

MODEL ARP-32
Audio Routing Panel

Up to and including Version 0.0.1



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Factory Service Department
Bosch Security Systems, Inc.
8601 East Cornhusker Hwy.
Lincoln, NE 68507 U.S.A.
Attn: Service

This package should include the following:

Part Number	Description	Qty
90107849-000	ARP-32, Lever Key (amber lens)	1
90107849-001	ARP-32, Pushbutton Key (amber lens)	
90107849-002	ARP-32, Lever Key (purple and amber lens)	
90107849-003	ARP-32, Pushbutton Key (purple amber lens)	
532026-000	Power Supply	1
8800102668	Power Cord	1
93507849-000	ARP-32 User Manual	1
38110-387	Warranty Card	1

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Introduction

This manual describes the installation, programming, and operating procedures for the RTS Model ARP-32 Audio Routing Panel. The ARP-32 provides the user with the ability to assign one of up to 16 crosspoints and/or up to 16 different crosspoints. Through the use of up to three (3) expansion panels, allowing for a total of 64 input keys and 63 output keys, in addition to the scroll key.

The sum total of ARPs and LCP-102s cannot exceed 15 in a system. The ARP-32 works with ADAM intercom matrix system. The ARP-32's key assignments and setup page assignments are stored by the ADAM MCII-e controller, and downloaded to the panel when it powers up. Changes made at the ARP-32 are automatically saved by the MCII-e. Changes can also be made using AZedit. ARP firmware version 0.0.1 and later allows configuration of crosspoint connections.

Features

- Firmware Requirements
 - ARP-32 version 0.0.1 or later
 - ADAM MCII-e version 1.4.0 or later
 - AZedit version 3.2 or later
- Single key activation to display audio paths that are forced to or from a particular port, as well as any crosspoint inhibits. By pressing one input key and one output key, the user can toggle the force status of a single crosspoint.
- Uses AZedit's Crosspoint screen as a graphical interface for the user to force and inhibit configured ports.
- The ARP-32 supports up to a maximum of three expansion panels, allowing a total of 64 input keys and 63 output keys, in addition to a scroll key.

