15A Announcement System
Description and Operating Procedures
Common Systems

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1. OVERVIEW

1.01 This practice describes the 15A Announcement System, a state-of-the-art, completely electronic, digital announcement system. Since there are no moving parts, the 15A does not require routine maintenance.

1.02 This practice is reissued to include the following changes:

- To add information on BLD3, BLD4, BLD5, BLD20, BLD21, BLD22, BLD23 and 400B circuit packs. The manufacture of BLD1, BLD2 and 400A has been discontinued.
- The BLD3 circuit pack provides 60 seconds of recording time. The discontinued BLD1 and BLD2 only provided 20 seconds and 40 seconds, respectively, of recording time.
- The 400B unit supersedes the 400A unit. The 400B provides voice prompting in addition to an option for tone prompting. The 400A unit only provided tone prompting.

1.03 This practice contains admonishments in the form of **CAUTIONS** that can or will cause minor property damage if the hazard is not avoided.

1.04 Additional copies of this practice and any associated appendixes may be ordered by contacting the AT&T Customer Information Center as follows:

AT&T Customer Information Center
Attention: Order Entry Section
2855 N. Franklin Road
P.O. Box 19901
Indianapolis, IN 46219-1999
Telephone: 1-800-432-6600

1.05 The following information applies to the 15A Announcement System:

⚠ CAUTION:
If this equipment is to be connected to standard telephone lines through the 400B Remote Record Module, or is to be operated as part of a PBX system, it must also comply with Part 68 of the FCC regulations. The FCC registration number and Ringer Equivalence Number (REN) is shown on the back of this equipment. If requested, this information must be provided to the telephone company. This equipment is also UL[1] recognized and CSA[2] certified.

1.06 FEDERAL COMMUNICATIONS COMMISSION (FCC) Notification and Repair Information

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, use, and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

1.07 Each telephone service company has standards regarding the signals that ring devices. This determines the type and number of devices that can be attached to the line. The REN determines the relative value of each device. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area. The optional 400B Remote Record Module provides a line interface for remote recording. When the 400B Remote Record Module is included, the 15A Announcement System REN is 0.4 per line.

1.08 The telephone company may make changes in its facilities, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice to make the necessary modifications to maintain uninterrupted service.

1.09 Warranty repair information for wireless applications can be obtained by contacting customer service at the following:

AT&T Technologies (Customer Service, Repair and Return)
9501 West 67th Street
Merriam, KS 66203
Telephone 1-800-255-7333

1.Registered trademark of Underwriter's Laboratories
2.Registered trademark of Canadian Standards Association

NOTE:
FCC Notification and Repair information

The user is cautioned that modifications to the equipment not expressly approved by AT&T could void the user's authority to operate the equipment. If trouble is experienced with this equipment, please contact the number above for repair and warranty information.

The telephone company may request that the equipment be removed until the problem is solved.

Technical support for wireless applications can be obtained by calling the *Autoplex* ® cellular telecommunications system customer diagnostics center at 1-800-225-4672.

For technical support for applications other than wireless, contact 1-800-352-5563.

1.10 The 15A Announcement System provides recorded and playback service to PBX and central office switching systems. The announcer interconnects to auxiliary trunks in the switch. Typical switches that the unit interfaces with include Definity ® switches (G1, G2, G3), Merlin Legend (TM), System 25, System 75/85, the 5ESS, DMS-100[3], and with Network Wireless Systems Mobile Switching Centers. The 15A Announcement System packs can be mounted side by side to create a 4, 8, 12 or 16 channel system within 2 inches of height. Other features provided are menu-oriented controls. The 15A Announcement System uses CMOS Electrically Erasable Programmable Read Only Memory (EEPROM) technology to provide nonvolatile recordings (no batteries). The 15A Announcement System can also be provided with remote recording interface.

2. General

2.01 The following 15A Announcement System circuit packs and modules provide flexibility in recorded announcement service for the user:

- BLD3 (Figure 1A) - a record/reproduce unit that uses EEPROM memory and can record up to eight unique announcements of up to 60 seconds in length each.
- BLD4 (Figure 1A) - a record/reproduce unit that uses EEPROM memory and can record one unique announcement of up to 60 seconds in length. The recorded announcement is copied in all 8 channels of the BLD4 unit. The announcements are played back continuously in "phased" (cascaded) mode.
- BLD5 (Figure 1A) - A record/reproduce unit that uses EEPROM memory and can record up to eight unique announcements of up to 120 seconds in length each.
- BLD20 (Figure 1B) - A record/reproduce unit that uses EEPROM memory and can record up to four unique announcements of up to 60 seconds in length each.

3.DMS-100 is a trademark of Northern Telecom

- BLD21 (Figure 1C) - A record/reproduce unit that uses EEPROM memory and can record up to four unique announcements of up to 60 seconds in length each. Each channel is equipped with ring-trip circuitry and can be connected to a telephone line.
- BLD22 (Figure 1B) - A record/reproduce unit that uses EEPROM memory and can record up to four unique announcements of up to 120 seconds in length each.
- BLD23 (Figure 1C) - A record/reproduce unit that uses EEPROM memory and can record up to four unique announcements of up to 120 seconds in length each. Each channel is equipped with ring-trip circuitry and can be connected to a telephone line.

All circuitry needed for playback of a recorded announcement is located on each circuit pack.

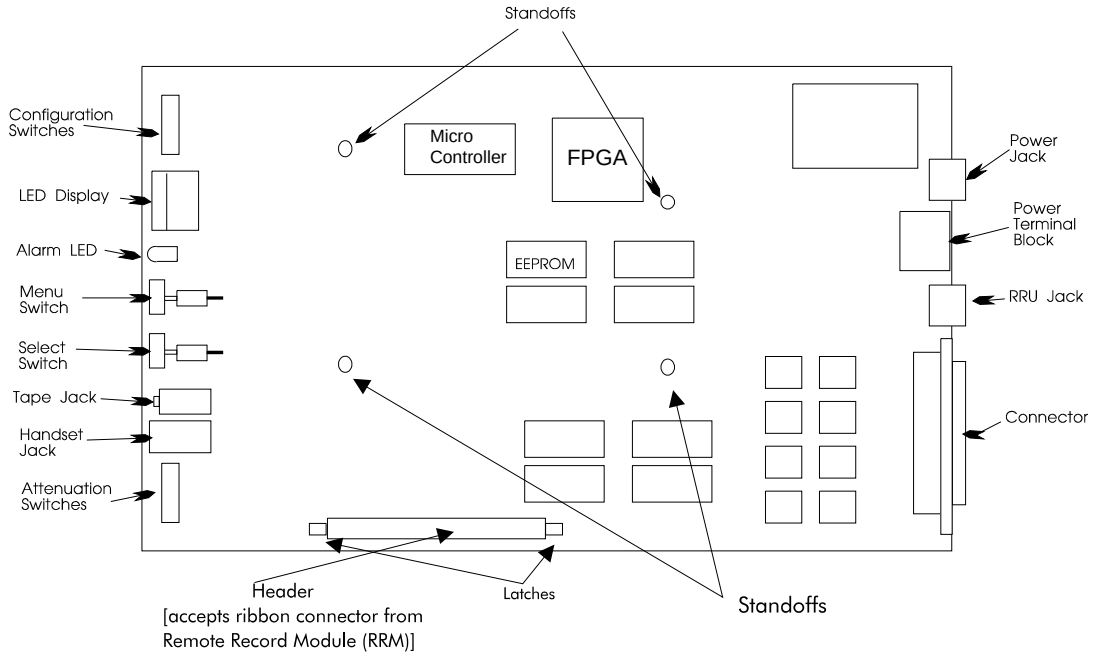


Figure 1A. BLD3, BLD4 or BLD5 Circuit Pack

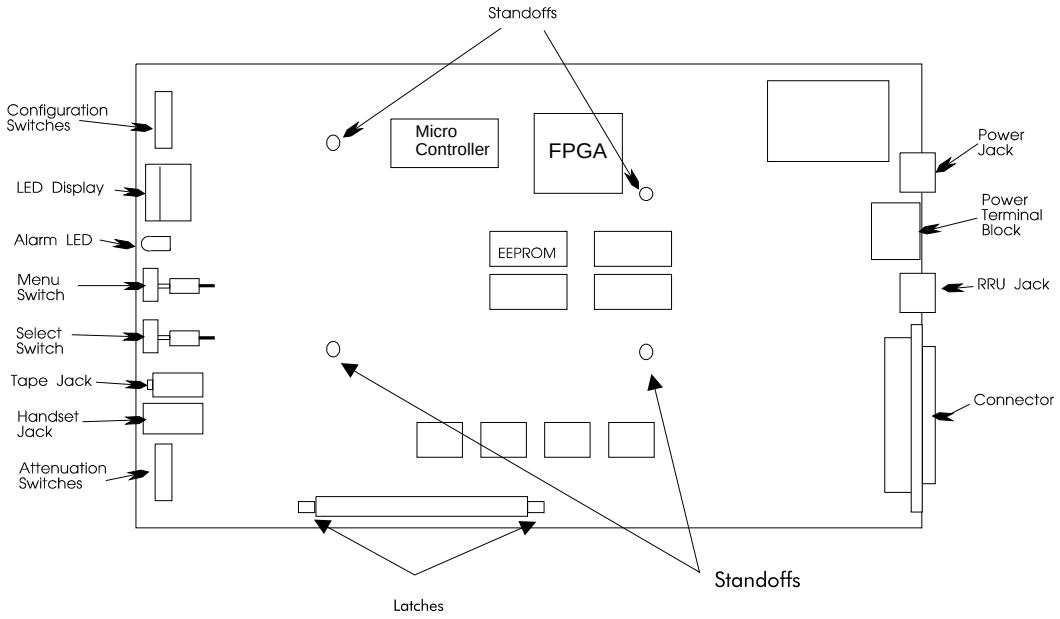


Figure 1B. BLD20 or BLD22 Circuit Pack

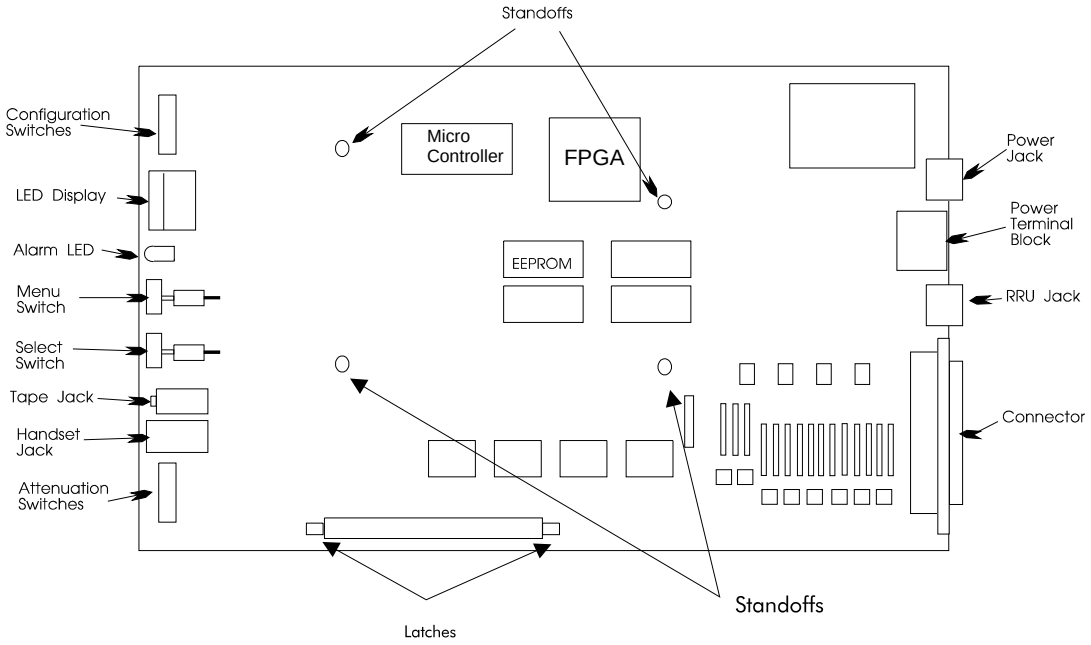


Figure 1C. BLD21 or BLD23 Circuit Pack

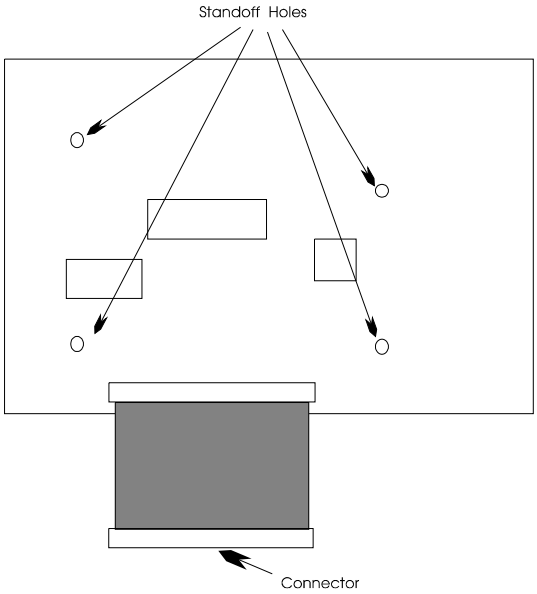


Figure 2. 400B Remote Record Module

2.02 With the 15A System circuit packs, users can choose an announcement service that meets their needs. The cost effectiveness and small size makes the system particularly suitable for applications where eight or more channels are needed. The 400B Remote Record Module can be used with any of the BLD type circuit packs to provide remote recording. Each basic 15A Announcement System common equipment unit consists of two circuit packs (each with one 400B Remote Record Module), shelf and apparatus mountings. The user may choose:

- Four, 8, 12 or 16 channels with 60 or 120 seconds each of record/reproduce announcement and with E & M trunk interface v ia one or a combination of two of the following circuit packs in a shelf: BLD3, BLD5, BLD20 or BLD22.
- Eight or 16 channels with 60 seconds each of record/reproduce of cascaded (phased) announcement via one or two BLD4's.
- Four or 8 channels with 60 seconds or 120 seconds each of record/reproduce announcement and with line-side interface via a combination of one or two of the following circuit packs: BLD21 or BLD23.

2.03 If the circuit is to be provided with remote record functionality, then a 400B Remote Record Module is to be added to the BLD coded circuit pack. Each remote record module provides remote record functionality to its associated circuit pack. The 400B Remote Record Module provides the capability to remote record to all channels of the associated BLD coded circuit pack. The 400B Remote Record Module mounts on standoffs already provided on the BLD coded circuit packs. A ribbon connector provides interconnectivity between the two boards. A modular jack on the back of the BLD coded board is used to interconnect to a telephone line.

2.04 The 400B Remote Record Module is accessed via a Plain Old Telephone Service (POTS) line or via a POTS line interfaced with a Concentrator (ALD4) circuit external to the 15A system. In each case, a Line Interface Circuit (LIC), that resides on the printed wire circuit pack, is available to the public switched network. When the circuit pack is accessed remotely via a touch-

tone telephone, it interacts with the user via voice prompts (it can also be set to provide tone prompts). Using the touch-tone keyboard, the user enters a security password and a series of commands to record and play back messages.

2.05 The 15A Announcement System has been optimized for a large variety of network announcements. It is possible to record announcements on the 15A Announcement System via the handset on the front of the unit or through the tape jack, in front of the unit. By using the tape jack, messages can be downloaded using standard prerecorded announcements available on tape.

2.06 Remote recordings can be made live via the telephone handset, or they can be dubbed from tape using the Telephone Tape Recorder Adapter (see Figure 3). The 400B Remote Record Module as well as the Concentrator (ALD4) circuit, can also be used as a subsystem to the AT&T Announcement Systems Manager (ASM) Personal Computer (PC) based workstation. ASM features include a speech file manager that allows digitally encoded storage of messages, a database manager that allows efficient record-keeping and storage of all information associated with announcement channels, and a Remote Record interface that allows downloading of stored messages to 13A, 13A+, 14A 15A and 16A Announcement Systems from a central location. See Figure 4 for the ASM/Remote Record Unit (RRU) architecture.

