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World Leader of In-Rack, Audio, Video, Data Monitoring, and Closed Captioning Solutions

AMP2-16 Series

- AMP2-16-3G
- AMP2-16D
- AMP2-16M
- AMP2-16DA-3G
- AMP2-16MDA
- AMP2-E16-3G
- AMP2-E16D
- AMP2-E16M
- AMP2-E16DA-3G
- AMP2-E16MDA

Modular Audio Management and Monitoring Platform

User Guide

Part Number 821699, Revision E

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CHAPTER 1
Quick Start

Introduction

Overview

The AMP2-16-3G Series monitors come with a 4.3″ TFT LCD screen and an easy-to-use configuration interface that provides flexible audio metering, video monitoring, and other data display.

Topics

Safety Instructions

1. Read, keep, and follow all of these instructions; heed all warnings.
2. Do not use this equipment near water.
3. Use only a dry cloth to clean the equipment.
4. Do not block any ventilation openings. Install only in accordance with the instructions in the section entitled, Installation Recommendations on page 3.
5. Do not install near any heat source such as a radiator, heat register, amplifier, or stove.
6. Do not expose the equipment to rain or moisture.
7. Do not attempt to plug the unit into a two-blade outlet (with only two prongs of equal width).

IMPORTANT: By design, these monitors will only plug into a three-prong outlet for your safety. If the plug does not fit into your outlet, contact an electrician to replace the obsolete outlet.

8. Protect the power cord from being walked on or pinched, particularly at plug's source on the equipment and at the socket.
9. Use only the attachments/accessories specified by the manufacturer.
10. Unplug the equipment during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel. Servicing will be required under all of the following conditions:
    - The equipment has been damaged in any way, such as when the power-supply cord or plug is damaged.
    - Liquid had been spilled or objects have fallen onto the equipment.
    - The equipment has been exposed to rain or moisture.
    - The equipment does not operate normally.
    - The equipment has been dropped.

Installation Recommendations

Mounting

The unit is designed to install into a standard 19" rack mounted at eye level for best visual observation of the monitor screen. After installing the AMP2-16-3G, remove the clear, plastic protective cover from the screen using the tab provided.

Heat Dissipation

The ambient temperature inside the mounting enclosure should not exceed 40° Celsius (104° Fahrenheit). Adjacent devices can be rack mounted (or stacked) in proximity to the unit if this temperature is not exceeded. If the product must be operated in an environment with an elevated temperature, allow a 1RU (1.75”/44.45mm) space above and below the unit for air circulation.

Important: The heat generated by the class D power amplifiers, power supplies, and other components is vented by slots in the sides of the unit. Therefore, as a safety precaution, we advise you to be sure to allow proper ventilation on both sides of the unit.

Power

On each of its power supplies, the AMP2-16-3G has a standard IEC connector on the rear panel from which it can connect to AC mains power (100 to 240 VAC ± 10%, 50/60 Hz, 150W). You may use the power cord provided or any other cord to adapt the unit to the proper country-specific power connection.

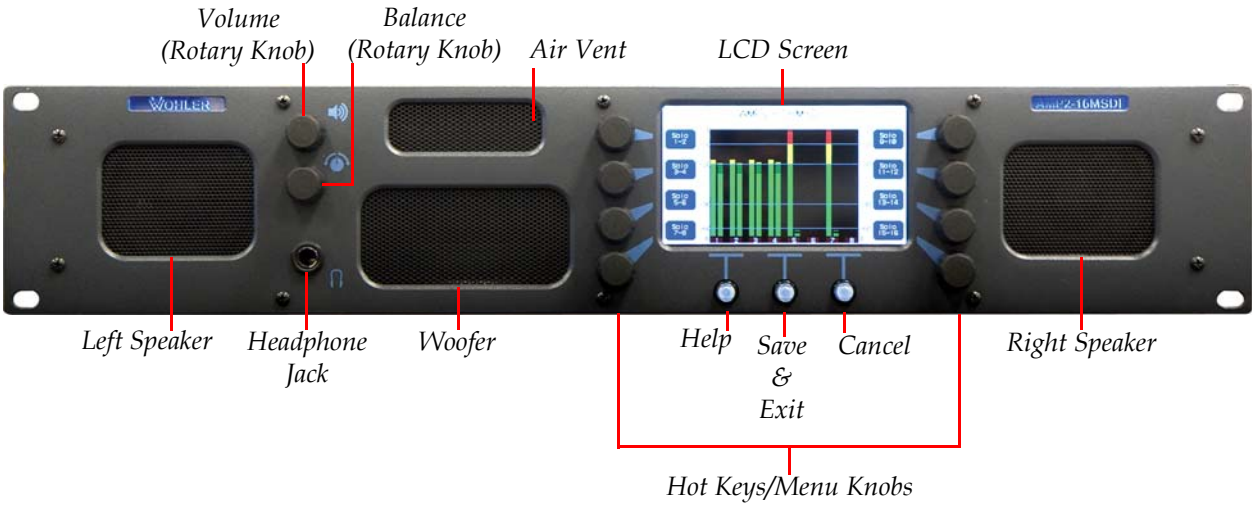
Note: The second power supply is optional and is only for redundancy. Also, when using a second power supply, make sure it is plugged into an outlet that is controlled by a different circuit breaker than the first supply. This will ensure that a tripped breaker will not result in the loss of operation.

Using the Monitor

This section provides a brief overview of the controls on the front panel, and the connectors on the back panel of the monitor.

Front Panel

Figure 1–1 Front Panel Layout



Speakers: Audio monitoring is achieved through the use of class D amplifiers driving two (left/right) wide range speakers and one low frequency driver fed with a sharply rolled off sum of the left/right signals.

Headphone Jack: A class AB amplifier drives the front panel 1/4" stereo jack for an optional headphone.

Balance and Volume Rotary Knobs: Control knobs are above the headphone jack. The top knob controls the **Volume**. Pressing this control toggles a 20 dB speaker dip on and off. The bottom knob adjusts the **Balance** between the speakers. Pressing the knob returns the audio balance to center. Rotating either knob displays the change graphically.

Navigation Buttons: The three illuminated buttons below the LCD screen typically provide **Help** (left), **Save/Exit** (center), and **Cancel** (right) functions for the configuration menus. On some menus/screens, however, their functions may vary or they may be disabled altogether.

LCD Screen: This screen displays the audio meter bar graphs and the configuration menus.

Hot Keys/Menu Rotary Knobs: Eight knobs are used for menu navigation and hot key access to solo/mute, and preset functions.

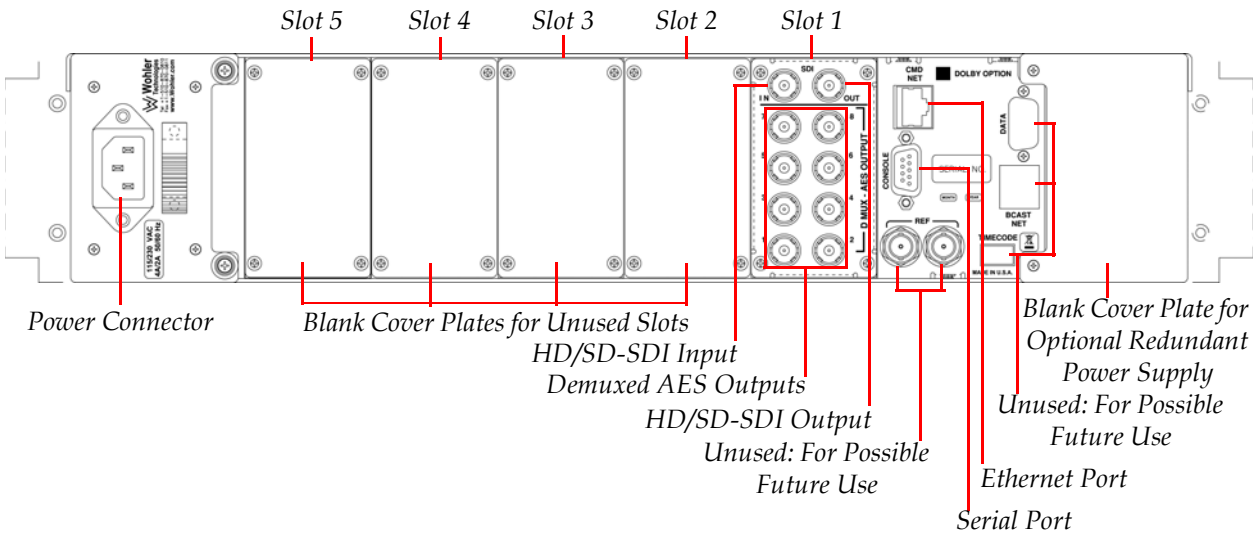
- For solo/mute hot keys, rotating the knob to the right sets the function to mute; rotating the knob to the left sets the function to solo. Pressing the knob activates the selected function.
- For selectable preset hot keys, rotate the knob to display the preset number you want to recall and then press the knob to recall it.

Back Panel

Standard Back Panel Connectors

The AMP2-16-3G and AMP2-E16-3G back panel contains all of the connectors except for the headphone jack as shown in Figure 1–2 below. Note that, as you are facing the rear panel, the slots are numbered from right to left.

Figure 1–2 Typical Back Panel Layout



- **Power:** The AMP2-16-3G and AMP2-E16-3G use a standard IEC power cord for the 100 to 240 VAC power connection. A redundant power supply is optional.
- **Ethernet:** The Ethernet port is used for system software upgrades.
- **Serial:** This DB-9F connector is used for system software upgrades.

Optional Input/Output Modules and Rear Panel Connectors

The AMP2-16-3G and AMP2-E16-3G series monitors can include any combination of the optional I/O modules listed in Table 1–1 below.

Table 1–1 Available Add-On I/O Modules

I/O Module Name	I/O Module Description
3G/HD/SD-SDI Card	2 3G/HD/SD-SDI inputs 8 de-embedded AES pairs outputs (Includes automatic frame rate detection)
HD/SD-SDI Card	1 HD/SD-SDI inputs 8 de-embedded AES pairs outputs (Includes automatic frame rate detection)
AES Input Card	16 channel (eight AES pairs)
AES Output Card	16 channel (eight AES pairs)
Analog I/O Card	8 channel
Dolby Card D/E Card[a]	Provides Dolby decoding for an AES pair or de-embedded SDI of your choice

a The Dolby D/E Card is a daughter card and does not occupy one of the vacant slots and does not require its own external connectors.

Refer to Chapter 3: Input/Output Modules and Options on page 19 for more details.

Getting Started

Setting Up the Monitor

The **Main Screen** (shown on Figure 1–3 on page 7) is typically the starting and ending point for any system setup procedures.