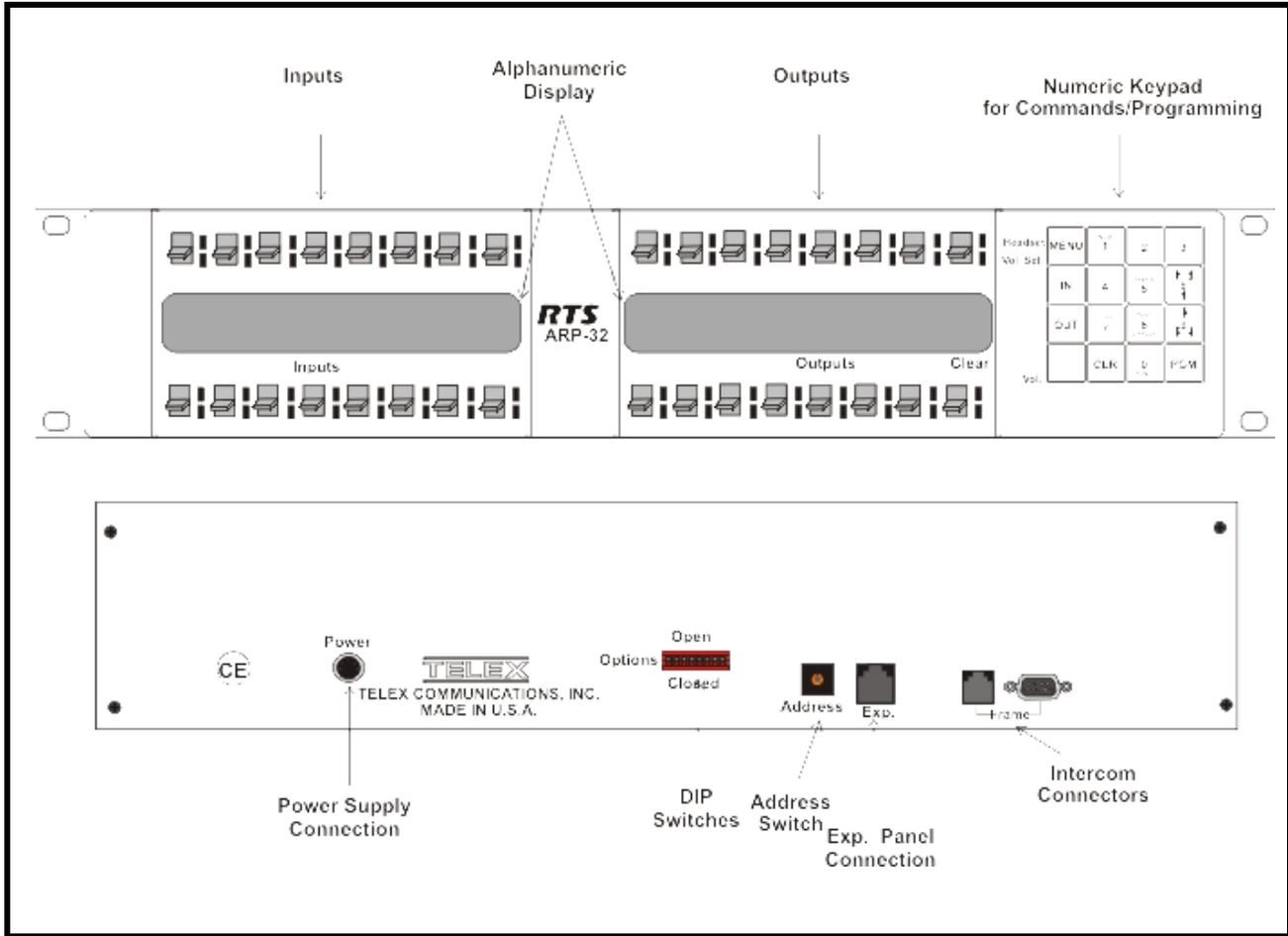


FIGURE 1. ARP-32 Reference View

Specifications

Matrix Connections

DE-9S Female

RJ12 Female

Power Requirements

100-240 VAC, 50/60 Hz, 1A

Environmental

Operating Temperature

0° C to 50° C

Storage Temperature

-20° C to 75° C

Humidity (Operating and Storage)

0%-95%, non-condensing

Dimensions

3.44" (88mm) high

19" (483mm) wide

3.5" (89mm) deep

Weight

5.5lbs (2.5kg)

Finish

Thermoplastic front panel, aluminum case and rear panel, light gray finish

Specifications subject to change without notice.

Configuration and Operation

Address Configuration

Address and Dip Switch Configuration is accomplished via the 16-position rotary switch (Address) and the 8-position DIP switch, both located on the rear of the ARP-32. See Figure 1 on page 4 for the location of both switches.

Setting Address

A 16-position rotary switch is used to select the polling ID. Valid IDs are 1-15. (Note, letters A through F on the rotary switch represent IDs 10 through 15.) There can be at most one ARP-32 or LCP-102 at any given ID. Use a small flat blade screw driver to rotate the switch to the desired setting.

Panel Options

The 8-position DIP switch is used to set options as follows

POSITION	DEFINITION
8	Normally OPEN, when CLOSED forces boot download mode.
7	Reserved for diagnostics, must be OPEN.
6	Unused, should be left OPEN
5	Unused, should be left OPEN
4	Disable keypad access, OPEN
3	When CLOSED disables screen saver
2	Unused, should be left OPEN
1	Unused, should be left OPEN

Connections

The ARP-32 connects to the UIO-256/PAP port, J3 on an ADAM system. The baud rate, as with all UIO-256, PAP, and LCP-102 devices, can be either 9600 baud or 76.8 K baud.

A cable must be made to connect the ARP-32 to the system.