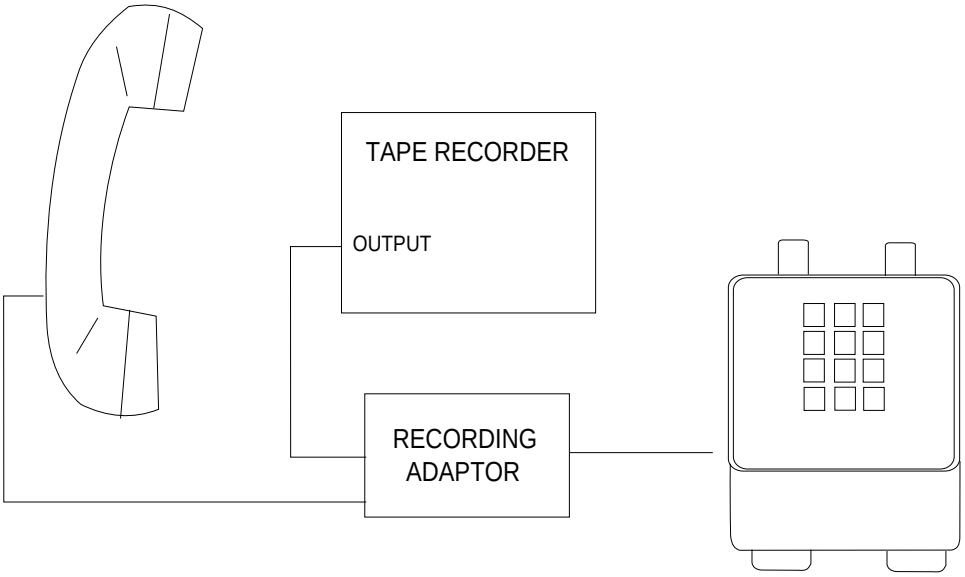


Figure 3. Telephone Tape Recorder Adapter

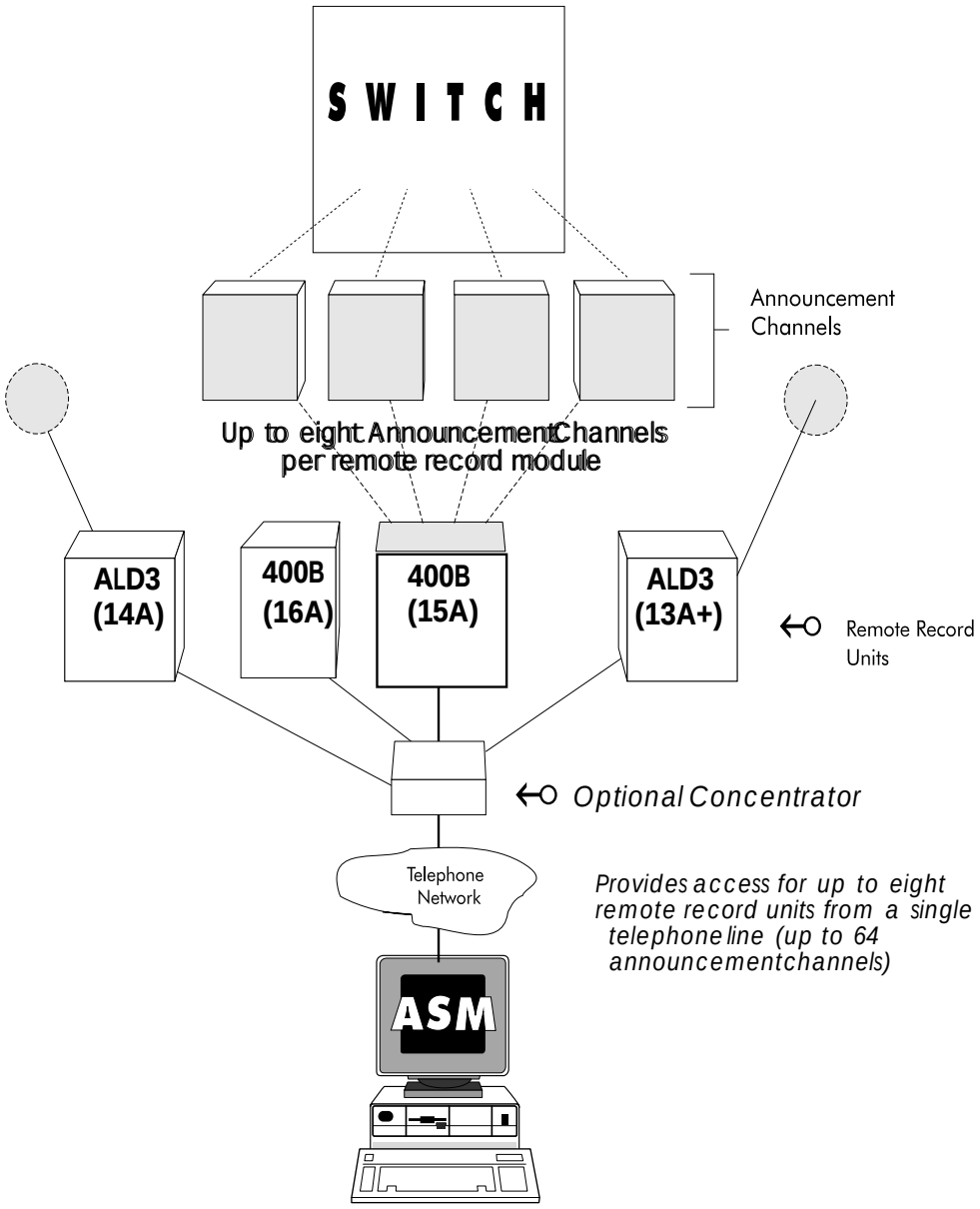


Figure 4. ASM/RRU Architecture

3. Description

3.01 The 15A Announcement System is 2 inches high by 17 inches wide by 13.5 inches deep. Apparatus mountings are also provided to allow mounting ina variety of commonly used cabinets. The basic 15A Announcement System shelf holds two circuit packs. Each of these packs could be equipped with a 400B Remote Record Module. The packs slide into the shelf and are fastened in the back using hex-headed screws. Connectivity is provided by a 50-pin connector (JP1)

(see Figure 5) that interfaces to a standard communication cable (KS-16689 L18 type). The announcer interconnects to auxiliary trunks and telephone lines in the switch.

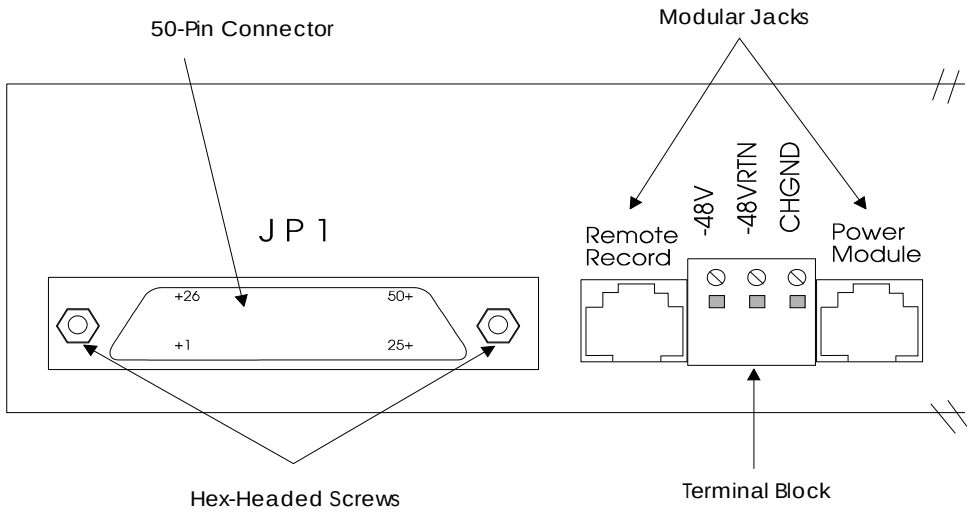


Figure 5. 15A Rear View

3.02 Each BLD coded circuit pack is self-contained and independent of the other circuit packs. Some of the major components of these circuit packs are described as follows:

- Microcontroller: Handles overall control of the pack, including diagnostics, display, faceplate controls, and Remote Record Interface.
- EEPROM: Stores the voice signal. Each announcement channel has a dedicated EEPROM.
- FPGA: Field Programmable Gate Array. Provides the necessary interface logic between the microcontroller, the EEPROMs and the control signals from the switch.
- Transformer coupled outputs: Provides isolated voice signals to 600-ohm circuits. Output level is present to provide acceptable transmission level per FCC Part 68.

DIP Switch Settings Configuration

3.03 The configuration Dual In-Line Package (DIP) switch (Figure 6) allows control of different signalling modes. For the trunk port models: BLD3, BLD4, BLD20 and BLD22, the different dip switch options are given in Table 1. The different signaling modes for the trunk port models are illustrated in Figure 7. When switch 1 is high, the start signal is configured as a “level” start. The message continues playing for as long as the start signal is present. Removal of the start signal stops the playback immediately and the channel becomes available to be seized again. If the start signal is applied continuously, the channel is reset automatically and plays continuously.

3.04 When switch 1 is low, the start signal is configured for pulse mode. In this mode, a momentary closure across the start leads causes the message to play in its entirety. Any other pulses provided while the message is playing will be ignored. If the start leads are closed at the end of the message, the message will play again.

3.05 With switch 2 high, the mode of the signal appearing across the MUTE and -48 V RTN (Return) pins is set to level mute. In this mode, a closure appears whenever the message is playing. The signal appears open otherwise. When this switch is low, the signal is configured so that a closure appears just before the start of the message (cut-through signal) after a start signal has been received from the switch. The signal is open when the channel is idle and goes low immediately after a start signal is received. The signal is open during the duration of the message. The cut-through signal duration (long = 1.6 sec/short = 0.4 sec) can be controlled with SW4.

3.06 The signaling options for the BLD4 circuit pack are given in Table 2. The channels run continuously without intervention from the switch. DIP switch SW2 controls the length of the cut-through signal.

3.07 The DIP switch configuration for Ring-Trip (line-side) units is given in Table 3. Switch SW1 has no effect. With Switch SW2 the unit can be set to go “on-hook” for long or short forward disconnect pulses. With SW3 the unit can be set to provide an “on-hook” or “off-hook” when one of the channels is remotely accessed. With SW4 channel 0 can be set to go “off-hook” and play back continuously (music-on-hold). With SW5 all channels can be set to go “off-hook” and playback continuously (music-on-hold). When the BLD is provided with the 400B Remote Record module, switch 7 controls whether the unit is set for “tone prompting” only or voice prompting and tone prompting (the unit will interface by means of tone prompting when working with ASM regardless of SW7 position). Switch SW8 controls the level of the tones provided by the Remote Record Unit. Table 4 gives a functional description of the DIP switch names.

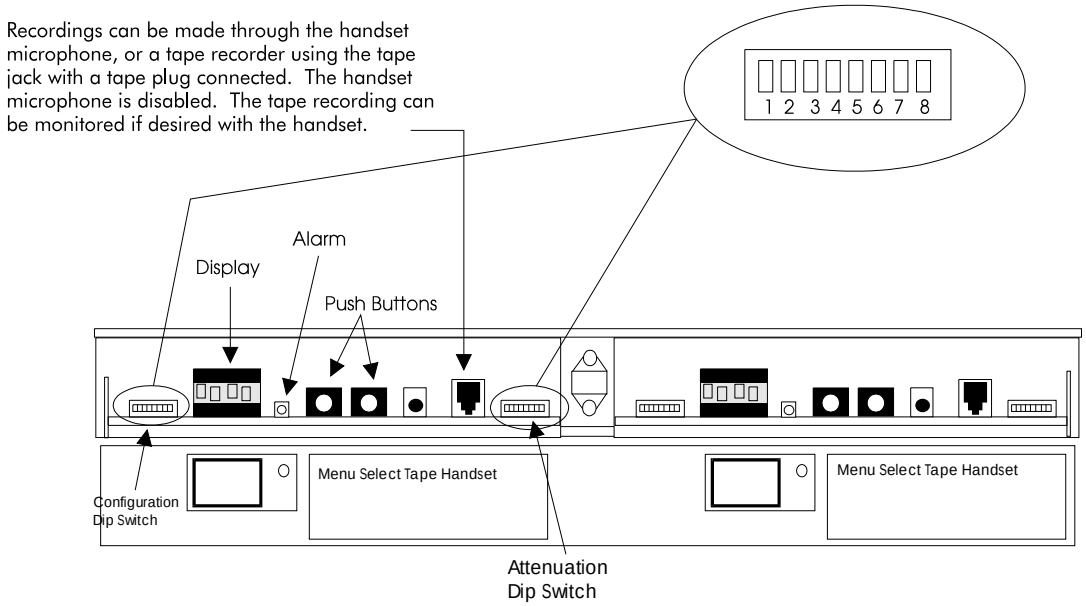
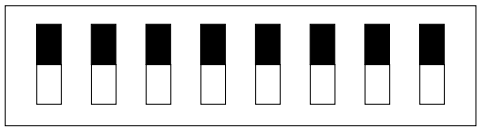


Figure 6. 15A Front View

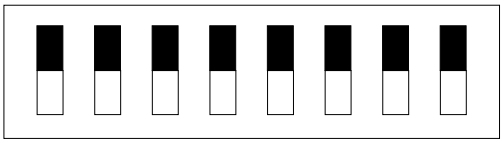


CONFIGURATION DIP SWITCH
Trunk Port Models

Switch	Position	Function	
SW1 -	High	Level Start/	
	Low	Pulse Start	
SW2 -	High	Mute/	
	Low	Cut Through	
SW3 -	High	Remote Record - Idle*	
	Low	Remote Record - Busy	
SW4 -	High	Long cut through	
	Low	Short cut through	
SW5 -	High	No effect	
	Low	No effect	
SW6 -		No effect	
SW7 -	High	Voice Prompting	Remote Record
	Low	Tone Prompting	Options
SW8 -	High	Tone level high	
	Low	Tone level low	

*Note: 4 channel board only: BLD20, BLD22

Table 1. DIP Switch Configuration - Trunk Port Models: BLD3, BLD4, BLD20 and BLD22



HIGH (UP POSITION) [OPEN]

LOW (DOWN POSITION) [CLOSED]

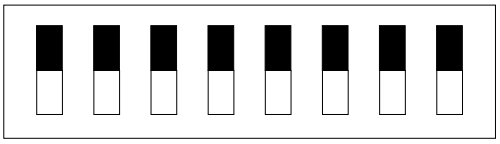
1 2 3 4 5 6 7 8

CONFIGURATION DIP SWITCH
Trunk Port Models

Switch	Position	Function	
SW1 -	High	No effect	
	Low	No effect	
SW2 -	High	Cut through short	
	Low	Cut through long	
SW3 -	High	No effect	
	Low	No effect	
SW4 -	High	No effect	
	Low	No effect	
SW5 -	High	No effect	
	Low	No effect	
SW6 -		No effect	
SW7 -	High	Voice Prompting	Remote Record
	Low	Tone Prompting	Options
SW8 -	High	Tone level high	
	Low	Tone level low	

*Note: 4 channel board only: BLD20, BLD22

Table 2. Cascaded (Phased) Announcement Model: BLD4



HIGH (UP POSITION) [OPEN]

LOW (DOWN POSITION) [CLOSED]

1 2 3 4 5 6 7 8

CONFIGURATION DIP SWITCH
Ring Trip Models

Switch	Position	Function	
SW1 -	High	No effect	
	Low	No effect	
SW2 -	High	Short Pulse/	
	Low	Long Pulse	
SW3 -	High	Remote Record - Idle	
	Low	Remote Record - Busy	
SW4 -	High	No effect	
	Low	Channel 0 - Music on Hold	(continuous play)
SW5 -	igh	No effect	
	Low	All Channels Music on Hold	(continuous play)
SW6 -		No effect	
SW7 -	High	Voice Prompting	Remote Record
	Low	Tone Prompting	Options
SW8 -	High	Tone level high	
	Low	Tone level low	

Table 3. DIP Switch Configuration - Ring Trip Models

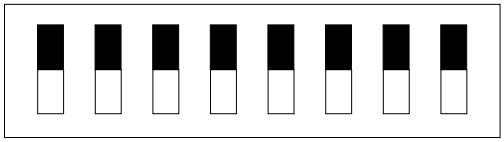
Configuration DIP Switches Functional Descriptions

Pulse Start	A pulse on start leads will cause messages to play once from beginning to end.
Level Start	Messages will play for the duration of a closure across start leads.
Mute	A closure is provided on the MU lead to -48VRTN for the duration of the message.
Cut Through	A momentary closure is provided on the MU lead to -48VRTN before the start of the message.
Remote Record - Idle	An idle (open) on the MU lead is provided when a channel is remotely accessed and the Mute option is used (SW2-high).
Remote Record - Busy	A busy indication is provided when a channel is remotely accessed and the MUTE option is used (SW2-low).
Tone Prompting	Remote Record Feature provides tone prompting only for interface.
Voice Prompting	Remote Record Feature provides voice prompting interface.
SW8 Tone 1 Level High Tone 1 Level Low	Controls the volume levels of the tones provided by the Remote Record Feature.
Short Pulse	Unit disconnects when a forward disconnect pulse of at least 300 msec in length is received from the switch.
Long Pulse	Unit disconnects when a forward disconnect pulse of at least 500 msec in length is received from the switch
Long Cut Through	Unit provides a 1.6 sec. cut through signal.
Short Cut Through	Unit provides a 0.4 sec. cut through signal.

Table 4. Configuration DIP Switches Functional Descriptions

A. Output Level

3.07 The DIP switch labeled “attenuation” can be used to set the output level to one of two levels. Each switch controls the level of one channel. DIP switch 1 controls the level of channel 0, DIP switch 2 controls the level of channel 1, and so forth. Table 5 provides output level information for the attenuation DIP switch.



