16A Announcement System Description and Operating Procedures

Help Line 1-800-352-5563 (calls within USA)
1-973-386-4311 (calls outside USA)

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1. OVERVIEW

1.1 Introduction

The 16A Announcement System, shown in Figure 1-1, is a digital record and playback system that provides up to 24 broadcast announcements for 5ESS® central office switches[1] and for Network Wireless Systems Mobile Switching Centers. The 16A interconnects with the switch using DS1 or E1 digital trunk facilities. The 16A can also be configured to provide 20 recorded announcements and four channels with an external audio source for music on queue or music on hold.

Each 16A is equipped with one **BLD10** digital interface circuit pack and up to three announcement circuit packs. The BLD10 encodes, frames, and formats the analog announcements into either a DS1signal with D4 format and AMI line coding or an E1 signal.

Three different types of announcement circuit packs are available, each of which may be equipped with the optional 400B Remote Record Module. They are listed below:

- **BLD3** - eight one-minute announcements
- **BLD4** - eight one-minute cascaded or phased announcements; one announcement is recorded automatically on all eight channels. The starting times for the eight announcements are spaced apart by approximately $1/8^{th}$ of the announcement length. The BLD4 is typically used with Automatic Call Distributor (ACD) applications.
- **BLD5** - eight two-minute announcements
- **400B** - a dial-up Remote Record Module that mounts on top of each of the BLD3, BLD4, or BLD5 (BLD3/4/5) circuit packs.

The 16A is modular in design; it can be equipped with 1, 2, or 3 announcement circuit packs, i.e., any combination of the BLD3, BLD4, or BLD5.

Each announcement is stored on a non-volatile chip. The announcement is not lost when power is removed. A new announcement can be recorded over an existing announcement as often as necessary.

The 5ESS central office domestic switch delivers each announcement to as many as 60 callers simultaneously. Thus, 24 announcements can be heard by as many as 1440 callers at any one time.

The 16A contains no disks, batteries, or fans and requires no maintenance during its life cycle.

[1] Digital announcements are supported on the SM2000 SM's for software release 5e10 and later and on Classic SM's for software release 5e9.2 and later.

Figure 1-1 16A Announcement System

Front view with the access panel door open and a handset connected for on site recording. Equipped with 24 announcement channels and the remote record option.

1.2 Local Access

Announcements are recorded locally on the 16A in one of two ways:

- by using a handset that comes with the equipment and plugs into a telephone jack at the front of a BLD3/4/5 announcement circuit pack
- by using a tape recorder that plugs into a tape jack on the front of an announcement circuit pack.

1.3 Remote Access (POTS dial-up)

Announcements can also be recorded remotely from any touch tone telephone or from an Announcement Systems Manager (ASM) via a standard analog POTS line. For remote access, the optional 400B Remote Record Module must be mounted on the BLD3, the BLD4, and the BLD5 announcement circuit packs. In addition to remotely recording and monitoring announcements, a user can also place any channel (announcement) off-line or on-line, perform diagnostics, change security codes, and manage individual channel passwords.

To ensure remote access security, a unique 8-digit master security code should be assigned by the 16A system administrator to each BDL3, BLD4, and BLD5 equipped with a 400B. The default security code installed at the factory on these circuit packs is ***47985621**.

A service provider can assign a unique security code to an individual channel and lease this channel to a commercial customer. Customers of leased channels can access only their channels for recording and playback.

1.4 Remote Record Concentrator (Optional Equipment)

When multiple 16A Announcement Systems are required, the optional Remote Record Concentrator can be installed in the same cabinet as the 16A's to minimize the number of analog lines for remote access. With the Remote Record Concentrator, a single analog line is used to access up to eight 400B Remote Record Modules (i.e., up to 64 announcement channels). For more information on the Remote Record Concentrator, see Section 4.5

1.5 Announcement Systems Manager (Optional Equipment)

The optional Announcement Systems Manager (ASM) workstation is a PC based system used for the administration of recorded announcements for the 15A, 16A, 17A, and 18A Announcement Systems. The ASM is an effective way of administering announcement systems in multiple offices from a central location via an analog POTS dial-up line. ASM allows the user to record, edit, store, and download announcements. The ASM user can also transfer announcements on a user-controlled schedule to any 15A, 16A, 17A, or 18A throughout the network via the remote access feature. The ASM administers 15A and 16A systems connected with or without the Remote Record Concentrator.

For a complete list of equipment codes and comcodes of the 16A as well as the Remote Record Concentrator and the Announcement Systems Manager, see Appendix A.

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2. INSTALLATION

2.1 Unpacking

The 16A shipped from the factory consists of the following:

- 16A shelf (metal housing for the circuit packs with back plane)
- Mounting brackets and screws
- BLD10 digital interface circuit pack installed in the shelf
- Telephone handset for recording and monitoring announcements
- Snap-on ferrite core ESD-SR-15
- Lucent Technologies Practice 201-523-101
- Lucent Technologies 15A/16A Fact Sheet

Figure 2-1 shows a sketch of the front of the 16A shelf with the door open and equipped with four circuit packs. A BLD10 is shown in the upper left slot. Three BLD3/4/5's each with a 400B Remote Record Module mounted on top are shown in the remaining three slots. The upper right slot is referred to as a Group 1 BLD3/4/5; the lower left slot is referred to as a Group 2 BLD3/4/5; the lower right slot is referred to as a Group 3 BLD3/4/5.

Figure 2-2 shows a sketch of the rear of the shelf to which all connections are made.

Depending on how the equipment was ordered, the announcement circuit packs, i.e., BLD3, BLD4, BLD5, and the 400B Remote Record Module are either already installed in the shelf or shipped separately.

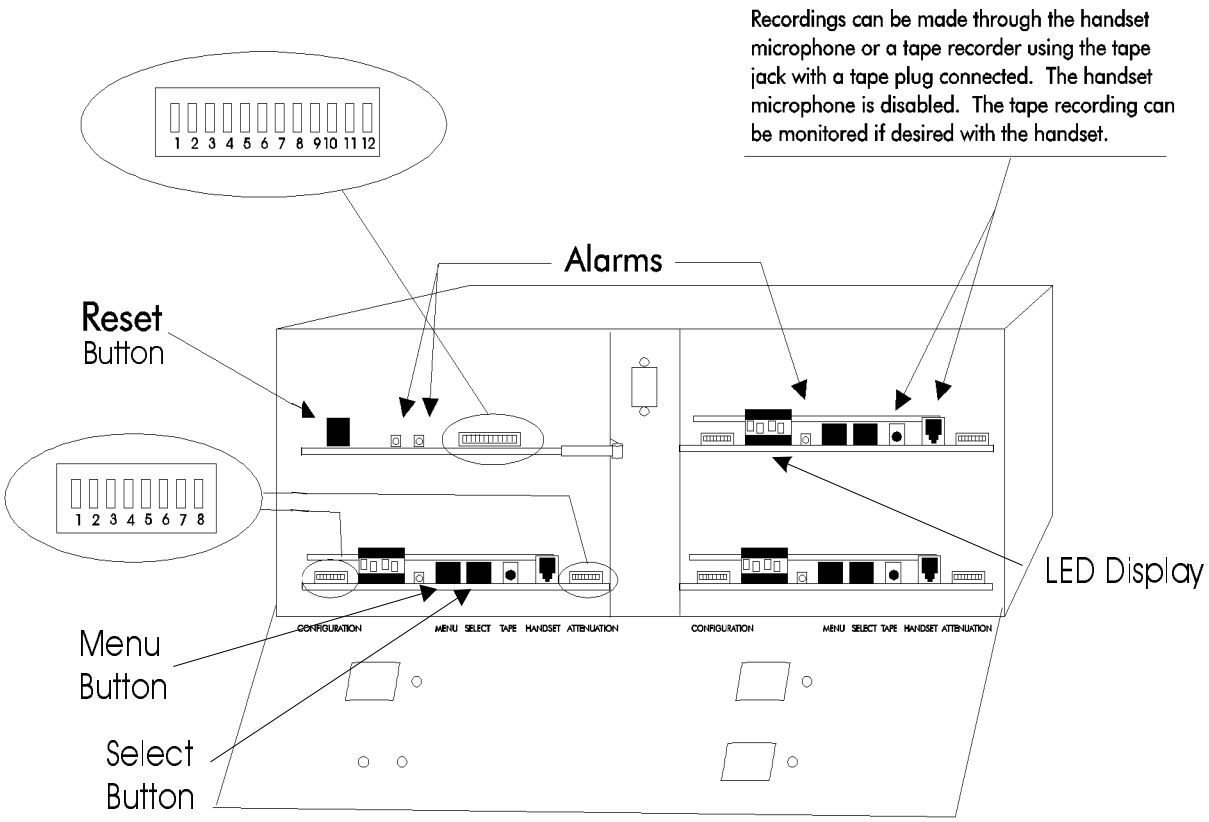


Figure 2-1 Front of the 16A With the Door Open

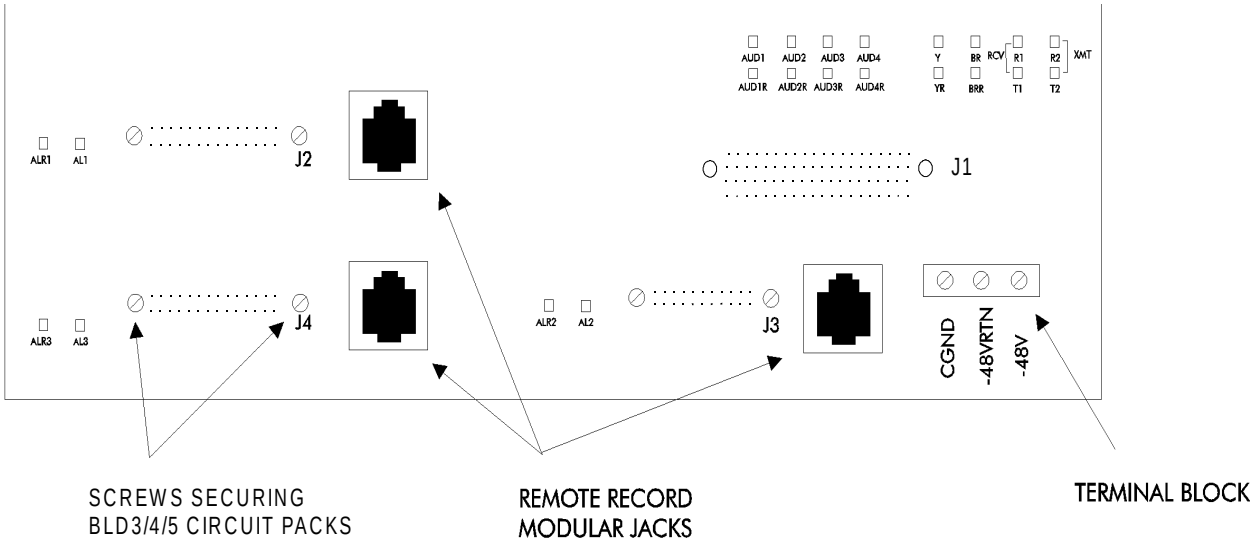


Figure 2-2 Rear of the 16A

2.2 Shelf Mounting

The 16A is typically mounted in a 5ESS miscellaneous cabinet. It can also be mounted in any standard 23-inch communications cabinet or bay. The 16A mounting brackets should be installed so that the front and back of the 16A are easily accessible. The front door should open freely and the instructions on the back of the front door should be easily read.

