13A/14A Remote Record Unit Description And Operating Procedures Common Systems

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Tables

1. General

1.01 This practice describes the Remote Record Unit (ALD3), an electronic system that interfaces with the 13A and 14A Announcement Systems. This compact unit allows the user to add or change recorded messages on either announcement system from a remote location. It should be noted that any reference made to the 13A Announcement System within the contents of this practice, will also hold true for the 13A+ Announcement system. The only exception is maximum message length which is specified in Table A.

1.02 This practice is reissued to update information about the ALD3 RRU to correspond to its feature changes and enhancements. The specific reasons for reissue are listed below:

(a) Modify Tables B, E, and I and add Tables A, F, and G to incorporate changed features and functionality. Also modify paragraphs 8.01, 8.14, 8.16, 8.17, 9.03, 9.04, 10.01, 10.04, 10.06, 10.08, 10.10 through 10.16, and Figures 5 and 6. Delete paragraph 8.19. Add paragraphs 10.18 through 10.25.

(b) Modify paragraph 2.07 to include new systems with which the ALD3 interfaces.

(c) Modify Figure 5 to correspond to the circuit pack changes.

(d) Modify any references to the "ALD2 Diagnostic Request" to indicate simply "Diagnostic Request" since more than one type of 14A system now exists.

(e) Modify paragraphs 12.03 through 12.05 to incorporate new troubleshooting techniques. Add paragraphs 12.06 through 12.12.

(f) Add Figures 1 and 3 to illustrate the system architecture.

(g) Add Appendix A to indicate security code information.

1.03 This practice contains an admonishment.

⚠ WARNING:
This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference. The user will be required to take whatever measure necessary to correct this interference at his/her own expense.

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1.07 The 13A/14A Remote Record Unit (RRU) is an electronic, microprocessor controlled unit that is arranged to accommodate two remote record circuit packs which are apparatus coded ALD3 (J1C259A-1 List 2). Each ALD3 can access eight channels for remote recording: either four 2-channel 14A systems equipped with ALD2 or ALD5 circuit packs, or a complete 8-channel 13A/13A+ System.

Table A. Maximum Message Length for AT&T Announcement Systems

Announcement System	Channel Type	Maximum Length	Valid Entries for Record Function
14A	ALD2	30 seconds	X=1 to 30 seconds
	ALD5	2 minutes	X=1 second to 2 minutes
13A	UD4	24 seconds*	X=1 to 24 seconds
	UD6	12 seconds*	X=1 to 12 seconds
	UD7	3 minutes	X=1 second to 3 minutes
13A+	UD14	30 seconds	X=1 to 30 seconds
	UD15	1 minute †	X=1 second to 1 minute
	UD16	2 minutes †	X=1 second to 2 minutes
	UD17	4 minutes †	X=1 second to 4 minutes

* Maximum message length in the 13A Announcement System is dependent upon thumb wheel setting.

† Available 2nd quarter 1992.

1.08 The RRU is accessed via a line Plain Old Telephone Service (POTS) or via a POTS line interfaced with a Concentrator (ALD4) circuit See Figure 1. In each case a Line Interface Circuit (LIC), which resides on the printed wire circuit pack, is available to the public switch network. When the circuit pack is accessed remotely by a Touch Tone telephone, it interacts with the user via tone prompts. Using the Touch Tone keyboard, the user enters a security password and a series of commands to record and play back messages.

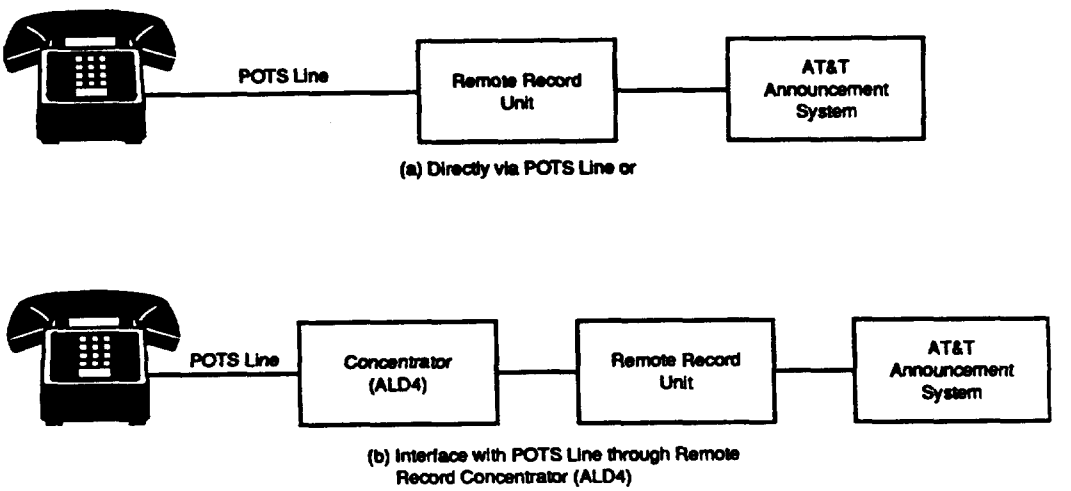

Figure 1. Accessing Remote Record Unit

1.09 Recordings can be made live via the telephone handset, or they can be dubbed from tape using the 602A Telephone Tape Recorder Adapter (J1C259A-1 List 5) (Figure 2). The Remote Record Unit (ALD3) as well as the Concentrator (ALD4) circuit, can also be utilitized as a subsystem to the AT&T Announcement Systems Manager (ASM) PC based workstation. ASM features include a Speech File Manager that allows digitally encoded storage of messages, a Database manager that allows efficient recordkeeping and storage of all information associated with announcement channels, and a Remote Record Interface that allows downloading of stored messages to either a 13A, 13A+, or a 14A Announcement System from a central location. See Figure 3 for ASM/RRU architecture.

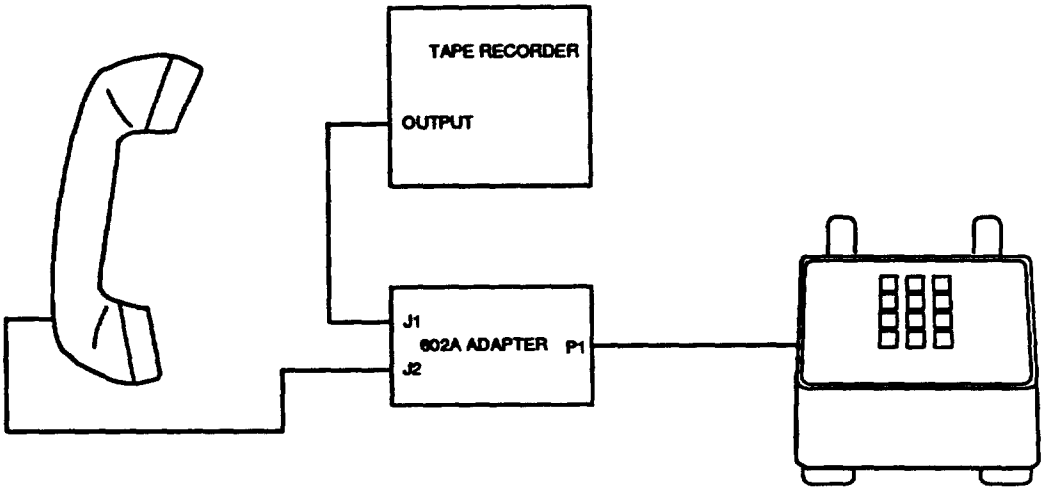

Figure 2. 602A Telephone Tape Recorder Adapter (Tape Dubbing of Announcement Remotely)

