010542 G SCHER5 010706 G SCHER6 011122 G	964 625# 1084# 892# 915# 938# 962# 986# 1009#	978# 3098 3227 3099 3120 3132 3182 3196 3207	3119	3131	3146	3181	3195	3206	3214	3226			
SCHER7 011260 G SCHEXE 015746 G SCHEXT= 000010 G	1033# 1540# 340#	3215 3112 506	3327	3597	3809	3968	4134	4198	4226				
SCHPKT 002240 G SFPTBL 002212 G	503# 172#	1542	3239*	3241	3261 *								
SHWRAP 016020 G SIP = 040000 G SKDAEM 007176 G SKEWER 003270 G	1571 n 347 n 812 n 625 n	2939 3201 3639 3860	3068 3672 3909	3707 3936	3748	3861	3910	4013	4066				
SPECON 003422 G SSROFF 002566 G	625# 625#	1200	1332	2725									
SSRON 002623 G SVCGBL= 000000	625# 4# 38 51 65 79 92 115 676 867 1033	2885 19 39 52 66 80 93 133 677 892 1034	20 40 53 68 81 94 134 702 893	28 41 54 69 82 95 140 703 915 1085	29 42 55 70 83 96 141 728 916 1108	30 43 56 71 84 97 153 729 938 1109	31 44 57 72 85 98 154 754 939 1120	32 45 58 73 86 99 155 755 962 1121	33 46 59 74 87 100 171 780 963 1155	34 47 60 75 88 101 172 781 986 1156	35 48 61 76 89 102 173 812 987 1163	36 49 62 77 90 103 649 813 1009 1164	37 50 63 78 91 114 650 866 1010

ZTSIB.	ER CODI	NG 19-AUG-79	MACY11 20:26	30(1046)	CROSS RI	-79 20:2 EFERENCE	TABLE -	USER S	MBOLS						SEQ 015
	000000		3488 3580 3682 3776 3907 4012 4103 4184 4253 4291 4# 3393 3725 4# 776 958 1139 2738 2941	3489 3616 3704 3777 3908 4013 4104 4185 4257 4292 2873 3394 3827 160 777 981 1140 2789 2942	3495 3636 3705 3778 3909 4031 4105 4190 4258 4293 2874 3451 3828 161 808 982 1159 2790 2999	3507 3637 3706 3785 3910 4032 4106 4202 4259 4296 2921 3452 3877 179 1005 1160 2815 3000	3545 3638 3707 3786 3922 4036 4116 4203 4260 4303 2922 3506 3878 180 862 1006 1167 2816 3065	3546 3639 3721 3791 3934 4040 4157 4204 4262 4314 3026 3507 3986 672 863 1028 1168 2842 3066	3547 3645 3725 3828 3935 4063 4158 4205 4263 4315 3027 3615 3987 673 883 1029 1175 2843 3076	3548 3649 3745 3858 3936 4064 4159 4206 4264 4316 3087 3616 4039 698 884 1066 1176 2898 3077	3554 3669 3746 3859 3937 4065 4160 4207 4265 4329 3088 3648 4040 699 911 1067 1183 2899 3105	3567 3670 3747 3860 3948 4066 4174 4208 4266 4330 3109 3649 724 912 1103 1184 2903 3106	3568 3671 3748 3861 3987 4086 4175 4209 4269 4331 3110 3681 725 934 1104 2679 2904 3231	3569 3672 3762 3874 4010 4087 4176 4215 4275 4332 3341 3682 750 935 1116 2680 2933 3232	3570 3678 3775 3878 4011 4091 4177 4233 4287 4333 3342 3724 751 957 1117 2737 2934 3276
vctst=	000000		2941 3277 3677 3948 4276 4#	3382 3678 4035 4277 2870	3383 3720 4036 4304 2871	3440 3721 4090 4305 3016	3441 3761 4091 4334 3017	3494 3762 4115 4335 3084	3495 3790 4116 4338 3085	3553 3791 4189 4339 3324	3554 3873 4190 3325	3579 3874 4214 3594	3580 3921 4215 3595	3644 3922 4232 3806	3645 3947 4233 3807
	010000		3965 306#	3966	4130	4131	4195	4196	4220	4221					
SLSYM= AEM AEMA AEMB AEMC AERR	010000 006716 007016 007067 007123 003220	G	958# 2738# 3277# 3948# 780# 783 790 797 625#	161# 982# 2790# 3383# 4036# 3377 805# 805# 805# 3569	180# 1006# 2816# 3441# 4091# 3435	673# 1029# 2843# 3495# 4116# 3489	699# 1067# 2876# 3554# 4190# 3548	725# 1104# 2904# 3580# 4215#	751# 1117# 2924# 3645# 4233#	777# 1140# 2942# 3678# 4277#	809# 1160# 3000# 3721# 4305#	863# 1168# 3066# 3762#	884# 1176# 3077# 3791#	912# 1184# 3106# 3874#	935# 2680# 3232# 3922#
AER1 AER2 ALOAD	003100 003150 015626	G	625# 625# 1495# 3463	3376 3434 3351 3465	3488 3547 3353 3466	3354 3467	3355 3469	3357 3470	3358 3518	3405 3520	3407 3522	3409 3523	3410 3525	3412 3526	3413
CFCMK= EMPO	177701 002430		299# 605# 1896*	2423 1467* 1909*	1469* 1915*	1475* 1944*	1479* 1950*	1504 1964*	1702 1965*	1716* 1966	1718* 1974	1721 * 1981	1722 * 2006 *	1724 2007*	1890* 2010
EMP1	002432	G	2012 606# 1726*	685 1763*	711 1773*	1646* 1780*	1648* 1798*	1650* 1814*	1694 1818*	1696 1821*	1698 1823*	1707 2059*	1716 2146*	1720 2154	1725 * 2961 *
EMP2	002434	G	2963 607#	3038* 737	3040 763	1195*	1204	1326*	1336	1470*	1471*	1762*	1766*	2974*	2977•
ERMA ERMTB ERMO1 ERMO2 ERMO3 ERMO5 ERMO6	010142 014532 003630 003651 003714 003775 004056	G G G	2979 886# 1196 629# 629# 629# 629#	3051* 1205 1217# 1217 1217 1217 1218 1218	3053 1337 1328									N/e	