Multiple 16A's can be installed in a single cabinet. They should be mounted at least 1-inch apart.

2.3 Power Requirements and Fusing

The maximum current drain for the 16A is 800 ma at -48 Vdc. The acceptable voltage range is from -39.5 Vdc to -60 Vdc. Each 16A should be fused separately. A 2 amp slow blow fuse is recommended. There are no serviceable fuses internal to the 16A. There is no power ON/OFF switch in the 16A. Power is applied to the 16A via the external 2 amp fuse.

2.4 Wiring

After the 16A is mounted in a cabinet or bay, connect -48 Vdc and -48 Vdc return to the screw terminal block on the back of the 16A shelf (see Figure 2-2). Use 16 gauge wire for the power wires. When using a 5ESS miscellaneous cabinet, connect the power wires to the 2 amp fuse located in the cabinet fuse panel at the top of the cabinet. Do **NOT** install the fuse at this time.

NOTE: If the -48 Vdc and the -48 Vdc return leads are reversed, the 16A will be damaged when the fuse is inserted.

For some fuse panels, high impedance -48 Vdc may be supplied on the -48 Vdc power lead, causing the alarm LEDs on the circuit packs installed in the 16A shelf to glow dimly. This is a normal condition when the fuse is not present. When the fuse is inserted, the circuit packs power up and the LEDs glow normally.

Wire wrap the pairs for the digital trunk facility, the 16A alarms, and the external audio sources (when required) as indicated in Table 2-1. The volume level for the external audio sources should be adjusted to between -10 dBm and -5 dBm when terminated in the 600 ohm load provided by the 16A.

In order to meet the requirements of Part 15 of the FCC Rules, a common mode, split core, snap-on ferrite choke (ESD-SR-15) must be installed on the two pairs for the digital facility interface. The core must enclose two turns of the four digital facility leads and must be installed no more than 5-inches away from the wire wrap pins on the 16A back plane. The digital facility leads must pass through the center of the core twice as shown in Figure 2-3.

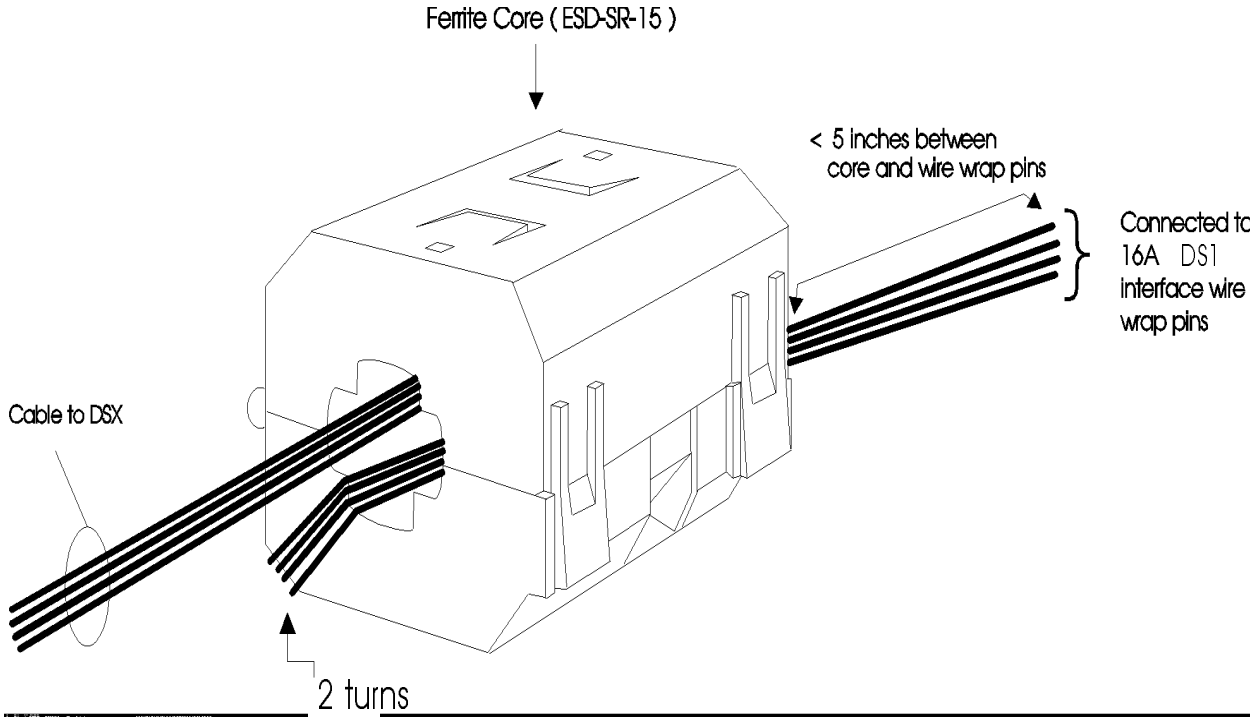


Figure 2-3 Ferrite Core Installation

PIN NAME	FUNCTION	TYPE OF CABLE	INTER-CONNECT	TYPICAL 5ESS CONNECTION
DS1 Digital Trunk Facilities				
				ANN3B or TN1611 Ckt Pack
RCV T1/RCV R1	receives incoming DS1 or E1 from the switch	1 pair 22 GA shielded cable	DSX	XMT T-R
XMT T2/XMT R2	transmits outgoing DS1 or E1 to the switch	1 pair 22 GA shielded cable	DSX	RCV T-R
Five Alarm Pairs				
				TN 220B Ckt Pack
AL1/ALR1	scan point alarm for BLD3/4/5 Group 1	5 pair 24GA shielded cable	MDF	AT00/AR00
AL2/ALR2	scan point alarm for BLD3/4/5 Group 2			AT01/AR01
AL3/ALR3	scan point alarm for BLD3/4/5 Group 3			AT02/AR02
Y/YR	scan point network alarm for the BLD10			AT03/AR03
BR/BRR	scan point system alarm for the BLD10			AT04/AR04
Four Pairs for External Audio (When Required)				
AUD1/AUD1R	external source connection for channel 21 (see Note below)	4 pair 24 GA shielded cable	MDF	---
AUD2/AUD2R	external source connection for channel 22 (see Note below)			---
AUD3/AUD3R	external source connection for channel 23 (see Note below)			---
AUD4/AUD4R	external source connection for channel 24 (see Note below)			---

Note: For E1 facilities, the corresponding channels are 22 through 25.

Table 2-1 Wire Wrap Pin Designation, Cable Type, and Connection

The four shields associated with the four cables shown in Table 2-1 should be connected to the ground screw on the 16A back plane.

When multiple 16A systems are mounted in the same cabinet, use four cables as indicated in Table 2-1 for each 16A. Do not combine cables from several 16A systems into one cable.

If the remote record capability is required, connect 1, 2, or 3 analog POTS lines to the remote record RJ11 modular jacks on the associated BLD3/4/5. These modular jacks are accessed through holes in the 16A back plane. The analog line connections to the modular jack are shown in Figure 2-4.

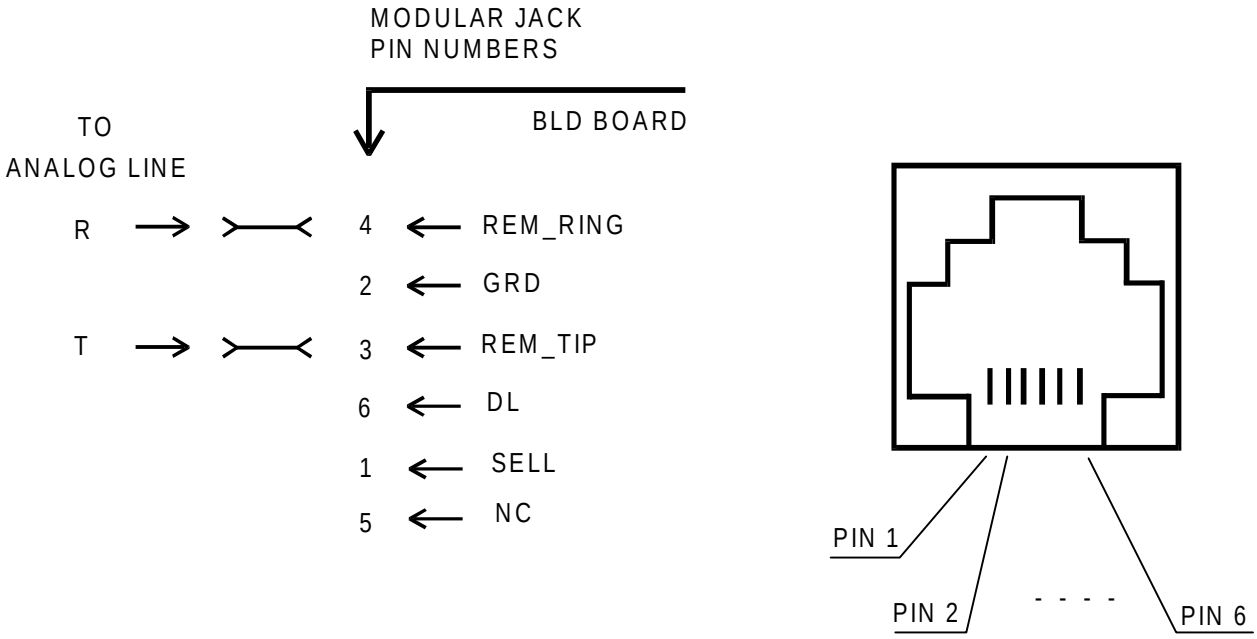


Figure 2-4 Analog Line Connections to the RJ11 Modular Jack

If a Remote Record Concentrator is used with the 16A, only one analog POTS line is required to provide access for up to eight Remote Record Groups (RRG). Each RRG consists of one BLD3/4/5 circuit pack in a 16A as shown in the following table.

Concentrator RRGs	Multiple 16A Systems
0	RA 1 - Group 1 BLD3/4/5
1	RA 1 - Group 2 BLD3/4/5
2	RA 1 - Group 3 BLD3/4/5
3	RA 2 - Group 1 BLD3/4/5
4	RA 2 - Group 2 BLD3/4/5
5	RA 2 - Group 3 BLD3/4/5
6	RA 3 - Group 1 BLD3/4/5
7	RA 3 - Group 2 BLD3/4/5

Use the RJ11 connectorized cables that come with the concentrator to connect between the concentrator RRGs and the remote record modular jacks on the BLD3/4/5 circuit packs. The concentrator connections between one RRG and a BLD3/4/5 modular jack are shown in Figure 2-5.