HIGH (UP POSITION) [OPEN]

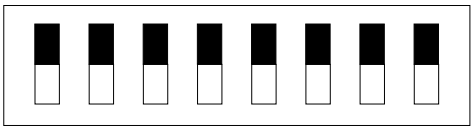
LOW (DOWN POSITION) [CLOSED]

1 2 3 4 5 6 7 8

ATTENUATION DIP SWITCH
Ring Trip Models

Switch Position	Output Level	
SW1 - High	Channel 0 -13	
Low	Channel 0 -19	
SW2 - High	Channel 1 -13	
Low	Channel 1 -19	into 600 ohms
SW3 - High	Channel 2 -13	
Low	Channel 2 -19	
SW4 - High	Channel 3 -13	
Low	Channel 3 -19	
SW5 -	No effect	
SW6	No effect	
SW7	No effect	
SW8	No effect	

Table 5. Attenuation DIP Switches - All Models Part 1 of 2



HIGH (UP POSITION) [OPEN]

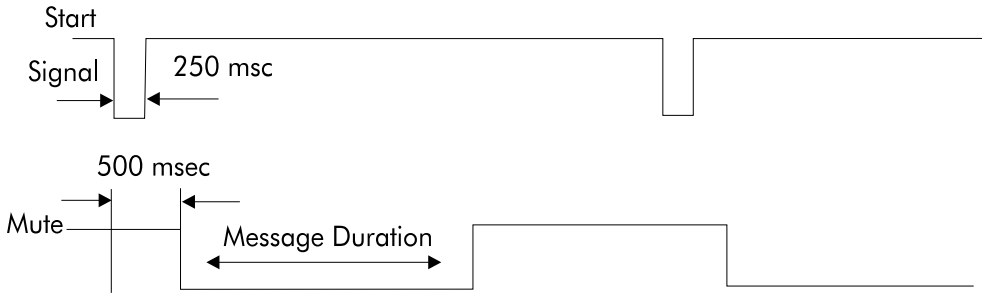
LOW (DOWN POSITION) [CLOSED]

1 2 3 4 5 6 7 8

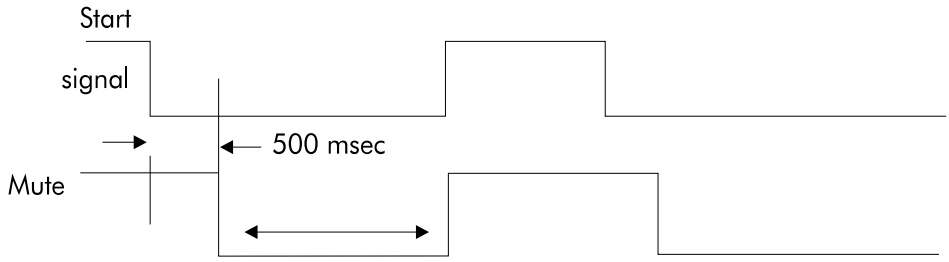
ATTENUATION DIP SWITCH
Trunk Port Models

Switch Position	Output Level	
SW1 - High	Channel 0 - 15	into 600 ohms
Low	Channel 0 - 18	
SW2 - High	Channel 1 - 15	
Low	Channel 1 - 18	
SW3 - High	Channel 2 - 15	
Low	Channel 2 - 18	
SW4 - High	Channel 3 - 15	
Low	Channel 3 - 18	
SW5 - High	Channel 4 - 15	
Low	Channel 4 - 18	
SW6 - High	Channel 5 - 15	
Low	Channel 5 - 18	
SW7 - High	Channel 6 - 15	
Low	Channel 6 - 18	
SW8 - High	Channel 7 - 15	
Low	Channel 7 - 18	

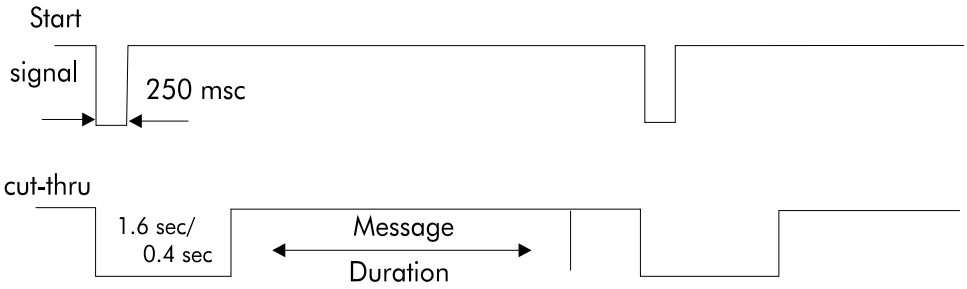
Table 5. Attenuation DIP Switches - All Models Part 2 of 2



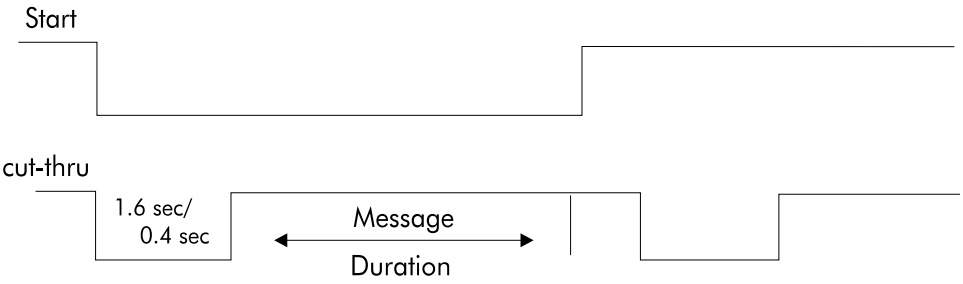
(1) Pulse start, mute. Message plays until end. Start pulses during duration of message are ignored. Switch 1 low, switch 2 high.



(2) Level start, mute. Switch 1 high, switch 2 high.



(3) Pulse start, cut-through. Switch 1 low, switch 2 low.



(4) Level start, cut-through. Switch 1 high, switch 2 low.

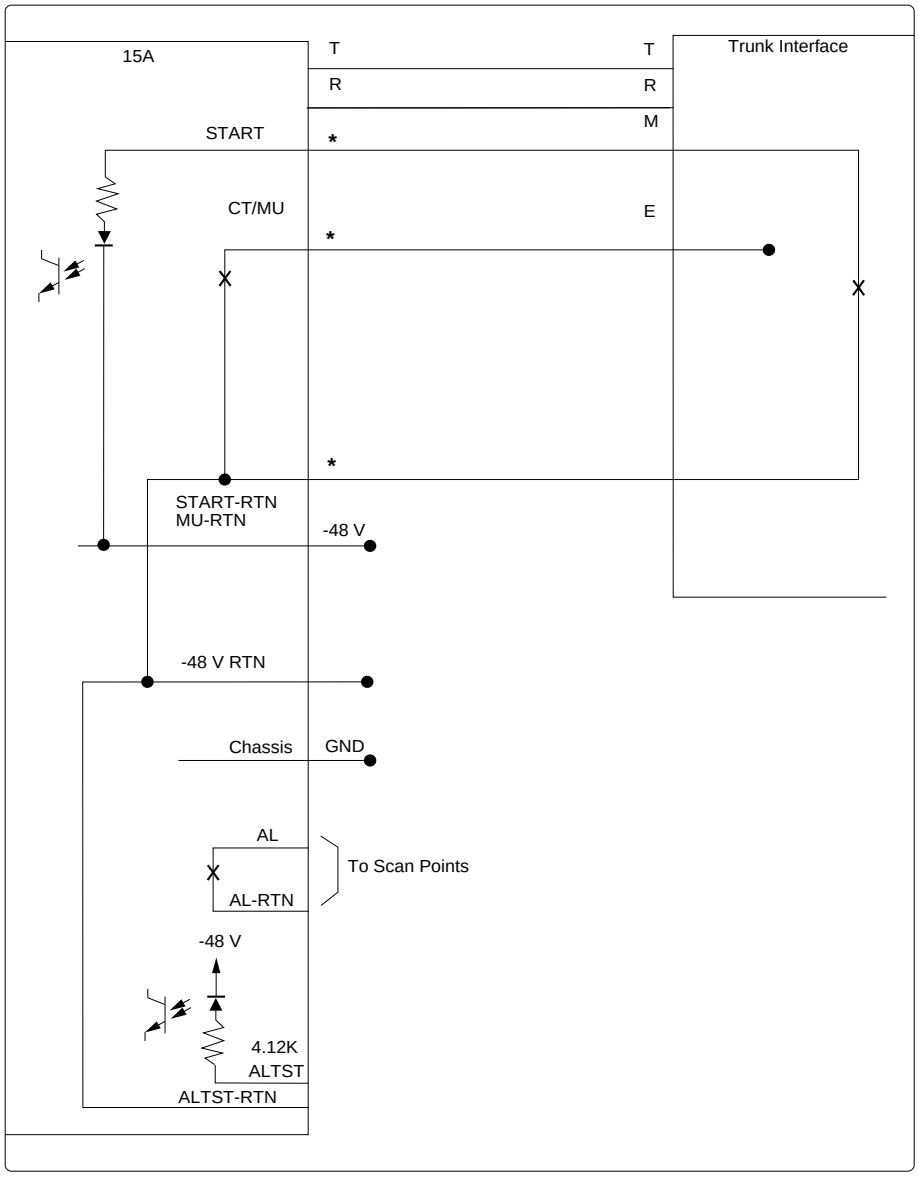
Figure 7. Signaling

4. Function

Switch Interface and Pin Outs

4.01 Announcements are played to the trunk or telephone line circuits by playing back the voice signal stored in the EEPROMs. The microcontroller and FPGA logic allow independent control of all the channels by the switch. Figure 8 shows the interface circuits and their connection to the switch. For trunk port models the announcement sequence begins after a start-signal is received. For line-side models the announcement sequence begins after one or two cycles of ringing are received and tripped. The circuit also provides an alarm signal consisting of relay closure to the switch. This signal can be tied to one or several scan points in the switch. The unit is also provided with a way of testing the alarm circuit remotely [pins labeled ALTST (Alarm Test) and ALTST-RTN (Alarm Test Return)].

4.02 A complete list of all functions available at the 50-pin connector JP1 is given in Figure 9A and Figure 9B.



* Used in trunk port models only

Figure 8. Interface Circuits

15A 50-Pin Connector Pin Outs

	PIN	Description	PIN	Description	
Power	50	-48 V	25	-48 V RTN	Power
	49	MU7	24	NC	
	48	START7	23	START-RTN	
	47	T7	22	R7	
	46	MU6	21	-48 V RTN	
	45	START6	20	START-RTN	
	44	T6	19	R6	
	43	MU4	18	NC	
	42	START5	17	START-RTN	
	41	T5	16	R5	
	40	MU4	15	-48 V RTN	
	39	START4	14	START-RTN	
	38	T4	13	R4	
	37	MU3	12	ALTST-RTN	Alarm Test Return
	36	START3	11	START-RTN	
	35	T3	10	R3	
	34	MU2	9	ALTST	Alarm Test
	33	START2	8	START-RTN	
	32	T2	7	R2	
	31	MU1	6	AL-RTN	Alarm Return
	30	START1	5	START-RTN	
	29	T1	4	R1	
	28	MU0	3	AL	Alarm
Start Lead for Channel 0	27	START0	2	START-RTN	Start Return Channel 0
“Tip” Audio Output Channel 0	26	T0	1	R0	“Ring” Audio Output Channel 0

Figure 9A. Pin Outs for 8 Channel Cards: BLD3, BLD4 and BLD5

15A 50-Pin Connector Pin Outs

	PIN	Description	PIN	Description	
	50	NC	25	NC	
	49	NC	24	NC	
	48	NC	23	NC	
Alarm Test	47	ALTST	22	ALTST-RTN	Alarm Test Return
	46	NC	21	NC	
	45	NC	20	NC	
Alarm	44	AL	19	AL_RTN	Alarm Return
ALD4 Control Lead	43	ALD4_SEL	18	ALD4_DL	ALD4 Control Lead
ALD4 Control Return	42	GRD	17	NC	
400B Tip Lead	41	REM_TIP	16	REM_RING	400B Ring Lead
	40	NC	15	NC	
	39	NC	14	NC	
	38	T2	13	R2	
	37	MU3	12	-48VRTN	
	36	START3	11	START-RTN	
	35	T3	10	R3	
	34	MU2	9	-48VRTN	
	33	START2	8	START-RTN	
	32	T2	7	R2	
	31	MU1	6	-48VRTN	
	30	START1	5	START-RTN	
	29	T1	4	R1	
	28	MU0	3	-48VRTN	
Start Lead for Channel 0	27	START0	2	START-RTN	Start Return Channel 0
“Tip” Audio Output Channel 0	26	T0	1	R0	“Ring” Audio Output Channel 0

Figure 9B. 15A 50 Pin Connector Pins for 4 Channel Cards: BLD20, BLD21, BLD22 and BLD23

5. POWER REQUIREMENTS

Powering Methods

5.01 The voltage required for the 15A can be obtained from the -48V battery plant or from a separate power module. The circuit pack can be powered through the terminal block or modular jack (see figure 5). When the power already exists in the cabinet, the terminal block provides an easy way to interconnect to the power. The modular jack can be used in cases where the unit is locally powered by means of a wall power module, e.g. KS-22911 L2 power supply. This power supply plugs into a standard 120VAC outlet. A telephone cable assembly with modular telephone plugs on both ends can be used to interconnect this power supply with the unit through the modular connector.

⚠ CAUTION:
Applying the incorrect polarity of power could damage the 15A Announcement. When using the power module to power the 15A Announcement System, use the cable assemblies specified in SD-97815-01.

Input Voltage

5.02 The input voltage requirements are -39.5Vdc to -60Vdc measured at the input of the 15A Announcement System. The nominal current drain of each pack is 130 milliamps at -48Vdc.

Fusing

5.03 When powering from a battery plant, each circuit pack in a 15A shelf should be powered and fused separately. When using standard telecommunication fuses, such as the 70A type, a 3/4 Amp could be used to avoid nuisance tripping of the fuse during transients and power up. The fuse rating should not exceed 1-3/4 Amps.

Signaling Ground

5.04 All signaling is done with respect -48VRTN (see Figure 8). The STARTRTN pins are tied to -48VRTN internally. The signal sent back to the trunk circuits in the switch from the 15A (MUTE or CUT-THROUGH) is referenced to -48VRTN, i.e., it consists of a closure from the MUTE pins to -48VRTN (signaling ground). When the units are powered from a centralized battery plant, the 15A is connected to the switch signaling ground by means of the powering connection. However, when the unit is powered from an isolated power supply, such as a power module, an alternate connection to signaling ground must be provided. This can be done with a separate connection from the -48VRTN to the signaling ground of the switch. When interfacing to a TN763 pack in a PBX environment this could also be accomplished by tying the SO (return leads) of the TN763 to the -48VRTN pins of the 15A at the 110 block.

6. Applications

6.01 The 15A Announcement System was primarily designed for digital switches where announcements can be broadcast to several callers using one circuit. Each output of a 15A Announcement system can be connected to 600-ohm trunk circuit or telephone line . The switches that the 15A Announcement System can interface with include System 75/85, *Definity* telecommunications switching apparatus G1, G2, G3, the 5ESS switch, DMS-100[1] and Network Wireless Systems Mobile Switching Centers. the 15A Announcement System interfaces with auxiliary trunk packs: SN231, TN763D, SN104 and NT2X72AA.

Equipment Code and Ordering Information

6.02 Ordering information for the 15A Announcement System hardware is shown as:

J1C267A-1

15A Announcement System

List 11	Mounting Shelf, Brackets, AT&T Practice, 4B Retainer And Mounting Screws.
List 12	BlD3 Circuit Pack (8 Channels, 60 Seconds Per Channel)
List 13	400B Remote Record Module (One Per BLD Circuit Pack As Required.
List 14	BLD4 Circuit Pack (8 Channels Phased, 60 Seconds Per Channel)
List 15	BLD5 Circuit Pack (8 Channels 120 Seconds Per Channel)
List 20	BLD20 Circuit Pack (4 Channels, 60 Seconds Per Channel)
List 21	BLD21 Circuit Pack (4 Channels, 60 Seconds Per Channel Plus Ring Trip)
List 22	BLD22 circuit Pack (4 Channels, 120 Seconds Per Channel)
List 23	BLD23 Circuit Pack (4 Channels, 120 Seconds Per Channel Plus Ring Trip)
ST-700	6 Foot Patch Cord (Switchcraft) comcode: 401973599

1.DMS-100 is a trademark of Northern Telecom.

7. Installation

7.01 This section gives general information about the installation of the 15A Announcement System in some applications. Specific instructions for a particular application should be followed and supersedes these instructions. Also connectivity tables and instructions are given for the 5ESS switch, System 75/85 and *Definity* telecommunications switching apparatus, DMS-100[2], and Network Wireless systems *Autoplex* 1000 cellular telecommunications system applications.

General Installation Notes

7.02 The 15A Announcement System shelf includes mounting hardware which consists of brackets and screws. See Figure 10. This hardware is used to attach the brackets to the chassis and to mount this assembly on the cabinet. Several shelves could be mounted on a cabinet with no particular restrictions on spacing. The shelf is also provided with rubber feet for desktop applications.

NOTE:
Mount the 15A Announcement System away from equipment which produces heavy electrical interference.

NOTE:
Cabling between the 15A Announcement System and the Remote Record Concentrator should be handled in accordance with SD-97815-01.