PARAMETER CODING CZTSIB.P11 19-AUG-7		30(1046)	19-AUG CROSS R	-79 20: EFERENCE	27 PAGE TABLE -	K 12 125 - USER S							SEQ 0153
TERMO7 004155 G TERM10 004231 G TERM11 004306 G TERM12 004411 G TERM13 004476 G TERM14 004547 G TERM15 004620 G TERM16 004705 G	629# 629# 629# 629# 629# 629#	1219 1219 1219 1220 1220 1220 1221 1221											
TERM17 004776 G TIME 002426 G	604#	1221	1193*	1232*	1247*	1250*	1252	1280	1290*	1293*	1295	1323	1385 •
TKACER 016044 G TRAPD4 030050	1388* 1588# 2693*	1390 3365 2707	1420 3420 2758*	3477 2761#	3533								
TRAP4 030042 TSBA 002220 G	2696	2757# 2650*	2651	2961	3038	3126							
TSBAHI 002222 G TSDB 002214 G TSDBHI 002216 G	485# 482# 483#	2651* 1395* 2653*	2652* 1532* 2654*	1542*	2648*	2649*	2650	2653	3028*	3241*			
TSSR 002224 G TSVCT 002226 G TS.NBA= 002000 G	486# 2927 487# 295#	1191 2935* 2655* 3093	1195 2974 2662 3114	1255 3020* 2775	1298 3023	1326 3051	2422 3090*	2647* 3093	2648 3114	2702 3153	2710 3187	2721 4222*	2880
TS.SPE = 020000 G TS.SSR = 000200 G TS.XAO = 000400 G	297N 294N 293N	3187 1255 2910	1298 2975	2721	2880	2927	3023						
TS.XA1= 001000 G TS11BD 005037 G TS4ADR 034112 TS4CL 002424 G TS4INT 002306 G	292N 629N 4258 603N 536N	2913 678 4271# 3267* 2661	2975 756 3268*	894	917	940	2888						
TS41NO 014370 G TS41N1 014400 G TS41N2 014410 G TS41N3 014420 G TS4VCT 034127	536 537 538 539 4263	1155# 1163# 1171# 1179# 4271#											
T\$CODE = 031004	20# 708 789# 855 946# 1021 1128# 1427 2202# 2396 2724# 4257#	21 m 710 m 794 868 m 950 1035 m 1132 1434 m 2206 2401 m 2729 4262 m	22# 717 796# 876 964# 1039 1203# 1438 2242# 2405 2888# 4269#	23# 730# 801 894# 968 1049# 1209 2082# 2246 2410# 2892 4291#	24# 734 814# 898 970# 1053 1283# 2086 2271# 2414 3253# 4296#	25# 736# 819 900# 974 1086# 1287 2114# 2275 2441# 3257	657# 743 821# 904 988# 1090 1335# 2118 2344# 2445	661 756# 825 917# 992 1092# 1341 2126# 2348 2473#	678# 760 827# 921 994# 1096 1347# 2130 2353# 2477	682 762# 835 923# 998 1110# 1351 2138# 2357 2489#	684# 769 837# 927 1011# 1114 1378# 2142 2362# 2494	691 782# 845 940# 1015 1122# 1382 2170# 2366 2710#	704# 787 847# 944 1017# 1126 1423# 2174 2392# 2715
TSERRN= 000022	3145N 3670N	1199# 3180# 3705#	1331# 3194# 3746#	2429# 3205# 3776#	2605# 3213# 3859#	2884# 3225# 3908#	2967# 3249# 3935#	2983# 3375# 4011#	3044# 3433# 4064#	3057# 3487# 4104#	3097# 3546# 4158#	3118# 3568# 4175#	3130# 3637#
T\$EXCP= 000000 T\$FLAG= 000041	4257# 668# 859 1023# 2837	4261 670 878# 1025 2947#	4262# 693# 880 1060# 3271#	4267 695 906# 1062 3785#	719# 908 1098# 4031#	721 929# 1100 4086#	745# 931 1134# 4184#	747 952# 1136 4269#	771# 954 2669# 4296#	773 976# 2782#	803# 978 2808#	805 1000# 2810	857# 1002 2835#
1\$FREE = 034552	4315	4340#											

PARAMETER CODING CZTS1B.P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG CROSS R	-79 20: EFERENCE	27 PAGE TABLE -	126 - USER S	YMBOLS						SEQ 0154
T\$GMAN= 000000 T\$HIL1= 000776 T\$LAST= 000001 T\$LOL1= 000060	4257N 4257N	4260 4315# 4259	4262# 4328 4262#	4266 4265	400	726	761	777	800	947	994	013	075
T\$LSYM= 010000	958 2738 3441 4091	161 982 2790 3495 4116	180 1006 2816 3554 4190	673 1029 2843 3580 4215	699 1067 2904 3645 4233	725 1104 2942 3678 4277	751 1117 3000 3721 4305	777 1140 3066 3762	809 1160 3077 3791	863 1168 3106 3874	884 1176 3232 3922	912 1184 3277 3948	935 2680 3383 4036
T\$LTNO= 000012 T\$NEST= 177777	4318# 724# 915# 1103# 2574# 2842# 3017# 3394# 3720# 4040# 4275#	9# 728# 934# 1108# 2583# 2846# 3027# 3440# 3725# 4090# 4287#	152M 750M 938M 1116M 2588M 2851M 3065M 3452M 3761M 4115M 4296	160# 754# 957# 1120# 2592# 2871# 3076# 3494# 3790# 4131# 4303#	170# 776# 962# 1139# 2598# 2874# 3085# 3507# 4189# 4320#	179# 780# 981# 1155# 2679# 2876# 3088# 3553# 3828# 4196#	182# 808# 986# 1159# 2690# 2898# 3105# 3579# 3873# 4214#	186 M 812 M 1005 M 1163 M 2737 M 2903 M 3110 M 3595 M 3878 M 4221 M	649N 862N 1009N 1167N 2772N 2922N 3231N 3616N 3921N 4232N	672# 866# 1028# 1171# 2789# 2924# 3276# 3644# 3947# 4236#	676# 883# 1033# 1175# 2799# 2933# 3325# 3649# 3966# 4242#	698# 892# 1066# 1179# 2815# 2941# 3342# 3677# 3987# 4253#	702# 911# 1084# 1183# 2826# 2999# 3382# 3682# 4035# 4269
T\$NSO = 000000 T\$NS1 = 000005	9# 152# 776 962# 1139 2772# 3579 4253#	182 160 780# 981 1155# 2789 3595# 4269	186# 170# 808 986# 1159 2799# 3790 4275	2574 179 812# 1005 1163# 2815 3807# 4287#	2583# 649# 862 1009# 1167 2826# 3947 4296	2588 672 866# 1028 1171# 2842 3966# 4303	2592# 676# 883 1033# 1175 2871# 4115	2846 698 892# 1066 1179# 2999 4131#	2851# 702# 911 1084# 1183 3017# 4189	4236 724 915# 1103 2598# 3076 4196#	4242# 728# 934 1108# 2679 3085# 4214	4320 750 938# 1116 2690# 3276 4221#	754# 957 1120# 2737 3325# 4232
T\$NS2 = 000002 T\$NS3 = 000003 T\$PCNT = 000000 T\$PTAB = 010074 T\$PTHV = 000001 T\$PTNU = 000001 T\$SAVL = 177777	2874# 3440 3828# 2876# 4329# 33 4#	2903 3452# 3873 2898 4329# 4335 4340# 4335#	2922# 3494 3878# 2924#	2941 3507# 3921 2933	3027# 3553 3987#	3065 3616# 4035	3088# 3644 4040#	3105 3649# 4090	3110 <i>n</i> 3677	3231 3682#	3342 <i>n</i> 3720	3382 3725#	3394# 3761
T\$SEGL= 177777 T\$SEKO= 010000 T\$S1ZE= 000007 T\$SUBN= 000000	2876# 4316 4#	2876# 2898 4340# 2870#	2898# 2924# 2873#	2900 2933 2921#	3016#	2933# 3026#	2935 3084#	3087#	3109#	3324#	3341#	3393#	3451#
T\$TAGL= 177777 T\$TAGN= 010076	3506N 4195N 4N 938N 2598N 3325N	3594N 4220N 152N 962N 2690N 3342N	3615# 170# 986# 2772# 3394#	3648# 1009# 2799# 3452#	3681# 676# 1033# 2826# 3507#	702# 1084# 2871# 3595#	728# 1108# 2874# 3616#	754# 1120# 2922# 3649#	780# 1155# 3017# 3682#	3965# 812# 1163# 3027# 3725#	3986# 866# 1171# 3085# 3807#	892# 1179# 3088# 3828#	915# 2583# 3110# 3878#
T\$TEMP= 000000	3966# 115# 182# 771# 907 1005# 1139#	911#	4040# 117# 669 776# 929# 1024 1167#	4131# 118# 672# 803# 930 1028# 1175#	4196# 119# 693# 804 934# 1060# 1183#	4221# 120# 694 808# 952# 1061 2574#	4253# 121# 698# 857# 953 1066# 2588#	4287# 122# 719# 858 957# 1098# 2669#	4328# 123# 720 862# 976# 1099 2670	4329# 124# 724# 878# 977 1103# 2679#	4333 <i>n</i> 125 <i>n</i> 745 <i>n</i> 879 981 <i>n</i> 1116 <i>n</i> 2737 <i>n</i>	160# 746 883# 1000# 1134# 2782#	179# 750# 906# 1001 1135 2783

