

SYSTEM CENTURY® DIGITAL CENTRAL OFFICE

FAULT PRINTOUT INTERPRETATION

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1.02 This section is reissued to incorporate new mnemonics in table 2 generated for systems up to and including those with hardware configuration 12.

2. RELATED INFORMATION

2.01 General.

A Sales and Instructional Literature Index, which lists the latest publications available from Stromberg-Carlson Corporation, can be obtained from your Stromberg-Carlson sales representative or from Publications Services, Stromberg-Carlson Corporation, P.O. Box 1698, Sanford, Florida 32771.

TABLES

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2.02 Related Publications.

The following publications are recommended for use with this document:

01-025-05 Glossary of Digital Switching Terms and Abbreviations

23-001-97 SYSTEM CENTURY DCO, System Operators Manual

1. INTRODUCTION
1.01 This section describes various diagnostic-message formats that are used as a standard means for representing printouts that are generated when a fault occurs in the SYSTEM CENTURY® Digital Central Office (DCO). The formats chosen for

*DECwriter is a registered trademark of the Digital Equipment Corporation.

- 23-001-99 SYSTEM CENTURY DCO,
Input/Output Message
Dictionary
- 23-051-05 SYSTEM CENTURY DCO,
Software Organization and
Functional Description
- 23-207-31 SYSTEM CENTURY DCO,
Emergency Call Processor
Startup, Maintenance Processor
Startup, and Recovery
Procedures
- 23-222-51 SYSTEM CENTURY DCO,
Equipment Location
- 23-223-51 SYSTEM CENTURY DCO,
Equipment Removal and
Replacement Procedures
- 23-224-51 SYSTEM CENTURY DCO,
Diagnostic Procedures

3. DIAGNOSTIC OUTPUT MESSAGES

3.01 General.

Diagnostic error messages, which are automatically printed at the console, can originate from either hardware or software faults during the fault-isolation process under the jurisdiction of either the error handler, the first-level diagnostic controller, or the second-level diagnostic controller. (These are described in the section titled *SYSTEM CENTURY DCO, Software Organization and Functional Description*, referenced in paragraph 2.02.) In all cases, diagnostic messages are preceded by three asterisk characters (***).

3.02 Diagnostic Message Formats.

Any error occurring in the call processing (CP) system, from which the CP can recover unaided, is printed according to the format shown in printout example 1. To get a description and possible corrective actions to be taken relative to a fault, the operator uses the six-digit error number (ERR #) printed on the first line of this message and refers to the *SYSTEM CENTURY DCO, Input/Output Message Dictionary* (referenced in paragraph 2.02) for the corresponding message number. Any other fault occurring elsewhere, and especially any fault that causes the DCO system to enter either a single-side-

fault mode (DCO system in state 2) or a degraded mode (DCO system in state 1), is printed according to the format shown in printout example 2. When the diagnostic-related mnemonic MSDHND is printed (indicating a matrix switch fault has occurred), a subset of messages is included (see printout example 2) that identifies the following information relative to the fault: matrix switch diagnostic (MSD) PWBA, timeslot interchange (TSI) PWBA generating the mismatch error, port group number, and the timeslot number. The interpretation of this information is described later.

Example 1

```
*** 00:01:19 PAGE ONE LINE OF ERR 1000146
      FOUR NUMBER 002500
```

Example 2

```
*** 00:01:19 PAGE SYSTEM NOW IN STATE 4
*** 00:01:40 MSDHND MSD CARD 000001
              MSDHND MISMATCH FROM TSI CARD 000001
              Subst {  PORT GROUP 000004
                      TIME SLOT 000032
```

4. PRINTOUT INTERPRETATION

4.01 Fault Isolation Method.

Whenever a fault occurs, the main diagnostic controller (error handler) is activated to analyze the nature of the fault. According to the fault information collected, the error handler decides whether or not to initiate side-switchover and to pass control over to either the first- or second-level diagnostic controller. If a fault is not side-specific, the first-level diagnostic controller is initiated; this causes appropriate messages to be printed out at the console. The format of CP-related messages is shown in printout example 1 and the corresponding description (with corrective actions) is included in the *Input/Output Message Dictionary*. The format of MS-related messages (caused by the use of MSDHND) is shown by printout example 2 and the description is included in table 1. If a side-specific fault occurs, causing the A side to be taken out of service, the second-level diagnostic controller is selected by the error handler to begin the isolation process. This process results in the automatic generation of an extensive, fault-isolation printout (printout example 3), described later. This printout can also be initiated through manual intervention by the operator. In both cases (automatic or manual), the error information generated by these diagnostic tests is ultimately summarized and printed out in the form of a four-column table (lines 7 through 11 of printout example 3) of suspected PWBA's. This table is called a repair list (as indicated by line 6 of printout example 3); it is organized on a most probable to least probable faulty PWBA basis.

4.02 Matrix Switch Diagnostic Handler (MSDHND) Messages.

Refer to table 1 to interpret the information generated as a result of the matrix switch diagnostic card detecting a fault. The MSDHND printout (printout example 2) is used to show the method.

4.03 Automatic Second-Level Diagnostic Messages.

- a. The repair list is preceded by a series of second-level diagnostic messages. This series of messages is shown in printout example 3, where an example of a

port control store fault is provided. Error or fault messages are identified by three asterisks in the printout and, (except for the header, which indicates second-level diagnostics are active) DIAG2, indicating that they are a result of a second-level diagnostic test. The line numbers at the right side of printout example 3 are shown for discussion only; they are not part of the printout. The information contained in the messages on lines 1, 5, 6, 7, and 8 is always printed when a fault occurs. The number of messages (in this example only lines 2, 3, 4, 9, 10, and 11) varies with the fault.

Table 1. MSDHND Message Interpretation

MSD	TSI			
	001	002	004	010
	CCS/TSI	CCS/TSI	CCS/TSI	CCS/TSI
0	00-00	00-01	00-02	00-03
1	00-04	00-05	00-06	00-07
2	01-00	01-01	01-02	01-03
3	01-04	01-05	01-06	01-07
4	02-00	02-01	02-02	02-03
5	02-04	02-05	02-06	02-07
6	03-00	03-01	03-02	03-03
7	03-04	03-05	03-06	03-07

EXAMPLE:

```
*** 00:01:40  MSDHND  MSD CARD 000002
                MSDHND  MISMATCH FROM TSI CARD 000001
                PORT GROUP 000004
                TIME SLOT 000037
```

NOTE. In the above example where MSD PWBA is 2 and TSI PWBA is 1, the actual location where the error occurred (shown in bold outline) is common control sector (CCS) 01 and TSI number 00.

