DIMENSION® 600/2000 PBX
STATION-TO-STATION TEST CALL
(PROC 550)

1. GENERAL

1.1 This section is issued in order to make available the information contained in the Administration and Maintenance Manual, 500-497, PROC 550.

1.2 The attachment provides procedures for testing touch-tone registers and rotary digit collection.

ATTACHMENT

PROC 550 (8 pages)

Reason for Issue:
New Section

Manager, Denver PBX PECC

PROCEDURE 550 - STATION-TO-STATION TEST CALL

A. DESCRIPTION

Procedure 550 should be called in to test TOUCH-TONE (TT) registers by allowing a call to be placed from any station via any TT register. Procedure 550 displays the digits dialed as decoded by the register.

Three tests are available:

- Test 1 - Tests all TT registers.
- Test 2 - Tests a specific TT register.
- Test 3 - Tests rotary digit collection.

TEST 1:	TEST 2:	TEST 3:	NOTES:	STATE ENCODES:
TESTS ALL TT REGISTERS USE 'NEXT CIRCUIT' TO OBTAIN THE NEXT UNTESTED TT REGISTER. USE 'NEXT UNIT' TO OBTAIN AN UNTESTED TT REGISTER IN THE NEXT MODULE.	TESTS A SPECIFIED TT REGISTER. PROVIDE THE EQUIPMENT LOC OF THE TT REGISTER IN FIELDS 8-11.	TESTS ROTARY DIGIT COLLECTION.	1. A DEFAULT TEST LINE IS DISPLAYED. 2. PLACE THE NUMBER TO BE DIALED INTO FIELD 12 TO TURN OFF HUNTING. ERROR CODE: 80-ONLY TESTING 63 TT REGISTERS AT A TIME.	0=TEST LINE OR REG. NOT AVAIL. 1=TEST LINE ON HOOK. 2=DIAL TONE THRU DIALING. 3=RINGING OR TALKING. 4=BUSY OR INCPT. 5=END OF GROUP TEST. 6=CALL ABORTED. 7=NO REGISTER OR NO TIME SLOT AVAIL.

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TEST NO	TEST LINE EQUIPMENT LOC.					T-T =1, ROT =0	TEST 2				DESTINATION NUMBER	STATE	PROC 550
	MODULE	CABINET	CARRIER	SLOT	CIRCUIT		T.T. REGISTER EQUIPMENT LOCATION						
							MODULE	CAB	CARR	SLOT			
1	2	3	4	5	6	7	8	9	10	11	12	13	

1.	–		0.	1.	1.		9.	0.	1.	–		0.	1.	0.	2	3.	–		4	2	4.	–	–	2.		550
FIELD	1		2		3	4		5		6	7		8		9	10		11		12				13		

B. FIELD DEFINITIONS AND CODES

Field	Code	Definition
1	1-3	Test number.
Test Line Equipment Location.		
2	0-24	Module number.
3	0-4	Cabinet number.
4	0	Line group control carrier number.
	1-4	Line port carrier number.
5	5,7-10, 12-18	Slot number of circuit pack in a line group control carrier.
	2-9, 11-18	Slot number of circuit pack in a line port carrier.
6	0-3	Number of circuit assigned to line.
7	0 1	TOUCH-TONE. Rotary digit collection.

Field	Code	Definition
TOUCH-TONE Register Equipment Location (Test 2 only).		
8	0-24	Module number.
9	0-4	Cabinet.
10	0	Module control and trunk port Carrier number.
	1-4	Trunk port carrier number.
11		Slot number of circuit pack in module control and trunk port carrier:
	8,10,12, 15,17,19, 21,or 23	LC10
	9,11,13, 16,18,20, 22,or 24	LC54
		Slot number of circuit pack in trunk port carrier:
	11,13,15, or 17	LC10
	12,14,16, or 18	LC54

B. FIELD DEFINITIONS AND CODES (Contd)

Field	Code	Definition
12	Any 2-, 3-,or 4-digit number	Dialed/destination number.
13	0	Test line or specified register is not idle.
	1	Test line is on-hook and the register is idle.
	2	Dial tone through dial completion.
	3	Ringing or talking.
	4	Busy or intercept tone.
	5	End of group test.
	6	Call dropped.
	7	No register or time slot available.

