DIMENSION® 2000 AND CUSTOM PBX

NETWORK POWER FAILURES
(PROC 504)

CONTENTS

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1. GENERAL

1.1 This section provides information for interrogating PROC. 504 in the event that the craftsperson is directed to this procedure due to a NETWORK POWER FAILURE alarm. Whenever this type of alarm occurs the ALARM PANEL - MINOR and NETWORK PF led's will be lit.

2. RECORDS

2.1 Form SD 97-1313 is required for recording the results of this test.

3. MAAP DISPLAY FIELDS (PROC 504 FORMAT)

3.1 The following describes each of the display fields for the NETWORK POWER FAILURE (PROC 504) format:

FIELD	DESCRIPTION
1	TEST NO. Displays active test number (maximum of 3) per the following encodes:

ENCODE	DESCRIPTION
1	Displays failure history.
2	Tests all circuits sequentially.
3	Test a particular circuit (as displayed in fields 2 and 3).

2,3	EQUIPMENT LOCATION (MODULE/CAB) (TESTS 1, 2 and 3), for TESTS 1 and 2, displays test location. Allowable encodes are as follows:

ENCODE	DESCRIPTION
00 - MM	Allowable module encodes for field 2 (MM = highest module number in system under test).
0 - C	Allowable cabinet encodes for field 3 (C = highest cabinet number in module under test).

4	FAILURE CODE - (TESTS 1, 2 and 3), displays failure code per the following encodes:

ENCODE	DESCRIPTION
0	Pass
1	NETWORK POWER FAILURE
9	Network order incomplete

5	TOTAL CABINETS - (TESTS 1, 2, and 3), displays total number of network cabinets.
6	TOTAL CABINETS FAILED - (TESTS 1 and 2), displays total number of network cabinet failures.

7 FAILURE INDEX - TESTS 1 and 2), displays an index number which either indicates:
A) Locations with highest number of failures in descending order (TEST 1) or
B) Locations in order of detected failures.
Index number "0" in TEST 1, indicates a display of the failure history totals; in TEST 2, indicates that no failures were detected.

8 FAILURES PER HOUR - (TEST 1), displays a 2 hour average failure rate.

9 FAILURES BEGAN - HOURS AGO - (TEST 1), displays number of hours since failures started to nearest hour (17 hours maximum).

10,11 MOST RECENT FAILURE - HOURS/MINUTES AGO - (TEST 1), displays time since last failure to nearest minute (136 hours/31 minutes maximum).

4. MAAP CONTROL KEY SEQUENCES

4.1 PROC NO. 5, 0, 4, ENTER - Causes program for PROC 504 to be loaded into memory from tape for execution.

4.2 CLEAR DATA, EXECUTE - (TEST 1), clears failure history records stored in memory.

4.3 EXECUTE - Starts executing test number displayed in FIELD 1.

4.4 NEXT CIRCUIT - (TESTS 1 and 2), displays next failure. (TEST 3), advances test to next equipped cabinet when test is stopped.

4.5 NEXT TEST - Advance procedure to the next TEST.

4.6 RESET - Resets the procedure to the beginning of TEST 1.

4.7 STOP - Stops TEST 3 from further testing. NOTE: This key must be operated before the NEXT CIRCUIT key can be operated if TEST 3 is executing.

5. PROCEDURES

5.1 The following describes the repair procedure that should be used in the event of a NETWORK POWER FAILURE alarm.

5.1.1 Execute TEST 1 and record failure history generated by online maintenance.

5.1.2 Execute TEST 2 and record the results. If there are no failures, use TEST 3 to continuously test each cabinet displayed in TEST 1 to check for intermittent faults. If failures occur either during TEST 2 or 3, use the following repair procedures:

A) FAILURE CODE = 1, proceed as follows:

AA) If more than one cabinet is indicated, check for possibility of intermittent commercial power failure.

AB) Check for intermittent or marginal power supply.

AC) Replace LC105.

AD) Use procedure 508 to test LC105 more thoroughly.

B) FAILURE CODE = 9, use procedure 505.

5.1.5 After the trouble(s) has been cleared, go to TEST 1 and clear the on-line maintenance records (use CLEAR DATA, EXECUTE keys).

