86-000   Work Station Controller (Local or Remote)

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86-010 HOW TO USE THE WORK STATION CONTROLLER ERROR INFORMATION (LOCAL)

The work station controller error information is used to determine the cause of failures in the work station controller. It is possible to use the work station controller error history tables only for intermittent problems. The display of the error recording analysis procedure program needs a working work station controller.

Run the error recording analysis procedure for the work station controller and look at the error information that has been recorded. If a pattern is observed from the information displayed, go to MAP 8600 for aid in correcting the problem. If you see no pattern, go to paragraph 86-200 for a general description of what the recorded information means.

86-100 ERROR COUNTER TABLE SAMPLE

```
ERROR COUNTER TABLE FOR WORK STATION CONTROLLER          DATE LAST RESET 09/09/77
                                                               DESCRIPTION  MAP
                   WSC DBO/DBI PARITY CHECKS ......    0      86-260       8600
                   WSC STORAGE PARITY CHECKS ......    0      86-280       8600
```

86-200 ERROR HISTORY TABLE SAMPLE

Only those errors that cause a complete failure of the work station controller are reported here. These errors cannot be associated with a work station. For more errors associated with the controller, see section 87 *Display Stations* or section 88 Matrix Printers.

```
ERROR HISTORY TABLE FOR WORK STATION CONTROLLER
              CON/HOST       WSC RETURN
               STATUS          STATUS         DATE        TIME
              ........ HEX ........          YY/MM/DD     HH:MM:SS
                 08             05           77/06/10     11:46:28
                 08             02           77/06/10     00:10:46
                 0C             00           77/06/10     10:33:32
               \___/          \___/
               86-250         86-250
```

86-250   Sense Bytes—General

Controller/Host Status Byte

Bits	Description	
0-2	Programming errors—displayed, but not logged in ERAP	
3	Work station controller data bus out or data bus in parity check	(86-260)
4	Operation check (Ignore an operation check condition if bit 3 or bit 5 or bit 7 is on)	(86-270)
5	Storage parity check	(86-280)
6	Ignore	
7	Long time-out check	(86-290)

WSC Return Status Byte	Description
00	Check first byte for bits 3, 5 or 7.
01	A time-out occurred in one of the serial interface subroutines while sending a frame to a work station.
02	A time-out occurred on a cycle steal.
03, 04	Not assigned.
05	No internal microcode interrupts have occurred in 30 ms.

86-260   WSC Data Bus Out or Data Bus In Parity Check

A parity error was sensed on the work station controller data bus out or data bus in. The controller is stopped and the system is informed of the problem. The system console indicates a console check after the error is recorded and all display stations go blank.

86-270   Operation Check

If bit 3, 5, or 7 is on, ignore an Operation Check condition. A hardware failure was sensed by the work station controller microcode. The second byte in the error log entry contains a code which specifies the reason for the operation check.

WSC Return Status Byte	Description
00	Check first byte for bits 3, 5, or 7.
01	A time-out occurred in one of the serial interface subroutines while sending a frame to a work station.
02	A time-out occurred on a cycle steal.
03, 04	Not assigned.
05	No internal microcode interrupts have occurred in 30 ms.

86-280   WSC Storage Parity Check

A parity check was sensed on the controller storage bus out.

86-290   Long Time-out

The work station controller microcode failed to reset the timer in 7 seconds. This is a general indicator of a work station controller microcode problem.

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**HOW TO USE THE 5251 MODEL 2
OR 12 WORK STATION CONTROLLER
ERROR INFORMATION (REMOTE)**

The ERAP option on the Prime Option Menu for the
online tests (2050) is used on the 5251 Models 2 and
12 or an attached display station to display or print the
errors that are logged in the host system. The ERAP
option shows the errors in an error history table for the
printer, the display station, or the controller (Model 2 or
12).

Examples of the display station and the 5251 Model 2
or 12 error history tables are shown here, with the
sense byte fields, field definitions, and logged error
codes. The size of the error log buffer is 16 bytes for a
basic Model 2 or 12 display station and an additional 64
bytes for each Cluster feature added.

The logged error codes are grouped for the display
station and the controller. These error codes follow the
error history table. The first 2 digits are the device code,
which represents where the error was found. The device
codes are:

00   Pertains to errors caused by the controller
      function (communications and Cluster feature).

01   Pertains to errors caused by a display station
      attached to a Cluster feature, and to errors
      caused by the keyboard/display controller
      functions of the Model 2 or 12.