C. TEST PROCEDURES

A list of station-to-station call tests, what each one does, and how each is run follows:

Call in Procedure 550:

PROC NO.; 550; ENTER

Test 1 is automatically selected.

Depressing the NEXT TEST key repeatedly advances the procedure to the desired test.

Test 1:

Test 1 enables the craftsperson to test all TT registers by means of test calls. A TOUCH-TONE telephone set is used for the test calls.

CAUTION

The test line used for the test calls (fields 2 through 6) must be in service and not busied out.

When Test 1 is called in, default test line and first TT register equipment locations are displayed in fields 2 through 6 and 8 through 11, respectively. These circuits can be used or other circuit locations can be selected.

The module field of the test line equipment location (field 2) is flashed when Test 1 is called in, indicating it is an optional entry field. To select another test line, enter its equipment location in fields 2 through 6; eg:

(Test Line Module); ENTER; (Cabinet); ENTER; (Carrier); ENTER; (Slot); ENTER; (Circuit); ENTER

> **NOTE**
>
> If field 2 alone is changed, a new default test line is displayed in fields 3 through 6.

If another TT register is to be selected, the NEXT CIRCUIT and NEXT UNIT keys can be used to sequence through all the TT registers in the system. NEXT CIRCUIT sequences the test to the next untested TT register in the module. NEXT UNIT sequences the test to the first untested TT register in the next module.

To start the test, depress the EXECUTE key. The test sequence is as follows:

1. If the test line and TT register are available, field 13 equals 1.

2. The number to be dialed may be entered in field 12, followed by ENTER. This entry assures that the test call will be directed to the station dialed. If a number other than that entered in field 12 is dialed from the test line and hunting is allowed, the test line will be connected to a hunted-to station if the dialed station is busy and the call is successful.

3. When the test line is taken off-hook and a number dialed, field 13 should advance to 2. During dialing, field 12 contains the dialed digits.

4. When dialing and ringing have been completed, field 13 should contain a 3 (if a conversation is in progress) or 4 (if a busy or intercept tone is received), indicating completion of the test for the selected TT register.

   After dialing has been completed, field 12 changes to display the hunt-to destination. If hunting does not occur, the dialed number is displayed.

5. If during the test sequence field 13 displays a 0, 6 or 7, a problem in the test call is indicated.

6. When Test 1 is completed and all TT registers have been tested, field 13 equals 5.

TT registers that are in use when an attempt is made to test them are passed over. If the system has more than 63 TT registers, special error code 80 is displayed to indicate that testing of all TT registers has not been completed. Testing should be continued until the test has been sequenced through all possible TT registers. Depressing the NEXT CIRCUIT key after the test of the last TT register has been attempted reloads the test buffer with more untested TT registers and causes special error code 80 to be displayed again. The next set of TT registers can now be

C. TEST PROCEDURES (Contd)

tested, noting that state 5 will be displayed only when all registers have been tested.

Test 2:

Test 2 enables the craftsperson to test a specific TT register by means of a test call.

CAUTION
The test line used for the test calls must be in service and not busied out.

When Test 2 is called in, the default test line and TT register equipment locations from the previous test are displayed in fields 2 through 6 and 8 through 11, respectively. The module field of the TT register equipment location (field 8) is flashed, indicating it is an optional entry field. Either the default TT register can be tested or another TT register can be selected. To select another TT register, enter its equipment location in fields 8 through 11; eg:

(TT Register Module); ENTER (Cabinet); ENTER; (Carrier); ENTER; (SLOT); ENTER

To start the test, depress the EXECUTE key. The test sequence is the same as described in test sequence Steps 1 through 5 for Test 1.

