Audio Perfect™ Tools
User's Manual

Gentner®

Gentner Communications Corporation

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Introduction

Audio Perfect™ Tools is software designed to simplify the setup and operation of Audio Perfect products. Using AP Tools, you will be able to access and control multiple AP units via modem or a direct RS-232 connection.

This manual describes each feature of the AP Tools software and provides detailed instructions on how to use these features to customize your Audio Perfect system.

We recommend that you familiarize yourself with the software by connecting your PC to an AP unit on the bench before attempting to configure or operate a complete AP system.

What's in This Manual

The manual is divided into the following sections:

"Overview," is a basic introduction to AP Tools, including descriptions of the functions of the main toolbar.

"Site Configuration," explains how to establish the AP Tools connection between your PC and the Audio Perfect units.

"Unit Setup," has two main sections. The first section, AP800 unit setup, discusses how to configure preset functions, program GPIO pins, and perform additional setup procedures for AP800 units. The second section, AP10 Unit Setup, explains how to setup and control AP10 units.

"Troubleshooting," provides suggestions for addressing technical problems that may occur during setup and configuration.

The **"Appendices,"** include information on right-click mouse operation, warranty, and licensing for AP Tools.

For any additional information on how to install or operate Audio Perfect Tools software, please contact Gentner Communications Corporation as noted below. We welcome your comments in order to improve our products and serve your needs.

Overview

About Audio Perfect™ Tools

Audio Perfect™ Tools was designed as a graphic user interface which would simplify the configuration and operation of the Audio Perfect family of products. Nearly all of the features available via the front panel controls on the AP800 and AP10 units are programmable via the AP Tools software, including a few that are not otherwise available.

AP Tools is capable of accessing and controlling a G-link local area network (LAN) of up to eight AP800 units and 16 AP10 units per site, using only one serial connection. AP Tools can communicate with AP units locally or remotely via modem, and multiple sites may be accessed from one PC. Once you are familiar with AP Tools, customizing and reconfiguring your AP system will be quick, simple, and easy.

Program Security

AP Tools provides site security. Outside access to AP units and the G-Link LAN is impossible if the appropriate access codes are not provided.

Unit Identification

Each AP unit has unit-specific identification programmed into it at the factory. This unit ID is checked whenever communications between a PC and the unit are initiated—even before a password is requested.

User-Selected Password

Site access is provided by inputting the correct user-selected modem password. The password is set in the AP800 unit(s) by the AP Tools software using a serial command. The password must be validated by the AP Tools software before any other serial access is permitted.

Main Toolbar Functions

Figure 1. Main Toolbar

The main toolbar (above) activates AP Tools' basic functions and commands. The function of each button is described below.

1. Open/Close. This button opens and closes the Site Panel, in which you can view and select one or more existing sites

2. Create Site. Pressing this button will create a new site icon in the Site Panel and open the Site Properties window in which you can name the site and configure site connections.

3. Create AP800. This button adds a new AP800 icon to an existing site and opens the AP800 Unit Properties window in which you can name the unit and configure unit connections.

4. Create AP10. This button adds a new AP10 icon to an existing site and opens the AP10 Unit Properties window in which you can name the unit and configure unit connections.

5. Export Site. This button allows you to export site information to disk for backup and easy retrieval.

6. Import Site. This button allows you to import previously saved site information from disk.

7. Retrieve Configuration. This button queries your site hardware for current configuration settings, allowing you to make changes and reconfigure your site from your PC.

8. Program Site. This button sends new configuration information to your site hardware.

9. Compare Site. This button allows you to compare the current configuration in your AP Tools software with the configuration programmed into your site's hardware.

10. Disconnect. Press this button to disconnect a site or unit in order to make configuration and setting changes off-line.

11. Find New Units. When you press this button, the AP Tools software will query your site hardware for new AP800 or AP10 units not in your current site configuration.

12. Open Properties. Pressing this button opens the Properties window for the item you have selected. The Properties window allows you to rename a site or unit and/or change the connection configuration.

Site Configuration

Upon first run after installation, AP Tools will recognize that no Audio Perfect sites have been created. A query box (below) will appear asking if you would like to create a site. Choose "Yes". This will automatically create a new site for you.

Create a site ? ☒

There are no existing sites. Would you like to create one ?

[Yes]   [No]   [Cancel]
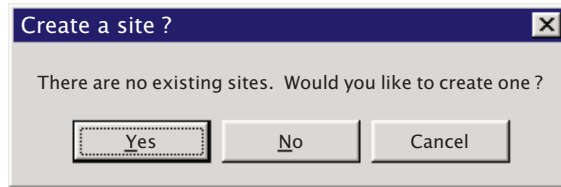
Figure 2. Create-a-Site box

New Site 1

Figure 3. New Site icon

To manually create a site, left-click once on the Open/Close button (1) on the main toolbar to open the Site Panel. The Site Panel will remain empty until you have created a site. Left-click once on the Create Site button (2) to create a new site. A Site Icon (left) will appear in the Site Panel and the Site Properties window (below) will open below the main toolbar. Each time you create a new site, a corresponding Site Icon will appear in the Site Panel, and a new Site Properties window will open.

Site Properties - New Site 1 ☒

Site Properties

1 — ☑ Modem Dialup   Site Name New Site 1
2 —

Site Connection

3 — Phone Number 5551212
4 — Modem Init String AT&F&C1&D2
5 — Modem Password [   ]
6 — COM Port   1 ◉   2 ○   3 ○   4 ○
7 — Baud Rate   9600 ○   19200 ○
                   38400 ◉

8 — AMX Configuration
    Uses AMX ☐   AMX Port Number [   ]

[Close]
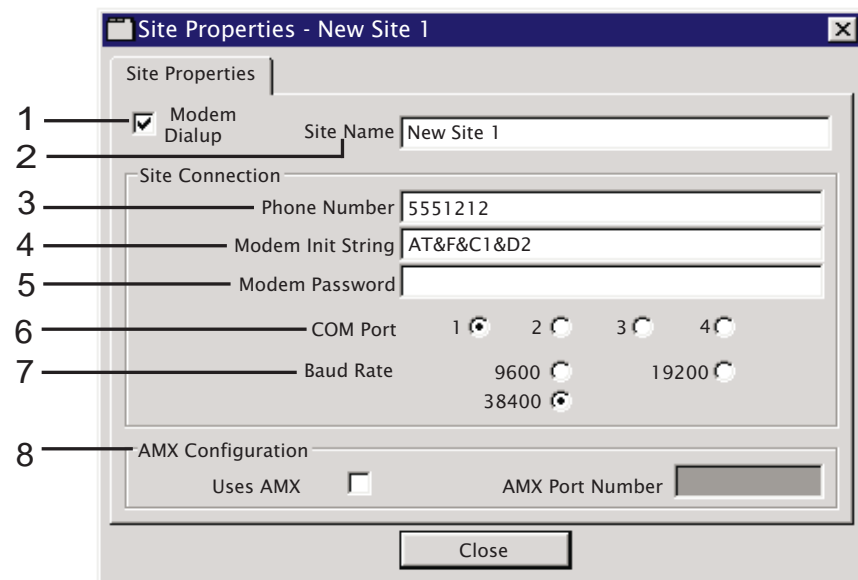
Figure 4. Site Properties window

☆ *SITE PROPERTIES NOTE:*
You may return to the Site Properties window at any time by clicking on the desired Site Icon to select it, then clicking on the Site Properties button [12] on the main toolbar.

Enter Site Properties
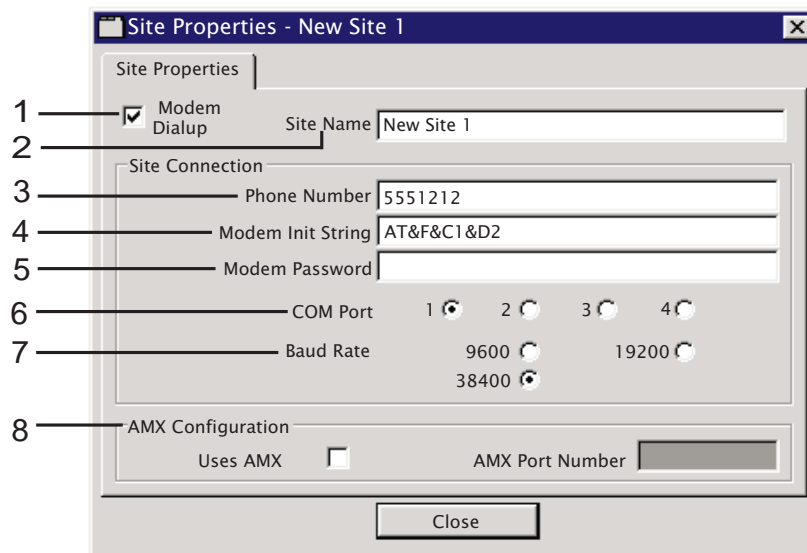
Figure 4a. Site Properties Window

The Site Properties Window (above) is used to tell AP Tools how to communicate to the site hardware from your PC. Each feature will be discussed in the order it is labeled in Figure 4a, above.

1. Modem Dialup. If you will be using a modem to connect to the AP units, click once to place a check mark in the Modem Dialup box. The software will now send the modem initialization string to the serial port and dial the phone number you have provided.

2. Site Name. In the space provided, enter a descriptive name.

3. Phone Number. If a modem will be used, enter the phone number in the provided space. Be sure to indicate area code, "9" for an outside line, etc. You may also use "#" and "✳" notation for extended dialing, as well as "," for two-second pauses between digits. The | and ~ symbols are not valid in the phone-number line.

    Example: 9,1503,5551212#215

4. Modem Init String. You may need to make special initialization-string adjustments or other setup changes to accommodate your two-wire modem in the INIT STRING space provided. The default initialization string should work for most modems; however, it may need to be modified for a few two-wire modem brands or models. See the modem manufacturer's manual for your particular configuration.

Site Properties

Continued
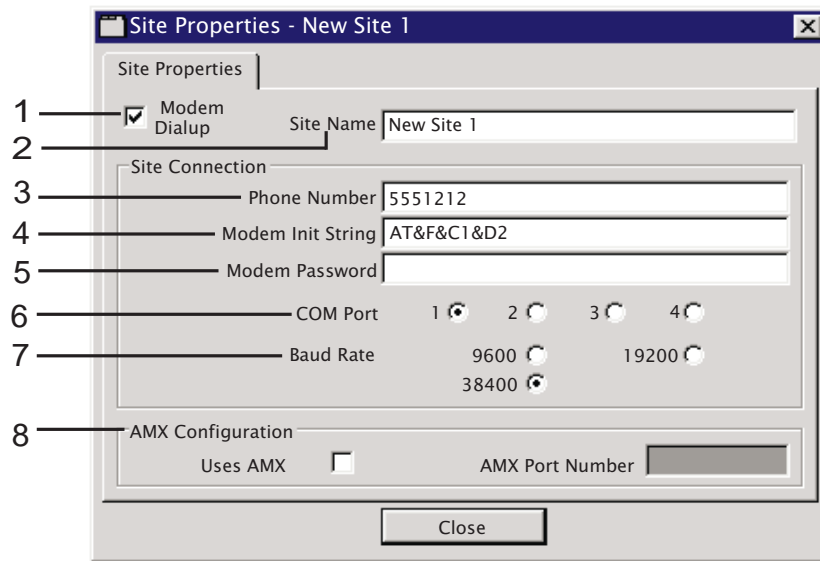
Figure 4b. Site Properties window

5. Modem Password. Enter the password your PC will use to connect to the AP800 unit. This must be the same password entered in the AP800 Unit Properties window (see page 13) which is stored in unit memory. If a new password is not entered, the default password, which is a carriage return (Enter), will remain active.

6. COM Port. Indicate the COM port on your PC intended for communication with the site hardware.

7. Baud Rate. Specify the communication baud (bps) rate for the selected COM port. This should be the same as the baud rate setting on the AP800 unit in the RS-232 submenu of the SYSTEM main menu (see *AP800 Installation and Operations Manual* page 21).

8. AMX Configuration. If you will be using an AMX remote control device in conjunction with the site hardware, left click once on the USES AMX box. A checkmark will appear and the AMX PORT NUMBER box will be enabled. Enter the AMX port number.

When all information has been entered correctly, click CLOSE.

Creating New AP Units

You are now ready to enter unit properties for individual AP units.

To begin, double-click on a Site Icon. AP Tools will attempt to open the COM port and find new units. The Site window (see "**A**", below) will open. If any units are found, AP Tools will attempt to synchronize with the units, which includes obtaining the unit IDs and current settings. If the units do not respond, see Troubleshooting, page 58.
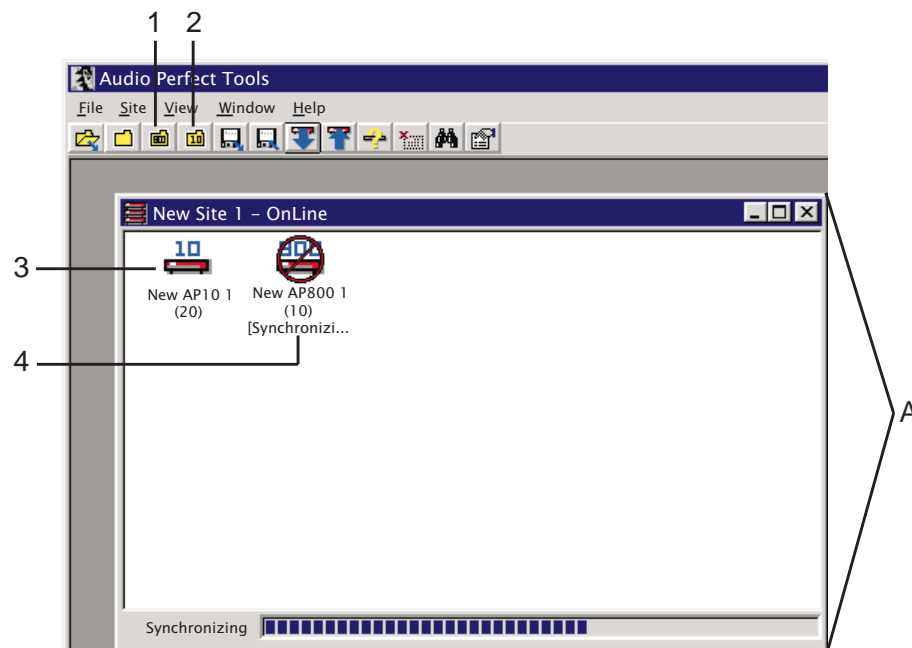
Figure 5. Site window

AP Tools should automatically create icons for any units that are properly connected in the G-Link network.

If AP Tools does not find your units, or should you decide to add additional units at a later date, you may manually create new AP units by clicking on the Create Units buttons on the main toolbar. Button 1, above, will create a new AP800 unit icon (4, above) and button 2 will create a new AP10 icon (3, above). When you manually add a new unit, the unit properties window will open automatically. You will need to enter the unit properties for each unit that is part of the site's local area network (LAN).

Enter AP800 Properties

Figure 6. Main toolbar

1   2   3   4   5   6   7   8   9   10 11 12

New AP800 1
(10)

Figure 7. AP800 unit icon

If AP Tools has automatically created units for you, select a unit by clicking once on the unit icon (left). Then click on the Properties button in the main toolbar (12, above).

AP800 unit properties define how the site hardware will communicate with your PC. Additional features in the unit properties include unit identification information and AP800 front panel configuration. Each feature will be discussed in the order it is labeled in figure 8, below.
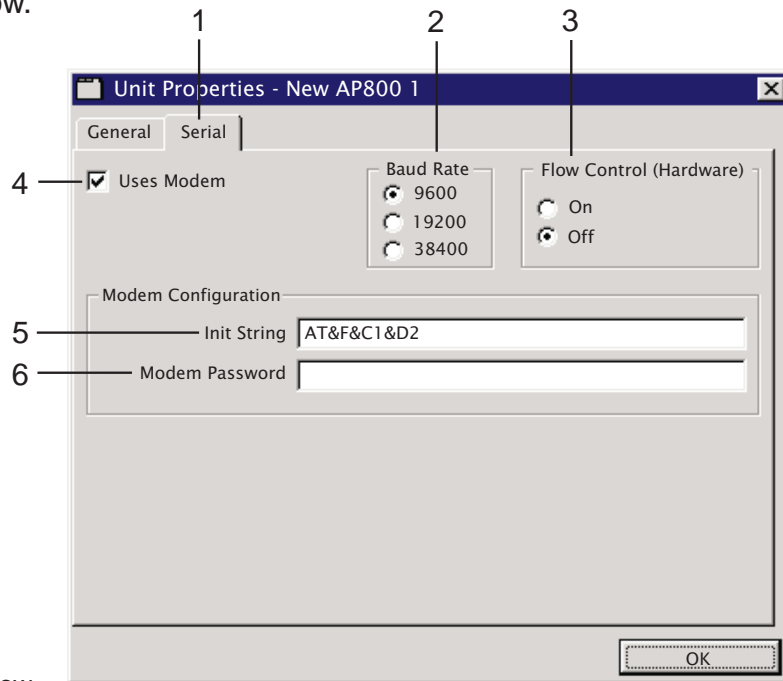
Figure 8. AP800 Unit Properties window (Serial Settings)

1. Serial Tab. AP800 unit properties are separated into two sections: general and serial. One click on the SERIAL tab will cause the serial properties to appear in the unit properties window.

2. Baud Rate. This option allows you to set the baud rate the AP800 unit will use to communicate via the RS-232 serial port on the back panel. The default setting is 9,600 baud (bps).

3. Flow Control. This option allows you to enable or disable the flow control for the AP800 unit. The default setting is OFF.

AP800 Properties

Continued
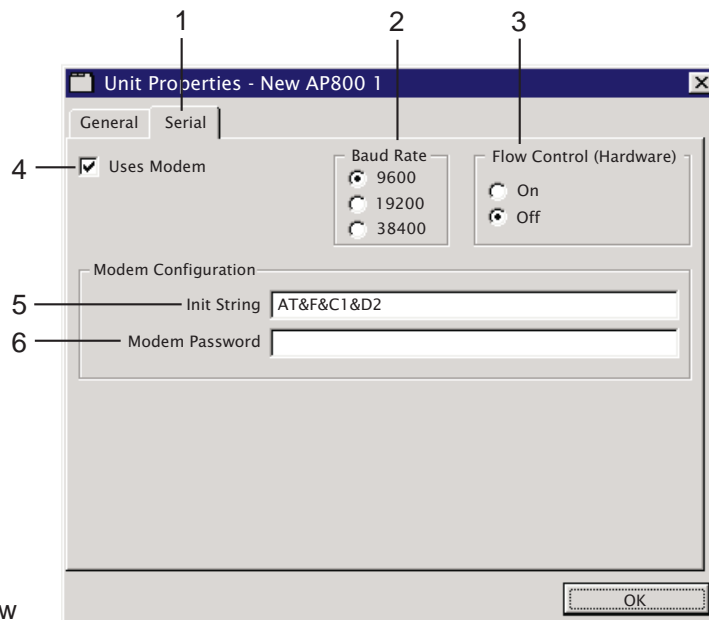
Figure 8a. AP800 Unit Properties window (Serial Settings)

4. Uses Modem. If you will be connecting a modem to the AP800 unit, click once to place a checkmark in the Uses Modem box. The unit will now send the modem initialization string to the serial port and will require a password for serial access. Unchecking the box deactivates modem mode. This allows you to communicate directly via the serial port without a password.

5. Init String. Modify the modem init string (if necessary) to operate with your modem. Refer to your modem manufacturer's documentation to verify the initialization string.

6. Modem Password. Enter the modem password for this unit in the space provided. This password is saved in the AP800 unit memory. Anyone accessing the AP800 via modem will be required to enter the same password before any commands are processed. This password must match the password entered in the Site Properties window (see page 10).

★ *PASSWORD NOTE:*
The default password is a carriage return (Enter). *If necessary, the modem password can be cleared back to the factory default through the front-panel LCD on AP800 units. The CLEAR PASSWORD command is located in the SYSTEM main menu under the RS-232 submenu. A new password can be set **only** via the AP Tools software or serial command.*

★ *INACTIVITY NOTE:*
After five minutes of serial inactivity, the password will be requested before serial activity can continue.