Note: As a factory default, the AMP2-16 Series monitor will always be configured to produce audio in the monitor speakers from the card in Slot 1.

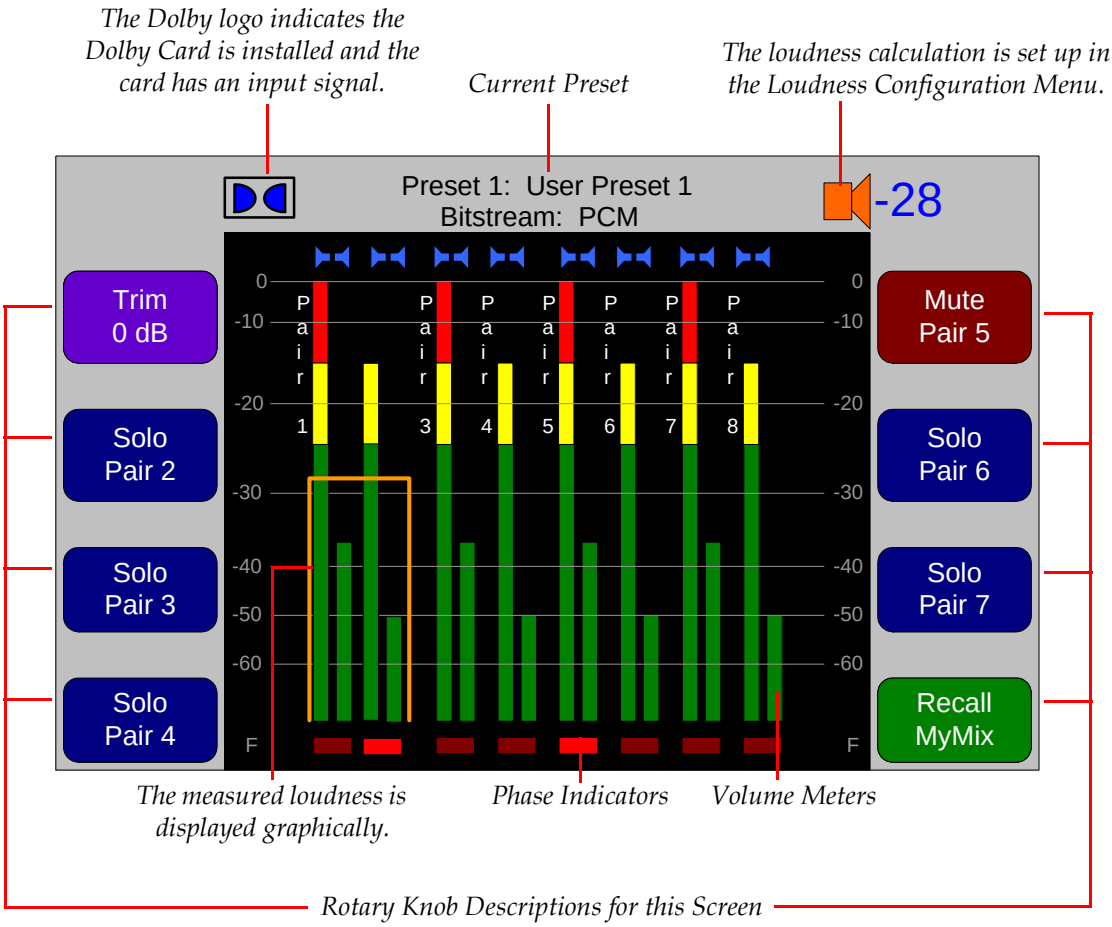
The following steps provide a simple example.

Simple Example

1. Connect the power cord (or cords) to the unit, and then plug the other end of the cord into a standard outlet. (Refer to Table 7–1 on page 112 for details about power consumption and requirements.)
2. Connect the audio input source(s) to the Input 1 connector (or connectors for an AES Input Card) on the rear panel adaptor of Slot 1. (Refer to Figure 1–2 on page 5 for slot numbering.)
3. Adjust the **Volume** and **Balance** as needed.

For more detailed audio configuration instructions, refer to Configuring Audio on page 12.

Figure 1–3 Main Screen



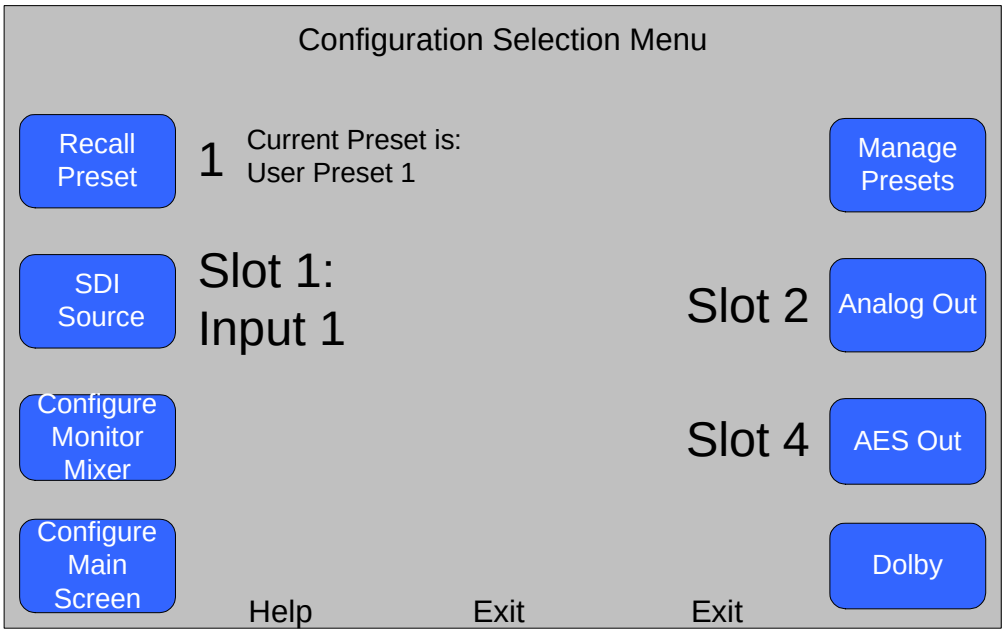
Navigation

You can launch the menu system by pressing either the center or right buttons directly below the LCD screen. These same buttons usually also either the **Save / Exit** or **Cancel** the current function, however they are programmable and occasionally take on different functions depending on the current menu.

From the **Main Screen**, press either the **Save / Exit** or **Cancel** buttons to display the **Configuration Selection Menu**. The eight knobs surrounding the screen allow you to access options or functions on the screen or to proceed to other menus.

Generally, to make changes, rotate the knob to highlight the option that you want. Pressing the **Save / Exit** saves the changes. To move back up in the menu tree (see Figure 5–1 on page 69) press either the **Save / Exit** or the **Cancel** repeatedly until you reach the **Main Screen**.

Figure 1–4 Configuration Selection Menu



Note: Both the center **Exit** and the right **Exit** buttons provide the same function in this menu.

Configuring the System

The functional descriptions fall under the following categories:

- Configuring Audio, Metering, and Mixing (Chapter 2 on page 11)
- Adding/Removing Optional Hardware (Chapter 3 on page 19)
- Configuring Presets and Hot Keys (Chapter 4 on page 53)

Note: For maintenance tasks such as serial/ethernet port configuration and software upgrades, refer to Chapter 6: System Maintenance on page 101.

CHAPTER 2
Audio, Metering, and Mixing

Introduction

Overview

This chapter discusses the various menus and their configuration options for customizing the audio inputs/outputs, and the audio level meters.

Topics

Configuration Options

The AMP2-16 Series monitors are very flexible and can be configured to adapt to almost any audio configuration. The available adjustments are:

- Selecting the inputs channels to mix and monitor
- Adjusting individual channel levels for any monitored channels or output channels
- Displaying audio levels and phase indications with meters that can be clustered for quick visibility
- Switching channels dynamically
- De-embedding and rearranging channels for display and output
- Mixing of any audio inputs to any outputs

  Note: This does not include the de-embedded AES outputs on the SDI or 3G cards.

- Adjusting monitored audio delay of from 0 to 170 ms to allow synchronization with an LCD monitor.

Configuring Audio

As a factory default, the AMP2-16 Series monitor will always be configured to produce audio in the front speakers from the card in monitor Slot 1. However, you can configure the monitor to product audio in the front speakers from any available input source.

Figure 2–1 on page 13 illustrates the flexibility of the AMP2-16 Series monitors. You can configure the monitor to output sound from any card or output other than the default, in the **Monitor Mixer Configuration Menu** shown on Figure 2–2 on page 14.

1. Use the **Source Pair Select** knob to select the source pairs from the input card you want to route to the speakers.
2. Use the **Mixer Channel Select** knob to select the individual channels the other knobs will affect.