Test 3:

Test 3 enables the craftsperson to test rotary digit collection, where a TT register is not used. Rotary digit collection consists primarily of the collection and counting of groups of dial pulses by the call processing software.

When Test 3 is called in, a default test line is displayed in fields 2 through 6. If the selected originating register is for rotary digit collection, a 1 is displayed in field 7.

To start the test, depress the EXECUTE key. The test sequence is similar to that described for Test 1, except a rotary dial telephone set must be connected to the test line.

D. REPAIR GUIDE

When a TT register failure is indicated, the following steps should be performed, in the order shown, to isolate and repair the faulty unit:

Step	Isolation Procedure
1.	Execute Test 1 and record the test results.
2.	Based on test results, use Test 2 to further test suspect circuits.

C. TEST PROCEDURES (Contd)

Step	Isolation Procedure
3.	To test a TT register, proceed as follows:
	(a) At the test line circuit pack, install a 249A adapter and TOUCH-TONE type telephone set.
	(b) Depress the EXECUTE key.
	(c) Choose one valid directory number which contains any of the following:
	• 1, 5, and 9 used in any combination.
	• 1, 6, and 8 used in any combination.
	• 2, 4, and 9 used in any combination.
	• 2, 6, and 7 used in any combination.
	• 3, 5, and 7 used in any combination.
	• 3, 4, and 8 used in any combination.
	(d) Dial the chosen number.
	(e) If field 12 displays a number different than the one dialed, and if hunting was disabled (intended destination number entered in field 12 before starting the test), the TT register is failing.
	(f) If the TT register did not fail, make another test call using a directory number that contains a 0.
	(g) Test the other TT registers in the system as described in Steps 3(b) through 3(f).
4.	If all the TT registers in a given carrier fail, replace LC49B and rerun the tests.
5.	If Step 4 does not clear the trouble, replace LC101.
6.	If only one TT register is failing, refer to the LC10B and LC54B test point descriptions and go to Step 7.