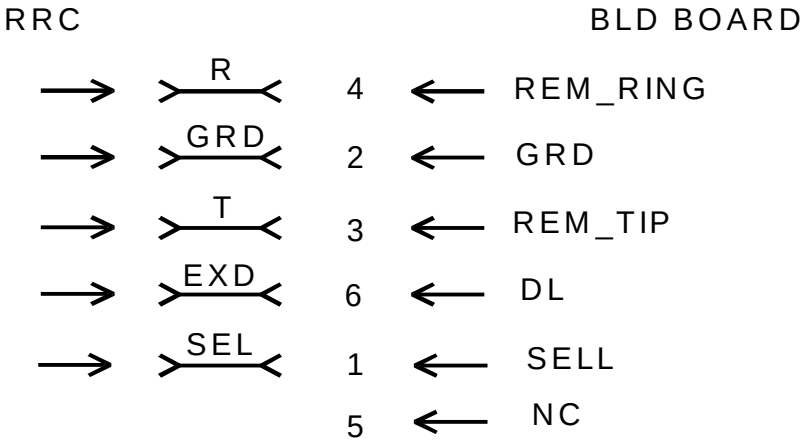


Figure 2-5 Connections Between One Remote Record Concentrator RRG and One BLD3/4/5 RJ11 Modular Jack

2.5 Installing the Circuit Packs (If Shipped Separately From the 16A Shelf)

The BLD10 comes from the factory already installed in the upper left slot of the shelf. The BLD10 can be removed or inserted from the front of the shelf by releasing the horizontal stainless steel latch handle on the front edge of the BLD10 printed wiring board.

If the remote record function is desired, then mount a 400B Remote Record Module on each of the BLD3/4/5 announcement circuit packs. To mount the 400B on a BLD3/4/5,

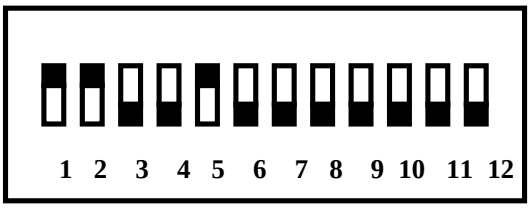
- Align the four mounting holes in the 400B module with the plastic standoffs in the BLD3/4/5 circuit pack.
- Carefully press the 400B near each standoff until the board snaps and locks onto each standoff.
- Insert the 2-inch ribbon cable assembly into the header on the BLD3/4/5 so that the 50 pin headers on the two boards are connected. The ribbon cable is keyed so as to ensure proper interconnection.

From the front of the 16A shelf, insert the BLD3/4/5 announcement circuit packs into the 16A shelf slots. Circuit pack placement is shown on the inside of the front cover of the 16A. Fasten the BLD3/4/5 circuit packs in place by installing the two screws provided with each circuit pack. The screws are inserted through holes in the back plane to the left and right of the appropriate connector (J2, J3, and/or J4).

2.6 DIP Switch Settings

The 12 position configuration DIP switch for the BLD10 has factory default settings that apply for most 5ESS applications. Verify that the switch settings are as shown in Figure 2-6 and Tables 2-2 and 2-3. See Appendix B for details on setting the switches for other applications. The location of the DIP switch is shown in Figure 2-1. The DIP switch options are also listed on the inside of the front cover of the 16A.

NOTE: Any changes to the DIP switch configuration on the BLD10 should be followed by a reset of the system. This is accomplished by pressing the black square reset push button on the BLD10 circuit pack. Pressing the reset button momentarily takes the 16A out of service.



← UP POSITION (HIGH, OPEN)

← DOWN POSITION (LOW, CLOSED)

Figure 2-6 Default Settings for the Configuration DIP Switch on the BLD10 Circuit Pack for DS1 Operation

TABLE 2-2

BLD10 CONFIGURATION DIP SWITCH DEFAULT SETTINGS

SWITCH	POSITION	FUNCTION
SW1,2 3	----------	Line Equalization as per Table 2-3
SW4	DOWN	T1 facility
SW5	UP	Continuous announcement operation
SW6	DOWN	Normal operation (no loop back)
SW7	DOWN	Continuous announcement operation
SW8	DOWN	Currently not used
SW9	DOWN	No external audio on channel 21 (see Note below)
SW10	DOWN	No external audio on channel 22 (see Note below)
SW11	DOWN	No external audio on channel 23 (see Note below
SW12	DOWN	No external audio on channel 24 (see Note below)

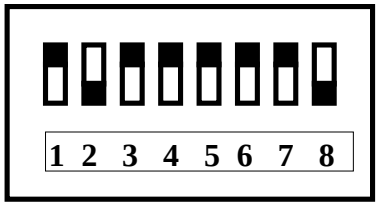
(Note: for E1 facilities, the corresponding channels are 22, 23, 24 ,and 25)

TABLE 2-3

DIGITAL TRUNK EQUALIZATION TO THE DSX (22 GAUGE CABLE)

SERVICE	EQUALIZATION	SW1	SW2	SW3
DS1	0 to 131 ft	UP	UP	DOWN
DS1	131 ft to 262 ft	UP	DOWN	UP
DS1	262 ft to 393 ft	UP	DOWN	DOWN
DS1	393 ft to 524 ft	DOWN	UP	UP
DS1	524 ft to 655 ft	DOWN	UP	DOWN
E1 (75 ohms)	----------	DOWN	DOWN	UP
E1 (120 ohms)	----------	DOWN	DOWN	DOWN

The DIP switches for the BLD3/4/5 circuit packs have factory default settings that apply for most 5ESS applications. Verify that the switch settings are as shown in Figure 2-7 and Table 2-4 for the eight position configuration DIP switch and in Figure 2-8 and Table 2-5 for the eight position attenuation DIP switch. See Appendix B for details on setting the switches for other applications. The location of the DIP switches is shown in Figure 2-1. The location of the DIP switches is also labeled on the inside of the front cover of the 16A.



← UP POSITION (HIGH, OPEN)

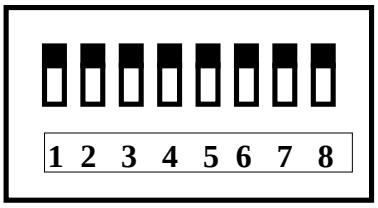
← DOWN POSITION (LOW, CLOSED)

Figure 2-7 Default Settings for the Configuration DIP Switch on the BLD3/4/5

TABLE 2-4

BLD3/4/5 CONFIGURATION DIP SWITCH DEFAULT SETTINGS

SW1	UP	Level start
SW2	DOWN	Cut through
SW3	UP	Remote record - idle
SW4	UP	Long cut through
SW5	UP	Not currently used
SW6	UP	Not currently used
SW7	UP	Voice prompting for remote control
SW8	DOWN	Tone level low for remote control



← UP POSITION (HIGH, OPEN)

← DOWN POSITION (LOW, CLOSED)

Figure 2-8 Default Settings for the Attenuation DIP Switch on the BLD3/4/5

TABLE 2-5

BLD3/4/5 ATTENUATION DIP SWITCH DEFAULT SETTINGS

SWITCH	POSITION	CHANNEL NUMBER	ANNOUNCEMENT LEVEL
SW1	UP	0	-15 dBm
SW2	UP	1	-15 dBm
SW3	UP	2	-15 dBm
SW4	UP	3	-15 dBm
SW5	UP	4	-15 dBm
SW6	UP	5	-15 dBm
SW7	UP	6	-15 dBm
SW8	UP	7	-15 dBm

2.7 Powering Up the 16A at Initial Installation

If the 16A does not perform as described below, see Appendix C for the trouble shooting procedures.

1. Verify from the 5ESS Trunk and Line Workstation that the DS1 trunk to the 16A is active. The trunk should be cross connected at the DSX to a 5ESS Digital Facility Interface circuit pack, a DACS, or other equipment.

2. If the remote record feature is used, verify that directory numbers have been assigned to the analog POTS lines connected to the rear of the 16A system and that dial tone is present.

3. Verify that the five alarm pairs to the 5ESS scan points show a contact closure from the 16A circuit packs. The BLD10 provides two contact closures and each of the three BLD3/4/5 circuit packs provides one contact closure. No power applied to the circuit packs is one of the causes of a contact closure.

4. Insert the 2 amp fuse in the fuse panel at the top of the miscellaneous cabinet for the 16A system. Verify that the red system alarm LED and the yellow network alarm LED on the BLD10 circuit pack come on for approximately 10 seconds and then go off. Verify that the red LED on each of the BLD3/4/5 circuit packs flash on and then off. The display on the BLD3/4/5 first shows **WAIT** and then **RDY** (ready).

5. If the 16A does not power up as indicated above, verify that -48 Vdc is present across the back plane terminals -48 Vdc and -48 Vdc RTN.

6. If the red LED on the BLD10 circuit pack stays on, press the black square reset button on the BLD10 to see if the alarm clears. If it does not, replace the circuit pack.

7. If the turn up of the system does not progress as indicated above, consult the trouble shooting procedures in Appendix C.

8. For each of the BLD3/4/5 circuit packs installed in the 16A system, follow the next steps.

    - Connect the handset supplied with the system to the BLD3/4/5. The location of the handset jack is shown on the inside of the front cover of the 16A.
    - Verify the presence of a default announcement on channel zero.
    - Press the **MENU** button to progress to channel one. Verify the presence of a default announcement on channel one.
    - Continue until all eight channels (0 through 7) have been verified.

10. Verify that the default announcements are present on the digital facility by using the Trunk and Line Workstation to listen to one or more of the channels on the facility. Alternatively, assign a test directory number to one of the channels, dial that number, and listen to the recording through the switch.

11. If the BLD3/4/5 circuit packs are equipped with a 400B Remote Record Module, verify that the remote record module functions by dialing the phone number assigned to the BLD3/4/5 and playing back one of the announcements. Use the following steps for each of the BLD3/4/5 circuit packs.

    - **Dial** the phone number of the remote record module.
    - Enter the factory default security code ***47985621** at the voice prompt.
    - Enter the function code ***0**.
    - Enter the channel number, e.g. **0**.
    - Enter the playback function code ***2** to hear the announcement up to four times.
    - Interrupt playback by entering **#** or **hang up**.

2.8 Removing Circuit Packs

Before removing circuit packs from the 16A, disconnect power from the 16A by removing the associated fuse.

The BLD10 circuit pack can be removed from the front of the shelf by releasing the horizontal stainless steel latch handle on the front edge of the BLD10 printed wiring board.

The BLD3/4/5 circuit packs can be removed as follows:

- From the rear of the 16A, unscrew the screws to the left and right of the corresponding BLD3/4/5 connector labeled J2, J3, or J4 on the 16A back plane.
- Remove the BLD3/4/5 circuit pack by pulling it out from the front of the 16A.

To remove a 400B from a BLD3/4/5,

- Eject the ribbon cable from the BLD3/4/5 circuit pack using the ejection latches on the header.
- Carefully remove the 400B from the plastic standoffs one corner at a time by grasping the board and pressing on the standoff. Use a pair of pliers to press the standoff's locking tabs at the topside of the board.
- Remove the 400B.