Figure 2–1 Audio Routing Diagram

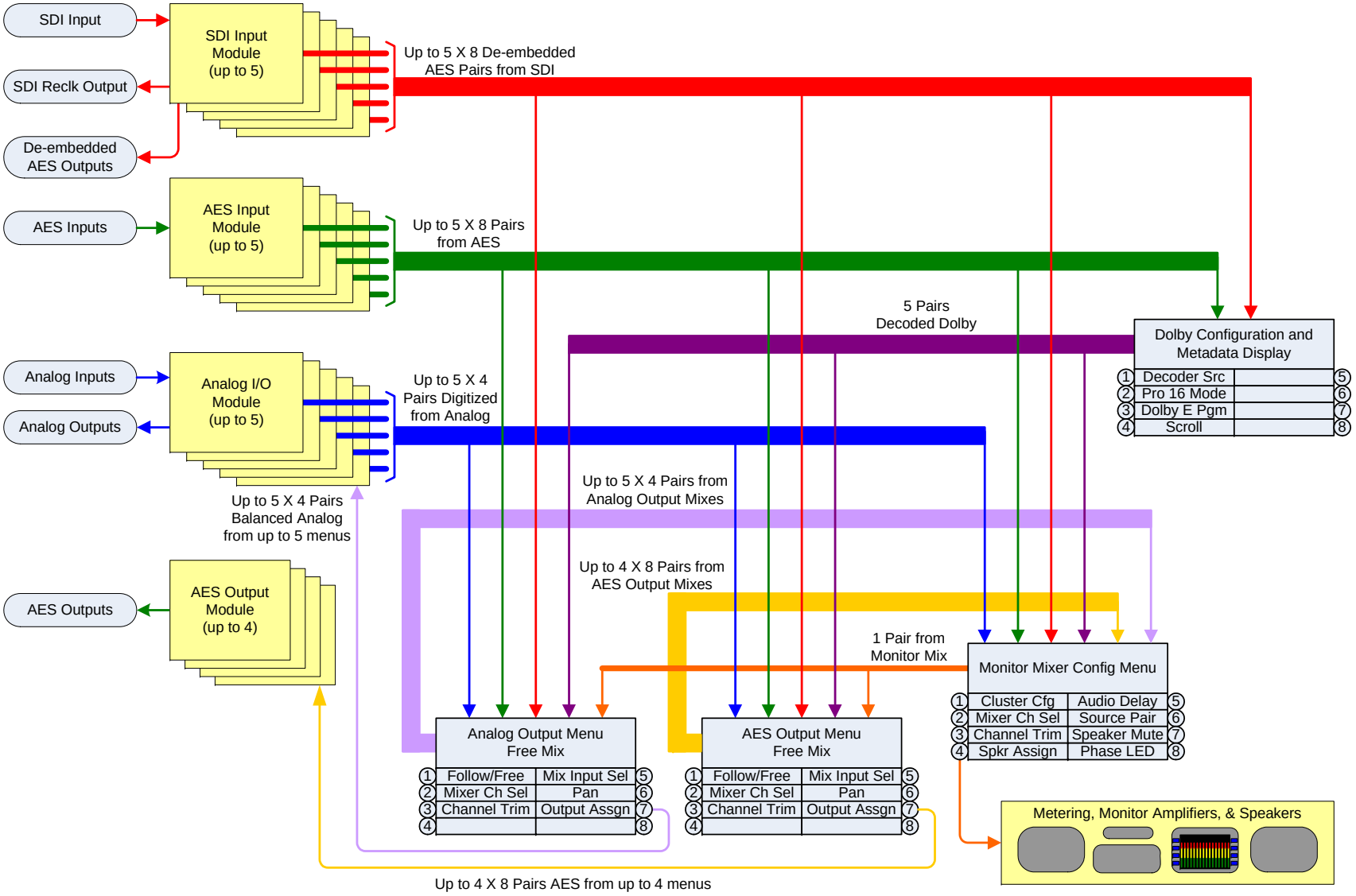
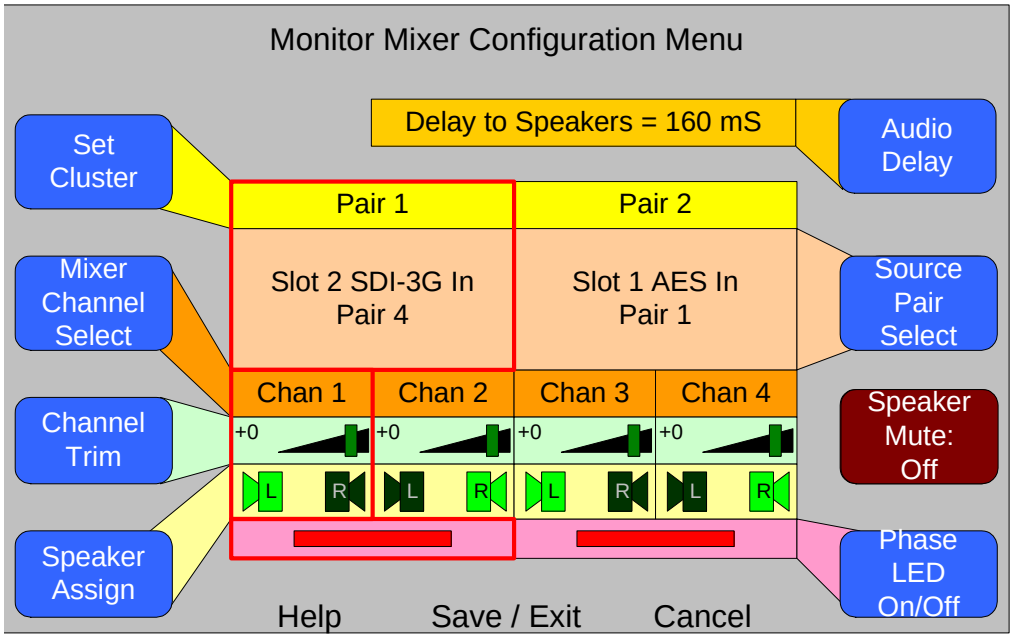


Figure 2–2 Monitor Mixer Configuration Menu



3. Use the **Channel Trim** to modify the relative loudness of each channel.

4. Use the **Speaker Assign** to assign the channels that will be heard in each front panel speaker.

5. Verify that **Speaker Mute** is **Off**.

Level Metering

Overview

The AMP2-16 Series monitors are capable of displaying 16 bar graph level indicators with a variety of selectable scales and eight phase indicators simultaneously with a loudness indication. You can set the signals to be monitored by the level meters in the **Monitor Mixer Configuration Menu**, which also controls the internal speakers. These signals can be de-embedded SDI audio, AES audio, decoded Dolby, a mix of any inputs, or a combination depending on the optional I/O modules installed in the unit.

Metering Menus

You can modify the level meters' display and related visual indications in the following menus.

1. Set the source for each of the 16 level meters and phase indicators in the **Monitor Mixer Configuration Menu.**
2. Set the meter scale, ballistics, limits, reference level, as well as segment colors and transition points in the **Meter Configuration Menu**.
3. Set the clustering of the meters into logical arrangements in the **Cluster Configuration Menu**.
4. Set the loudness indication up for any chosen meter cluster in the **Loudness Configuration Menu**.

Audio Mixing

Overview

The AMP2-16 Series monitors can perform live mixing functions when they have an Analog Ouput Card and/or an AES Output Card installed. You can create these mixes independently of the audio monitoring function. Also, you can use the audio monitoring and level metering functions to monitor the result of the mix.

Note: When mixing live audio in the broadcast chain, Wohler highly recommends that you purchase the redundant power supply option. (See Redundant Power Supply Option Kit on page 51 for details.) Each power supply should then be connected to power circuits on different circuit breakers. This will assure that the audio mix is never interrupted by a fault on any single power circuit.

Configuring the Audio Outputs

You can route the digital audio signals at the monitor's inputs to the monitor's speakers, or to the outputs, depending on your needs. The internal routing paths are controlled by the settings in the setup menus. Figure 2–3 on page 17 shows the relationship between the internal routing paths and the various menus that control the signal flow.

The different colors in the diagram represent various audio formats or levels of processing. Each menu will select, route, or adjust the audio paths. Further detail on each of these menus is available in Chapter 5: Menu List on page 67.

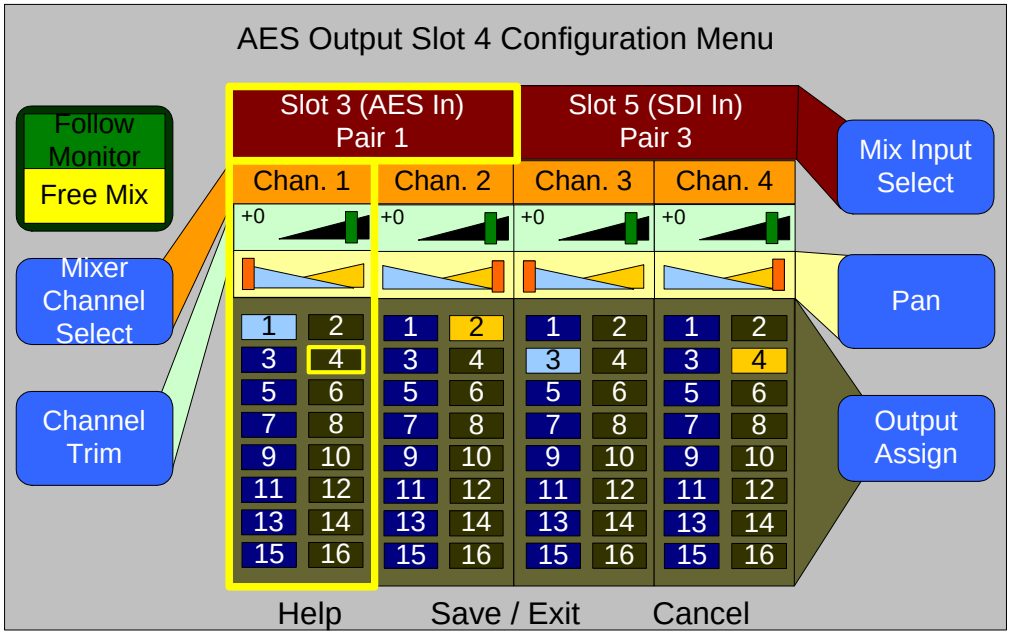
Note that you can set up multiple audio paths. For example, while monitoring de-embedded SDI audio channels through the speakers, you may independently decode Dolby channels from an AES stream, convert them to analog, and output them. Setups like this can be stored as presets and called up at will. See Chapter 4: Efficiency Enhancements on page 53.

Basic Mixing

The **Analog** and **AES Output Configuration Menu**s have two modes. The first mode is the **Follow Monitor** mode in which the selected channels in the **Monitor Mixer Configuration Menu** are output through the Analog or AES Output card. This menu allows you to set level control, channel assignment, and front panel control options. While there are many uses, this mode is primarily intended to be when an output card is connected to an external surround-sound monitoring system.

The second mode is the **Free Mix** mode. This very flexible mode allows you to mix and output any combination of channel pairs into any combination of output channels as shown in Figure 2–3 on page 17.

Figure 2–3 AES Output Configuration Menu



In the **Free Mix** mode, you can direct each channel of each chosen channel pair to any or all of the 16 channel outputs of the AES Output card (or eight channel outputs of an Analog Output card.) Direct each channel with the **Output Assign** control to turn on or off the channel indicators in the odd-numbered left and even-numbered right columns shown on each output channel. If outputs are assigned to channels in both the left and right columns, you can use the **Pan** control to pan the source channel between the two columns. You can use the **Channel Trim** control to adjust the output level of each source into the output channel(s). Using these controls, you can create any audio mix you choose.

Note: The pan control will affect the level of the signal, even if only odd or even channels are selected. For example, if the pan control is turned all the way to the left, but only Channel 2 is selected, no sound will come from the channel, regardless of the other controls.

You can also set the trims to be adjustable as hot keys from the **Main Screen**. These adjustments are separate from, and in addition to the **Channel Trims** located on this menu. Refer to Presets on page 54 and Hot Keys on page 57 for more information.

Mixed Channel Metering

In some applications it can also be advantageous not only to have the **Channel Trim** controls accessible from the **Main Screen**, but to monitor their output on the level meters or monitor speakers. This allows a visual and audible reference to the output mix as it is adjusted. To set up this function, use the **Monitor Mixer Configuration Menu** to select the source(s) for the meters and monitor speakers from the output channels being mixed into.

This setup is simple. The same **Source Pair Select** control that is used to select the sources being monitored is rotated to select the analog or AES output pair that is to be monitored. If only level meters and no audible monitoring is desired, use the **Trim** control (on the **Monitor Mixer Configuration Menu**) to disable the monitor speakers on that channel pair or mute it from the **Main Screen**.