PARAMETER CODING CISIB.P11 19-AUG-79		30(1046)	19-AUG- CROSS RE	FERENCE	TABLE	M 12 127 USER S1	MBOLS						SEQ 0155
	2789# 2948 3579# 4035# 4269#	2808# 2999# 3644# 4086# 4275#	2809 3065# 3677# 4087 4291#	2815# 3076# 3720# 4090# 4296#	2835# 3105# 3761# 4115# 4303#	2836 3231# 3785# 4184# 4320#	2842# 3271# 3786 4185	2846# 3272 3790# 4189#	2898# 3276# 3873# 4214#	2903# 3382# 3921# 4232#	2933# 3440# 3947# 4236#	2941# 3494# 4031# 4257#	2947# 3553# 4032 4262#
1\$1EST= 000012	3506	2870# 3594#	2873 3615	2921 3648	3016# 3681	3026 3724	3084# 3806#	3087 3827	3109 3877	3324# 3965#	3341 3986	3393 4039	3451 4130#
\$151M= 177777	4195# 768 884 991 1117 1330 2205 2604 2776 2922 3088 3235 3486 3682 3907	4220# 660 777 897 1125 1340 2245 2621 2779 2924 3096 3248 3495 3704 3922	4318 673 786 903 1006 1131 1350 2274 2628 2782 2934 3106 3256 3507 3721 3934	681 793 912 1014 1140 1381 2347 2639 2790 2942 3110 3264 3545 3725 3948	690 800 920 1020 1190 1406 2356 2644 2816 2947 3117 3271 3554 3745 3987	699 809 926 1029 1198 1426 2365 2664 2843 2966 3129 3277 3567 3762 4010	707 818 935 1038 1208 1429 2395 2669 2874 2982 3144 3342 3580 3775 4031	716 824 943 1052 1228 1437 2404 2680 2876 3000 3179 3374 3616 3785 4036	725 834 949 1067 1231 2085 2413 2699 2878 3027 3193 3383 3636 3791 4040	733 844 958 1089 1236 2117 2428 2705 2883 3043 3204 3394 3645 3828 4063	742 854 967 1095 1271 2129 2444 2714 2891 366 3212 3432 3649 3858 4086	751 863 973 1104 1286 2141 2476 2728 2899 3066 3224 3441 3669 3874 4091	759 875 982 1113 1314 2173 2493 2738 2904 3077 3232 3452 3678 3878 4103
\$TSTS = 000001 \$\$AU = 010035 \$\$AUT = 010032 \$\$CLE = 010033 \$\$DAT = 010075 \$\$DU = 010034 \$\$HAR = 010071 \$\$HW = 010000 \$\$INI = 010031	4116 4N 2826N 2690N 2772N 4333N 2799N 4253N 152N 2598N	4157 2871# 2835 2737 2782 4338 2808 4269 160 2669	4174 3017# 2842 2789 2815 4276 2679	4184 3085#	4190 3325#	4215 3595#	4233 3807#	3966#	4131#	4196#	4221#		
\$\$MSG= 010023	649# 771 911 1009# 1139	668 776 915# 1023	672 780# 929 1028	676# 803 934 1033#	693 808 938# 1060	698 812# 952 1066	702# 857 957 1084#	719 862 962# 1098	724 866# 976 1103	728# 878 981 1108#	745 883 986# 1116	750 892# 1000 1120#	754# 906 1005 1134
#\$\$PC = 000001 #\$\$PRO= 010030 #\$\$PTA= 010074 #\$\$SEG= 010000 #\$\$SOF= 010072 #\$\$SRV= 010027 #\$\$SUB= 010065	4328# 2583# 4328# 2876# 4287# 1155# 2874# 3440	4340 4334 2898# 4296 1159 2903 3452#	4335# 2924# 4304 1163# 2922# 3494	2933# 1167 2941 3507#	1171# 3027# 3553	1175 3065 3616# 4031	1179# 3088# 3644 4035	1183 3105 3649# 4040#	3110# 3677 4086	3231 3682# 4090	3342# 3720	3382 3725#	3394# 3761
T\$\$SW = 010001 T\$\$TES= 010070 T1 030130 G T1DATA 030216 T1WRAP 030332 T1.1 030130 T1.2 030254 T10 034042 G	3828# 170# 2871# 3807# 115 2907# 2929 2873# 2921# 124	3873 179 2947 3947 2870# 2944 2951#	3878# 2999 3966#	3921 3017# 4115	3987# 3076 4131#	3085# 4184	3271 4189	3276 4196#	3325# 4214	3579 4221#	3595# 4232	3785	3790

ARAMET ZTS1B.	ER CODING P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG	-79 20: EFERENCE	27 PAGE	128 - USER S	SYMBOLS						SEQ 015
2 2SHFT	030464 G 030634	116 3024	3016# 3069#											
2WRAP 2.1	030634 030470 030510 030644 G	3020#	3070											
3.1	030510	3026#	3084#											
3.1	030644 030710	3087#	3004#											
3.2	030710 031336 G	3109#	3324#											
4.1	031346	3341# 3393#	3324#											
4.2	031502 031656	3393#												
4.1	032014	3451 M 3506 M												
5	032014 032232 G	119	3594#											
5.2	032266 032350	3615# 3648#												
5.3	032434	3681#												
5.4	032532 032674 G	3724# 120	3806#											
5.1	032730	3827#	3000#											
2.2	033060 033256 G 033312 033442 033640 G	3877#	3965#											
7.1	033312	121 3986#	3903#											
.2	033442	4039#	/170#											
3	033774 G	122	4130# 4195#											
AM =	000200 G	252#												
NTM	003520 G 002422 G	625N 602N	684	710	736	762	782	814	868	1203	1335	2667.	272/	
AITEM	015456	1423	1451#	110	750	102	102	014	000	1203	1333	2667*	2724	
AITMR	015144 015420	1283 1378	1358#											
TMT	015174 G	1370#	3329	3599	3811	3970	4136	4200						
AITSR	014616 G	1245#	1540	1543	2901	2925	2937	3022	3091	3243	4224			
RAPR1	006044 G 006220 G	676# 702#	2969 3046											
APR3	006372 G	728#	3059											
APR4	006544 G 002706 G	754N 625N	2985 2968											
PER2	002740 G	625#	2984											
PER3	003015 G 000200 G	625 M 283 M	3045 1632	3058										
PLO =	000005 G	282#	1631											
4SSR	014430 G	1188#	1530	1533										
ORDA	017074 017162	1899 1905	1904#	1918	1923#									
IULT	017244	1938	1943#											
REAM	017312 017456	1953 2005#	1962#											
OTATO	002266 G	522#	1375	1408										
TATE	002270 G	523#	3189											
STAT3	002270 G 002272 G 002274 G	524N 525N	2433	3201										
ALWA=	000000	4#	4269	4296										
OFFS=	000040 000400 000020	4#	4269	4296										

PARAMETER CODING CZTSIB.P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG CROSS R	-79 20:	27 PAGE TABLE -	129 - USER S	YMBOLS						SEQ 015
x00F9 017200 x80F9 017026 x90F9 017216	1924 1889# 1930	1929# 1935#											
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\$F\$AND= 000310	2113 2440 3128 3742	654 2125 2452 3140 3774	1046 2137 2638 3189 3855	1257 2156 2709 3203 3904	1282 2162 2723 3247 3933	1300 2220 2882 3371 4007	1325 2241 2929 3429 4060	1377 2270 2965 3483 4102	1410 2290 2981 3542 4152	1422 2293 3042 3566 4156	1557 2305 3055 3633 4173	1790 2308 3095 3666	2081 2427 3116 3701
\$F\$BLA= 000170 \$F\$CAS= 000150	1250 1395 1782 2106 2189 2296 2457 2693 3128 3373 3601 3821 4096 4#	654 1257 1410 1790 2109 2191 2305 2459 2702 3143 3422 3604 3857 4098 1279	655 1282 1422 1794 2113 2196 2308 2462 2709 3153 3425 3609 3906 4102 1322	663 1290 1552 1796 2125 2220 2309 2464 2723 3156 3431 3635 3925 4152 1419	1041 1293 1557 2029 2137 2221 2316 2467 2758 3192 3479 3668 3927 4156	1046 1300 1558 2061 2156 2226 2422 2479 2882 3203 3485 3703 3929 4173	1047 1325 1560 2066 2157 2231 2427 2481 2929 3237 3535 3744 3933	1055 1326 1590 2071 2162 2236 2433 2625 2965 3239 3538 3766 3972	1157 1328 1631 2076 2163 2241 2436 2632 2981 3241 3544 3768 3975	1165 1377 1741 2081 2165 2265 2440 2634 3042 3247 3558 3770 3980	1173 1385 1744 2091 2176 2270 2452 2638 3055 3261 3560 3774 4009	1181 1388 1749 2096 2179 2290 2453 2657 3095 3267 3562 3813 4062	1247 1393 1762 2101 2187 2295 2455 2667 3116 3367 3566 3816 4094
\$f\$DEC = 000220 \$f\$DO = 000340 \$f\$f AL = 000405 \$f\$GOO = 000400	1055 1250 1327 1408 1632	654 2341 651 1056 1251 1328 1420 1741	1046 2389 652 1157 1254 1329 1552 1742	1557 3176 655 1158 1255 1375 1553 1744	656 1165 1280 1385 1554 1745	663 1166 1290 1386 1555 1748	664 1173 1291 1388 1558 1749	1041 1174 1293 1389 1559 1750	1042 1181 1294 1392 1560 1762	1043 1182 1297 1393 1561 1763	1044 1211 1298 1394 1590 1782	1047 1247 1323 1395 1591 1783	1048 1248 1326 1396 1631 1787