Example 3

LINE
NO.

***HH:MM:SS MM/DD/YY SECOND LEVEL DIAGNOSTICS ACTIVE V _n	1
*** DIAG2 LNKST EV=000000 VX=0 FC=000000	2
*** DIAG2 CONTST EV=000000 VX=0 FC=000000 CCS=0	3
*** DIAG2 PSMTST EV=000004 VX=0 FC=000014 CCS=0	4
***HH:MM:SS DIAG2 FLTISO FAIL	5
*** DIAG2 REPAIR LIST	6
*** SIDE CCS PWBA NO.	7
*** -----	8
*** B 0 PSM 2	9
*** B 0 PSM 3	10
*** B 0 TIMC	11

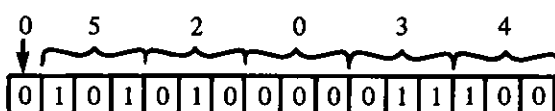
Where: TIMC = Timing and control
 CCS = Common control sector
 PSM = Port control store
 EV = Error vector
 VX = Error vector extension
 FC = Fault Code
 V_n = Version number of software
 H, M, S = Hour, minute, second

b. Line 1 shows that second-level diagnostics are activated. Vn shows the software version of the second-level diagnostics program. The n is a number representing the level of changes that this program has undergone.

c. The mnemonics following DIAG2 in lines 2, 3, and 4 indicate which second-level diagnostic tests have been executed and the corresponding results. The tests that can be done and the corresponding mnemonics that appear are: link diagnostics (LNKTST), call processor logic (CPLTST), call processor memory (CPMTST), controller (CONTST), matrix switch memory (MSMTST), port store memory (PSMTST), programable logic (PGLTST), and automatic message accounting system routine test (AMATST). The error vector (EV), error vector extension (VX), and fault code (FC) information is used after all the PWBAs (listed in the repair list) have been replaced and the fault still exists. Whenever this condition is present and before proceeding with this information to isolate a fault, it is recommended that a Stromberg-Carlson customer service representative be contacted.

d. Figures 1 through 8 provide interpretations of the results of second-level diagnostics other than AMATST; interpretation of AMATST printouts is explained in subparagraph h. To use these interpretations, the EV, VX, and FC printouts must be converted from octal form to binary form, as follows.

1. Octal numbers use the digits 0 through 7; three binary digits count to a magnitude of 7 (binary 111 = 7). If an octal number is taken digit-by-digit, a 3-digit binary number can be written for each octal digit. The result is a true binary number.
2. For example, an EV printout of 052034 is converted to a binary number as shown below. This 16-bit binary number can then be used with the proper failure interpretation (figures 1 through 8) to determine the exact fault.

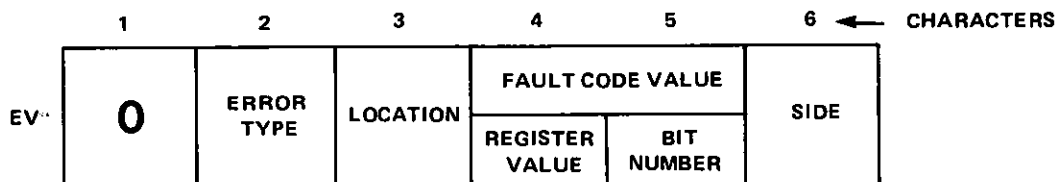


e. Line 5 shows the results (passed or failed) of the test(s) run during the fault-isolation process (for this example, the results of lines 2, 3, and 4). The message DIAG2 FLTISO FAIL (representing second-level diagnostic fault-isolation failed) is printed when a test fails, and the message DIAG2 FLTISO PASS (representing fault-isolation passed) is printed when all tests pass.

f. The messages that follow (lines 6 through 11) are generated when a test fails. The message DIAG2 REPAIR LIST (on line 6 of printout example 3) identifies the purpose of the column information that follows (for this example, lines 7 through 11). The message on line 7 provides headings for the vertical columns (SIDE, CCS, PWBA, and NO.) of the repair list; the message on line 8 provides underlines for these headings.

g. The remaining lines (in this example, lines 9 through 11) of the repair list sequentially indicate the order to replace PWBAs. The actual procedure to replace a PWBA is described in the section titled *SYSTEM CENTURY DCO, Equipment Removal and Replacement Procedures*, referenced in paragraph 2.02. The first action (on line 9 of printout example 3) calls for replacing the number 2 port control store (PCS) PWBA located in common control sector 0 (first 1920-port section) of side B. To further locate this PWBA to a specific frame, cell, and cell position, the operator should take the mnemonic information printed under the PWBA column of the repair list and refer to the corresponding mnemonic listed in table 2 to get the PWBA assembly number and circuit name. Refer to the section titled *SYSTEM CENTURY DCO, Equipment Location*, referenced in paragraph 2.02, for location in frame cell, and cell position. The success of the PWBA replacement action is verified by doing the repair and restore verification procedures provided in the section titled *SYSTEM CENTURY DCO, System Operators Manual*, referenced in paragraph 2.02. If the replacement is unsuccessful, the next action (in printout example 3, line 10 of the original repair list printout) should be done. Subsequently, the action indicated by line 10 should be verified and, if also unsuccessful, the next action (in printout example 3, line 11) should be done and verified.

h. The printouts for AMATST do not need conversion to binary form; they are interpreted directly according to character placement. Error vectors are interpreted as follows:



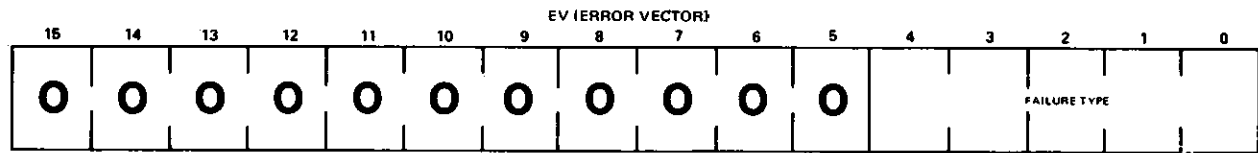
CHARACTER	INTERPRETATION
-----------	----------------

2	Error type: 1 = Functional fault (and functional fault code) 3 = Read or write/read 4 = Bus timeout 5 = Indicator (and bit number) 7 = Test aborted
---	--