CHAPTER 3
Input/Output Modules and Options

Introduction

Overview

This chapter discusses the various modules and their impact on the menu system, as well as other available options for the AMP2-16-3G and AMP2-E16-3G monitors.

Topics

Distinctions Among Models

Optional I/O Modules

You can further customize the AMP2-16-3G by inserting additional I/O modules (a total of five) to the back plane.

Figure 3–1 Optional I/O Modules

Note that you can add any of the I/O modules (listed in Table 3–1) or multiples of I/O modules, in any order.

Table 3–1 Available Add-On I/O Modules

I/O Module Name	Functionality Provided
3G/HD/SD-SDI Card	2 3G/HD/SD-SDI inputs 8 de-embedded AES pairs outputs (Includes automatic frame rate detection)
HD/SD-SDI Card	1 HD/SD-SDI inputs 8 de-embedded AES pairs outputs (Includes automatic frame rate detection)
AES Input Card	16 channel (eight AES pairs)
AES Output Card	16 channel (eight AES pairs) consisting of a mix of any channels
Analog I/O Card	8 channel
Dolby Card D/E Card[a]	Provides Dolby decoding for an AES pair or de-embedded SDI of your choice

a The Dolby D/E Card is a daughter card and does not occupy one of the vacant slots since it does not require its own external connectors.

Standard Models

The model names rely on the following naming schema.

Table 3–2 AMP2-16-3G Model Naming Schema

Letter	Description
E	Includes Dolby D, E, and Dolby Digital Plus decoding capability
M	Includes HD/SD-SDI input and reclocked output
D	Includes AES digital inputs
A	Includes analog inputs and outputs
3G	Includes dual 3G/HD/SD-SDI inputs and reclocked output

While a huge number of functional combinations are possible, the following typical combinations form Wohler's standard offering.

Table 3–3 Relationship Between Model Name and Included I/O Modules

Model	HD/SD-SDI Card	3G/HD/SD-SDI Card	AES Input Card	AES Output Card	Analog I/O Card	Dolby D/E Card
AMP2-16-3G		✓				
AMP2-E16-3G		✓				✓
AMP2-16DA-3G		✓	✓		✓	
AMP2-E16DA-3G		✓	✓		✓	✓
AMP2-16-MDA	✓		✓		✓	
AMP2-E16MDA	✓		✓		✓	✓

Menu Modifications for Input I/O Modules

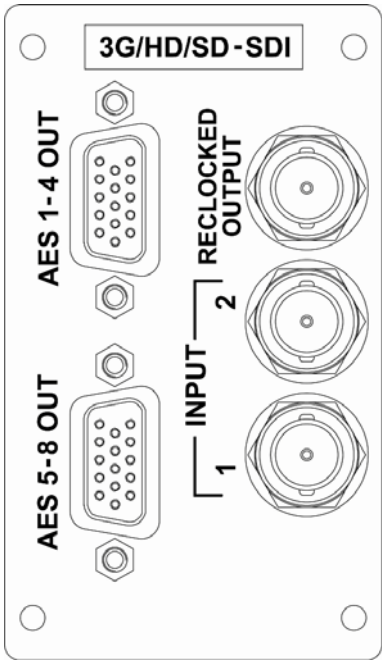
The menus automatically adjust themselves to accommodate any I/O modules that are added to the system. This means that the channels of any new input cards and the mixed outputs of any output cards automatically appear as sources in the available monitoring or output menus. The output cards automatically cause output menus to appear so that you can assign sources to them.

3G/HD/SD-SDI Card

3G/HD/SD-SDI Rear Panel Adaptor

After adding the 3G/HD/SD-SDI Card and its corresponding rear panel adaptor to the AMP2-16-3G or AMP2-E16-3G, the rear panel adaptor provides the connectors shown in Figure 3–2.

Figure 3–2 3G/HD/SD-SDI Card Rear Panel Adaptor and Rear Card Cover Plate



Menu Modifications

Inputs

The 3G/HD/SD-SDI Card rear panel adaptor has two selectable BNC inputs from the **Configuration Selection Menu** that will also appear as sources on the **Monitor Mixer Configuration Menu**.

Outputs

The eight AES output pairs on this card are de-embedded and re-clocked from the 3G/HD/SD-SDI signal. No other signals can be routed to these particular outputs. Pairs 1 through 4 are output through the top DB-9 connector and Pairs 5 through 8 are output through the bottom DB-9 connector. The de-embedded pairs that you select in the **Monitor Mixer Menu** are the same ones that display on the level meters and are audible through the internal speakers.

Connector Pin Outs

The pin out of the unbalanced AES output connectors on the 3G/HD/SD-SDI rear panel adaptor is listed in Table 3–4 below.

Note: The unbalanced AES output pin out is the same as a commercially-available VGA cable.

Table 3–4 Unbalanced AES Output Connector Pin Out

Pin	AES Outputs 1 thru 4 Function	AES Outputs 5 thru 8 Function	Use
1	AES Pair 1	AES Pair 5	Unbalanced AES Outputs
2	AES Pair 2	AES Pair 6	
3	AES Pair 3	AES Pair 7	
4	Ground	Ground	Chassis Ground Return
5	Ground	Ground	
6	Ground	Ground	
7	Ground	Ground	
8	Ground	Ground	
9	Ground	Ground	
10	Ground	Ground	
11	Ground	Ground	
12	Ground	Ground	
13	AES Pair 4	AES Pair 8	Unbalanced AES Outputs

Table 3–4 Unbalanced AES Output Connector Pin Out

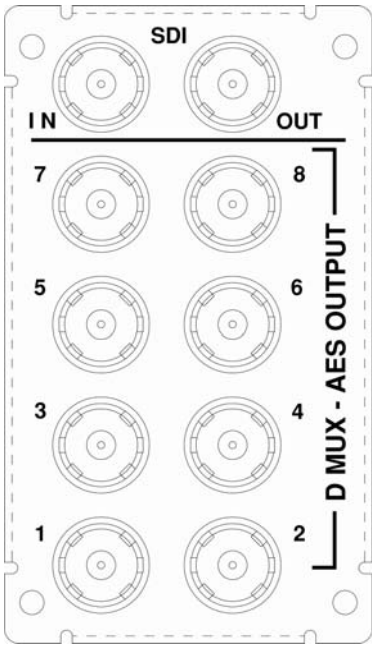
Pin	AES Outputs 1 thru 4 Function	AES Outputs 5 thru 8 Function	Use
14	Ground	Ground	Chassis Ground Return
15	Ground	Ground	

HD/SD-SDI Card

HD/SD-SDI Rear Panel Adaptor

After adding the HD/SD-SDI Card and its corresponding rear panel adaptor to the AMP2-16-3G or AMP2-E16-3G, the rear panel adaptor provides the connectors shown in Figure 3–3.

Figure 3–3 HD/SD-SDI Card Rear Panel Adaptor and Rear Card Cover Plate



Menu Modifications

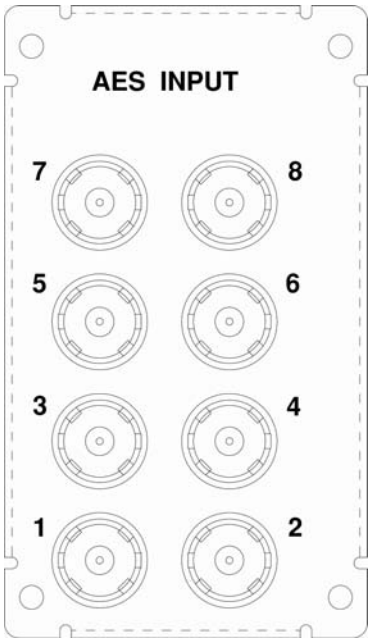
The eight AES output pairs on this card are de-embedded and re-clocked from the HD/SD-SDI signal. No other signals can be routed to these particular outputs. Pairs 1 through 4 are output through the top DB-9 connector and Pairs 5 through 8 are output through the bottom DB-9 connector. The de-embedded pairs that you select in the **Monitor Mixer Configuration Menu** are the same ones that display on the level meters and are audible through the internal speakers.

AES Input Card

AES Input Rear Panel Adaptor

After adding the AES Input Card and its corresponding rear panel adaptor to the AMP2-16 Series monitor, the rear panel adaptor provides the connectors shown in Figure 3–4.

Figure 3–4 AES Input Card Rear Panel Adaptor and Rear Card Cover Plate



Menu Modifications

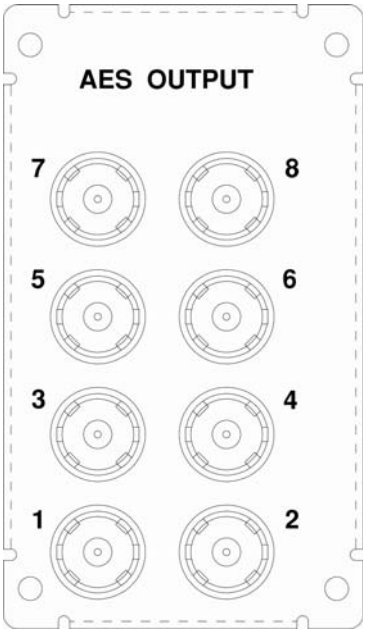
All of the AES input pairs on the AES Input Card rear panel adaptor are selectable on the **Monitor Mixer Configuration Menu** and are also sources on the **AES** or **Analog Output Cards** or on the optional **Dolby D/E Card**.

AES Output Card

Rear Panel Adaptor

After adding the AES Output Card and its corresponding rear panel adaptor to the AMP2-16-3G or AMP2-E16-3G, the rear panel adaptor provides the connectors shown in Figure 3–6.

Figure 3–5 AES Output Card Rear Panel Adaptor and Rear Card Cover Plate



Menu Modifications

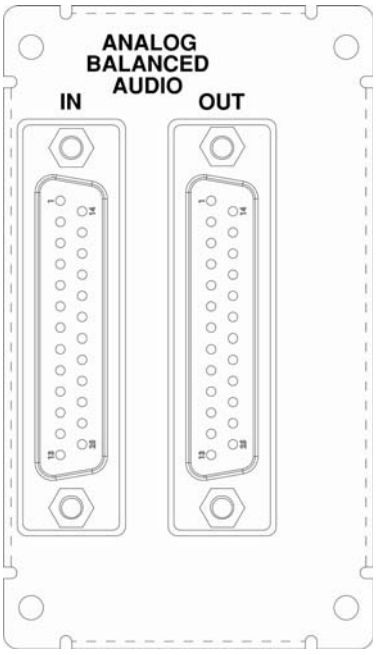
The **Configuration Selection Menu** will now display an **AES Out** knob. Pressing the **AES Out** knob will display the **AES Output Menu** from which you can select and/or configure each of the AES output pairs. Rotating this knob will select among multiple AES Output cards if more than one is installed. You can modify the Input termination settings in the **Hardware Configuration Menu**.

