DIMENSION® PBX
BACKUP LINE EXTENSION TEST

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1. GENERAL INFORMATION

1.1 This section provides information to test Backup Line Extension for DIMENSION 400 and 2000 PBX.

1.2 The Backup mode of operation is used to handle call when:

a) One or more Release-Link Trunks (RLT) fail to operate properly.

b) There is a failure in the call distributor located at the main location.

c) The opening and closing times of the branch location differ from those of the main location (for detail information about Branch and Main location refer to BSP 554-191-136).

1.3 While the PBX is in the Backup mode, the backup station attendant receives calls which would normally be routed to CAS attendants located at the main location. The Backup station may then extend the call to the desired station or trunk. Table A shows a listing of the various information tones used to aid in the processing of CAS calls.

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TABLE A
CAS INFORMATION TONES

CALL TYPE	INFORMATION TONES
LDN, IN-WATS, and FX	In sequence - 480 Hz (100 ms), 440 Hz (100 ms), 480 Hz (100 ms)
Call Extended to Idle Station (provide immediate ringback to CAS attendant)	Audible ring for 300 ms followed by a connection to the normal ringing cycle at any point in the cycle
Don't Answer Recall (for recall of don't answer calls and code calls)	Audible ring for 300 ms followed by normal ringback cycle
Call Extended to Busy Station and Automatically Placed in Call Waiting, and Call Waiting Recall	440 Hz for 100 ms
Call Extended to Busy Station — Call Denied or Call Waiting Not Provided (per system)	Busy tone
Dial "0" Call or Attendant Transfer	In sequence 440 Hz — 100 ms on, 100 ms off, and 100 ms on
Remote Hold and Remote Hold Recall	A series of four to six 50-ms bursts of 440-Hz tone — Each separated from the next by a 50-ms silent period
Code Call	A series of 500-ms bursts of 895-Hz tone — Each series represents the code dialed with the complete code being heard three times

1.4   Each DIMENSION 400 PBX at a branch location can have as many as four RLTs and four Backup stations (one for each RLT). Each DIMENSION 2000 or Custom PBX at a branch location can have as many as 16 RLTs and 16 backup stations (one for each RLT). Each backup station line in a DIMENSION PBX is assigned a TOUCH-TONE® calling class of service and other features that permit the backup station to perform the same functions as a CAS attendant position.

1.5   Each backup control station is a 2514 BM-type telephone set equipped with
       a 642A turn key and headset or handset with necessary cords and adapter
       as shown in Figure 1. The 642A turn key is used to switch modes of
       operation from the existing handset to the auxiliary handset or headset.
       The turn key is also used to generate the flash signal used to request a
       register or release a destination party. When the turn key is turned fully
       counter-clockwise, the backup station is connected to the existing handset.
       When the turn key is turned fully clockwise, the backup station is connected
       to the auxiliary handset or headset. In this position, the station is in an
       off-hook condition; therefore, the existing handset should be left on-hook
       while the auxiliary handset or headset is being used. When fewer backup
       stations are attended than are provided, and the system is in backup mode,
       all unattended stations should be left off-hook.

1.6   The backup station can dial activate any one of three modes of operation;

       -- CAS mode
       -- Backup station mode
       -- Trunk answer any station (TAAS) mode

1.7   The backup stations have associated 30A8 System Status Indicator(s)
       (see Figure 2). The first indicator, located near the backup stations,
       is a panel of eight lamps which provide a visual indication of:

       -- The busy/idle status of RLTs 1 through 4 (for DIMENSION 400 PBX).
       -- The RLT mode of operation
       -- Traffic overload
       -- Alarm conditions (major or minor)

       A DIMENSION 400 PBX has just the first indicator. A DIMENSION 2000
       PBX may have one or two additional indicators. If needed, the eight lamps
       on the second indicator display the status of RLTs 5 through 12. The third
       indicator displays the status of RLTs 13 through 16 (see Figure 2). Table
       B provides a functional description of each lamp. For testing of 30A8
       (if required), see section 80310 of Handbook 282.