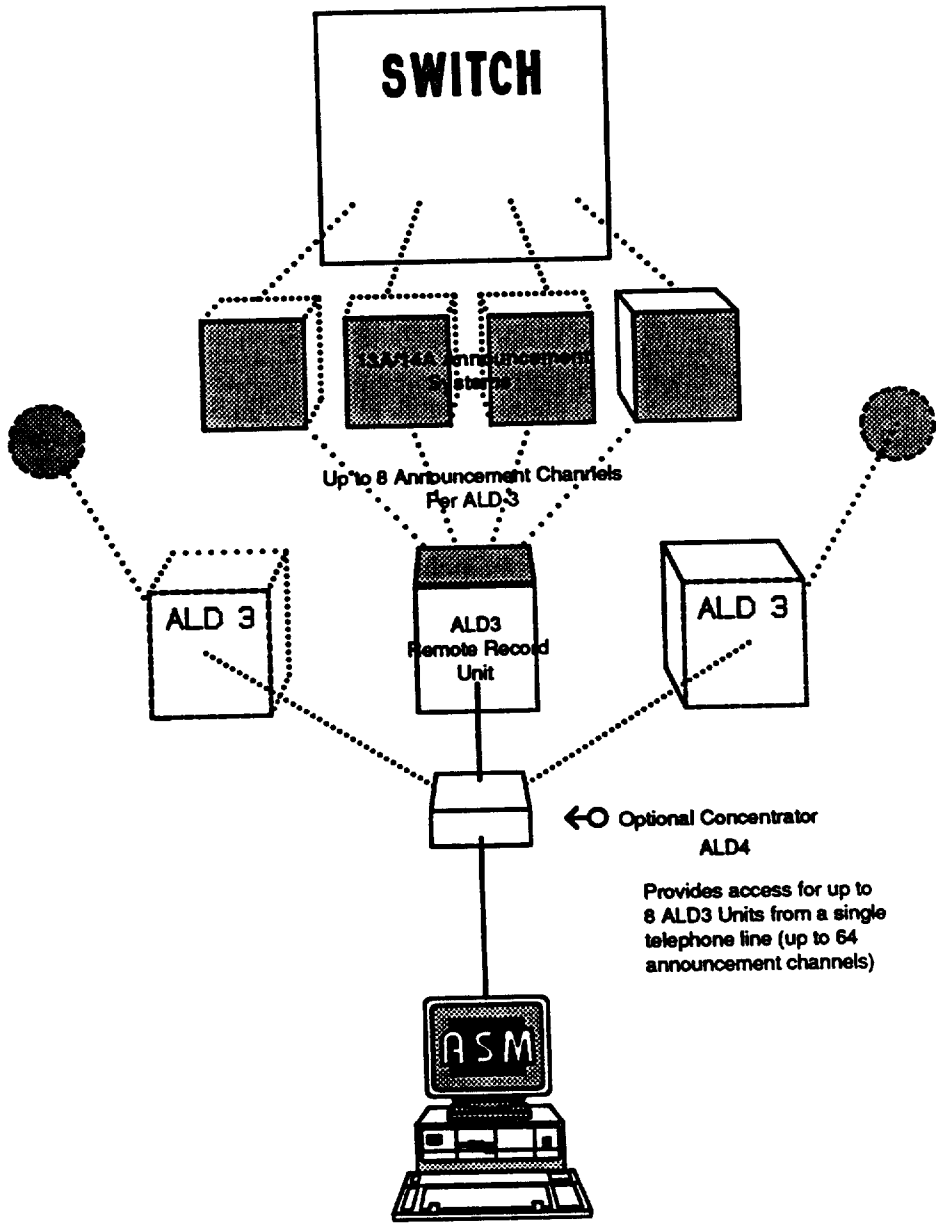

Figure 3. ASM/RRU Architecture

2. Description

Physical Design

2.01 The 13A/14A Remote Record Unit shares the same physical configuration as the 14A Announcement System. The unit is 2 inches high by 23 inches wide by 11-1/2 inches deep, including the mounting plate and apparatus mountings for two independent channels (Figure 4). The ALD3 circuit pack(s) connect to 940A connectors mounted on the mounting plate. Wire wrap pins on the 940A connector's wiring side interconnect the unit for power and distribution to 13A and 14A Announcement Systems. The two apparatus mountings attached to the mounting plate receive the ALD3 circuit packs and guide them into the connectors via sliders. Table B describes the major components of the ALD3 circuit pack.

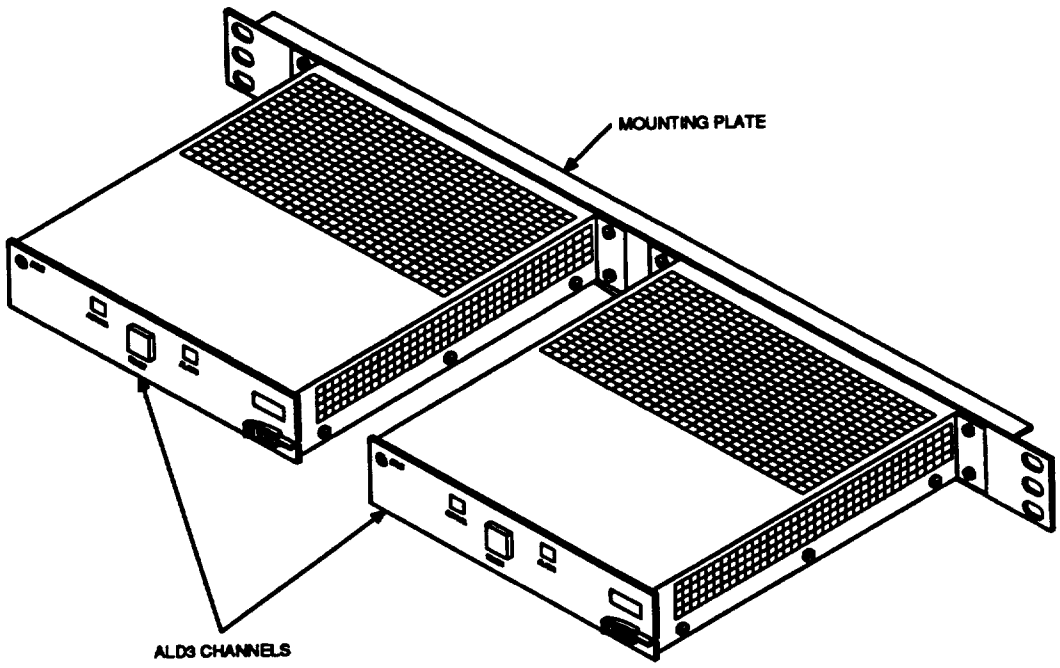

Figure 4. Remote Record Unit Equipped with Two ALD3 Circuit Packs

Table B. ALD3 Circuit Pack Major Components

Component	Description
Microcomputer	Handles overall control of the pack, including diagnostics to monitor for proper operation, detect failures, and initiate alarms.
EEPROM	Stores user security codes.
Tone Generator	Generates tones which are the means of interaction with the user.
Touch Tone Decoder	Decodes the user's Touch Tone input.
Transformer Coupled Line Interface Circuit	Provides line interface capability including nominal 900 ohm impedance, ring detection, and hybrid function.

2.02 Two different types of mounting brackets are available to secure the unit to the standard equipment frames and cabinets.

2.03 System controls and indicators are located on the faceplate of the ALD3 (Figure 4). These are described in Table C.

Table C. ALD3 Controls and Indicators

Component	Description
RESET	A pushbutton switch used to clear alarm conditions caused by a temporary fault.
ACTIVE	A green light emitting diode (LED) used to show that the ALD3 has been accessed by a user and is in an off-hook condition.
ALARM	A red LED used to show that a failure has occurred in the ALD3.

2.04 The 13A/14A RRU (ALD3) apparatus mountings and faceplates are Central Office white to comply with the Central Office Equipment standards. See Table D for an equipment list for the J1C259A-1 Remote Record Unit.

Table D. J1C259A-1 — Remote Record Unit Equipment List

Equipment	List No.	Qty.
Apparatus and common equipment for one 13A/14A Remote Record Unit arranged for two remote record circuits.	1	1
Apparatus (ALD3 circuit pack) required in addition to List 1 to equip one remote record circuit.	2	*
Mounting brackets required to adapt the unit to mount in the ESS-type framework as ED-97735-70, Gr 1.	3	1
Mounting brackets required to adapt the unit to mount in the No. 5 Crossbar-type framework, as ED-26524-70, Gr 2 & 7.	4	1
602A Telephone Tape Recorder Adapter to allow connection of a tape recorder to the telephone for tape dubbing of announcements.	5	1

* Maximum of two List 2 per each List 1.

2.05 Each ALD3 can record on up to 8 channels. For instance, a single ALD3 will record on:

- One 13A or 13A+ Announcement System (8 channels),

or

- Four 2 channel 14A Announcement Systems (8 channels).

2.06 Two ALD3 circuit packs can record on eight 2-channel 14A Announcement Systems (16 channels) or two 13A Announcement Systems.

System Interfaces

2.07 The components of the Announcement systems (13A, 13A+, or 14A) that interface to the ALD3 can consist of more than one channel type. Each channel type varies in its message storage capacity. Table A contains the maximum message length that can be stored on each channel type for a given system. Special Information Tones (SIT) generated by the ALD2 and ALD5 circuit packs may also be incorporated remotely if desired. SITs, if desired on a 13A or 13A+, must be recorded along with the announcement by use of a cassette tape, tape recorder, and the 602A Telephone Tape Recorder Adapter (J1C59A-1 List 5) (Figure 2).

2.08 The RRU should be mounted near the announcement system it serves — preferably 1 inch above or below the 13A or 14A system. A 2-wire telephone line is wired to the T-R leads of the ALD3 circuit pack. The remaining leads are wired to the backplane connectors of the interfacing announcement system.

2.09 A 4-position Dual Inline Package (DIP) switch on the ALD3 must be set to indicate the system interface being used:

- 13A Interface - Position 1 on the DIP switch is ON
- 14A Interface - Position 1 on the DIP switch is OFF.

2.10 See Table E for DIP switch representations and Figure 3 for DIP switch location. See Table F and Table G

Table E. DIP Switch Representations

Switch Number	Position	Mode
1	OFF	14A System Interface
	ON	13A System Interface
2	OFF	Single-User Mode
	ON	Multiuser Mode
3	OFF	Tone Level (Max -5dBm)
	ON	Tone Level (Max -9dBm)
4	OFF	ALD2/13A Standard Configuration
	ON	ALD5/13A Drum Retrofit Configuration

Table F. Recommended 14A Interface DIP Switch Settings

Configuration	Setting
Single-User Mode, ALD2	1 - OFF 2 - OFF 3 - ON 4 - OFF
Multiuser Mode, ALD2	1 - OFF 2 - ON 3 - ON 4 - OFF
Single-User Mode, ALD5	1 - OFF 2 - OFF 3 - ON 4 - ON
Multiuser Mode, ALD5	1 - OFF 2 - ON 3 - ON 4 - ON

Note: Place switch number 3 in the OFF position if required by Announcement System Manager (ASM) PC based system.

Table G. Recommended 13A Interface DIP Switch Settings

Configuration	Setting
Single-User Mode, Standard Configuration	1 - ON 2 - OFF 3 - ON 4 - OFF
Multiuser Mode, Standard Configuration	1 - ON 2 - ON 3 - ON 4 - OFF
Single-User Mode, Drum Retrofit Configuration	1 - ON 2 - OFF 3 - ON 4 - ON
Multiuser Mode, Drum Retrofit Configuration	1 - ON 2 - ON 3 - ON 4 - ON

Note: Place switch number 3 in the OFF position if required by Announcement System Manager (ASM) PC based system.