Analog I/O Card

Rear Panel Adaptor

After adding the Analog I/O Card and its corresponding rear panel adaptor to the AMP2-16-3G or AMP2-E16-3G, the rear panel adaptor provides the connectors shown in Figure 3–5.

Figure 3–6 Analog I/O Card Rear Panel Adaptor and Rear Card Cover Plate



Menu Modifications

You can select the analog input from the **Monitor Mixer Configuration Menu** and also from the **AES** and **Analog Output Menus**.

The **Configuration Selection Menu** will now display an **Analog Out** knob. Pressing this knob will display the **Analog Output Menu** from which you can select and configure the outputs. Rotating this knob will select among multiple Analog I/O cards if more than one card is installed.

Note: You can modify the analog reference levels in the **Hardware Configuration Menu**.

Connector Pin Outs

The pin out of the balanced analog input connector is listed in Table 3–5 below.

Note: The balanced analog input connector pin out is the same as the commercially-available Tascam DA-88 adapter cables.

Table 3–5 Balanced Analog Input Connector Pin Out

Pin	Function	Use
1	Channel 8 (+)	Non-inverted Balanced Analog Input
2	Ground	Channel 8 Shield
3	Channel 7 (-)	Inverted Balanced Analog Input
4	Channel 6 (+)	Non-inverted Balanced Analog Input
5	Ground	Channel 6 Shield
6	Channel 5 (-)	Inverted Balanced Analog Input
7	Channel 4 (+)	Non-inverted Balanced Analog Input
8	Ground	Channel 4 Shield
9	Channel 3 (-)	Inverted Balanced Analog Input
10	Channel 2 (+)	Non-inverted Balanced Analog Input
11	Ground	Channel 2 Shield
12	Channel 1 (-)	Inverted Balanced Analog Input

Table 3–5 Balanced Analog Input Connector Pin Out

Pin	Function	Use
13	(NC)	Not Used
14	Channel 8 (-)	Inverted Balanced Analog Input
15	Channel 7 (+)	Non-inverted Balanced Analog Input
16	Ground	Channel 7 Shield
17	Channel 6 (-)	Inverted Balanced Analog Input
18	Channel 5 (+)	Non-inverted Balanced Analog Input
19	Ground	Channel 5 Shield
20	Channel 4 (-)	Inverted Balanced Analog Input
21	Channel 3 (+)	Non-inverted Balanced Analog Input
22	Ground	Channel 3 Shield
23	Channel 2 (-)	Inverted Balanced Analog Input
24	Channel 1 (+)	Non-inverted Balanced Analog Input
25	Ground	Channel 1 Shield

The pin out of the balanced analog output connector is listed in Table 3–6 below.

Table 3–6 Balanced Analog Output Connector Pin Out

Pin	Function	Use
1	Channel 8 (+)	Non-inverted Balanced Analog Output
2	Ground	Channel 8 Shield
3	Channel 7 (-)	Inverted Balanced Analog Output
4	Channel 6 (+)	Non-inverted Balanced Analog Output
5	Ground	Channel 6 Shield
6	Channel 5 (-)	Inverted Balanced Analog Output
7	Channel 4 (+)	Non-inverted Balanced Analog Output
8	Ground	Channel 4 Shield
9	Channel 3 (-)	Inverted Balanced Analog Output
10	Channel 2 (+)	Non-inverted Balanced Analog Output

Table 3–6 Balanced Analog Output Connector Pin Out

Pin	Function	Use
11	Ground	Channel 2 Shield
12	Channel 1 (-)	Inverted Balanced Analog Output
13	(NC)	Not Used
14	Channel 8 (-)	Inverted Balanced Analog Output
15	Channel 7 (+)	Non-inverted Balanced Analog Output
16	Ground	Channel 7 Shield
17	Channel 6 (-)	Inverted Balanced Analog Output
18	Channel 5 (+)	Non-inverted Balanced Analog Output
19	Ground	Channel 5 Shield
20	Channel 4 (-)	Inverted Balanced Analog Output
21	Channel 3 (+)	Non-inverted Balanced Analog Output
22	Ground	Channel 3 Shield
23	Channel 2 (-)	Inverted Balanced Analog Output
24	Channel 1 (+)	Non-inverted Balanced Analog Output
25	Ground	Channel 1 Shield

Dolby D/E Card

Note: The Dolby D/E Card does not have a rear panel adaptor.

Menu Modifications

Installing a Dolby D/E Card activates the **Dolby Configuration and Metadata Display Menu.**

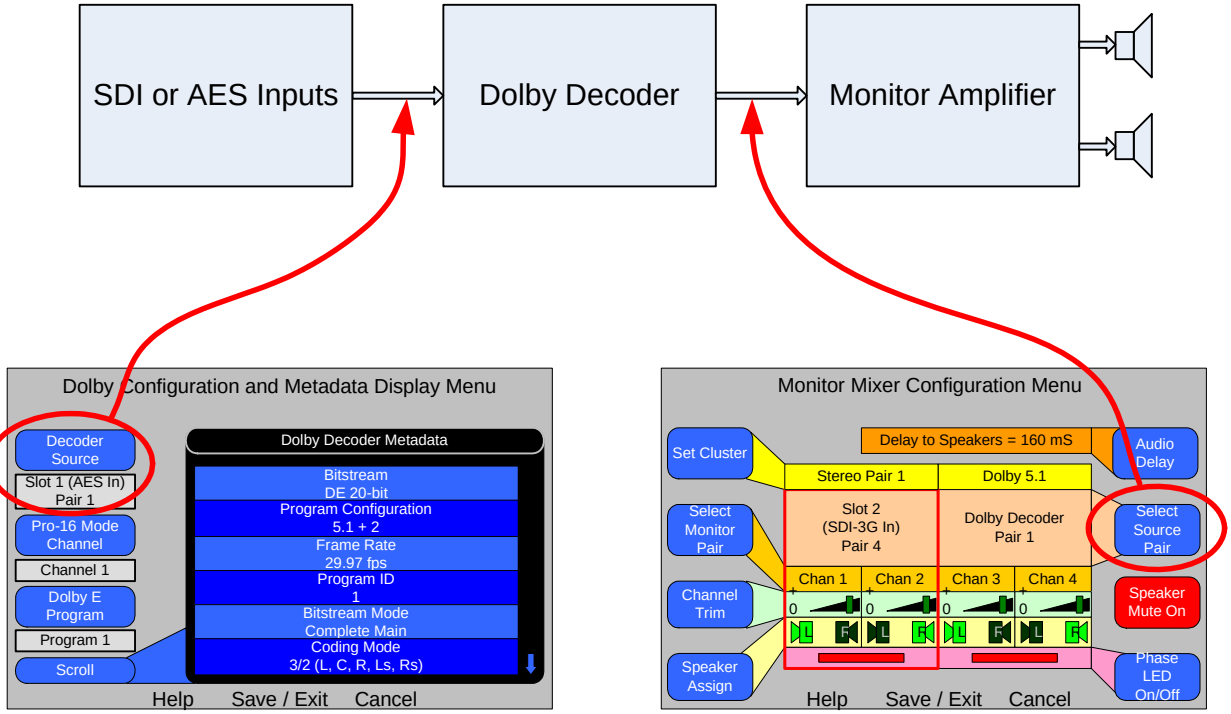
Dolby Configuration

Overview

The Dolby stream can be any AES input pair, or any SDI de-muxed audio pair. The following instructions demonstrate how to configure the Dolby decoder.

Refer to the diagram in Figure 3–7 for the relationship between the functionality and the configuration menus.

Figure 3–7 Dolby Bitstream Configuration



Assigning the Source Inputs

First, determine which pair contains the Dolby bitstream. You will then need to configure the AMP2-E16-3G using the following instructions:

1. Press the **Dolby** button in the **Configuration Selection Menu** to display the **Dolby Configuration and Metadata Display Menu**.

2. Rotate the **Decoder Source** knob so that it displays the pair containing the Dolby bitstream, for example, **Slot 1 (AES In) Pair 1**. This will connect the source of the Dolby decoder to the first AES input or any AES or SDI pair you choose. The **Dolby Configuration and Metadata Display Menu** will indicate that the bitstream is present.

3. Press **Save/Exit** to return to the **Configuration Selection Menu**.

Assigning the Target Outputs

The following instructions allow you to assign the target outputs to the audio/metering channels.

1. Press **Monitor Config** button in the **Configuration Selection Menu** to display the **Monitor Mixer Configuration Menu**.

2. Rotate the **Source Channel Select** knob to select **Pair 1**.

3. Rotate the **Source Pair Select** knob to display **Dolby Decoder Pair 1**.

4. Rotate the **Source Channel Select** knob to select **Pair 2**.

5. Rotate the **Source Pair Select** knob to display **Dolby Decoder Pair 2**.

6. Rotate the **Source Channel Select** knob to select **Channel 3**.

7. Rotate the **Channel Input Select** knob to display **Dolby Decoder Pair 3**.

8. Rotate the **Source Channel Select** knob to select **Channel 4**.

9. Rotate the **Source Pair Select** knob to display **Dolby Decoder Pair 4**.

10. Optional: You can connect Dolby Decoder Pair 5 to the next pair of channels.

    Note: The Dolby Decoder Pair 5 is also known as the *Aux Pair* and contains a down mix of the first four pairs.

11. If you like, press the **Set Cluster** knob to display the **Cluster Configuration Menu** where you can cluster the meters into the

5.1 Dolby arrangements as described in Cluster Configuration Screen section of Chapter 5. Or you can simply leave the display in pairs.

12. Press the **Save/Exit** button to return to the **Configuration Selection Menu**.

Saving the Configuration

Now save your work to a preset so you don't lose the new configuration after you power down. In our example we'll be using Preset 1; but you can use any available preset.

1. Press the **Manage Presets** knob in the **Configuration Selection Menu** to display the **Preset Management Menu**.

2. Rotate the **Save Current Config** knob to **Preset 1** (or another preset of your choice) and then press the **Save Current Config** knob.

3. Press the **Save/Exit** button return to the **Configuration Selection Menu**.

4. Press the **Exit** button to return to the **Main Screen**.

Now, each time power is applied to the system, Preset 1 (or the one you chose) will be recalled and your system will be programmed for the Dolby channels.

Adding a Redundant Power Supply

The AMP2-16-3G and AMP2-E16-3G come with a single 150W power supply that is sufficient to drive a fully-loaded monitor. However, an additional power supply (also 150W) is available as an option to provide for system redundancy. Unlike the I/O modules that can go in any available slot, the redundant power supply can only go into the far right-hand side of the unit (as seen from the rear).