AP800 Properties
Continued

You should now enter the AP800 unit's general properties. Each feature will be discussed in the order it is labeled in figure 9, below.
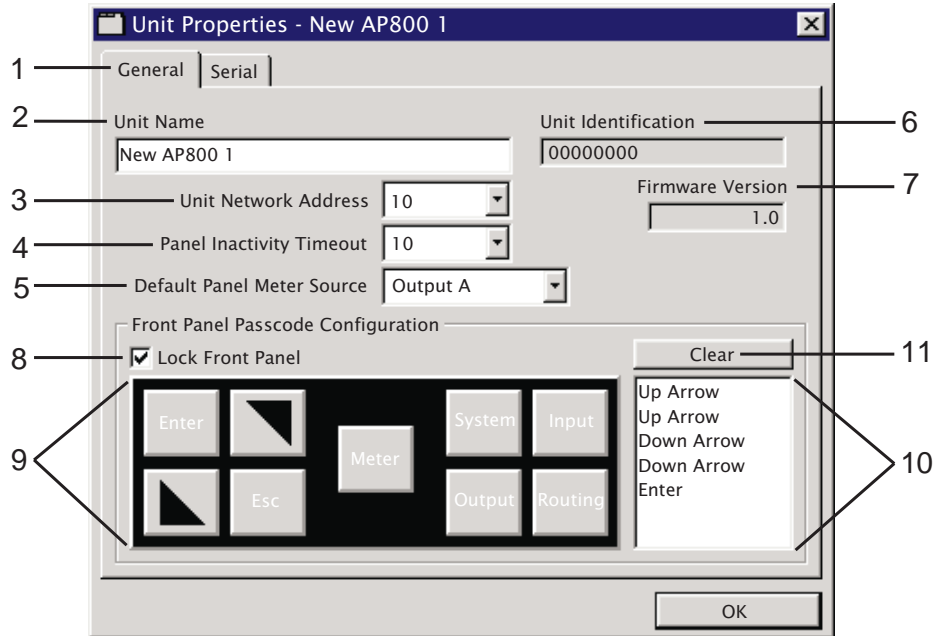
Figure 9. AP800 Unit Properties window
(General Settings)

New AP800 1
(10)

Figure 10. AP800 unit icon

1. General Tab. One click on the GENERAL tab will cause the general properties to appear in the site properties window.

2. Unit Name. Enter a descriptive unit name in the space provided. This name will appear in the first line on the AP800 unit icon (left).

3. Unit Network Address. If necessary, adjust the unit network address (G-Link local area network). This number will appear below the name on the AP800 unit icon (left).

☆ *NETWORK ADDRESS NOTE:*
Each time you create a new unit, the unit network address will automatically increase by one. The only time you should need to make a change manually is if a unit is removed and a new Unit 10 needs to be assigned.

AP800 Properties

Continued
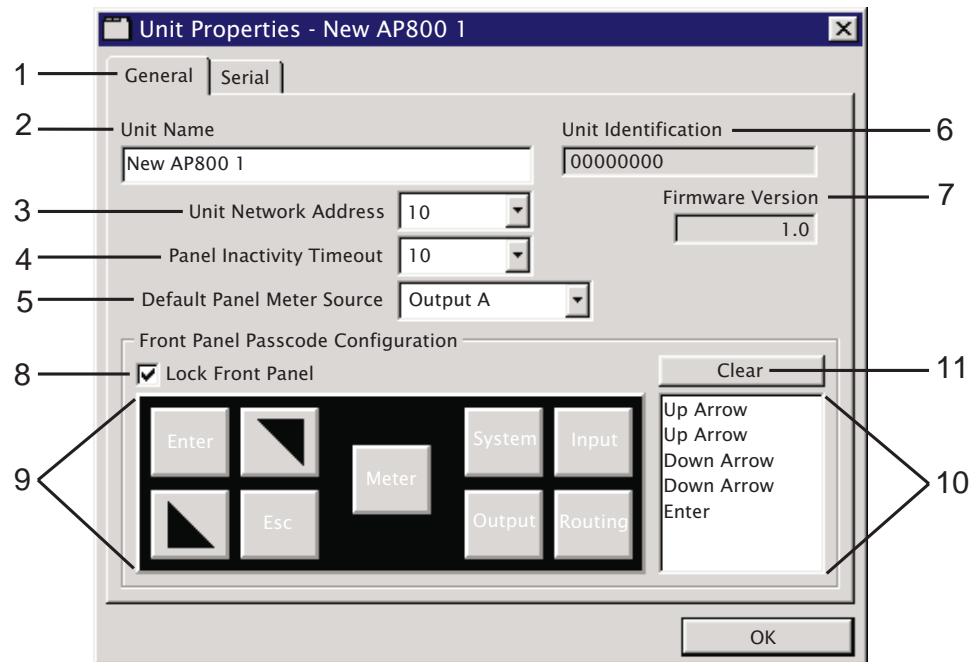
Figure 11. AP800 Unit Properties window
(General Settings)

4. Panel Inactivity Timeout. This feature allows you to choose how long the front panel LCD display will remain inactive before reverting back to the title screen. The inactivity timeout ranges from 1 to 15 minutes or you may choose "Disabled." This feature is useful because it allows you leave the unit inactive for a period of time without automatically exiting the submenu you are in. The timeout period can be set only via AP Tools or other direct serial command.

5. Default Panel Meter Source. The pull down menu to the right of the entry space allows you to scroll through the possible default panel meter sources. The meter values for the source you select will be displayed on the LED bar meter on the front panel of the current AP800 unit.

6. Unit Identification. This is a factory-set unique ID number, which identifies your individual unit. AP Tools will retrieve this number from the AP800 unit upon connection

7. Firmware Version. This box identifies the version of firmware your AP800 unit is using. AP Tools will retrieve the version number from the AP800 unit upon connection.

AP800 Properties

Continued
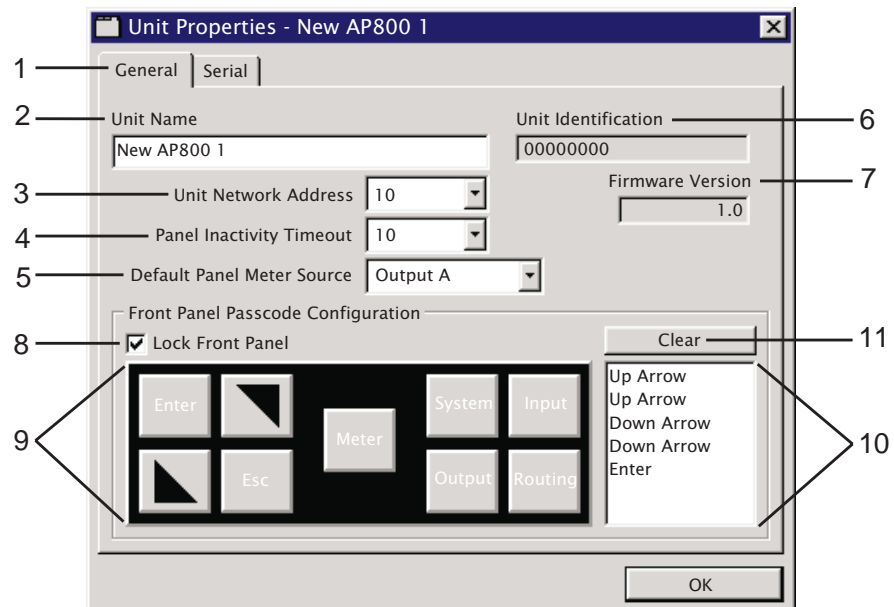
Figure 11a. AP800 Unit Properties window
        (General Settings)

8. Lock Front Panel. Clicking on this box will lock the front panel of the AP800 unit; a checkmark will appear in the box. The only way to unlock the front panel when this feature is active is by entering the correct passcode or by disabling the feature via the AP Tools software. For more information, see the *AP800 Installation and Operations Manual* page 17.

9. Front Panel Passcode Buttons. When the Lock Front Panel box is checked, an image of the AP800 front panel buttons will appear in the Front Panel Passcode Configuration box. Select a new passcode by clicking on the sequence of buttons of your choice. A good way to remember the new passcode would be to create a word using the first letters of the buttons. For example, using ROOMS as the passcode would be the key sequence: routing, output, output, meter, system. The passcode must be *five characters long.* (The default passcode for all boxes is ▲▲▼▼ENTER.)

10. Passcode Box. This box shows the sequence of buttons you have entered.

11. Clear Button. Click once on the CLEAR button if you desire to clear the passcode sequence you have entered.

☆ *PASSCODE NOTE:*
*The front-panel **passcode** is not to be confused with modem **password** which prevents unauthorized access via the RS-232 serial port.*

When all AP800 unit properties have been defined, click OK.

Enter AP10 Properties

Figure 12. Main toolbar

1 2 3 4 5 6 7 8 9 10 11 12

New AP10 1
(20)

Figure 13. AP10 unit icon

If AP Tools has automatically created AP10 units for you, select a unit by clicking once on the unit icon (left). Then click on the Properties button in the main toolbar (12, above).

AP10 unit properties concern unit identification. Each feature will be discussed in the order it is labeled in figure 14, below.
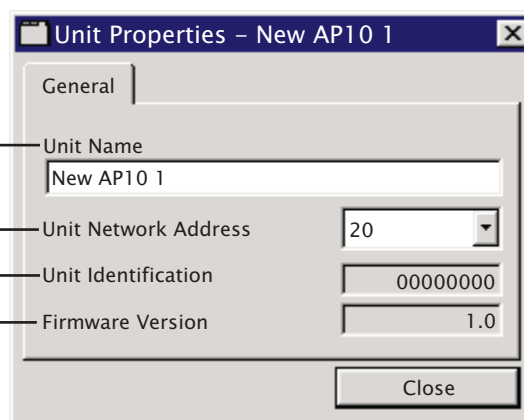
Figure 14. AP10 Unit Properties window
(General Settings)

1. Unit Name. Enter a descriptive unit name in the space provided. This name will appear on the first line on the AP10 unit icon (above left).

2. Unit Network Address. If necessary, adjust the unit network address (G-Link local area network). This number will appear below the name on the AP10 unit icon.

☆ NETWORK ADDRESS NOTE:
Each time you create a new unit, the unit network address will automatically increase by one. The only time you should need to make a change manually is if a unit is removed and a new Unit 20 needs to be assigned.

3. Unit Identification. The Unit Identification number is a factory-set unique ID number, which identifies your individual unit. AP Tools will retrieve this number from the AP10 unit upon connection

4. Firmware Version. The firmware version your AP10 unit is using will appear in the box. AP Tools will retrieve the version number from the AP10 unit upon connection.

Site Configuration is now complete.

Unit Setup

Once site configuration is complete and you have successfully synchronized AP Tools to your hardware, you may begin setting up individual AP units. A different setup window will open for each AP unit. AP800 unit setup will be discussed first on the following pages. AP10 unit setup begins on page 55.

AP800 Unit Setup

New AP800 1
(10)

Figure 15. AP800 Unit icon

To begin AP800 unit setup, double-click on the AP800 unit icon (left). This will open the AP800 main setup window (below).

Due to the large amount of material to be covered, AP800 setup will be discussed in sections. The sections will be addressed in the order they are labeled in Figure 16, below.
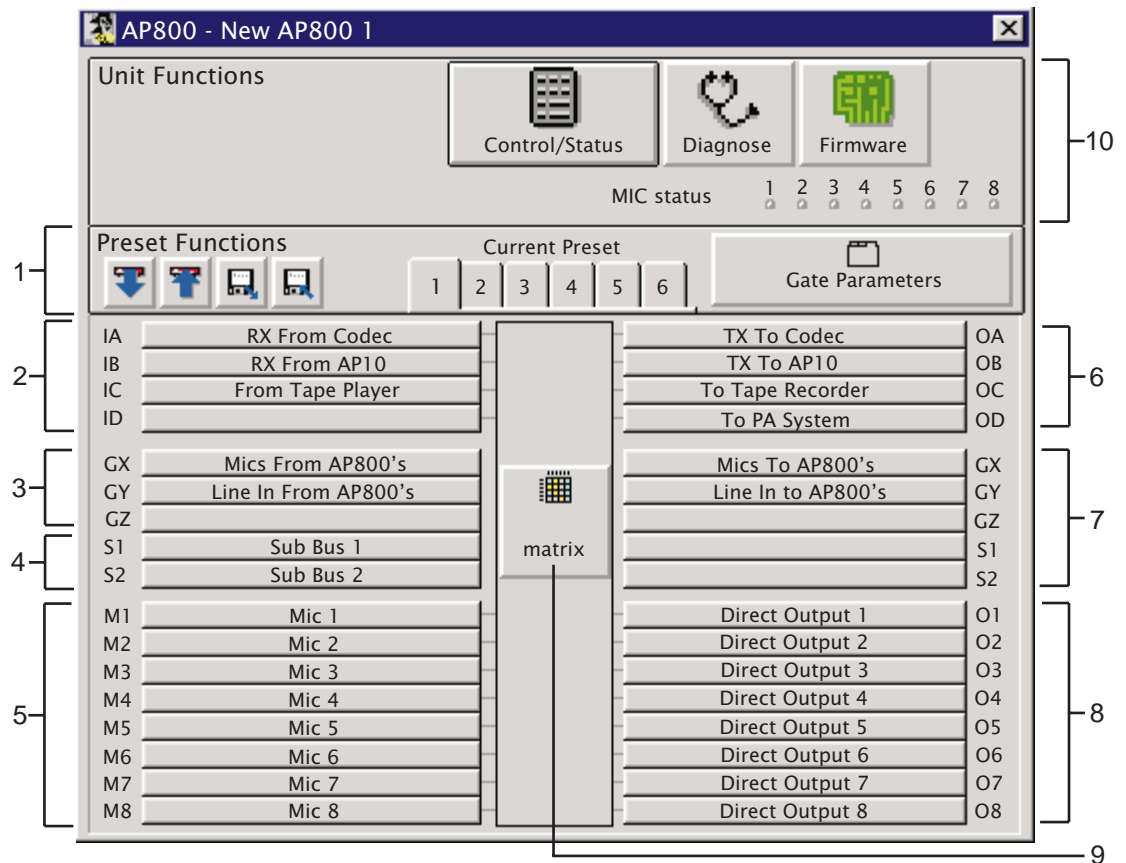
Figure 16. AP800 Main Setup window

AP800 Unit Setup

Continued

□ *Preset Functions*

The Preset Functions section (below) of the AP800 main setup window consists of five buttons and six preset tabs. Each function will be described in the order it is labeled in figure 17, below.
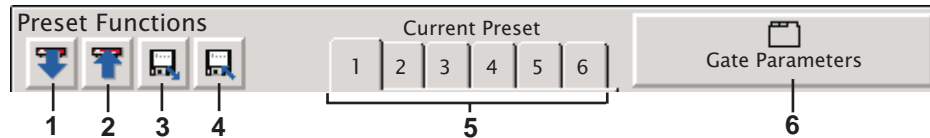
Figure 17. AP800 Preset Functions

1. Retrieve Configuration. When this button is pressed, AP Tools queries the AP800 unit for the configuration settings of the six presets. This allows you to modify the presets based on the current setup programmed into the unit.

2. Program Configuration. This button is used to program the AP800 unit with a new preset configuration, such as one previously saved to disk. Presets may be used for one unit alone or affect the entire G-Link local area network.

3. Open Preset. This button allows you to open a previously saved preset file from disk.

4. Save Preset. This button allows you to save your current preset configuration(s) to disk.

5. Preset Tabs. Each AP800 can be programmed with six presets. To edit a preset, click on the desired preset tab. Changes made to a preset are applied in real time. Saving a preset to disk (4) allows you to return to it later by pressing the Open preset button (3) and selecting the appropriate preset file.

6. Gate Parameters. Clicking this button will open the Gate Parameters window (See Figure 18, next page) for the current preset. Each preset has its own gate parameters.

AP800 Unit Setup
Continued

Preset Functions

1   2   3   4   5   6
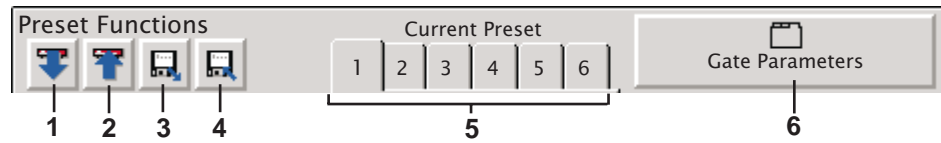
Figure 17a. AP800 Preset Functions

Gate Parameters
Open the Gate Parameters window (below) by pressing the Gate Parameters button in the AP800 main setup window (6, above).

Each feature in the Gate Parameters window will be discussed in the order it is labeled in figure 18, below.
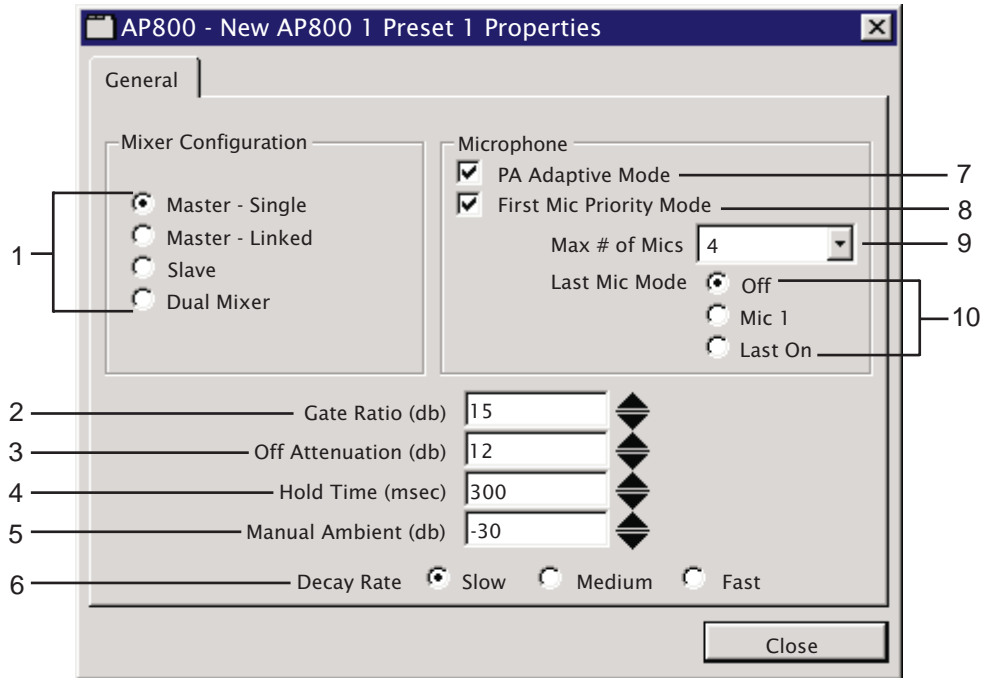
Figure 18. Gate Parameters window

1. Mixer Configuration. This parameter allows you to choose the mixer configuration for the current preset. There are four mixer settings: master-single (default), master-linked, slave, and dual mixer. *Master-single* must be used when only one AP800 will be used in the current preset. *Master-linked* is used when multiple AP units will be used in a preset; however, only one AP800 can be designated as *master-linked*, all other AP800s on the G-Link network must be assigned *slave* status. *Dual-mixer* is used when a single AP800 will be used as two distinct mixers in a preset. Dual-mixer mode cannot be used when there are other AP800 units on the G-Link network within a single system.

AP800 Unit Setup
Continued
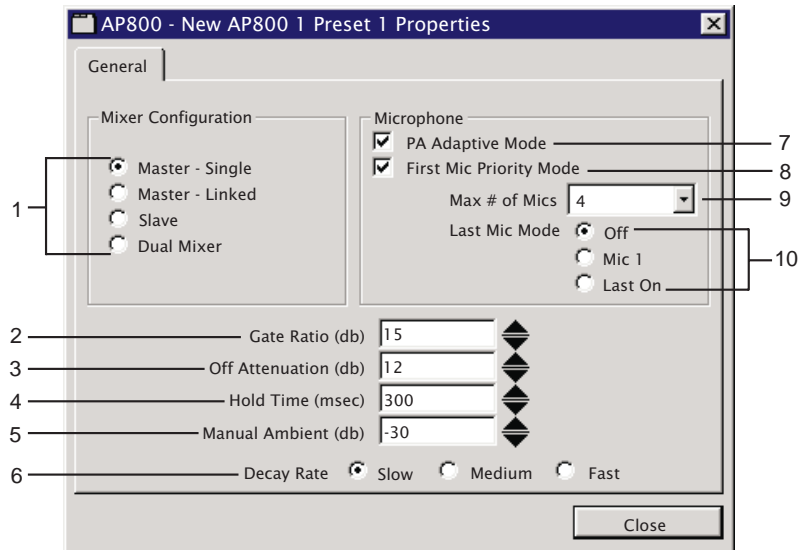
Figure 18a. Gate Parameters window

2. Gate Ratio determines how much louder microphone audio level must be above the ambient level before a mic gates ON. The adjustment range is from 0 to 50 dB (default 15) in 1 dB increments. You may adjust the parameter by clicking on the ▲/▼ buttons to scroll up and down through the dB values. You may also use the number keys to enter a new value, then press TAB to apply the change. If microphones gate on frequently when no one is speaking, increase the gate ratio.