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3. LOCAL OPERATIONS

3.1 Introduction

The 16A Announcement System is operated locally by using the two black square momentary push buttons on each of the BLD3/4/5 circuit packs. The status of the BLD3/4/5 is shown on a four character LED display. The left button is called the **MENU** button and the right button is called the **SELECT** button. Labels for the two buttons are on the inside of the front cover of the 16A. Operating instructions for the BLD3/4/5 are also silk screened on the inside of the front cover.

Each of the eight channels on the BLD3/4/5 can be placed either in service (**ON LINE**) or out of service (**OFF LINE**). The normal mode of operation for each of the channels is ON LINE, i.e., each channel plays its announcement to an announcement trunk either continuously or on demand. For 5ESS applications, the option switch on the BLD10 is set for continuous play. In order to record or play back (monitor) an announcement on a channel, the channel must be OFF LINE.

The association of the DS1 channels 1 through 24 with channels 0 through 7 for each of the group 1, group 2, and group 3 BLD3/4/5 circuit packs is shown on the inside of the front cover of the 16A. The conversion is as follows:

- DS1 channels 1-8 contain announcements 0-7 respectively of group 1 (upper right BLD3/4/5).
- DS1 channels 9-16 contain announcements 0-7 respectively of group 2 (lower left BLD3/4/5).
- DS1 channels 17-24 contain announcements 0-7 respectively of group 3 (lower right BLD3/4/5).

A user may listen to the announcement on a channel that is ON line as it is played to an announcement trunk by plugging the handset supplied with the 16A into the jack on the front of the BLD3/4/5. The location of the handset jack is shown on the inside of the front cover of the 16A. Pressing the **MENU** button increments the channel that is heard over the handset. The LED display shows the channel number followed by the length of the announcement in seconds.

An announcement can be recorded using one of the following methods:

- Handset
- Tape Recorder

After recording an announcement, the handset is used to monitor the announcement during playback. The channel is set to OFF line during record and playback.

3.2 Using the MENU Button on the BLD3/4/5

Use the following steps to familiarize yourself with the use of the **MENU** button:

Step	Action
1	Power up the 16A by inserting the fuse. The display on the BLD3/4/5 shows **WAIT** and then **RDY** (ready). If the 16A is optioned for continuous play (see Section 2.6), any of the eight channels that are on line are now playing announcements to their respective announcement trunks. If the handset is connected to the BLD3/4/5, the announcement for channel 0 is heard *if and only if channel 0 is on line*.
NOTE	The only time that the display shows **WAIT** and then **RDY** is when the BLD3/4/5 is powered up. If the **MENU** button is pushed at least once, the display will not show **RDY** again unless the power on the BLD3/4/5 is cycled off and then on. Therefore, RDY does not have to be displayed, except initially, for proper operation of the BLD3/4/5.
2	Press the **MENU** button once. The display shows 0 for channel 0 and a one, two, or three digit number for the length of the announcement in seconds. Channel 0 is heard in the hand set if channel 0 is on line and is playing continuously. A default announcement recorded at the factory on each channel is ten seconds long. Therefore, for channel 0 with the default announcement, the display shows 0_10
3	Press the **MENU** button again. The display shows 1 for channel 1 and the length of the channel 1 announcement. If channel 1 is on line, the announcement for channel 1 is heard in the handset. Pressing the **MENU** button repeatedly causes the display to cycle through channels 0 through 7.
4	Press the **MENU** button after channel 7 is displayed. The display shows **DFLT** (default) if the BLD3/4/5 is equipped with a 400B Remote Record Module. If the BLD3/4/5 is not equipped with a 400B, channel 0 is displayed instead.
5	Press the **MENU** button after **DFLT** is displayed. The BLD3/4/5 displays channel 0 again.

WARNING: The BLD3/4/5 display must be left in the main menu in order to allow remote access via the 400B. This means that the display must show either RDY, a channel number followed by the length of the announcement, or DFLT.

When channel unit functions, such as record and playback, are performed remotely, **REM** is displayed instead of either **RDY, DFLT,** or a channel number followed by the length of the announcement. When the remote session is terminated, whatever was previously displayed is displayed again.

3.3 Changing the Security Code to the Default Security Code

When the BLD3/4/5 is equipped with the 400B, the security code can be changed back to the default security code (*47985621) by using the following steps. This is only done if the security code is forgotten or lost.

Step	Action
1	Press the **MENU** button until **DFLT** is shown on the display.
2	Press the **SELECT** button. **OK** is displayed, indicating that the security code has been reset to the default security code. Channel 7 is still heard in the hand set.
3	Press the **MENU** button to return to the *main menu, i.e.,* channel 0 is now shown in the display.
WARNING	**All remote channel operations are disabled as long as OK is displayed. You MUST push the MENU button at least once to return to the main menu and restore remote channel operations.**

3.4 Changing the ON Line or OFF Line Status of a Channel

A channel must be **OFF** line to record an announcement or to monitor an announcement.

A channel does not play an announcement to the announcement trunk when it is OFF line.

For the BLD4 only, when the status of one of the channels is OFF Line, none of the eight channels plays an announcement to an announcement trunk.

Placing a channel OFF line does not cause any alarms that were not present already.

Use the following steps to change the status of a channel to **ON** line:

Step	Action
1	Press the **MENU** button until the desired channel number is displayed.
2	Press the **SELECT** button to display the channel status. If the channel status is already **ON** line, skip to step 4.
3	Press the **SELECT** button to toggle the channel status from **OFF** line to **ON** line.
4	Press the **MENU** button. The display returns to the main menu and displays the channel number and the recording length. The channel is **ON** line.

Use the following steps to change the status of a channel to **OFF** line:

Step	Action
1	Press the **MENU** button until the desired channel number is displayed.
2	Press the **SELECT** button to display the channel status. If the channel status is already **OFF** line, skip to step 4.
3	Press the **SELECT** button to toggle the channel status from **ON** line to **OFF** line.
4	Press the **MENU** button. The channel number and **REC** are displayed. The channel is now in the recording mode. If the select button is pushed, the channel is re-recorded.
5	Press the **MENU** button again. The channel number and **MON** are displayed. The channel is now in the monitor or playback mode. If the select button is pushed, playback of the channel begins.
6	Press the **MENU** button again. The channel number and **OFF** are displayed, indicating that the channel is off line.
7	Press the **MENU** button again to return to the main menu. The display shows the channel number and the length of the recording. **The channel is off line and not in service. No announcement is being played to the announcement trunk.**

3.5 Monitoring a Channel Announcement

Use the following steps to place a channel **OFF** line and to monitor a channel announcement:

Step	Action
1	Plug the telephone handset into the jack on the front of the BLD3/4/5.
2	Press the **MENU** button until the desired channel is displayed.
3	Press the **SELECT** button to display the channel number and the channel status. If the channel is **OFF** line, go to step 5.
4	Press the **SELECT** button to toggle the channel status from **ON** line to **OFF** line.
NOTE	Before changing the channel status to **OFF** line, listen to the announcement. If the announcement is playing, wait until the end of the announcement before pressing the **SELECT** button to avoid interrupting a customer listening to the announcement.
5	Press the **MENU** button. The channel number and **REC** are displayed.
6	Press the **MENU** button again. The channel number and **MON** are displayed.
7	Press the **SELECT** button to monitor or play back the announcement into the handset. For the BLD3 and BLD4, the display shows the channel number as the first character, an M as the second character, and the length of the announcement in seconds. The length of the announcement decrements as the announcement plays. For the BLD5, the only difference is that the display does not show the channel number while the remaining announcement length exceeds 99 seconds. The announcement plays over and over.
8	Press the **SELECT** button. Playback stops. The display shows the channel number and **REC**.
9	Press the **MENU** button. The display shows the channel number and **MON**.
10	Press the **MENU** button. The display shows the channel number and **OFF** indicating that the channel is off line. No announcement is heard in the handset.
11	Do you wish to change the channel status to **ON** line? If yes, press the **SELECT** button. The display shows the channel number and **ON** indicating that the channel is on line. For continuous operation, the announcement is heard in the handset indicating that the channel is playing into an announcement trunk.
12	Press the **MENU** button to return to the main menu. The display shows the channel number and the length of the recording. Disconnect the handset.
NOTE	**If you do not return to the main menu, i.e., the display continues to display ON, remote access to all the channels on that BLD3/4/5 is blocked. Always complete step 12 to avoid this problem.**

3.6 Recording a Channel Announcement

Eight different announcements can be recorded on the eight channels of the BLD3 and BLD5. Only one announcement can be recorded on the BLD4. This one announcement can be recorded on any one of the eight channels of the BLD4 and is automatically distributed to the other seven channels. The starting times for the eight announcements are spaced apart by approximately $1/8^{th}$ of the announcement length.

3.6.1 Recording a Channel Announcement Using a Handset

Use the following steps to record an announcement on one of the channels of the BLD3/4/5 and then monitor or play back the announcement to verify the quality of the recording:

Step	Action
1	Plug the telephone handset into the jack on the front of the BLD3/4/5.
2	Press the **MENU** button until the desired channel is displayed.
3	Press the **SELECT** button to display the channel number and the channel status. If the channel is **OFF** line, go to step 5.
4	Press the **SELECT** button to toggle the channel status from **ON** line to **OFF** line.
NOTE	Before changing the channel status to **OFF** line, listen to the announcement. If the announcement is playing, wait until the end of the announcement before pressing the **SELECT** button to avoid interrupting a customer listening to the announcement.
5	Press the **MENU** button. The channel number and **REC** are displayed.
6	Press the **SELECT** button. For the BLD3 and BLD4, the display shows the channel number for the first character and **R60** for 60 seconds available for recording. For the BLD5, the display shows **R120** for 120 seconds available for recording. The channel number is not displayed.
7	Press the **SELECT** button again to begin recording. Begin speaking into the handset. The display begins counting down to show the remaining recording time.
8	Press the **SELECT** button again to stop recording. The display shows the channel number and **MON**, indicating the channel is now in the monitor mode.
9	Press the **SELECT** button again to monitor or play back the announcement into the handset. For the BLD3 and BLD4, the display shows the channel number, **M**, and the length of the announcement in seconds. The length of the announcement decrements as the announcement plays. For the BLD5, the only difference is that the display does not show the channel number while the remaining announcement length exceeds 99 seconds. The announcement plays over and over again.
10	Press the **SELECT** button. Playback stops. The channel number and **REC** is displayed. Repeat steps 6 through 9 as many times as necessary to re-record the announcement and play it back.
11	Press the **MENU** button. The display shows the channel number and **MON**.
12	Press the **MENU** button. The display shows the channel number and **OFF** indicating that the channel is off line. No announcement is heard in the handset.
13	Press the **SELECT** button. The display shows the channel number and **ON** indicating that the channel is on line. For continuous operation, the announcement is heard in the handset indicating that the channel is playing into an announcement trunk.
14	Press the **MENU** button to return to the main menu. The display shows the channel number and the length of the recording. Disconnect the handset.