Precautions

Before unpacking your new power supply, make sure you have a static-free surface on which to work.

CAUTION! Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling the circuit boards in high static environments such as carpeted areas, and when synthetic or wool fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from a frame, and always exercise proper grounding precautions when handling circuit boards.

Requirements

- A small Phillips screwdriver
- The redundant power supply option kit (See Option Kits on page 50 for more information.)

Adding the Power Supply

To install an additional power supply, follow the instructions below.

Note: It may prove helpful to place the monitor with the rear panel facing you for this procedure.

1. Place the monitor on a solid, static-free surface and remove the power cord.
2. Using a small Phillips screwdriver, remove the top cover.
3. Remove the blank cover plate on the rear panel on the far right-hand side.

Important: Keep the blank cover plate for future use. We recommend taping it to the side of the monitor; but do not cover the air vent.

4. Slide the power supply into the slot from the rear panel, making sure that the power supply's connector snaps securely into the connector inside the monitor.
5. Screw in the two captive thumbscrews that hold the power supply in place.

6. Replace the lid and the screws.

7. Attach the power cord to the connector and plug it into an outlet on a different circuit breaker than the original power supply.

Important: It is crucial that the secondary power supply be plugged into an outlet on a different circuit breaker than the original power supply to ensure system redundancy.

Adding/Removing Modules

Wohler's standard models typically do not populate all five slots, allowing for the addition of other modules. This section describes the procedures for adding new cards and removing existing cards.

Precautions

Before unpacking your new module, make sure you have a static-free surface on which to work.

CAUTION! Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling the circuit boards in high static environments such as carpeted areas, and when synthetic or wool fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from a frame, and always exercise proper grounding precautions when handling circuit boards.

Requirements

- A small Phillips screwdriver
- A wrench, preferably an adjustable one
- If you are adding hardware, the components of the option kit you want to add
- If you are removing hardware, a static-free bag or container

Adding a Dolby D/E Card

To add a Dolby D/E Card, follow the instructions below.

Note: It may prove helpful to place the monitor with the rear panel facing you for this procedure.

1. Place the monitor on a solid, static-free surface and remove the power cord(s).

2. Using a small Phillips screwdriver, remove the top cover.

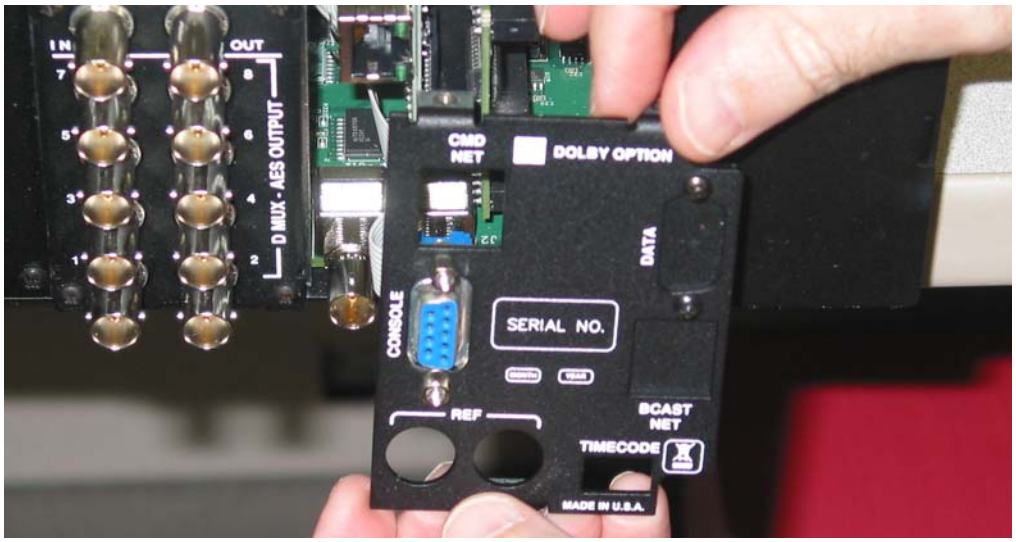
Figure 3–8 Remove Bottom Screw

3. Pull the monitor so that it slightly hangs over the edge of the surface on which it is sitting, and remove the screw on the bottom as shown in Figure 3–8 above.

Figure 3–9 Remove Nuts and Washers

4. Using the wrench, remove the nuts and washers from the **REF** connectors as shown in Figure 3–9 above.

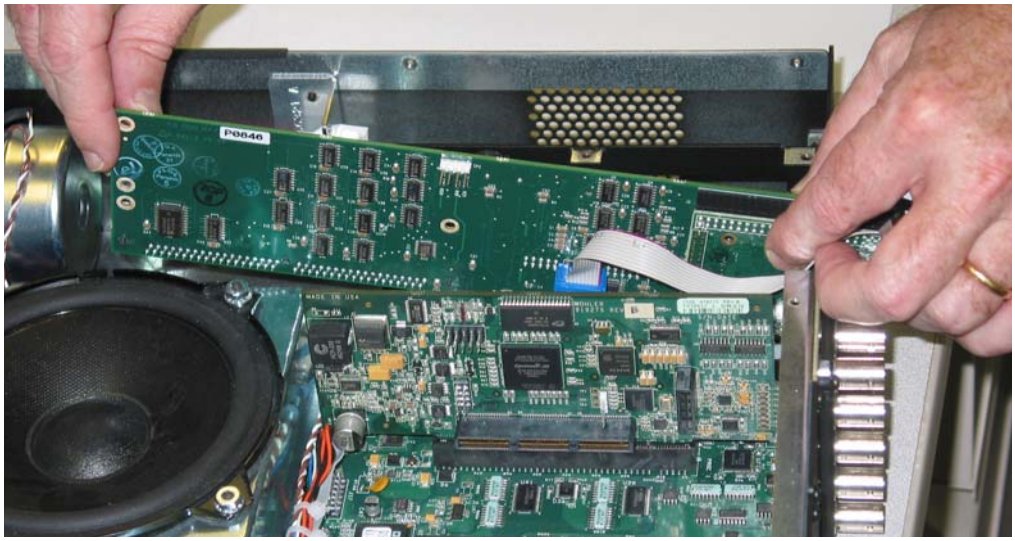
Figure 3–10 Remove System Control Board's Rear Panel Adaptor



5. Remove the rear panel adaptor for the system control board as shown in Figure 3–10 above.

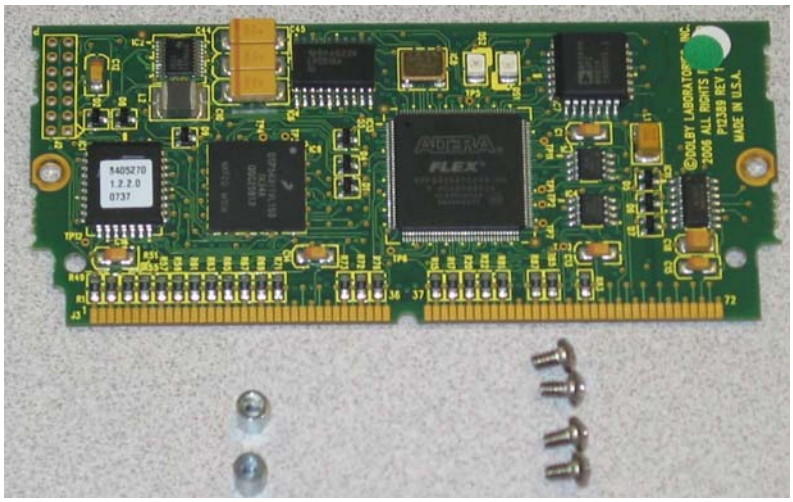
Important: Do not remove the ribbon cable from the system board or from the rear panel adaptor.

Figure 3–11 Remove System Control Board



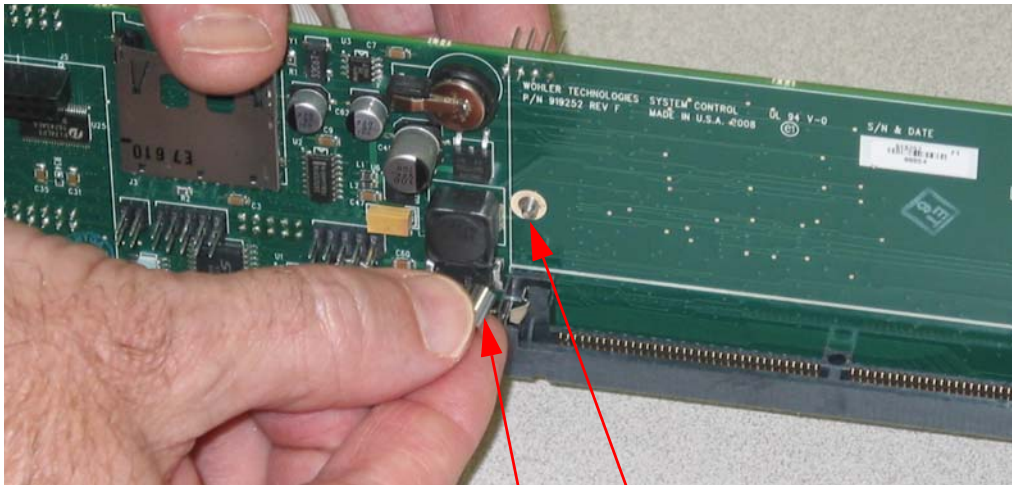
6. Gently tilt the system board out of its slot and remove it from the monitor as shown in Figure 3–11 above.

Figure 3–12 Dolby D/E Option Kit



7. Remove the new Dolby D/E Card from its shipping container being careful to remain grounded. Figure 3–12 above illustrates the card and the two standoffs (left) and the four screws (right).