02   Pertains to errors caused by the printer attached
      to a Cluster feature. Printer error codes are in
      the printer MIMs.

86-310 Error History Table and Logged Error
Codes for the Controller (Remote)

ERROR CODE	SENSE 0	SENSE 1	SENSE 2	SENSE 3	SENSE 4	DATE	TIME
0123	HEX	0123 4567	0123 4567	0123 4567	0123 4567	YY/MM/DD	HH:MM:SS
0086	00	0000 0000	0000 0000	0000 0000	0000 0000	78/08/24	04:46:19
0067	42	0000 0000	0000 0000	0000 0000	0000 0000	78/07/24	02:32:06

Device code

Error type

Error counter for error code 006x.
LSID for error codes 007x, 008x, and 009x. 00 for 004x and 005x,

(reserved)
No response
Transmit activity check
(reserved)

Receive parity check
Receive length check
(reserved)
Even/odd time-out

Busy
Line parity
(reserved)
Outstanding status

456

(reserved)

Op-end
Overrun
Receive parity error
End of transmission (EOT) character
Wrong station responded
Transmit activity check
(reserved)
(reserved)

Even/odd response level
0 = Even
1 = Odd

000 No exception status
001 Null or attribute not found
010 Invalid activate
011 (reserved)
100 Invalid command
101 Input queue/storage overrun
110 Invalid register value
111 Power-on transition

Note: Sense bytes 1, 2, 3, and 4 will contain zeros when the error code is not 007x, 008x, or 009x.

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86-320 Error Code Descriptions for the Controller (Remote)

Error Code	Error Description
0040	**Data set ready line inactive** The 'data set ready' line went inactive during a receive operation.
0042	**Receive clock failed** The 'receive clock' signal failed during a receive operation.
0043	**Data set ready line active** The 'data set ready' line is active and it should be inactive. This error will occur if the Modem Mode switch is left set to the Data position at the end of switched line operations and the Models 2 and 12 and/or the modem is set up for manual answer only.
0044	**30-second time-out** The 30-second time-out has ended with no valid data received. If the Models 2 and 12 and/or the modem is set up for auto-answer operation, the 'data terminal ready' line becomes inactive and causes a line disconnect.
0050	**Clear to send error** Either the 'clear to send' line was inactive while the 'request to send' line was active, or the 'clear to send' line was active while the 'request to send' line was inactive.
0051	**Transmit clock failed** The 'transmit clock' signal failed during a transmit operation.
0052	**Transmit hardware error** The transmit buffer failed to clear either before or during a transmit operation.

Error Code	Error Description
0054	**Command reject sent** The SDLC command received is not valid.
0060	**Test command counter–bad** Counts the test commands received from the host system with CRC errors during a link test.
0061	**Test command counter–good** Counts the test commands received from the host system without CRC errors during a link test.
0062	**Communication adapter underrun counter** Counts the underrun conditions found by the communication adapter. An underrun condition occurs during a transmit operation when the SDLC MPU fails to supply a character to the transmit buffer in time for the character to be sent on the line.
0063	**Communication adapter overrun counter** Counts the overrun conditions found by the communication adapter. An overrun condition occurs during a receive operation when the SDLC MPU fails to clear the receive buffer in time for another character to be received on the line.
0064	**Receive line signal detect glitch counter** Counts the 'receive line signal detect' line glitches during a receive operation.
0065	**Clear to send glitch counter** Counts the 'clear to send' line glitches during a transmit operation.
0066	**Data set ready glitch counter** Counts the 'data set ready' line glitches during a transmit or receive operation.

Error Code	Error Description

0067   Frame sequence error counter

Counts the frames that were received that have a sequence error (the Nr-Ns count does not match).

0068   Transmit retry counter

Counts the frame or groups of frames that must be transmitted again by the Models 2 and 12 to the host system because the host system did not receive them correctly.

0069   CRC error counter

Counts the frames that were received that have a CRC error.

0070   Cluster feature hardware

An internal Cluster feature error was detected.

0072   Cluster feature overrun

The Cluster feature MPU was not ready to receive the next frame from a work station.

0073   Cluster feature write error

A condition was found by the Cluster feature MPU at the end of a write operation that is not valid.

0086   Expanded Function feature not installed

A service request was received from a magnetic stripe reader, but the Expanded Function feature is not installed on this Model 2 or 12.

0098   Invalid error

The Cluster feature MPU found an error, but the error is not valid.

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