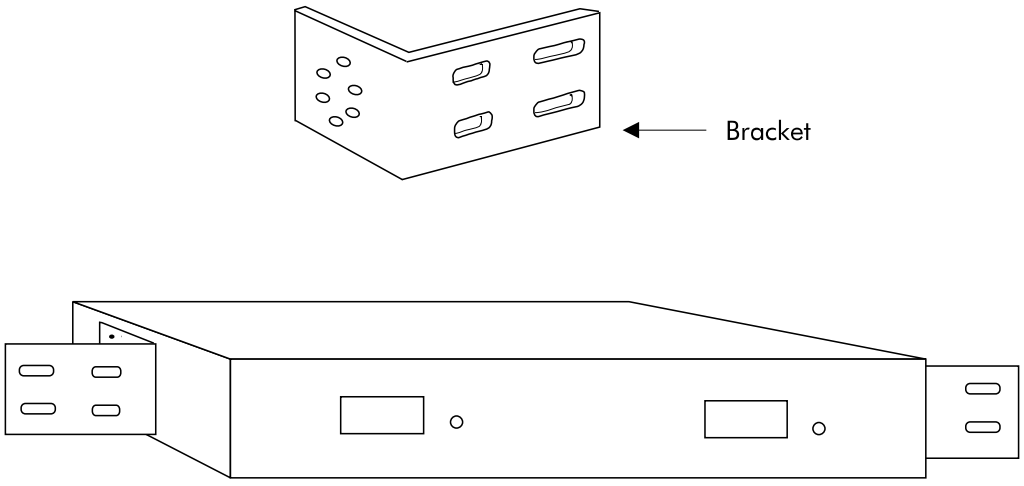


Figure 10. Shelf Assembly and Brackets

2.DMS-100 is a trademark of Northern Telecom

7.03 To install a 15A Announcement System:

CAUTION:
Apply Power last

1. Use hardware provided to install shelf (brackets, bolts and screws).

   Before mounting the brackets on the chassis and installing the unit on the cabinet, determine the best position for the unit. Consider the following:

   - Should the front of the unit be leveled with the existing equipment units?
   - Will the unit be easily accessible from the front and back?
   - Can the door be opened freely?
   - Will the instructions on the back of the door be easily readable?

   Depending on how the brackets are mounted, the unit will be offset toward the front or the back. Figure 10 shows the unit mounted with the front of the unit offset toward the back of the cabinet. The shorter part of the brackets points toward the back of the unit. The edges of the brackets are leveled with the top and bottom of the chassis. The unit can also be mounted with the offset toward the front by reversing the positions of the left and right brackets.

2. Remove the hex-headed screws from the JP1 connector in the back of the circuit pack and save them.
3. Slide the circuit pack(s) into the shelf using the card guides. Make sure that the connectors are correctly situated in the back of the shelf.
4. Close door and proceed to secure the circuit pack to the chassis with the hex headed screws.
5. Attach the communication cable to JP1. Use the 4B retainer (black plastic part) to hold right angle communication cables securely to the chassis. See Figure 11. Screws are also provided for straight cables.
6. If using the remote record option, install an analog line into the modular connector labeled "Remote Record".

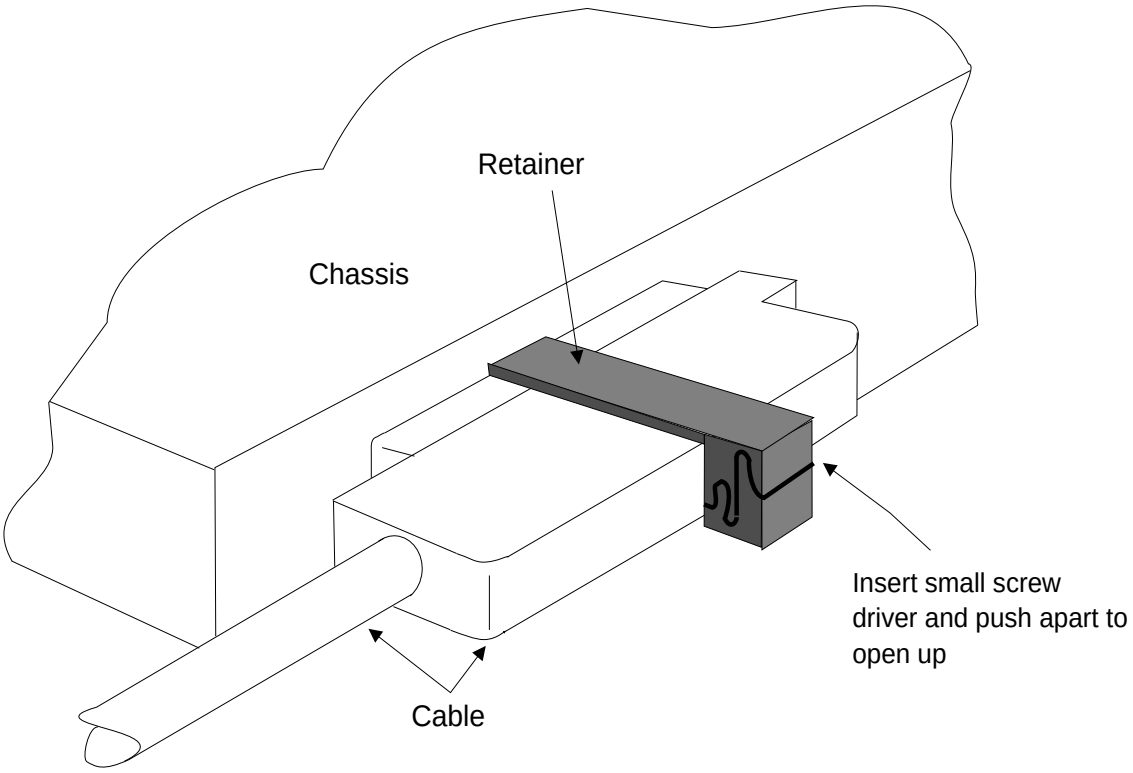


Figure 11. 4B Retainer Used to Secure right Angle Cable

Adding Remote Record Capability (Field Upgrade)

7.04 To add the remote record capability to a 15A Announcement System:

1. Remove power and the rear-panel connectors from the 15A Announcement System.
2. Remove the 2 screws securing the BLD circuit pack to the chassis. Remove the BLD circuit pack from the 15A housing.
3. Align the four mounting holes in the 400B module (Figure 2) with the plastic standoffs in the BLD circuit pack (Figure 1).
4. Carefully press on the 400B near each standoff until the board snaps and locks onto each standoff.
5. Insert the 2-inch ribbon cable assembly into the header shown in figure 1 such that the 50-pin headers on the two boards are connected. The ribbon cable is keyed so as to ensure proper interconnection.

6. Replace the BLD circuit pack and the 400B into the 15A Announcement System chassis.
7. Repeat the procedure for the second BLD circuit pack in the system if necessary.
8. Restore power to the system.

7.05 Diagnostics will automatically run on both the BLD circuit pack and on the 400B. If no alarms are generated (ALARM LED lights) after approximately 6 seconds, the installation procedure is complete.

Removing Remote Record Capability

7.06 Follow local procedures first before removing the circuit packs. To remove the circuit packs:

1. Remove power and the rear-panel connectors from the 15A Announcement System.
2. Remove the two hex-head screws securing the BLD circuit pack to the chassis. Remove the BLD circuit pack from the housing.
3. Eject the ribbon cable connector from the BLD circuit pack using the ejector latches on the header (see Figure 1).
4. Carefully remove the 400B Remote Record Module 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 standoffs locking tabs at the top side of the board.

5ESS® Connections and DIP Switch Positions

7.07 For 5ESS® switch applications with trunk port models, perform the following:

1. Set the Configuration DIP switches as follows:

SW1	High
SW2	Low
SW3 - SW7	High
SW8	Low

2. Set all Attenuation DIP switches to “high”.
3. Make the connections specified in Figure 12A.

DMS-100[3] Switch Connections and DIP Switch Positions

7.08 For DMS-100 applications with BLD3 Series 2 and BLD5 perform the following:

1. Set the configuration DIP switches as follows:

SW1	High
SW2	Low
SW3	High
SW4	Low
SW5 - SW7	High
SW8	Low

2. Set all attenuation DIP switches to “high”.
3. Make the connections specified in Figure 12B.

Connections to System 85, and Definity® Telecommunications Switching Apparatus G2 and G3 Connections, and DIP Switch Positions

7.09 For System 85 and *Definity* telecommunications switching apparatus: G2, (G3R V1), (G3i, r, s, vs, V2), (G3i, r,s, vs, V3) with auxiliary trunks and *Autoplex* cellular telecommunications system applications perform the following:

1. Set the Configuration DIP switches as follows:

SW1	High
SW2	High
S3-SW7	High
SW8	Low

2. Set all Attenuation DIP switches to “high”.
3. For connections using the SN231 auxiliary trunk pack, make the connections specified in Figure 13.
4. For connections using the TN763 auxiliary trunk pack, make the connections specified in figure 14.

3.DMS-100 is a trademark of Northern Telecom.

System 75, Definity® G1, G1.1, G1.1N, (G3i, s vs, V1), (G3R V1), (G3i, v s, vs, v2), (G3i, r, s, vs, v3)

1. Use Table 3 and Table 5 to set the DIP switches
2. Make the connections specified in Table 6.

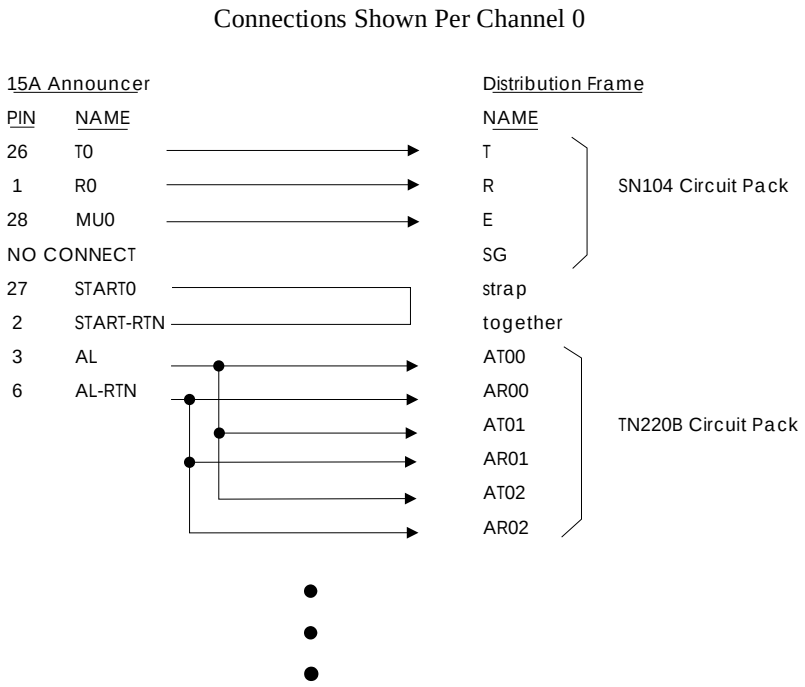


Figure 12A. 5ESS Switch Connections

NOTE:
Figure 12A shows one channel on a BLD trunk port model circuit pack connected to one port of a SN104 circuit pack. The other three ports of the SN104 circuit pack can also be tied accordingly to other channels of the 15A Announcement System.

NOTE:
Connect one scan point per announcement trunk. (Maximum of 8 when all 8 channels are used).

NOTE:
All scan points for one BLD circuit pack should be from the same TN220 circuit pack.

Connections Shown Per Channel 0

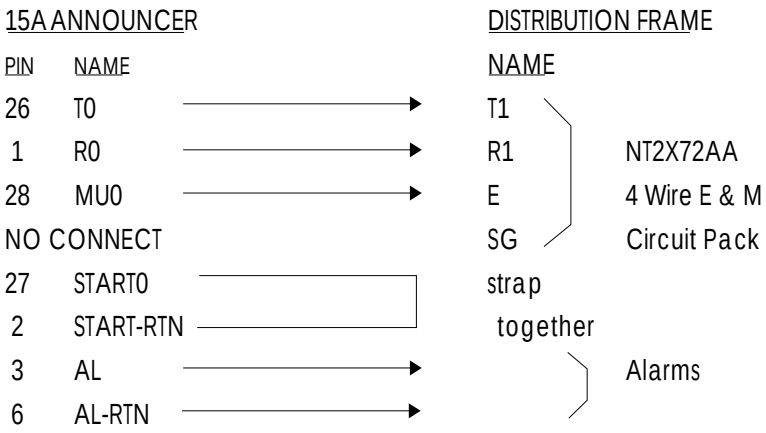


Figure 12B. DMS-100[4] Switch Connections

4.DMS-100 is a trademark of Northern Telecom.

AT&T 15A		Wallfield			Switch				
15A	50-Pin Connector	110 Block*		110 Block	50-Pin Connector	SN231	Announcement Channel	SN231 Channel	
T0	26	1	----------	1	26	T0			
R0	1	2	----------	2	1	R0			
START0	27	3	----------	6†	3	S0	0	0	
START-RTN	2	4	no connect†						1st
MU0	28	5	----------	5	28	AL0			SN231
AL	3	6	no connect						interface
T1	29	7	----------	7	29	T1			
R1	4	8	----------	8	4	R1	1	1	
START1	30	9	----------	12	6	S1			
START-RTN	5	10	no connect						
MU1	31	11	----------	11	31	AL1			
AL-RTN	6	12	no connect‡						
T2	32	13	----------	13	32	T2			
R2	7	14	----------	14	7	R2	2	2	
START2	33	15	----------	18	9	S2			
START-RTN	8	16	no connect						
MU2	34	17	----------	17	34	AL2			
ALTST	9	18	no connect						
T3	35	19	----------	19	35	T3			
R3	10	20	----------	20	10	R3	3	3	
START3	36	21	----------	24	12	S3			
START-RTN	11	22	no connect						
MU3	37	23	----------	23	37	AL3			
ALTST-RTN	12	24	no connect						
T4	38	25	----------	1	16	T0			
R4	13	26	----------	2	1	R0			
START4	39	27	----------	6	3	S0	4	0	
START-RTN	14	28	no connect						
MU4	40	29	----------	5	28	AL0			2nd
-48 V RTN	15	30	no connect						SN231
T5	41	31	----------	7	29	T1			interface
R5	16	32	----------	8	4	R1	5	1	
START5	42	33	----------	12	6	S1			
START-RTN	17	34	no connect						
MU5	43	35	----------	11	31	AL1			
	18	36	no connect						
T6	44	37	----------	13	32	T2			
R6	19	38	----------	14	7	R2	6	2	
START6	45	39	----------	18	9	S2			
START-RTN	20	40	no connect						
MU6	46	41	----------	17	34	AL2			
-48 V RTN	21	42	no connect						
T7	47	43	----------	19	35	T3			
R7	22	44	----------	20	10	R3	7	3	
START7	48	45	----------	24	12	S3			
START-RTN	23	46	no connect						
MU7	49	47	----------	23	37	AL3			
	24	48	no connect						
-48 V	50	49	no connect						
-48 V RTN	25	50	no connect						

*See figure 15

†These leads are not terminated in consecutive order.

‡In some applications such as wireless, these may be connected to external monitoring equipment

NOTE: When powering from a power module consult section 5.04 on signaling ground.

NOTE: Connectivity to a 4 channel announcement card is similar to Figure 13, but only connects to one SN231 Auxiliary Trunk Pack. Consult Figure 9B for alarm lead connections

Figure 13. Digital Announcer Connectivity to SN231 Auxiliary Trunk Pack Using 8 Channel Trunk Port Model

AT&T 15A		Wallfield			Switch				
15A	50-Pin Connector	110 Block		110 Block	50-Pin Connector	TN763		Announcement Channel	SN231 Channel	
T0	26	1	----------	1	26	T0				
R0	1	2	----------	2	1	R0				
START0	27	3	----------	3	27	SZ-1		0	0	
START-RTN	2	4	----------	4	2	SZ0-1				1st
MU0	28	5	----------	5	28	S-1				TN763
AL	3	6	no connect*	6	3	S0-1				interface
T1	29	7	----------	7	29	T1				
R1	4	8	----------	8	4	R1		1	1	
START1	30	9	----------	9	30	SZ-2				
START-RTN	5	10	----------	10	5	SZ0-2				
MU1	31	11	----------	11	31	S-2				
AL-RTN	6	12	no connect*	12	6	SO-2				
T2	32	13	----------	13	32	T2				
R2	7	14	----------	14	7	R2		2	2	
START2	33	15	----------	15	33	SZ-3				
START-RTN	8	16	----------	16	8	SZ0-3				
MU2	34	17	----------	17	34	S-3				
ALTST	9	18	no connect	18	9	SO-3				
T3	35	19	----------	19	35	T3				
R3	10	20	----------	20	10	R3		3	3	
START3	36	21	----------	21	36	SZ-4				
START-RTN	11	22	----------	22	11	SZ0-4				
MU3	37	23	----------	23	37	S-4				
ALTST-RTN	12	24	no connect	24	12	S0-4				
T4	38	25	----------	1	26	T0				
R4	13	26	----------	2	1	R0				
START4	39	27	----------	3	27	SZ-1		4	0	
START-RTN	14	28	----------	4	2	SZ0-1				
MU4	40	29	----------	5	28	S-1				2nd
-48 V RTN	15	30	no connect	6	3	S0-1				TN763
T5	41	31	----------	7	29	T1				interface
R5	16	32	----------	8	4	R1		5	1	
START5	42	33	----------	9	30	SZ-2				
START-RTN	17	34	----------	10	5	SZ0-2				
MU5	43	35	----------	11	31	S-2				
	18	36	no connect	12	6	SO-2				
T6	44	37	----------	13	32	T2				
R6	19	38	----------	14	7	R2		6	2	
START6	45	39	----------	15	33	SZ-3				
START-RTN	20	40	----------	16	8	SZ0-3				
MU6	46	41	----------	17	34	S-3				
-48 V RTN	21	42	no connect	18	9	SO-3				
T7	47	43	----------	19	35	T3				
R7	22	44	----------	20	10	R3		7	3	
START7	48	45	----------	21	36	SZ-4				
START-RTN	23	46	----------	22	11	SZ0-4				
MU7	49	47	----------	23	37	S-4				
	24	48	no connect	24	12	S0-4				
-48 V	50	49	no connect							
-48 V RTN	25	50	no connect							

*In some applications, such as wireless, these may be connected to external monitoring equipment

NOTE: When powering from a power module consult Section 5.04 on signaling ground.