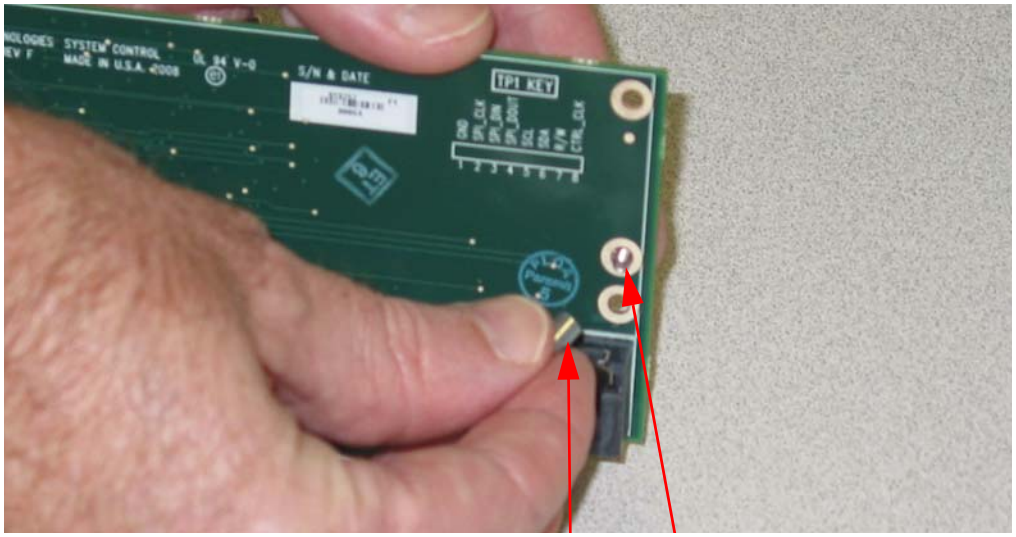
Figure 3–13 Attach First Standoff



Standoff *Screw from the Other Side*

8. Attach a standoff to the side of the system control board containing the Dolby slot, by screwing it in from the other side of the board as shown in Figure 3–13 above.

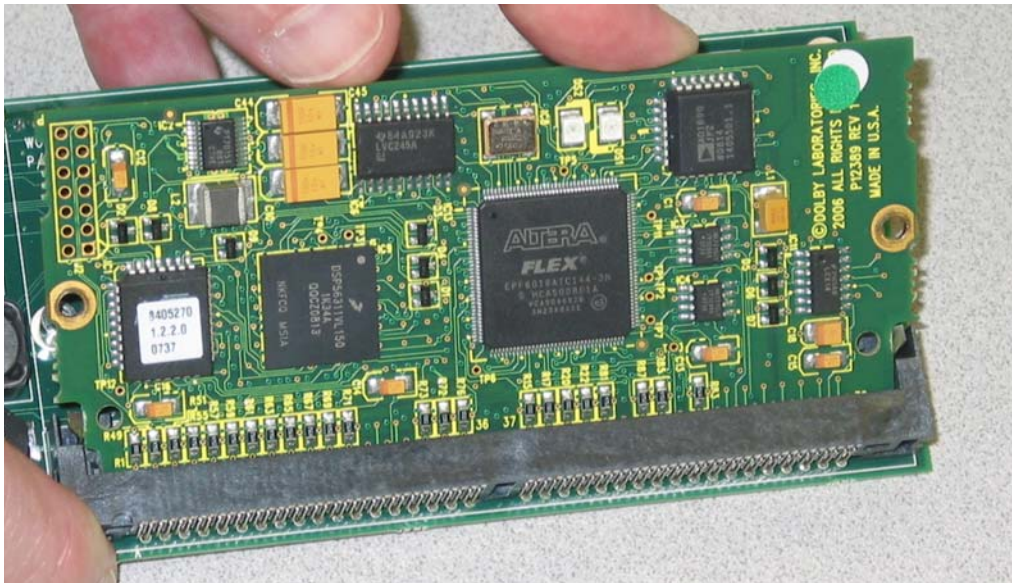
Figure 3–14 Attach Second Standoff



Standoff *Screw from the Other Side*

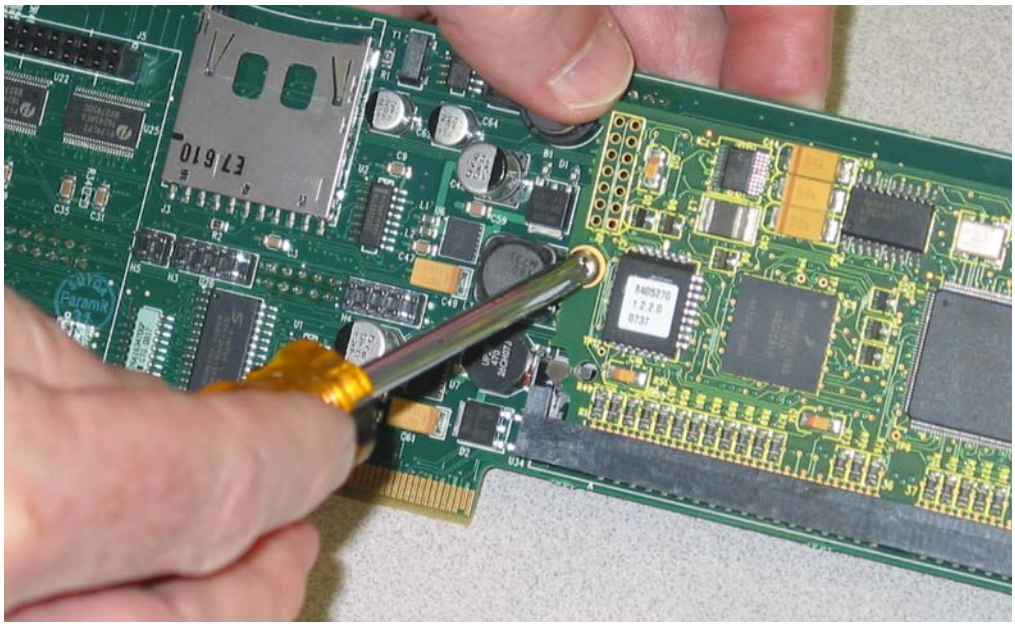
9. Attach the second standoff similarly as shown in Figure 3–14 above.

Figure 3–15 Insert Dolby D/E Card



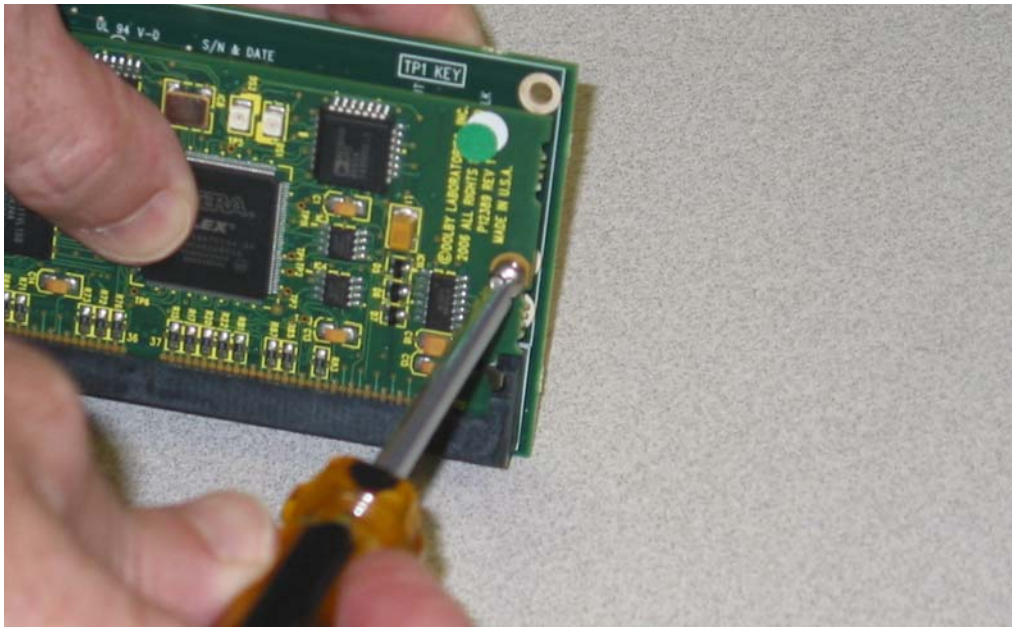
10. Insert the Dolby D/E Card into the slot as shown in Figure 3–15 above.

Figure 3–16 Tighten First Standoff Screw



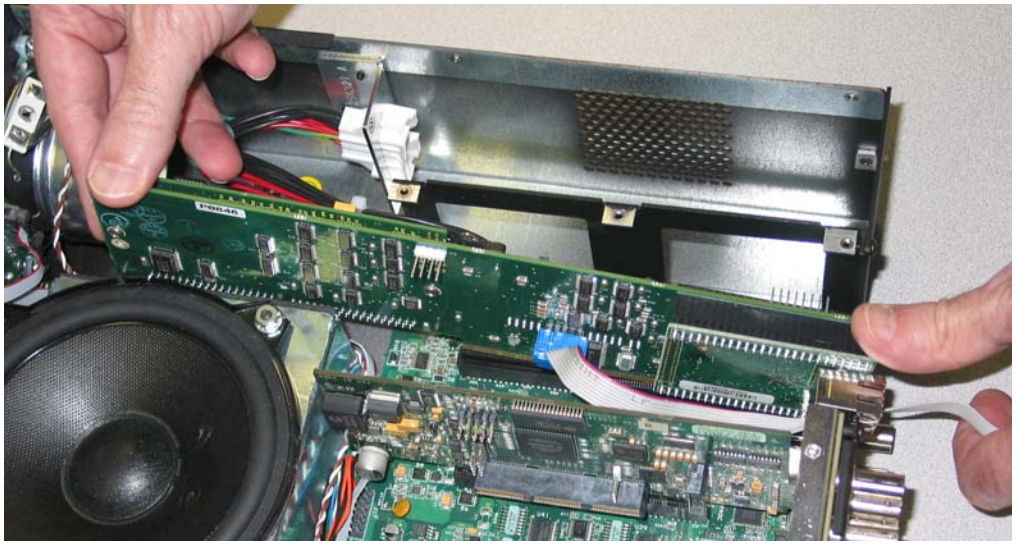
11. Adjust (if needed) and tighten the first standoff screw on the opposite side of the system control board, and then attach another screw on top of the standoff as shown in Figure 3–16 above.