3	Location: 0 = Link 1 = Maintenance bus interface (MBI) 2 = Tape diagnostic card (TDIA) 3 = Tape interface buffer card (TIB) 4 = Tape buffer card (TBUF) 5 = Tape motion control card (TMC) 6 = Tape bus interface card (TBI) 7 = Tape drive unit (TDU)
---	--

4 & 5	Functional fault code value (error type = 1):
-------	---

(Location)	Value (dependent on location)	Definition
0	01	Link error
0	02	Link busy
0	03	No response from CP
0	04	Invalid response from CP
0	05	No unsolicited response from CP
0	06	Bus timeout in link external transfer
0	07	Interrupt to CP: never started test
0	10	Test in CP never completed
1	01	MBI mask (bit 10) not masked
1	02	MBI status error, unable to test
1	03	MBI error, not getting to handler
1	04	Error removed but status not cleared
2	01	No motion controller error to MBI
2	02	No tape buffer error to MBI
2	03	No tape buffer mismatch error to MBI
2	04	No power fail error to MBI
2	05	No A/B bus interface error to MBI
2	06	Tape buffer mask(s) not masked
3	00	Pattern failure on 4K RAM
3	01	Checkerboard pattern fail
3	02	Incrementing pattern fail
3	03	Decrement read mode fail
3	04	Address freeze fail
4	00	Illegal command fail
4	01	Rewind tape fail
4	02	Backspace tape fail



VX (VECTOR EXTENSION) = 0

FC (FAULT CODE) = 0 - Tests pass
1 - Tests fail**ERROR VECTOR**

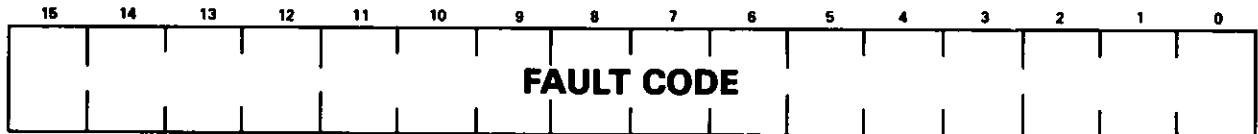
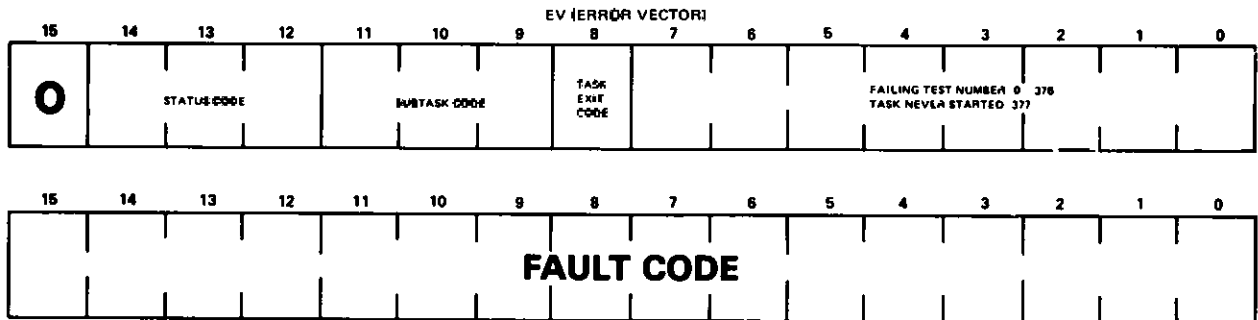
VALUE	FAILURE TYPE	VALUE	FAILURE TYPE
1	Bus timeout accessing location 0 in each CP memory bank via link	15	CP received MP interrupt at wrong location
2	Same wrong pattern received from all CP banks	16	Bus timeout when accessing link registers from MP
3	Various wrong patterns received from all CP banks	17	Path read from link status register not same as written to CP
4	Wrong pattern received from some, not all, CP banks	20	Link status register reports side under test on link
5	Bus timeout or wrong pattern received, occurred from all CP banks	21	Link status register reports both CPs in sync
6	Mismatch from some, not all, CP banks	22	Link status register reports MSGRDY bit set in side under test
7	Bus timeout during copy to CP memory via link	23	Some CP banks gave bus timeout, or data mismatch
10	Bus timeout during MP-CP or CP-MP interrupt request via link	24	Bus timeout attempting to access location 0 in some CP banks
11	Sumcheck wrong from patterns from CP banks		
12	Program read from CP not same as written		
13	No MP interrupt from CP to set MSGRDY bit in link		
14	No CP interrupt from MP		

FAULT CODE

0	Tests pass
1	Tests fail

CP 7840

Figure 1. LNKST Failure Indications

**ERROR VECTOR**

VALUE	STATUS CODE
0	No errors detected during test
1	Bus timeout
2	Task not found on disk
3	Received disk read errors
4	Link busy
5	Side in sync, link request error
6	Undefined link error

SUBTASK CODE IF VX = 0

0	CP ISU test
1	Instruction set test (LOGTST)
2	Traps test (TOLTST)
3	Memory management tests (MMLSI)

SUBTASK CODE IF VX = 1

0	CP ISU test
1	Instruction set tests (BISTST)
2	Traps test (TRPTST)
3	Extended instruction set tests (EISTST)
4	Memory management tests (MMPDP) or (MMLSI)
5	Memory management abort logic tests (ABOTST)
6	Memory management access key tests (KEYTST)

VECTOR EXTENSION

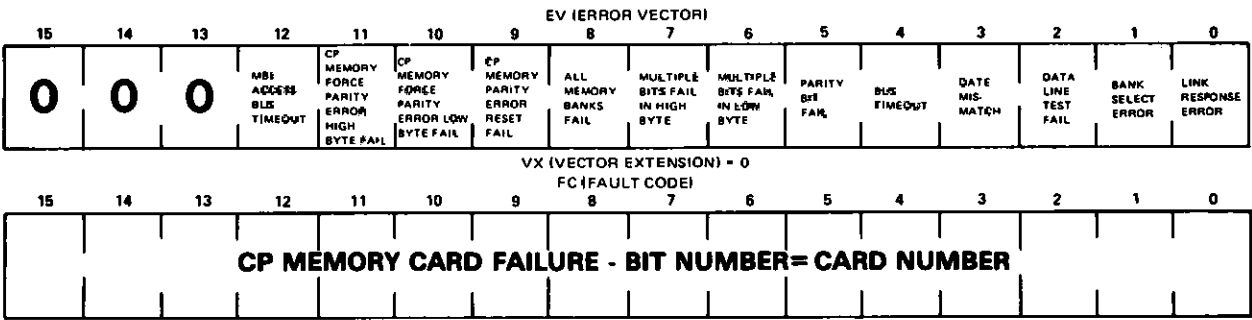
VALUE	CP TYPE
0	LSI - 11 call processor
1	PDP - 11/34 call processor