6. TROUBLESHOOTING AIDS

6.1 GENERAL TEST PROCEDURES

6.1.1 TEST 1 - TEST 1 is the default test when the procedure is first read in from the tape or when the MAAP-RESET key is operated. When the MAAP-EXECUTE key is operated, data accumulated by on-line maintenance is displayed on the MAAP starting with the display of the total failures (FAILURE INDEX = 0). If failures were detected, FIELD 6 should display the total cabinet failure number and FIELD 8 thru 11 will display the failure history. If no failures were detected, FIELD 6 will display a "0" and FIELDS 9 thru 11 will contain dashes. NOTE: If failures were detected and if failure index is a "0", FIELDS 2 thru 4 will be dashed since this type of display only indicates totals and not a display of a cabinet failure.

If failures were detected, operation of the NEXT CIRCUIT key will display the location of the cabinet failure by index number. FIELDS 2 and 3 will display the failure location,

FIELD 4 displays the type of failure and FIELD 7 displays the failure index. Repeated operation of the next circuit key displays other failures until all detected failures have been displayed, in which case all FIELD except 1 and 6 will be dashed.

Operation of the CLEAR DATA, EXECUTE keys clears the fault records.

6.1.2 TEST 2 - The purpose of this test is to test all NETWORK POWER FAILURE alarm detectors, to display the failed circuits, and to control ALARM PANEL - NETWORK POWER FAILURE alarms.

The test is initiated when the MAAP-EXECUTE key is operated, which turns on the MAAP-WAIT lamp and begins testing each of the network cabinet maintenance circuits (LC105's). At the end of the test, the WAIT lamp is turned off and the appropriate data and alarms are displayed.

If a failure is detected, the MINOR and NETWORK POWER FAILURE (PF) lamps are turned on. All failed circuit data is stored and at the conclusion of the test, the first failed circuit will be displayed in FIELDS 2 and 3. Operation of the MAAP-NEXT CIRCUIT key will display other detected failures if more than one failure exists. If no failures are detected, the ALARMS - MINOR and NETWORK POWER FAILURE - are turned off.

6.1.3 TEST 3 - The purpose of this test is to test a particular circuit continuously and to turn on the alarms if a failure exists. If a default circuit (last circuit failure detected) is not displayed, the craftsperson must enter a circuit location. If the displayed location is not the one desired, it can be changed by the change field sequence or by continually operating the next circuit key until the desired one is obtained. The test is started by operating the EXECUTE key.
The WAIT lamp is not turned on since the test is continuous. However, the failure code is flashed (60 IPM) in FIELD 4 to indicate that the test is running. If a failure is detected, the test continues to run and FIELD 4 flashes the appropriate failure code. The test can be stopped by either operating the STOP key (which then allows a next circuit key operation) or operating the next test, reset, or proc no keys.

6.2 GENERAL TROUBLESHOOTING INFORMATION

6.2.1 PROC 504 checks for NETWORK POWER FAILURE failures by addressing each of the network cabinet maintenance circuits (LC105)

and checking the status of the power flip flop. To check the power failure flip flop, the BBS15* is activated (made low) and the status of the flip flop will appear on the SS3* output lead. That is, if there is a power failure, when the BBS15* lead is activated the SS3* should pulse low. The LC105 - PWR should light if there was a power failure.

The above describes what is verified and should be checked in the event that a fail code of "1" is displayed in FIELD 4 and the normal troubleshooting procedures described in Paragraph 5 of this section did not clear the trouble.

FAIL CODE 9, in FIELD 4 indicates failure to receive an I/O done signal from the network and if this is the case PROC 505 should be used to clear the trouble.

6.2.2 Check +5M4 fuses.

TEST 1:

DISPLAYS FAILURE HISTORY.
USE 'NEXT CIRCUIT' TO DISPLAY FAILURE HISTORY.
USE 'CLEAR DATA,EXECUTE' TO CLEAR FAILURE HISTORY.

TEST 2:

TESTS ALL CIRCUITS.
USE 'NEXT CIRCUIT' TO DISPLAY NEXT FAILURE.

TEST 3:

TESTS A PARTICULAR CIRCUIT CONTINUOUSLY.
USE 'NEXT CIRCUIT' TO DISPLAY NEXT EQUIPMENT LOCATION.
FAILURE CODES:

0= PASS 9= NETWORK ORDER
1= FAIL INCOMPLETE

ISSUE L7.8

PROC 504

ISSUE L7.8

NETWORK POWER FAILURE

TEST NO 1	TEST 3 EQUIPMENT LOCATION MODULE 2	CAB 3	FAILURE CODE 4	TOTAL CABINETS 5	TOTAL CABINETS FAILED 6	FAILURE INDEX 7	FAILURE HISTORY: FAILURES PER HOUR 8	FAILURES BEGAN-HOURS AGO 9	MOST RECENT FAILURE: HOURS AGO 10	MINUTES AGO 11

PROC 504

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