NOTE: Connectivity to a 4 channel announcement card is similar to Figure 14, but only connects to one TN763 auxiliary trunk pack. Consult figure 9B for alarm lead connections.

Figure 14. Digital Announcer Connectivity to TN763 Auxiliary Trunk Pack Using 8 Channel Trunk Port Model

Lead Designations at Cross-Connect Fields

Color	50 Pin Conn. Numbers	15A Function Pin	110 Block		110 Block	50 Pin Conn. Numbers	Anal. Line (8)TN762 or TN769
W-BL	26	T0	1	----------	1	26	T1
BL-W	01	R0	2	----------	2	01	R1
W-O	27		3		3		
O-W	02	-48VRTN	4	NO CONNECTION	4		
W-G	28	MU0	5		5		
G-W	03	-48VRTN	6	NO CONNECTION	6		
W-R	29	T1	7	----------	7	29	T2
BR-W	04	R1	8	----------	8	04	R2
W-S	30		9		9		
S-W	05	-48VRTN	10	NO CONNECTION	10		
R-BL	31	MU1	11		11		
BL-R	06	-48VRTN	12	NO CONNECTION	12		
R-O	32	T2	13	----------	13	32	T3
O-R	07	R2	14	----------	14	07	R3
R-G	33		15		15		
G-R	08	-48VRTN	16	NO CONNECTION	16		
R-BR	34	MU2	17		17		
BR-R	09	-48VRTN	18	NO CONNECTION	18		
R-S	35	T3	19	----------	19	35	T4
S-R	10	R3	20	----------	20	10	R4
BK-BL	36		21		21		
BL-BK	11	-48VRTN	22	NO CONNECTION	22		
BK-O	37	MU3	23		23		
O-BK	12	-48VTRN	24	NO CONNECTION	24		
BK-G	38	T2	25	NO CONNECTION	25	38	T5
G-BK	13	R2	26	NO CONNECTION	26	13	R5
BK-BR	39	NC	27		27		
BR-BK	14	NC	28	NO CONNECTION	28		
BK-S	40	NC	29		29		
S-BK	15	NC	30	NO CONNECTION	30		
Y-BL	41	REM-TIP	31		31	41	T6
BL-Y	16	REM-RING	32	NO CONNECTION	32	16	R6
Y-O	42	GRD	33		33		
O-Y	17	NC	34	NO CONNECTION	34		
Y-G	43	ALD4 SELL	35		35		
G-Y	18	ALD4-DL	36	NO CONNECTION	36		
Y-BR	44	AL	37		37	44	T7
BR-Y	19	AL-RTN	38	NO CONNECTION	38	19	R7
Y-S	45	NC	39		39		
S-Y	20	NC	40	NO CONNECTION	40		
V-BL	46	NC	41		41		
BL-V	21	NC	42	NO CONNECTION	42		
V-O	47	ALTST	43		3	47	T8
O-V	22	ALTST-RTN	44	NO CONNECTION	44	22	R8
V-G	48	NC	45		45		
G-V	23	NC	46	NO CONNECTION	46		
V-BR	49	NC	7		47		
BR-V	24	NC	48	NO CONNECTION	48		
V-S	50	NC	49		49		
S-V	25	NC	50	NO CONNECTION	50		

Table 6A. Connectivity of 15A Ring Trip Models to 8 Port Analog Line Packs

Lead Designations at Cross-Connect Fields

AT&T 15A			Wallfield			Switch	
Color	50 Pin Conn. Numbers	15A Function Pin	110 Block		110 Block	50 Pin Conn. Numbers	Anal. Line (16) TN746B
W-BL	26	T0	1	----------	1	26	T1
BL-W	01	R0	2	----------	2	01	R1
W-O	27		3				
O-W	02	-48VRTN	4	NO CONNECTION			
W-G	28	MU0	5				
G-W	03	-48VRTN	6	NO CONNECTION			
W-BR	29	T1	7	----------	3	27	T2
BR-W	04	R1	8	----------	4	02	R2
W-S	30		9				
S-W	05	-48VRTN	10	NO CONNECTION			
R-BL	31	MU1	11				
BL-R	06	-48VRTN	12	NO CONNECTION			
R-O	32	T2	13	----------	5	28	T3
O-R	07	R2	14	----------	6	03	R3
R-G	33		15				
G-R	08	-48VRTN	16	NO CONNECTION			
R-BR	34	MU2	17				
BR-R	09	-48VRTN	18	NO CONNECTION			
R-S	35	T3	19	----------	7	29	T4
S-R	10	R3	20	----------	8	04	R4
BK-BL	36		21				
BL-BK	11	-48VRTN	22	NO CONNECTION			
BK-O	37	MU3	23				
O-BK	12	-48VTRN	24	NO CONNECTION			
BK-G	38	T2	25	NO CONNECTION	17	34	T5
G-BK	13	R2	26	NO CONNECTION	18	09	R5
BK-BR	39	NC	27		19	35	T6
BR-BK	14	NC	28	NO CONNECTION	20	10	R6
BK-S	40	NC	29		21	36	T7
S-BK	15	NC	30	NO CONNECTION	22	11	R7
Y-BL	41	REM-TIP	31		23	37	T8
BL-Y	16	REM-RING	32	NO CONNECTION	24	12	R8
Y-O	42	GRD	33		25	38	T9
O-Y	17	NC	34	NO CONNECTION	26	13	R9
Y-G	43	ALD4-SELL	35		27	39	T10
G-Y	18	ALD4-DL	36	NO CONNECTION	28	14	R10
Y-BR	44	AL	37		29	40	T11
BR-Y	19	AL-RTN	38	NO CONNECTION	30	15	R11
Y-S	45	NC	39		31	41	T12
S-Y	20	NC	40	NO CONNECTION	32	16	R12
V-BL	46	NC	41		41	46	T13
BL-V	21	NC	42	NO CONNECTION	42	21	R13
V-O	47	ALTST	43		43	47	T14
O-V	22	ALTST-RTN	44	NO CONNECTION	44	22	R14
V-G	48	NC	45		45	48	T15
G-V	23	NC	46	NO CONNECTION	46	23	R15
V-BR	49	NC	47		47	49	T16
BR-V	24	NC	48	NO CONNECTION	48	24	R16
V-S	50	NC	49		49	50	
S-V	25	NC	50	NO CONNECTION	50	25	

Note:Connection to unused pairs on Analog Line Pack (5-16) can be made using additional 15A- 4 channel Ring Trip units.

Note: When powering this unit with a power module, consult sections on Powering Methods (page 22) and Signaling Ground (page 22)

Table 6B. Connectivity to 15A Ring Trip Models 16 Port Analog Line Packs

Index Strips and Connecting Blocks

7.12 The index strips are slotted rows that provide space to terminate 25-pair cables. A 110-type Index Strip with connecting blocks is shown in Figure 15. The wires are placed in the slots in the index strip standard termination for a 25-pair cable as shown in Figure 16.

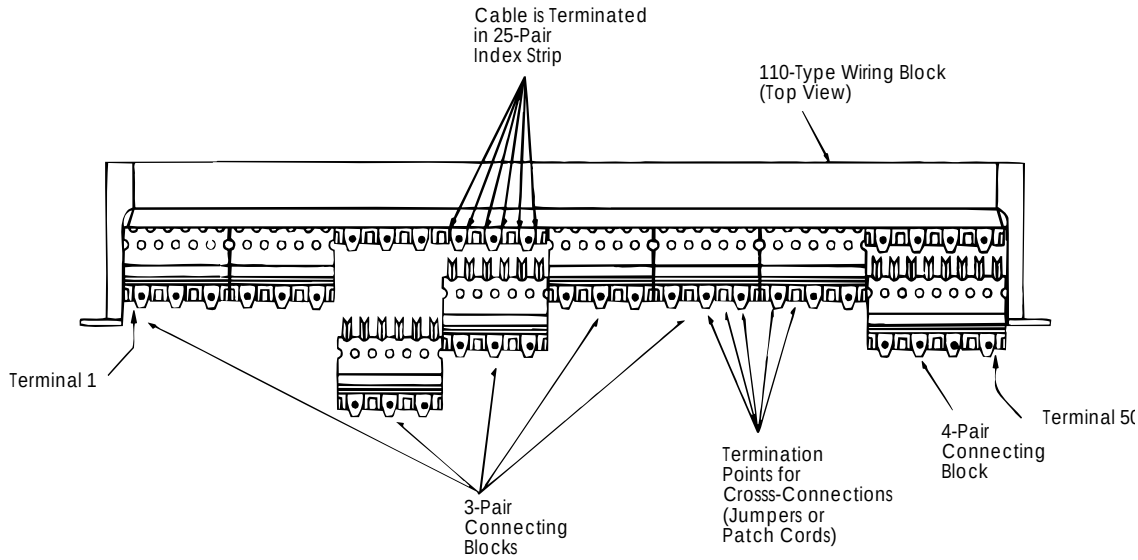


Figure 15. 110-Type Index Strip with Connecting Blocks

25-Pair Cable			110-Type Wiring/Conn Block Terminals
50 Connector Pin Numbers	Pair	Color	
26	1	W-BL	1
1		BL-W	2
27	2	W-O	3
2		O-W	4
28	3	W-G	5
3		G-W	6
29	4	W-BR	7
4		BR-W	8
30	5	W-S	9
5		S-W	10
31	6	R-BL	11
6		BL-R	12
32	7	R-O	13
7		O-R	14
33	8	R-G	15
8		G-R	16
34	9	R-BR	17
9		BR-R	18
35	10	R-S	19
10		S-R	20
36	11	BK-BL	21
11		BL-BK	22
37	12	BK-O	23
12		O-BK	24
38	13	BK-G	25
13		G-BK	26
39	14	BK-BR	27
14		BR-BK	28

Figure 16. 25-Pair Cable Termination on a 110-Type Wiring Block (Part 1 of 2)

25-Pair Cable			
50 Connector Pin Numbers	Pair	Color	110-Type Wiring/Conn Block Terminals
40	15	BK-S	29
15		S-BK	30
41	16	Y-BL	31
16		BL-Y	32
42	17	Y-O	33
17		O-Y	34
43	18	Y-G	35
18		G-Y	36
44	19	Y-BR	37
19		BR-Y	38
45	20	Y-S	39
20		S-Y	40
46	21	V-BL	41
21		BL-V	42
47	22	V-O	43
22		O-V	44
48	23	V-G	45
23		G-V	46
49	24	V-BR	47
24		BR-V	48
50	25	V-S	49
25		S-V	50

Figure 16. 25-Pair Cable Termination on a 110-Type Wiring Block (Part 2of 2)

8. Operation

8.01 The 15A Announcement System front cover can be opened to access the unit's push-button controls and input jacks. Helpful reference labels and instructions are printed on the inside of the cover to identify the various controls, switches, and jacks. See Figure 17A. When provided with Ring-Trip functionality, the unit comes equipped with an instruction card. The card is located between the side wall and the card guide. See Figure 17B. The unit has two momentary push-button labeled MENU and SELECT. When the MENU push-button is pressed, the operational modes are displayed. When the SELECT push-button is pressed, the operational mode shown on the display is selected. The SELECT push-button is also used to stop recording, to playback a recorded announcement, select the default security code and to turn recording channels OFF- or ON-LINE. The various modes of operation are explained in Figure 18A and B.

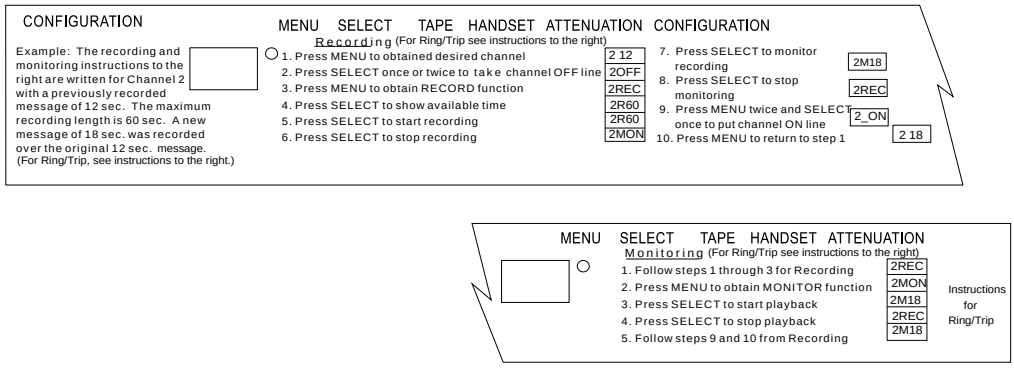


Figure 17A. Operating Instructions Inside Front Door

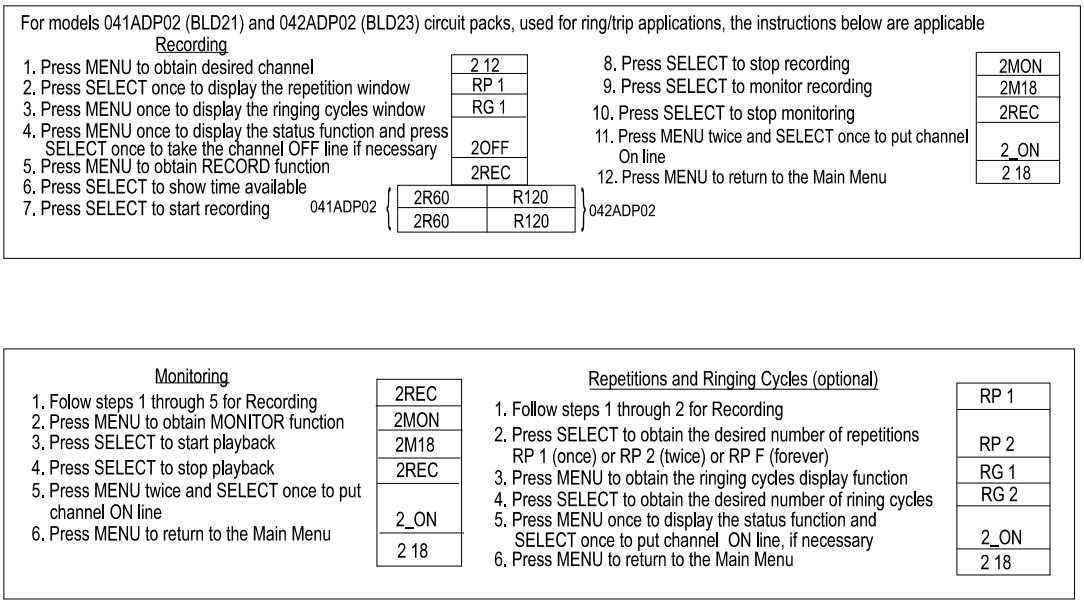


Figure 17B. Instruction Card Inside Chassis.

