

DIMENSION® 2000 PBX
AND CUSTOM PBX
CONTACT INTERFACE TEST
(PROC 573)

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1. GENERAL

1.1 This procedure allows the craftsperson to test the Contact Interface boards (LC15) in the system. By selecting the appropriate tests (1-4) all contacts on a particular board or just selected contacts can be tested. The tests provide the option to test a selected contact set by either hard closure or alternating open and closure.

1.2 This procedure is necessary to allow the craftsperson to determine whether apparent peripheral failure(s) are due to a peripheral device malfunction or the Contact Interface board which controls it. The corresponding contact operation can be verified visually or audibly (i.e. Lamp, Buzzer, etc.).

Notes: 1 - This test will run without any peripheral being connected to the system and will not produce a failure message.

2 - This test will run without any Contact Interface board (LC15) plugged into the carrier, and will not produce a failure message. If error code 74 is displayed, it indicates that no Contact Interface board (LC15) is found in the translation.

1.3 The testing of each board selected is accomplished by one or all of the following tests:

Test 1: Exclusively open and close each contact on the selected Contact Interface board at a 60 Interrupt per Minute (IPM) rate.

Test 2: Same as Test 1, except each contact on the selected Contact Interface board remains closed for 5 sec. intervals.

PRIVATE

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

1.3 (cont'd)

Test 3: Manual selection of a contact on the selected Contact Interface board at a 60 IPM rate.

Test 4: Same as Test 3, except each contact on the selected Contact Interface board remains closed for the duration of testing interval.

2. RECORD

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

3. MAAP DISPLAY FIELDS

3.1 The Contact Interface Test (See Fig. 1) is comprised of the following fields:

<u>FIELD</u>	<u>DESCRIPTION</u>																		
1	Test number (1-4)																		
2-6	Equipment location of Contact Interface board to be tested; Maximum value in each field per following:																		
	<table border="0"> <thead> <tr> <th><u>FIELD</u></th> <th><u>MAX. VALUE</u></th> <th><u>DESCRIPTION</u></th> </tr> </thead> <tbody> <tr> <td>2</td> <td></td> <td>Max. module no. to be inserted</td> </tr> <tr> <td>3</td> <td>4</td> <td>Max. cabinet no.</td> </tr> <tr> <td>4</td> <td>4</td> <td>Max. carrier no.</td> </tr> <tr> <td>5</td> <td>25</td> <td>Max. slot no.</td> </tr> <tr> <td>6*</td> <td>7</td> <td>Max. contact no.</td> </tr> </tbody> </table>	<u>FIELD</u>	<u>MAX. VALUE</u>	<u>DESCRIPTION</u>	2		Max. module no. to be inserted	3	4	Max. cabinet no.	4	4	Max. carrier no.	5	25	Max. slot no.	6*	7	Max. contact no.
<u>FIELD</u>	<u>MAX. VALUE</u>	<u>DESCRIPTION</u>																	
2		Max. module no. to be inserted																	
3	4	Max. cabinet no.																	
4	4	Max. carrier no.																	
5	25	Max. slot no.																	
6*	7	Max. contact no.																	
	*Field 6 displays location of contact that is being tested.																		
7-14	State of each contact is being displayed: 0 - open 1 - closed																		
15	Failure code indicating I/O error (code 9).																		

4. VALID MAAP KEY SEQUENCES

4.1 PROC NO. , 5, 7, 3, ENTER - Loads program into memory from tape. When program is fully loaded into memory, the WAIT lamp will be extinguished. Fields 2-5 will display first Contact Interface board to be tested. Dashes (-) will be displayed in fields 7-15. Field 6 displays the contact to be tested.

4.2 NEXT CIRCUIT - To find location of other Contact Interface board(s) in

4.2 (cont'd)

the system, operate this MAAP key till you locate the board. When the last board is displayed, another operation of this key will display dashes (-) in all fields left of field 1. Next operation of this key will again start displaying the location of the first Contact Interface board and start the sequence over again (See notes 3 and 4).