3.6.2 Recording an Announcement from a Tape Recorder

Use the following steps to record an announcement from a tape recorder on one of the channels of the BLD3/4/5 and then monitor or play back the announcement through the handset to verify the quality of the recording:

Step	Action
1	Use a patch cord to connect the tape recorder to the BLD3/4/5. The location of the tape recorder jack is shown on the inside of the front cover of the 16A. The patch cord must have an 1/8 inch mono-miniplug on the end of the patch cord that plugs into the BLD3/4/5 tape recorder jack.
2	Set the recorder output level to approximately -10 dBm or until the announcement level is acceptable.
3	Position the recorded tape at a point just prior to the start of the announcement and set the recorder on pause.
4	Plug the telephone handset into the jack on the front of the BLD3/4/5.
5	Press the **MENU** button until the desired channel is displayed.
6	Press the **SELECT** button to display the channel number and the channel status. If the channel is **OFF** line, go to step 8.
7	Press the **SELECT** button to toggle the channel status from **ON** line to **OFF** line.
NOTE	Before changing the channel status to **OFF** line, listen to the announcement. If the announcement is playing, wait until the end of the announcement before pressing the **SELECT** button to avoid interrupting a customer listening to the announcement.
8	Press the **Menu** button. The channel number and **REC** are displayed.
9	Press the **SELECT** button. For the BLD3 and BLD4, the display shows the channel number for the first character and **R60** for 60 seconds available for recording. For the BLD5, the display shows **R120** for 120 seconds available for recording. The channel number is not displayed.
10	Press the **SELECT** button to begin recording and immediately release the recorder pause button. The display begins counting down to show the remaining recording time. Use the handset receiver to listen to the announcement from the tape recorder as it is being recorded and to monitor for the end of the announcement. Go to the next step at the end of the announcement.
11	Press the **SELECT** button to stop recording. Stop the tape recorder. The display shows the channel number and **MON**, indicating the channel is now in the monitor mode.
12	Press the **SELECT** button again to monitor or play back the announcement into the handset. For the BLD3 and BLD4, the display shows the channel number, **M**, and the length of the announcement in seconds. The length of the announcement decrements as the announcement plays. For the BLD5, the only difference is that the display does not show the channel number while the remaining announcement length exceeds 99 seconds. The announcement plays over and over again.
13	Press the **SELECT** button. Playback stops. The channel number and **REC** is displayed. Repeat steps 9 through 12 as many times as necessary to re-record the announcement and play it back.
14	Press the **MENU** button. The display shows the channel number and **MON**.

continued on next page

Continue to use the following steps to record an announcement from a tape recorder and to monitor the announcement through the handset:

Step	Action
15	Press the **MENU** button. The display shows the channel number and **OFF** indicating that the channel is off line. No announcement is heard in the handset.
16	Press the **SELECT** button. The display shows the channel number and **ON** indicating that the channel is on line. The announcement is heard in the handset indicating that the channel is playing into an announcement trunk.
17	Press the **MENU** button to return to the main menu. The display shows the channel number and the length of the recording. Disconnect the tape recorder and the handset.

4. REMOTE OPERATIONS

4.1 Introduction

A number of 16A functions can be performed remotely if the BLD3/4/5 circuit pack is equipped with a 400B Remote Record Module. Remote control is accomplished by dialing the analog telephone line connected to the 400B and sending touch tone signals to control the BLD3/4/5. The BLD3/4/5 responds either via voice prompts or special tones. The setting of the seventh switch on the configuration DIP switch on the BLD3/4/5 determines whether voice prompts or special tones are used for control. The remainder of this section assumes that voice prompts are used. Appendix D covers the use of special tones.

4.2 Security Codes

In order to access a BLD3/4/5 remotely, a system administrator first dials the associated 400B and then enters an 8-digit security code, preceded by a ***,** at the voice prompt. A default security code was programmed at the factory (*47985621). **The system administrator is strongly encouraged to change the security code to a unique code.** If a unique security code is forgotten or lost, thereby preventing remote access to that 400B, the security code can be reset to the default security code at the location of the 400B as described in Section 3.3.

A system administrator can assign a unique security code to an individual channel and lease this channel to a commercial customer. Customers of leased channels can access only their channels for recording and playback. If a system administrator sets the last digit of the single channel security code to a 0, the single channel user can then change the single channel security code to a different security code.

4.3 Remote Functions

A system administrator can remotely perform the following BLD3/4/5 channel functions. The corresponding touch tone function codes are also shown.

Function	Function Code
Channel selection	*0
Record (timed)	*1
Record (non-timed)	*90
Playback	*2
Change the **ON** and **OFF** line status	*3
Provide a single channel security code and change it	*5
End session	*6
Help	**
Interrupt - return to the main menu	#

If a channel status is **ON** line, the channel status is automatically changed to **OFF** line when a channel is recorded remotely. At the end of the recording session, the channel status is automatically restored to **ON** line. If the channel status is **OFF** line at the start of a recording session, the channel status remains **OFF** line at the end of a recording session until the channel status is changed to **ON** line by using the *3 function code.

Commercial single channel users can perform all of the above channel functions except for the channel selection itself. The *0 channel selection function is replaced by the single channel security code which contains the channel number as the first digit of the security code.

A system administrator can remotely perform other functions as follows:

Function	Function Code
Run diagnostics on the BLD3/4/5	*4
Access the Remote Record Concentrator (if provided) and establish communication with a different BLD3/4/5 without re-dialing the concentrator	*7
Change the BLD3/4/5 security code	*8

4.4 Error Conditions and Failures

If the user enters an invalid function code or invalid data, the 400B responds with “Invalid Entry”. If five consecutive “Invalid Entry” messages occur without a valid entry, the 400B terminates the session by hanging up.

If the 400B cannot establish communication with an announcement channel or if an established communication is lost, the 400B responds with a series of beeps and “Transmission Error.” The 400B disconnects the system administrator from the channel. The system administrator must then select a function code to continue. For a single channel user, the 400B says “Goodbye” and hangs up.

The 400B monitors response time and times out under the following conditions:

- After the user is prompted to enter the security code, the 400B waits 20 seconds and hangs up if no security code is entered.
- After the user is prompted to enter either a function code or input data, the 400B waits 90 seconds and hangs up if no entry is made.

If the 400B does not respond or the user enters an invalid function code, the pound sign (#) should be pressed to escape and return to the function code menu prompt.

If the 400B does not respond to ringing, the 400B may have failed. An alarm should be present on the associated BLD3/4/5.

4.5 Remote Access Via the Remote Record Concentrator

A Remote Record Concentrator may be used to provide telephone access for up to eight Remote Record Groups (RRG). Each RRG consists of one BLD3/4/5 in a 16A or a corresponding circuit pack in the 15A Announcement System. Therefore, one telephone line can be used to access up to 64 channels.

After a system administrator accesses a concentrator by dialing the telephone number assigned to the concentrator, the system administrator inputs a touch tone number from 0 to7, followed by the *****, that corresponds to a specific RRG. Once the RRG is accessed, the same procedures are followed as if the 15A or 16A Announcement Systems were accessed directly through a telephone line. The concentrator does not use voice prompts but instead uses **Initial Access Tones** and **Transmission Error Tones** for control purposes.

The initial access tones consist of a high pitch tone, a low pitch tone, and a touch tone. The transmission error tones consist of a series of six tones: high pitch tone, medium pitch tone, low pitch tone, high pitch tone, medium pitch tone, low pitch tone. A single medium pitch tone is also used for an error condition after which the concentrator either hangs up or provides the initial access tones.

By using a unique function code (***7**), a system administrator can end a session with one RRG, access the concentrator, and then access another RRG without hanging up the POTS line.

4.6 Detailed Instructions for the System Administrator With Voice Prompt Responses

The following tables summarize the steps required by a system administrator to access a 400B and execute various functions. These steps are for voice prompt responses from the 400B. For voice prompts, set the seventh configuration switch on the BLD3/4/5 to the **UP** position. For the corresponding steps using tone responses instead of voice prompts, see Appendix D.

Single channel users should go to Section 4.7 for the steps to access a BLD3/4/5 channel and execute various functions.

TABLE 4.6-1 Accessing the 400B

NOTE: The BLD3/4/5 front panel display must be left in the main menu in order to allow remote access via the 400B. The display must show either RDY, DFLT, or a channel number followed by the length of the recording.

Use the following steps to access the 400B. If the Remote Record Concentrator is used, see Table 4.6-10 for accessing the 400B.

Step	Function	User Input	400B Response
1	Call the 400B	Dial the access number	1. Tone 2. "Enter your security code after the tone" 3. Tone
2	Enter the security code (* followed by eight digits)	*47985621 (default security code is shown as an example)	"Press # at any time to return to the main menu. Enter a function code or press ** for help."

TABLE 4.6-2 Record (timed)

Use the following steps to make a timed recording:

Step	Function	User Input	400B Response
1	Select the channel function	Function code *0	"Enter the channel number"
2	Enter the channel number	n where n= 0, 1, 2, … or 7	"Enter a function code or press** for help"
3	Select timed record function	Function code *1	"Enter the message length in seconds followed by a *"
4	Enter announcement length	Valid entries: x* or * x is any number equal to or less than the maximum length for the BLD3/4/5. A single * entry defaults to the maximum announcement length . Example: 8 seconds, enter 8*	1."Start the message after the tone" 2. Tone.
5	Record the announcement	Begin the announcement by speaking into the handset	----
6	Stop recording	No input required	"Press # to interrupt playback"
6	Playback	No input required.	The announcement automatically plays back a maximum of four times.
7	Interrupt playback	Press #	"Enter a function code or press ** for help"

NOTE: Eight different announcements can be recorded on the eight channels of the BLD3 and BLD5. Only one announcement can be recorded on the BLD4; this one announcement can be recorded on any one of the eight channels of the BLD4 and is automatically distributed to the other seven channels. The starting times for the eight announcements are spaced apart by approximately $1/8^{th}$ of the announcement length.

TABLE 4.6-3 Record (Non-Timed)

Use the following steps to make a non-timed recording:

Step	Function	User Input	400B Response
1	Select the channel function	Function code *0	"Enter the channel number"
2	Enter the channel number	n where n= 0, 1, 2, … or 7	"Enter a function code or press** for help"
3	Select timed record function	Function code *90	"Start the announcement after the tone"
4	Recording	Begin the announcement by speaking into the handset. Make sure that the announcement length does not exceed the channel size, i.e., either 60 seconds or 120 seconds	-------
5	Stop recording	Stop the recording, pause for about 3 seconds, and then enter *	"Press # to interrupt playback"
6	Playback	No input required.	The announcement automatically plays back a maximum of four times.
7	Interrupt playback	Press #	"Enter a function code or press ** for help"

NOTE: If the * you pressed to stop the recording is audible during playback, repeat the procedure with a longer pause before entering the *. If the trouble persists, use the timed recording procedure (*1).

NOTE: Eight different announcements can be recorded on the eight channels of the BLD3 and BLD5. Only one announcement can be recorded on the BLD4; this one announcement can be recorded on any one of the eight channels of the BLD4 and is automatically distributed to the other seven channels. The starting times for the eight announcements are spaced apart by approximately $1/8^{th}$ of the announcement length.