FAULT CODENOTE. FAULT CODE based on SUBTASK CODE
or 177777 (task never started)

SUBTASK CODE	FAULT CODE
CPISU	CPLTST address
LOGTST	Exited from test number
TOLTST	Subtest number
MMLSI	Address within test
BISTST	Subtest number
TRPTST	Subtest number
EISTST	Subtest number
MMLTST	Address within test
MMPDP	Address within test
or MMLSI	
ABOTST	Address within test
KEYTST	Address within test

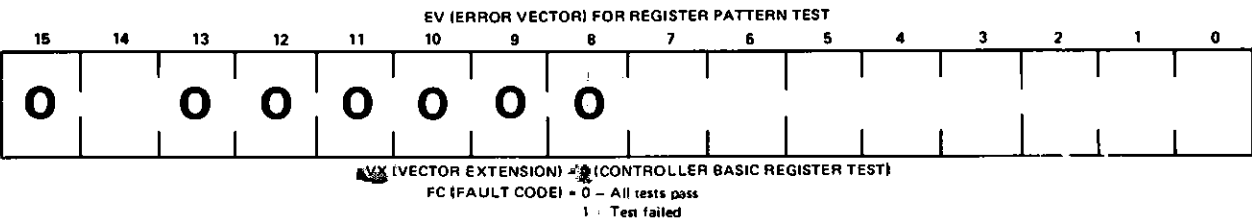
CP 7841A

Figure 2. CPLTST Failure Indications



CP 7842

Figure 3. CPMTST Failure Indications

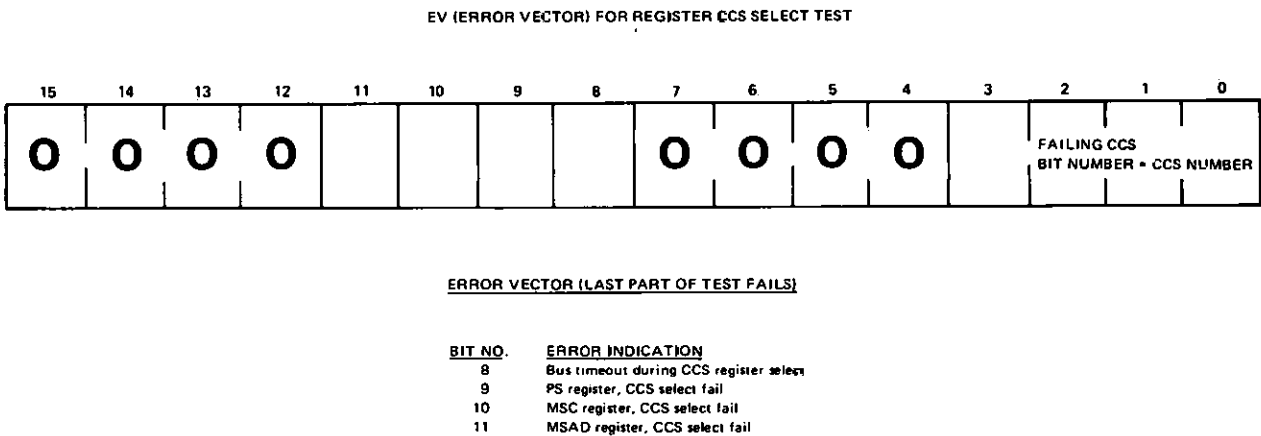


ERROR VECTOR (REGISTER PATTERN TEST FAILS)	
BIT NO.	ERROR INDICATOR
0 - 4	Controller register:
5	Multiple controller registers mismatched
6	Controller register mismatch
7	Bus timeout during controller access
8 - 13	Spare
14	Link error
15	Spare

VALUE	Register	VALUE	Register
0.	Port store word (PSW) 0	20.	Port store (PS) control
1.	PSW 1	21.	PS equipment number
2.	PSW 2	22.	PS mask
3.	PSW 3	23.	Queue 1
4.	PSW 4	24.	Queue 2
5.	PSW 5	25.	Queue 3
6.	PSW 6	26.	Ring phase status
7.	PSW 7	27.	CMP/XOR equipment number
10.	PSW 8	30.	MS control, CCS 0
11.	PSW 9	31.	MS control, CCS 1
12.	PSW 10	32.	MS control, CCS 2
13.	PSW 11	33.	MS control, CCS 3
14.	PSW 12	34.	MSAD, CCS 0
15.	PSW 13	35.	MSAD, CCS 1
16.	PSW 14	36.	MSAD, CCS 2
17.	PSW 15	37.	MSAD, CCS 3