3. Off Attenuation is the amount of level reduction applied to a microphone when it is OFF. The adjustment range is from 0 to 50 dB (default 12) in 1 dB increments. You may adjust the parameter by clicking on the ▲/▼ buttons to scroll up and down through the dB values. You may also use the number keys to enter a new value, then press TAB to apply the change. As more microphones are added, increase the off attenuation toward 50 dB to reduce the amount of echo and reverberation allowed into the system. If set too high, you may be able to hear the microphones gate ON and OFF.

4. Hold Time is the length of time that a microphone remains ON after the microphone audio level drops below the gate ratio. Values range from 100 to 8000 msecs (.1 to 8.0 seconds) in 100 msec increments. You may adjust the parameter by clicking on the ▲/▼ buttons to scroll up and down through the time values. You may also use the number keys to enter a new value, then press TAB to apply the change. Setting this value too low may cause the microphones to gate ON and OFF too frequently during brief pauses of speech; setting it too high may allow too many microphones to be on at the same time.

AP800 Unit Setup

Continued
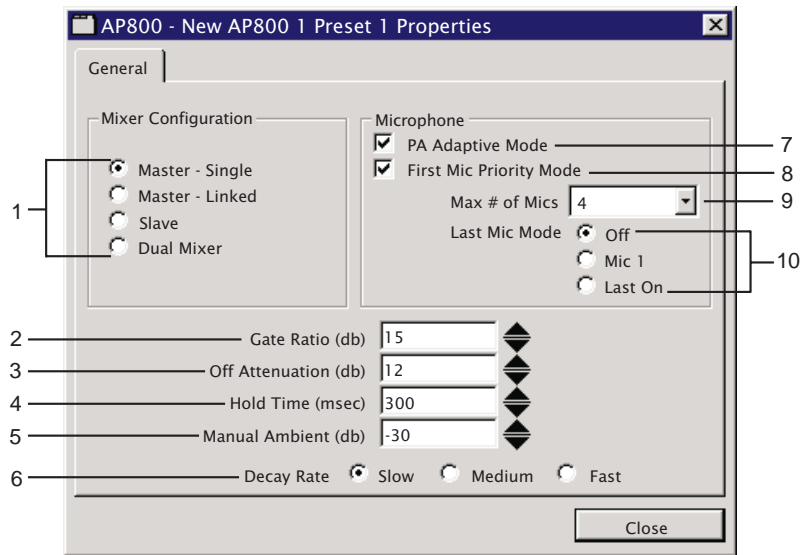
Figure 18b. Gate Parameters window

5. *Manual Ambient.* This setting is relevant only if the adaptive ambient mode is OFF on a microphone channel. Adaptive ambient generally achieves the best results. However, if you need to set the ambient level to a fixed value, turn OFF the adaptive ambient mode on the desired microphone channels (see page 32). Manual ambient is a global setting and will affect equally all mics that are set to adaptive ambient OFF. The adjustment range is from 0 to -70 dB (default -30) in 1 dB increments. You may adjust the parameter by clicking on the ▲/▼ buttons to scroll up and down through the dB values. You may also use the number keys to enter a new value, then press TAB to apply the change. For suggests on finding the ideal manual ambient setting, see the *Audio Perfect™ 800 Installation and Operations Manual*, page 21.

6. *Decay Rate* determines how fast a microphone gates OFF after the hold time expires. There are three decay rate settings: slow, medium, and fast. Click once on the appropriate radial button to change the decay rate. If your room has very low ambient noise, set the value to fast. If you hear a "swoosh" when the microphones decay, set this value to either medium or slow.

7. *PA Adaptive Mode* enables the AP800 to recognize how much loud speaker audio is picked up by the microphones and then use it as the new ambient level. This prevents loud speaker audio from gating on a microphone while still allowing mics to gate on with normal speech. Click once on the box to enable/disable PA Adaptive mode. A checkmark will appear when enabled. The recommended setting is ON.

AP800 Unit Setup
Continued
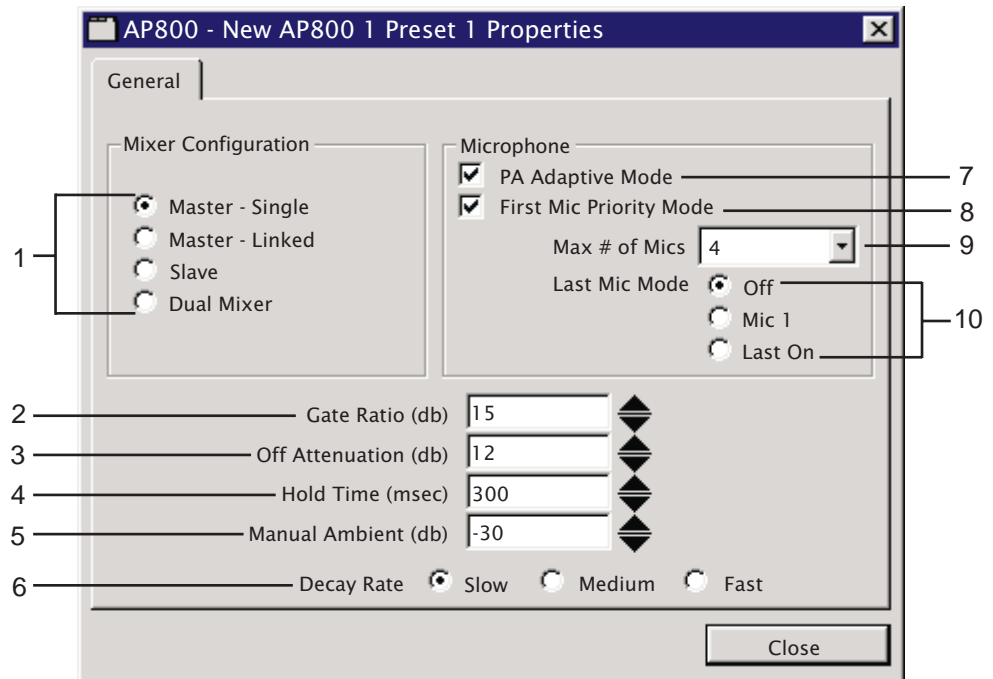
Figure 18c. Gate Parameters window

8. *First Mic Priority Mode.* When enabled, this feature allows only one microphone to gate on when one person is speaking. When disabled, usually two or more microphones gate on when only one person is speaking, reducing audio intelligibility. Click once on the box to enable/disable First Mic Priority mode. A checkmark will appear when enabled. The recommended setting is ON.

9. *Max # of Mics.* This parameter sets the maximum number of microphones that can gate on at any one time. The range is from one to eight microphones or OFF (default four). You may select the number of mics by using the pull down menu, or highlight the value with your mouse and type the desired number (or "o") and press TAB to apply the change.

10. *Last Mic Mode.* There are three modes of last-mic operation: Last On, Mic 1, and Off. Click on the desired radial button to change the setting. *Last On* leaves the last microphone on until another microphone gates on. *Mic 1* causes the AP800 to revert to the mic 1 input when all microphones gate off. *OFF* deactivates last mic mode. The recommended setting is *Last On*.

AP800 Unit Setup

Continued

❏ *Line Inputs*

The Line Inputs section (below) of the AP800 main setup window consists of four buttons. The functions related to these buttons will be discussed in the order they are labeled in figure 19, below.

Figure 19. Line Inputs

1. Inputs A-D. The line level inputs (A-D) are used to connect external equipment to AP800 units such as video CODECs, AP10 units, tape players, VCRs, and other audio devices.

2. Input Button. The label appearing on the input button is a user-defined description. To change the button name or make adjustments to the input properties for the current preset, click once on the desired input button. The Line-In Properties window will open. Each function will be discussed in the order it is labeled in figure 20, below.
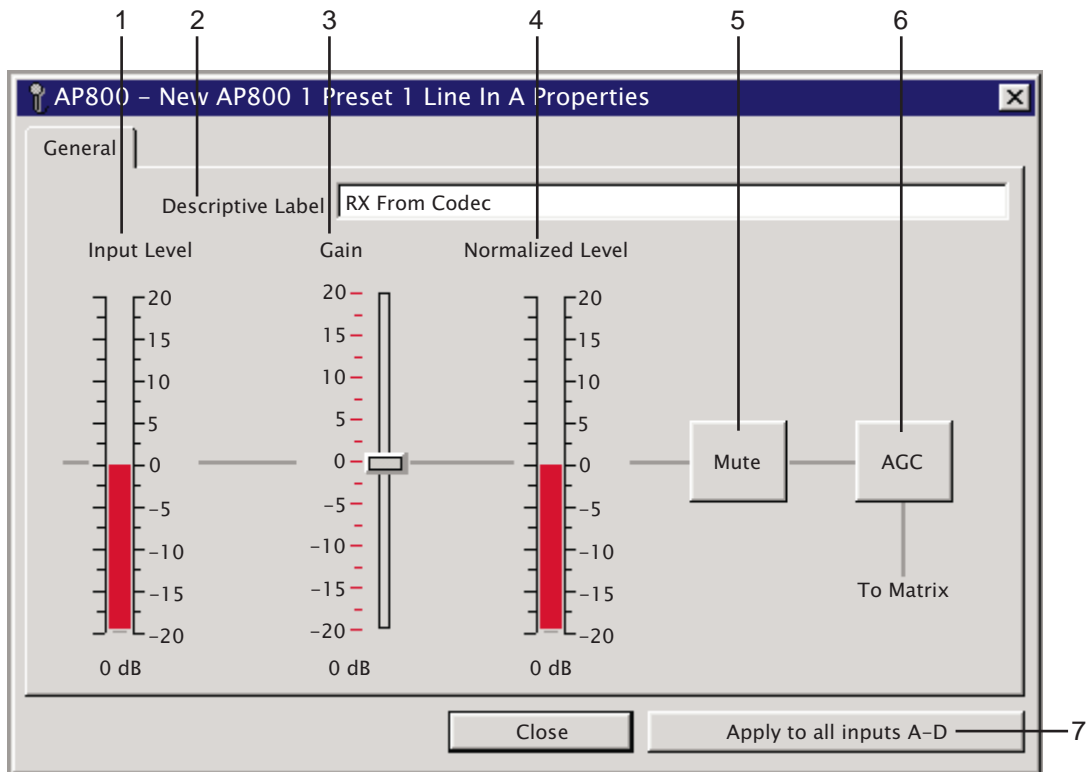
Figure 20. Line-In Properties window

AP800 Unit Setup
Continued
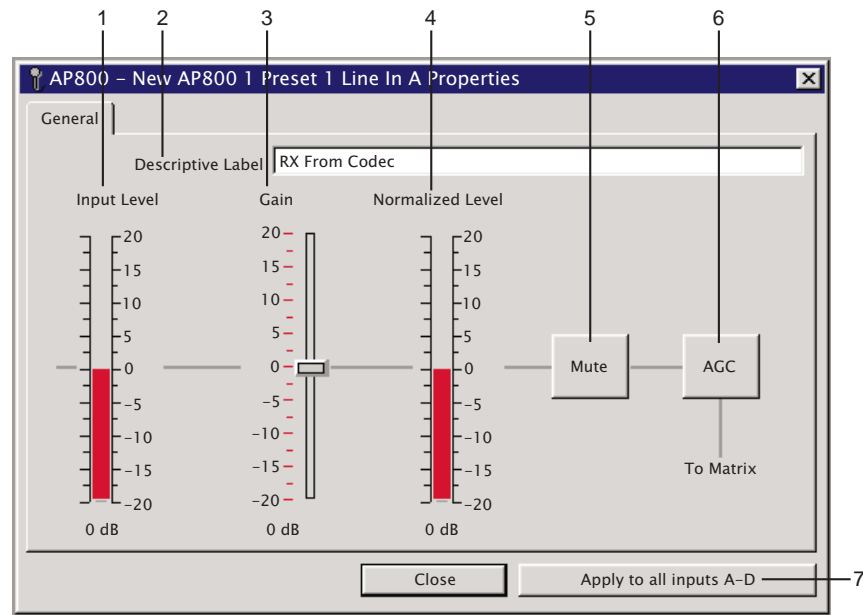
Figure 20a. Line-In Properties window

1. Descriptive Label. You may enter a description for each line input which will appear on the corresponding button in the AP800 main setup window.

2. Input Level. This bar meter displays the input level for the line input. The numeric amount (in dB) appears at the bottom of the bar meter.

3. Gain. This control allows you to adjust the input gain (range -20 dB to 20 dB, default 0) for the line input. To change the gain value, slide the fader control up or down the meter bar. Click anywhere on the bar to increase/decrease the gain by 1 dB increments. The current gain will appear at the bottom of the bar meter.

4. Normalized Level. This bar meter displays the normalized level (post-gain) for the line input.

5. Mute. Click this button to mute or unmute the line input.

6. AGC. Click this button to activate or deactivate the automatic gain control for this input. This feature keeps softer and louder input audio at a consistent receive level. The AGC default is OFF.

7. Apply to all inputs A-D. When all adjustments are made to the current input, you may apply the same changes to all line inputs by clicking this button. When finished, click CLOSE.

AP800 Unit Setup

Continued

□ *G-Link Inputs*
The G-Link Input section (below) of the AP800 main setup window consists of three buttons: X, Y, and Z. Each button corresponds to a G-Link bus. Each bus will be discussed as labeled in figure 21, below.
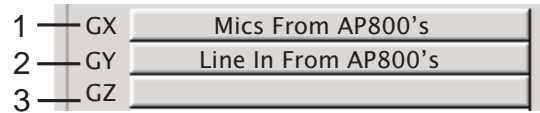
Figure 21. G-Link Inputs

These mix-minus buses allow audio to be routed to any destination on the G-Link network. As inputs, the G-Link buses make audio from other AP800's available to the matrix for routing to outputs on the current AP800 (see page 39).

> **1. X-Bus.** All gated microphones are default routed to this bus. The X-bus is defined as the master microphone mix, and it supports NOM (see page 35).
>
> **2. Y-Bus.** All line-level audio sources such as video CODECs, AP10s, etc. are default routed to this bus. The Y-bus is defined as the line input master mix. This bus does not support NOM.
>
> **3. Z-Bus** is a user-defined auxiliary bus. This bus does not support NOM.

Clicking on any of the G-Link buttons will open the G-Link In Properties window (below). Use this window to assign a new descriptive label to a G-Link Input. This is useful in relation to presets, because it allows you to easily identify the current G-Link routing in the matrix setup (see page 39).
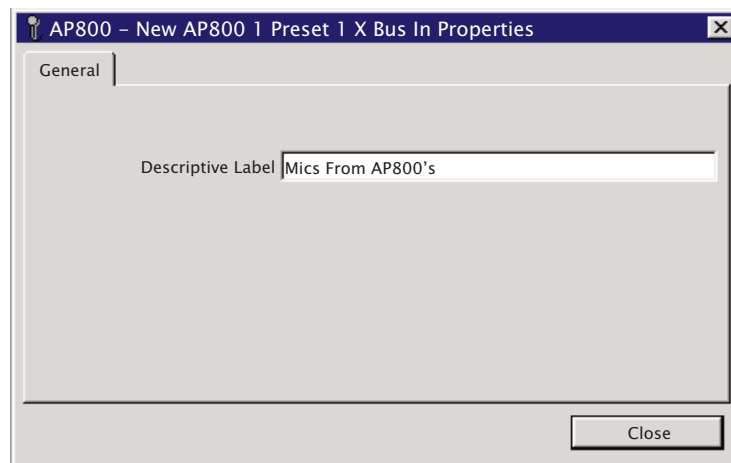
Figure 22. G-Link In Properties window

AP800 Unit Setup

Continued

S1 ☐ Sub Bus 1
S2 ☐ Sub Bus 2

Figure 23. Sub Bus Inputs

☐ *Sub Bus Inputs*

The Sub Bus Input section (left) of the AP800 main setup window consists of two buttons: Sub Bus 1 and Sub Bus 2. Clicking on either of the Sub Bus Input buttons will cause the Sub Bus Input Properties window to open. Each feature is discussed as it is labeled in figure 24, below.
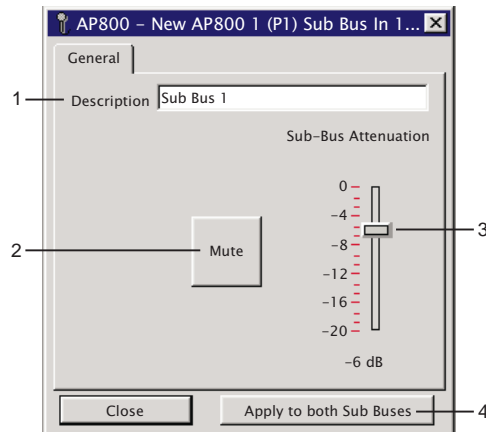
Figure 24. Sub Bus Input Properties window.

The Sub Buses are internal sub-mix buses which allow you to mix and attenuate audio signals before returning them to the matrix for further routing (see page 39). The Sub Bus input consists of the combined signal of the inputs you have routed to the Sub Bus.

1. Descriptive Label. Your descriptive label will appear on the Sub Bus button in the AP800 main setup window. Your description should indicate the audio processing that has taken place for this Sub Bus. For example, if you have routed your Zone 1 mics (1-4) to Sub Bus 1 and attenuated the combined signal by -6 dB, the descriptive label for the Sub Bus input would read:

Zone 1 (Mic 1-4) -6 dB

2. Mute. Click this button to mute or unmute the Sub Bus input.

3. Sub-Bus Attenuation. This parameter determines the amount the audio level of the Sub Bus mix will be reduced before it is made available to the matrix for routing. To change the attenuation value (0 to -20 dB), slide the fader control up or down the meter bar. Click anywhere on the bar to increase/decrease the attenuation by 1 dB increments. The current attenuation will appear at the bottom of the bar meter.

4. Apply to both Sub Buses. When all adjustments are made to the current Sub Bus, you may apply the changes to both Sub Buses by clicking this button. When finished, click CLOSE.

AP800 Unit Setup

Continued

❑ *Microphone Inputs*

The microphone inputs section (below) of the AP800 main setup window consists of eight buttons.

M1	Mic 1
M2	Mic 2
M3	Mic 3
M4	Mic 4
M5	Mic 5
M6	Mic 6
M7	Mic 7
M8	Mic 8

Figure 25. Microphone Inputs

Clicking on any of the eight Mic Input buttons will open the corresponding Microphone Input Properties window. Each feature in this window will be discussed in the order it is labeled in figure 26, below.
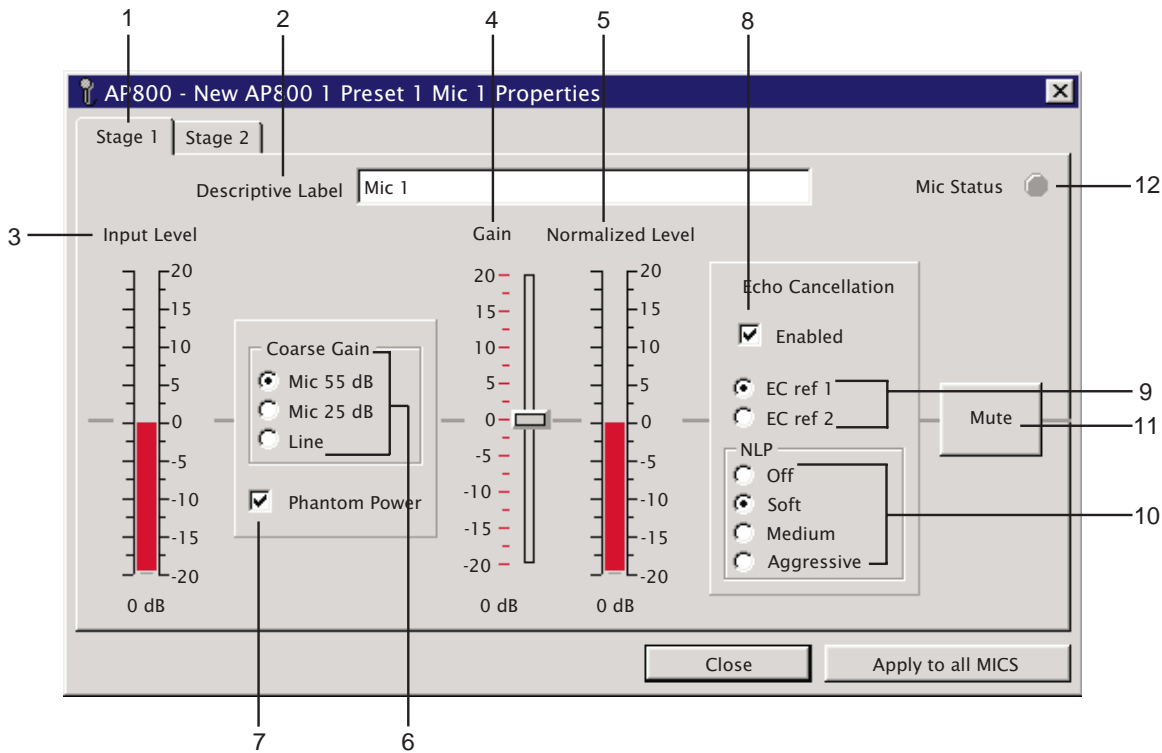
Figure 26. Microphone Input Properties window (Stage 1)

1. Stage 1 Tab. The Microphone Input Properties window has two stages with corresponding tabs. Once you have configured the Mic Input properties for Stage 1, click on the second tab to move to Stage 2.