TABLE 4.6-4 Playback

Use the following steps to play back an announcement in one of the channels:

Step	Function	User Input	400B Response
1	Select the channel function	Function code *0	"Enter the channel number"
2	Enter the channel number	n where n= 0, 1, 2, … or 7	"Enter a function code or press** for help"
3	Playback	Enter function code *2	The message is played back up to four times
4	Interrupt playback	Press #	"Enter a function code or press ** for help"

TABLE 4.6-5 Channel Status (ON/OFF - Line)

Use the following steps to change the **ON** line or **OFF** line status of a channel:

Step	Function	User Input	400B Response
1	Select the channel function	Function code *0	"Enter the channel number"
2	Enter the channel number	n where n= 0, 1, 2, … or 7	"Enter a function code or press****** for help"
3	Select the channel status function	Function code *3	"Enter 0 for off-line or 1 for on-line."
4	Enter channel status	Press 0 for off-line or 1 for on-line.	"Enter a function code or press ** for help."

NOTE: For the BLD4 only, for which the same announcement is automatically recorded on all eight channels, when the status of a channel is changed to OFF line remotely, the announcement for that channel and all other higher numbered channels cannot be played back. For example, if channel 4 is changed to OFF line, the announcement for channels 4, 5, 6, and 7 cannot be played by using the function code *2. The announcement for channels 0, 1, 2, and 3 can be played using the function code *2.

TABLE 4.6-6 Single Channel User Security Code Assignment

The system administrator uses the following steps to assign a single channel user security code:

Step	Function	User Input	400B Response
1	Select the single channel security code function	Function code *5	"Enter the channel number followed by eight digits. Enter 0 for the last digit to allow the user to change the code."
2	Enter the 9-digit code	xnnnnnnnz x=channel number n=0,1,…or 9 z=0 - permission to change the security code z=1 to 9 - permission denied	"Re-enter the code. Enter the channel number followed by eight digits. Enter 0 for the last digit to allow the user to change the code."
3	Re-enter the 9-digit code	xnnnnnnnz	"The new code has been saved. Enter a function code or press ** for help."

NOTE: A "lock-out" security code can be entered to block access to a designated channel. Enter the channel number followed by eight stars (x********). This code always causes a security code failure.

TABLE 4.6-7 Diagnostics

Use the following steps to perform remote diagnostics on the BLD3/4/5:

Step	Function	User Input	400B Response
1	Select the diagnostic function	Function code *4	"Please wait…."
2	Diagnostics complete; results	-------	"Diagnostics OK" or "Diagnostics failed" or "Excessive silence"
3	-----	-----	"Enter a function code or press ** for help."

NOTE: If the diagnostics failed for excessive silence, at least one of the announcement channels has too much silence recorded on it. This condition can be remedied by identifying the appropriate channel(s) using the playback function (*2) and re-recording the announcement.

TABLE 4.6-8 Ending a Session With One 400B, Accessing the Remote Record Concentrator, and Starting a New Session With Another 400B

Use these steps to end a session with one 400B, access the concentrator, and then access another 400B without hanging up the POTS line:

Step	Function	User Input	400B Response
1	End session with one 400B and access the concentrator.	Function code *7	"Enter ***** to end the session or # to return to the main menu."
2	End session.	Enter *****	"Goodbye."
3	Access the concentrator	------	Initial Access Tones from the concentrator (high pitch tone, low pitch tone, touch tone).
4	Access another 400B	Enter a BLD3/4/5 number from 0 to 7 followed by a *****, e.g., 0*	Tone. "Enter your security code after the tone." Tone.
5	Enter the security code	*nnnnnnnn	"Press # at any time to return to the main menu. Enter a function code or press ** for help."

See Section 4.5 for the tones used to indicate an error condition.

TABLE 4.6-9 System Administrator Security Code Assignment

The system administrator should use the following steps to change the security code assignment:

Step	Function	User Input	400B Response
1	Select the security code function.	Function code *8	"Enter the new 8-digit security code."
2	Enter 8-digit code	nnnnnnnn (n=0,1,…,or 9)	"Re-enter the code."
3	Re-enter the 8-digit code	nnnnnnnn	"Enter a function code or press ** for help."

NOTE: The system administrator security code must be preceded by a * when accessing the 400B. The * is not counted as part of the 8 digits when executing a *8 function code and entering a new 8-digit security code.

TABLE 4.6-10 End Session

Use the following steps to end a session using the end session function:

Step	Function	User Input	400B Response
1	Select the end session function.	Function code *6	"Enter * to end the session or # to return to the main menu."
2	End session	Enter *	"Goodbye."

A user can also end a remote record session as follows:

- Enter the "End Session and Access Concentrator" function code (*7) (if a concentrator is used).
- Hang up.

TABLE 4.6-11 Accessing a 400B When a Remote Record Concentrator is Used

Use the following steps to access a 400B via a Remote Record Concentrator:

Step	Function	User Input	Concentrator - 400B Response
1	Call the concentrator	Dial the concentrator access number	Concentrator responds with the "Initial Access Tones" consisting of a high pitch tone, a low pitch tone, and a touch tone.
2	Enter the assigned 400B number	Enter touch tones n*, where n=0,1,.., or 7	400B response: 1. Tone 2. "Enter your security code after the tone." 3. Tone
3	Enter the security code (* followed by eight digits)	*47985621 (default security code is shown as an example)	"Press # at any time to return to the main menu. Enter a function code or press ** for help."

TABLE 4.6-12 Help

Use the following step to obtain help:

Step	Function	User Input	Concentrator - 400B Response
1	Select the help message	Function code **	"To select a channel, press *0. To record, press *90. To playback, press *2. To set the channel status, press *3. To perform diagnostics, press *4. To change the security code, press *8. To end the session, press *6."

The following function codes are not included in the help menu but may be used by the system administrator: *1, *5, and *7.

TABLE 4.6-13 Interrupt and Return to the Main Menu

Use the following step to interrupt and return to the main menu:

Step	Function	User Input	Concentrator - 400B Response
1	Interrupt and return to the main menu	Function code #	"Enter a function code or press ** for help."

4.7 Detailed Instructions for Single Channel Users With Voice Prompt Responses

The following tables summarize the steps required by single channel users to access a 400B and execute various functions. These steps are for voice prompt responses from the 400B. For voice prompts, set the seventh configuration switch on the BLD3/4/5 to the **UP** position. For the corresponding steps using tone responses instead of voice prompts, see Appendix D.

System administrators should go to Section 4.6 for the steps to access a BLD3/4/5 channel and execute various functions.

TABLE 4.7-1 Accessing the 400B

NOTE: The BLD3/4/5 front panel display must be left in the main menu in order to allow remote access via the 400B. The display must show either RDY, DFLT, or a channel number followed by the length of the recording.

Use the following steps to access the 400B. If the Remote Record Concentrator is used, see Table 4.7-8 for accessing the 400B.

Step	Function	User Input	400B Response
1	Call the 400B	Dial the access number	1. Tone 2. "Enter your security code after the tone" 3. Tone
2	Enter the 8-digit security code	xnnnnnnn x=channel number n=0 thru 9, any combination	"Press # at any time to return to the main menu. Enter a function code or press ** for help."

TABLE 4.7-2 Record (timed)

Use the following steps to make a timed recording:

Step	Function	User Input	400B Response
1	Select timed record function	Function code *1	"Enter the message length in seconds followed by a ***** "
2	Enter announcement length	Valid entries: x* or * x is any number equal to or less than the maximum length for the BLD3/4/5. A single * entry defaults to the maximum announcement length . Example: 8 seconds, enter 8*	1."Start the message after the tone" 2. Tone.
3	Record the announcement	Begin the announcement by speaking into the handset	----
4	Stop recording	No input required	"Press # to interrupt playback"
5	Playback	No input required.	The announcement automatically plays back a maximum of four times.
6	Interrupt playback	Press #	"Enter a function code or press ****** for help"

TABLE 4.7-3 Record (Non-Timed)

Use the following steps to make a non-timed recording:

Step	Function	User Input	400B Response
1	Select timed record function	Function code *90	"Start the announcement after the tone"
2	Recording	Begin the announcement by speaking into the handset. Make sure that the announcement length does not exceed the channel size, i.e., either 60 seconds or 120 seconds	-------
3	Stop recording	Stop the recording, pause for about 3 seconds, and then enter *	"Press # to interrupt playback"
4	Playback	No input required.	The announcement automatically plays back a maximum of four times.
5	Interrupt playback	Press #	"Enter a function code or press ** for help"

NOTE: If the * you pressed to stop the recording is audible during playback, repeat the procedure with a longer pause before entering the *. If the trouble persists, use the timed recording procedure (*1).

TABLE 4.7-4 Playback

Use the following steps to play back an announcement in one of the channels:

Step	Function	User Input	400B Response
1	Playback	Enter function code *2	The message is played back up to four times
2	Interrupt playback	Press #	"Enter a function code or press ** for help"

TABLE 4.7-5 Channel Status (ON/OFF - Line)

Use the following steps to change the **ON** line or **OFF** line status of a channel:

Step	Function	User Input	400B Response
1	Select the channel status function	Function code *3	"Enter 0 for off-line or 1 for on-line."
2	Enter channel status	Press 0 for off-line or 1 for on-line.	"Enter a function code or press ** for help."

TABLE 4.7-6 Single Channel User Security Code Assignment

After the system administrator enables the single channel security code capability, the single channel user then uses the following steps to change a single channel user security code:

Step	Function	User Input	400B Response
1	Select the single channel security code function	Function code *5	"Enter the new 8-digit code."
2	Enter the 8-digit code	xnnnnnnn x=channel number (0 thru 7) n=0,1,…or 9	"Re-enter the code."
3	Re-enter the 8-digit code	xnnnnnnn	"Enter a function code or press ** for help."

TABLE 4.7-7 End Session

Use the following steps to end a session using the end session function:

Step	Function	User Input	400B Response
1	Select the end session function.	Function code *6	"Enter * to end the session or # to return to the main menu."
2	End session	Enter *	"Goodbye."

The session can also be ended by simply hanging up the phone.

TABLE 4.7-8 Accessing a 400B When a Remote Record Concentrator is Used

Use the following steps to access a 400B via a Remote Record Concentrator:

Step	Function	User Input	Concentrator - 400B Response
1	Call the concentrator	Dial the concentrator access number	Concentrator responds with the "Initial Access Tones."
2	Enter the assigned 400B number	Enter touch tones n*, where n=0,1,.., or 7	400B response: 1. Tone 2. "Enter your security code after the tone." 3. Tone
3	Enter the 8-digit security code	xnnnnnnn (x=channel number n=0,1,…, or 9)	"Press # at any time to return to the main menu. Enter a function code or press ** for help."

Single channel users cannot use the *7 function code to end a session with one channel on a 400B and access the concentrator without re-dialing the concentrator..

TABLE 4.7-9 Help

Use the following step to obtain help:

Step	Function	User Input	Concentrator - 400B Response
1	Select the help message	Function code **	"To record, press *90. To playback, press *2. To set the channel status, press *3. To change the security code, press *5. To end the session, press *6."