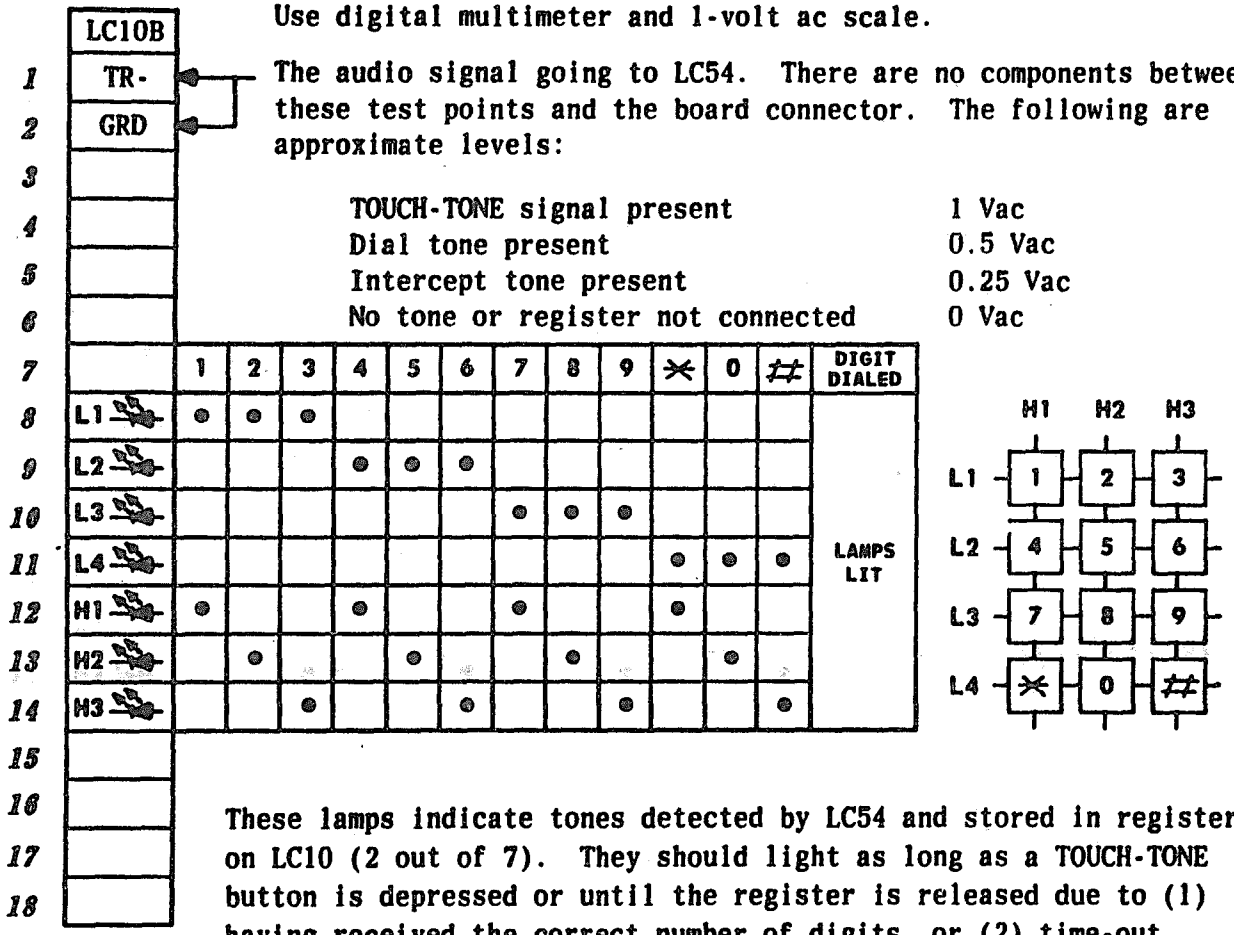
NOTE

In later systsems, LC10B and LC54B circuit pack pairs may be replaced by an LC10C circuit pack.

7.	If a single register is failing, determine whether LC10B or LC54B is at fault as follows:
	(a) Select the failing TT register and dial the number that was dialed before (Steps 3(c) and 3(d).

C. TEST PROCEDURES (Contd)

Step	Isolation Procedure
	(b) Watch the light-emitting diode (LED) indicators on LC10B (Figure 550-1).
	(c) If the LEDs display the correct 2-out-of-7 code for the directory number dialed, replace LC10B.
	(d) Repeat the test.
	(e) If the trouble is not cleared, check the wiring .
	(f) If the LED display is not correct, check TP1 on LC10B for a signal.
	(g) If the signal is absent, replace LC10B.
	(h) If a signal is present at LC10B TP1, check TP8 on LC54B.
	(i) If the signal is absent, replace LC54B.
	(j) If the signal is presesnt at LC54B TP8, dial a digit and check TP1 through TP7 on LC54B for the proper 2-out-of-7 code.
	(k) If the code is not correct, replace LC54B.
	(l) If the code is correct, replace LC10B.
	(m) If LC10B is replaced and the problem still exists, check TP9 through TP12 on LC54B for the correct voltages.
	(n) If any of the voltages are incorrect, replace LC54B.



Use digital multimeter and 1-volt ac scale.

The audio signal going to LC54. There are no components between these test points and the board connector. The following are approximate levels:

TOUCH-TONE signal present	1 Vac
Dial tone present	0.5 Vac
Intercept tone present	0.25 Vac
No tone or register not connected	0 Vac

These lamps indicate tones detected by LC54 and stored in registers on LC10 (2 out of 7). They should light as long as a TOUCH-TONE button is depressed or until the register is released due to (1) having received the correct number of digits, or (2) time-out (about 20 seconds). There is additional decoding before these signals leave LC10.

Fig. 550-1 – LC10B Test Points and Indicators

END