User Modes

2.11 The ALD3 circuit pack has two user mode configurations:

- **Single User** - limited to Telco users
- **Multiuser** - Telco and commercial users.

Single User

2.12 The purpose of the single-user mode is to block all commercial user access. The single user has access to all functions performed by the ALD3. Position 2 of the ALD3 DIP switch must be set to the OFF position for the single-user mode.

Multiuser

2.13 In the multiuser mode, the Telco user has access to all functions performed by the ALD3. The commercial user can access only the record and playback functions. Position 2 of the ALD3 DIP switch is set to the ON position for the multiuser mode.

Security Codes

2.14 The user must have a security code in order to access the ALD3. See Part 13.

3. Function

3.01 The ALD3 is an interface between a user on the switched network and an announcement system channel (13A or 14A). The user enters function codes in the form of Touch Tones to perform various announcement system functions.

3.02 The ALD3 communicates to the 14A Announcement System by a simple protocol of selecting the channel, sending function codes on a data bus, and monitoring a read acknowledge line to determine if the data was properly transmitted.

3.03 The ALD3 communicates to the 13A Announcement System by bringing the channel access lead to ground for playback or record. When a recording is to be made, a record request is sent to the 13A and the FML cut-through cycle is monitored. At the beginning of the FML cycle the recording will begin. Once the recording begins, the record relay on the 13A is monitored until the recording cycle is completed.

3.04 A complete list of functions available at the 940A connector for the ALD3 is given in Table H. All wiring information for the ALD3 to the 13A or 14A Announcement Systems should be referenced to SD-97811-01.

Table H. ALD3 Pin Functions

Lead Designation	940 Conn Pin No.	Function
-48 V -48 V RET	49 50	TALK battery connection
T R	26 1	Tip and ring leads
OA1 OA2	27 2	Office alarm signal. OA1 and OA2 are closed during alarm
OS1 OS2	28 3	Off-hook signal. OS1 and OS2 are closed to signal the ALD4 that the ALD3 is in an off-hook condition.
CHSEL0 CHSEL1 CHSEL2 CHSEL3 CHSEL4 CHSEL5 CHSEL6 CHSEL7	38 37 36 35 34 33 32 31	14A — Channel select leads for channels 0 - 7 13A — Start leads for channels 0 - 7 (if required) — Start leads CHSEL0 and CHSEL7 for drum retrofit configuration.
EXD0 EXD1 EXD2 EXD3 EXD4 EXD5 EXD6 EXD7	11 10 f9 f8 f7 f6 f5 f4	14A — 8-bit data bus used for communicating ALD3 function codes to ALD2 13A — Channel access leads 0 - 7
RCV0A RCV0B RCV1A RCV1B RCV2A RCV2B RCV3A RCV3B RCV4A RCV4B RCV5A RCV5B RCV6A RCV6B RCV7A RCV7B	48 23 47 22 46 21 45 20 44 19 43 18 42 17 41 16	Differential audio receive lines for ALD2 channels 0 - 7

Table H. ALD3 Functions (Contd)

Lead Designation	940 Conn Pin No.	Function
13AINA 13AINB	40 15	Single-ended audio receive lines from 13A Announcement System (common to all channels)
TRANS TRANSRTN	29 30	Differential Audio Transmit lines from ALD3 (common to all channels in both systems)
ALD2_RD_AC	39	14A — Read Acknowledge line from ALD2 used during transmission of function code (common to all channels) ALD4 — Signal used by ALD4 to request ALD3 to initiate an off-hook condition.
UDRECREQ	14	Record request line on 13A
UDRECMON	25	Monitors FML cut- through relay on 13A for the start of recording
UDSTOPREC	24	Monitors record relay on 13A for end of recording
GRD GRD	12 13	Common to ALD3 and announcement system

4. Power Requirements

4.01 The power required for the RRU is -48 V DC. The operating voltage limits are -39.5 to -57.0 V DC and will not be damaged up to -60 V DC. The preferred source of this power is TALK battery, but SIGNAL battery power is acceptable if TALK battery is not available in the frame in which the RRU is installed. The normal current drain is 0.125 amperes per ALD3. Power is protected by a separate 0.25A fuse for each ALD3 in the frame distribution circuitry.

5. Applications

1/1A ESS Switch Application

5.01 In these applications, three special announcement frames have been designed to provide the recorded announcements to the switch. The J1A058C-1 Recorded Announcement Frame uses the 13A Announcement System to provide from one to eight announcements depending on how the frame is equipped. Remote record features can be added to existing J1A058C-1 frames by retrofitting a J1C259A-1 RRU into the J1A058C-1 frame at the Telco site. The RRU should be mounted one inch above the 13A in this frame to allow for proper ventilation of both the 13A and the RRU. New J1A058C-1 frames can be equipped with remote record features by ordering the J1A058C-1 equipped with the required list numbers to provide the RRU feature.

5.02 The J1A058D-1 Recorded Announcement Frame uses the 14A Announcement System to provide from one to eight announcements depending on how the frame is equipped. As with the above frame, existing J1A058D-1 frames can be equipped with remote record features by retrofitting a J1C259A-1 RRU into the J1CA058D-1 frame at the Telco site. In this case, the RRU should be mounted one inch below the bottom 14A in the frame. New J1A058D-1 frames can be equipped with remote record features by ordering the J1A058-1 with the proper list numbers to provide the remote record features.

5.03 The J1A058E-1 Recorded Announcement Frame also uses the 14A Announcement System, but allows up to 16 channels, depending on how the frame is equipped. Existing J1A058E-1 frames can be equipped with remote record features by retrofitting a RRU into the frame at the Telco site, and new frames can be equipped with remote record features by ordering the correct list numbers. In this frame, the RRU should be mounted in the center of the 4-inch space immediately above the Group 0 14As. This will place the RRU one inch above the topmost 14A position in the Group 0 14A section.

5ESS® and Electromechanical Switch Applications

5.04 In the 5ESS switch, the 13A and 14A Announcement Systems are mounted in the J5D005C-1 Miscellaneous Cabinet (SD-5D130-01). This cabinet is configured to house 32 channels of either announcement system. As with the 1/1A ESS switch applications above, Remote Record features can be added to existing 5ESS switches by retrofitting the J1C259A-1 RRU into the J5D005C-1 cabinets at the Telco site, and new J5D005C-1 cabinets can be equipped with the RRU by ordering the correct list numbers to provide the RRU feature.

5.05 In electromechanical switches, the 13A and 14A Announcement Systems are procured and installed as individual shelf units on miscellaneous relay racks wherever space permits in the central office. Remote record features can be added to any of these systems by procuring a J1C259A-1 RRU and installing it adjacent to the 13A or 14A.

5.06 In both the 5ESS switch and electromechanical switch applications, a 1-inch space should be left between the RRU and the adjacent equipment to allow for proper ventilation.

6. Restrictions

6.01 These restrictions apply to the 13A/14A RRU:

- Mount the RRU away from equipment which produces heavy electrical interference.
- Leave ventilation space, minimum 1-inch clearance, between the RRU and other equipment mounted in the frame.
- Cabling between the RRU and the 13A or 14A systems should be handled in accordance with SD-97811-01.

7. Installation And Removal

Install

7.01 The ALD3 does not require any additional setup procedure once the circuit pack is installed in its housing. To install ALD3 circuit pack:

(1) Place the removed circuit pack or its replacement in the apparatus mounting tracks and slide it forward until it is fully mated with the 940A connector. See Figures 5 and 6.

(2) Hold the spring-loaded latch forward until the pack is fully mated.

(3) Release the latch and check to see it is in the latched position.

7.02 Diagnostics will automatically run on the ALD3. If no alarms are generated (ALARM LED lights) after approximately 6 seconds, the installation procedure is complete.