Notes: 3 - If this key is operated after "EXECUTE" key is pushed, then there will be an ERROR CODE 00 displayed, but the test will continue to run. To avoid this condition do the following:

- a. Operate "STOP" key.
- b. Operate "NEXT CIRCUIT" key till you find the desired board.
- c. Operate "EXECUTE" key to start testing the newly located board.

4 - When either test 1 or 2 is being executed, and 1 is being displayed in field 2 (Module 1), and "NEXT CIRCUIT" is pushed, dashes (-) will be displayed in all fields right of field 2 and in field 15 fault code 9 will be displayed.

4.3 NEXT TEST - Will increment test number (field 1) by one, and display dashes (-) in all the fields right of field 6. This key can be operated any time during testing. The number (0 or 1) in field 2 will flash at 60 IPM rate.

4.4 EXECUTE - This key is used to initiate testing for each test sequence (test number in field 1). Operation of this key for tests (1 and 2) will start testing the first contact location, and test each contact for 5 seconds. Fields 6 and 8-15 will display 0, field 7 will display alternating 1 to 0 for 5 seconds. Then the same alternating on-and-off sequence (1 and 0) will move right to field 8 and field 6 will increment by 1. This automatic sequence will continue and when it reaches field 14 it will repeat until it is stopped by the craftsman.

4.4.1 For tests 3 and 4, when "EXECUTE" key is operated, the contact which number is displayed in field 6 (e.g. 0) will be tested. To test the desired contact (0-7) you can follow either approach 1 or 2:

- 1:
 - a. Operate "STOP" key, which display dashes (-) in all the fields right of field 6.
 - b. Operate "NEXT DATA" key as many times as desired till the number of the contact to be tested (0-7) is displayed in field 6.
 - c. Operate "EXECUTE" key which will cause number 1 to be displayed in fields (7-14) corresponding to the number in field 6 and 0 will be displayed in all the other fields (7-14). See notes 5-7.

2: "CHANGE FIELD" key can also be used (See step 4.6).

Notes: 5 - For test 3, the number 1 in the field corresponding to the contact that is being tested will blink at 60 IPM (open-and-close) for any desired interval.

6 - Test 4 is the same as test 3 except the number 1 in the field will not blink (the contact under test will stay closed) for any desired interval.

7 - Tests 3 and 4, tests one contact at a time; therefore to test any other contacts, do the following:

Note 7 (cont'd):

- a. Operate "STOP" key.
- b. Operate "NEXT DATA" as many times required till the number of the contact to be tested (0-7) is displayed in field 6.
- c. Operate "EXECUTE" key.

4.5 NEXT DATA - This key allows the selection of a particular contact for testing. The initial contact location is set to 0 (field 6 = 0) for each new board selected for testing. Each operation of "NEXT DATA" key will increment the current contact by 1 (field 6), and when field 6 displaying 7 and "NEXT DATA" key is operated, it will start at 0 again and repeat the sequence again. Same can be accomplished by using "CHANGE FIELD" key as follows:

- a. Operate "CHANGE FIELD" key
 - b. "6"
 - c. Operate "ENTER" key, which blanks field 6
 - d. Field number corresponding to the desired contact to be tested (0-7)
 - e. Operate "ENTER" key
 - f. Operate "EXECUTE" key
- "NEXT DATA" is used in test 3 and 4.

Note: If the test is running and this key is operated, there will be ERROR 00 displayed. To avoid this, first operate "STOP" key and then do the above sequence.

4.6 CHANGE FIELD - This key is used to change data in valid fields for each test:

- a. For Test 1 and 2, data in fields 1-5 can be changed.
- b. For Test 3 and 4, data in fields 1-6 can be changed.