PARAMETER CODING CZTSIB.P11 19-AUG-7		30(1046)	19-AUG CROSS R	-79 20: EFERENCE	27 PAGE TABLE -	C 13 130 - USER S							SEQ 0158
SF\$1F = 000110	1788 2071 2102 2102 2160 2191 2232 2437 2463 2721 3022 3138 3241 3369 3540 3770 3853 3973 4099 1408 2132 2239 2306 2636 2979 3140 3379 3633 4068	1794 2072 2105 2105 2105 2105 2105 2	1795 2075 2106 2196 2196 22309 2466 2759 3153 3243 3592 37725 3976 4108 12144 2253 2707 3187 3429 3664 3127 3129 3129 3129 3129 3129 3129 3129 3129	1796 2076 2107 2165 2197 2237 22457 22880 3154 3245 3154 3245 3154 3245 3154 3154 3154 3166 3178 3189 3189 3189 3189 3189 3189 3189 318	1797 2077 2109 2109 2239 22470 2658 2894 3155 3261 33927 3980 1240 2150 2150 2259 2316 2450 2450 2450 2450 2450 2450 2450 2450	2029 2079 2176 22176 22176 22176 22176 2479 2659 2901 3068 3156 3156 3156 3156 3156 3156 3156 3156	2030 2091 2111 2178 2266 2422 2456 2456 2667 3093 3167 3563 3929 4071 1788 2154 2273 3154 2177 2438 2734 3701 3701 3701 3701 3701 3701 3701 3701	2061 2092 2123 2123 2129 22267 2423 2423 2423 2423 2423 2423 2423 242	2062 2095 2135 2182 2268 2424 2458 2458 2458 2458 2458 2458 245	2065 2096 2154 2187 2288 2425 2625 2694 2963 3114 3237 3535 3766 3939 4095 4211 1344 2088 2293 2486 2927 3124 3550 3742 4007	2066 2097 2157 2188 2227 2433 2460 2626 2702 2971 3122 3238 3537 3599 3537 3599 3540 2298 4096 4224 1353 2111 2298 2496 2931 3126 3259 3564 3750 4015	2067 2100 2158 2189 2230 2296 2435 2461 2632 2703 2979 3126 3239 3367 3538 3601 3768 3821 3970 4097 4226 1355 2120 2212 2300 2498 2963 31369 3574 3678 3772 4058	2070 2101 2159 2190 2231 2297 2436 2462 2633 2707 2987 3134 3240 3368 3539 3602 3769 3822 3972 4098 4228 1375 2123 2218 2303 2500 2973 3138 3371 3631 3782 4060 3823
SF\$LOO= 000200 SF\$NAM= 000160 SF\$NO = 000403	3972 4# 4# 1157 1323 1552 1762 2066 2165 2200 2268 2424 2458 2625 2702 3140 3242 3535 3768 3980	3982 1246 652 1158 1326 1553 1763 2070 2107 2168 2218 2288 2425 2459 2626 2703 3153 3261 3537 3769 3981	1278 655 1165 1327 1555 1782 2071 2109 2176 2221 2291 2433 2461 2632 2721 3155 3262 3538 3770 4094	1289 656 1166 1328 1558 1787 2075 2110 2178 2225 2293 2435 2435 2462 2633 2758 3156 3267 3539 3771 4096	1321 663 1173 1329 1559 1788 2076 2111 2179 2226 2436 2436 2436 2463 2634 2759 3160 3269 3558 3772 4097	1384 664 1174 1375 1560 1794 2077 2123 2182 2230 2297 2437 2464 2635 2880 3187 3560 3821 4098	1418 1041 1181 1393 1561 1795 2079 2135 2187 2231 2303 2438 2466 2927 3189 3368 3561 3822 4099	1042 1182 1394 1590 1796 2091 2154 2188 2235 2306 2450 2467 2657 2963 3201 3422 3562 3925 4100	1044 1255 1395 1591 1797 2095 2157 2189 2236 2309 2453 2470 2659 2979 3237 3424 3563 3927	1047 1259 1396 1631 2029 2096 2159 2159 2310 2454 2479 2667 3093 3238 3425 3564 3928	1048 1280 1408 1632 2030 2100 2160 2191 2239 2316 2455 2480 2668 3114 3239 3426 3609 3929	1055 1298 1412 1749 2061 2101 2163 2194 2265 2317 2456 2481 2693 3126 3240 3479 3610 3930	1056 1302 1420 1750 2065 2105 2164 2196 2267 2422 2457 2482 2694 3138 3241 3480 3766 3931

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\$F\$OR = 000320	2113 2427 3116 3544 3904	654 2125 2440 3128 3566 3906	1046 2137 2452 3140 3633 3933	1257 2156 2638 3189 3635 4007	1282 2162 2709 3203 3666 4009	1300 2220 2723 3247 3668 4060	1325 2241 2882 3371 3701 4062	1377 2270 2929 3373 3703 4102	1410 2290 2965 3429 3742 4152	1422 2293 2981 3431 3744 4156	1557 2295 3042 3483 3774 4173	1790 2305 3055 3485 3855	2081 2308 3095 3542 3857
\$F\$RTN= 000300 \$F\$SEL= 000140	4#	2326	2342	2350	2359	2368	2374	2390	2398	2407	2416	3161	3177
\$F\$THE = 000330	3184 4# 2156 2709 3203 3906	3221 1257 2162 2723 3247 3933	3229 1282 2220 2882 3373 4009	1300 2241 2929 3431 4062	1325 2270 2965 3485 4102	1377 2290 2981 3544 4152	1410 2295 3042 3566 4156	1422 2305 3055 3635 4173	1790 2308 3095 3668	2081 2427 3116 3703	2113 2440 3128 3744	2125 2452 3143 3774	2137 2638 3192 3857
\$F\$TRU= 000404	3185	2342 3221	2350 3222	2351	2359	2360	2390	2398	2399	2407	2408	3177	3184
\$F\$UNT = 000130 \$F\$WHI = 000120	4#	2471 651	2483	665	1043	1044	1057	1554	1555	1562	2293	3140	3189
\$F\$YES= 000402	3371 4# 1260 1394 1632 2079 2148 2194 2255 2310 2454 2626 2734 3063 3189 3368 3537 3641 3772 3941 4150	3429 652 1273 1396 1750 2088 2150 2259 2311 2456 2633 2759 3093 3198 3369 3539 3664 3782 3981 4154	3483 656 1280 1408 1763 2095 2152 2208 2267 2313 2458 2635 2880 3103 3201 3371 3540 3666 3822 4005 4162	3542 664 1298 1413 1787 2100 2154 2210 2268 2317 2461 2636 2896 3114 3209 3379 3542 3674 3853 4007 4164	3633 1042 1303 1420 1788 2105 2212 2277 2318 2463 2641 2927 3124 3217 3424 3550 3699 3855 4015 4171	3666 1044 1316 1431 1792 2107 2160 2218 2288 2320 2466 2659 2931 3126 3219 3426 3560 3701 3863 4058 4179	3701 1048 1323 1440 1795 2110 2164 2225 2291 2424 2470 2668 2963 3136 3238 3427 3561 3709 3902 4060	3742 1056 1327 1442 1797 2111 2168 2230 2293 2425 2480 2694 2973 3138 3240 3429 3563 3740 3904 4068	3855 1158 1329 1553 2030 2120 2178 2235 2297 2435 2297 2435 2703 2979 3140 3242 3437 3564 3742 3912 4096	3904 1166 1344 1555 2065 2123 2182 2237 2298 2437 2486 2707 2989 3151 3245 3480 3574 3750 3927 4097	4007 1174 1353 1559 2070 2132 2184 2239 2300 2438 2496 2718 3040 3155 3259 3481 3610 3768 3928 4099	4060 1182 1355 1561 2075 2135 2188 2248 2303 2447 2498 2721 3050 3160 3262 3483 3631 3769 3930 4100	1255 1375 1591 2077 2144 2190 2253 2306 2450 2500 2732 3053 3187 3269 3491 3633 3771 3931 4110
\$1FLEV= 177777	1440# 2208# 2306# 2721# 3053# 3219# 3631# 3912#	1255# 1442# 2210# 2311# 2732# 3063# 3245# 3641# 3931#	1273# 1788# 2212# 2318# 2734# 3093# 3259# 3664# 3941#	1280# 1792# 2218# 2320# 2880# 3103# 3369# 3674# 4005#	1298# 2079# 2239# 2425# 2896# 3114# 3379# 3699# 4015#	1316# 2111# 2253# 2438# 2927# 3124# 3427# 3709# 4058#	1323# 2123# 2259# 2450# 2931# 3126# 3437# 3740# 4068#	1353M 2135M 2268M 2496M 2963M 3136M 3481M 3750M 4100M	1355# 2148# 2277# 2498# 2973# 3138# 3491# 3772# 4110#	1375# 2150# 2288# 2500# 2979# 3151# 3540# 3782# 4150#	1408# 2152# 2291# 2636# 2989# 3187# 3550# 3853# 4154#	1413# 2154# 2298# 2641# 3040# 3201# 3564# 3863# 4162#	1420# 2160# 2303# 2707# 3050# 3217# 3574# 3902# 4164#
\$15K0 = 000001	4171# 1255# 2277 2963# 3136 3540# 3782 4150#	4179# 1273 2288# 2973 3138# 3550 3853# 4164	1280# 2320 2979# 3151 3564# 3863 4171#	1355 2425# 2989 3187# 3574 3902# 4179	1375# 2500 3040# 3219 3631# 3912	1442 2636# 3050 3245# 3641 3931#	1788# 2641 3053# 3259 3664# 3941	1792 2707# 3063 3369# 3674 4005#	2079# 2734 3093# 3379 3699# 4015	2212 2880# 3103 3427# 3709 4058#	2218# 2896 3114# 3437 3740# 4068	2259 2927# 3124 3431# 3750 4100#	2268# 2931 3126# 3491 3772# 4110