RECORDING ANNOUNCEMENTS - TRUNK PORT MODELS

Display		Action	Result
WAIT	1. Apply Power	15A Powers up and run diagnostics	Display code of RDY indicates unit ready
RDY	2. Depress (M) button	Display changes to indicate channel selected and the length of recording in seconds	Depressing M a second time selects Channel 2, a third time channel 3, etc.
0 60	3. Depress (S) button	The display changes to show the channel number and whether the channel is ON or OFF	An announcement cannot be recorded unless selected channel is first turned off
0 ON	4. Depress (S) button	The channel is turned off line	
0 OFF	5. Depress (M) button	The channel is put into recording mode	
0REC	6. Depress (S) button	Display changes to show available recording time in seconds	
0RXX	7. Depress (S) button	Begin recording the announcement	Display operates as a timer showing recording time remaining; i.e., 59, 58, 57, etc.
0RXX	8. Depress (S) button	Stops recording	Depress (S) to end the recording operation Display changes to 0MON
0MON	9. Depress (S) button	The announcement can be monitored	Display changes to 0MXX/see Action 6
0MXX	10. Depress (S) button	Stops monitoring Display shows 0REC	Rerecord the announcement, if necessary
0REC	11. Depress (M) button	Display shows 0MON	
0MON	12. Depress (M) button	Display shows 0OFF	
0OFF	13. Depress (S) button	Puts channel ON LINE	
0_ON	14. Depress (M) button		Returns to Step 3

MONITORING ANNOUNCEMENTS

Repeat steps 1 - 5 from RECORD ANNOUNCEMENT

Display	Action	Result	Comments
0REC	Depress (M)	System waits	
0MON	Depress (S)	Announcement can be monitored	

(M) refers to MENU push-button
(S) refers to SELECT push-button

Figure 18A. Front Panel Menu and Controls - Trunk Port Models

RECORDING ANNOUNCEMENTS - RING TRIP MODELS

Display	Action	Result	Comments
WAIT	1. Apply Power	15A Powers up and run diagnostics	Display code of RDY indicates unit ready
RDY	2. Depress (M) button	Display changes to indicate channel selected and the length of recording in seconds	Depressing M a second time selects Channel 2, a third time channel 3, etc.
RP X	3. Depress (M) button	Selects 1, 2 or continuous repetitions	
RG X	4. Depress (M) button	Selects 1 or 2 ring cycles before answering	
0 OFF	5. Depress (M) button	The channel is put into recording mode	
0REC	6. Depress (S) button	Display changes to show available recording time in seconds	
0RXX	7. Depress (S) button	Begin recording the announcement	Display operates as a timer showing recording time remaining; i.e., 59, 58, 57, etc.
0RXX	8. Depress (S) button	Stops recording	Depress (S) to end the recording operation Display changes to 0MON
0MON	9. Depress (S) button	The announcement can be monitored	Display changes to 0MXX/see Action 6
0MXX	10. Depress (S) button	Stops monitoring Display shows 0REC	Rerecord the announcement, if necessary
0REC	11. Depress (M) button	Display shows 0MON	
0MON	12. Depress (M) button	Display shows 0OFF	
0OFF	13. Depress (S) button	Puts channel ON LINE	
0_ON	14. Depress (M) button		Returns to Step 3

MONITORING ANNOUNCEMENTS

Repeat steps 1 - 5 from RECORD ANNOUNCEMENT

Display	Action	Result	Comments
0REC	Depress (M)	System waits	
0MON	Depress (S)	Announcement can be monitored	

(S) refers to SELECT push-button
(M) refers to MENU push-button

Figure 18B. Front Panel Menu and Controls - Ring Trip Models

Faceplate Indicators and Modes of Operation

8.02 The controls and display provide the following:

- Main Menu
- Channel (On/Off Line)
- Recording Mode
- Monitor Mode
- Error Indications
- Message Cycles (Ring-Trip Only)
- Ringing Cycles (Ring-Trip Only)

A. Main Menu

8.03 The main menu shows the channel number and the recorded length of the message on that channel. Pressing the MENU button steps the operator through channels Ø through 7 (or Ø through 3 on a 4 channel unit). The output audio of a channel in use may also be monitored by using a handset plugged locally in the 15A system at the modular handset output connection (see Figure 19). Any channel playing a message can be monitored through the handset.

8.04 The main menu also displays a "DFLT" selection which allows for setting the default security code manually through the front panel (see Remote Interface section).

B. Channel (On/Off-Line)

8.05 On auxiliary trunk units, pressing SELECT at the main menu will cause the unit to display the channel number selected and whether the channel is "ON" (on-line) or "OFF" (off-line).

8.06 On ring trip units, pressing SELECT once at the main menu window and MENU twice reaches the ON/OFF window.

8.07 Pressing the SELECT button toggles the channel from one mode to the other. A channel "ON" will respond to a start signal from the switch and provide the appropriate signaling to the switch. The operator has the option to take a channel "OFF-LINE" by pressing the SELECT button. Placing a channel "OFF-LINE" does not cause an alarm condition. However, a channel "OFF-LINE" may generate a "loss of announcement alarm" when playing back a message in the monitor mode. When a channel is placed "OFF-LINE", that channel will not provide signaling to the switch nor respond to signaling from the switch. A channel must be placed off-line before entering the record or monitor mode.

C. Recording Mode

8.08 Pressing MENU after a channel has been selected and placed "OFF-LINE" causes the unit to go into recording mode. In this mode, the display shows the channel number and the word REC. If the record mode is selected by pressing SELECT, the display shows channel

number and the letter R (on 1 minute models) followed by the available recording time. The recording is started by pressing SELECT. The display shows the channel number and the letter R followed by the remaining time in seconds. The recording is stopped by pressing SELECT. The recording is finished and the display shows the channel number and the word MON (monitor mode).

D. Monitor Mode

8.09 The monitor mode is indicated by the unit displaying the channel number followed by the word MON. The monitor mode is entered automatically at the end of a recording. If the monitor is selected by pressing the SELECT button, the message is played back continuously until the SELECT button is pressed again. During monitoring mode the display counts down in 1-second increments while playing the message. The message can be monitored using the handset connected to the modular jack in the front. When the monitoring mode is ended by pressing the SELECT button, the unit goes back to REC mode. The recording can be made again, or if everything is satisfactory, press MENU to go out of the recording mode and press MENU again to go out of monitoring mode. Here the display will show the channel number and the word OFF, indicating that the channel is OFF-LINE. The channel can be placed ON-LINE by pressing SELECT. The channel can be left OFF-LINE. Pressing MENU returns the operator to the Main Menu.

E. Error Indications

8.10 The display also provides error codes for certain unit failures (see Section 8. Maintenance and Troubleshooting). In addition to these, the unit will display "WAIT" for about 1 second after power-up while it does diagnostics. After passing diagnostics, the unit will display "RDY" (ready). The unit is at the Main Menu and ready to be used.

NOTE:
After using the front panel controls, the unit should always be left in the Main Menu.

F. Message Cycles (Ring Trip Units Only)

8.11 Pressing SELECT at the main menu will cause the unit to display the message repetition window: RP_X, where X could be 1, 2, or F. Pressing the SELECT button repeatedly will cause the windows to change from RP_1 to RP_2 to RP_F and back to RP_1, etc. When RP_1 is selected the message plays only once. When RP_2 is selected the message plays twice. When RP_F is selected the message plays continuously until a disconnect is received from the switch.

8.12 To make a selection display the desired window by using the SELECT button, press the MENU button to move out of the window.

G. Ringing Cycles (Ring Trip Units Only)

CAUTION:
Changing the ringing cycles window while the unit is in service may cause the caller to be dropped. Before changing the ringing cycles verify that a caller is not listening to the announcement. This can be done by listening through a handset connected to the front of the unit and verifying that the message is not playing.

8.13 After pressing the MENU button in the RP_X window the display will show the Ringing Cycles window. RG_X where X could be 1 or 2. In this mode pressing SELECT will cause the window to go from RG_1 to RG_2 and from RG_2 to RG_1. When the unit displays RG_1 the unit will answer after one ringing cycle. If the display shows RG_2, the unit will answer after two ringing cycles.

Monitoring Announcements

8.14 Use a standard carbon microphone handset to monitor the message through the handset jack.

NOTE:
Handset must be of the carbon microphone type. A handset can be ordered from Walker Equipment Company, 151 Highway South, Ringgold, GA 30736 (Part number for black model is W3-500CM-OP-00)

The following steps can be performed to monitor an announcement:

1. Press MENU to obtain the desired channel.
   If working with a Ring Trip model then press SELECT once and MENU twice to get to Step 2.
2. Press SELECT once or twice to take the channel OFF line.
3. Press MENU twice to obtain MONITOR function
4. Press SELECT to start playback.
5. Press SELECT to stop playback.
6. Press MENU twice and SELECT once to put the channel ON-line.
7. Press MENU to return to Step 1.

8.15 It should be noted that when following these instructions, the channel is taken OFF-LINE and it will not respond or provide signaling to the switch. If a channel is used "on-demand" and happens to be playing a message, it can be monitored by simply displaying the desired channel number in the main menu and listening through the handset. In applications where the 15A is configured to play continuously, therefore, one can simply display the channel number by pressing the MENU button while in the main menu, and monitor the message using the handset.

Record Input Level

8.16 The input audio section has an Automatic Gain Control (AGC) circuit with a dynamic range of -20 dBm to +5dBm. Recordings should typically be made at a level of -10 dBm.

Making a Recording from a Tape Recorder

8.17 Refer to Figure 19. The patch cord needed to connect the recorder to the 15A system can be obtained from various sources. An optional cassette player and patch cord can be obtained from AT&T (PEC Code 3119-010). A construction diagram for the patch cord is also given in Figure 20.

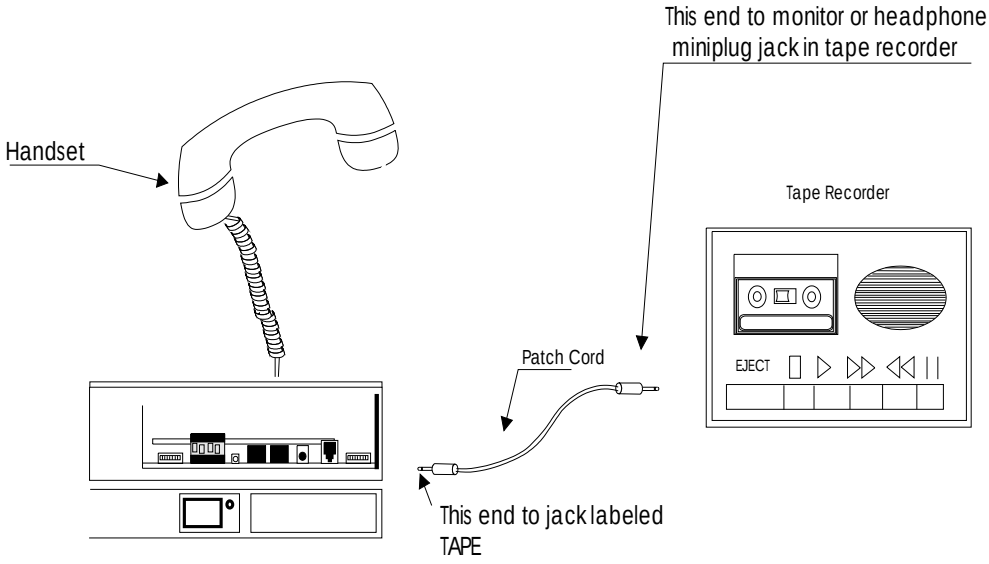


Figure 19. Making a Recording from a Tape Recorder

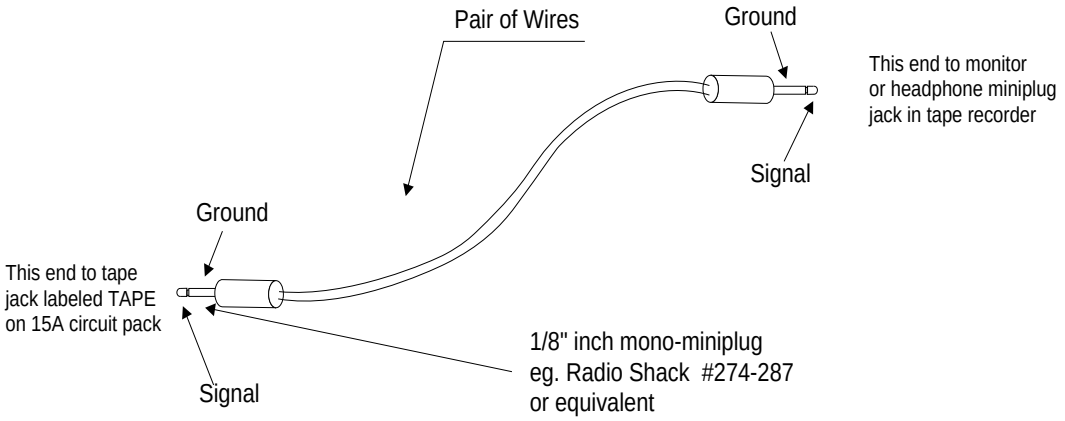


Figure 20. Patch Cord

Calibrate Cassette Tape Player

8.18 To calibrate the tape player, perform the following

> **NOTE:**
> If speed control is not available on the tape recorder and the announcement tape does not have a reference 1 kHz tone recorded on it, proceed to the "Record Announcement" section.

1) Connect tape player to 120 V AC. (If battery power must be used in place of the 120 V AC, use fresh batteries.)

2) Insert the announcement tape into the tape player.

3) Connect the output of the tape player to an electronic frequency counter with a patch cord.

4) Push the PLAY button on the tape player. Let the tape play until the reference tone begins.

NOTE:
If the tape recorder does not have speed control, proceed to Step 6.

5) With the reference tone playing, adjust the speed control on the tape player such that the frequency counter reads 995 Hz to 1005 Hz.

6) With the reference tone still playing, adjust the output level (volume) control to the appropriate level (-10 dBm for 15A Announcement System).

Record Announcement

8.19 To record an announcement, perform the following:

1. Fast forward cassette to the “5, 4, 3, 2, 1” countdown or to a point just prior to the start of the message.
2. Play the countdown and after hearing “1”, position the recording at a point just prior to the start of the message and leave the tape recorder on pause.
3. Perform the following to set the 15A:
   a. At the high-level menu, press the MENU button repeatedly until the desired channel number appears (this is the first digit of the display).

NOTE:
If recording on a Ring-trip unit, following instructions 2, 3 and 4 in Figure 17B and proceed to (c).

   b. Press the SELECT button to display the channel number at the left and the channel status (whether the channel is ON or OFF). If the channel is OFF, proceed to the next step. If the channel is ON, listen through a handset plugged into the jack labeled HANDSET in the 15A. If the message is being played in the receiver, wait until the end of the message and then press the SELECT button. This will toggle the channel OFF. If the message is not being played through the receiver, then simply proceed immediately to toggle the channel OFF.

   c. With the channel OFF, press the MENU button to display the channel number and the word REC.

   d. Press the SELECT button to display the channel number, the letter R, and the time available for recordings in seconds.

   e. The next step will start the recording. Get ready to release the PAUSE button on the tape recorder. Also, using a handset plugged into the handset jack of the 15A, get ready to monitor the downloading of the recording.

   f. Press the SELECT button immediately to start the recording session. (The display will show the channel number, the letter R, the remaining time for recording available as it counts down in 1-second increments).

4 Release the PAUSE button on the tape player, and monitor for the end of the announcement message using the handset.

5. At the end of the announcement, stop recording by pressing the SELECT button on the 15A front panel. The display will show the channel number and the word MON.

6. Stop the tape player.
7. Plug the handset into the handset jack on the 15A front panel and follow instructions on the 15A faceplate to monitor the recording, or follow these instructions:

    a. Press the SELECT button to start the message which can be heard through the handset receiver. Stop the monitoring process by pressing the SELECT button. The display shows the channel number and the word REC.

    b. If the recording needs to be repeated, repeat the steps above. Otherwise, proceed by pressing the MENU button. The display shows the channel number and the word MON. Press the MENU button again. The display shows the channel number and the word OFF.

8. To put the channel ON-LINE, perform the following:
    a. Press the SELECT button to toggle the channel to ON. The display shows the channel number and the word ON.
    b. Press the MENU button to return to the high-level menu. The display shows the channel number and the recording length in seconds.

Placing a Channel in Service (Announcement Mode)

8.20 Use the front panel controls and the display menu to put the channel ON-LINE. See the “Channel (On/Off Line)” section. Local office procedures should be followed to ensure that a subscriber is switched to that announcement when required.

9. Diagnostics

9.01 In-circuit diagnostics consist of the following:

- **ROM CHECK (on power up only).** This test does a checksum on the microprocessor on power up
- **EEPROM CHECK (on power up).** Checks for valid data in EEPROM.
- **FPGA CHECK (on power up)**. Checks that on-board field programmable array is functional.
- **Sanity Timer (microcontroller failure).** This test checks for program execution in the microcontroller. This test is done by having an output pin in the microcontroller continuously reset a timer.
- **Loss of Announcement.** This test checks that a message has not been lost after recording. This is done by measuring the audio level of the message every time it is played back. The criteria for failure is for the audio level to be below an acceptable value for more than 10 seconds typically.
- Loss of Power (relay closure only).
- Remote unit failure. A system equipped with the remote record option generates an alarm if the 400B Remote Record Module fails.

9.02 Any of these conditions will generate an alarm. This will light the alarm LED on the front and generate one alarm relay closure per circuit pack. The alarm LED is visible through the front cover. Complete loss of power will generate a relay closure only. An alarm caused by a “loss of announcement” condition caused by other than a hardware failure could be cleared by rerecording the message on the affected channel. The affected channels can be diagnosed by monitoring the channels through the handset. An alarm caused by the Remote Record Unit can be diagnosed by unplugging the 400B Remote Record Module. In general, however, an alarm may require the replacement of the circuit pack. The alarm closure appears across the AL and AL-RTN leads.

Alarm Test

9.03 A closure across the ALTST (alarm test lead) and ALTST-RTN (alarm test return) will cause an alarm relay closure and the alarm LED to light up for as long as the ALARM TEST closure is applied. The alarm condition, that is LED and relay closure will disappear once the alarm test closure is removed. The ALTST-RTN is tied to -48 V RTN. The ALTST is internally connected to -48 V through a 4.12 K resistor.

10. Remote Interface

10.01 The remote interface functionality is a highly recommended and cost effective option. The 400B remote Record Module provides a remote interface between a user on the switched network and the announcement channels on the BLD circuit pack.