To change data in any field while test is running, you should:

- a. Operate "STOP" key, displays dashes (-) in all fields right of field 6
- b. Operate "CHANGE FIELD"
- c. Number of the field to be changed (1-6)
- d. Operate "ENTER" key, which blanks that field
- e. The desired number
- f. Operate "ENTER" key, which displays (the desired number) in that field

4.7 STOP - Will STOP the testing sequence. This key should be used:

- a. When the craftsperson wants to use "CHANGE FIELD" key while a test is running.
- b. When the craftsperson wants to use "NEXT DATA" key while a test is running.
- c. When the craftsperson wants to use "NEXT CIRCUIT" key while a test is running.

5. TROUBLE SHOOTING AIDS

5.1 There is only one failure code associated with test execution, and it is:

- 9 - Network failure in trying to perform relay action.

Failure Code 9 means that no I/O response was received.

- 5.2 To activate a LC15 board RT- lead has to be at steady low and BRBCK lead has to be at steady high (See Table A and Fig. 2).
- 5.3 To select a port (relay), BBS-* has to be active (low), it flashes everytime the port (relay) is selected (See Table A and Fig. 2).

TABLE A
PORT SELECTION FOR LC15

CONTACT NO.	BRBS	BKRB	BPS-* (Note 9)			
			0	1	2	3
0	*	--	*	--	--	--
1	--	*	*	--	--	--
2	*	--	--	*	--	--
3	--	*	--	*	--	--
4	*	--	--	--	*	--
5	--	*	--	--	*	--
6	*	--	--	--	--	*
7	--	*	--	--	--	*

Notes:

- 9 : Active low
- * : Active
- : Inactive

- 5.4 The error codes mentioned below are some of the more frequently occurring error codes that may be displayed due to improper input.

<u>ERROR CODE</u>	<u>DESCRIPTION</u>
00	Invalid key input
02	Input data out of range
05	Input error (too many digits)
06	Button not applicable
10	Wrong equipment specification
11	Equipment location of unassigned board
74	No Contact Interface board (LC15) is found in the translation

TEST 1: AUTOMATICALLY SEQUENCE THRU ALL CONTACTS ON A BOARD OPENING AND CLOSING EACH EXCLUSIVELY AT A 60 IPH RATE FOR 5 SECONDS.					TEST 2: SAME AS TEST 1 EXCEPT EACH CONTACT REMAINS CLOSED FOR ENTIRE 5 SECOND INTERVAL.					TEST 3: MANUAL SELECTION OF CONTACT OPENING AND CLOSING IT AT A 60 IPH RATE FOR ANY DESIRED TESTING INTERVAL.					TEST 4: SAME AS TEST 3 EXCEPT CONTACT REMAINS CLOSED FOR DURATION OF TESTING INTERVAL.					
USE: 'NEXT CIRCUIT' TO ADVANCE NEXT BOARD - ALL TESTS 'NEXT DATA' TO ADVANCE NEXT CONTACT - TESTS 3 & 4										NOTE: FIELDS (7-14) INDICATE CURRENT STATE OF CONTACT WHEN TESTING IS ACTIVE 0-OPEN, 1-CLOSED.					FAILURE CODE: 9-NETWORK FAILURE					
ISSUE L8.3 FLIPCHART										PROC 573										
FLIPCHART ISSUE L8.3										CONTACT INTERFACE TEST										PROC 573
CONTACT INTERFACE BOARD EQUIPMENT LOCATION					CONTACT STATES OF BOARD UNDER TEST															
TEST NO	MODULE	CAB	CARR	SLOT	CURRENT CONTACT	CONTACT 0	CONTACT 1	CONTACT 2	CONTACT 3	CONTACT 4	CONTACT 5	CONTACT 6	CONTACT 7	FAILURE CODE						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15						