✩ **Note**

Mic audio properties will take effect in the order from left to right as shown above, beginning with the input level in Stage 1 and ending with the pregate or postgate to matrix in Stage 2.

AP800 Unit Setup

Continued
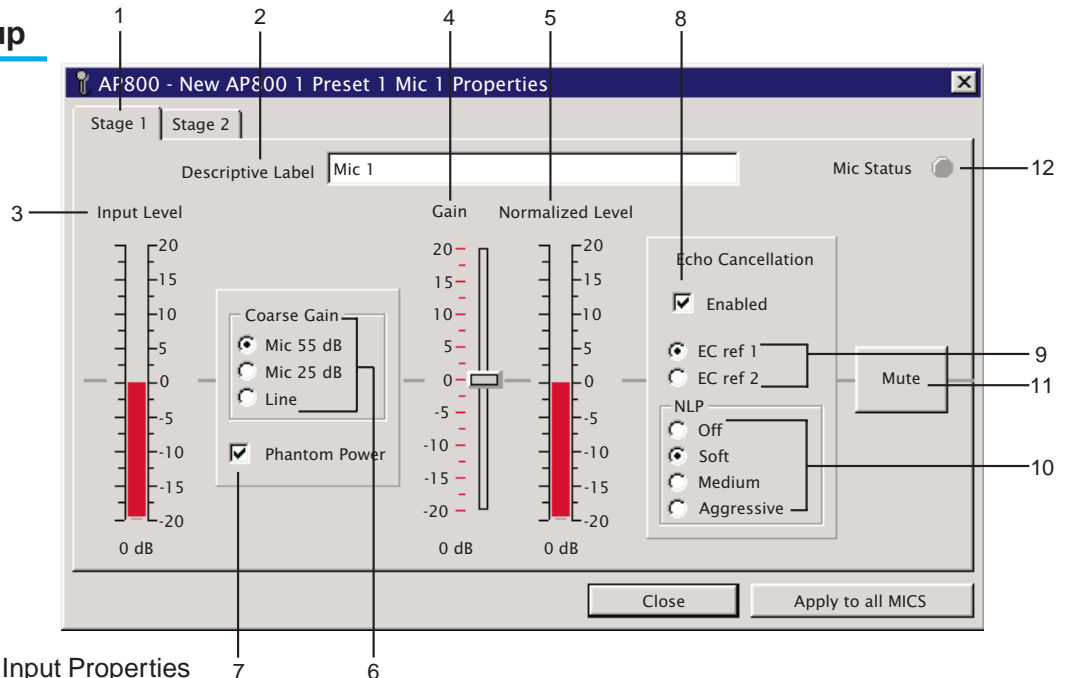
Figure 26a. Microphone Input Properties window (Stage 1)

2. Descriptive Label. You may enter a description for the current microphone which will appear on the corresponding button in the AP800 main setup window.

3. Input Level. This bar meter shows the input audio level for the mic input.

4. Gain Adjust. This control allows you to adjust the input gain (range -20 dB to 20 dB, default 0) for the microphone input. To change the gain value, slide the fader control up or down the meter bar. Click anywhere on the bar to increase/decrease the gain by 1 dB increments. The current gain will appear at the bottom of the bar meter.

5. Normalized Level. This bar meter shows the normalized (post-gain) level for the microphone input.

6. Coarse Gain. The Coarse Gain is the dB gain initially assigned to the mic input. There are three coarse gain settings: Line level, Mic 25 dB, and Mic 55 dB. Click on the radial button to the left of the desired setting.

7. Phantom Power. Click on this box to enable/disable phantom power for the current microphone input. Each input will default with 24 V phantom power, but may be switched OFF to accommodate signals not requiring phantom power. A checkmark will appear in the box when phantom power is enabled.

AP800 Unit Setup

Continued
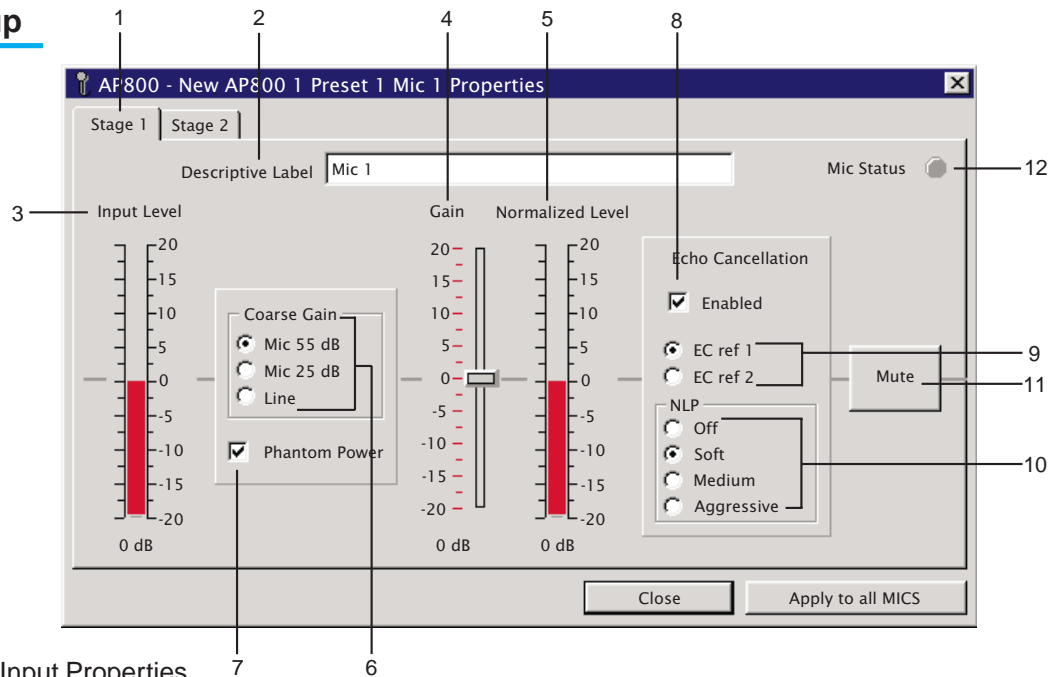
Figure 26b. Microphone Input Properties window (Stage 1)

8. Echo Cancellation Enabled. Click on this box to enable or disable echo cancellation for the current microphone input. A checkmark will appear in the box when echo cancellation is enabled.

9. EC Refs. Click on a radial button to choose the EC reference for the current microphone. There are two references: EC ref 1 and EC ref 2. EC References are designated during the Routing Matrix Setup (see page 39), and refer to loud speaker audio picked up by the microphone. Microphone placement, for example would be a factor in determining which EC ref should be assigned.

10. NLP. Click on a radial button to choose the NLP setting. Non-linear processing (NLP) has four settings: Soft, Medium, Agressive, and OFF. NLP adds additional echo cancelling "horsepower" to the echo canceller in difficult acoustical environments. Care should be taken when using NLP because of the corresponding trade-offs which potentially include suppression and half-duplex operation.

11. Mute. Click on this button to mute or unmute the microphone input.

12. Mic Status. This LED will light up yellow when the mic gates ON.

AP800 Unit Setup
Continued

Each feature in Stage 2 of the Microphone Inputs window will be discusssed in the order it is labeled in figure 27, below.
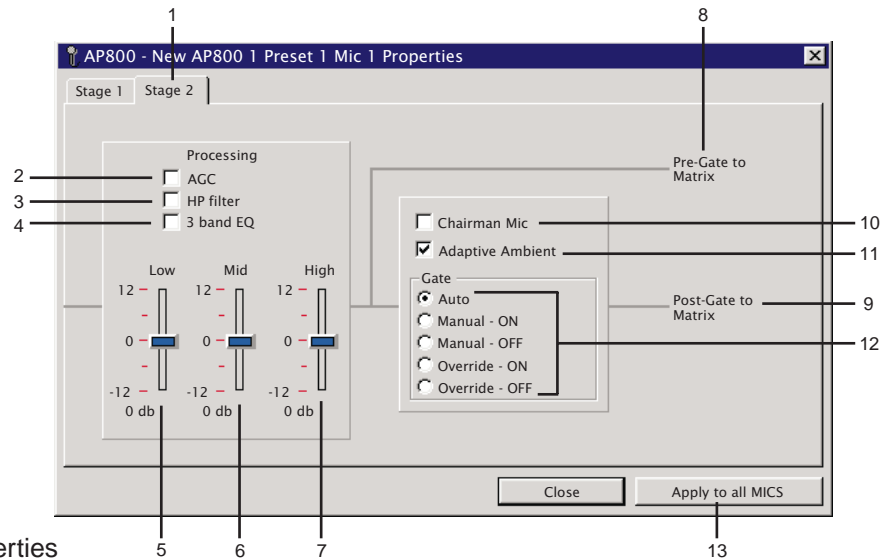
Figure 27. Microphone Input Properties window (Stage 2)

**1. Stage 2 Tab.** Stage 2 continues configuration of microphone input properties. If you desire to return the first half of microphone input configuration, click on the Stage 1 tab.

2. AGC. Click on the box to the left of each audio processing feature you which to enable. A checkmark will appear in the box when the feature is active. Automatic gain control (AGC) automatically increases gain when the audio level is too low and decreases gain when it is too high.

3. HP Filter. The high-pass (HP) filter may be selected on each mic input to reduce unwanted low-frequency noise. The filter has a break frequency at 250 Hz, and -3 dB down at 200 Hz, then rolls off at 6 dB per octave.

4. 3-band EQ. The three-band audio equalizer (EQ) is used for matching dissimilar microphones and for general circuit tuning. This EQ circuit provides 12 dB of cut or boost centered at frequencies of 250 Hz, 1 kHz and 4 kHz, Q factor of 1.4.

5. Low Band. This control provides 12 dB cut or boost to the low band frequency centered at 250 Hz. To change the value, slide the fader control up or down the meter bar. Click anywhere on the bar to apply the change in 1 dB increments. The actual value will appear at the bottom of the bar meter.

6. Mid Band. This control provides 12 dB cut or boost to the mid band frequency centered at 1 kHz.

7. High Band. This control provides 12 dB cut or boost to the high band frequency centered at 4 kHz.

AP800 Unit Setup
Continued
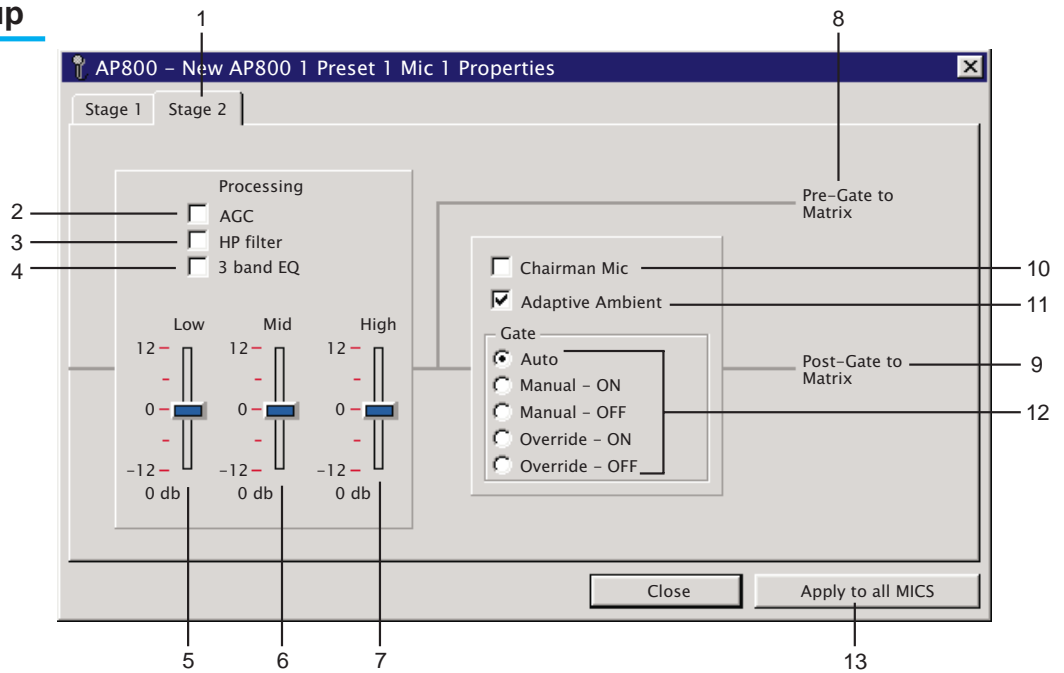
Figure 27a. Microphone Input Properties window (Stage 2)

8. Pre-Gate to Matrix. The gray lines leading to this point indicate which parameters apply when microphone audio is routed *pre-gate* to the matrix mixer.

9. Post-Gate to Matrix. The gray lines leading to this point indicate which parameters apply when microphone audio is routed *post-gate* to the matrix mixer.

☆ **Note**
Mic audio properties will take effect in the order from left to right as shown above, beginning with the input level in Stage 1 and ending with the pregate or postgate to matrix in Stage 2.

10. Chairman Mic. To activate chairman override for this microphone, click on this box and a checkmark will appear. When a chairman override mic gates on, all other non-chairman mics will be turned off.

11. Adaptive Ambient. Click on this box to activate adaptive ambient. A checkmark will appear when the feature is active. The recommended setting is ON. If the ambient noise in the room is constantly changing, and the AP800 unit is unable to track properly, turn adaptive ambient OFF (uncheck the box) and set manual ambient in the Gate Parameters window (see page 22).

AP800 Unit Setup

Continued
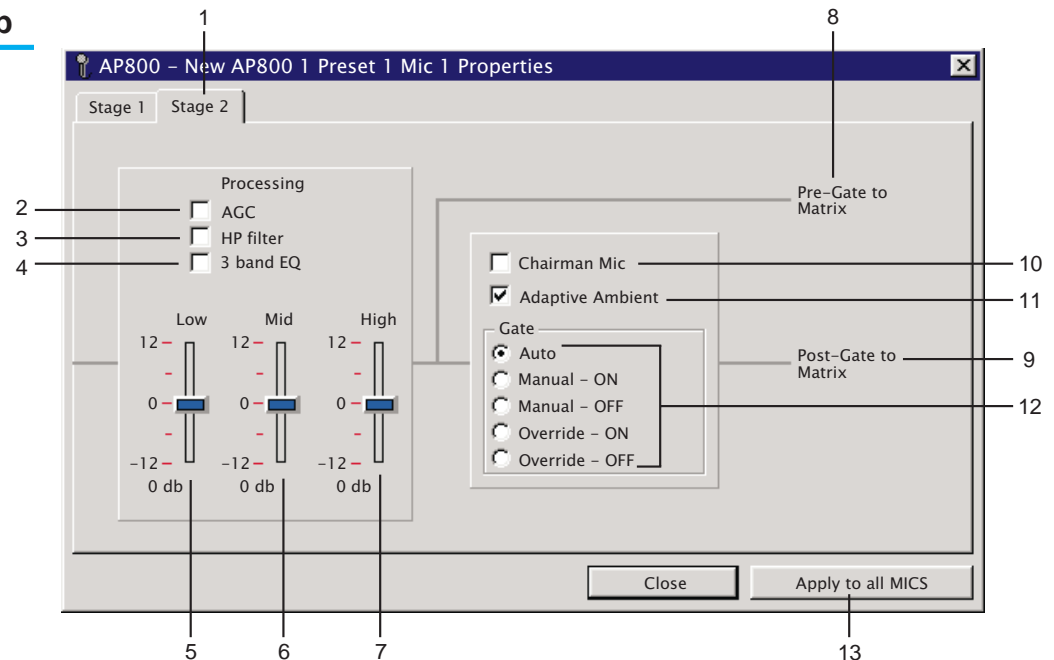
Figure 27b. Microphone Input Properties
window (Stage 2)

12. Gate. Click on a radial button to choose the gating mode for
this microphone. There are five Gate settings: Auto, Manual - ON,
Manual - OFF, Override - ON, Override - OFF.

> AUTO mode causes the microphone to gate on or off accord-
> ing to the settings established in the gate parameters window
> (see page 21).

> MANUAL ON activates the microphone and leaves it ON until
> it is manually turned OFF. MANUAL ON will affect all mixing
> parameters (such as maximum number of microphones, etc).

> MANUAL OFF deactivates the microphone and leaves it OFF
> until it is manually turned ON. MANUAL ON will affect all mix-
> ing parameters.

> OVERRIDE ON activates the microphone until it is manually
> turned OFF, but does **not** affect established mixing parameters
> (such as maximum number of microphones, etc.).

> OVERRIDE OFF deactivates the microphone until it is manu-
> ally turned ON, but does **not** affect established mixing param-
> eters.

13. Apply to all MICS. When all settings are established in both
Stage 1 and Stage 2, you may apply the same changes to all mic
inputs by clicking this button. When finished, click CLOSE.

AP800 Unit Setup

Continued

❑ *Outputs A-D*

The Line Outputs (A-D) section (below) of the AP800 main setup window consists of four buttons.

TX To Codec	OA
TX To AP10	OB
To Tape Recorder	OC
To PA System	OD
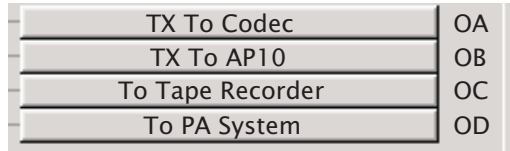
Figure 28. Line Outputs (A-D)

Clicking on any of the Line Output (A-D) buttons will open the corresponding Line Output Properties window. Each feature in this window will be discussed in the order it is labeled in figure 29, below.
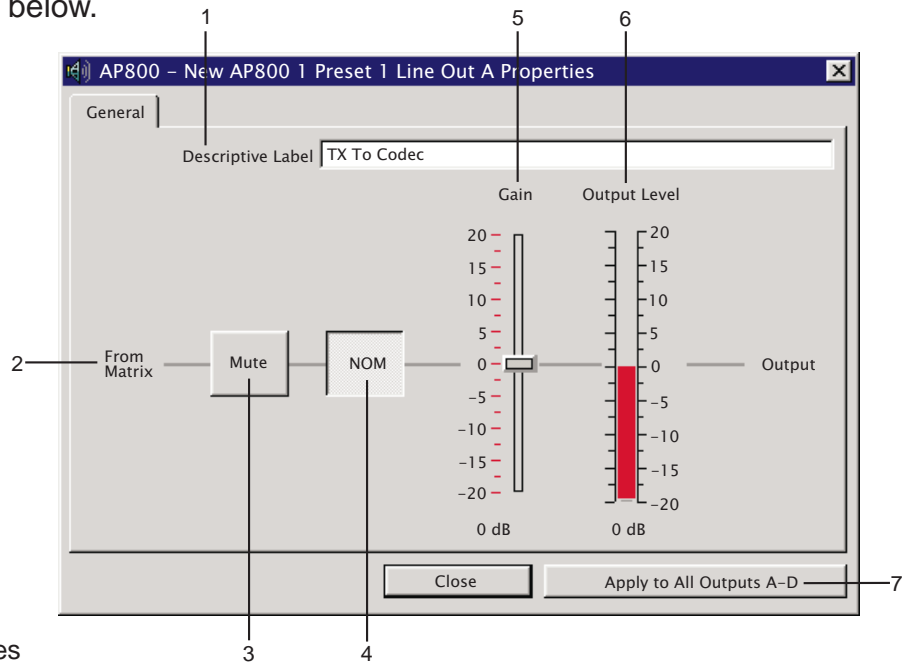
Figure 29. Line Output Properties window (A-D)

1. Descriptive Label. You may enter a description for the current output which will appear on the corresponding button in the AP800 main setup window.

2. From Matrix. The gray line indicates the direction of audio. Output properties are applied in the order they appear from left-to-right, beginning with *From Matrix* and ending with *Output*.