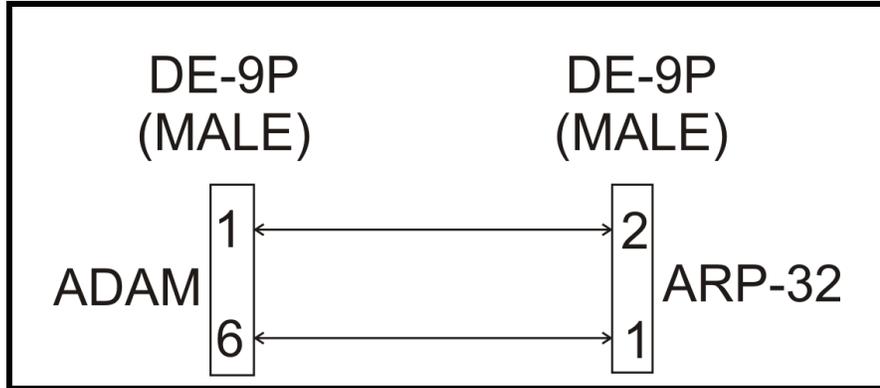


FIGURE 2. ARP-32 D-Sub Cable Diagram

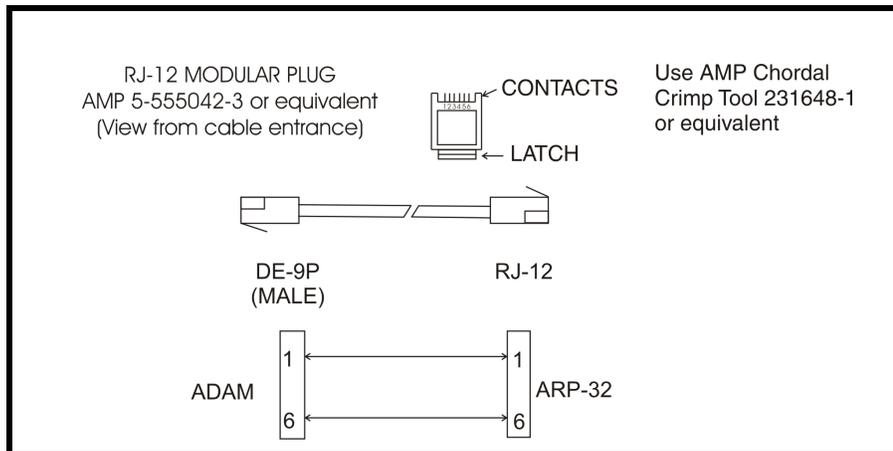


FIGURE 3. ARP-32 RJ12 Cable Diagram

Key Configuration

The ARP-32's key assignments and setup page assignments are stored by the ADAM MCII-e controller, and downloaded to the panel when it powers up. Changes made at the ARP-32 are automatically saved by the MCII-e. Changes can also be made using AZedit.

Operation

The ARP-32 Audio Routing Panel is used to establish audio paths by forcing crosspoints. The ARP-32 connects to J3 of the XCP-ADAM-MC breakout panel, along with other PAPs, LCP-102s, and UIO-256 devices.

The ARP-32 hardware consists of 32 keys, physically separated into two groups (see Figure 1, “ARP-32 Reference View,” on page 4). The keys on the left side of the ARP-32 panel are configured with input ports, while the keys on the right side of the panel are configured with output ports. The optional expansion panel doubles the number of input and output ports.

NOTE: If the intercom is configured to have separate input and output alphas, the input alphas are shown for the keys on the left side of the panel and the output alphas are shown on the right.

Each button can have an assignment (a port number for an input port, and a port number for an output port). The ARP-32 displays the alphas for these assignments.

By pressing a single key, the user can view the audio paths forced between particular ports, as well as any crosspoint inhibits that may be configured. By pressing an input key and an output key, you can toggle the force status of a single crosspoint.

The right-most output key on the lower row, the scroll key, is similar to a standard keypanel’s call waiting window. The keypad can be used to scroll through a list of available ports and assign them to keys. You can also change the setup pages assigned to the ARP-32 panel from the keypad.

Assign Key Assignments

To **assign key assignments on the ARP-32**, do the following:

1. Using the scroll up or scroll down keys, scroll to **the port** you want to assign to a key.
2. Press **Copy** (keypad number 7).
3. Press the **key** you want to assign the port.

Clear Key Assignments

To **clear key assignments**, do the following:

1. Verify the **scroll window** is clear.
2. Press **Copy** (keypad number 7).
This copies the blank assignment.
3. Press the **key assignment** you want to delete.
The blank assignment is assigned to the key.

Viewing Audio Paths

To **view audio paths**, do the following:

- > On the front panel of the ARP-32, press any **input key**.
The outputs associated which the input is forced or inhibited are displayed.
 - If the input is forced to at least one output, the key’s LED turns red. Otherwise, it turns green.
 - For each output key, if the input is forced to that output, the output key’s LED turns red. If the input is inhibited to that output, the output key’s LED flashes green.
 - If there is a single output to which that input is forced, and which does not appear on any key assignment, then the assignment is displayed in the scroll window.
 - If there are multiple outputs to which the output is forced, which do not appear on any key assignments, then the scroll window displays *Many*. The scroll-up (keypad number 6) and scroll down (keypad number 9) can be used to scroll through the list of outputs. Once the input key is released, the scroll window is cleared.

NOTE: Similarly, pressing a single output key displays which inputs are forced or inhibited to that output.