The *1 function code is not included in the help list but may be used by a single channel user.

TABLE 4.7-10 Interrupt and Return to the Main Menu

Use the following step to interrupt and return to the main menu:

Step	Function	User Input	Concentrator - 400B Response
1	Interrupt and return to the main menu	Function code #	"Enter a function code or press ** for help."

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APPENDIX A

Equipment Codes and Comcodes for 16A

A.1 Standard Configurations for 16A with Remote Access

System	Channels	Maximum Announcement Length	Equipment Code	Comcode
16A Digital Trunk Interface	24	1 minute	J1C273A-1 L11	601839483
		2 minutes	J1C273A-1 L12	601855968
		1 minute, cascading	J1C273A-1 L13	601855976
	16	1 minute	J1C273A-1 L14	601839475
	8	1 minute	J1C273A-1 L15	601839467
		2 minutes	J1C273A-1 L16	601839509
		1 minute, cascading	J1C273A-1 L17	601839491

A.2 Circuit Packs for Replacement, Growth and Spares

Circuit Packs		Comcode
BLD3	8 channels, 1 minute/channel	106868250
BLD4	8 channels, 1 minute/channel; announcements phased or cascaded	107037087
BLD5	8 channels, 2 minutes/channel	107107864
400B	Remote Record Module for mounting on BLD announcement circuit packs	107019648
BLD10	Digital Interface	107019663

A.3 Optional Equipment

Description	Equipment Code	Comcode
Announcement Systems Manager (ASM)		107665101
Remote Record Concentrator	J1C273A- L30	601855992
BLD30 Spare Remote Record Concentrator circuit pack		108078106

A.4 Cable and Wiring Kits

Length in Feet	Description	Comcode
100	Cable and Wiring to connect one 16A to DSX and MDF	108162405
200	Cable and Wiring to connect one 16A to DSX and MDF	108162413

A.5 Installation

	Description	Comcode
Basic Installation	Minimum set of services necessary to place the equipment in its location and run applicable factory tests through "turnover". This service includes Warehousing, Assembly, Cable and Wiring and Testing	300000122
Supplemental Installation	Additional installation services beyond Basic Installation which are either required due to site considerations or by customer request. Such services may include installation of systems across multiple floors or customer requested additional tests not required by handbook standards	300000130

APPENDIX B

DIP Switch Settings

The following three sections provide detailed information on the DIP switch settings for the BLD10 and the BLD3/4/5.

B.1 BLD10 DIP Switch Settings

The 12 position DIP switch located on the BLD10 circuit pack determines the modes of operation of the 16A Announcement System. See Figure 2-1.

Switches 1 through 3 control the line equalization setting for the digital interface. These switches are set according to the distance of the system from the digital cross connect frame (DSX). Table 2-3 in Section 2 shows the settings and their corresponding distances.

As indicated in Table 2-3 in Section 2, switches 1, 2, and 3 are also used to set the impedance level to either 75 ohms for coax or 120 ohms for twisted pair when E1 facilities are used. For E1 operation, switches 1, 2, and 3 are not used to set the equalization according to the distance to the DSX.

Switch 4 selects between E1 or T1 operation. Switch 4 should be set **DOWN** to select T1 operation and **UP** to select E1 operation.

Switches 5 and 7 on the BLD10 as well as switches 1 and 2 on the configuration switch of the BLD3/4/5 control signaling options to select **Continuous Operation** for 5ESS applications or **On-Demand Operation.** On the BLD10, Switch 5 should be set **UP** and switch 7 should be set **DOWN** for continuous operation.

For on-demand operation, the switch trunk signal controls the playing of announcements by regulating the start signal pulses sent to the announcement system. For continuous operation, the start signal is forced permanently off hook by the BLD10 circuit pack, allowing for continuous playback of announcements. In both cases, “mute” or cut-through signals to the switch indicate the period between message cycles. START, MUTE, and CUT-THROUGH signaling use the A signaling bit where an active high bit represents off hook and a low bit represents on hook.

Switch 6 activates a loop back test mode. If this switch is set **UP**, the system takes the incoming DS1 from the network and loops it through its line interface directly back to the switch.

Switch 8 is reserved for future use.

Switches 9 through 12 are associated with individually optionable music-on-queue or music-on-hold channels. These switches correspond to channels 21 through 24 on the T1 facility and channels 22 through 25 on an E1 facility. These inputs are isolated and limited for direct connections to unregistered external audio sources instead of playing a regularly recorded announcement directly from the announcement circuit pack. Setting these switches **DOWN** result in playing a regularly assigned announcement channel. Setting these switches **UP** enable the external sources.

NOTE: Any changes to the DIP switch configuration should be followed by a reset of the system. This is accomplished by pressing the black square reset push button on the BLD10 circuit pack. Pressing the reset button momentarily takes the 16A out of service.

Table B-1 details the configuration options for the BLD10 DIP switch.

SWITCH	POSITION	FUNCTION
SW1 - SW3	See Table 2-3	Digital facility equalization
SW4	UP - E1 DOWN - T1	Select between E1 and T1 facility
SW5	UP - continuous operation DOWN - on-demand operation	Selects signaling mode
SW6	UP - loop back operation DOWN - normal operation	For digital trunk trouble isolation
SW7	UP - on-demand operation DOWN - continuous operation	Selects signaling mode
SW8	----------	For future use
SW9	UP - External audio source active DOWN - Recorded announcement active	Channel 21* on the T1 digital trunk
SW10	UP - External audio source active DOWN - Recorded announcement active	Channel 22* on the T1 digital trunk
SW11	UP - External audio source active DOWN - Recorded announcement active	Channel 23* on the T1 digital trunk
SW12	UP - External audio source active DOWN - Recorded announcement active	Channel 24*on the T1 digital trunk

* For E1 facilities, the corresponding channels are channels 22 through 25

Table B-1 BLD10 Configuration DIP Switch Settings

B.2 BLD3/4/5 Configuration DIP Switch Settings

The location of the BLD3/4/5 configuration DIP switch is shown in Figure 2-1.

Switch 1 controls the mode of the response to the START signal from the switch.

Switch 2 controls the MUTE/ CUT-THROUGH signal given by the BLD3/4/5 to the switch.

Switch 3 controls the idle/busy status of the remote record feature.

Switch 4 controls the length of the cut through signal to the switch.

Switches 5 and 6 are not used at the present time.

Switch 7 selects voice prompting or tone prompting for the remote record feature.

Switch 8 controls the level of the tones provided by the remote record module.

Table B-2 describes the configuration options for the BLD3/4/5 configuration DIP switch.

SWITCH	POSITION	FUNCTION	DESCRIPTION
SW1	UP	Level Start	Announcements play for the duration of a closure across the start leads.
	DOWN	Pulse Start	A pulse on the start leads causes announcements to play once from beginning to end.
SW2	UP	Mute	A closure is provided on the **MU** lead to -48 VRTN for the duration of the announcement.
	DOWN	Cut through	A momentary closure is provided on the **MU** lead to -48 VRTN before the start of the announcement.
SW3	UP	Remote Record - Idle to switch	An idle (open) on the **MU** lead is provided when a channel is remotely accessed and the **MUTE** option is used (SW2 up).
	DOWN	Remote Record - Busy to switch	A busy indication is provided when a channel is remotely accessed and the **MUTE** option is used (SW2 up).
SW4	UP	Long Cut Through	The 16A provides a 1.6 second cut through signal.
	DOWN	Short Cut Through	The 16A provides a 0.4 second cut through signal.
SW5	UP	Not Used	
	DOWN	Not Used	
REMOTE RECORD OPTIONS			
SW6	UP	Not Used	
	DOWN	Not Used	
SW7	UP	Voice Prompting	Remote Record feature provides voice prompting.
	DOWN	Tone Prompting	Remote Record feature provides tone prompting.
SW8	UP	Tone Level High	Controls the volume levels of the tones provided by the Remote Record Feature.
	DOWN	Tone Level Low	

Table B-2 BLD3/4/5 Configuration DIP Switch Settings

B.3 BLD3/4/5 Attenuation DIP Switch Settings

The attenuation DIP switch is used to set the analog announcement output level from the BLD3/4/5 to the BLD10. Each of the eight switches controls the level of one channel as shown in Table B-3.

BLD3/4/5 ATTENUATION DIP SWITCH SETTINGS			
SWITCH	**POSITION**	**CHANNEL NUMBER**	**ANNOUNCEMENT LEVEL**
SW1	UP	0	-15 dBm
	DOWN	0	-18 dBm
SW2	UP	1	-15 dBm
	DOWN	1	-18 dBm
SW3	UP	2	-15 dBM
	DOWN	2	-18 dBm
SW4	UP	3	-15 dBm
	DOWN	3	-18 dBm
SW5	UP	4	-15 dBm
	DOWN	4	-18 dBm
SW6	UP	5	-15 dBm
	DOWN	5	-18 dBm
SW7	UP	6	-15 dBm
	DOWN	6	-18 dBm
SW8	UP	7	-15 dBm
	DOWN	7	-18 dBm

Table B-3 BLD3/4/5 Attenuation DIP Switch Settings

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APPENDIX C

Trouble Shooting Procedures

C.1 Power Failures

The 16A provides for five alarm closures to the switch as follows:

- A system alarm closure from the BLD10 circuit pack.
- A network alarm closure from the BLD10 circuit pack.
- An alarm closure for each of the three BLD3/4/5 circuit packs.

If there are five alarm closures to the switch but none of the LEDs on any of the circuit packs is lighted or is lighted very dimly, verify that there is -48 Vdc power present on the terminals at the rear of the 16A. Check for a blown or missing fuse if no -48 V is present.

C.2 BLD10 Failures

If the red system alarm LED on the BLD10 is lighted, press the black square reset button on the BLD10 to see if the alarm clears. If it does not, replace the BLD10 circuit pack.

If the 16A does not function and the red system alarm LED on the BLD10 is not lighted, press the black square reset button on the BLD10. The red and yellow LEDs should come on for about 10 seconds and then go off. If the LEDs on the BLD10 do not come on, verify that the BLD10 is fully seated in the back plane connector. If the 16A still does not function, replace the BLD10.

C.3 DS1/E1 Failures

If the yellow network alarm LED on the BLD10 is lighted, the BLD10 may not be receiving a valid DS1/E1 signal. Verify the following:

- Check to make sure that the DS1/E1 connection has been activated.
- Verify that the configuration DIP switches SW1 through SW3 on the BLD10 are properly set to account for the loop length to the DSX for DS1 signals and for the impedance level for E1 signals.
- Verify that SW4 is set correctly for DS1 or E1 operation.
- Verify that the DS1/E1 signal has been wired correctly through the DSX frame.

Using the loop back capability of the BLD10, the DSX, and either a 5ESS Digital Facility Interface circuit pack, a DACS, or other equipment, isolate the source of the problem to the DS1/E1 facility itself, the BLD10 circuit pack, or other equipment. The loop back at the BLD10 is activated by setting the BLD10 configuration DIP switch SW6 to the UP position.