3. Mute. Click on this button to mute or unmute the line output.

AP800 Unit Setup

Continued
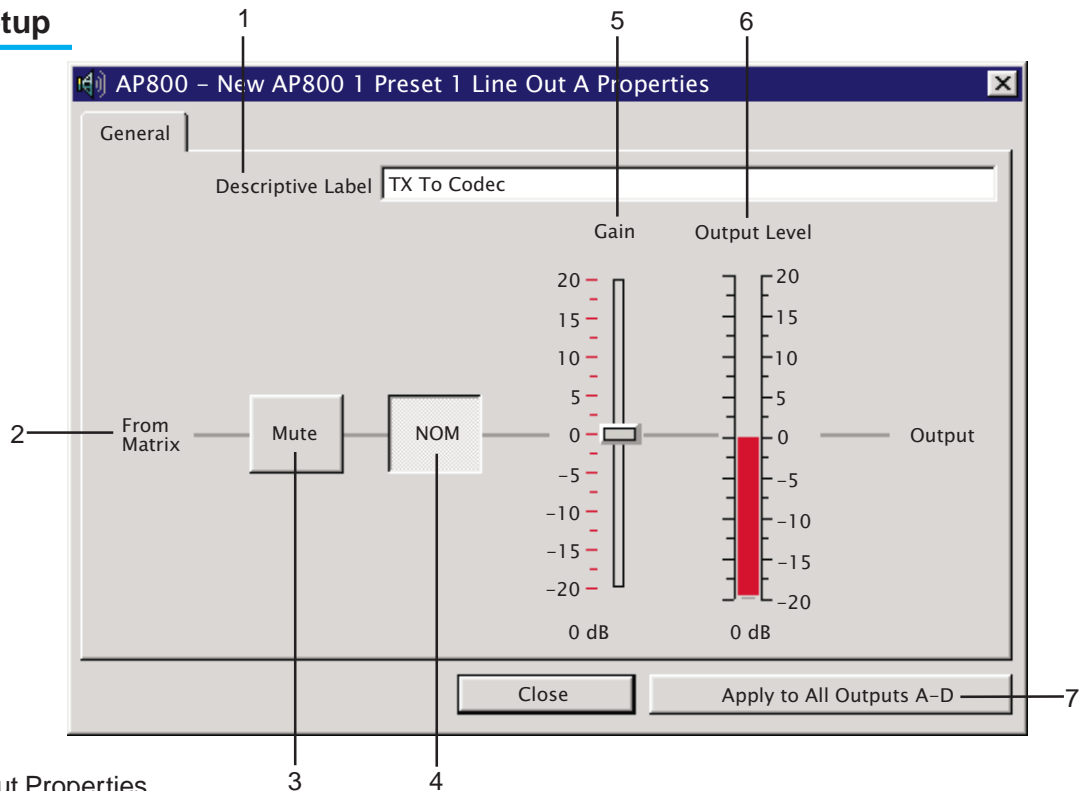
Figure 29a. Line Output Properties window (A-D)

4. NOM. Number of open mics (NOM) corrects for increased output levels when more than one microphone is gated on. The adjustment is 10 log of the number of open microphones or approximately 3 dB every time the number of open mics doubles. The default setting for outputs A, B, and C is ON, output D is OFF. You may turn NOM off or on by clicking once on this button.

5. Gain Adjust. This control allows you to adjust the output gain (range -20 dB to 20 dB, default 0) for the line output. To change the gain value, slide the fader control up or down the meter bar. Click anywhere on the bar to increase/decrease the gain by 1 dB increments. The current gain will appear at the bottom of the bar meter.

6. Output Level. This bar meter shows the post-gain level for the line output.

7. Apply to all outputs A-D. When all adjustments are made to the current output, you may apply the same changes to all outputs A-D by clicking this button. When finished, click CLOSE.

AP800 Unit Setup

Continued

❑ *G-Link and Sub Bus Outputs*

The G-Link and Sub Bus outputs section (below) of the AP800 main setup window consists of five buttons. These buttons represent the G-Link buses and Sub Buses as they appear on the ouputs line of the mixing matrix (see page 39).

G-Link Outputs. The inputs routed to the G-Link outputs (X, Y, and Z) will be made available to other AP800's on the G-Link network for additional routing and audio processing.

Sub Bus Outputs. The inputs routed to the internal Sub Buses will be returned as a mixed signal to the matrix for additional routing and processing.

Mics To AP800's	GX
Line In to AP800's	GY
	GZ
	S1
	S2
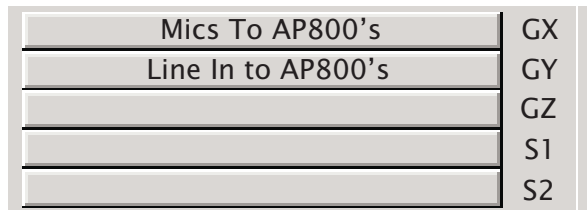
Figure 30. G-Link and Sub Bus Outputs

Click on any of the G-Link or Sub Bus buttons to open the corresponding properties window (below). Use this window to assign a new descriptive label to the G-Link or Sub Bus output. The descriptive label you enter should allow you to easily identify the routing for the output audio. **Example: Mics 1-4 to Sub Bus 1**.

AP800 – New AP800 1 Preset 1 X Bus Out Properties   ✕

General

Descriptive Label | Mics To AP800's

Close
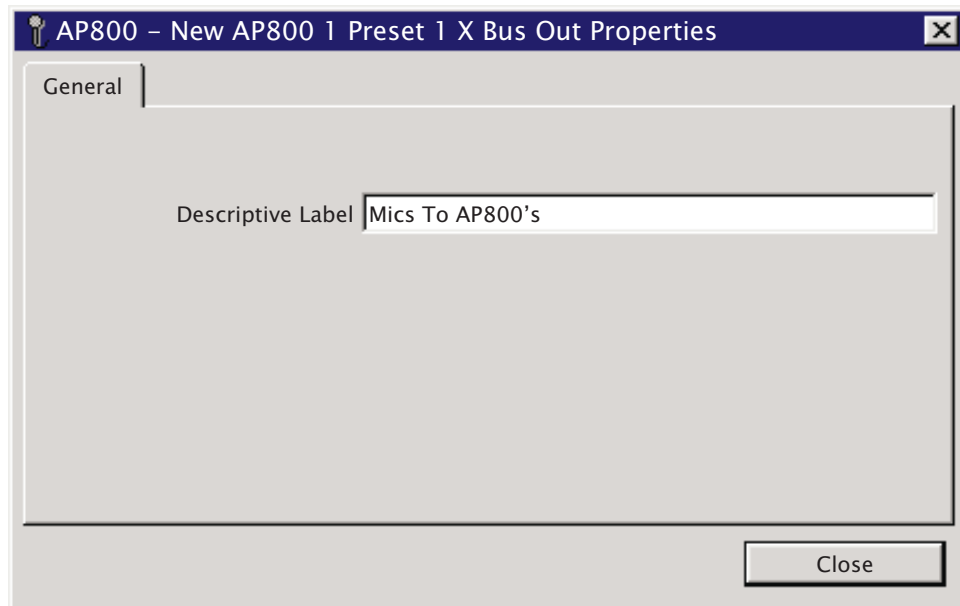
Figure 31. G-Link and Sub Bus Output
          Properties window

≣ = Gentner   Technical Support: 1.800.945.7730 (USA) or 1.801.975.7200

AP800 Unit Setup

Continued

❑ *Outputs 1-8*

The Line Outputs (1-8) section (below) of the AP800 main setup window consists of eight buttons.

Direct Output 1	O1
Direct Output 2	O2
Direct Output 3	O3
Direct Output 4	O4
Direct Output 5	O5
Direct Output 6	O6
Direct Output 7	O7
Direct Output 8	O8
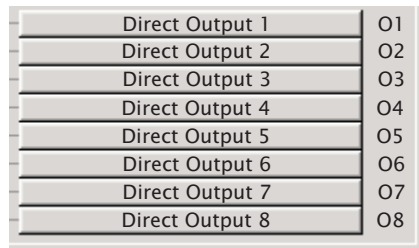
Figure 32. Line Outputs (1-8)

Clicking on any of the eight Line Output (1-8) buttons will open the corresponding Line Output Properties window.
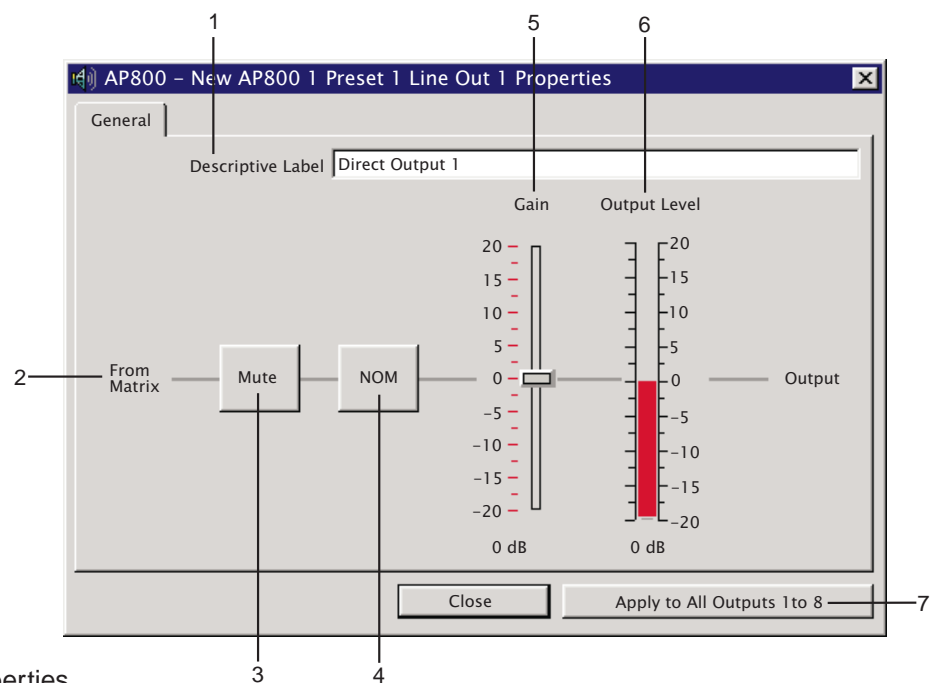
Figure 33. Line Output Properties window (1-8)

1. Descriptive Label. You may enter a description for the current output which will appear on the corresponding button in the AP800 main setup window.

2. From Matrix. The gray line indicates the direction of audio. Output properties are applied in the order they appear from left-to-right, beginning with *From Matrix* and ending with *Output*.

3. Mute. Click on this button to mute or unmute the line output.

![Gentner logo]

AP800 Unit Setup

Continued
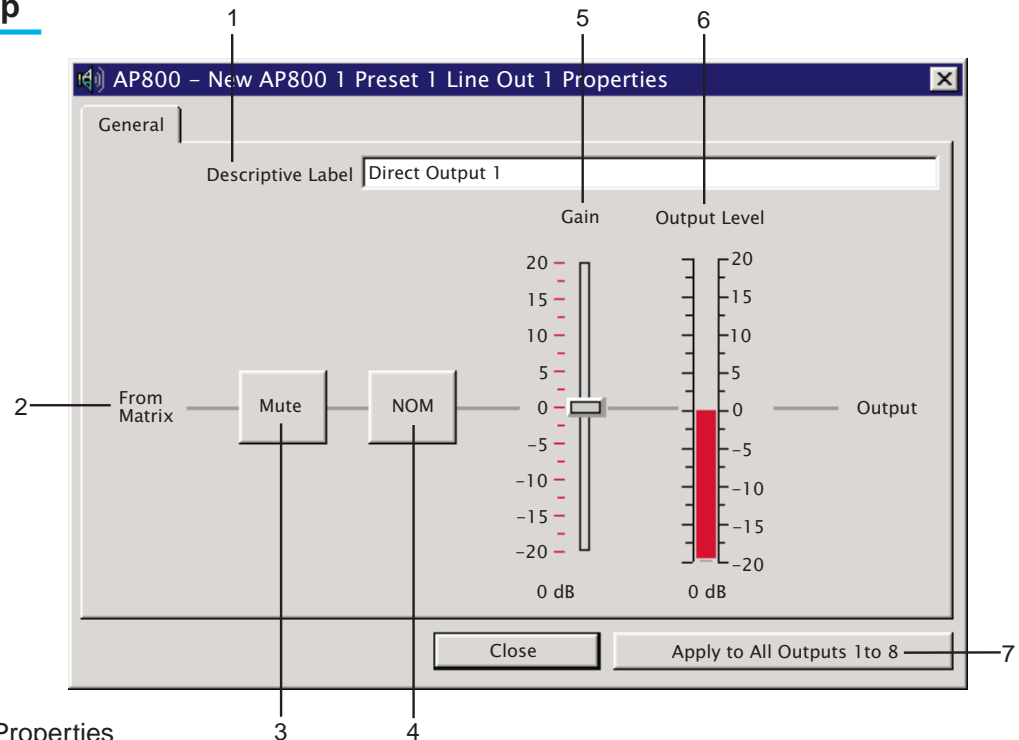
Figure 33a. Line Output Properties window (1-8)

4. NOM. Number of open mics (NOM) corrects for increased output levels when more than one microphone is gated on. The adjustment is 10 log of the number of open microphones routed to this output or approximately 3 dB every time the number of open mics doubles. The default setting for outputs 1-8 is OFF, but you may turn NOM on by clicking once on this button.

5. Gain Adjust. This control allows you to adjust the output gain (range -20 dB to 20 dB, default 0) for the line output. To change the gain value, slide the fader control up or down the meter bar. Click anywhere on the bar to increase/decrease the gain by 1 dB increments. The current gain will appear at the bottom of the bar meter.

6. Output Level. This bar meter shows the post-gain level for the line output.

7. Apply to all outputs 1 to 8. When all adjustments are made to the current output, you may apply the same changes to all outputs 1-8 by clicking this button. When finished, click CLOSE.

AP800 Unit Setup

Continued

Figure 34. Matrix button

❑ *Matrix Routing*

To change the way audio is being routed through the AP800 for the current preset, click on the Matrix button (left) which is located in the center of the AP800 main setup window.

Clicking on the Matrix button opens the Routing Matrix window. Each feature will be discussed in the order it is labeled in figure 35, below.
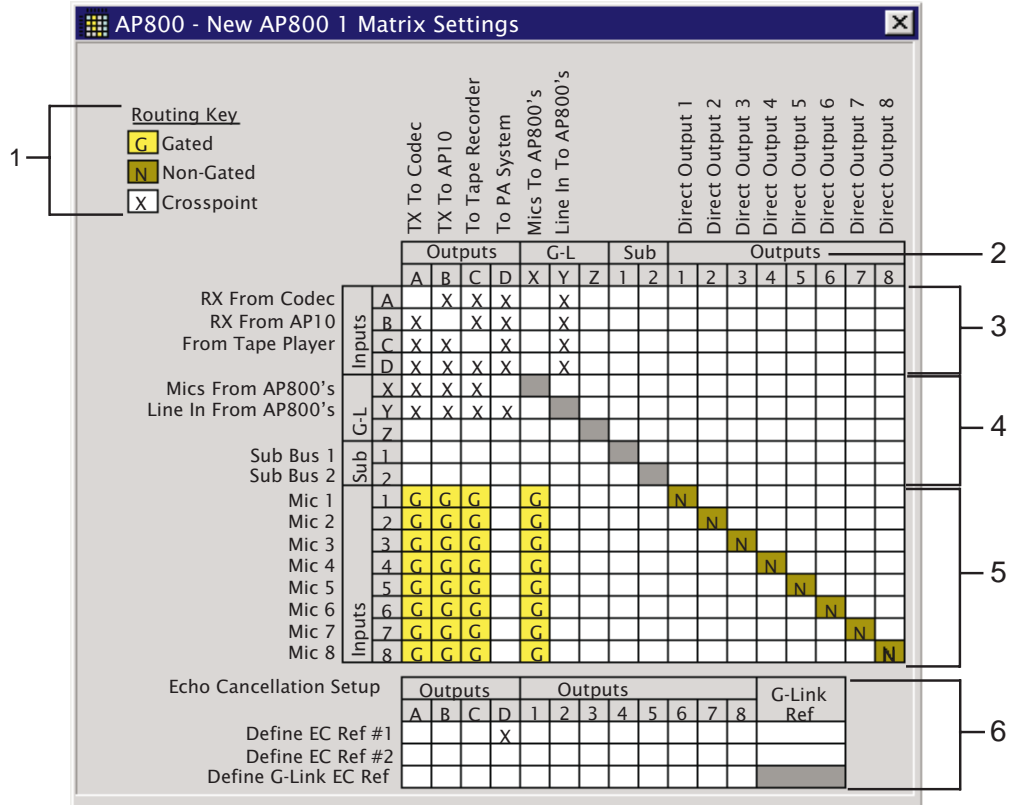
Figure 35. Routing Matrix window

1. Routing Key. This key identifies the routing type that has been assigned to a space in the routing matrix. There are three routing types: gated, non-gated, and crosspoint. Gated and non-gated routing types apply to microphones only. A dark gray space indicates an invalid route.

2. Outputs Line. Click on a box to indicate the crosspoint from an input to the desired output(s). You may route an input to as many outputs as you like. Routing an input to a G-link or Sub Bus permits additional routing and processing of the audio signal.

3. Line Input (A-D) Routing. Choose the routing for the line inputs A-D.

AP800 Unit Setup

Continued
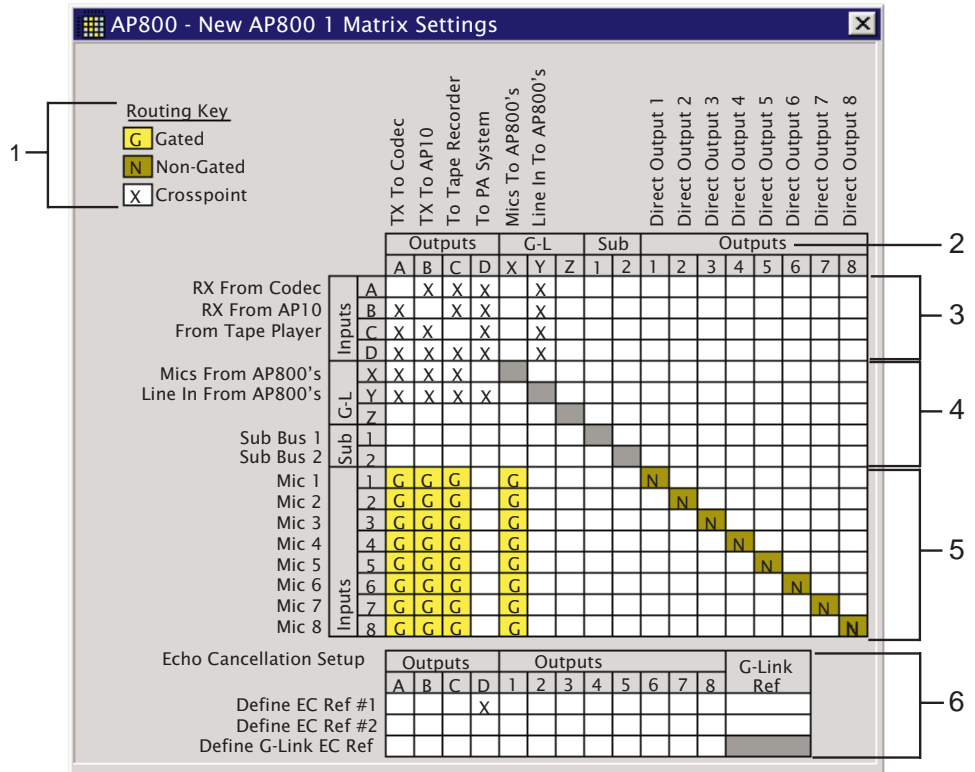
Figure 35a. Routing Matrix window

4. G-Link and Sub Bus Routing. Choose the routing for the G-Link and Sub Bus inputs. The G-Link inputs allow you to route audio from other AP800s to outputs on the current unit. The Sub Bus inputs allow you to route combined audio from local inputs to outputs on the current unit. Click on a box to indicate the crosspoint from an input to the desired output(s). It is not possible to route a G-Link bus or Sub Bus to itself.

5. Mic Input (1-8) Routing. Choose the routing for the microphone inputs. You must define whether the routing type is gating or non-gating. Click on a space in the routing matrix to scroll through the choices until the type you want appears. Figure 27a, page 32, shows which functions are applied in a non-gating (pre-gate) type and which are applied in a gating (post-gate) type.

6. Echo Cancellation Setup. To define which output will be used as an EC reference, click once in the space below the desired output. Only one output may be designated per EC reference. If the output of **another** AP800 unit needs to be defined as the EC reference, click once in the space below *G-Link Ref*. For more information on defining EC refs, see the *AP800 Installation and Operations Manual* pages 26-27.