TABLE B

SYSTEM STATUS INDICATOR (SSI) LAMP FUNCTIONS

	LAMP NUMBER	LAMP FUNCTION	LAMP STATUS
First SSI	1	Status of RLT of No. 1	Dark = Idle RLT
	2	Status of RLT of No. 2	Steady = Busy RLT -- seized at both ends or trunk is active when in backup mode
	3	Status of RLT of No. 3	
	4	Status of RLT of No. 4	Wink (at 30 ipm) = Maintenance Busy
	5	Indicate either normal or backup mode of operation for RLTs	Steady = Normal operation Blinking (at 30 ipm) = Backup mode or TAAS
	6	Traffic Overload Indicator	Dark = OK Steady = Queue threshold exceeded
	7	Major Alarm	Dark = OK
	8	Minor Alarm	Steady = Alarm
Second SSI	9 through 16	Status of RLTs 5 thru 12 (DIMENSION 2000 and Custom PBXs only)	Same Lamp Status as RLTs 1 thru 4
Third SSI	17 through 20	Status of RLTs 13 thru 16 (DIMENSION 2000 and PBXs only)	Same Lamp Status as RLTs 1 thru 4
	21 through 24	Unused	

2.   RECORD

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

3.   CIRCUIT PACK THAT MAY BE REQUIRED

AMT.	LC NUMBER	DESCRIPTION
1	LC 02B	Line Circuit
*	LC11B	Tie Trunk

        * LC11B; Trunk Carrier, Slots 02-09.

4.   PROCEDURE

4.1   FOR DIMENSION 400 PBX:

4.1.1   Use Procedure 88, Word 2 to verify the Release-Link Trunk (RLT)
        equipment location and the backup station extension number.

4.1.2   Use Procedure 29, Word 2 to verify (activate) the Backup station
        (code 46 in field one).

4.1.3   Use Procedure 70 (see Section 520 of Handbook 218B) to busyout
        all the RLTs except one.

4.1.4   Place a call, from any phone, that normally will go to CAS
        attendant. This should ring the backup extension line. If trouble,
        refer to trouble-shooting step.

4.1.5   Originate different types of calls (e.g., operator call, LDN, etc.) to make
        sure that all of them ring the backup extension line. Also, confirm the
        tones which should be heard at Backup Extension Line (see Table A).
        If trouble, refer to trouble-shooting step.

4.1.6   Use Procedure 70 to unbusy all the RLT's which were busied in Step 4.1.3.
        END.

4.2   FOR DIMENSION 2000 PBX:

4.2.1   Use Procedure 211, Word 2 to verify the RLT equipment location and the
        associated backup station extension number as well as a start pulse bit
        indicating whether or not the attendant concentrator expects a pulse
        for ringing control.

4.2.2   Use Procedure 350, Word 2 to verify (activate) the backup station extension
        (Code 46 in field one).

4.2.3   Use Procedure 560 to busy out the RLTs except one.

4.2.4   Place a call, from any phone, that normally will go to attendant (e.g.
        'O' operator, LDN, etc.). This should ring the backup extension line.
        If trouble, refer to troubleshooting step.

4.2.5   Originate different types of calls (e.g., operator call, LDN, etc.) to make sure that all of them ring the backup extension line. Also confirm the tones which should be heard at backup extension line (see Table A). If trouble, refer to troubleshooting step.

4.2.6   Use Procedure 560 to unbusy all the trunks (RLT) which were busied in step 4.2.3. END.

5.   TROUBLESHOOTING AIDS

5.1   FOR DIMENSION 400 PBX:

5.1.1   Trouble possibilities are:

a) Wrong tone is heard; see step 5.1.2
b) No tone is heard; see step 5.1.3
c) Backup Line Extension does not ring; see step 5.1.4

5.1.2   Use Procedure 76 (see Section 526T of Handbook 218B), to check the tone plant C.

5.1.3   Make sure that tone plant C (LC17B) is in slot 07 of Basic Line Carrier. If the LC17B is plugged in and trouble still exists, check the wiring (see SD-1E445-01).