10.02 The 400B Remote Record Module mounts on four standoffs on the BLD circuit pack. A modular jack on the back of each circuit pack provides connecitivity to a telephone line. The user enters function codes in the form of touch tones, that are interpreted by the 400B Remote Record Module to do various announcement system functions. The 400B Remote Record Module and BLD circuit pack communicate via a 50-pin ribbon cable. No external wiring to the 15A Announcement System is required. The 400B Remote Record Module and the BLD circuit pack perform full duplex communication by sending function codes on a data bus and using two digital lines for Data Ready and Read Acknowledge signals.

400B Functions

10.03 The 400B can perform a total of twelve functions. System Administrators can perform all twelve functions. If the unit is configured for Single Channel Users, these users can only execute six of the functions. These functions and their associated function codes are listed here.

Function	System Administrator
∗0	Channel Select
∗1	Record (timed)
∗2	Playback
∗3	On-line status
∗4	Diagnostic
∗5	Single Channel User Security Code Assignment
∗6	End Session and Hang-up
∗7	End Session and Access Concentrator
∗8	System Administrator Security Code Assignment
∗90	Record (non-timed)

Function	Single Channel User
∗1	Record (timed)
∗2	Playback
∗3	On-Line Status
∗5	Single Channel User Security Code Assignment (if enabled by System Administrator)
∗6	End Session and Hang Up
∗90	Record (non-timed)

400B Remote Record Module Communication

10.04 The 400B communicates to the user by either generating patterns of single frequency tones or by voice prompts, depending on the setting of SW7 of the Configuration DIP-switch on the BLD board. The user communicates to the 400B by entering Touch Tones from the telephone keypad. The 400B-generated tones and their corresponding voice prompts are:

Tone Prompts	Voice Prompts
Initial Access Tone (IAT)	"Enter your security code."
Function Code Menu Tone (FMT)	"Enter a function code or press ** for help"
Data Prompt Tone (DPT)	"Enter the channel number"
Wait Tone (WT)	"Please wait . . ."
Error Tone (ET)	"Invalid Entry"
Transmission Error Tone (TET)	"Transmission Error"

Error Tones or Messages

10.05 The 400B validates all function codes and data entered by the user. When an invalid entry is made, an Error Tone (or the corresponding voice prompt “Invalid Entry.”) The Error Tone is a series of alternating high- and low-pitched tones. If five consecutive Error Tones or Messages are generated without a valid entry, the 400B will terminate the session and hang up.

10.06 If the 400B cannot establish communication with an announcement channel or if an established communication is lost, then the 400B will generate a Transmission Error Tone (or the corresponding voice prompt, “Transmission Error”). The Transmission Error Tone is a pattern of high-, medium-, and low-pitched tones. If two consecutive transmission errors occur, the 400B will:

- Disconnect the System Administrator from the channel. The user must then select a channel to continue.
- Hang up on the Single Channel User.

Escape Sequence

10.07 If the 400B seems locked up or the user has entered an invalid Function code, the pound sign (#) can be pressed to escape and return to the Function Code Menu prompt.

Time Outs

10.08 The 400B is designed to time out to safeguard against being left off-hook or left hanging by a system interface. The 400B monitors response time and will time out under the following conditions:

- After the user is prompted to enter the security code, the 400B will wait twenty seconds. If no code is entered, then the 400B will hang up.

- After the user is prompted to enter either a function code or input data, the 400B will wait 90 seconds. If no entry is made, the 400B will hang up.
- When the 400B twice fails to establish communications with an announcement channel during initial access, the 400B will:
  - — Disconnect from the channel and require the System Administrator to reselect a channel
  - — Hang up and require the Single Channel User to redial the 400B access number

End Session

10.09 There are three ways to end a remote record session:

- Enter the "End Session and Hang-up" function code (*6)
- Enter the "End Session and Access Concentrator" function code (if a concentrator is used) (*7)
- Hang up

10.10 When a session is ended, the channel is put back on line (if it was on line before the session and not taken out of service with the *3 command) and the telephone line is set to on-hook.

Diagnostics

10.11 The 400B performs the following self-diagnostic tests:

- 8052 ROM checksum test
- Tone generator and Touch-Tone decoder test
- Watchdog circuitry for hardware failures

10.12 If any of these tests fail, the 400B will signal the BLD3 circuit pack. The BLD3 closes an alarm relay. As a result of the failure, the 400B will not respond to ring detection.

Optional Remote Record Concentrator (J1C262A-1)

10.13 The Remote Record Concentrator is an external circuit pack that interfaces between a POTS line and up to eight remote modules (either 400A or 400B circuit module or 13A/14A Remote Record Unit). Each remote module requires one POTS line for accessing eight announcement channels. The Concentrator circuit can interface up to eight remote modules to a single POTS line; therefore the number of POTS lines required is reduced from a maximum of eight to one. Thus up to 64 announcement channels can be accessed via one POTS line.

10.14 The Remote Record interface menu structure has an additional function when the concentrator circuit is utilized. This function allows the System Administrator user to end the session with a particular remote record circuit, access the Concentrator, and then access another remote module without hanging upt the POTS line.

10.15 The optional Remote Record Concentrator (J1C262A-1) interfaces to the 400B in a 16A via the modular jack provided in the back of the unit and accessed through the openings in the backplane. The connection is made in lieu of the POTS line conection to the 400B.

Remote Operations

The procedures for the remote operations are provided in the following sections:

- Accessing the 15A Announcement System (System Administrator)
- Accessing the 15A Announcement System (Single Channel User)
- Selecting a Channel (System Administrator
- Making a Timed Recording
- Making a Non-timed Recording
- Playing Back a Message
- Setting the Channel Status (On-Line/Off-Line)
- Running Remote Diagnostics
- Assigning a Single Channel User Security Code (System Administrator)
- Assigning a Single Channel User Security Code (Single Channel User)
- Ending a Session Using the Exit Function
- Existing the 400B and Accessing the Concentrator
- Changing the System Administrator Security code

A. Accessing the 15A Announcement System (System Administrator)

The following procedure describes how to access the 15A Announcement System:

NOTE:
The BLD3 front panel display must be left in the “main menu” in order to allow remote access by the 400B.

Table A. System Access (System Administrator)

Step	Action	System Response	Voice Prompt Option
1	Access the 15A by dialing the dedicated line interface. **Valid Entry** XXX-YYYY Number assigned to dedicated line.	Initial Access Tone (one high-pitched tone and a touch-tone) for 1 second.	Tone, **"Enter your security code after the tone**.", Touch Tone
2	Enter the Security Code. Valid Entries ✻nnnnnnnn n = 0 thru 9 - Any combination of numbers **Note**: The default security code is ✻47985621	Function Code Menu Tone (one medium-pitched tone). Error Conditions - 15A will hang up if: • An invalid Security Code is entered, or • An entry is not made within 20 seconds	PASS: **"Press # at any time to return to the main menu. Enter a function code or press ✻✻ for help.**" FAIL: **"Invalid entry. Please try again. Goodbye", hangup** .

Table A. System Access (continued)

Step	Action	System Response	Voice Prompt Option
3	Enter the Function Code. A channel must be selected before the Record or Playback functions can be invoked. Valid Entries ✻0 - Channel Select ✻4 - Diagnostic Request ✻5 - Single Channel User Security Code Assignment ✻6 - End Session & Hang Up ✻7 - End Session & Access Concentrator ✻8 - System Administrator Security Code Assignment	Data Prompt Tone (two low-pitched tones). Invalid Function Code entered - Error Tone (alternating high-low tones) and then Function Code Menu Tone (one medium-pitched tone). Reenter Function Code. Note: After five successive incorrect entries, the 15A will hang up.	"**Enter the channel number"** FAIL: "**Invalid Entry.**"

Table A. System Access (continued)

Step	Action	System Response	Voice Prompt Option
4	After the channel has been selected, enter the Function Code of your choice. Valid Entries ✻0 - Channel Select ✻1 - Record (timed) ✻2 - Playback ✻3 - On-line status ✻4 - Diagnostic Request ✻5 - Single Channel User Security Code Assignment ✻6 - End Session & Hang Up ✻8 - Security Code Assignment ✻90 - Record (non-timed)	Data Prompt Tone (two low-pitched tones) is heard. Invalid Function Code entered - Error Tone (alternating high-low tones) is heard; then the Function Code Menu Tone (one medium-pitched tone) is heard. Reenter the Function Code **Note**: After five sucessive incorrect entries, the 15A will hang up.	FAIL "**Invalid Entry.**"

B. Accessing the 15A Announcement System (Single Channel User)

The procedure in Table B enables the single channel user to access the announcement system

Table B. Single Channel User Procedures

Step	Action	System Response	Voice Prompt Option
1	Access the 15A by dialing the dedicated line interface. Valid Entry XXX-YYYY Number assigned to dedicated line.	Initial Access Tone (one high-pitched tone and a touch-tone) for 1 second.	Tone, "Enter your security code after the tone.", Touch Tone
2	Enter the Security Code. **Valid Entries** xnnnnnnn x = channel number n = 0 thru 9 - Any combination of numbers	Function Code Menu Tone (one medium-pitched tone). **Error Conditions** - 15A will hang up if: • An invalid Security Code is entered, or • An entry is not made within 20 seconds.	PASS: "**Press # at any time to return to the main menu. Enter a function code or press ✻✻** for help." FAIL: "**Invalid entry. Please try again. Goodbye**", hangup.

Table B. System Access (Single Channel User) (cont)

Step	Action	System Response	Voice Prompt Option
3	Enter the Function Code. **Valid Entries** ✻1. Record (timed) ✻2 - Playback ✻3 - On-line status ✻5 - Single Channel User Security Code Assignment (if enabled) ✻6 - End Session & Hang Up ✻90 -Record (non-timed)	Data Prompt Tone (two low-pitched tones). **Invalid Function Code entered -** Error Tone (alternating high-low tones) and then Function Code Menu Tone (one medium-pitched tone). Reenter Function Code. **Note:** After five incorrect entries, the 15A will hang up.	"**Enter the message length in seconds followed by a ✻**" FAIL: "**Invalid Entry**."

C. Selecting a Channel

The following procedure describes how to select a channel

Table C. Channel Select Function

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**0** for the Channel Select function	Data Prompt Tone (two low pitched tones)	"**Enter the channel number.**"
2	Enter the channel number n Valid Entry: n = 0 thru 7	Wait Tone (a short medium-pitched tone) and then, if communication is established with the announcement channel, a Function Code Menu Tone (one medium-pitched tone). If communication is not established a Transmission Error Tone (a series of high, medium and low tones). Return to Step 1 and reenter the function code ✻0. Invalid Channel Number Entered- Error Tone (alternating high-low tones), then Data Prompt Tone (two low-pitched tones). Reenter the channel number.	Pass: "**Enter a function code or press ✻✻ for help.**" Fail: "**Transmission error."** or "**Invalid entry. Enter the channel number.**"

D. Making a Timed Recording

The following procedure describes how to make a "timed" recording.

Table D. Record (Timed Function)

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**1** for the Record function.	Data Prompt Tone (two low-pitched tones)	"**Enter the message length in seconds followed by a ✻.**"
2	Enter message length. **Valid Entries** X✻ or ✻ (star). X is any number equal or less than maximum length of unit. **Note:** A single ✻ entry defaults to the maximum message length of the Announcement System. **Examples**: 8 second message,enter 8✻ 20 second message,enter 20✻ 110 second message,enter 110✻	Data prompt tone **Invalid Time entered -** Error Tone (alternating high-low tones) is heard, then Data Prompt Tone (two low-pitched tones). Re-enter the message length. **Note:** After five incorrect entries, the 15A will hang up.	"**Start the message after the tone**." FAIL "**Invalid entry**. **Enter the message length in seconds followed by a ✻**"

Table D. Record (Timed Function)

Step	Action	System Response	Voice Prompt Response
3	Begin the message you wish to record. **Valid Entries** Any message that does not exceed the specified message length.	At the end of the specified recording time, you will hear the Data Prompt Tone (two low-pitched tones).	"**Press # to interrupt playback.**"
4	The message will automatically play back. No entry is required. **Note**: The recording playback may be stopped at any time by entering the # (pound sign).	The message is played back up to 4 times.	"**Enter a function code or press ✻ for help."**
5	Select another Function Code or hang up.	The system will now accept a new Function Code.	

E. Making a Nontimed Recording

The following procedure describes how to make a non-timed recording:

Table E. Record (Non-Timed) Function

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**90** for the Record function.	Data Prompt Tone (two low-pitched tones)	"**Start the message after the tone.**"
2	Begin the message you wish to record. **Valid Entries** Any message that does not exceed the specified message length.	None (the unit is recording).	
3	To stop recording (if the maximum time has not already elapsed), pause (silence) for about 3 seconds, then enter ✻. **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).	Data Prompt Tone (two low-pitched tones).	"**Press # to interrupt playback.**"
4	The message will automatically play back. No entry is required. Note: The recording playback may be stopped at any time by entering the # (pound sign).	The message is played back up to 4 times.	"**Enter a function code or press ✻✻ for help.**"
5	Select another Function Code or hang up.	The system will now accept a new Function Code.	

F. Playback Function

The following procedure describes how to play back a message.

Table F. Playback Function

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**2** for the Playback function. Note: The recording playback may be stopped at any time by entering the # (pound sign).	The message is played up to 4 times.	"**Enter a function code or press ✻✻ for help.**"
2	Select another Function Code or hang up.	The system will now accept a new Function Code.	

G. Setting the Channel Status (On-Line/Off-Line)

The following procedure describes how to set the Channel Status (On-line/Off-line).

Table G. Channel Status (On-line/Off-line) Function

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**3** for the Channel Status Function	Data Prompt Tone (two low-pitched tones)	**"Enter 0 for off-line or 1 for on-line."**
2	Enter the channel status. N Valid Entries N = 0: Off Line N = 1: On Line	Function Code Menu Tone (high-pitched tone). **Invalid Data entered** - Error Tone (alternating high-low tones), then the Data Prompt Tone (two low-pitched tones). Re-enter the Channel Status. **Note**: After five incorrect entries, the 15A will hang up.	Pass: "**Enter a function code or press ✻✻ for help.**" Fail: **"Invalid Entry. Enter 0 for off-line or 1 for on-line**."
3	Select another Function Code or hang up.	The system will now accept a new Function Code.	

H. Running Remote Diagnostics (System Administrators Only)

The following procedure describes how to perform remote diagnostics on the 15A.

Table H. 15A Diagnostic Request

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**4** for the Diagnostic Request function.	Data Prompt Tone (two low-pitched tones); then the Wait Tone (a series of short medium-pitched tones) **Note** The duration of the diagnostics depends on the maximum message length (e.g. approximately 60 seconds for 60-second announcement channels.) **Diagnostic Passed** - Function Code Menu Tone (one medium-pitched tone). **Diagnostic Failed** - Transmission Error Tone (a series of high-medium-low tones); then the Function Code Menu Tone (one medium-pitched tone).	**"Please wait. . .."** "**Diagnostics OK**." OR "**Excessive silence.** " OR "**Diagnostics failed.** "**Enter a function code or press ✻✻ for help.**" **Note** If the diagnostics failed for excessive silence, this indicates that 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 rerecording the message.
2	Select another Function Code or hang up.	The system will now accept a new Function Code.	

I. Assigning an Single Channel User Security Code

Table I. Single Channel User Security Code Assignment Function (System Administrator)

The following procedure describes how a Single Channel User Security Code is assigned.

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**5** for the Security Code Assignment Function	Data Prompt Tone (two low-pitched tones)	"**Enter the channel number followed by 8 digits. Enter 0 for the last digit to allow the user to change the code."**
2	Enter the 9-digit security code. XNNNNNNNZ **Valid Entries** X = 0 to 7 - Channel Number N = 0 to 9 - Any combination of numbers Z = 0 - Permission to change security code Z = 1 to 9 - Permission denied **Note**: A dummy security code can be entered to block access to a designed channel. Enter the channel number followed by 8 stars (X✻✻✻✻✻✻✻✻). This code will always cause a security code failure.	Data Prompt Tone (two low-pitched tones) Invalid Security Code entered - Error Tone (alternating high-low tones), then the Data Prompt Tone (two low-pitched tones). Re-enter the Security Code. **Note**: After five successive incorrect entries, the 15A will hang up.	"**Re-enter the code. Enter the channel number followed by 8 digits. Enter 0 for the last digit to allow the user to change the code.**"

Table I. Single Channel User Security Code Assignment Function (System Administrator (cont)

Step	Action	System Response	Voice Prompt Response
3	Re-enter the same Security Code.	The system will check for a Security Code match. **Match** - Function Code Menu Tone (one medium-pitched tone). The new security code is saved in non-volatile memory. **No match** - Error Tone (alternating high-low tones), then the Function Code Menu Tone (one medium-pitched tone). The old security code is not altered.	OK: "**The new code has been saved. Enter a function code or press ✻✻ for help**." Fail: ."**Invalid Entry. Enter a function code or press ✻✻ for help**"
4	Select another Function Code or hang up. **Note**: System administrators must select a channel before the Record or Playback functions can be executed.	The system will now accept a new Function Code.	

J. Assigning an Single Channel User Security Code (Single Channel User)

The following procedure describes how a Single Channel User Security Code is assigned.