AP800 Unit Setup

Continued

❏ *Unit Functions*

The Unit Functions section (below) of the AP800 main setup window consists of three buttons and eight status indicators. Each function will be discussed in the order it is labeled in figure 36, below.
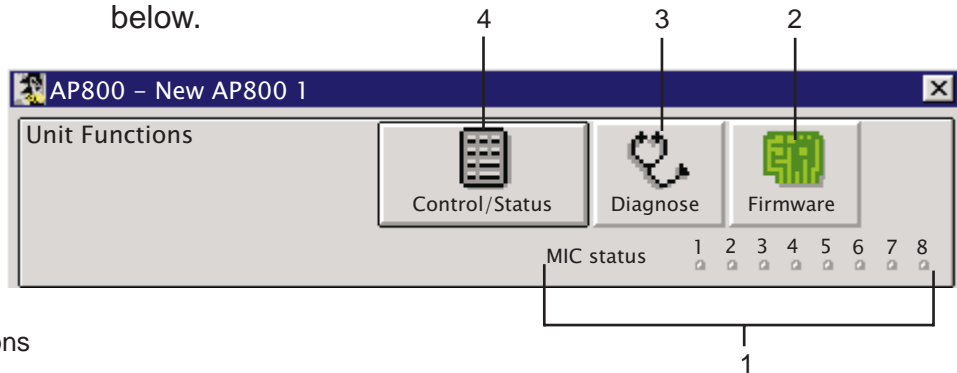
Figure 36. Unit Functions

1. Mic Status. These indicators show which microphones are gated ON. The MIC status indicators will light up in real time in the same manner as the front panel mic LEDs on the AP800 unit.

2. Firmware. Clicking this button opens a window which allows you to upload a new firmware file to the connected AP unit.

3. Diagnose. Clicking the DIAGNOSE button opens the Microphone Diagnostics window (below). The features of this window will be discussed in the order they are labled in figure 37, below.
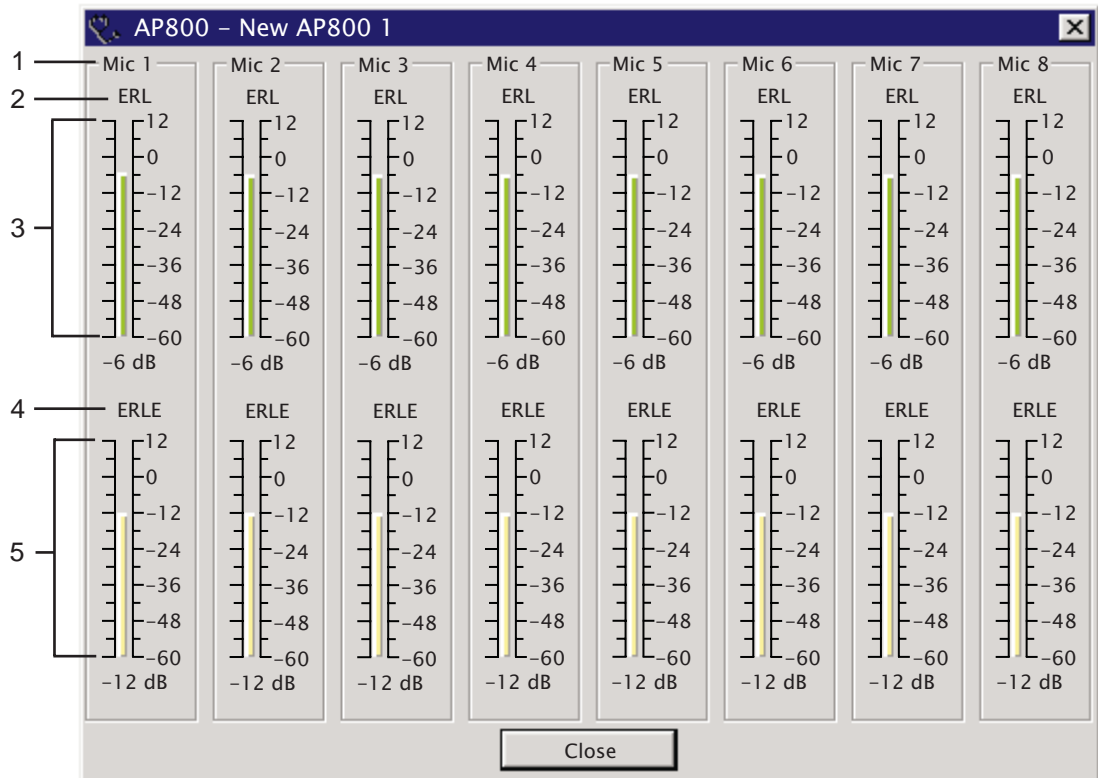
Figure 37. Microphone Diagnostics window

AP800 Unit Setup

Continued
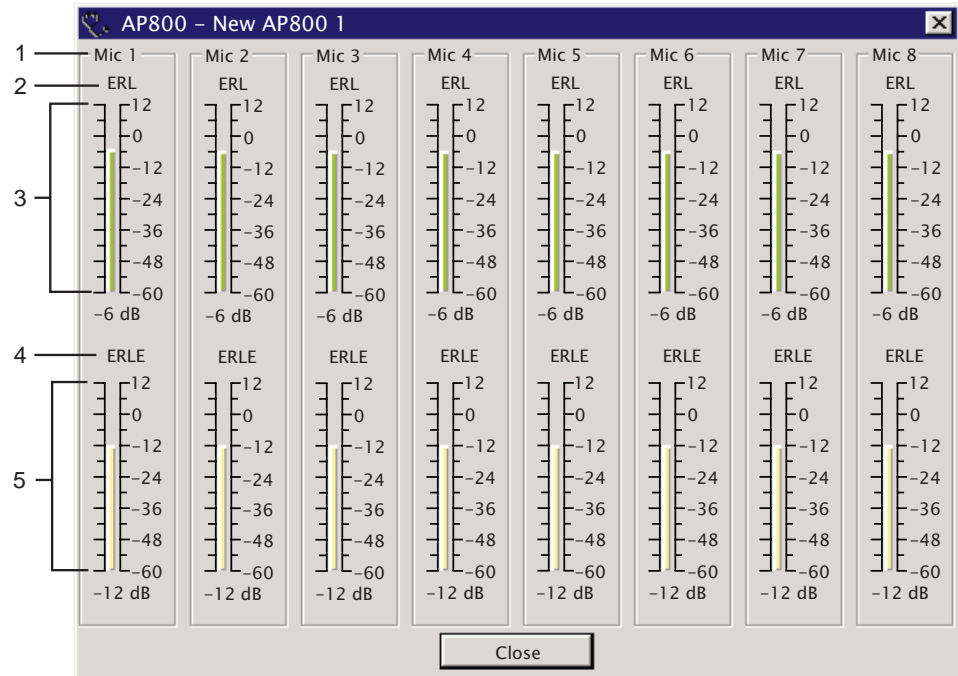
Figure 37a. Microphone Diagnostics window

1. *Microphones Diagnostics.* The echo cancelling performance of each microphone is represented in the Microphone Diagnostics window. There are two aspects to microphone performance: echo return loss (ERL) (see 2, below) and echo return loss enhancement (ERLE) (see 4, below). This window enables you to isolate return echo to a specific microphone.

2. *ERL.* Echo return loss is the amount of echo loss from the loudspeaker to the microphone.

3. *Bar Graph.* The bar graphs are a visual representation of the ERL registered by the microphones. Compare the graphs to determine the relative performance of each individual microphone. An ideal ERL value should be approximately -6 dB or less depending on the application. A higher return value is an indication that a microphone is too close to a loudspeaker.

4. *ERLE.* Echo return loss enhancement is the enhancement added by the echo canceller to reduce echo to a value below the ambient noise level of the room.

5. *Bar Graph.* Compare the ERLE graphs to determine the relative performance for each individual microphone.

AP800 Unit Setup

Continued
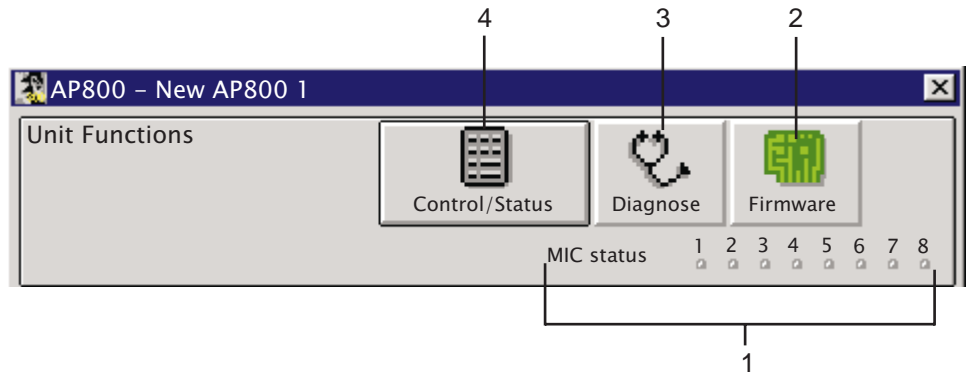
Figure 38. Unit Functions

4. Control/Status button. Clicking this button opens the GPIO Settings window (below). This window allows you to program the command and status parameters of the general purpose input/output (GPIO) pins for each AP800 unit. The features in this window will be described in the order they are labeled in figure 39, below.
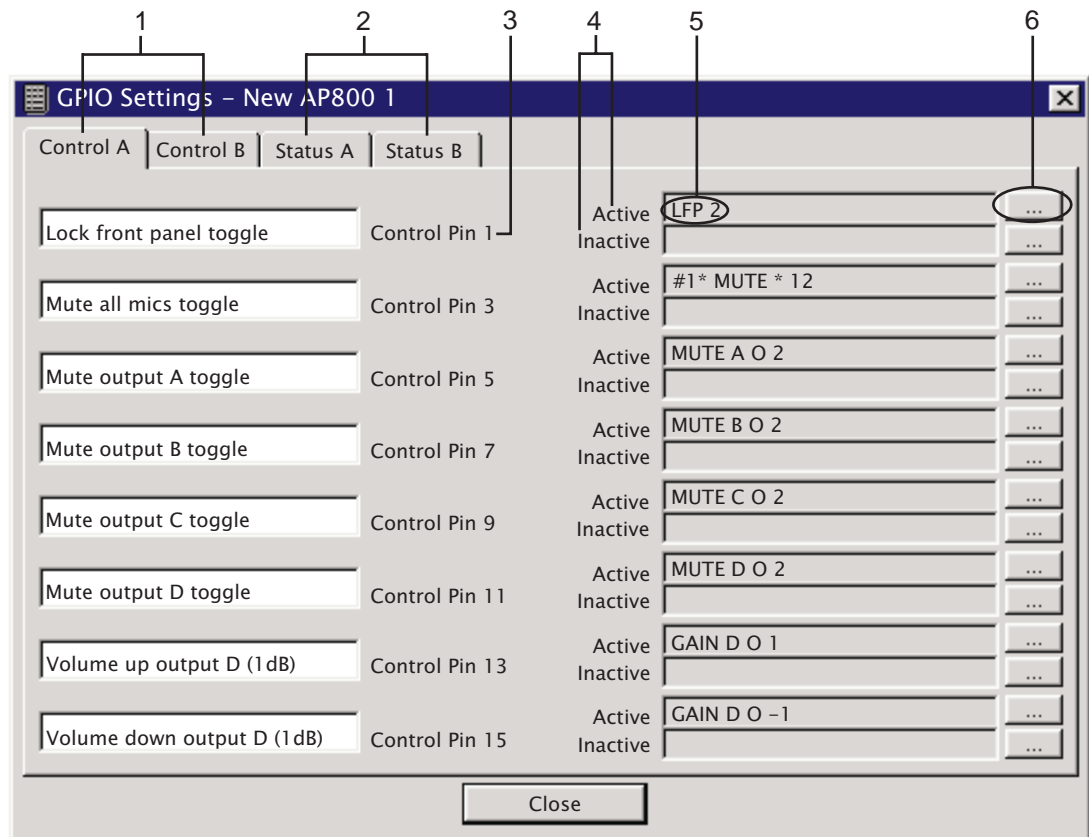
Figure 39. GPIO Settings window

AP800 Unit Setup

Continued
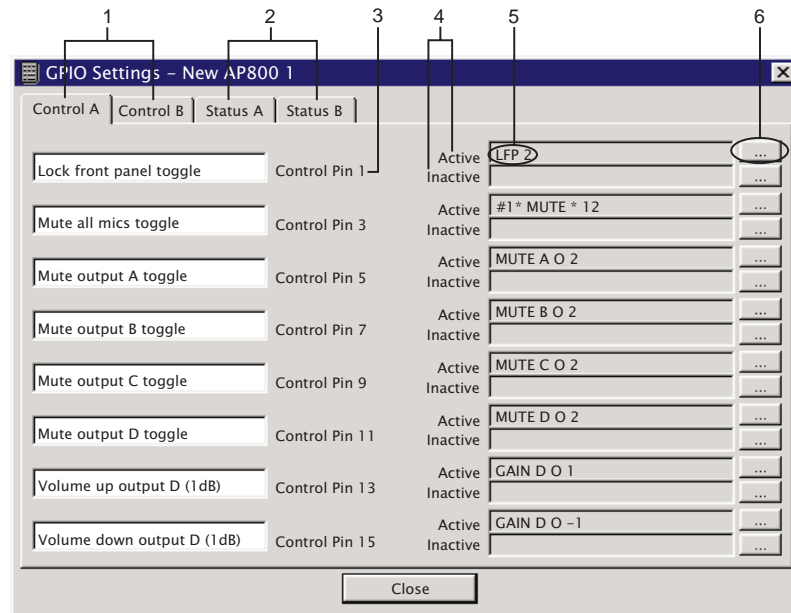
Figure 39a. GPIO Settings window

1. *Control Tabs.* The GPIO Settings window has two control tabs: Control A and Control B. Each control pin may be programmed to issue commands via the CONTROL/STATUS connectors (A and B) on the back panel of your AP800 unit. These commands can be set to toggle operation (momentary) or latching depending on your specific requirements. Control pins are odd numbered (1-15).

2. *Status Tabs.* The GPIO Settings window has two status tabs: Status A and Status B. Each status pin may be programmed to indicate status to a remote device via the CONTROL/STATUS connectors (A and B) on the back panel of your AP800 unit. Status pins are even numbered (2-16).

☆ **Note**
The GPIO Settings window appears the same on all four tabs, only descriptions and parameter settings differ from tab to tab.

3. *Descriptive Label.* To the left of each pin is a descriptive label field. You may type in whatever label describes the program you have set to that pin.

4. *Active/Inactive Locations.* To the right of each pin appears two program fields, one for the active location of the pin and one for the inactive location. If you will be using toggle operation, only the active location is required. If you are using latching operation or checking status, the active location is ON, the inactive location is OFF.

AP800 Unit Setup
Continued
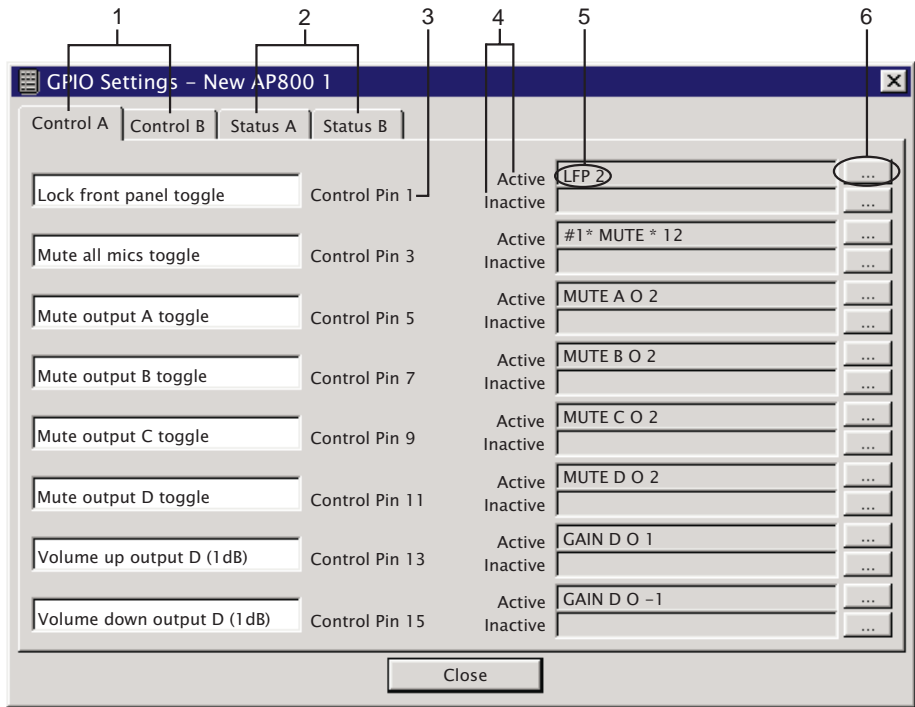
Figure 39b. GPIO Settings window

5. *Program Definition.* The program field contains a definition that corresponds to the command programmed for that location. The default setting for each control and status pin will appear upon first opening.

6. *Change Button.* To modify a control or status pin's programming, press the Change button located to the right of the command field. This will open the Program window. Each feature in the Program window will be discussed in the order it is labeled in figure 40, below.
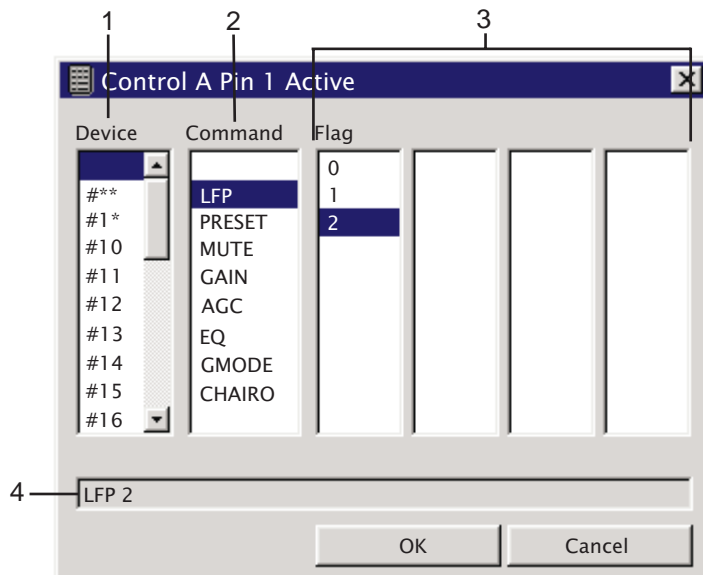
Figure 40. Program window

AP800 Unit Setup
Continued
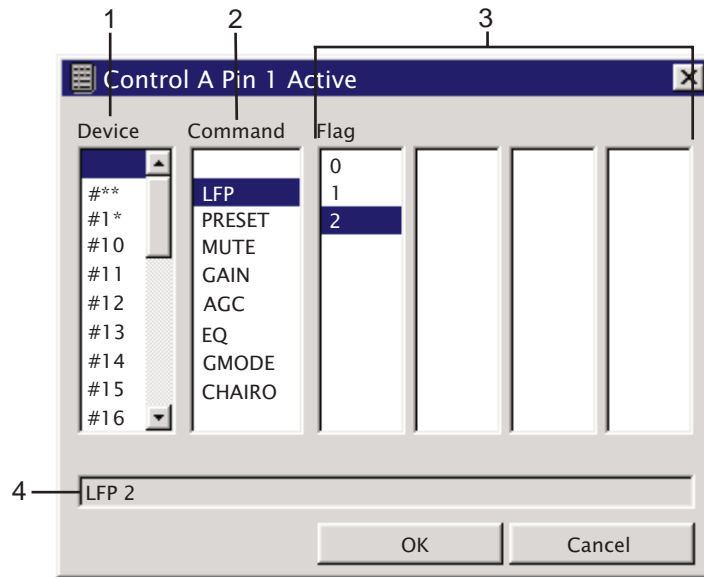
Figure 40a. Program window

1. Device. When the device setting is blank (default), the pin programming applies to the current unit only. Changing the device setting will apply the same pin programming to one or more additional devices. Device setting "#1*" will apply the pin programming to all AP800 units; "#10" will apply the pin programming to unit 10 only. For example, if you wanted to apply the LFP command to all AP800 units, the command definition would read "#1* LFP 2". The device parameter is the same for all program windows. You may issue a command to any or all units via a control pin, or you may indicate status for any or all units via a status pin.

2. Command. The command parameter allows you to select which command will be programmed for the current pin. Commands which may be programmed are LFP, Preset, Mute, Gain, AGC, EQ, GMODE, and CHAIRO. On a control pin, a command is issued to make a change either by toggle or latching operation. On a status pin, the programmed command indicates status (on/off) only.

3. Sub-Parameters. Each command has its own set of sub-parameters which will appear in the sub-parameter fields when the command is selected. Each command will be discussed in the following pages along with a description of the sub-parameters.

