

DIMENSION[®] 2000 AND CUSTOM PBX
CO, FX AND WATS TRUNK TESTING
(ALL TRUNKS USING LC8 CIRCUIT PACK)

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1. GENERAL

1.1 This section describes procedures to be followed to test all types of trunks using LC8 circuit packs. The LC8 is a Central Office trunk circuit pack, but it could be used for FX and WATS service as well. The type of signalling and electrical distance to the serving exchange will determine whether an LC8 or an LC11 pack will be used. Testing of LC11 trunks is covered in SEC. 580 of this handbook.

1.2 Testing of trunks in this section (hereafter referred to as LC8 trunks) will be accomplished by use of the ITE-5735 PBX Trunk Test Set with its associated connecting cords.

1.3 The ITE-5735 set is a loop-around type of set, that is; testing is accomplished by dialing out on one trunk circuit, through the trunk set and then back into a receiving circuit. LC8 trunks may be operated as one-way outgoing only, one-way incoming only or two-way. Before testing is started, the trunks must be sorted out so the cords can be placed in proper sequence for efficient testing.

1.4 All LC8 circuit packs in the system should be tested whether or not they will be used initially. Some changes in the administration may be necessary to accomplish this (using the MAAP panel).

1.5 If the LC8 trunks are to be operated TOUCH-TONE, they should be tested using TOUCH-TONE instruments. If they are to be operated as rotary dial, then rotary dial instruments will be required. In either case, however, if reverse battery toll deny is to be tested, a rotary dial test telephone will be required. The ITE-5735 set will not respond to TOUCH-TONE for this test.

2. RECORDS

2.1 Form SD-97-1313 should be used to record the results of these tests.

3. TOOLS AND TEST EQUIPMENT

- 3.1
- 1 ITE-5735 Trunk Test Set, PBX
 - 1 ITE-9259 Connecting Cord (Part of ITE-5735)
 - 1 Rotary Dial Telephone (500 DR or equivalent)
 - 1 TOUCH-TONE Dial Telephone (1500D or equivalent)
 - 1 MAAP Panel

4. DOCUMENTS AND DRAWINGS

4.1 The following documents and drawings should be available to test and clear troubles on the LC8 trunks:

SD-1E480-01
Customer Order Document - COD

5. PREPARATION FOR TESTING

5.1 Locate the trunk test set near the cross connect field and plug it into a source of 117 VAC. The power switch is on the rear panel of the set. Connect GRD-1 and/or GRD-2 to System grd. It may be necessary to run a temporary wire to the 201 cabinet ground bar to obtain a reliable ground. Power ground (3rd wire in AC cord) is not acceptable for this connection.

5.2 Testing will be done in two phases. Phase 1 will be concerned with testing each of the outgoing only LC8 trunks and/or the outgoing capability of two-way trunks. Phase 2 will test incoming only trunks and/or the incoming capability of two-way trunks.

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5.3 In Phase 1, test calls will be forced onto each trunk of each trunk group defined by Dial Access Codes (DAC) using Test 1 of Procedure 551 on the MAAP panel. Test 2 of this procedure will be used during Phase 2 testing. Examples of how to set up both tests are shown below as FIG. 1 (for outgoing trunk testing) and FIG. 2 (for incoming trunk testing):

5.4 Testing can be expedited if two people perform the tests as a team. One tester would operate the MAAP panel and place the calls while the other tester would move the trunk set cords, call out the supervisory lamps, and answer the calls at the console (or telephone instrument).

5.5 If there are any spare LC8 circuit packs in the machine, they should be tested by temporarily defining them at the MAAP panel. After the test, be sure to restore the administrative information to normal.

5.6 By locating the trunk set at the cross-connect field, the machine wiring and circuit packs are fully tested as well as all the Installer's wiring. This is as electrically close to the Central Office as it is possible to test (without the complete Central Office facilities). If there are voice repeaters on the trunks, they should also be wired in and tested along with the trunks with which they will be associated.

6. PROCEDURE

6.1 Phase 1 tests (outgoing only or outgoing capability of two-way trunks) are described below:

6.101 Using Procedure 551, Test 1, enter the first trunk group to be tested by dial access code (dial 9 for example). Refer to FIG. 1 on how to do this with the MAAP panel. A trunk location should be displayed in Fields 7 through 11.