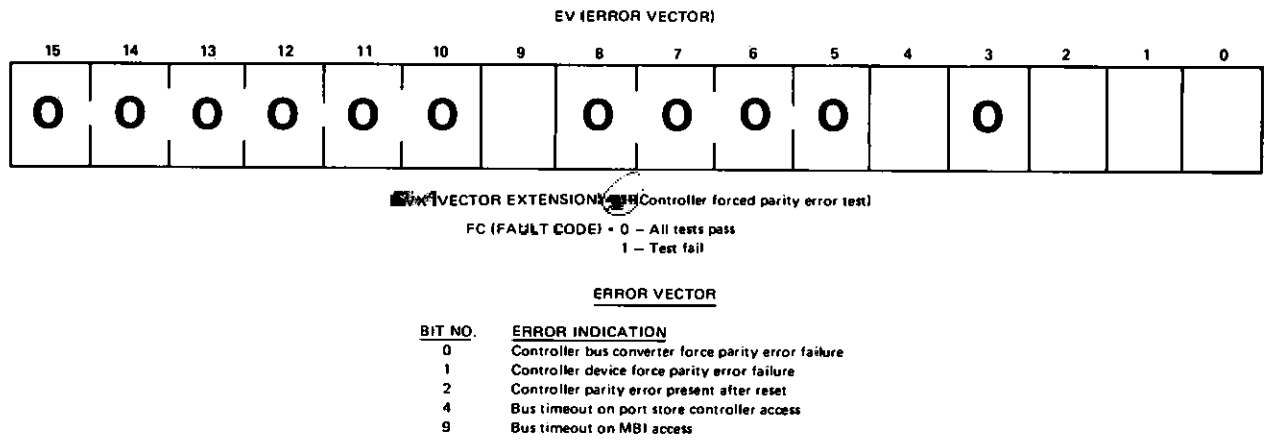
CP 7843A

Figure 4A. CONTST Failure Indications



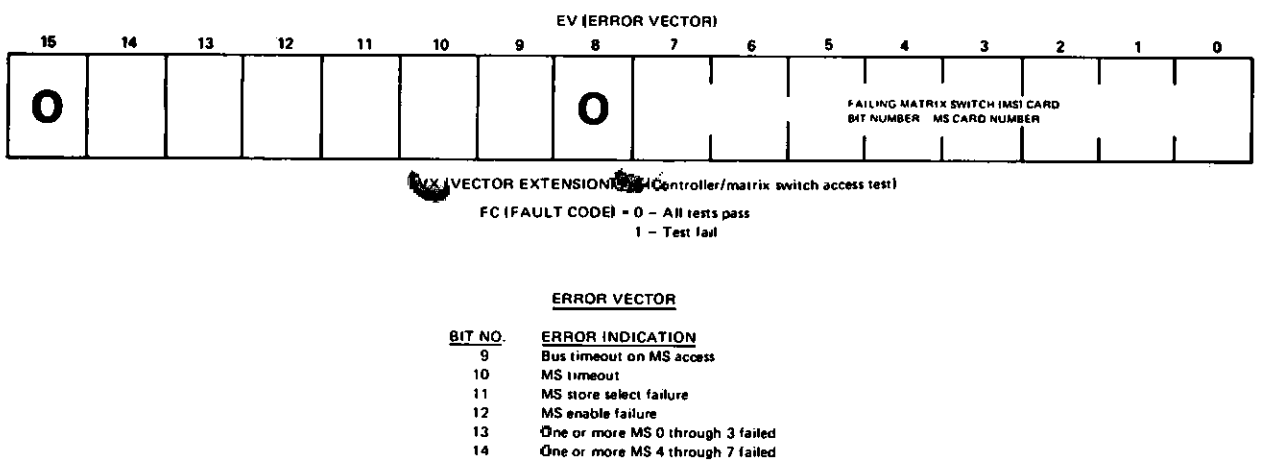
CP 7844A

Figure 4B. CONTST Failure Indications



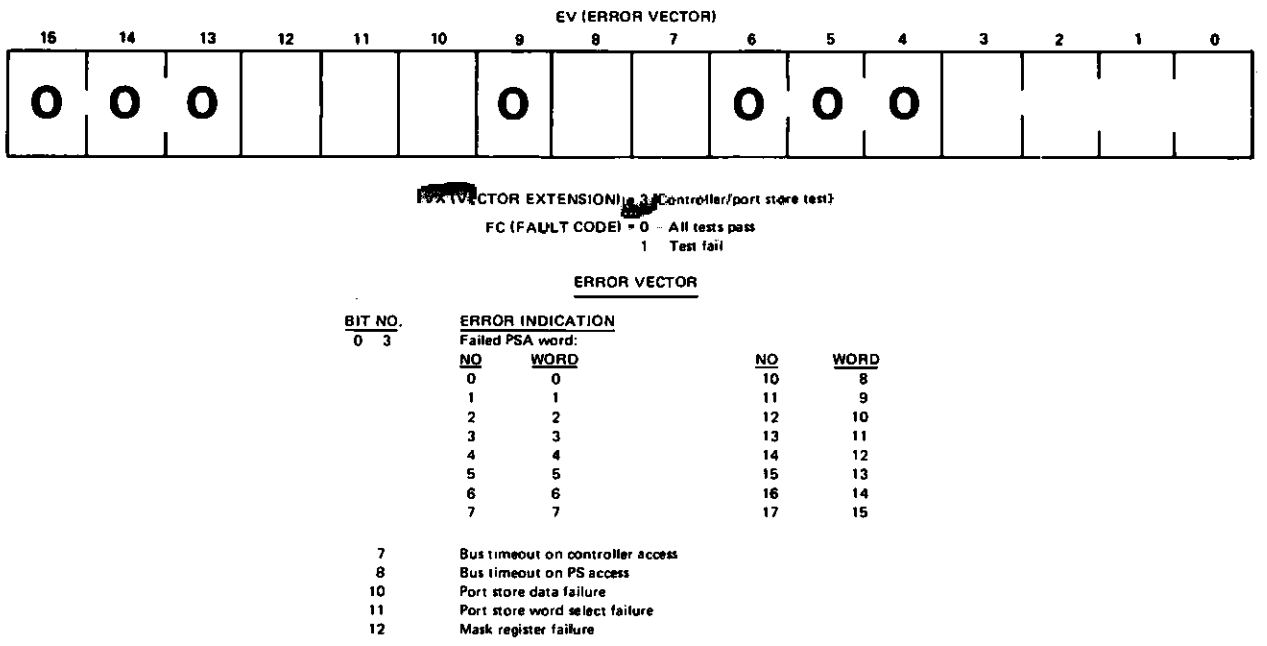
CP 7845

Figure 4C. CONTST Failure Indications



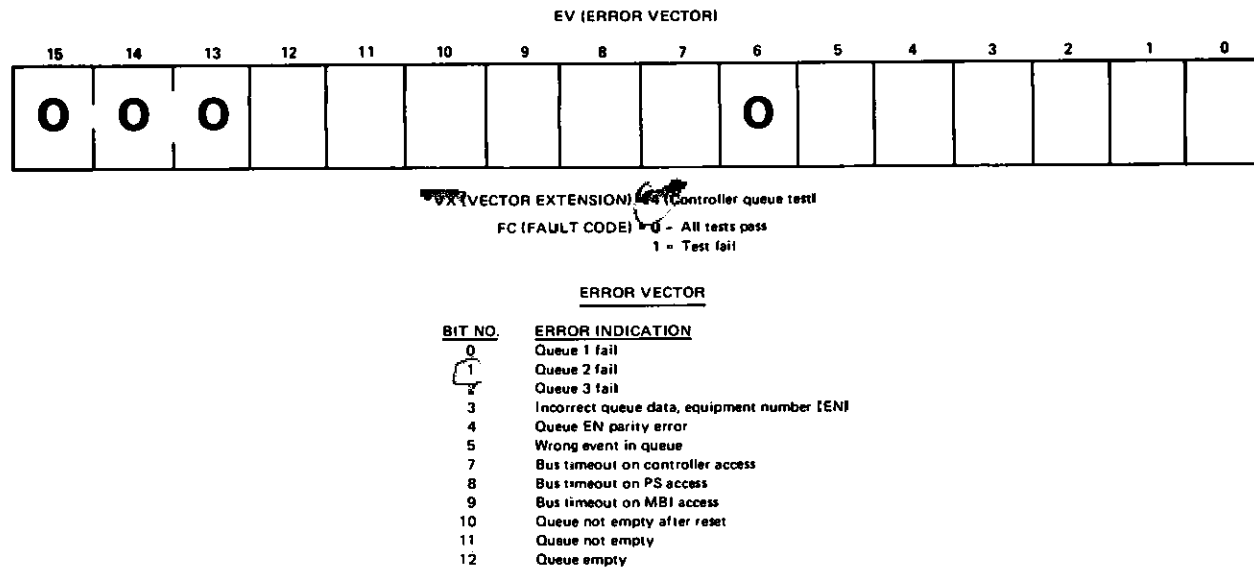
CP 7846

Figure 4D. CONTST Failure Indications



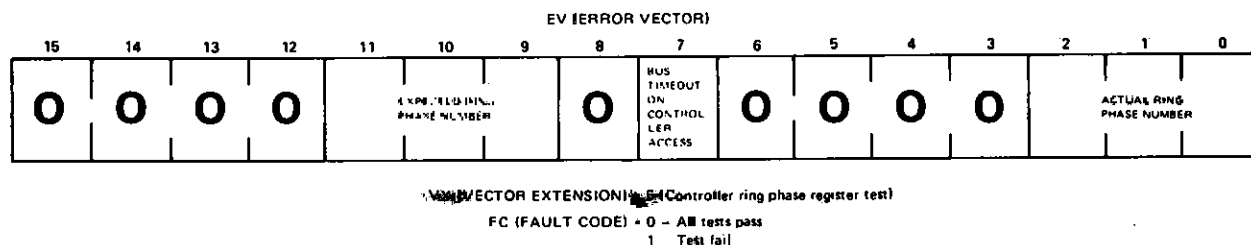
CP 7847

Figure 4E. CONTST Failure Indications



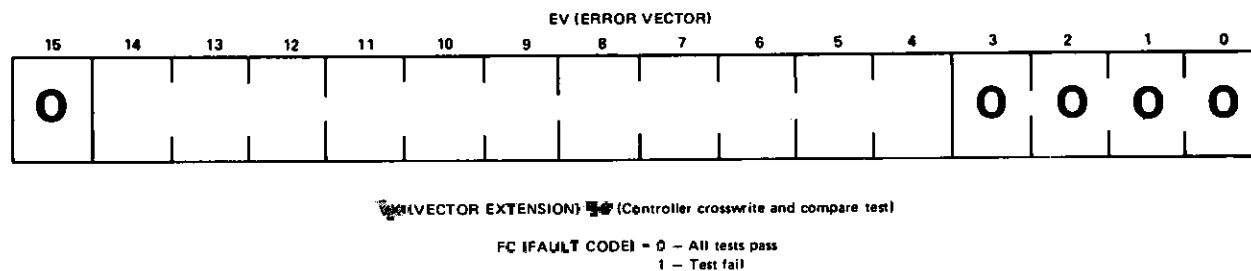
CP 7848

Figure 4F. CONTST Failure Indications



CP 7849A

Figure 4G. CONTST Failure Indications