AP800 Unit Setup

Continued
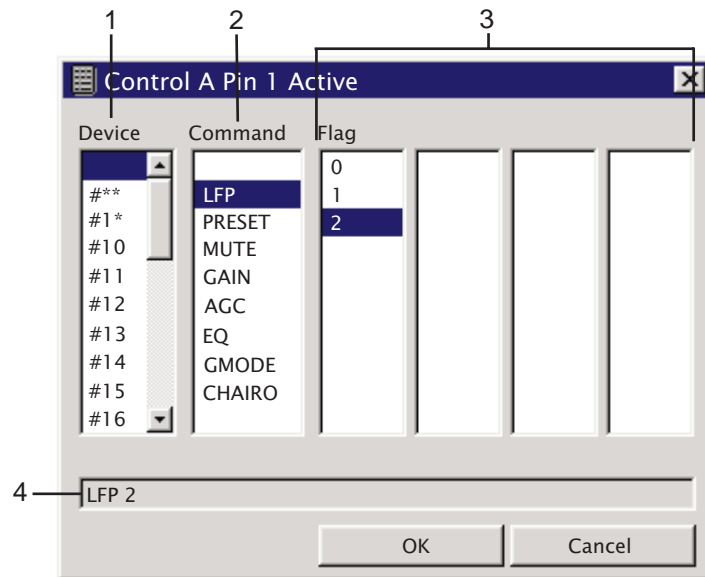
Figure 40b. Program window

4. Program Definition. The pin program string will always appear at the bottom of the window in the Program Definition field. Once you exit the Program window, the same program definition will appear next to the Change button in the GPIO Settings window.

Click OK to accept the new command definition or CANCEL to ignore any changes and return to the GPIO settings window.

Programming Commands

In the following pages, each programming command and its sub parameters will be discussed for both control and status pins. It is important to note that on a control pin, commands are issued to change the state. On a status pin, programming commands indicate status (on/off) only.

Programming commands will be discussed in the following order: LFP, Preset, Mute, Gain, AGC, EQ, GMODE, and CHAIRO; beginning on page 48.

AP800 Unit Setup

Continued

LFP Command. LFP has only one sub parameter.

1

Control A Pin 1 Active ⊠

Device	Command	Flag
#**	LFP	0
#1*	PRESET	1
#10	MUTE	2
#11	GAIN	
#12	AGC	
#13	EQ	
#14	GMODE	
#15	CHAIRO	
#16		

LFP 2

OK   Cancel
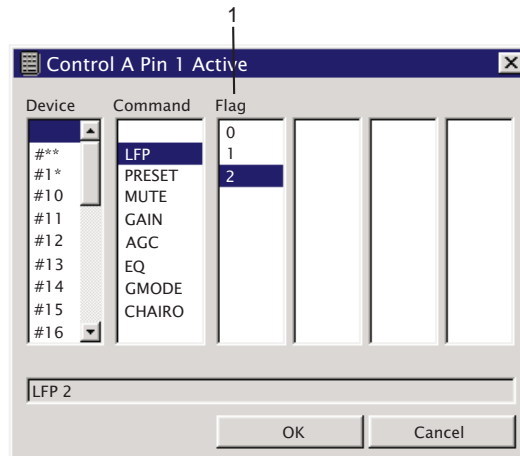
Figure 41. Program window
(LFP command)

1. Flags. The LFP command locks, unlocks, or shows the current state of the front panel (status). The LFP command has only one sub-parameter consisting of three flags: 0, 1, and 2. The "0" flag unlocks the front panel (on a control pin), or indicates the unlocked state (in the inactive location of a status pin). The "1" flag locks the front panel (on a control pin), or indicates the locked state (in the active location of a status pin). The "2" flag toggles the panel from one state to another (locked to unlocked, and vice versa).

Preset Command. PRESET has only one sub-parameter.

1

Control A Pin 1 Active ⊠

Device	Command	Select
#**	LFP	1
#1*	PRESET	2
#10	MUTE	3
#11	GAIN	4
#12	AGC	5
#13	EQ	6
#14	GMODE	
#15	CHAIRO	
#16		

PRESET 2

OK   Cancel
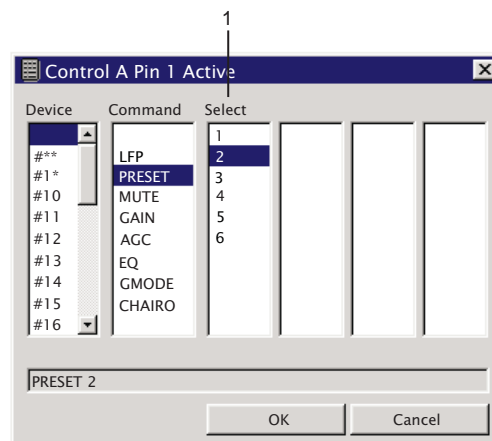
Figure 42. Program window
(PRESET command)

1. Select. The preset command allows you to select one of the six presets programmed for the AP800 unit. It is also used to return the current preset status. The number (1-6) you choose from the Select parameter field determines which preset the command will refer to. A different control and/or status pin is required for each preset you have programmed.

AP800 Unit Setup
Continued

Mute Command. MUTE has three sub-parameters.
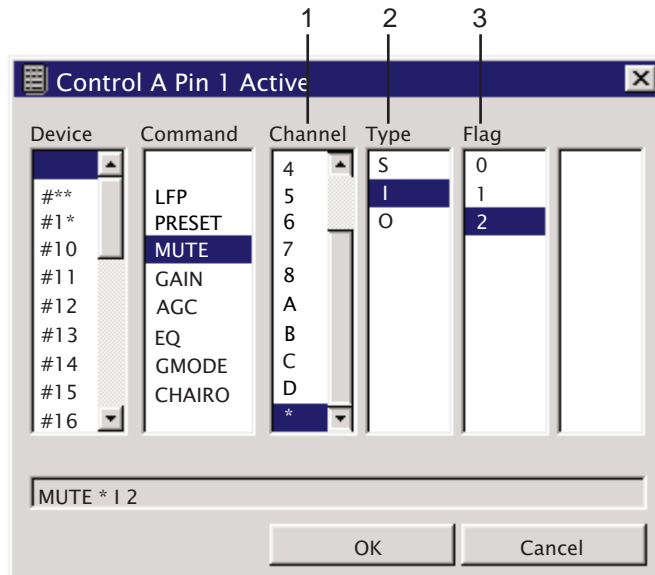
Figure 43. Program window (MUTE command)

1. Channel. The MUTE command allows you to change the state of mute for a given input, output, or sub bus channel. It is also used to indicate the current mute status. You may choose to apply the MUTE command to one channel or—for microphone inputs only—all channels. The channels are as follows: channels "1-8" and "A-D" apply the MUTE command to the specified input or output channel, "*"is used to apply the MUTE command to all microphone input channels (inputs 1-8). A sub bus mute operates only on channels "1" and "2".

2. Type. This parameter determines the type of channel to be muted. Type "I" is for input, "O" for output, and "S" for sub bus. For an "I" type, channels 1-8 are microphone inputs, channels A-D are line inputs. An "O" type is for outputs 1-8 and A-D. An "S" type has only two valid channels: sub bus 1 and sub bus 2.

3. Flags. The MUTE command has three flags: 0, 1, and 2. The "0" flag sets mute to OFF (on a control pin), or indicates the OFF state (in the inactive location of a status pin). The "1" flag sets mute to ON (mutes the current channel), or indicates the mute ON state. The "2" flag toggles the channel from one state to another (muted to unmuted, and vice versa).

AP800 Unit Setup

Continued

Gain Command. GAIN has four sub-parameters.
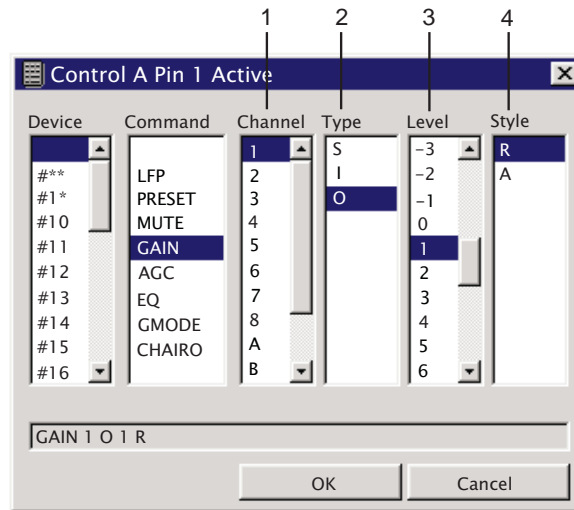
Figure 44. Program window
(GAIN command)

1. Channel. GAIN allows you to change the level for a given input, output, or sub bus channel. You may choose to apply the GAIN command to one channel or—for mic inputs only—all channels. The channels are as follows: channels "1-8" and "A-D" apply the GAIN command to the specified input or output channel, "*" is used to apply the GAIN command to all microphone input channels (inputs 1-8). Sub bus gain operates only on channels "1" and "2".

2. Type. This parameter determines the type of channel the GAIN command will be applied to. Type "I" is for input, "O" for output, and "S" for sub bus. For an "I" type, channels 1-8 are mic inputs, channels A-D are line inputs. An "O" type is for outputs 1-8 and A-D. An "S" type has only two valid channels: sub bus 1 and sub bus 2.

3. Level. This parameter sets the gain level from -20 dB to 20 dB.

4. Style. This parameter allows you to determine whether the gain level change is relative "R" or absolute "A". Relative means that the change will be relative to the current gain level; thus, a relative gain change of -2 dB to a current level of -16 dB would change the level to -18 dB. Absolute means that the GAIN command setting will be the new gain level; thus, an absolute gain change of -2 dB would set the new level to -2 dB regardless of the prior level.

AP800 Unit Setup
Continued

AGC Command. AGC has two sub-parameters.
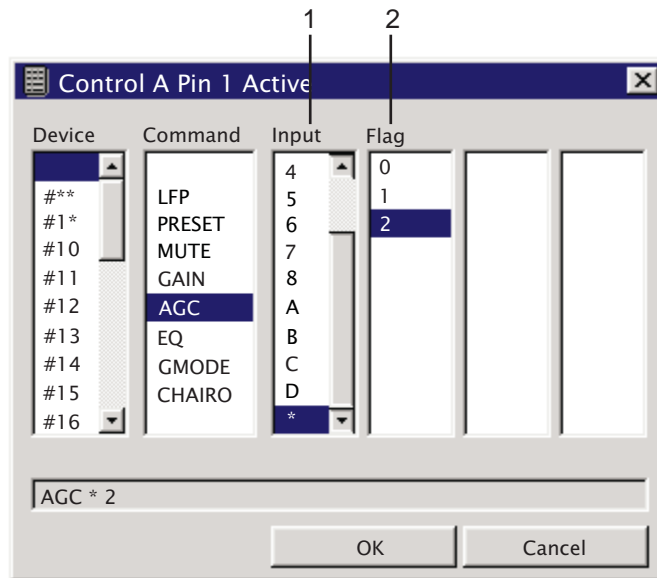
Figure 45. Program window
(AGC command)

1. Input. The AGC command allows you to turn on or turn off the automatic gain control for a given input channel. It is also used to indicate the on/off status of AGC (on a status pin). You may choose to apply the AGC command to one mic or line input or all microphone inputs. The channels are as follows: selecting input "1-8" or "A-D" applies the AGC command to the specified input, "*" is used to apply the AGC command to all microphone input channels (1-8).

2. Flag. The AGC command has three flags: 0, 1, and 2. The "0" flag turns OFF automatic gain control (on a control pin), or indicates the OFF state (in the inactive location of a status pin). The "1" flag turns ON automatic gain control, or indicates the ON state. The "2" flag toggles automatic gain control from one state to another (ON to OFF, and vice versa) each time the command is issued.

AP800 Unit Setup
Continued

EQ Command. EQ has two sub-parameters.
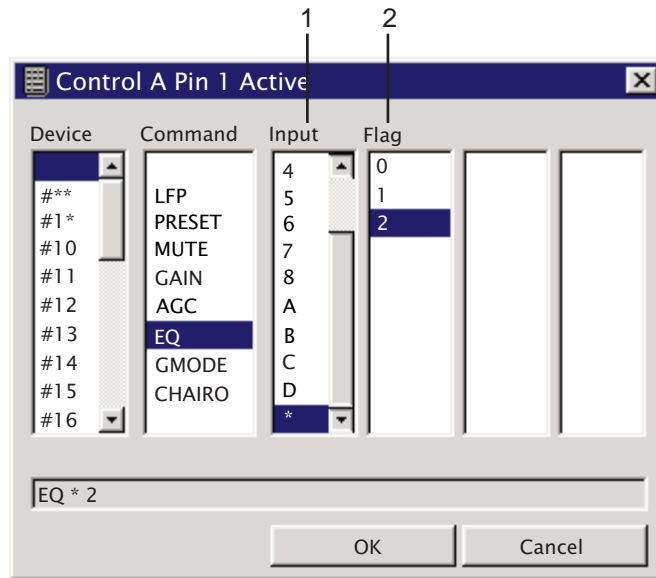
Figure 46. Program window (EQ command)

1. Input. The EQ command allows you to turn on or turn off the graphic equalizer for one or all microphone input(s). It is also used to indicate the on/off status of AGC (on a status pin). Select input "1-8" to apply the EQ command to the specified microphone input; select "*" to apply the EQ command to all microphone input channels.

2. Flag. The EQ command has three flags: 0, 1, and 2. The "0" flag turns OFF the graphic equalizer (on a control pin), or indicates the OFF state (in the inactive location of a status pin). The "1" flag turns ON the graphic equalizer, or indicates the ON state. The "2" flag toggles the graphic equalizer from one state to another (ON to OFF, and vice versa) each time the command is issued.

AP800 Unit Setup
Continued

GMODE Command. GMODE has two sub-parameters.
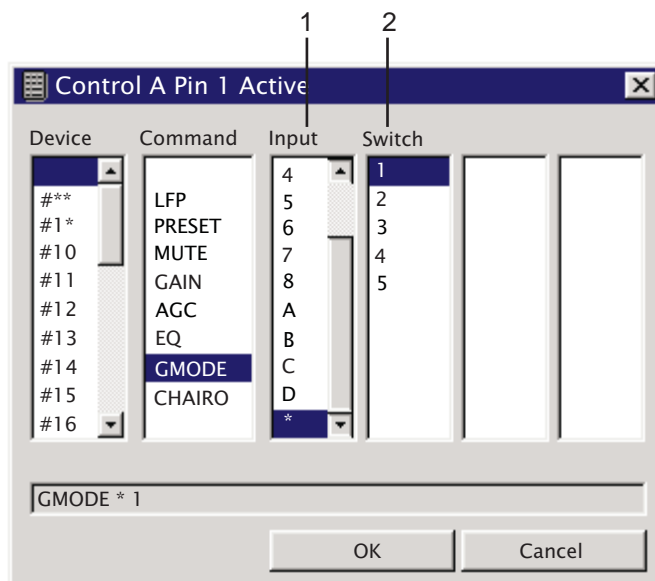
Figure 47. Program window
(GMODE command)

1. Input. The GMODE command allows you to change the mic activation mode (gating) for one or all microphone input(s). It is also used to indicate the mic activation status of a mic input (on a status pin). Select input "1-8" to apply the GMODE command to the specified microphone input; select "*" to apply the GMODE command to all mic input channels.   Inputs A-D are not valid with this command.

2. Switch. The GMODE command has five switches: 1,2,3,4, and 5. Switch "1" sets the gating mode to AUTO; switch "2" to MANUAL ON; switch "3" to MANUAL OFF; switch "4" to OVERRIDE ON; switch "5" to OVERRIDE OFF. AUTO is where a microphone does not gate on until audio is present at the mic. The AP800 unit decides to gate the mic on or off according to the settings established in the gate parameters window (see page 21). MANUAL ON activates a mic until it is manually turned OFF; this feature affects mixing parameters (such as maximum number of mics, etc.). MANUAL OFF deactivates a mic until it is manually turned ON; this feature affects mixing parameters. OVERRIDE ON activates a mic until it is manually turned OFF, but does not allow it to affect established mixing parameters (such as maximum number of mics, etc.). OVERRIDE OFF de-activates a mic until it is manually turned ON, but does not allow it to affect established mixing parameters.

AP800 Unit Setup

Continued

CHAIRO Command. CHAIRO has two sub-parameters.
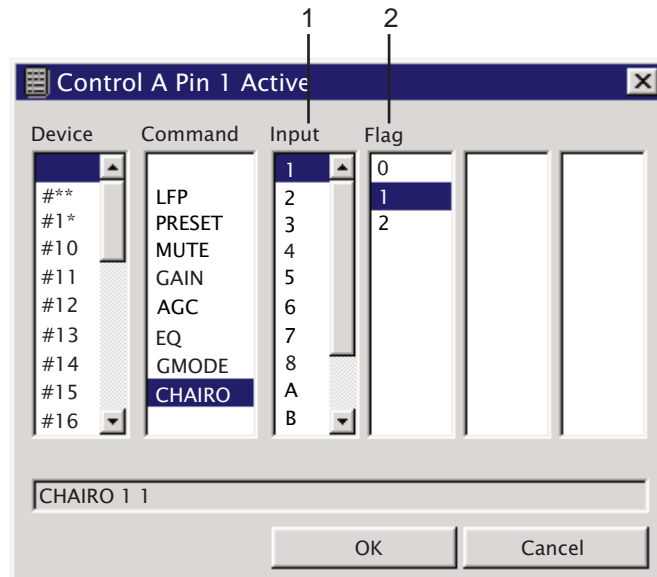
Figure 48. Program window
(CHAIRO command)

1. Input. The CHAIRO command allows you turn on or turn off the chairman override for one or all microphone input(s). It is also used to indicate the on/off status of a mic input. Any mic input can be selected as the chairman's mic. When a chairman override mic gates on, all other non-chairman mics will be turned off. Select input "1-8" to apply the CHAIRO command to the specified microphone input; select "*" to apply the CHAIRO command to all microphone input channels. Inputs A-D are not valid with this command.

2. Flag. The CHAIRO command has three flags: 0, 1, and 2. The "0" flag turns OFF the chairman override (on a control pin), or indicates the OFF state (in the inactive location of a status pin). The "1" flag turns ON the chairman override, or indicates the ON state. The "2" flag toggles the chairman override from one state to another (ON to OFF, and vice versa) each time the command is issued.

AP10 Unit Setup

New AP10 1
(20)

Figure 49. AP10 Unit icon

To begin AP10 unit setup, double-click on the AP10 unit icon (left). This will open the AP10 Setup and Operations window (below). The features of this window will be discussed in the order they are labeled in figure 50, below.
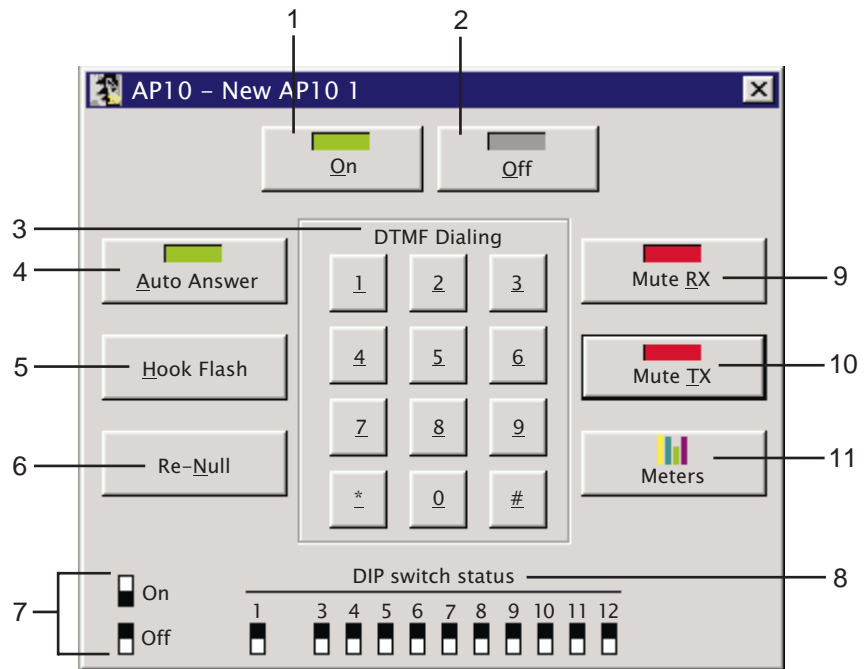
Figure 50. AP10 Setup and
Operations window

1. On. The ON button connects the AP10 to the telephone line and automatically adapts the hybrid to the line. The LED will light up green when the AP10 is in the ON state.

2. Off. The OFF button disconnects the AP10 from the telephone line and mutes all audio. The LED will light up red when the AP10 is in the OFF state.

3. DTMF Dialing. You may dial a phone number by clicking on the numbered buttons or by holding down the ALT key and typing the numbers on your keyboard.

4. Auto Answer. This button activates and deactivates the auto answer feature. The LED will light up green when auto answer is active.