6.102 Select one of the test circuits on the ITE-5735 Trunk Set and operate switches per the following:

REV BATT	---	OFF (center position).
MODE	---	DID if incoming test trunk is to be a DID type (LC9). 2WCO if incoming test trunk is to be a console terminated type (LC8).

METER STROKE	---	OFF (center position).
RESET	---	Switch in lock position.

6.103 Using the ITE-9259 Cord, connect A1 of circuit 1 or C2 of circuit 2 (see PAR. 6.102 above) to the first outgoing trunk to be tested (displayed on MAAP panel --- see PAR. 6.101 above). Connect B1 or D2 to a trunk that has been selected for the incoming side of the test circuit. If DID trunks are available (LC9) they should be used since the Dial repeating function of the outgoing trunk can then be tested. If there are no DID trunks, use a two-way or one-way incoming only trunk (LC8) as the receiving trunk. The red half of the 961C Connector faces to the right for both test cord connections.

6.104 Use a TOUCH-TONE or rotary dial instrument on an unrestricted line selected according to the following criteria. The line circuit to be used must be defined in Fields 2 through 6 in Procedure 551:

- A) Use TOUCH-TONE instrument if system is configured as all TOUCH-TONE (incoming and outgoing).
- B) Use rotary dial instrument, if system is configured as dial pulse only.
- C) Use rotary dial instrument, if system has a mixture of telsets (rotary and TOUCH-TONE dials).

6.105 With the trunk to be tested and a selected incoming trunk connected to the ITE-5735, go off-hook at the test telephone and dial the trunk access code. The SEIZE lamp on the ITE-5735 Panel should light. If the incoming trunk is an LC8 type, an incoming call should be signaled on the attendant console.

6.106 If the incoming trunk is DID (LC9 type), dial a convenient station line or the listed directory number. An incoming call should be signaled on a station set by ringing in two bell groups. Ringing indication on the console from a DID trunk will be identical to an LC8, except for the alphanumeric display.

- 6.107 Answer the call at the station set or the console. Ringing should cease and the ANSWER lamp on the trunk set should light. A talking circuit should be established.
- 6.108 Release the connection by hanging up both instruments (or by releasing the console). The SEIZE and ANSWER lamps should go dark. If the machine is to be equipped for battery reverse toll control, proceed to PAR. 6.109 below. Otherwise proceed to PAR. 6.111 below.
- 6.109 Battery reverse toll control must be tested from a rotary dial telephone. Operate the REV BATT switch on the ITE-5735 Set to TD. Go off-hook at the test instrument and dial the trunk access code. The SEIZE lamp should light.
- 6.110 Dial an "0" on the test instrument. The red TD lamp should light followed by rerouting of the call to the attendant or to trunk busy tone. When the call is rerouted, the machine will automatically disconnect the trunk. All lamps will go dark on the ITE-5735 Set. Go on-hook at the test instrument.
- 6.111 To display the next trunk to be tested on the MAAP panel, operate the NEXT CIRCUIT key. Move the 961C connector (A1 or C2) of the ITE-9259 Cord to the new trunk and proceed to test as outlined above in PAR. 6.105 through 6.110. If a machine has more than one module, it will be necessary to operate the NEXT UNIT key on the MAAP panel to access trunks in other module(s).
- 6.112 When all outgoing trunks have been tested, proceed to PAR. 6.2 below. Be sure all the LC8 trunks used on all trunk codes have been tested. For example: outgoing trunk codes might be 9, 81, 82 and 85 (four different trunk groups each with its own dial access code).
- 6.2 Phase 2 tests (incoming only or incoming capability of two-way trunks terminating on the attendant console) are described below:
- 6.201 Using Procedure 551, Test 2, write in the location of the test line equipment and the location of an outgoing trunk to be permanently associated with the A1 or C2 connector of the ITE-9259 cord. Whenever the trunk access code is dialed from the test instrument, the machine should set up a line to trunk connection between the two locations keyed into the MAAP panel, Procedure 551.
- 6.202 At the cross-connect field, connect the B1 or D2 961C Connector of the ITE-9259 Cord to the first incoming trunk to be tested. Red side of the connector goes to the right.
- 6.203 Set the test set switches as follows:
REV BATT to OFF (center position)
MODE to 2WCO
MTR STROKE to OFF (center position)
RESET - Switch in lock position.
All lamps should be dark.
- 6.204 All the trunks to be tested must be defined in the administrative area of the program. The machine will not recognize a seizure signal from an undefined trunk.
- 6.205 Go off-hook at the test instrument and dial the trunk access code. The SEIZE lamp on the trunk set should light, the attendant console should indicate an incoming call, the proper alphanumeric display should be displayed on the console, and audible ringback should be heard by the calling station.
- 6.206 At the console, answer the call. Ringing and ringback tone should cease and a talking connection should be established. The ANSWER lamp on the ITE-5735 Set should light.
- 6.207 Release the connection by hanging up the test instrument and by depressing the console RELEASE Key. The machine should tear down the connection and all the trunk set lamps should be extinguished.
- 6.208 Move the B1 or D2 961C Connector to the next incoming trunk and repeat the test procedure described above in PAR. 6.205 through 6.207.
- 6.209 When all the incoming trunks have been tested, disconnect the trunk set and remove any temporary administration information from the machine memory.