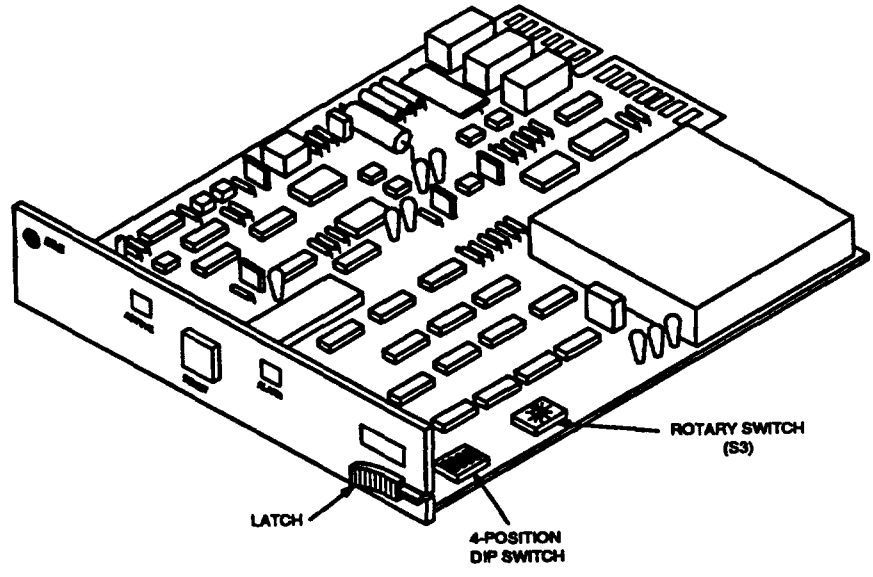

Figure 5. Remote Record Unit ALD3 Circuit Pack

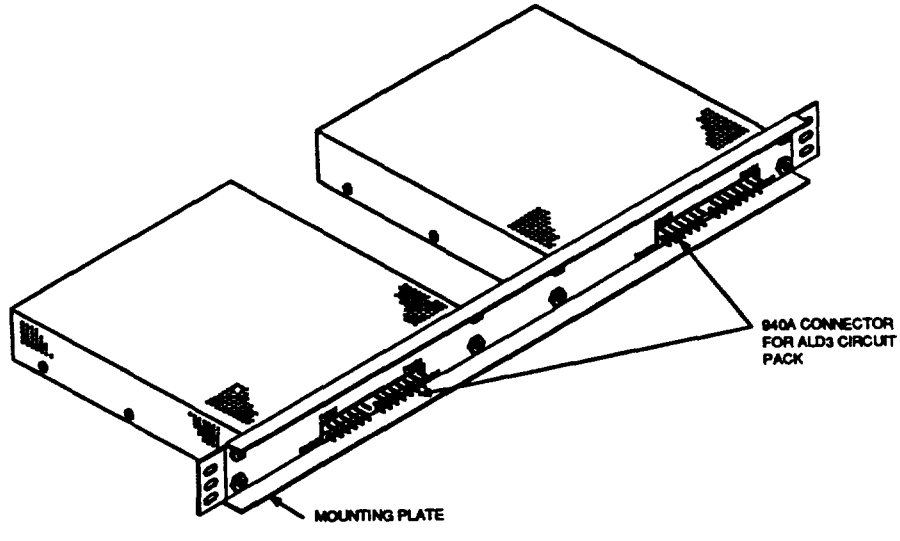

Figure 6. Remote Record Unit Rear Mounting Plate

Remove

7.03 **Follow local procedures first before removing ALD3 circuit pack.** To remove ALD3 circuit pack:

(1) Pull the spring-loaded latch located on the right side of the pack forward and hold it there (Figure 5).

(2) Pull the circuit pack forward and out of the apparatus mounting. (No electrical damage will be caused to an ALD3 by removing it with the power on.)

8. Operations

ALD3 Functions

8.01 The ALD3 can perform a total of nine functions. The following is a list of functions and associated function codes that are available to the Telco user and the commercial user:

Telco User

***0 —** Channel Select

***1 —** Record

***2 —** Playback

***3 —** Special Information Tone (SIT) Select/Record (14A Interface only)

***4 —** Diagnostic Request (14A Interface only)

***5 —** Commercial User Channel Security Code Assignment

***6 —** ALD3 Reset

***7 —** Exit ALD3 - Access Concentrator

***8 —** Telco Security Code Assignment

Commercial User

***1 —** Record

***2 —** Playback

***5 —** Commercial Channel Security Code Assignment (if enabled)

8.02 The ALD3 will interface with the 13A or 14A Announcement System. Response to user input may vary depending on which announcement system is being interfaced. These differences are noted in the descriptions of the system functions. See Part 10, Executing System Functions.

ALD3 Generated Tones

8.03 A series of tones are generated by the ALD3 to serve as a communications mechanism to the user. See Table I for a quick reference guide to tone definitions. The ALD3 generated tones are:

- Initial Access Tone (IAT)
- Function Code Menu Tone (FMT)
- Data Prompt Tone (DPT)
- Wait Tone (WT)
- Error Tone (ET)
- Transmission Error Tone (TET).

Table I. ALD3 Tone Generations

Tone	Definition
Initial Access Tone (IAT)	One long, high-pitched tone and a Touch Tone
	Duration - 1 second
	Generated when ALD3 is first accessed
Function Code Menu Tone (FMT)	Medium-pitched tone
	Duration - .5 second
	Generated each time a Function Code is to be entered
Data Prompt Tone (DPT)	Two tones, lower in pitch than the Function Code Menu Tone
	Duration - 800 ms
	Generated when more input data is required
	*4 - Data Prompt Tone is generated, no input data required
	*2 - Data Prompt Tone is not generated
Wait Tone (WT)	Medium-pitched tone
	Duration - 800 ms
	This tone is generated as long as it is necessary for the interface to respond or time out
Error Tone (ET)	A pair of high- and low-pitched tones, played three times
	Duration - 1.5 seconds
	Generated when incorrect data is entered
Transmission Error Tone (TET)	A series of three tones, high-, medium-, and low-pitched, played twice
	Duration - 1.5 seconds
	Generated whenever the ALD3 cannot establish communication or has lost communication with a channel

A. Initial Access Tone (IAT)

8.04 When the ALD3 is first accessed, the system responds with the Initial Access Tone, a high-pitched tone and a Touch Tone that lasts for 1 second. After the tone, the user must enter a Security Code within 20 seconds or the system will hang up.

B. Function Code Menu Tone (FMT)

8.05 After the Security Code is entered and verified, a medium-pitched tone is generated to indicate the system is ready for a Function Code. This tone is generated throughout the remote session whenever a function code is to be entered.

C. Data Prompt Tone (DPT)

8.06 The Data Prompt Tone is generated after a valid Function Code has been entered. Two consecutive low-pitched tones (half a second each) are generated to indicate that additional input is required. The ALD2 Diagnostic Function is an exception to this rule; additional input is not required when the Data Prompt Tone is heard.

D. Wait Tone (WT)

8.07 The Wait Tone is a series of short, medium- pitched tones that are generated to let the user know that the selected function is being implemented. For example, if a channel is selected that is playing an announcement, the channel will not respond until the message is over. Instead of hearing silence for this time period, the Wait Tone is heard.

E. Error Tone (ET)

8.08 The ALD3 validates all Function Codes and input data entered by the user. When an invalid entry is made, an Error Tone is generated. The Error Tone is a pair of tones that alternate between high and low pitches that repeat three times.

8.09 If an Error Tone is generated 4 times in a row and an error occurs the fifth time, the ALD3 will hang up.

F. Transmission Error Tone (TET)

8.10 The Transmission Error Tone is a series of high-, medium-, and low-pitched tones that are generated twice. This tone is heard if the ALD3 cannot establish communication with a channel during initial access or if communication with a channel is lost.

8.11 If a transmission error occurs twice in a row, the ALD3 will:

- Disconnect the Telco user from the channel. The user must reselect a channel.
- Hang up on the commercial user. The user must redial the dedicated line interface.

Escape Sequence

8.12 If the ALD3 appears locked up or the user has entered the wrong Function Code, the pound sign (#) can be pressed to escape back to the Function Code Menu prompt. This escape sequence can only be performed when the user is making an entry in response to the Function Code Menu Tone or the Data Prompt Tone.

Time Outs

8.13 The ALD3 is designed to time out to safeguard against being left off hook or left hanging by a system interface. The ALD3 monitors response time and will time out under the following conditions:

- If no Security Code is entered after the user is prompted, fifteen seconds later the ALD3 will hang up.
- If no Function Code or input data is entered after the user is prompted, one minute later the ALD3 will hang up.
- When the ALD3 twice fails to establish communications with a channel during initial access, the ALD3 will:
  - — *Disconnect* from the channel and require the **telephone user** to reselect a channel
  - — *Hang up* and require the **commercial user** to redial the ALD3 access number.

End Session

8.14 There are three ways to end a record session:

- Switch to a different channel, or
- Exit ALD3 - Access Concentrator, or
- Hang up the phone.

8.15 When a session is ended, the channel is put back in service and the telephone line is placed on hook.

Diagnostics

8.16 The ALD3 performs two self-diagnostic tests:

- 8052 ROM checksum test
- Tone generator and Touch Tone decoder test.

If any of these tests fail, a red alarm light emitting diode (LED) on the front panel of the ALD3 and an alarm relay that shorts pins 27 and 2 will turn on. As a result of the failure, the ALD3 will not respond to a ring detection.

8.17 The 8052 Read Only Memory (ROM) checksum test and the tone generator/Touch Tone decoder test are performed whenever the ALD3 is powered up or when the reset switch on the faceplate is pressed.

8.18 The 8052 ROM checksum test is also performed while the ALD3 is idle and waiting for a ring detection. Upon a ring detection, the ALD3 will perform the tone generator test.

9. Access To The ALD3

9.01 Two types of users can access the ALD3:

- Telco users
- Commercial users.

9.02 The system access procedure for each type of user is described in the following paragraphs.

Telco Users

9.03 The following procedure describes how the Telco user accesses the ALD3. After accessing the system, an announcement channel **must** be selected before the SIT Select, Record, Playback, or Diagnostic functions can be executed. The Telco and Commercial Security Code Assignment, ALD3 Reset, and Exit ALD3 - Access Concentrator functions can be executed without selecting a channel. Figure 7 is a Telco User Flowchart.

Telco User's Procedures

Step	Action	System Response
1	Access the ALD3 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.
2	Enter the Security Code. (You have 20 seconds to enter the Security Code before the ALD3 will time out.) **Valid Entries** Single user mode - nnnnnnnn Multiuser mode - *nnnnnnnn n = 0 thru 9 — Any combination of numbers	Function Code Menu Tone (one medium-pitched tone). **Error Conditions** — ALD3 will hang up if: ■ An invalid Security Code is entered, or ■ An entry is not made within 20 seconds.
3	Enter the Function Code. A channel must be selected before the SIT Select, Record, Playback, and Diagnostic functions can be invoked. **Valid Entries** *0 - Channel Select *5 - Commercial User Channel Security Code Assignment *6 - ALD3 Reset *7 - Exit ALD3 - Access Concentrator *8 - Telco Security Code Assignment Refer to Part 10 for the appropriate procedure. Function Code *0 - See Part 10.04. Function Code *5 - See Part 10.19. Function Code *6 - See Part 10.21. Function Code *7 - See Part 10.28. Function Code *8 - See Part 10.31.	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 ALD3 will hang up.