Fig. 1 - FLIPCHART 573

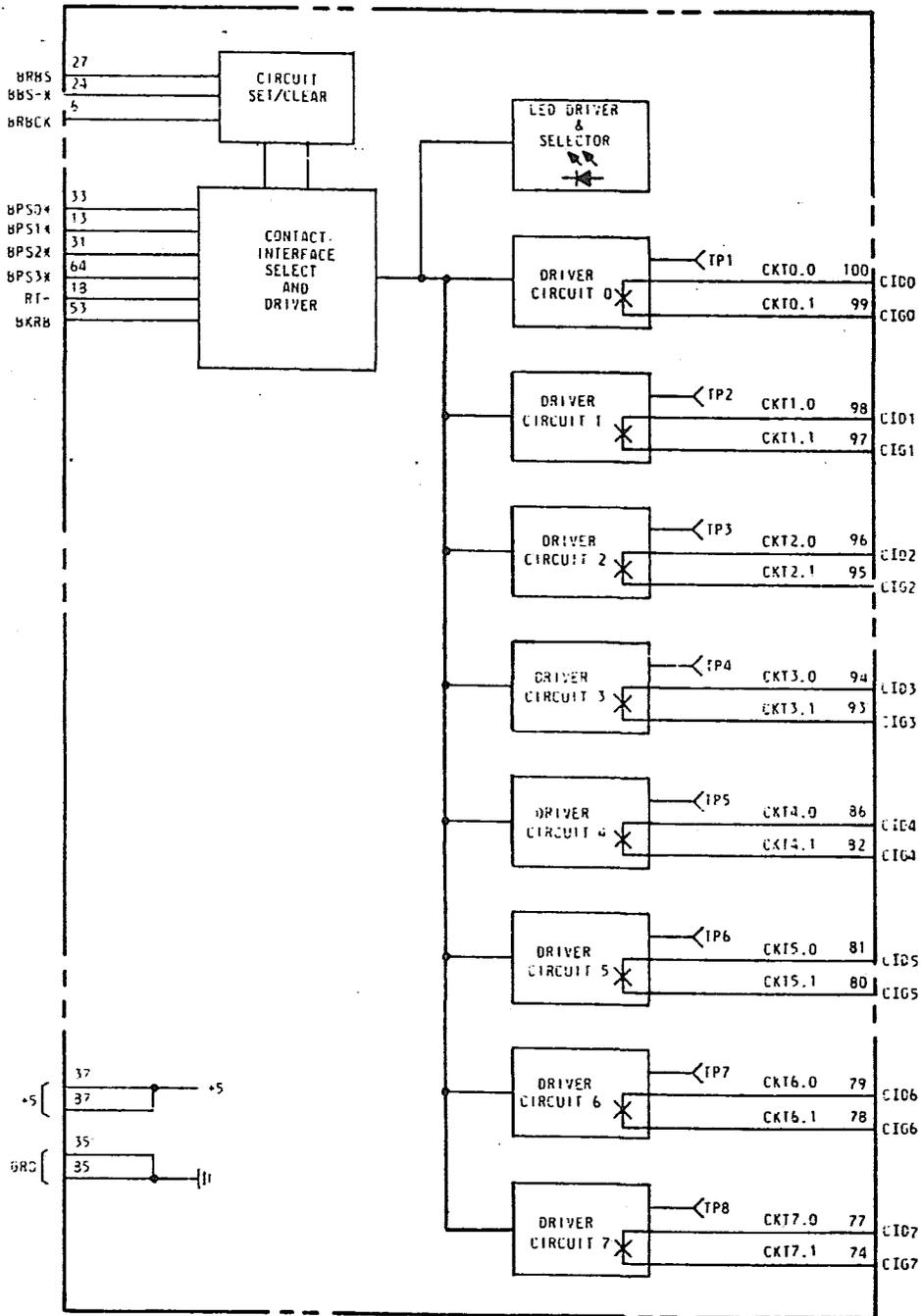


Fig. 2 - LC15 CIRCUIT PACK

Reason for Issue:
New Section

Manager, Denver PBX PECC