PARAMETER CODING CZTSIB.P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG	79 20:	7 PAGE	132 - USER S	MBOLS						SEQ 0160
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PARAMETER CODING CZTSIB.P11 19-AUG-79	MACY11 20:26	30(1046)	19-AUG CROSS R	-79 20: EFERENCE	27 PAGE TABLE -								SEQ 0165
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\$\$LOC = 033754	3939# 4# 1376# 2113 2269# 2330 2708# 3042 3190# 3431 3634# 3744 4006#	3968# 653# 1377 2124# 2270 2377# 2709 3054# 3191 3482# 3635 3773# 4007	3970# 654 1409# 2125 2289# 2378 2722# 3055 3202# 3483 3665# 3774 4008#	4108# 1045# 1410 2136# 2290 2426# 2723 3094# 3203 3484# 3666 3854# 4009	4136# 1046 1421# 2137 2292# 2427 2881# 3095 3246# 3485 3667# 3855 4059#	4198# 1256# 1422 2155# 2293 2439# 2882 3115# 3247 3541# 3668 3856# 4060	4200# 1257 1556# 2156 2294# 2440 2928# 3116 3370# 3542 3700# 3857 4061#	4211# 1281# 1557 2161# 2295 2451# 2929 3127# 3371 3543# 3701 3903# 4062	4224# 1282 1789# 2162 2304# 2452 2964# 3128 3372# 3544 3702# 3904 4101#	4226# 1299# 1790 2219# 2305 2484# 2965 3141# 3373 3565# 3703 3905# 4102	4228# 1300 2080# 2220 2307# 2485 2980# 3142 3428# 3566 3741# 3906 4151#	1324# 2081 2240# 2308 2637# 2981 3164# 3429 3632# 3742 3932# 4152	1325 2112# 2241 2329# 2638 3041# 3165 3430# 3633 3743# 3933 4155#
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\$\$1GS2= 000000 \$\$10 = 000000	2987# 3113 3572# 3940 4211#	1211# 2988 3122# 3573 3968# 4212	1212 3022# 3123 3597# 3969 4224#	2894# 3023 3134# 3598 3970# 4225	2895 3048# 3135 3599# 3971 4226#	2901# 3049 3149# 3600 4108# 4227	2902 3061# 3150 3780# 4109 4228#	2937# 3062 3243# 3781 4136# 4229	2938 3068# 3244 3809# 4137	2939# 3069 3327# 3810 4198#	2940 3101# 3328 3811# 4199	2971# 3102 3329# 3812 4200#	2972 3112# 3330 3939# 4201
\$\$\$TAG= 050000 = 034552	746 977 1257 1377 2112	138# 772 979# 1267 1402 2113	142# 804 1001 1269 1404 2124	492# 806# 1024 1281 1409 2125	501# 858 1026# 1282 1410 2136	510# 879 1045 1299 1421 2137	526 881# 1046 1300 1422 2155	630# 887# 1061 1310 1556 2156	653 907 1082# 1312 1557 2161	654 930 1099 1324 1789 2162	669 932# 1101# 1325 1790 2219	694 953 1135 1362# 2080 2220	720 955# 1256 1376 2081 2240
	2241 2329 2614 2881 3041 3165 3429	2269 2330 2616 2882 3042 3190 3430	2270 2377 2637 2928 3054 3191 3431	2289 2378 2638 2929 3055 3202 3482	2290 2426 2670 2948 3094 3203 3483	2292 2427 2708 2958 3095 3246 3484	2293 2439 2709 2960 3115 3247 3485	2294 2440 2722 2964 3116 3272 3541	2295 2451 2723 2965 3127 3370 3542	2304 2452 2762# 2980 3128 3371 3543	2305 2484 2783 2981 3141 3372 3544	2307 2485 2809 3035 3142 3373 3565	2308 2571# 2836 3037 3164 3428 3566

PARAMETER CODING CZTSIB.P11 19-AUG-79		30(1046)		-79 20: EFERENCE	27 PAGE TABLE -								SEQ 0166
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ARAMETER ZTSIB.P1		-AUG-79	MACY11 20:26	30(1046)	19-AUG CROSS R	-79 20: EFERENCE	27 PAGE TABLE -	140 - MACRO							SEQ 016
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SNINI SNMOD SNMSG SNPRO SNPTA	2# 2# 1008 2# 2#	1032	2597 8 648 1083 2582 4328	185 675 1107	2591 701 1119	2850 727	4241 753	779	811	865	891	914	937	961	985
NRPT NSEG NSET	2 N 2 N	4#	2875 4327	2923											
ISFT ISRV ISUB	2# 2# 2# 3826	4# 4# 3876	4286 1154 2872 3985	1162 2920 4038	1170 3025	1178 3086	3108	3340	3392	3450	3505	3614	3647	3680	3723
TST OMP	211	4#	169 2869 2622	3015 2645	3083	3323	3593	3805	3964	4129	4194	4219			
RRO AK	511	4#	1189	1270	1313	1405									
	2# 2# 3133 4135	1210 3148 4197	2877 2893 3242 4199	2900 3326 4210	2936 3328 4223	2938 3571 4225	2970 3596 4227	2986 3598	3021 3779	3047 3808	3060 3810	3067 3938	3100 3967	3111 3969	3121 4107
E OOP CK SE VEC MEN LLO LAR	2n 2n 2n 2n 2n 2n 2n	2341 4# 4# 4# 4# 4#	2703	2358	4223 2389	2397	2406	3176	3183	3220					
R RU AUL AY CRI TYP	2 n 2 n 2 n 2 n 2 n 2 n 2 n 2 n 2 n	4#	1261 132 139 112	1304	1396	2608	2952	3029	4201						
LN U	2#	4#	1235 1226	1428	2638										
RPT SE DAU DAU	2 N 2 N 2 N 2 N 2 N 2 N 2 N	1259 2717 1277	1302 3197 1320 2841 2736	1343 3208 1417	1430	2087	2119	2131	2143	2183	2247	2254	2299	2312	2446