Telco User's Procedures (Contd)

Step	Action	System Response
4	After the channel has been selected, enter the Function Code of your choice. **Valid Entries** *0 - Channel Select *1 - Record *2 - Playback *3 - SIT (Select/Record) (14A Interface) *4 - ALD2 Diagnostic Request (14A Interface) *5 - Commercial User Channel Security Code Assignment *6 - ALD3 Reset *7 - Exit ALD3 - Access Concentrator *8 - Telco Security Code Assignment Refer to Part 10 for the appropriate procedure. Function Code *0 - See Part 10.04. Function Code *1 - See Part 10.06. Function Code *2 - See Part 10.08. Function Code *3 - See Part 10.10. Function Code *4 - See Part 10.12. Function Code *5 - See Part 10.19. Function Code *6 - See Part 10.21. Function Code *7 - See Part 10.28. Function Code *8 - See Part 10.31.	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 incorrect entries, the ALD3 will hang up.

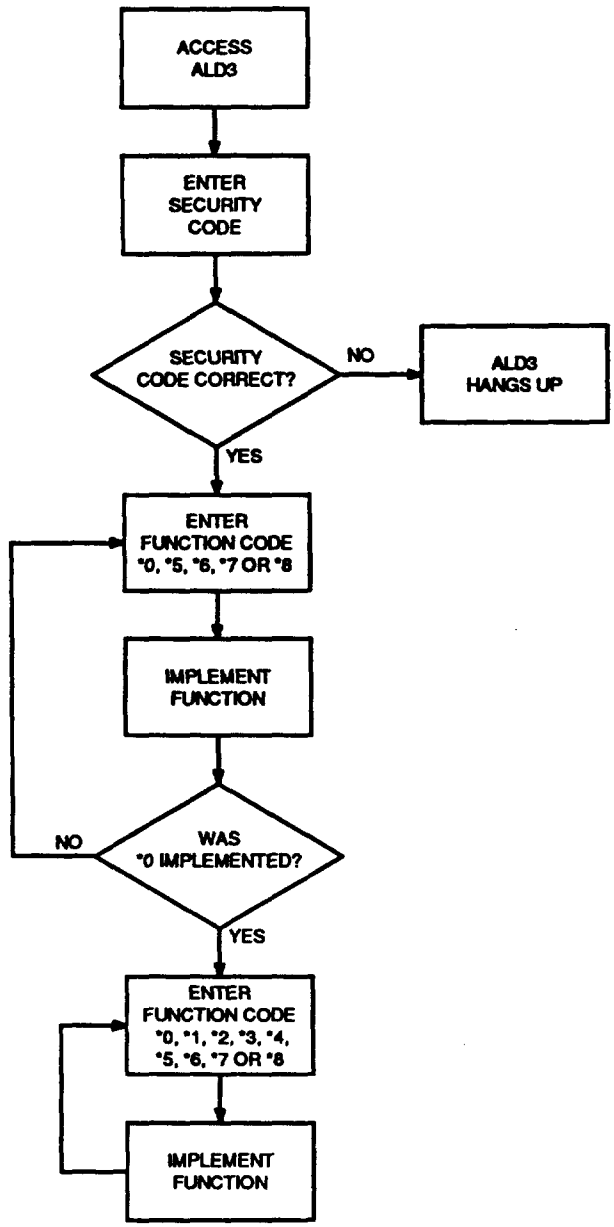

Figure 7. Telco User Flowchart

Commercial Users

9.04 The following procedure describes how the commercial user accesses the ALD3. After access is gained to the system, the Record, Playback, and Commercial Channel Security Code Assignment functions can be executed.

NOTE:
The Commercial user will have permission to change a security code if the Telco user has enabled this function (see Part 13). Figure 8 is a Commercial User Flowchart.

Commercial User Procedure

Step	Action	System Response
1	Access the ALD3 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.
2	Enter the Security Code. (You have 15 seconds to enter the Security Code before the ALD3 will time out.) **Valid Entries** Multiuser mode - xnnnnn x = 0 thru 7 - See Part 10F. n = 0 thru 9	Function Code Menu Tone (one medium-pitched tone) is heard. **Invalid Security Code entered** — ALD3 will hang up.
3	Enter the Function Code. **Valid Entries** *1 - Record *2 - Playback *5 - Commercial Channel Security Code Assignment (if enabled) Refer to Part 10 for the appropriate procedure. Function Code *1 - See Part 10.06. Function Code *2 - See Part 10.08.	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. Re-enter the Function Code. **Note:** After five incorrect entries, the ALD3 will hang up.

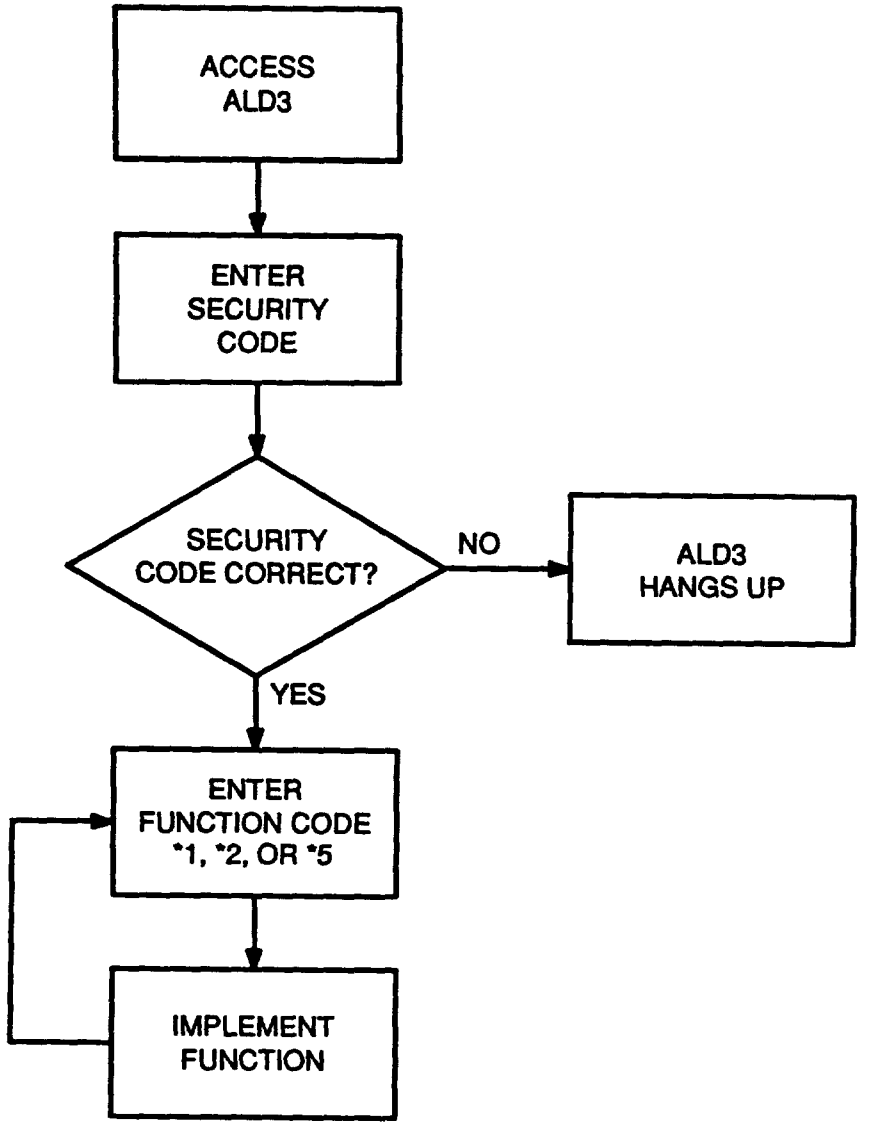

Figure 8. Commercial User Flowchart

10. Executing System Functions

10.01 The ALD3 can perform seven functions:

- *0 — Channel Select
- *1 — Record
- *2 — Playback
- *3 — SIT Select/Record (14A Interface)
- *4 — Diagnostic Request (14A Interface)
- *5 — Commercial User Channel Security Code Assignment
- *6 — ALD3 Reset
- *7 — Exit ALD3 - Access Concentrator
- *8 — Telco Security Code Assignment.

The Telco user has access to all seven functions; the commercial user can access only the Record and Playback functions. The following procedures describe how to execute the ALD3 functions.

Channel Select

10.02 The Telco user must always select an announcement channel before the SIT Select, Record, Playback, and Diagnostics functions can be executed. If a channel is not selected, an Error Tone will be heard.

10.03 The commercial user is not required to select a channel. A channel is automatically selected after the 6-digit Security Code is verified.

10.04 The following procedure describes how the Telco user selects a channel:

Channel Select Function

Step	Action	System Response
1	Enter *0 for the Channel Select function.	Data Prompt Tone (two low-pitched tones).
2	Enter the channel number. n **Valid Entries** n = 0 thru 7	13A - Function Code Menu Tone (one medium-pitched tone). 14A - Wait Tone (a series of short, medium-pitched tones) is heard and then if communication is established with the announcement channel, a Function Code Menu Tone (one medium-pitched tone) is heard. If communication is not established, a Transmission Error Tone (a series of high-medium-low tones) is heard. Return to Step 1 and re-enter the Function Code *0. **Invalid channel number entered** — Error Tone (Alternating high-low tones) is heard, then Data Prompt Tone (two low-pitched tones) is heard. Re-enter the Channel Number. **Note:** After five incorrect entries, the ALD3 will hang up.