Changing Audio Paths

To **change an audio path**, do the following:

1. Press and hold an **input key**.
2. Tap an **output key** assigned to a different port.
If the crosspoint is not already forced, the crosspoint becomes forced between to the two points.

NOTE: The scroll key can also be used to force and unforce crosspoints. However, it cannot be used to view the audio paths. When using the scroll key to force/unforce, a crosspoint can be used as an input or an output key.

If a crosspoint (or its reciprocal) is inhibited, attempting to force or unforce the crosspoint has no effect. The ARP-32 cannot change the crosspoint until the inhibit status is changed via AZedit.

A crosspoint cannot be forced or unforced if either the input or output port is a trunk port. If you try to force a crosspoint on a trunked port, the port's LED turns red briefly, and then will turn OFF again.

Scrolling

In normal scroll mode, the scroll up (keypad number 6) and the scroll down (keypad number 9) can be used to display a list of available ports. The only ports displayed are those for which the LCP-102 is scroll enabled via AZedit.

To **normal scroll using the ARP-32**, do the following:

1. Using the scroll up (keypad number 6) or scroll down (keypad number 9) key, scroll to **the port** you want to assign to a key.
2. Press **Copy** (keypad number 7).
3. Press the **key** you want to assign the port.

Prefix Scroll

Prefix scrolling allows you to scroll through the matrix ports in multiples of 100. This allows you to quickly get to higher ports you want to use.

To **prefix scroll using the ARP-32**, do the following:

1. Press the **Prefix key** (keypad number 5).
Prefix Scroll mode is enabled.
2. Using the  , scroll to the **closest multiple of 100** to the desired port you want (for example, you want port 98, prefix scroll to 100).
3. Press **PGM**.
The scroll keys revert to individual ports.
4. Using the  , scroll to the **individual port** you want.

Clear the Scroll Window

To clear the scroll window, do the following:

- > Tap the **scroll key up**.
The scroll window clears.

Keypad Operation

In addition to the scrolling operations the following key sequences can be performed.

SEQUENCE	DESCRIPTION
NUM-##-#-PGM-key	Program the specified key with the specified port number. The port number can be 1, 2, or 3 digits.
COPY-key	Copy the scroll key's assignment to the specified key.
FUNC-COPY-key1-key2	Copy the first key's assignment to the second key.
PAGE-#-PGM-key	Change the setup page assigned to a group of 16 keys. For each physical panel (main or expansion), one setup page is assigned to the input keys, and one setup page is assigned to the output keys. (The input setup pages are independent of the output setup pages.) The intercom supports a total of 8 input pages and 8 output pages.
FUNC-DISP-1	Display the panel's polling ID on the scroll key.
FUNC-DISP-0	Enter test mode. This can be used to verify key, LED, and keypad operation. Press CLR to exit test mode.

AZedit and the ARP-32

You can also use AZedit to configure the key assignments on the ARP-32.

Assign Key Assignments

To **assign key assignments** on the ARP-32 using AZedit, do the following:

1. From the System Menu, select **ARP-32 Assignments**.
The ARP-32s page appears.
2. From the ARP-32 port drop down menu, select the port you want to assign key assignments.
You can also use the ARP-32 port alpha drop-down menu to select the port.

NOTE: You can only assign point-to-point assignments.