Table J. Single Channel User Security Code Assignment Function (Single Channel User)

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**5** for the Security Code Assignment Function	Data Prompt Tone (two low-pitched tones)	"**Enter the 8 digit code. "**
2	Enter the 9 digit security code. XNNNNNNNZ **Valid Entries** X = 0 to 7 - Channel Number N = 0 to 9 - Any combination of numbers Z = 0 - Permission to change security code Z = 1 to 9 - Permission denied **Note**: A dummy security code can be entered to block access to a designed channel. Enter the channel number followed by 8 stars (X✻✻✻✻✻✻✻✻). This code will always cause a security code failure.	Data Prompt Tone (two low-pitched tones) Invalid Security Code entered - Error Tone (alternating high-low tones), then the Data Prompt Tone (two low-pitched tones). Re-enter the Security Code. **Note**: After five successive incorrect entries, the 15A will hang up.	"**Re-enter the code."**

Table J. Single Channel User Security Code Assignment Function (Single Channel User) (cont)

Step	Action	System Response	Voice Prompt Response
3	Re-enter the same Security Code. .	The system will check for a Security Code match. **Match** - Function Code Menu Tone (one medium-pitched tone). The new security code is saved in non-volatile memory. **No match** - Error Tone (alternating high-low tones), then the Function Code Menu Tone (one medium-pitched tone). The old security code is not altered.	OK: "**The new code has been saved. Enter a function code or press ✻✻ for help**." Fail: ."**Invalid Entry. Enter a function code or press ✻✻ for help**"
4	Select another Function Code or hang up.	The system will now accept a new Function Code.	

K. Ending a Session Using the Exit Function

The following procedure describes how to end the session with the Exit Function.

Table K. End Session (Exit Function)

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**6** for the Exit Function.	Data Prompt Tone (two low-pitched tones).	"**Enter ✻ to end the session or # to return to the main menu.**"
2	Enter ✻ (star) to exit or Enter # (pound sign) to abort the Exit function.	**Exit** - The 15A will immediately hang up and perform hardware reset on itself. You can access the 15A again by dialing the dedicated line interface. **Abort** - Function Code Menu Tone (one medium-pitched tone). Select another Function Code or hang up. **Invalid Entry** - not ✻ or #. Error Tone (alternating high-low tones), then the Data Prompt Tone (two low-pitched tones) is heard. **Note**: After five incorrect entries, the 15A will hang up.	Exit: "**Goodbye**" Abort: "**Enter a function code or press ✻✻ for help**." " **Invalid entry. Enter ✻ to end the session or # to return to the menu."**

L. Exiting the Remote Record Feature and Accessing the Concentrator (System Administrators Only)

The following procedure describes how to exit the Remote Record feature and access the Concentrator.

Table L. Exit Remote Record Feature - Access Concentrator Function

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**7** for the Exit Function.	Data Prompt Tone (two low-pitched tones).	"**Enter ✻ to end the session or # to return to the main menu.**"
2	Enter ✻ (star) to exit or Enter # (pound sign) to abort the Exit function.	**Exit** - The 15A will immediately hang up. **Abort** - Function Code Menu Tone (one medium-pitched tone). Select another Function Code or hang up. **Invalid Entry** - not ✻ or #, the Error Tone (alternating high-low tones), then the Data Prompt Tone (two low-pitched tones). **Note**: After five successive incorrect entries, the 15A will hang up.	Exit: **"Goodbye**." FAIL: "**Invalid entry. Enter a function code or press ✻✻ for help**."

M. Assigning or Changing the System Administrator Security Code (System Administrators Only)

The following procedure describes how to assign or change the System Administrator Security Code.

Table M. Security Code Assignment Function for System Administrators

Step	Action	System Response	Voice Prompt Response
1	Enter ✻**8** for the Security Code Assignment Function.	Data Prompt Tone (two low-pitched tones).	"**Enter the new 8-digit code.**"
2	Enter 8-digit Security Code NNNNNNNN Valid Entries N = 0 to 9 - Any combination of numbers.	Data Prompt Tone (two low-pitched tones). Invalid Security Code entered - Error Tone (alternating high-low tones), then the Data Prompt Tone (two low-pitched tones). Re-enter the Security Code. **Note**: After five successive incorrect entries, the 15A will hang up.	"**Re-enter the code."**

Table M. Security Code Assignment Function for System Administrators (cont)

Step	Action	System Response	Voice Prompt Response
3	Re-enter the same Security Code.	The system will check for a Security Code match. **Match** - Function Code Menu Tone (one medium-pitched tone). **No Match** - Error Tone (alternating high-low tones), then hear the Function Code Menu Tone (one medium-pitched tone). The old security code is not altered.	PASS: **"Enter a function code or press ✻✻ for help."** FAIL: "**Invalid entry. Enter the new 8 digit code.**"
4	Select another Function Code or hang up. **Note**: System administrators must select a channel before the Record or Playback functions can be executed.	The system will now accept a new Function Code.	

N. Accessing Help

Table N. Accessing Help

Step	Action	System Response	Voice Prompt Response
1	Enter ✻✻ to access the help message		"**To select a channel, press ✻0. To change the security code, press ✻8.** **To record, press ✻90.** **To play back, press ✻2.** **To set the channel status, press ✻3.** **To perform diagnostics press ✻4.** **To end the session, press ✻6. Enter a function code or press ✻✻ for help."**
2	Select another function code or hang up. **NOTE**: System administrators must select a channel before the Record or Playback functions can be executed.	The system will now accept a new function code.	

11. MAINTENANCE AND TROUBLESHOOTING

11.01 Since the 15A Announcement System is completely electronic, no routine maintenance is required.

TROUBLESHOOTING

11.02 In general, a failure condition indicated by a relay closure and lighting of the alarm LED requires the replacement of the circuit pack, however, certain failures can be cleared or fixed. General troubleshooting procedures are given below. The following instructions assume that the packs have been properly installed.

a. A loss of power to the 15A Announcement System generates a central office alarm condition (alarm relay closure) that is indicated by a lighted red SYSTEM ALARM LED. If the 15A does not operate and no alarm LED is lighted, check the fuse in the -48V battery supply. If the fuse is blown replace it. If it blows again, replace the BLD circuit pack.

b. During power up the unit goes through a diagnostics procedure to identify any problems. A problem will be identified by an error code in the display:

- ER_0 —. identifies a defective micro controller.

  Solution: Try to clear by pressing menu. If the error condition persists replace the pack.

- ER_1— . identifies a defective FPGA.

  Solution: Try to clear by pressing menu. If the error condition persists replace the pack.

- ER_2— identifies a time out caused by a "lock-up" condition in the communication link between the BLD boards and the 400B remote record unit.

  Solution: Pressing menu will clear this error. If this error reappears it could mean a defective connection between the BLD pack and the 400B or a defective BLD or 400B in which case the packs should be replaced.

- ER_3 and ER_4 — identifies an error caused by miscommunication between the BLD and the 400B Remote Record Module.

  Solution: Same as above.

- The display flashes: RECX where the X stands for a channel number. This condition means that a power failure occurred while making a recording in channel X. Therefore that channel should be re-recorded.

Other Alarm Conditions Indicated by an Alarm Relay Closure and a Lighted ALARM LED

To resolve other possible alarm conditions, perform the following:

- Proceed to Step through the main menu. A failure to respond to the front panel controls would indicate a defective micro controller.

  Solution: Replace circuit pack.

- Unit seems to respond to the front panel controls and signaling correctly, but LED turns on and off periodically. This could indicate "loss of announcement" in one of the channels. This is found when a message has 10 seconds or more of silence or low audio level. Monitor all channels for bad quality audio with long periods of silence. Once the bad channel is identified attempt to correct the problem by re-recording the message. If this fails it means that the memory device associated with that particular channel is bad. In general this will not affect other channels and it may be possible to keep the other channels in service for some time by turning the bad channel OFF-LINE. However, this circuit pack should be replaced as soon as possible.
- No apparent problem with the BLD. This could indicate a bad 400B unit. Attempt to download the default code or try to do a remote recording. Disconnect or replace 400B if necessary.

For more information or suggestions, please call our Announcement Systems Product Team Customer Service number - 1-800-352-5563.

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12. Quick Reference Guide

400B Remote Record Interface - Tone Prompt Protocol

FUNCTION	USER INPUT	400B RESPONSE
Call RRU	dial number	Tone followed by a Touch-Tone
Enter security code **Note:** The system administrator security code needs to be preceded by a ✻ when accessing the unit (no matter what the code is changed to).	**✻47985621**	Function Menu Tone
Select channel	**✻0**	2 tones (Data Prompt)
	n(n=0,1,2, ..., or 7)	Sequence of wait tones, Function Menu Tone

PLAYBACK

Select playback function	**✻2**	Message plays 4 times
Interrupt playback	#	Function Menu Tone

RECORD (timed)

Select record function	**✻1**	2 tones (Data Prompt)
Enter message length	**n✻**	2 tones (Data Prompt)
Record message	start message	2 tones (Data Prompt)
		(after elapsed time), playback of message
Interrupt playback	#	Function Menu Tone

RECORD (non-timed)

Select record function	**✻90**	2 tones (Data Prompt)
Record message	start message	
Stop recording	pause 3 seconds, ✻	2 tones (Data Prompt)
		Playback of message
Interrupt playback	#	Function Menu Tone

CHANNEL STATUS (ON/OFF - LINE)

Select channel status function	**✻3**	2 tones (Data Prompt)
	n (0=off line; 1=on line)	Function Menu Tone

DIAGNOSTICS

Select diagnostic function	**✻4**	2 tones (Data Prompt)
		sequence of wait tones
		PASS: Function Menu Tone FAIL: Error Tone

NOTE: If the Touch-Tone is audible at the end of the message, re-record with a longer pause at the end.

400B Remote Record Interface - Tone Prompt Protocol (cont)

SYSTEM ADMINISTRATOR SECURITY CODE ASSIGNMENT

Select security code function **Note:** The system administrator security code needs to be preceded by a ✻ when accessing the unit (no matter what the code is changed to), but a ✻ is not counted as part of the 8 digits when performing a **✻8** and when asked to enter the new 8-digit code.	**✻8**	2 tones (Data Prompt)
Enter 8-digit code	nnnnnnnn (n=0,1, ..., or 9)	2 tones (Data prompt)
Re-enter 8-digit code	nnnnnnnn	OK: Function Menu Tone FAIL: Error Tone

SINGLE CHANNEL USER SECURITY CODE ASSIGNMENT

Select Security Code function	**✻5**	2 tones (Data Prompt Tone)
Enter 9-digit code	xnnnnnnz (x=channel number) (n=0,1, ..., or 9) (z=0: user changeable	2 tones (Data Prompt)
Re-enter 9-digit code	xnnnnnnnz	OK: Function Menu tone FAIL: Error Tone

END SESSION

Select reset/hangup function	**✻5**	2 tones (Data Prompt)
	✻	hang up and reset
OR		
Hang up		hang up

400B Remote Record Interface - Tone Prompt Protocol
Single Channel Users

FUNCTION	USER INPUT	400B RESPONSE
Call RRU	dial number	Tone followed by Touch-Tone
Enter security code	xnnnnnnn (x=channel number n=0, 1, ..., or 9)	Function Menu Tone

PLAYBACK

Select playback function	**✻2**	Message plays 4 times
Interrupt playback	#	Function Menu Tone

RECORD (timed)

Select record function	**✻1**	2 tones (Data Prompt)
Enter message length	**n✻**	2 tones (Data Prompt)
Record message	start message	2 tones (Data Prompt) (after elapsed time)
		Playback of message
Interrupt playback	#	Function Menu Tone

RECORD (non-timed)

Select record function	**✻90**	2 tones (Data Prompt)
Record Message	start message	
Stop recording	pause 3 seconds, ✻	2 tones (Data Prompt)
		Playback of message
Interrupt playback	#	Function Menu Tone

Note: If the Touch-Tone is audible at the end of the message, re-record with a longer pause at the end.

SECURITY CODE ASSIGNMENT (if authorized)

Select Security Code function	**✻5**	2 tones (Data Prompt)
Enter 8-digit code	xnnnnnnn (x=channel number n=0, 1, ..., or 9)	2 tones (Data Prompt)
Re-enter 8-digit code	xnnnnnnn	OK: Function Menu Tone Fail: Error Tone

END SESSION

✻6		Hang up

400B Remote Record Interface - Voice Prompt Protocol
System Administrator

FUNCTION	USER INPUT	400B RESPONSE
Call RRU	dial number	Tone, "Enter your security code after the tone", Touch-Tone
Enter security code **Note:** The system administrator security code needs to be preceded by a ✻ when accessing the unit (no matter what the code is changed to), but a ✻ is not counted as part of the 8 digits when performing a ✻**8** and when asked to enter the new 8-digit code.	✻**47985621**	"Press # at any time to return to the main menu. Enter a function code or press ✻✻ for help."
Select channel	✻**0**	"Enter the channel number."
	n (n=0, 1, 2, ..., or 7)	"Enter a function code or press ✻✻ for help."

PLAYBACK

Select playback function	✻**2**	Message plays 4 times
Interrupt playback	#	"Enter a function code or press ✻✻ for help."

RECORD (timed)

Select record function	✻**1**	"Enter the message length in seconds followed by a ✻."
Enter message length	n✻	"Start the message after the tone."
Record message	start message	"Press # to interrupt playback. (After elapsed time), playback of message
Interrupt playback	#	"Enter a function code or press ✻✻ for help."

RECORD (non-timed)

Select record function	✻**90**	"Start the message after the tone."
Record message	start message	
Stop recording	pause 3 seconds, ✻	"Press # to interrupt playback.", playback of message
Interrupt playback	#	"Enter a function code or press ✻✻ for help."

Note: If the Touch-Tone is audible at the end of the message, re-record with a longer pause at the end.

400B Remote Record Interface - Voice Prompt Protocol (System Administrator) (cont)

CHANNEL STATUS (ON/OFF - LINE)

Select channel status function	✻3	"Enter 0 for off-line or 1 for on-line."
Enter mode	0 or 1	"Enter a function code or press ✻✻ for help."

DIAGNOSTICS

Select diagnostic function	✻4	"Please wait..."
		"Diagnostics OK." OR "Diagnostics failed." OR "Excessive silence."
		"Enter a function code or press ✻✻ for help."

SYSTEM ADMINISTRATOR SECURITY CODE ASSIGNMENT

Select security code function **Note:** The system administrator security code needs to be preceded by a ✻ when accessing the unit (no matter what the code is changed to), but a ✻ is not counted as part of the 8 digits when performing a ✻8 and when asked to enter the new 8-digit code.	✻8	"Enter new 8-digit security code."
Enter 8-digit code	nnnnnnnn (n=0, 1, ..., or 9)	"Re-enter the code."
Re-enter 8-digit code	nnnnnnnn	OK: "Enter a function code or press ✻✻ for help." FAIL: "Invalid entry."

SINGLE CHANNEL USER SECURITY CODE ASSIGNMENT

Select Security Code function	✻5	"Enter the channel number followed by 8 digits. Enter 0 for the last digit to allow the user to change the code."
Enter 9-digit code	xnnnnnnnz (x=channel number) (n=0, 1,..., or 9) (z=0: user changeable)	"Re-enter the code."
Re-enter 9-digit code	xnnnnnnnz	OK: Enter a function code or press ✻✻ for help." FAIL: "Invalid Entry."

400B Remote Record Interface - Voice Prompt Protocol (System Administrator) (cont)

END SESSION

Select reset/hangup function	✻**6**	"Enter ✻ to end the session."
	✻	"Goodbye."
	OR	
Hangup		hang up

HELP

Select help message	✻✻	"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.
Interrupt/return to main menu	#	"Enter a function code or press ✻✻ for help."

Other miscellaneous voice prompts generated by the 400B for the appropriate conditions:
"Invalid security code. Please call again."
"Transmission error."

400B Remote Record Interface - Voice Prompt Protocol
Single Channel Users

FUNCTION	USER INPUT	400B RESPONSE
Call RRU	dial number	Tone, “Enter your security code.after the tone”, touch-Tone.
Enter 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.

PLAYBACK

Select playback function	**✻2**	Message plays 4 times
Interrupt playback	**#**	“Enter a function code or press ✻✻ for help.”

RECORD (timed)

Select record function	**✻1**	“Enter the message length in seconds followed by a star.”
Enter message length	**n✻**	“Start the message after the tone.”, tone
Record message	start message	“Press # to interrupt playback.” (after elapsed time, playback of message)
Interrupt playback	#	“Enter a function code or press ✻✻ for help.”

Note: If the Touch-Tone is audible at the end of the message, re-record with a longer pause at the end.

SECURITY CODE ASSIGNMENT (if authorized)

Select function	**✻5**	“Enter the new 8-digit code.”
Enter 8-digit code	xnnnnnnn (x=channel number) (n=0, 1, ..., or 9)	“Re-enter the code.”
Re-enter 8-digit code	xnnnnnnn	OK: “Enter a function code or press ✻✻ for help.” FAIL: “Invalid Entry.”

END SESSION

	✻6	Hangup.

HELP

Select help message	**✻✻**	“To record, press ✻90. To playback, press ✻2.”
Interrupt/return to main menu	#	“Enter a function code or press ✻✻ for help.”