5. Hook Flash. This button sends a momentary interruption in line seizure to the telephone line.

AP10 Unit Setup

Continued
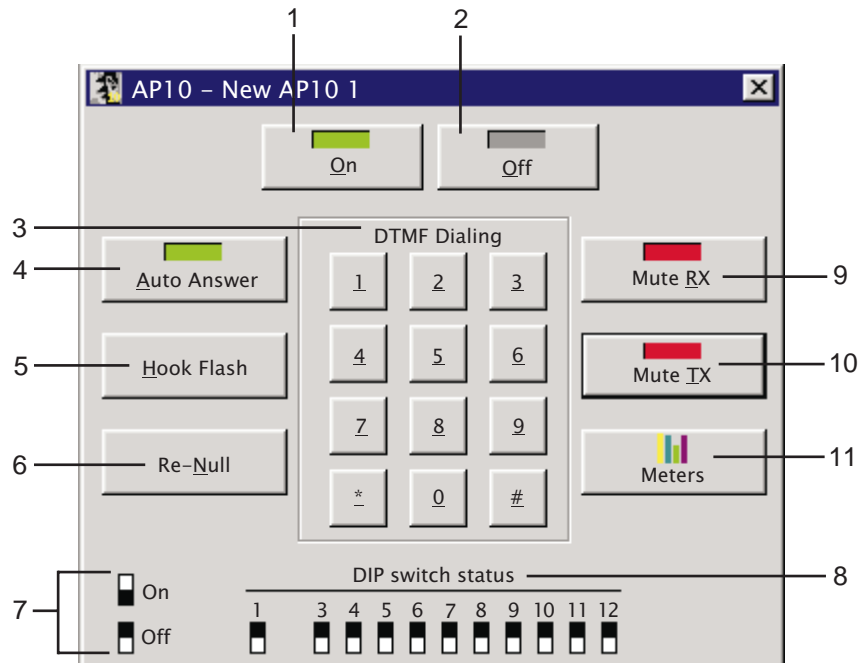
Figure 50a. AP10 Setup and Operations window

6. Re-Null. This button sends a short noise burst down the telephone line and forces the AP10 to adapt to the telephone line.

7. DIP Switch Key. This key depicts the ON and OFF positions of the DIP switches as they appear under DIP switch status.

8. DIP Switch Status. This is a read-only function that allows you to view the current state of the DIP switches on the AP10 unit. For definitions of the operational features associated with the DIP switches, see the *Audio Perfect™ 10 Installation and Operations Manual* page 7.

9. Mute RX. This button mutes and unmutes the receive channel of the AP10. The LED will light up red when the channel is muted.

10. Mute TX. This button mutes and unmutes the transmit channel of the AP10. The LED will light up red when the channel is muted.

11. Meters. Clicking on the meters button opens the AP10 Meters window (figure 51, next page). This window is a diagnostic tool which allows you to observe the performance of various aspects of AP10 operation. The features of this window will be discussed in the order they are labeled in figure 51.

AP10 Unit Setup

Continued
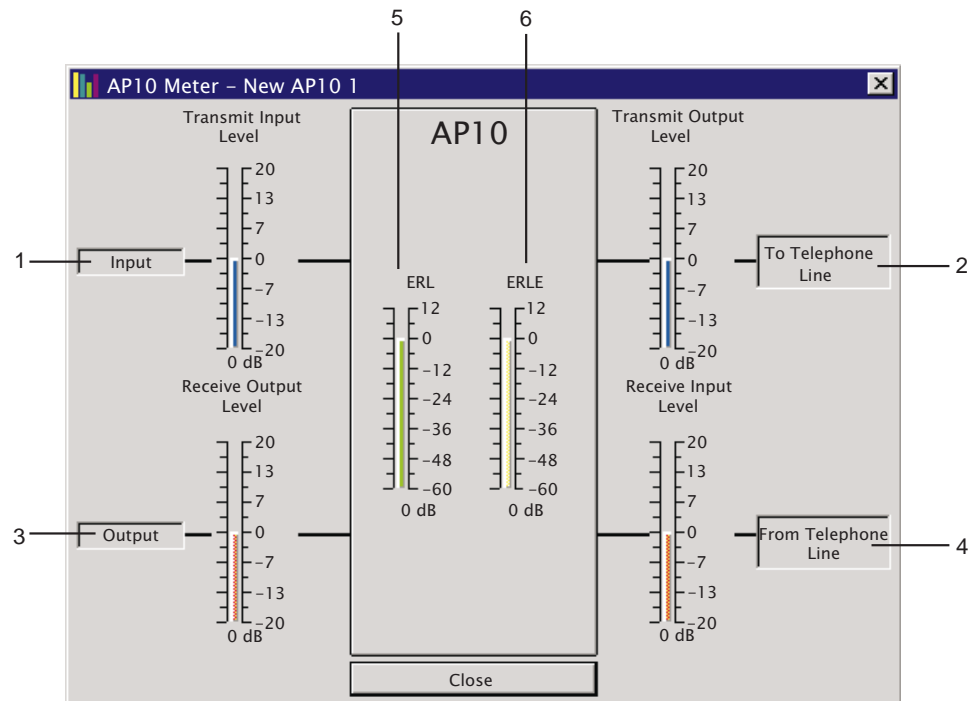
Figure 51. AP10 Meters window

1. *Transmit Input.* This bar meter shows the audio level input-ted into the AP10 for transmission to the telephone line. The meter ranges from -20 dB to 20 dB.

2. *Transmit Output.* This bar meter shows the transmit audio level outputed from the AP10 to the telephone line. The meter ranges from -20 dB to 20 dB.

3. *Receive Output.* This bar meter shows the receive audio level outputed from the AP10 to another device such as an AP800. The meter ranges from -20 dB to 20 dB.

4. *Receive Input.* This bar meter shows the audio level input-ted into the AP10 as it is received from the telephone line. The meter ranges from -20 dB to 20 dB.

5. *ERL.* This bar meter shows the telephone echo return loss (ERL). ERL is the amount of echo loss from the telephone line to the device and vice versa. The meter ranges from -60 dB to 12 dB.

6. *ERLE.* This bar meter shows the telephone echo return loss enhancement (ERLE). ERLE is the enhancement added by the telephone hybrid to reduce echo to a value below the au-dible level. The meter ranges from -60 dB to 12 dB.

Troubleshooting

Not Responding Error

When the AP Tools software fails to communicate with the AP units, a *not responding* error will be returned. The caption "not responding" will appear below the AP800 and AP10 icons in the site window. The icons will remain crossed-out (See Figure 52, below) even though the attempt to synchronize the units has been terminated.

Figure 52. Unit Icons (not responding)

The following suggestions should enable you to establish communications between the software and the AP units:

1. Check the serial connections. The serial cable should be connected both to the AP800 unit and a COM port on your PC. If you are using modems, check the serial connections on both modems.

2. Check the COM setting in Site Properties window (see page 8). Make sure that the COM setting is the same as the COM port connected to the AP unit or modem.

3. If you are using a modem, make sure the Enable Modem command is ON in the SYSTEM / RS-232 submenu of the AP800 front panel controls. If you are *not* using a modem, make sure it is OFF.

4. Check the Baud Rate setting in the Site Properties window. The Baud Rate should be the same as shown in the SYSTEM / RS-232 submenu of the AP800 front panel controls.

5. Click the Compare Site button or Retrieve Site Information button on the main toolbar to reattempt communications.

If you are still unable to establish communications, Call Technical Support at 1.800.945.7730 for additional assistance.

Troubleshooting

Continued

Debug Window

The AP Tools Debug Window enables you to view the communications between the AP Tools software and AP units. This window is accessed through the Windows® 95 Taskbar. When AP Tools is attempting to communicate, a small Audio Perfect™ icon will appear in the small box on the right side of the Taskbar. To access the debug window, right click on the icon. Three options will appear: Show Debug Window, Exit, and About. Left click on "Show Debug Window". This will open the Debug Window (below). Technical Support may require you to open this window for additional technical assistance.
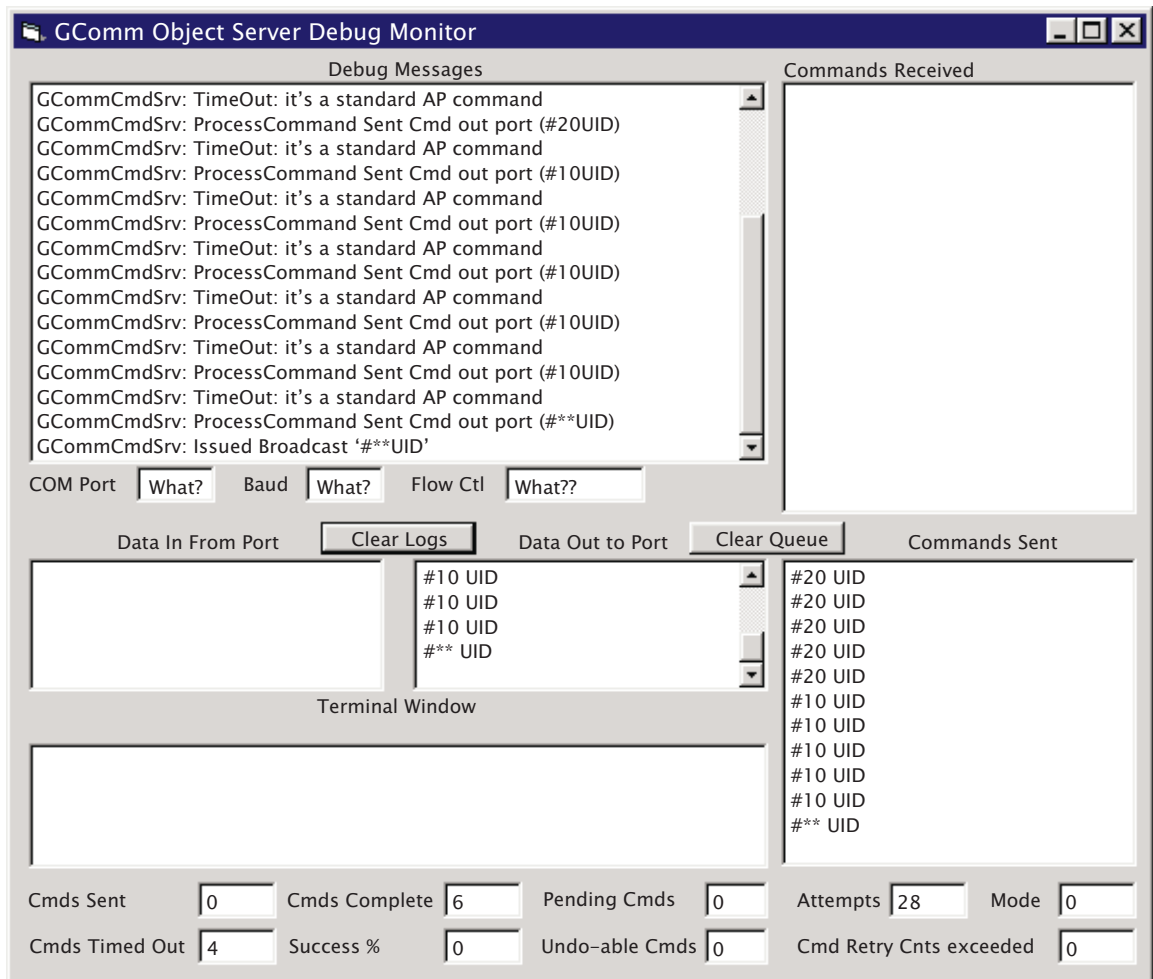
Figure 53. Debug window

Appendix A

Right-Click Operations

Many of the main toolbar functions may be activated by right-clicking on your mouse. The available functions are context specific, depending on what has been selected. Functions that are not available will be grayed out. Some options will be labeled differently and open different windows according to context. You may also access additional functions not available on the main toolbar such as RENAME and VIEW.

Below is a brief description of the options that will appear when you right-click on your mouse, arranged according to context. For a full description of the main toolbar and its functions, see *Main Toolbar Functions*, page 7.

Site Panel Options
If the site panel is open, but *no* site is selected, the only available right-click function is NEW SITE. Choosing this option will create a new site icon, and open the Site Properties window.

If the site panel is open, and a site has been selected, the following options will appear:

> OPEN OFFLINE will open the Site window which contains the unit icons without connecting to the site.
> DELETE allows you to delete the current site and all related information.
> RENAME will allow you to edit the text box containing the site's name. Press ENTER to end the edit.
> PROPERTIES will open the Site Properties window.
> NEW SITE will create a new site icon and open the Site Properties window.
> EXPORT SITE allows you to save site information to disk.
> IMPORT SITE allows you to retrieve site information from disk.
> RETRIEVE SITE causes AP Tools to query the site hardware for current configuration settings.
> PROGRAM SITE sends the configuration in the AP Tools software to your site's hardware.
> COMPARE SITE compares the current hardware configuration with the configuration in the AP Tools software.

Appendix A

Continued

Site Window Options
If *no* unit icon is selected, the following options will appear:

PROPERTIES will open the Site Properties window.
NEW SITE will create a new site icon in the site panel and open
   the Site Properties Window. However, to add units or continue
   site setup for the new site, you must close the Site window and
   double-click on the new site icon to open the Site window for
   the new site.
NEW AP800 will create a new AP800 icon and open the AP800
   Unit Properties window.
NEW AP10 will create a new AP10 icon and open the AP10 Unit
   Properties window.
EXPORT SITE, IMPORT SITE, RETRIEVE SITE, PROGRAM
   SITE, COMPARE SITE function as described under *Site Panel
   Options,* above.
DISCONNECT this will disconnect the site from the hardware
   allowing you to make changes OFFLINE.

If an AP800 or AP10 icon has been selected, the following options
will appear:

OPEN will open the Unit Setup window.
DELETE allows you to delete this unit and all related information.
RENAME will allow you to edit the text box containing the unit's
   name. Press ENTER to end the edit.
PROPERTIES will open the Unit Properties window.
NEW > has two sub-options: AP800 UNIT and AP10 UNIT. Each
   option will create a new unit icon and open the corresponding
   Unit Properties window.
EXPORT allows you to save unit information to disk.
IMPORT allows you to retrieve unit information from disk.
RETRIEVE UNIT causes AP Tools to query the unit hardware for
   current configuration settings.
PROGRAM UNIT send the configuration in the AP Tools software
   to your unit hardware.
WORK OFFLINE allows you to work offline with the selected unit
   only.
VIEW > has three sub-options: LARGE ICONS, SMALL ICONS,
   and LIST. These options determine how unit icons will appear
   in the Site window.

Appendix B

Warranty

Gentner Communications Corporation (Manufacturer) warrants that this product is free of defects in both materials and workmanship. Should any part of this equipment be defective, the Manufacturer agrees, at its option, to:

A. Repair or replace any defective part free of charge (except transportation charges) for a period of one year from the date of the original purchase, provided the owner returns the equipment to the Manufacturer at the address set forth below. No charge will be made for parts or labor during this period;

B. Furnish replacement for any defective parts in the equipment for a period of one year from the date of original purchase. Replacement parts shall be furnished without charge, except labor and transportation.

This Warranty excludes assembled products not manufactured by the Manufacturer whether or not they are incorporated in a Manufacturer product or sold under a Manufacturer part or model number.

THIS WARRANTY IS VOID IF:

A. The equipment has been damaged by negligence, accident, act of God, or mishandling, or has not been operated in accordance with the procedures described in the operating and technical instructions; or,

B. The equipment has been altered or repaired by other than the Manufacturer or an authorized service representative of the Manufacturer; or,

C. Adaptations or accessories other than those manufactured or provided by the Manufacturer have been made or attached to the equipment which, in the determination of the Manufacturer, shall have affected the performance, safety or reliability of the equipment; or,

D. The equipments original serial number has been modified or removed.

NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE, APPLIES TO THE EQUIPMENT, nor is any person or company authorized to assume any warranty for the Manufacturer or any other liability in connection with the sale of the Manufacturer's products.

Manufacturer does not assume any responsibility for consequential damages, expenses, or loss of revenue or property, inconvenience, or interruption in operation experienced by the customer due to a malfunction in the purchased equipment. No warranty service performed on any product shall extend the applicable warranty period.

In case of unsatisfactory operation, the purchaser shall promptly notify the Manufacturer at the address set forth below in writing, giving full particulars as to the defects or unsatisfactory operation. Upon receipt of such notice, the Manufacturer will give instructions respecting the shipment of the equipment, or such other matters as it elects to honor this warranty as above provided. This warranty does not cover damage to the equipment during shipping and the Manufacturer assumes no responsibility for such damage. All shipping costs shall be paid by the customer.

This warranty extends only to the original purchaser and is not assignable or transferable.

Gentner Communications Corporation, 1825 Research Way, Salt Lake City, Utah 84119

Appendix C

License Agreement

Important: *Read this license before using this product. Use of this product indicates that you have read this license and agree to its terms. If you do not agree, return the product complete to your dealer within 10 days of the date you acquired it for a full refund. This license agreement is your proof of licensure. Please treat is as valuable property.*

A. License: Gentner Communications Corporation ("we" or "us"), provides you with a computer program ("the Program"), a user manual, a license ("the license"), a registration card and accompanying documents (together called "the Product"), and grants you the right to use the Product in accordance with the terms of this license. The copyright and all other Product rights remain with Gentner Communications Corporation or its suppliers. You must reproduce any copyright or other notice marked on the Product on all copies you make.

B. You *may* 1) use the Program only on a single computer or network (only a single user at a time), regardless of the number of original copies of the Program included with the Product. If you wish to use the Product for more users, further license for each additional user is required; 2) make one copy of the Program for archive or back-up purposes; 3) transfer the Program to someone else only if you assign all of your rights under this license, cease all use of the Product, erase or destroy any copy of the Program (including hard-drive copy) made in support of your use of the Product, and the other person agrees to the terms of this license. *Important:* If the Product is an upgrade from a Gentner product, you may use or transfer the product only in conjunction with the upgraded product, unless you destroy it. If the Product is an upgrade from a Gentner product, you may only use that upgraded product in accordance with this license.

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D. Term: This license continues for as long as you use the Product. However, failure to comply with any of its terms or conditions will terminate your license. Upon termination, you agree to destroy all copies of the Product. The limitations of warranty and liability set out below continue in force even after termination.

E. Warranty: We warrant that all components of this Product will be free of defects of materials and workmanship for one year from the date of acquisition. If such a defect occurs, return it to us at the address below and we will replace it free. This remedy is your exclusive remedy for breach of this warranty.

F. Limitation of warranties and liability: Except for the express warranty above, this Product is provided on an "as is" basis, without any other warranties or conditions, expressed or implied, including but not limited to warranties of merchantable quality, merchantability or fitness for a particular purpose, or those arising by law, statute, usage of trade or course of dealing. The Product's entire performance risk is assumed by you. Neither we nor our dealers or suppliers have any liability to you or any other person or entity for any indirect, incidental, special or consequential damages whatsoever, including but not limited to loss of revenue or profit, lost or damaged data or other commercial or economic loss, even if we have been advised of the possibility of such damages or they are foreseeable; or for claims by a third party. Our maximum aggregate liability to you and that of our dealers and suppliers shall not exceed the amount paid by you for the Product. The limitations in this section apply whether or not the alleged breach or default is a breach of a fundamental condition or term, or a fundamental breach. Some states/countries do not allow the exclusion or limitation of liability for consequential damages so the above limitation may not apply to you.

G. General: This license is the entire agreement between us, supersedes any other agreements or discussions, oral or written, and may not be changed except by a written signed agreement. This license shall be governed by and construed in accordance with the laws of Salt Lake City, Utah. If any provision of this license is declared by a court of competent jurisdiction to be invalid, illegal, or unenforceable, such provision shall be severed from the license and the other provisions shall remain in force and effect.

Gentner Communications Corporation, 1825 South Research Way, Salt Lake City, UT 84119, TEL: Worldwide 1.801.975.7200 or USA 1.800.945.7730, FAX: Worldwide 1.801.977.0087 or USA 1.800.933-5107

Gentner   Technical Support: 1.800.945.7730 (USA) or 1.801.975.7200

Contact Numbers

Sales and Technical Support:

Call Toll Free (USA)..........................1.800.945.7730
Fax..1.800.933.5107
Fax-On-Demand.................................1.800.695.8110

International Sales and Technical Support:

Telephone...1.801.972.7200
Fax..1.801.977.0087
Fax-On-Demand.................................1.801.974.3661

Other Contact Information:

Worldwide Web...............................www.gentner.com

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Salt Lake City, UT 84119

For additional information and instructions on Audio Perfect™ products, please refer to the following manuals:

Audio Perfect 800 Installation and Operations Manual
Gentner Part No. 800-150-001

Audio Perfect 10 Installation and Operations Manual
Gentner Part No. 800-150-201