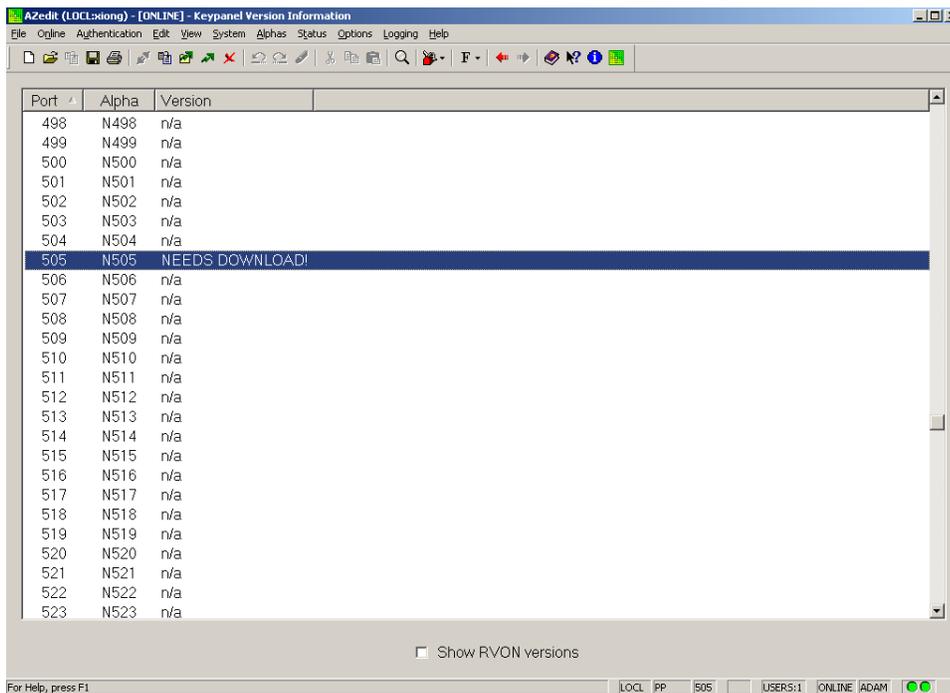
3. There are 3 three ways to assign ports to the ARP-32 (in either the input or output assignments):
 - Manually enter the port number (N001, N002, etc.) or port alpha.
 - Right-click and use Change Assignment.
 - Use the Assignment Grid.

Downloading Firmware to the ARP-32

NOTE: The ARP-32 firmware cannot be downloaded when the panel is operating as an ARP panel.

To **download firmware to an ARP-32**, do the following:

1. Power **OFF** the panel.
2. **Disconnect the panel** from the intercom.
3. **Connect the panel** to a spare keypanel port.
4. Change the **polling ID** to match the keypanel port (if connected to an AIO-16 in individual driver mode, it is sufficient to verify the polling ID is in the 1-8 range).
5. Set DIP Switch 8 to **CLOSED**.
6. Power **ON** the panel.
The panel enters boot downloader mode and displays “This panel needs a firmware download!” in the lower left window.
7. Open **AZedit**.
8. From the Status menu, select **Software Versions**.
The Software Versions submenu appears.
9. From the Software Versions submenu, select **Keypanels**.
The Keypanel Version Information screen appears. In the Version field, NEEDS DOWNLOAD will display for the ARP-32.



10. Right-click the **port** to which the ARP-32 is connected.
A popup menu appears.
11. From the popup menu, select **Download Firmware**.
The Firmware Download window appears.
12. Using the browse feature, browse to the **file to be downloaded** (for example, *ARP32.hex*).

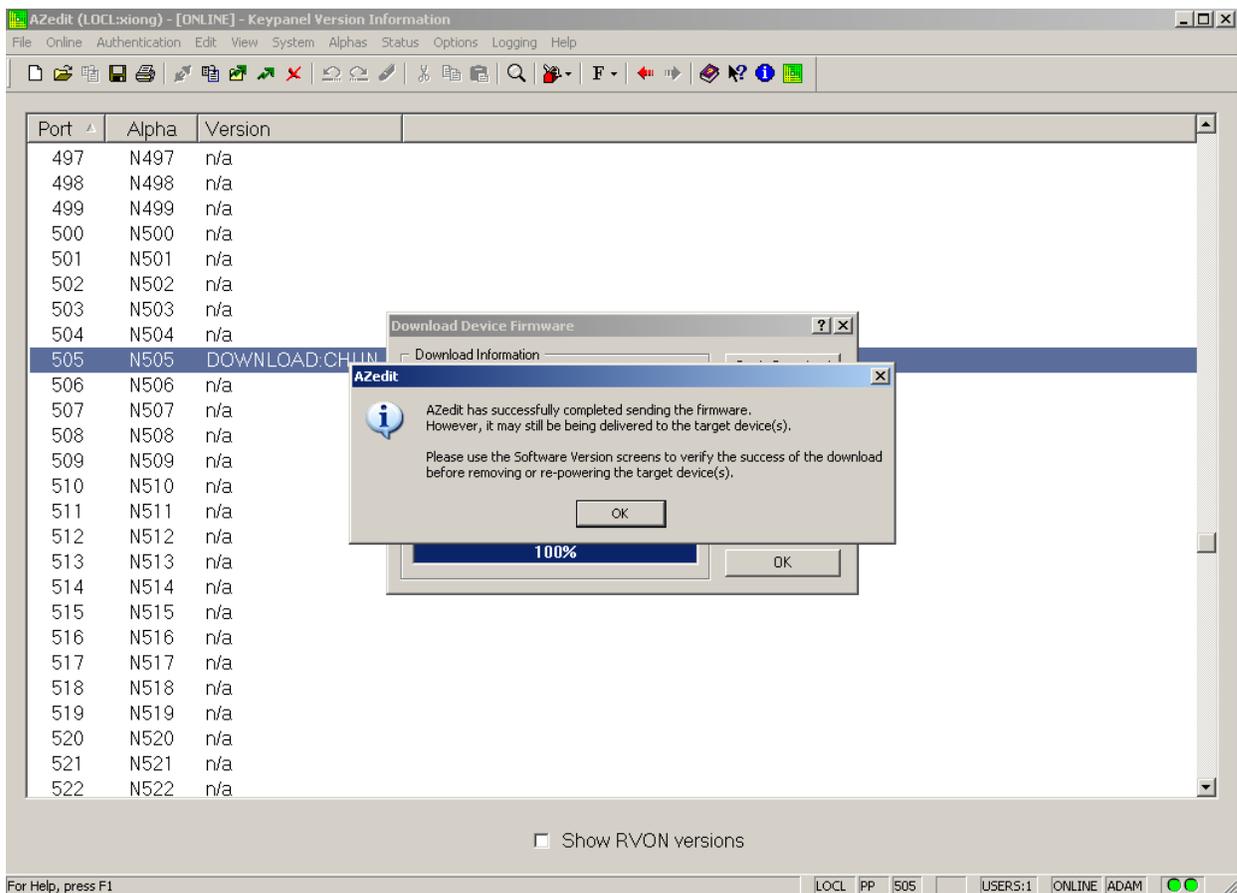
13. Click **Open**.