Channel Select Function (Contd)

Step	Action	System Response
3	After the channel has been selected, enter the Function Code of your choice. **Valid Entries** *0 - Channel Select *1 - Record *2 - Playback *3 - SIT (Select/Record) 14A Interface) *4 - ALD2 Diagnostic Request (14A Interface) *5 - Commercial User Channel Security Code Assignment *6 - ALD3 Reset *7 - Exit ALD3 - Access Concentrator *8 - Telco Security Code Assignment Refer to Part 10 for the appropriate procedure. Function Code *0 - See Part 10.04. Function Code *1 - See Part 10.06. Function Code *2 - See Part 10.08. Function Code *3 - See Part 10.10. Function Code *4 - See Part 10.12. Function Code *5 - See Part 10.16. Function Code *6 - See Part 10.21. Function Code *7 - See Part 10.28. Function Code *8 - See Part 10.31.	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. Re-enter the Function Code. **Note:** After five incorrect entries, the ALD3 will hang up.

Record

10.05 After a channel is selected, the user can record a message by entering *1 at the Touch Tone keypad. The message length will be dependent upon the system interface. See Table A for maximum message lengths. The user enters the message length and receives a Wait Tone (13A Interface), a slight pause, and then a Data Prompt Tone (both interfaces). At this time, the user begins the message to be recorded. At the end of the recording, the message will automatically play back.

10.06 The following procedure describes how to record a message:

Record Function

Step	Action	System Response
1	Enter *1 for the Record function.	Data Prompt Tone (two low-pitched tones) is heard.
2	Enter maximum message length. **Valid Entries** X* or * (star) See Table A for maximum message length and valid entries. **Note:** A single * entry defaults to the Maximum message length of the Announcement System. Examples : 8 seconds message - Enter 8* 20 seconds message - Enter 20* 1 minute message - Enter 100*	14A — Data Prompt Tone (two low-pitched tones) is heard. 13A — Wait Tone (a series of short, medium-pitched tones) is heard; then the Data Prompt Tone (two low-pitched tones are heard). **Invalid Time entered** — Error Tone (alternating high-low tones) is heard, then Data Prompt Tone (two low-pitched tones are heard). Re-enter the message length. **Note:** After five incorrect entries, the ALD3 will hang up.

Record Function (Contd)

Step	Action	System Response
3	When you hear the two low-pitched tones, 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). 13A — If time entered is shorter than time setting on the message board, the Wait Tone will be heard until the time setting is reached.
4	After the low-pitched tones, 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).	14A — The message is played back up to 4 times (ALD2) or 2-1/2 minutes (ALD5). Then the Function Code Menu Tone (one medium-pitched tone) is heard. 13A — The message is repeated for 4 minutes; then the Function Code Menu Tone (one medium-pitched tone) is heard.
5	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

Playback

10.07 The user can request a message playback from any channel by entering *2. Immediately after the Function Code is entered, the message will start to play. The message will repeat for 3 minutes on the 13A system or will repeat up to 4 times on the 14A system. The playback can be stopped at any time by entering # (pound sign).

10.08 The following procedure describes how to execute the Playback function:

Playback Function

Step	Action	System Response
1	If you wish to listen to a recorded message, enter *2 for the Playback function. **Note:** The recording playback may be stopped at any time by entering the # (pound sign).	Immediately after the Playback function is selected, the message will start to play. 14A — The message will repeat up to 4 times (ALD2) or 2-1/2 minutes (ALD5). Then the Function Code Menu Tone (one medium-pitched tone) will be heard. 13A — The message will repeat for 4 minutes; then the Function Code Menu Tone (one medium-pitched tone) will be heard.
2	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

SIT Select and Record (14A Interface)

10.09 The SIT Select/Record function can be executed only by the Telco user. There are 32 SIT codes that can be selected. See Table J for valid SIT codes for the ALD3.

Table J. SIT Codes for ALD3

ALD3 SIT CODES	NETWORK REPORTABLE CONDITION SHOWN IN ALD3 DISPLAY	TYPE OF SIT	TONE 1 (HZ)	TONE 1 DURATION (MS)	TONE 2 (HZ)	TONE 2 DURATION (MS)	TONE 3 (HZ)	TONE 3 DURATION (MS)
1	INTERCPT	Intercept	913.8	274	1370.6	274	1776.7	380
2	InLATANC	No Circuit*	913.8	380	1370.6	380	1776.7	380
3	VAC CODE	Vacant Code	985.2	380	1370.6	274	1776.7	380
4	InLATARO	Reorder*	985.2	274	1370.6	380	1776.7	380
5	NO CKT	No Circuit	985.2	380	1428.5	380	1776.7	380
6	REORDER	Reorder	913.8	274	1428.5	380	1776.7	380
7	INEFF OT	Ineffective Other	913.8	380	1428.5	274	1776.7	380
8	SIT #8†		913.8	274	1428.5	274	1776.7	274
9	SIT #9†		913.8	380	1428.5	274	1776.7	274
10	SIT #10†		913.8	274	1428.5	380	1776.7	274
11	SIT #11†		913.8	380	1428.5	380	1776.7	274
12	SIT #12†		913.8	274	1428.5	274	1776.7	380
13	SIT #13†		913.8	380	1428.5	380	1776.7	380

See notes at the end of table.

Table J. SIT Codes for ALD3 (Contd)

ALD3 SIT CODES	NETWORK REPORTABLE CONDITION SHOWN IN ALD3 DISPLAY	TYPE OF SIT	TONE 1 (HZ)	TONE 1 DURATION (MS)	TONE 2 (HZ)	TONE 2 DURATION (MS)	TONE 3 (HZ)	TONE 3 DURATION (MS)
14	SIT #14†		913.8	274	1370.6	274	1776.7	274
15	SIT #15†		913.8	380	1370.6	274	1776.7	274
16	SIT #16†		913.8	274	1370.6	380	1776.7	274
17	SIT #17†		913.8	380	1370.6	380	1776.7	274
18	SIT #18†		913.8	380	1370.6	274	1776.7	380
19	SIT #19†		913.8	274	1370.6	380	1776.7	380
20	SIT #20†		985.2	274	1428.5	274	1776.7	274
21	SIT #21†		985.2	380	1428.5	274	1776.7	274
22	SIT #22†		985.2	274	1428.5	380	1776.7	274
23	SIT #23†		985.2	380	1428.5	380	1776.7	274
24	SIT #24†		985.2	274	1428.5	274	1776.7	380
25	SIT #25†		985.2	380	1428.5	274	1776.7	380
26	SIT #26†		985.2	274	1428.5	380	1776.7	380
27	SIT #27†		985.2	274	1370.6	274	1776.7	274
28	SIT #28†		985.2	380	1370.6	274	1776.7	274
29	SIT #29†		985.2	274	1370.6	380	1776.7	274
30	SIT #30†		985.2	380	1370.6	380	1776.7	274
31	SIT #31†		985.2	274	1370.6	274	1776.7	380
32	SIT #32†		985.2	380	1370.6	380	1776.7	380

*SIT encoding associated with inter-LATA (Local Access and Transport Area) carrier call handling.

†SIT numbered 8 to 32 are undefined.

10.10 The following procedure describes how to execute this function:

SIT Select And Record Function (14A Interface)

Step	Action	System Response
1	Enter *3 for the SIT Select and Record function.	Data Prompt Tone (two low-pitched tones) is heard.
2	Enter the SIT code. **Valid Entries** X* Where X = 1 to 32 (See Table J.) **Note:** After a SIT code has been entered, the Record function is now implemented in the following steps.	Data Prompt Tone (two low-pitched tones) is heard. **Invalid SIT Code entered** — Error Tone (alternating high-low tones) is heard; then the Data Prompt Tone (two low-pitched tones) is heard. Re-enter the SIT code. **Note:** After five incorrect entries, the ALD3 will hang up.
3	Enter maximum message length. **Valid Entries** X* or * (star) See Table A for maximum message length and valid entries. **Note:** A single * entry defaults to the maximum message length of the Announcement System. Examples : 8 seconds message - Enter 8* 20 seconds message - Enter 20* 1 minute message - Enter 100*	Data Prompt Tone (two low-pitched tones) is heard. **Invalid Time entered** — Error Tone (alternating high-low tones) is heard; then the Data Prompt Tone (two low-pitched tones) is heard. Re-enter the message length. **Note:** After five incorrect entries, the ALD3 will hang up.

SIT Select And Record Function (14A Interface) (Contd)

Step	Action	System Response
4	When you hear the two low-pitched tones, 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).
5	After the low-pitched tones, 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 will repeat up to 4 times (ALD2) or 2-1/2 minutes (ALD5). Then the Function Code Menu Tone (one medium-pitched tone) will be heard.
6	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

Diagnostic Request (14A Interface)

10.11 The Telco user can request a diagnostic to be run on either an ALD2 or an ALD5 channel (14A Interface) by entering the Function Code *4. After *4 is entered, the user will first bear the Data Prompt Tone; then the Wait Tone is heard while the channel is running the diagnostic. This process can take up to 10 seconds for an ALD2 or 30 seconds for an ALD5.