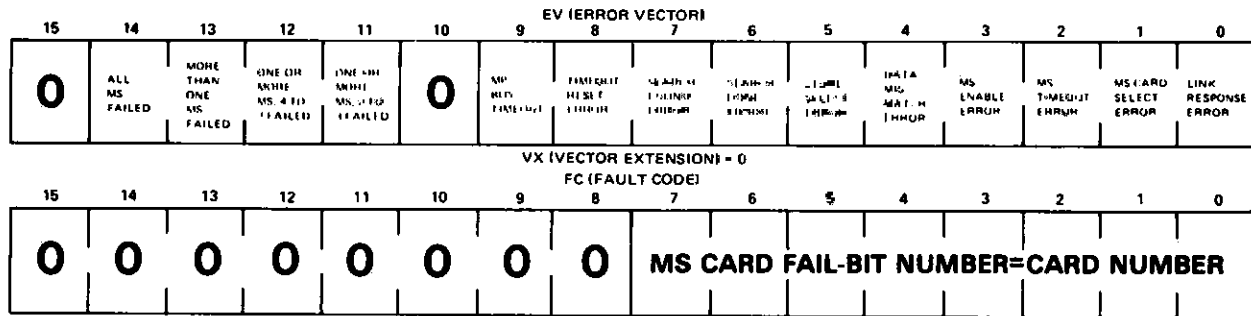


ERROR VECTOR

BIT NO.	ERROR INDICATION
4	Crosswrite enable bit did not reset when (on-line side) crosswrite completed
5	Crosswrite done bit did not reset when (on-line side) crosswrite enabled
6	CCEN register did not latch on controller mismatch
7	Bus timeout on controller access
8	Bus timeout on port store access
9	Bus timeout on MBI access
10	Crosswrite error flag set
11	PCS force parity error failure
12	Crosswrite failed to write all port store words
13	Crosswrite done failure
14	Controller comparator did not detect mismatch

