

DIMENSION<sup>®</sup> 2000 AND CUSTOM PBX  
(CSS 201L)  
X-RAY TEST 02  
(SYSTEM TEST)

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1. GENERAL INFORMATION

1.1 Description

1.1.1 This section describes the procedures to be followed to perform X-Ray Test 02.

1.1.2 X-Ray Test 02 is run to test the entire PBX.

1.2 Test Description

1.2.1 X-Ray Test 02 automatically executes several of the X-Ray sub-routines in order to assure proper operation of the entire PBX.

1.2.2 During initial testing, system configuration Format F18 should be monitored to verify hardware counts and that all circuit packs are functioning properly.

2. RECORDS

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

3. TEST EQUIPMENT

3.1 Test Sets -- see Section 400 of Handbook 281.

PRIVATE

THE INFORMATION CONTAINED HEREIN SHOULD NOT BE DISCLOSED TO UNAUTHORIZED PERSONS. IT IS MEANT SOLELY FOR USE BY AUTHORIZED BELL SYSTEM EMPLOYEES.

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#### 4. TEST PROCEDURES

- 4.1 If the system under test is Feature Package 9 (FP9) equipped with LC03 and LC190, X-Ray Test 52, Mode 1 should be run before running Test 02.
- 4.2 At the MAAP, are the IN USE, BUSY OUT, and WAIT lamps cycling on and off or is the BUSY OUT lamp flashing? If not, at the Alarm Panel, depress HALT then GO.
- 4.3 At the MAAP depress EXECUTE and Dial 0, 2.
- 4.4 Are the Alarm Panel lamps cycling on and off as shown in Figure 1? If not, perform repairs as indicated by the Fault Code and restart the test.
- 4.6 During initial testing, Format F18 should be monitored to verify all circuit packs are in working order.
- 4.7 Test Pass Indication for Unduplicated Processor.
- 4.71 The Alarm Panel lamps cycling on and off as shown in Figure 1 in conjunction with the PASS lamp changing state with each cycle of the test is the indication that Test 02 has been successfully completed.
- 4.8 This completes the required testing per X-Ray Test 02 for a single processor system, if you are testing a duplicated process system proceed to step 4.9 of this section.
- 4.9 Duplicated Processor System Test Procedure
- 4.901 The following test steps are provided to verify proper operation of both processors in a Duplicated Processor machine including the system's capability to successfully switch back and forth between the two processors.
- 4.902 X-Ray Tests 02 and 04 must be completed prior to running this test to assure the network is operating properly.
- 4.903 Two X-Ray tapes must be loaded (one for each processor) per Section 400.01 of this Handbook.
- 4.904 At the Alarm Panel set the SYSTEM SELECT switch to CCO and depress the STOP key at the MAAP. Now select CC1 with the SYSTEM SELECT switch and depress STOP at the MAAP.
- 4.905 At the MAAP depress the EXECUTE key and Dial 01.
- 4.906 At the Alarm Panel place the SYSTEM SELECT switch in the CCO position and then return it to the NORMAL position.

- 4.9 Duplicated Processor System Test Procedure (Cont'd)
- 4.907 At the MAAP, depress RLS/BUSY OUT and Dial 02.
- 4.908 Are the Alarm Panel lamps at both Common Control 0 and 1 cycling as indicated in figure 1? The lamps at CCO cycle at a slower rate than do the lamps at CC1.
- 4.909 At this point Format F28 should appear at the MAAP. The display at the MAAP will indicate an unduplicated system at this time.
- 4.910 After Test 02 has run through the first complete test, the PASS lamp on CCO will come on.
- 4.911 If the off-line processor tape (CC1) is running the on-line (CCO) processor will wait until the tape stops running before a switch is made.
- 4.912 The ACT lamp on CCO should now go out and the ACT lamp on CC1 should come on.
- 4.913 The MAAP should now indicate a Duplicated Processor system. If not, replace first the on-line LC146 (CCO) and restart the test, if after replacing the on-line LC146 (CCO) the MAAP still does not indicate a Duplicated Processor replace the off-line LC146 (CC1) and restart the test.
- 4.914 Allow sufficient time for another complete cycle of tests 01 and 02 to run.
- 4.915 Test Pass Indication - the PASS lamp on CC1 should come on, the ACT lamp on CCO should go out and the ACT lamp on CC1 should come on. (The ACT lamps will swap states each time a successful processor switch takes place.)
- 4.916 This completes the required testing per X-Ray Test 02 for a Duplicated Processor system.
- 4.917 Automatic Repeat Mode Operation.  
In the event that you should desire to run X-Ray Test (02) in the Automatic Repeat Mode via the MAAP, operate RLS BUSY/OUT and Dial 02.
- 4.918 The Alarm Panel lamps should be cycling on and off as shown in Figure 1.

- 4.919 If the lamps on the Alarm Panel are not cycling, at the MAAP depress DISPLAY and 2. The faults that have occurred will be recalled from memory by repeatedly depressing 2 up to a maximum of ten (10) faults.
- 4.920 Perform the repairs indicated by the Fault Code and restart the test. Depress the RESET key to clear the MAAP display.
- 4.921 Automatic Repeat Mode Pass Indication  
After the test has run, observe the MAAP Fault Code fields, see Format F7. If no Fault Code is displayed the test has run with no failures and will continue to run until manually stopped by depressing the STOP key on the MAAP. Decimal 620 will be displayed on the MAAP and the BUSY OUT lamps on the MAAP will flash.
- 4.922 This completes X-Ray testing per X-Ray Test 02.

5. Minimum Circuit Pack Requirements

- 5.1 The system should be equipped per the COD for this test.

LAMP CYCLING SEQUENCE (LAMPS 1-22)

ALARMS		PROCESSOR/MEMORY			MAAP PROCEDURES							
MJ	MN	I/O	PROC	MEM	CONTROL		OVER	FUSE				
1	2	BUS	4	5	TAPE	I/O	TEMP	10				
		3			7	8	9					
			PASS	FAIL	PF	I/O	SCAN	NET	PAM			
				6	11	12	13	14	15			
					TONE	CNSL	LINKS	TTR	TRKS			
					16	17	18	19	20			
					ANI	OTHER						
					21	22						

FLASH RATE = 40 MS

FAULT CODE DISPLAY

MJ	MN	I/O	PROC	MEM	BIT SWAP	CONTROL		OVER	FUSE	
	TH <sub>8</sub>	BUS	TH <sub>2</sub>	TH <sub>1</sub>		TAPE	I/O	TEMP		
		TH <sub>4</sub>				H <sub>8</sub>	H <sub>4</sub>	H <sub>2</sub>	H <sub>1</sub>	
						PF	I/O	SCAN	NET	PAM
							T <sub>8</sub>	T <sub>4</sub>	T <sub>2</sub>	T <sub>1</sub>
						TONE	CNSL	LINKS	TTREG	TRKS
							U <sub>8</sub>	U <sub>4</sub>	U <sub>2</sub>	U <sub>1</sub>

TH = THOUSANDS  
 H = HUNDREDS  
 T = TENS  
 U = UNITS

EXAMPLE:

LAMPS ON  
 (TH<sub>1</sub>) MEM = 1000  
 (H<sub>8</sub>) TAPE = 800  
 (T<sub>2</sub>) NET = 20  
 (U<sub>4</sub>) LINKS = 4  
 FAULT CODE: 1824

8	4	2	1	DIGIT
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9

1 = LAMP ON

—Alarm Panel Lamp Sequence and Fault Code Display

Fig. 1

Reason for Issue:  
New Section

Manager, Denver PBX PECC