TSIB.P	R CODING	-AUG-79		30(1046)	19-AUG	-79 20: EFERENCE									SEQ 016
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IDDE C IDDO IDDU IDHRD IDHW	2 n 2 n 2 n 2 n 2 n 2 n 2 n 2 n	664 4# 4#	1056 2814 4274 159	1561											
ID1F	2252 2972 3573 2#	1272 2258 2988 3640 1274	1315 2276 3049 3673 1317	1352 2297 3062 3708 1414	1354 2310 3102 3749 1750	1412 2317 3123 3781 3610	1439 2319 3135 3862 3822	1441 2495 3150 3911 3981	1791 2497 3216 3940	2147 2499 3218 4014	2149 2640 3258 4067	2151 2731 3378 4109	2207 2733 3436 4161	2209 2895 3490 4163	2211 2930 3549 4178
DINI DLOO	211	4#	2678 181	2573	2845	4235	4319								
IDMOD IDMSG IDPRO IDPTA	2 n 2 n 2 n 1027 2 n 2 n	4#	671 1102 2587 4337	697 1115	723 1138	749	775	807	861	882	910	933	956	980	1004
IDRPT IDRTN IDSEG IDSEL IDSET	20 20 20 20 20 20 20 20 20	2367	2897 2415 4339	2932 3228											
DSFT DSRV DSUB	3872	4# 4# 3920	4302 1158 2902 4034	1166 2940 4089	1174 3064	1182 3104	3230	3381	3439	3493	3552	3643	3676	3719	3760
DTST	2#	4#	178 2998 192	3075	3275	3578	3789	3946	4114	4188	4213	4231			
UALS RDF	2# 2# 3203	3211	1197 3223	1329 3247	2882	2965	2981	3042	3055	3095	3116	3128	3143	3178	3192
RHRD ROR	2077	1000	2427	3373 4102	3431 4156	3485 4173	3544	3566	3635	3668	3703	3744	3774	3857	3906
RSF RSOF RTBL CAPE IF	2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 /	4#	2603												
IFB IT	2 <i>n</i> 1022 4295	1059	667 1097	692 1133	718 2668	744 2781	770 2807	802 2834	856 2946	877 3270	905 3784	928 4030	951 4085	975 4183	999 4268
QUAL TBYT TPRI TWOR ANIA ANID ANIL	2 M 2 M 2 M 2 M 2 M 2 M 2 M 2 M 2 M 2 M	4 # 4 # 4 # 4 # 4 # 4 # 4 # 4 # 4 # 4 #													
HARD RMA RMD	2 N 2 N 2 N 2 N	4#	1229 4256 4261 4290	2643											

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PARAMETER CZTS1B.P1	CODING	-AUG-79	MACY11 20:26	30(1046)	19-AUG	-79 20:		N 13							
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IFCOND IF.ERR IF.NO. INCR INCRU INLINE	2 N 2 N 2 N 2 N 2 N	1246	1289	1384	1740	3600	3812	3971							
INLOOP IOSETU IOSTAR KT11 LASTAD LEAVE LET	2# 2# 2# 2# 2# 2# 2# 1557 2095 2230 2466 3240 3769	4# 4# 4# 1257 654 1559 2100 2235 2478 3260 3820	4313 1300 662 1589 2105 2264 2480 3266 3924	1410 1040 1630 2108 2295 2624 3366 3927	1046 1748 2156 2308 2631 3421 3928	1054 1761 2162 2315 2633 3424 3979	1156 1781 2164 2421 2656 3478 4093	1164 1793 2175 2432 2666 3534 4096	1172 1795 2178 2435 2692 3537 4097	1180 2028 2186 2452 2701 3557	1325 2060 2188 2454 2757 3560	1327 2065 2190 2456 3152 3561	1392 2070 2195 2458 3155 3608	1394 2075 2220 2461 3236 3765	1551 2090 2225 2463 3238 3768
LOCAL LOOP MANUAL MEMORY MSBYTE MSCHEC	2n 2n 2n 2n 2n 2n 1023n	4 M 4 M 4 M 4 M 1060 M	19# 668# 1098#	25 693# 1134#	26 719# 2669#	27 745# 2782#	771# 2808#	803# 2835#	857N 2947N	878# 3271#	906# 3785#	929# 4031#	952# 4086#	976# 4184#	1006# 4269#
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MSDATA	2441#	2473#	2489# 19# 56	2710# 28 58#	2724# 30 60	2888# 32 62	3253# 34 65	36 68	38 70	40 72	42 74	44 76	46 78	48 80	50 82
	84 211 95711 273711 338211 411511	981# 2789# 3440# 4189#	88 160# 1005# 2815# 3494# 4214#	90 179# 1028# 2842# 3553# 4232#	92 182# 1066# 2846# 3579# 4236#	94 672# 1103# 2898# 3644# 4275#	96 698# 1116# 2903# 3677# 4303#	98 724# 1139# 2933# 3720# 4320#	100 750# 1159# 2941# 3761# 4329#	102 776# 1167# 2999# 3790#	133# 808# 1175# 3065# 3873#	140# 862# 1183# 3076# 3921#	883# 2574# 3105# 3947#	911# 2588# 3231# 4035#	934# 2679# 3276# 4090#
MSDEFA MSENDE	211 95711 278911 344011	981 m 2815 m 3494 m	4257# 160# 1005# 2842# 3553#	4262# 179# 1028# 2846# 3579#	4291# 182# 1066# 2898# 3644#	672# 1103# 2903# 3677#	698# 1116# 2933# 3720#	724# 1139# 2941# 3761#	750# 1159# 2999# 3790#	776# 1167# 3065# 3873#	808# 1175# 3076# 3921#	862# 1183# 3105# 3947#	883# 2574# 3231# 4035#	911# 2679# 3276# 4090#	934# 2737# 3382# 4115#
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PARAMETER CZTSIB.P1	CODING	-AUG-79	MACY11 20:26	30(1046)			27 PAGE TABLE -	B 14 143 - MACRO							SEQ
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MSEXTJ	4296# 2# 858 1060#	878# 1061	668# 879 1098#	669 906# 1099	693# 907 1134#	694 929# 1135	719# 930 2669#	720 952# 2782#	745# 953 2808#	746 976# 2809	771# 977 2835#	772 1000# 2836	803# 1001 2947#	804 1023# 3271#	857# 1024 3785#
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M\$GENB M\$GETS	4334# 2# 2# 957# 2737# 3382# 4115#	4338# 4# 981# 2789# 3440# 4189#	160# 1005# 2815# 3494# 4214#	179# 1028# 2842# 3553# 4232#	182# 1066# 2846# 3579# 4236#	672# 1103# 2898# 3644# 4269#	698# 1116# 2903# 3677# 4275#	724# 1139# 2933# 3720# 4296#	750# 1159# 2941# 3761# 4303#	776# 1167# 2999# 3790# 4320#	808# 1175# 3065# 3873#	862# 1183# 3076# 3921#	883# 2574# 3105# 3947#	911# 2588# 3231# 4035#	934# 2679# 3276# 4090#
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\$1F \$1FCOD	2351 2500 3151 3437 3863 218 2963 3564 2135 2450 3163 3664 4060	2360 2641 3165 3491 3912 1255 2239 2979 3631 652 2154 2483 3189 3666 4100	2368 2719 3167 3550 3941 1280 2268 3040 3664 1044 2160 2636 3201 3699 4150	2378 2732 3171 3574 3974 1298 2288 3053 3699 1255 2218 2707 3245 3701 4154	2380 2734 3177 3603 3976 1323 2291 3093 3740 1280 2239 2721 3369 3740 4171	2384 2896 3185 3605 3983 1375 2303 3114 3772 1298 2268 2880 3371 3742	2301 2390 2931 3191 3612 4015 1408 2306 3126 3853 1323 2288 2927 3427 3772	2399 2973 3199 3641 4068 1420 2425 3138 3902 1375 2291 2963 3429 3853	2314 2408 2989 3210 3674 4110 1788 2438 3187 3931 1408 2293 2979 3481 3855	2318 2416 3050 3217 3709 4162 2079 2450 3201 4005 1420 2303 3040 3483 3902	2320 2448 3063 3219 3750 4164 2111 2636 3245 4058 1555 2306 3053 3540 3904	2330 2471 3103 3222 3782 4179 2123 2707 3369 4100 1788 2328 3093 3542 3931	2332 2487 3124 3229 3815 2135 2721 3427 4150 2079 2376 3114 3564 4005	2336 2496 3136 3259 3817 2154 2880 3481 4154 2111 2425 3126 3631 4007	2342 2498 3142 3379 3824 2160 2927 3540 4171 2123 2438 3140 3633 4058
BIFCON BIFOPR	2# 2# 2136 2451 3164 3665	653 2155 2484 3190 3667	1045 2161 2637 3202 3700	1256 2219 2708 3246 3702	1281 2240 2722 3370 3741	1299 2269 2881 3372 3743	1324 2289 2928 3428 3773	1376 2292 2964 3430 3854	1409 2294 2980 3482 3856	1421 2304 3041 3484 3903	1556 2307 3054 3541 3905	1789 2329 3094 3543 3932	2080 2377 3115 3565 4006	2112 2426 3127 3632 4008	2124 2439 3141 3634 4059
SLPCNT	4061 2# 1558 2096 2231 2467 3241 3770	4101 655 1560 2101 2236 2479 3261 3821 1247	4151 663 1590 2106 2265 2481 3267 3925 1290	4155 1041 1631 2109 2296 2625 3367 3927 1385	4172 1047 1749 2157 2309 2632 3422 3929 1741	1055 1762 2163 2316 2634 3425 3980 3601	1157 1782 2165 2422 2657 3479 4094 3813	1165 1794 2176 2433 2667 3535 4096 3972	1173 1796 2179 2436 2693 3538 4098	1181 2029 2187 2453 2702 3558	1326 2061 2189 2455 2758 3560	1328 2066 2191 2457 3153 3562	1393 2071 2196 2459 3156 3609	1395 2076 2221 2462 3237 3766	1552 2091 2226 2464 3239 3768
SOPADD SOPAND SOPCD1	2 <i>n</i> 2 <i>n</i> 3816 2 <i>n</i> 2 <i>n</i>	663 3975 2062 2106	1055 2067 2109	1250 2072 2176	1293 2092 2189	1388 2097 2433	1560 2102 2464	1744 2165 3422	1796 2179 3535	2457 2191	2462 2197	2479 2222	2632 2227	2758 2232	3604 2467