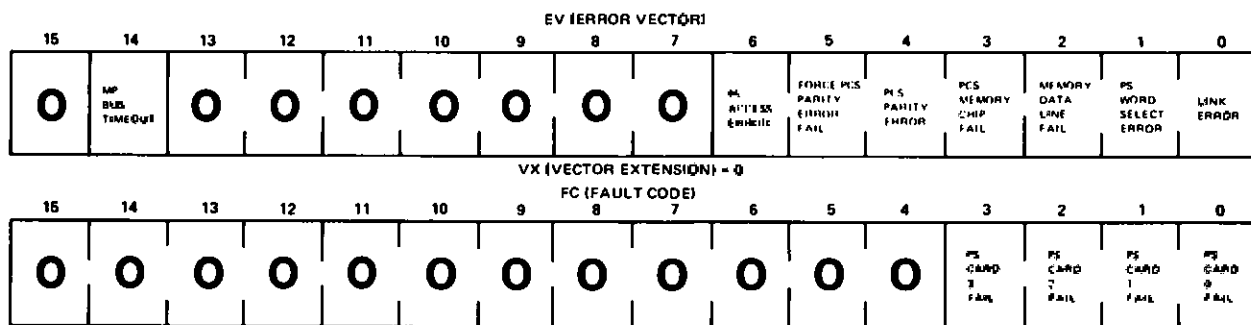
CP 7850

Figure 4H. CONTST Failure Indications



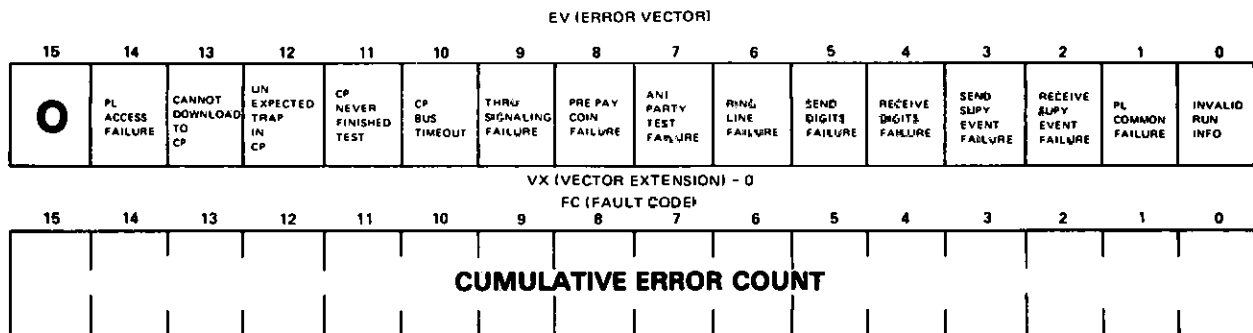
CP 7851

Figure 5. MSMTST Failure Indications



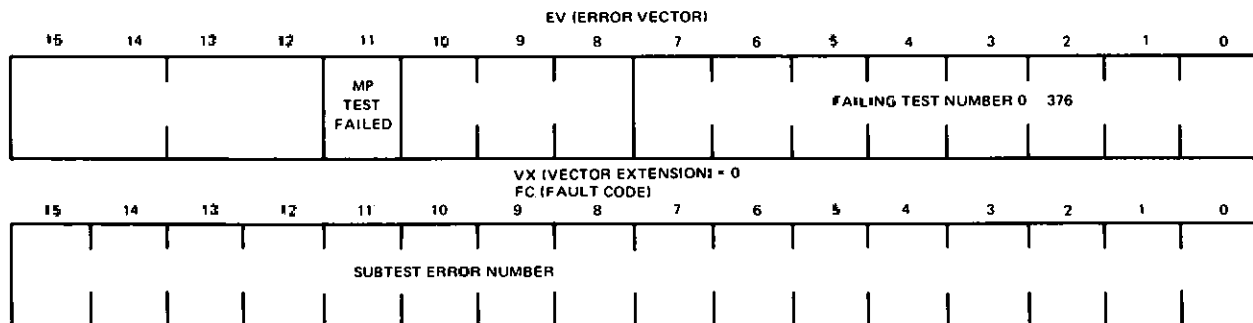
CP 7852

Figure 6. PSMTST Failure Indications



CP 7863

Figure 7. PGLTST Failure Indications



CP 7936

Figure 8. MPLTST Failure Indications

Table 2. PWBA Mnemonic to PWBA Assembly Number

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NAME</i>
ACLK	814016-526 814476-526	ANI Party Test, Clock Distribution Program Logic-ANI Clock Distribution
ALMS	814263-026	Alarm Sending and Checking
AMOD	814260-026	LXN A-Module
ANIP	814016-046 814476-026 814476-046	ANI Party Test and Local Clock Distribution ANI Party Test ANI Party Test
BMP1	814428-036	Basic Maintenance Panel Logic 1
BMP2	814429-026	Basic Maintenance Panel Logic 2
BMP3	814430-026	Basic Maintenance Panel Logic 3
BSTP	814404-526	Bus Termination, Parity Generator, Bootstrap
CBI	817111-526	CP Bus Interface
CCLK	814551-526	Line Calendar Clock
CODC	814248-026 814539-026	Filter PCM2 CODEC CODEC
CMEM	—	Any Call Processor Memory
CMMB	814405-556 814406-526	CP Memory Motherboard CP Memory Motherboard
CP	814405-586	Call Processor
C.P.	814405-586	Call Processor
CPPS	—	Call Processor Cell Power Supply
DBC	814272-526	Differential Bus Converter
DBT	814408-026 814408-036 814408-046	Differential Bus Terminator Differential Bus Terminator Differential Bus Terminator
DDIA	814305-026	DNI Diagnostics

Table 2. PWBA Mnemonic to PWBA Assembly Number (Cont)

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NAME</i>
DDIO	814313-026	DNI Diagnostics I/O
DNDR	814303-026	DNI Drivers
DNIF	814307-026	DNI/CPS Interface
DNII	814319-026	DNI Isolation
DNIM	814317-536	LXN Monitor and Display
DNIS	814321-026	DNI Auto Subscriber
DNIX	814306-026	DNI Transfer
DNMC	814302-026	DNI Marking Control
DNPM	814202-026	DNI Power Monitor
DNPR	814308-026 814308-526	DNI Processor DNI Processor
DNRC	814304-026	DNI Receivers
DNSC	814301-026 814301-526	DNI Scanner DNI Scanner
DP48	—	Distribution Power, 48VDC
DSID	817106-526	DSI Diagnostics
DSIF	817103-526	DSI Formatter
DSIM	817101-526	DSI Memory
DSIP	817102-526	DSI Processor
DSRB	817116-026	DSI Repeater
DSRP	817116-026	DSI Repeater
DTP	814445-526	Digital Tone Plant
FDU	202958-180	Floppy Drive Unit
FDUC	—	Floppy Drive Unit Controller

Table 2. PWBA Mnemonic to PWBA Assembly Number (Cont)