TEST NUMBER	TEST LINE EQUIPMENT LOCATION					TRUNK EQUIPMENT LOCATION					TEST 1
	MODULE	CABINET	CARRIER	SLOT	CKT	MODULE	CABINET	CARRIER	SLOT	CKT	TRUNK DIAL ACCESS CODE
1	2	3	4	5	6	7	8	9	10	11	12

A ← | → B ← | → D ← | → C →

- A. ENTER "1" IN FIELD 1.
- B. ENTER COMPLETE OUTGOING TEST LINE LOCATION IN FIELDS 2 THROUGH 6.
- C. ENTER DIAL ACCESS CODE OF TRUNK GROUP TO BE TESTED IN FIELD 12.
- D. LOCATION OF TRUNK UNDER TEST WILL APPEAR HERE (FIELDS 7 THROUGH 11)
 THIS DISPLAY WILL ADVANCE TO THE NEXT TRUNK TO BE TESTED
 EACH TIME THE "NEXT CIRCUIT" OR "NEXT UNIT" KEYS ON THE
 MAAP PANEL ARE DEPRESSED.

FIG. 1 - PROCEDURE 551 - TEST 1 - STATION TO TRUNK TEST CALL

TEST NUMBER	TEST LINE EQUIPMENT LOCATION					TEST 2										
	MODULE	CABINET	CARRIER	SLOT	CKT	TRUNK EQUIPMENT LOCATION										
						MODULE	CABINET	CARRIER	SLOT	CKT						
1	2	3	4	5	6	7	8	9	10	11						



- A. ENTER "2" IN FIELD 1.
- B. ENTER COMPLETE OUTGOING TEST LINE LOCATION IN FIELDS 2 THROUGH 6.
- C. ENTER COMPLETE OUTGOING TEST TRUNK LOCATION IN FIELDS 7 THROUGH 11.

FIG. 2 - PROCEDURE 551 - TEST 2 - STATION TO TRUNK TEST CALL

7. TROUBLE INVESTIGATION

7.1 Failure of the machine to seize the outgoing trunk could be attributed to any of the following causes:

- A) Bad trunk circuit pack.
- B) Incorrect MAAP panel assignment.
- C) Incorrect placement of test cord at cross-connect field.
- D) Reversed or split wiring to cross-connect field.
- E) Defective ITE-5735 Set.
- F) GRD-1 or GRD-2 of ITE-9259 not connected to system ground.

7.2 Failure of the trunk set to seize an incoming trunk could be attributed to any of the following causes:

- A) Trunk under test is not defined.
- B) Defective ITE-5735 Set.
- C) Test cord incorrectly placed at cross-connect field.
- D) Defective trunk circuit pack.
- E) Reversed or split Installer wiring.

NOTE: If the ANSWER lamp lights steady before a DID test trunk is answered and if it goes dark after answer, the wiring to the cross-connect field is reversed.

Reason for Issue:
New Section

Manager, Denver PBX PECC