PARAMETE CZTSIB.	R CODING	G 9-AUG-79	MACY11 20:26	30(1046)	19-AUG	-79 20: EFERENCE	27 PAGE TABLE -	1 14 150 - MACRO							SEQ 017
SOPCD2	2097 2436 3261 3975	663 2102 2453 3268 4095	1055 2158 2455 3425 4096	1250 2165 2457 3538 4098	1293 2179 2460 3559	1388 2191 2462 3560	1560 2197 2467 3562	1744 2222 2479 3604	1783 2227 2481 3767	1794 2232 2632 3768	1796 2266 2658 3770	2062 2296 2758 3816	2067 2309 3154 3926	2072 2316 3156 3927	2092 2423 3239 3929
BOPCOM	2# 1181 1293 1386 1556 1783 2068 2097 2135 2135 2248 2338 2387 2451 2484 2721 2980 3115 3159 3188 3267 3430 3560 3632 3766 3823 3766 3823 3766 3823 3766	3422 1211 1295 1388 1558 1784 2069 2136 2136 2136 22255 23388 2486 2722 2388 2486 2722 23161 3169 3268 3479 3562 3633 3767 3853 4060 4172	3535 1247 1296 1390 1785 12099 21481 22265 23488 24525 23488 24525 23488 24525 23162 3162 3163 3164 3164 3164 3164 3164 3164 3164	655 1248 1298 1391 1562 1786 2072 2154 22101 2154 22266 2350 2457 2457 2457 2457 2457 2457 2457 2457	663 1250 1299 1393 1590 1788 2073 2155 2157 22268 23159 2429 2459 2459 2459 24634 3164 3164 3164 3164 3164 3164 3164	665 1252 1301 1395 1631 1789 2107 2157 2269 2316 2460 2636 2894 3138 3166 3202 3484 3597 3666 3773 3975 4096 4224	1041 1253 1318 1408 1741 1794 2104 2158 2158 2288 2325 2462 2462 2462 2637 2901 3053 3168 3209 3539 3667 3780 3780 3780 3780 3780 3780 3780 378	1044 1255 1323 1409 1742 1796 2160 2192 2376 2464 2657 2376 2464 2657 2376 3169 3169 3169 3169 3169 3169 3169 316	1045 1256 1324 1411 1744 2029 2080 2109 2161 2231 2328 2377 2433 2465 2658 2928 3061 3170 3237 3372 3538 3602 3700 3811 3905 3980 4101	1047 1258 1326 1415 1746 2061 2088 2111 2163 2196 2232 2379 2434 2467 2667 2937 3068 3149 3172 3239 3422 3540 3604 3701 3813 3925 3982 4108	1055 1275 1328 1420 1747 2062 2091 2112 2165 2293 2331 2436 2693 2468 2693 3153 3153 3153 3153 3153 3153 3153 31	1057 1280 1344 1421 1749 2063 2092 2166 2198 2234 2333 2469 2702 2963 3154 3154 3154 3154 3154 3154 3154 315	1157 1281 1375 1431 1751 2064 2093 2123 2167 2296 2334 2383 2479 2707 2964 3101 3156 3175 3245 3427 3543 3609 3741 3818 3929 4007 4151	1165 1290 1376 1552 1762 2066 2094 2124 2176 2218 2239 2300 2335 2447 2481 2708 2971 3112 3157 3184 3246 3428 3558 3611 3742 3819 3931 4008 4154	1173 1291 1385 1555 1782 2067 2096 2132 2177 2219 2240 2303 2337 2386 2450 2483 2718 2979 3114 3158 3187 3261 3429 3559 3631 3743 3821 3932 4058 4155
OPEQU OPNAN OPNEG OPNOR OPNOT OPOR	2# 2# 2# 2# 2# 2# 3927	2423 1794 3929	2436 2158 4095	2453 2266 4096	3154 2296 4098	3261 2309	3268 2316	3425 3239	3538 3559	3560	3562	3767	3768	3770	3926
OPROT OPRO	2# 2# 1552 2693	655 1558 2702	1041 1590 3237	1047 1631 3241	1157 1741 3367	1165 1749 3479	1173 1762 3601	1181 2029 3609	1247 2076 3813	1290 2163 3821	1326 2187 3972	1328 2236 3980	1385 2625	1393 2634	1395 2667
SOPR1 SOPR2 SOPSHF	2# 2# 2096 2436 3261 3975 2#	2106 663 2101 2453 3267 4094 2455 2481	2109 1055 2157 2455 3425 4096 2460	2176 1250 2165 2457 3538 4098 2658	2189 1293 2179 2459 3558 3156	2433 1388 2191 2462 3560	2464 1560 2196 2467 3562	3422 1744 2221 2479 3604	3535 1782 2226 2481 3766	1794 2231 2632 3768	1796 2265 2657 3770	2061 2296 2758 3816	2066 2309 3153 3925	2071 2316 3156 3927	2091 2422 3239 3929