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NUMBER</i>
LCD	814093-026 814093-536	Local Clock Distribution Local Clock Distribution
LINK	814052-026 814052-526 814052-536	Data Link Data Link Data Link
LSI	814405-586	LSI-11 and Motherboard
LSIM	814447-526 814447-546	LSI-11 Memory Management LSI-11 Memory Management
MBI	814061-526 814470-536	Maintenance Bus Interface Maintenance Bus Interface
MBIB	817110-526	Maintenance Bus Interface
MCD	814034-026 814034-526	Master Clock Distribution Master Clock Distribution
MCLK	814033-526	Master Clock
MDCP	814053-024 814053-034	Main Display Control Panel Main Display Control Panel
MFDO	801545-016	MF Detector Output
MFDI	801544-016	MF Detector Input
MMMB	814406-526	Memory Motherboard
MPBJ	814410-026 814410-036	Processor Bus Jumper Ground Processor Bus Jumper Ground
MP	814405-586	Maintenance Processor
MPMB	814405-526 814405-586	Maintenance Processor Motherboard CPU and Adapter (LSI-11)
MS	814005-526	Matrix Switch
MSC	814270-526	Matrix Switch Controller
MSD	814069-526 814069-536	Matrix Switch Diagnostic Matrix Switch Diagnostic

Table 2. PWBA Mnemonic to PWBA Assembly Number (Cont)

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NAME</i>
MSX	814062-026 814062-526	Matrix Switch Expander Matrix Switch Expander
P265	(M8265) (S-C Part # Not Available)	PDP-11 Data Path Module
P266	(M8266) (S-C Part # Not Available)	PDP-11 Control Module
P301	(M9301) (S-C Part # Not Available)	PDP-11 Bootstrap Module
P302	202958-130	Terminator Board
P727	202958-120	PDP-11 Grant Continuity Module
P850	202958-140	PDP-11 Parity Memory Control Module
PCD	814265-526	Matrix Switch/Port Control System Diagnostic
PDP	..	PDP 11/34 Call Processor
PGC1	814254-026 814439-026	Port Group Control 1 Port Group Control 1
PGC2	814255-026 814440-026	Port Group Control 2 Port Group Control 2
PGMD	814256-026 814256-036 814441-036	Port Group MUX/DEMUX Port Group MUX/DEMUX MUX/DEMUX
PL01	814400-526	Program Logic-Line Expansion 0 Interface
PL11	814401-526	Program Logic-Line Expansion 1 Interface
PL1	814039-526 814535-526	Program Logic 1 (Common) Program Logic 1
PL2	814040-526 814534-526	Program Logic 2 (RSE/SSE) Program Logic 2
PL3	814041-526 814479-526	Program Logic 3 (Ring Line) Program Logic 3

Table 2. PWBA Mnemonic to PWBA Assembly Number (Cont)

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NAME</i>
PL4	814042-526	Program Logic 4 (Send Digits)
PL5	814043-526	Program Logic 5 (Receive Digits)
PL6	814046-526	Program Logic 6 (Receive Digits/Send Digits)
PLD	814412-526	Programable Logic Diagnostic
PORT	814293-026	Trunk/CODEC, 2-Wire E&M
	814293-046	Trunk/CODEC, 2-Wire E&M
	814294-026	Trunk/CODEC, Loop
	814295-026	Trunk/CODEC, Battery- and Ground-Pulsing
	814296-026	Trunk/CODEC, Step-by-Step, Incoming
	814297-026	Trunk/CODEC, Outgoing
	814403-026	Line Circuit, Paystation
PPC	814247-026	Program Logic Prepay Coin
	814402-526	Prepay Paystation Control
PSC	814271-526	Port Store Controller
PSM	814027-526	Port Control Store
PSXC	814277-526	PS Crosswrite Controller
	814277-536	Port Store Crosswrite and Control
PTG	814009-026	Precise Tone Generator
PWRM	814202-026	Power Monitor
RI	814057-046	Ringin Monitor and Serializer (Ringin Interrupter)
RIT	814057-066	Ringin Monitor and Serializer (Ringin Interrupter Transfer)
RITC	814057-086	Ringin Monitor and Serializer (Ringin Interrupter Transfer Control)
RTC	814264-026	Real-Time Clock
SBC	814037-526	Supervisory Buffer Control
SBUF	814028-526	Supervisory Buffer
SCMM	814561-026	Memory Management

Table 2. PWBA Mnemonic to PWBA Assembly Number (Cont)

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NAME</i>
SECP	814231-026	Secondary Protection (Lightning) – Lines
SGD	814074-546	Service Group Diagnostic
SGD2	814095-526	Service Group Diagnostic 2
SPP	814231-036	Secondary Protection (Paddle Board) – Trunks
SWC	814414-526	Switchover Control
SYNC	814026-526	Synchronizer
TAPE	–	LAMA Tape
TAS1	814063-026	Test Access Selector 1
TAS2	814064-026	Test Access Selector 2
TAS3	814088-026	Test Access Selector 3
TBI	814289-526 814289-536	Tape Bus Interface Tape Bus Interface
TBUF	814298-526	Tape Buffer
TC21	814073-026 814457-026	Test Call Generator 2 Test Call Generator 2
TC22	814073-046 814457-046	Test Call Generator 2 Test Call Generator 2
TCBL	–	Tape Unit Cable (DCO to Tape Unit)
TCG1	814072-026 814456-526	Test Call Generator 1 Test Call Generator 1
TCG3	814094-526 814458-526	Test Call Generator 3 Test Call Generator 3
TCG4	814292-026	Test Call Generator 4
TCG5	814292-046	Test Call Generator 5 (DNI)
TCPS	814463-026 814463-526	± 5-Volt Power Supply Tape Control Power Supply

Table 2. PWBA Mnemonic to PWBA Assembly Number (Cont)

<i>PWBA MNEMONIC</i>	<i>PWBA ASSEMBLY NO.</i>	<i>CIRCUIT NAME</i>
TDDI	801537-016	TD Detector Input
TDDO	801538-016	TD Detector Output
TDIA	814288-526	Tape Diagnostics
TDU	—	Tape Drive Unit
TIB	814290-026 814290-526	Tape Interface Buffer Tape Interface Buffer
TIMC	814038-526	Timing and Control
TMC	814291-526	Tape Motion Control
TMFD	801546-016	Toll MF Detector
TMFG	814013-026	Toll Multifrequency Generator
TNBF	814257-026 814492-036	Tone Buffer (PCM2) Tone Buffer (PCM2)
TPIF	814025-026 814464-026	Tone Plant Interface Tone Plant Interface
TPNL	—	Tape Panel
UMC	814283-526	Micro/Mini Converter
UMT	814409-526	Micro/Mini Terminator
WCDC	814426-026	Wire Chiefs Test Circuit (Discrete Card)
WCLC	814427-026	Wire Chiefs Test Circuit (Logic Card)
XIOP	814309-026	XIOP (DNI Port)
XNLC	814261-026	LXN Circuit