5.1.4   Use Procedure 88, Word 2 to verify the backup line extension location.

5.2   FOR DIMENSION 2000 PBX:

5.2.1   Trouble possibilities are:

a) Wrong tone is heard; see step 5.2.2
b) No tone is heard; see step 5.2.3
c) Backup Line Extension does not ring; see step 5.2.4

5.2.2   Use Procedure 554 (see Section 554 of Handbook 281), to check the tone plant C.

5.2.3   Make sure that tone plant C (LC17B) is plugged in (Note 1). If the LC17B is plugged in, and trouble still exists, check the wiring (See SD-1E480-01).

NOTE: 1 - Refer to Customer Order Document (COD) to find out the proper location of any circuit pack.

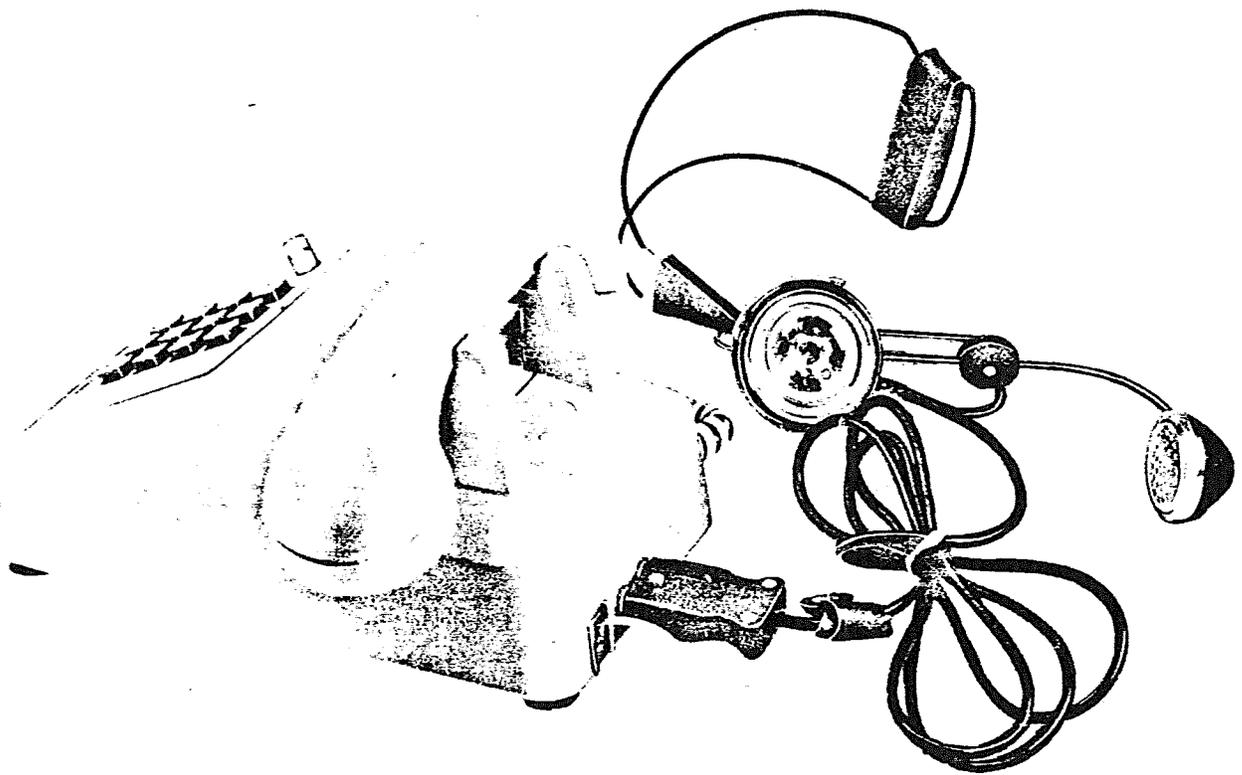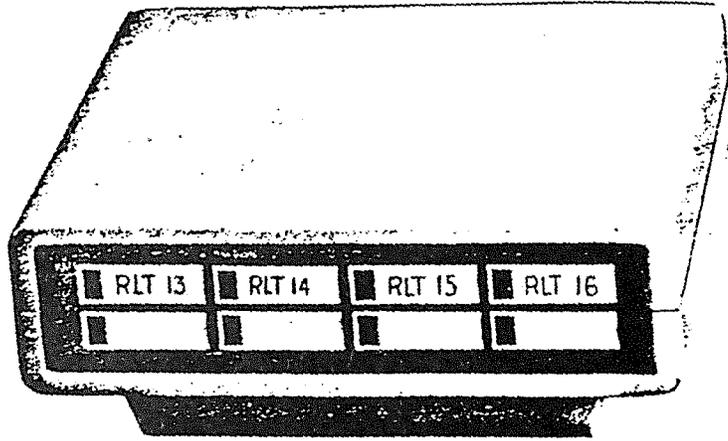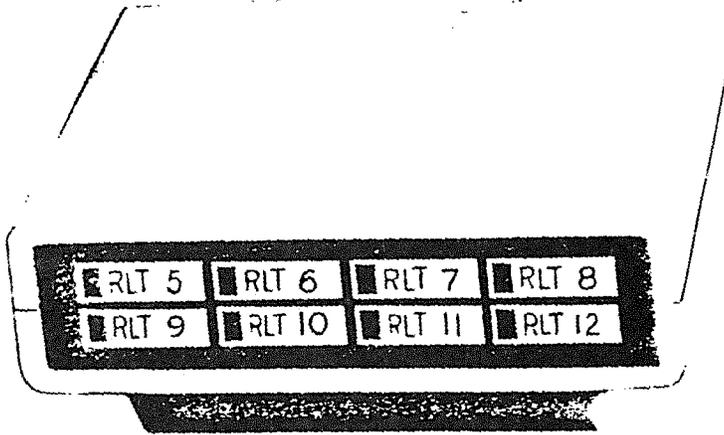5.2.4   Use procedure 211, Word 2 to verify the backup line extension location.