10.12 When the diagnostic passes, the Function Code Menu Tone is heard to indicate that the ALD3 will accept another Function Code. If the diagnostic fails, the Transmission Error Tone is heard; then you are prompted for a new Function Code.

ALD2 Diagnostic Request (14A Interface)

Step	Action	System Response
1	Enter *4 for the Diagnostic Request function. You will hear the Data Prompt Tone, however, no entry is required.	After the Diagnostic function is selected, you will hear the Data Prompt Tone (two low-pitched tones); then the Wait Tone (a series of short medium-pitched tones) is heard.
2	While the channel is running the Diagnostic function, the Wait Tone is heard. This process can take up to 10 seconds for an ALD2 or 30 seconds for an ALD5.	**Diagnostic Passed** - You will hear the Function Code Menu Tone (one medium-pitched tone). **Diagnostic Failed** - You will hear the Transmission Error Tone (a series of high-medium-low tones); then the Function Code Menu Tone (one medium-pitched tone).
3	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

Commercial Channel Security Code Assignment

10.13 The Telco user has the capability to assign individual security codes to channels used by commercial users. The ALD3 must be in the multiuser mode before individual channel access can be utilized (see Table E, F, and G.)

10.14 The Telco user must issue the commercial user a 7-digit security code. It should be noted that the last digit of the 7-digit security is unknown to the commercial user; therefore, the commercial user will enter six of the seven digits assigned. The seventh digit is used to grant or deny the commercial user permission to change the assigned security code.

10.15 The security code is assigned by using the Function Code *5. Once *5 has been entered, the ALD3 will prompt the user for the new 7-digit security code by generating a Data Prompt Tone. The first digit represents the channel number assigned to the commercial user (0 thru 7). The next five digits can be any combination of 0 thru 9. The seventh digit represents permission for the commercial user to change the assigned security code. If the Telco user enters a zero as the seventh digit, permission to change the security code is GRANTED. If any number (1 thru 9) has been entered, permission to change the security code is DENIED. Once the seven digits are entered, the ALD3 will prompt the user (Data Prompt Tone) to re-enter the new 7-digit security code. If the two codes are equivalent, the Function Code Menu Tone will be generated. The new security code is placed in nonvolatile memory, and the commercial user will use this code (first six digits) to access the Announcement channel via the ALD3.

Examples: The new security code is 1234560 (the commercial user is assigned to channel 1 and is granted permission to change the commercial channel security code).

The new security code is 01234560 (the commercial user is assigned to channel 0 and is denied permission to change the commercial channel security code).

10.16 The following procedure (for Telco user) describes how a Commercial Security Code is assigned:

Commercial Channel Security Code Assignment Function

Step	Action	System Response
1	Enter *5 for the Security Code Assignment Function.	Data Prompt Tone (two low-pitched tones) is heard.
2	Enter the 7-digit security code. XNNNNNZ **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 designated channel. Enter the channel number followed by 6 stars (******). 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) is heard, then the Data Prompt Tone (two low-pitched tones) is heard. Re-enter the Security Code. **Note:** After five incorrect entries, the ALD3 will hang up.
3	Re-enter the same Security Code. The system will verify the new Security Code entered.	The system will check for a Security Code match. **Match** - Function Code Menu Tone (one medium-pitched tone) is heard. **No Match** - If the codes do not match, the old Security Code is saved and the Error Tone (alternating high-low tones) is heard twice. You will then hear the Function Code Menu Tone (one medium-pitched tone).
4	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

10.17 The Commercial user has the capability to change assigned security codes. Permission must be granted by the Telco user in order for the Commercial user to utilized this function (see Part 10). If permission is denied by the Telco user, an Error Tone is heard when this function is selected.

10.18 The security code is assigned by using the Function Code *5. Once *5 has been entered, the ALD3 will prompt the user for the new 6-digit security code by generating a Data Prompt Tone. The first digit represents the channel number assigned to the commercial user (0 thru 7). The commercial user must be made aware of the assigned channel number so a new security code can be properly entered. If the user should try to change a security code using a different channel number (first digit), an Error Tone will be generated twice and then the Function Menu Tone. The next five digits can be any combination of 0 thru 9. Once the six digits are entered, the ALD3 will prompt the user (Data Prompt Tone) to re-enter the new 6-digit security code. If the two codes are equivalent, the Function Code Menu Tone will be generated. The new security code is placed in nonvolatile memory, and the commercial user will use this code to access the Announcement channel via the ALD3.

10.19 The following procedure (for Commercial Users) describes how a Commercial Security Code is assigned:

Commercial Channel Security Code Assignment Function

Step	Action	System Response
1	Enter *5 for the Security Code Assignment Function.	Data Prompt Tone (two low-pitched tones) is heard.
2	Enter the 6-digit Security Code. XNNNNN **Valid Entries** X = 0 to 7 — Channel number 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) is heard, then the Data Prompt Tone (two low-pitched tones) is heard. Re-enter the Security Code. **Note:** After five incorrect entries, the ALD3 will hang up.
3	Re-enter the same Security Code. The system will verify the new Security Code entered.	The system will check for a Security Code match. **Match** - Function Code Menu Tone (one medium-pitched tone) is heard. **No Match** - If the codes do not match, the old Security Code is saved and the Error Tone (alternating high-low tones) is heard twice. You will then hear the Function Code Menu Tone (one medium-pitched tone).
4	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

ALD3 Reset

10.20 The Telco user can reset an ALD3 channel from a remote location. After the reset function is executed, the ALD3 will place a channel back in service (if necessary) and hang up. This process takes approximately 4 seconds.

10.21 The following procedure describes how to reset an ALD3 channel:

ALD3 Reset Function

Step	Action	System Response
1	Enter *6 for the ALD3 Reset Function.	Data Prompt Tone (two low-pitched tones).
2	Enter * (star) to reset the ALD3 or Enter # (pound sign) to abort the Reset function.	**Reset** - The ALD3 will immediately hang up and perform hardware reset on itself. You can access the ALD3 again by dialing the dedicated line interface. **Abort** - Function Code Menu Tone (one medium-pitched tone) is heard. Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed. **Invalid Entry** — not * or #. Error Tone (alternating high-low tones) is heard, then the Data Prompt Tone (two low-pitched tones) is heard. **Note:** After five incorrect entries, the ALD3 will hang up.

Exit ALD3 - Access Concentrator

10.22 The Remote Record Unit (ALD3) can be accessed in two ways, directly through a POTS line or through a Concentrator (ALD4) circuit (see Figure 1).

10.23 One Concentrator circuit has the capability of Interfacing up to eight ALD3 circuit packs which can interface up to 64 announcement channels. The Concentrator circuit minimizes the number of POTS lines from eight (for eight ALD3 circuit packs) to one.

10.24 If the ALD3 was accessed through a Concentrator (ALD4) circuit, the Telco user will have the capability to exit the ALD3 and return back to the Concentrator circuit. The user will then be able to access a different ALD3 or group of announcement channels. This gives the Telco user the capability to remotely access up to sixty-four announcement channels without hanging up the POTS line.

10.25 If the ALD3 was accessed directly through the POTS line, an Error Tone is heard when this function is selected.

10.26 To exit the ALD3 and access the Concentrator, select Function Code *7. Once *7 has been entered, the ALD3 will prompt the user to enter a * (star) to execute the function by generating a Data Prompt Tone. When the user enters the * (star), the ALD3 will hang up and the Initial Access Tone (IAT4) from the Concentrator is heard. At that time a group number can be entered to gain access to different ALD3.

10.27 Entering a # (pound sign) will abort the function and a Function Menu Tone is heard.

10.28 The following procedure describes how to exit the ALD3 and Access the Concentrator.

Exit ALD3 — Access Concentrator Function

Step	Action	System Response
1	Enter *7 for the Exit ALD3 - Access Concentrator Function.	Data Prompt Tone (two low-pitched tones).
2	Enter * (star) to exit ALD3 and access Concentrator. or Enter # (pound sign) to abort the Exit ALD3 - Access Concentrator Function.	**RESET** — The ALD3 will immediately hang up and the Initial Access Tone (IAT4) from the Concentrator is heard. **Abort** — Function Code Menu Tone (one medium-pitched tone) is heard. Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed. **Invalid Entry** — not * or #. Error Tone (alternating high-low tones) is heard, then the Data Prompt Tone (two low-pitched tones) is heard. (Re-enter the Channel Number. **Note:** After five incorrect entries, the ALD3 will hang up.

Telco Security Code Assignment

10.29 The Telco user has the capability to change the 8-digit security code through the function code menu. It is advised that Part 13 (Security Codes) is understood before proceeding.

10.30 The Telco security code is assigned by using the Function Code *8. Once *8 has been entered, the ALD3 will prompt the user for the new 8-digit security code by generating a Data Prompt Tone. Each of the eight digits can be a number (Touch Tone) 0 thru 9. Once the eight digits are entered, the ALD3 will prompt the user (Data Prompt Tone) to re-enter the new 8-digit security code. If the two codes are equivalent, the Function Code Menu will be generated. The new security code is placed in nonvolatile memory, and the Telco user will use this code to access the ALD3.

10.31 The following procedure describes how a Telco Security Code is assigned:

Telco Security Code Assignment Function

Step	Action	System Response
1	Enter *8 for the Telco Security Code Assignment Function.	Data Prompt Tone (two low-pitched tones).
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) is heard, then the Data Prompt Tone (two low-pitched tones) is heard. Re-enter the Security Code. **Note:** After five incorrect entries, the ALD3 will hang up.
3	Re-enter the same Security Code. The system will verify the new Security Code entered.	The system will check for a Security Code match. **Match** - Function Code Menu Tone (one medium-pitched tone) is heard. **No Match** - If the codes to not match, the old Security Code is saved and the Error Tone (alternating high-low tones) is heard twice. You will then hear the Function Code Menu Tone (one medium-pitched tone).
4	Select another Function Code or hang up. See Part 10 for the appropriate procedure. **Note:** Telephone users must select a channel before the SIT Select, Record, Playback, or Diagnostic functions can be executed.	The system will now accept a new Function Code.