C.4 BLD3/4/5 Failures

The BLD3/4/5 may identify a problem during self diagnostics and indicate the nature of the problem using the display on the circuit pack. Error codes are displayed as follows:

Error Code	Action
ER_0 ER_1	Try to clear the problem by pressing the menu button. If the error condition persists, replace the BLD3/4/5 circuit pack.
ER_2 ER_3 ER_4	Pressing the menu button should clear these error codes. If the error code reappears, replace the 400B module. If the error code still reappears, replace the BLD3/4/5 circuit pack.
REC_X	The channel X should be re-recorded, where X=0,1,…, or 7.

C.5 Other Problems on the BLD3/4/5 or 400B

If there is no alarm on the BLD3/4/5 but the MENU and SELECT buttons do not function, replace the BLD3/4/5.

If local and remote operations function correctly, but the red LED turns on and off periodically, either the recording level on one of the channels is too low or the channel has 10 seconds or more of silence. Play back each channel and monitor for poor quality audio with long periods of silence. Re-record any channel as required. If re-recording an announcement does not correct the problem, a memory device may be defective for that channel on the BLD3/4/5. Change the bad channel status to OFF line. The other channels should not be affected. While you can continue to use the other channels on the BLD3/4/5, you should replace the BLD3/4/5 as soon as possible to restore full service.

If local operations for the BLD3/4/5 function correctly but remote operations do not work, replace the associated 400B module.

C.6 Still Having a Problem?

If you are still having a problem, please call the Announcement Systems Product Team customer service number - 1-800-352-5563 (within the United States) or 1-973-386-4311 (outside the United States).

APPENDIX D

Remote Operations with Tone Responses

D.1 Detailed Instructions for the System Administrator with Tone Responses

The following tables summarize the steps required by a system administrator to access a 400B and execute various functions. These steps are for tone responses from the 400B. For tone responses, set the seventh configuration switch on the BLD3/4/5 to the **DOWN** position. For the corresponding steps using voice responses instead of tone responses, see Section 4.6.

The tone response tables will be provided in a future release of this practice.

D.2 Detailed Instructions for Single Channel Users with Tone Responses

The following tables summarize the steps required by single channel users to access a 400B and execute various functions. These steps are for tone responses from the 400B. For tone responses, set the seventh configuration switch on the BLD3/4/5 to the **DOWN** position. For the corresponding steps using voice responses instead to tone responses, see Section 4.7.

The tone response tables will be provided in a future release of this practice.

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APPENDIX E

Regulatory Agency Approvals

The 16A complies with the following:

UL Standard 1459
FCC Rules and Regulations - Part 15, Subpart B - Class A
FCC Rules and Regulations - Part 68
CAN/CSA - C22.2
Bellcore NEBS TR-NWT-000063
ISO 9001 Certification, Quality Management Systems

Additional information is listed below:

FCC Registration Number AS5USA-20424-XD-N
Ringer Equivalence Number (REN) for remote record, i.e., the 400B - 0.4A, 1.8B
Facility Interface Code (for DS1 interface) - 04DU9-BN
Service Order Code (for DS1 interface) - 6.0N

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APPENDIX F

Frequently Asked Questions and Answers

1. **Q.** Can I use the same cable with many DS1 pairs in it to connect multiple 16As to the DSX?

   A. We do not recommend it. Use individual shielded cables for each DS1 pair. Use separate shielded cables for transmit and receive pairs. See page 2-5.

2. **Q.** How do I remove boards from the 16A?

   A. See Section 2.8.

3. **Q.** I forgot the security code. What do I do?

   A. See Section 3.3. This section describes how to reset the security code to the default security code. This must be done locally. The default security code is *47985621. The default security code can then be changed remotely to a unique security code.

4. **Q.** How do you change the security code?

   A. The system administrator can remotely change the security code assignment for a BLD3/4/5 by following the steps in Table 4.6-9. See Table 4.6-6 for the procedure for the system administrator to assign a single channel security code for a commercial customer. The single channel security code can only be changed by a commercial customer if the system administrator enables that capability. See Table 4.7-6 for the procedure for a commercial customer to change the single channel security code.

5. **Q.** What do I have to do to make the BLD4 cascaded or phased announcement circuit pack work correctly.

   A. All channels have to be placed on line or else the BLD4 does not work correctly. The BLD4 has to be connected to a trunk group with eight members. The 16A cascaded special feature must be activated in the 5ESS switch and the cascaded option set to YES in the recent change view.

6. **Q**. What are the comcodes for the 16A circuit packs?

   A. See Appendix A.

7. **Q.** For a 16A used in a 5ESS application, why doesn't the 16A answer and play announcements on any of the channels? There are no alarms on the 16A.

   A. Check that the DIP switch settings on the BLD10 are set correctly. SW5 and SW7 should be set for continuous play for 5ESS applications. See Appendix B.

8. **Q.** How should I wire the DS1 facility from the 5ESS DFI to the 16A?

   A. The cabling should be connected from the transmit terminals of the DFI through the DSX to the receive terminals of the 16A and from the transmit terminals of the 16A though the DSX to the receive terminals of

the DFI.

9. **Q.** Do all of the channels of the 16A power up ON - LINE?

   A. When the 16A is powered up, all of the channels are in the state that they were when power was removed. When a 16A is received from the factory, all channels are ON - LINE.

10. **Q.** Does RDY mean all channels are ON - LINE?

    A. RDY does not mean all of the channels are ON - LINE. RDY is simply the state of the BLD3/4/5 display right after the BLD3/4/5 powers up and completes the diagnostic tests. Any channels that were OFF - LINE when the power was removed will still be OFF - LINE when power is restored.

11. **Q.** Can I concatenate two one minute channels of a BLD3 to obtain a two minute announcement?

    A. No! Use the BLD5 for two minute announcements.

12. **Q.** What does a flashing red LED on the BLD3/4/5 mean?

    A. If local and remote operations function correctly, but the red LED turns on and off periodically, either the recording level on one of the channels is too low or the channel has 10 seconds or more of silence. Play back each channel and monitor for poor quality audio with long periods of silence.

13. **Q.** How many seconds of recording time do I have on the BLD4.

    A. Sixty seconds. Only one announcement can be recorded on the BLD4. Choose any of the eight channels. The announcement is automatically distributed across all eight channels but with different starting times. The starting times for the eight announcements are spaced apart by approximately $1/8^{th}$ of the announcement length.

14. **Q.** The BLD3 displays **OK**. The remote record feature does not work. What do I do?

    A. As described in Section 3.3, when **OK** is displayed on a BLD3/4/5, all remote channel operations are disabled. You must push the **MENU** button at least once to return to the main menu to restore remote channel operations. Channel 0 should then be displayed.

15. **Q.** The BLD3 display shows **0 11**. What does this mean?

    A. The display **0 11** means that channel 0 has an 11 second announcement. Channel 0 is heard in the handset if channel 0 is on line and is set to play continuously for 5ESS applications,

16. **Q.** I am having problems powering up my 16A. What should I do?

    A. Follow the powering up instructions for the initial installation of the 16A as described in Section 2.7. If there are still problems, remove all of the circuit packs and reinstall them one at a time making sure the circuit packs are fully inserted. Follow the instructions in Section 2.8 for removing circuit packs.

17. **Q.** If I power down my 16A, do I have to rerecord all the announcements.

    A. No, announcements are not lost when the 16A is powered down. The ON/OFF channel status does not change either. Each announcement is stored on a non-volatile chip.

18. **Q.** What is the reset button for? Will I lose announcements if I push the reset button?

    A. You will not lose announcements if you push the reset button on the BLD10. Pushing the reset button causes the BLD10 to perform diagnostic tests on itself. If the red LED on the BLD10 is lighted, press the reset button to see if the alarm clears. If it does not, replace the BLD10. See Section C.2 in Appendix C for more information.

19. **Q.** If I have to remove a circuit pack from the 16A, do I have to power it down first? If yes, how do I power down the 16A.

    A. Before you remove a circuit pack from the 16A, the 16A should be powered down by removing the fuse. See Section 2.8 which discusses removing circuit packs from the 16A.

20. **Q.** How can I test that an external audio source connected to the 16A is working?

    A. Use the Trunk and Line Workstation to access the channel in the T1/E1 facility that contains the external audio source to verify that audio is present. Alternatively, connect a T1/E1 test set to the facility and monitor the channel. Another way to verify that the external audio source is present on a channel is to assign a directory number to the announcement trunk (channel), dial the trunk, and listen to the audio.

21. **Q.** Suppose I lease channels on a BLD3 to several different customers. If one customer makes a poor recording (low volume or too much silence) and causes an alarm, how do I prevent other customers served by the same BLD3 from being affected?

    A. Program the scan point associated with this BLD3 so that the 5ESS switch does not take all eight channels on the BLD3 out of service but simply creates a minor alarm. The system administrator can then remotely set the offending channel OFF line and the alarm clears. The system administrator notifies the customer of the problem with the recording.

22. **Q.** What handset do I use to monitor and make recordings locally at the 16A.

    A. A handset is provided with the 16A for monitoring and recording announcements on the BLD3/4/5 channels. A carbon microphone type handset must be used If you cannot find yours, you can order one from Walker Equipment, 4009 Cloud Spring Road, Ringgold, Ga. 30736 (Phone: 1-800-426-3738). The part number for a “pearl” colored handset is W3-500CM -10. You will also need a handset cord. The model number for a six foot handset cord with modular plugs on both ends is 50436-10.

23. **Q.** How do I wire the connector for the analog line that connects to the RJ11 modular jack on the BLD3/4/5?

    A. Wiring information is shown in Figure 2-4. The ring lead is connected to pin 4 and the tip lead is connected to pin 3 of the plug that connects to the RJ11 jack.

24. **Q.** The display for one of the channels on the BLD3 shows the channel number and ON. I cannot remotely access any of the channels on this BLD3.

    A. After performing a local operation, you must return to the main menu or remote channel operations will be blocked. You are in the main menu if the display shows RDY, a channel number and the length of its recording, or DFLT. If the display shows OK or a channel number and ON, OFF, REC, or MON, the BDL3/4/5 is NOT in the main menu and remote channel operations are blocked.

25. **Q.** The external audio channels connected to a 16A are not playing correctly for a 5ESS Wireless switch. How do I solve this problem?

    A. For 5ESS Wireless switches, the announcement trunks must be set up using both recent change and another administration subsystem specific to 5ESS Wireless switches, e.g., the Executive Cellular Processor (ECP). Specifically, both recent change and ECP should be set for barge-in for the external audio channels.

26. **Q.** Does Lucent sell a tape recorder and the associated patch cord for use with the 16A?

    A. No! Any tape recorder with good quality audio should work. The patch cord should be available from local audio or electronic supply stores.

27. **Q.** What are the requirements for an external audio source that connects to the 16A?

    A. The level of the external audio source should be between -10 dBm and -5 dBm into a 600 ohm load provided by the 16A.

28. Q. How do I order announcement tapes with network announcements and special information tones?

    A. Lucent does not sell announcement tapes. Usually each telephone company supplies their own tapes.

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