FIGURE 1 - 2514BM Telephone Set Equipped With a Supplementary Headset

HB 282-85105

SSI-3

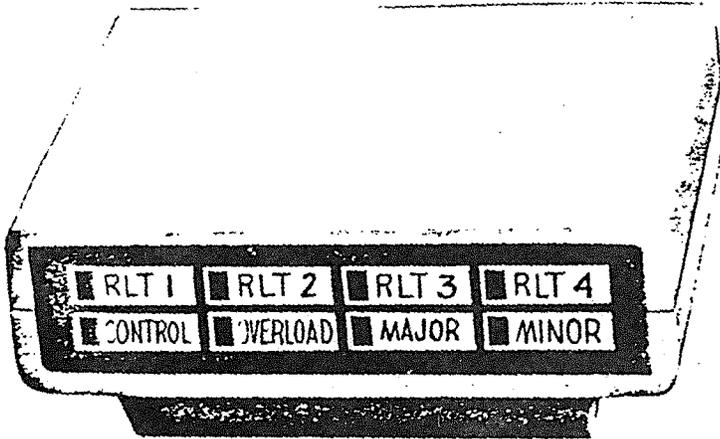RLT 13   RLT 14   RLT 15   RLT 16

SSI - 2

RLT 5   RLT 6   RLT 7   RLT 8
RLT 9   RLT 10   RLT 11   RLT 12

NOTE: DIMENSION® 2000 PBX USES UP TO THREE SSI's, DEPENDING ON THE NUMER OF RLT CIRCUITS. SSI - 3 DOES NOT USE THE LAST FOUR (LOWER) LAMPS.

SSI - 1

RLT 1   RLT 2   RLT 3   RLT 4
CONTROL   OVERLOAD   MAJOR   MINOR

Fig. 2 —30A8 System Status Indicators

Reason For Issue;
New Section

Manager, Denver PBX PECC