11. Maintenance

11.01 Since the Remote Record is completely electronic, no routine maintenance is required. An on-board microcomputer routinely diagnoses the circuitry and signal alarms when a hard fault is discovered.

12. Trouble Analysis

12.01

Due to routine diagnosis by the on-board microcomputer, trouble detectors, and analysis, connection to the ALD3 is simplified. Troubles are indicated by system alarms and lighted indicators on the ALD3. Once the trouble area is located, most problems are solved by replacing the circuit pack.

12.02 If the ALD3 does not operate and the ALARM LED does not light, check the fuse in the -48 V battery supply. If the fuse is blown, replace it. If it blows again, replace the circuit pack(s).

12.03 When the ALD3 circuit pack is plugged in, a series of diagnostic tests will be performed. This includes a ROM checksum test and a Tone generator/Touch Tone decoder test. If any of these tests fail, the red ALARM LED on the faceplate will light.

12.04 If the ALARM LED on an ALD3 circuit pack lights after it has been plugged in, press the RESET switch on the faceplate to see if the ALARM occurs again. If the alarm persists, replace the ALD3 circuit pack.

12.05 If the ALD3 does not initiate an off-book condition when accessed, check if there is an alarm and reset the board. Access the board again to see if the alarm occurs again. If the alarm persists, replace the ALD3 circuit pack.

12.06 If the ALD3 does not initiate an off-hook condition when accessed and there is no alarm, check the Tip and Ring connections (pin 1 and pin 26 on connector) and the 48V power connectiosn (pin 49 and pin 50). If proper connection is made, replace the ALD3 circuit pack.

12.07 If the ALD3 is interfaced to a Concentrator circuit (ALD4), does not initiate as off-hook condition when accessed, and there is no alarm; check that the following pins on the ALD3 connector are properly terminated at the Concentrator circuit: pin 39 (ALD2_RD_AC), pin 28 (OS1), pin 3 (OS2) connected to ground, pin 26 (Tip), and pin 1 (Ring).

12.08 If the ALD3 can be accessed, but the user cannot access announcement channel: check if the announcement channel is plugged in, the proper channel was selected with respect to wiring, all wiring connections are properly terminated to the announcement channel, and the 4 position DIP switch was properly set.

12.09 If a Telco user security code cannot be assigned, check that the rotary switch (Figure 5) on the ALD3 is set to five.

12.10 If a Telco user security code is lost or forgotten, then follow the procedure in Part 13 for loading the DEFAULT security code.

12.11 If a commercial user security code is lost or forgotten, it must be reassigned by the Telco user.

12.12 If a commercial user cannot access the ALD3, check if the 4 position DIP switch is in multiuser mode (see Tables E, F and G).

13. Security Code

13.01 The user must have a security code in order to access the ALD3. Security Code entry for both Telco users and Commercial users is described below.

Telco User

13.02 An 8-digit security code must be entered by the Telco user to access the ALD3. If the ALD3 is in Multiuser mode, then the user must enter a star (*) before the 8-digit security code. If the ALD3 is in Single-user mode, then only the 8-digit security code is entered.

Examples: If the assigned security code is 12345678

Enter 12345678 (Single-user mode)

Enter *12345678 (Multiuser mode)

13.03 When the ALD3 is first installed the rotary switch (SW3) will be set to the number 5. At this point, the user is advised to access the unit and assign a new security code (see paragraphs 10.01 through 10.31, *8 function code). Initially the unit can be acessed using the DEFAULT security code 47985621.

13.04 If the unit is installed and does not respond to the default security code, then do the following:

1. Unplug the ALD3 circuit pack
2. Set rotary switch (SW3) to 0
3. Plug unit back into housing

4. Wait approximately 10 seconds
5. Unplug the ALD3 circuit pack
6. Set rotary switch (SW3) to 5
7. Plug unit back into housing
8. Access unit
9. Assign a new security code using the *8 function code.

13.05 The above process will load the DEFAULT security code into the ALD3s non-volatile memory and allow the user to assign a new security code. It is advised never to leave the rotary switch (SW3) in the zero setting. At this setting, the unit will only accept the DEFAULT security code and will not allow the user to reassign a new security code.

Commercial User

13.06 A 6-digit security code, which is assigned by the Telco user, must be entered by the commercial user to access the ALD3. The ALD3 must be in Multiuser mode to accept commercial user access.

Example: If the assigned commercial user security code is 123456

Enter 123456 (Multiuser mode only)

14. Quick Reference Guides

14.01 The following quick reference guides provide the user inputs and system responses necessary to execute 13A/14A Remote Record Unit system functions. Separate quick reference pages are provided for the Telco user and commercial user. Separate copies of these pages should be made and used as a job aid.

AT&T 13A/14A RRU — Telco User's Quick Reference Guide

FUNCTION	USER INPUT	SYSTEM RESPONSE
1. Call RRU	dial number	2 tones (no concentrator)
		OR
		3 tones (concentrator)
(if no concentrator, skip to #3)		
2. Enter group number	n* (n=0,1,2,..., or 7)	2 tones
3. Enter security code	*47985621	Function Menu Tone
4. Select channel	*0	2 tones (Data Prompt)
	n (n=0,1,2,..., or 7)	sequence of wait tones (14A only) Function Menu Tone
5. Proceed to desired function		

PLAYBACK

6a. Select playback function	*2	message plays
		(14A:plays 4 times)
		(13A: plays until stopped)
b. stop playback	#	Function Menu Tone

RECORD

7a. Select record function	*1	2 tones (Data Prompt)
b. Enter message length[1]	n*	sequence of wait tones (13A only) 2 tones (Data Prompt)
c. Record Message	start message	2 tones (Data Prompt)
		(after elapsed time)
		Playback of message
d. Stop Playback	#	Function Menu Tone

DIAGNOSTICS (14A only)

8. Select diagnostic function	*4	2 tones (Data Prompt)
		sequence of wait tones
		Pass: Function Menu Tone
		Fail: Error Tone

[1] The maximum message length is machine dependent. Refer to the appropriate AT&T practice.

RECORD with SIT (14A only)

9a. Select record w/SIT function	*3	2 tones (Data Prompt)
b. Enter SIT code[1]	n* (n=1,2,..., or 32)	2 tones (Data Prompt)
c. Enter message length[2]	n* (n=0,1,..., or 7	2 tones (Data Prompt)
d. Record message	start message	2 tones (Data Prompt)
		(after elapsed time)
		Playback of message
e. Stop playback	#	Function Menu Tone

TELCO SECURITY CODE ASSIGNMENT

10a. Select security code function	*8	2 tones (Data Prompt)
b. Enter 7 digit code	nnnnnnnn (n=0,1,..., or 9)	2 tones (Data Prompt)
c. Re-enter 7 digit code	nnnnnnnn	OK:Function Menu Tone
		FAIL:Error Tone

COMMERCIAL USER SECURITY CODE (CUSC) ASSIGNMENT

11a. Select CUSC function	*5	2 tones (Data Prompt)
b. Enter 7 digit code	xnnnnnz	2 tones (Data Prompt)
	(x=channel number)	
	(n=0,1,..., or 9)	
	(z=0: user changeable)	
c. Re-enter 7 digit code	xnnnnnz	OK:Function Menu Tone
		FAIL:Error Tone

SELECT DIFFERENT RRU GROUP (concentrator only)

12a. Select new RRU group	*7	2 tones (Data Prompt)
	*	3 tones (concentrator)
b. Go to #2		

END SESSION

13. Select reset/hangup function	*6	2 tones (Data Prompt)
	*	hang up and reset
OR		
14. Hangup		hang up

[1] Refer to AT&T Practice #201-519-110, Table J for SIT Codes

[2] The maximum message length is machine dependent. Refer to the appropriate AT&T practice.

AT&T 13A/14A RRU — Commercial User's Quick Reference Guide

FUNCTION	USER INPUT	SYSTEM RESPONSE
1. Call RRU	dial number	2 tones (no concentrator)
		OR
(if no concentrator, skip to #3)		3 tones (concentrator)
2. Enter group number	n* (n=0,1,2..... or 7)	2 tones
3. Enter security code	012345	Function Menu Tone
4. Proceed to desired function		

PLAYBACK

5a. Select playback function	*2	message plays
b. stop playback	#	Function Menu Tone

RECORD

6a. Select record function	*1	2 tones (Data Prompt)
b. Enter message length[1]	n*	sequence of wait tones (13A only) 2 tones (Data Prompt)
c. Record Message	start message	2 tones (Data Prompt) (after elapsed time) Playback of message
d. Stop Playback	#	Function Menu Tone

COMMERCIAL USER SECURITY CODE (CUSC) ASSIGNMENT

7a. Select CUSC function	*5	2 tones (Data Prompt)
b. Enter 6 digit code	xnnnnn (x=channel number) (n=0,1,..... or 9)	2 tones (Data Prompt)
c. Re-enter 7 digit code	xnnnnn	OK:Function Menu Tone FAIL:Error Tone

END SESSION

8. Hangup		hang up

[1] The maximum message length is machine dependent. Refer to the appropriate AT&T practice.