PARAMETER ZTSIB.PT		-AUG-79	MACY11 20:26	30(1046)	19-AUG	-79 20: EFERENCE	27 PAGE TABLE -		NAMES						SEQ 017
SOPSWB SOPXOR SOR SPUT	2#	2106 1783 3138	2109 3187	2176	2189	2433	2464								
STRUC	2 // 2 // 1316 1442 2185 2330 2496 3136	665 1318 1562 2208 2338 2498 3151	666 1319 1563 2210 2339 2500 3165	1057 1321 1745 2212 2340 2641 3173	1058 1345 1748 2249 2368 2719 3174	1251 1353 1751 2253 2369 2732 3175	1254 1355 1752 2256 2378 2734 3199	1260 1389 1792 2259 2386 2896 3210	1273 1392 2089 2277 2387 2931 3217	1275 1413 2121 2298 2388 2973 3219	1276 1415 2133 2301 2416 2989 3229	1278 1416 2145 2311 2417 3050 3230	1294 1418 2148 2314 2448 3063 3259	1297 1432 2150 2318 2483 3103 3379	1303 1440 2152 2320 2487 3124 3437
STHEN	3491 3824 2# 2218 2963 3564	3550 3863 1255 2239 2979 3633	3574 3912 1280 2268 3040 3666	3605 3941 1298 2288 3053 3701	3608 3976 1323 2293 3093 3742	3611 3979 1375 2303 3114 3772	3612 3982 1408 2306 3126 3855	3641 3983 1420 2425 3140 3904	3674 4015 1788 2438 3189 3931	3709 4068 2079 2450 3201 4007	3750 4110 2111 2636 3245 4060	3782 4162 2123 2707 3371 4100	3817 4164 2135 2721 3429 4150	3820 4179 2154 2880 3483 4154	3823 2160 2927 3542 4171
STILA STILO SUNTL2 SUNTL3 SWHILE	2# 2# 2# 2#	651	1043	1554											
SDEFA SENDS	2#	2369	2417	3230											
SERRO SEEN	2# 2# 1319 1743 2249 2351 2500 3151 3437 3863	651 1321 1745 2253 2360 2641 3165 3491 3912	666 1345 1752 2256 2368 2719 3167 3550 3941	1043 1353 1792 2259 2378 2732 3171 3574 3974	1058 1355 2089 2277 2380 2734 3177 3603 3976	1249 1387 2121 2298 2384 2896 3185 3605 3983	1251 1389 2133 2301 2390 2931 3191 3612 4015	1260 1413 2145 2311 2399 2973 3199 3641 4068	1273 1416 2148 2314 2408 2989 3210 3674 4110	1276 1418 2150 2318 2416 3050 3217 3709 4162	1278 1432 2152 2320 2448 3063 3219 3750 4164	1292 1440 2185 2330 2471 3103 3222 3782 4179	1294 1442 2208 2332 2487 3124 3229 3815	1303 1554 2210 2336 2496 3136 3259 3817	1316 1563 2212 2342 2498 3142 3379 3824
SSGETS.	2# 1316 1432 2133 2256 2359 2486 3063 3221 3674	665 1318 1440 2144 2259 2360 2487 3103 3222 3709	666 1319 1442 2145 2277 2368 2496 3124 3229 3750	1057 1321 1562 2148 2298 2369 2498 3136 3230 3782	1058 1344 1563 2150 2300 2378 2500 3151 3259 3817	1251 1345 1745 2152 2301 2390 2641 3165 3379 3820	1254 1353 1748 2184 2311 2398 2718 3177 3437 3823	1260 1355 1751 2185 2313 2399 2719 3184 3491 3824	1273 1389 1752 2208 2314 2407 2732 3185 3550 3863	1275 1392 1792 2210 2318 2408 2734 3198 3574 3912	1276 1413 2088 2212 2320 2416 2896 3199 3605 3941	1278 1415 2089 2248 2330 2417 2931 3209 3608 3976	1294 1416 2120 2249 2342 2447 2973 3210 3611 3979	1297 1418 2121 2253 2350 2448 2989 3217 3612 3982	1303 1431 2132 2255 2351 2483 3050 3219 3641 3983
SSGETT	4015 2# 2350	4068 1260 2351	4110 1303 2359	4162 1344 2360	4164 1431 2390	4179 2088 2398	2120 2399	2132 2407	2144 2408	2184 2447	2248 2486	2255 2718	2300 3177	2313 3184	2342 3185
SSLP(N SSPOP	3198 2# 2# 1316 1442 2185 2330 2734	3209 1250 665 1318 1562 2208 2368 2896	3221 1293 666 1319 1563 2210 2369 2931	3222 1388 1057 1321 1745 2212 2378 2973	1744 1058 1345 1748 2249 2416 2989	3604 1251 1353 1751 2253 2417 3050	3816 1254 1355 1752 2256 2448 3063	3975 1260 1389 1792 2259 2483 3103	1273 1392 2089 2277 2487 3124	1275 1413 2121 2298 2496 3136	1276 1415 2133 2301 2498 3151	1278 1416 2145 2311 2500 3165	1294 1418 2148 2314 2641 3199	1297 1432 2150 2318 2719 3210	1303 1440 2152 2320 2732 3217

PARAMETE CZTSIB.F	R CODIN	G 9-AUG-79	MACY11 20:26	30(1046)	19-AU CROSS	G-79 20: REFERENCE	27 PAGE	K 14 152 - MACRO	NAMES						SEQ 0179
	3219 3709 4068	3229 3750 4110	3230 3782 4162	3259 3817 4164	3379 3820 4179	3437 3823	3491 3824	3550 3863	3574 3912	3605 3941	3608 3976	3611 3979	3612 3982	3641 3983	3674 4015
\$\$PUSH	1257 1375 1562 2134 2268 2374 2707 3053 3200 3566 3813	651 1261 1377 1741 2135 2270 2376 2709 3055 3201 3601 3815	652 1280 1384 1743 2137 2288 2385 2720 3093 3603 3603 3816	654 1282 1385 1744 2146 2290 2425 2721 3095 3211 3604 3820	1289 1387 1748 2154 2291 2427 2723 3114 3245 3608 3853	1043 1290 1388 1788 2156 2295 2438 2880 3116 3247 3631 3857	1044 1292 1392 1790 2160 2302 2440 2882 3126 3369 3635 3902	1046 1293 1408 2079 2162 2303 2449 2927 3128 3373 3664 3906	1057 1297 1410 2081 2186 2305 2450 2929 3138 3427 3668 3931	1246 1298 1420 2090 2218 2306 2452 2963 3143 3431 3699 3933	1247 1300 1422 2111 2220 2308 2471 2965 3161 3481 3703 3972	1249 1304 1433 2113 2239 2315 2472 2979 3163 3485 3740 3974	1250 1323 1554 2122 2241 2326 2488 2981 3172 3540 3744 3975	1254 1325 1555 2123 2250 2328 2636 3040 3187 3544 3772 3979	1255 1346 1557 2125 2257 2337 2638 3042 3192 3564 3774 4005
\$\$SELE \$\$SETS	4009 2# 1257 1375 1562 2134 2268 2343 2452 2963 3143 3369 3635 3902	4058 2337 651 1261 1377 1741 2135 2270 2352 2471 2965 3161 3373 3664 3906	4062 2338 652 1280 1384 1743 2137 2288 2361 2472 2979 3163 3427 3668 3931	4100 2339 654 1282 1385 1744 2146 2290 2374 2488 2981 3172 3431 3699 3933	4102 2340 665 1289 1387 1748 2154 2291 2376 2636 3040 3178 3481 3703	4150 2385 1043 1290 1388 1788 2156 2295 2385 2638 3042 3186 3485 3740 3974	4152 2386 1044 1292 1392 1790 2160 2302 2391 2707 3053 3187 3540 3744 3975	4154 2387 1046 1293 1408 2079 2162 2303 2400 2709 3055 3192 3544 3772 3979	4156 2388 1057 1297 1410 2081 2186 2305 2409 2720 3093 3200 3564 3774 4005	4171 3172 1246 1298 1420 2090 2218 2306 2425 2721 3095 3201 3566 3813 4009	4173 3173 1247 1300 1422 2111 2220 2308 2427 2723 3114 3203 3601 3815 4058	3174 1249 1304 1433 2113 2239 2315 2438 2880 3116 3211 3603 3816 4062	3175 1250 1323 1554 2122 2241 2326 2440 2882 3126 3223 3604 3820 4100	1254 1325 1555 2123 2250 2328 2449 2927 3128 3245 3608 3853 4102	1255 1346 1557 2125 2257 2337 2450 2929 3138 3247 3631 3857 4150
SSSETT	4152	4154 2343	4156 2352	4171 2361	4173 2391	2400	2409	3178	3186	3223					

. ABS. 034552 000

ERRORS DETECTED: 0

CZTSIB,CZTSIB/CRF/SOL/EQ:ONEFILE=NLISTF.P11,SVC.SML,SPMAC.SML,LISTF.P11,CZTSIB.P11
RUN-TIME: 71 77 7 SECONDS
RUN-TIME RATIO: 170/156=1.0
CORE USED: 28K (56 PAGES)