The Download Device Firmware window appears.



14. Click **Begin Download**.

The download begins. Once the download is complete, a success message appears.



15. Click **OK**.
The ARP-32 firmware download is complete. This may take a few minutes to occur.
16. Verify the **version upgrade** in the Keypanel Version Information window is correct.
17. Power **OFF** the panel.
18. Set DIP Switch 8 to **OPEN**.
19. Change the **polling ID** back to the proper ARP-32 ID.
20. **Disconnect the panel** from the spare keypanel port.
21. **Reconnect the panel** to the PAP/LCP/UIO port.
22. **Repower** the panel.

The MENU key provides access to two sub-menus which display various functions, the **Display** menu and the **Service** menu.

Display

To access the **Display** menu via the front panel, do the following:

1. On the ARP-32 keypad, press **MENU**.
Menu mode opens and Display appears.
2. Press **PGM**.
Item # appears in the right most display.
3. Use   to scroll the **Display menu options** (described below).

Item #

The **Item #** menu item changes the display so item number are shown instead of alphas. The display reverts to the standard alphas after 15 seconds, or when the CLR key is pressed.

Panel ID

The **Panel ID** menu item displays the polling ID of the ARP-32 (in the range 1 through 15).

Setup Pages

Use the Setup Pages menu item to display different configuration pages. For example, to display expansion panel 2 input configuration, select *X2/Inp*.

Menu options include: *Mn/Inp:1, Mn/Outp:1, X1/Inp, X1/Outp, X2/Inp, X2/Outp, X3/Inp, X3/Outp*.

Version

The **Version** menu item displays the version currently running on the ARP-32.

Service

To access the **Service menu via the front panel**, do the following:

1. On the ARP-32 keypad, press **MENU**.
Menu mode opens and Display appears.
2. Using the keypad, press either   to scroll to **Service**.
3. Press **PGM**.
Baud appears in the right most display.
4. Use   to scroll the **Service menu options** (described below).

Baud Rate

Use the **Baud Rate** menu item to set the baud rate at which audio is transmitted.

Menu options include: *auto-baud, 9600 baud, 76.8K bd.*

Display Dim

Use the **Display Dim** menu item to set the brightness of the fluorescent display. This menu item also allows you to activate the screen saver (Scr Saver).

Menu options include: *Dsp Off, Dim, Normal, Bright, Maximum, and Scr Saver.*

Mod Assign

Use the **Mod Assign** menu item to configure module assignments for expansion panels.

Reset Cfg

Use the **Reset Cfg** menu item to restore panel to default setup.

Save Cfg

Use the **Save Cfg** menu item to save page setup and module assignments. Save Cfg saves page and module setup locally on the ARP-32.

Test Panel

Use the **Test Panel** to put the panel in test mode. Test mode allows you to test the operation of the keys, LEDs, keypad, and fluorescent

Notes