Figure 3–17 Tighten Second Standoff Screw



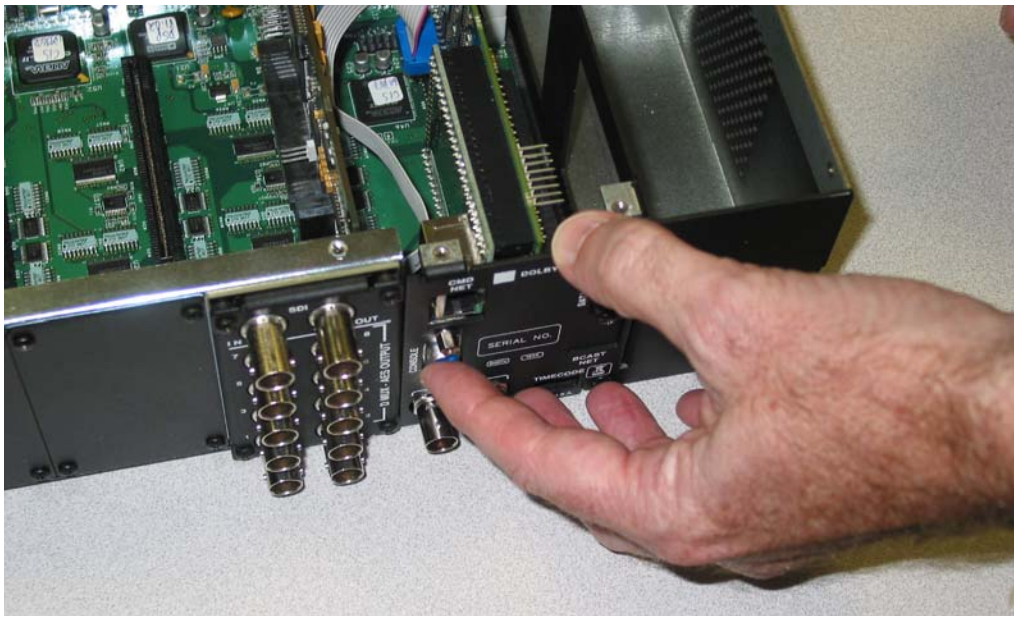
12. Similarly, adjust and tighten the second standoff screw on the opposite side of the system control board, and then attach another screw on top of the standoff as shown in Figure 3–17 above.

Figure 3–18 Re-Seat System Control Board



13. Firmly press the system control board back into it's slot so that it is securely connected as shown in Figure 3–18. Generally, this board does not snap in.

Figure 3–19 Replace Rear Panel



14. Replace the rear panel as shown in Figure 3–19 above.
15. Replace the washers and nuts on the **REF** connectors.
16. Screw in the rear panel from the bottom of the monitor.
17. Replace the lid and the screws.

Important: After inserting a new card into the monitor, the software will automatically recognize the new card and automatically implement all appropriate changes to the menu system. No software upgrades or further modifications are necessary.

Removing a Dolby D/E Card

To remove a Dolby D/E Card, follow the instructions in reverse for Adding a Dolby D/E Card on page 36 and leave the standoffs attached to the system control board.

Important: After removing a module from the monitor, the software will automatically adjust by removing all appropriate input sources and output options from the menu system. No software modifications are necessary.

Note: All presets will be set to a factory default appropriate for the new arrangement of cards.

Adding an I/O Module

Decision Point:

If you would like to add a 3G Card, then continue on to Adding a 3G Option Card immediately below.

Otherwise, if you would like to add a different type of I/O module, continue on to Adding a Non-3G Card I/O Module on page 47.

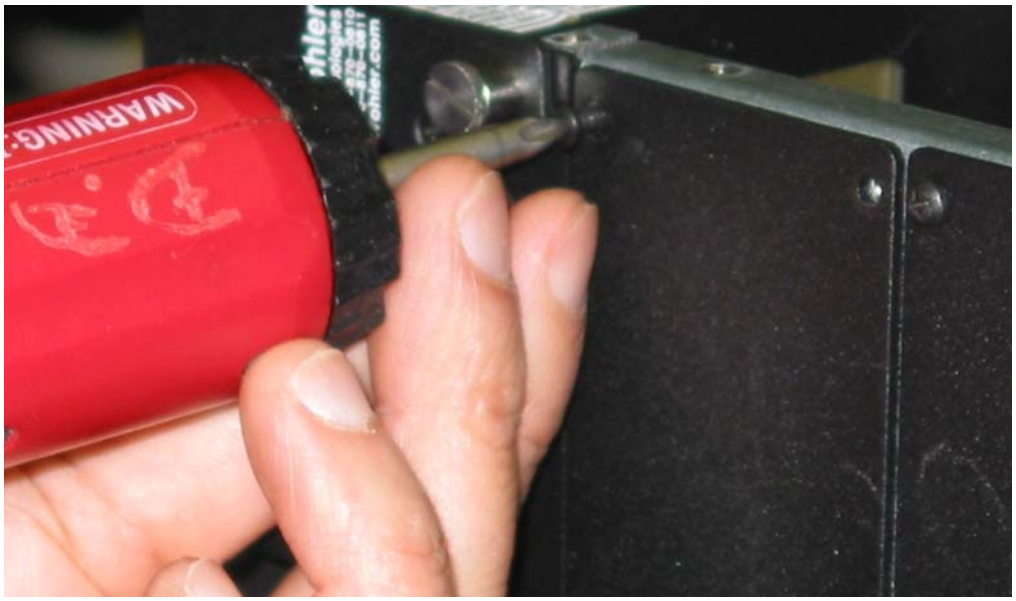
Adding a 3G Option Card

To add a new 3G card, follow the instructions below.

Note: It may prove helpful to place the monitor with the rear panel facing you for this procedure.

1. Place the monitor on a solid, static-free surface and remove the power cord(s).
2. Using a small Phillips screwdriver, remove the top cover.
3. Remove the rear panel cover from Slot 5 as shown in Figure 3–20.

Figure 3–20 Removing the Blank Cover Plate

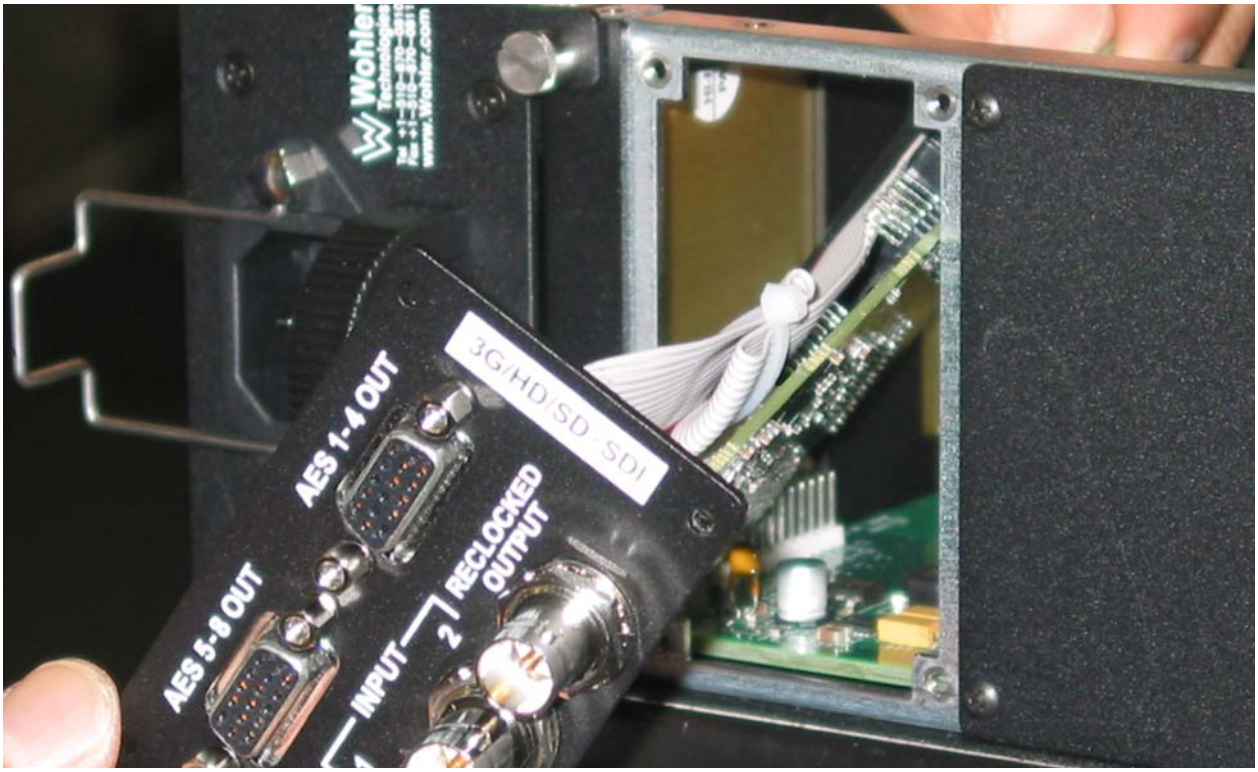


4. Remove the 3G Option Card from its shipping container being careful to remain grounded.

5. When you receive your 3G Option Card, it will arrive partially assembled. Verify that the external nuts and washers on the BNC connectors are loose.

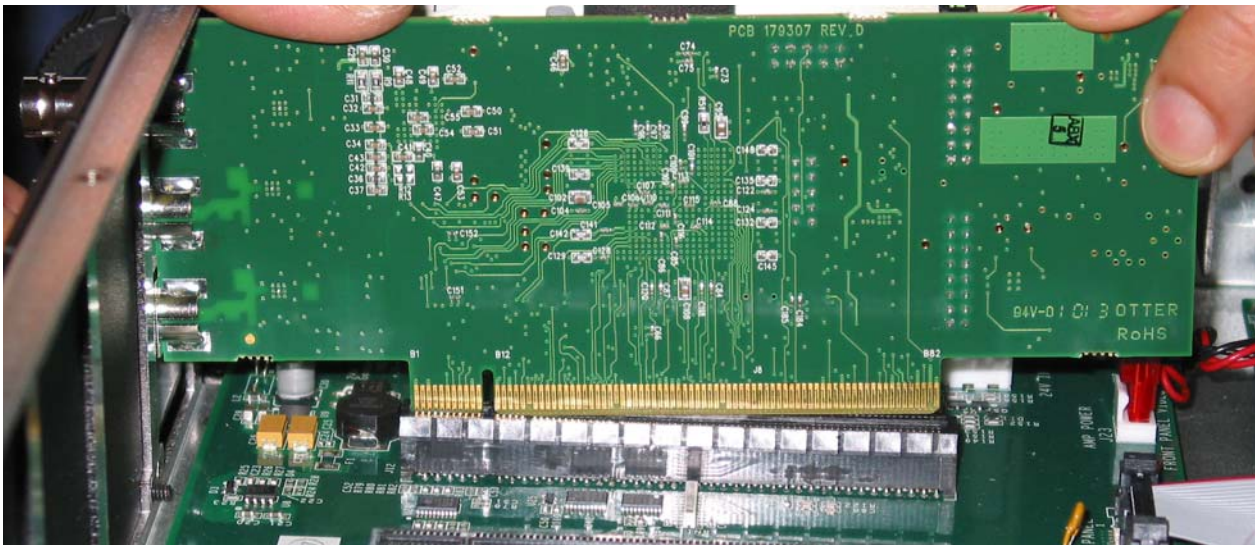
6. Insert the 3G Option card into the rear panel opening being careful not to snag the ribbon cables. Keep them folded against the circuit board to keep them out of the way as shown in Figure 3–21 below.

Figure 3–21 Inserting the 3G Card into the Slot



7. Insert the card into the slot and press firmly until it plugs in securely as shown in Figure 3–22 on page 45.

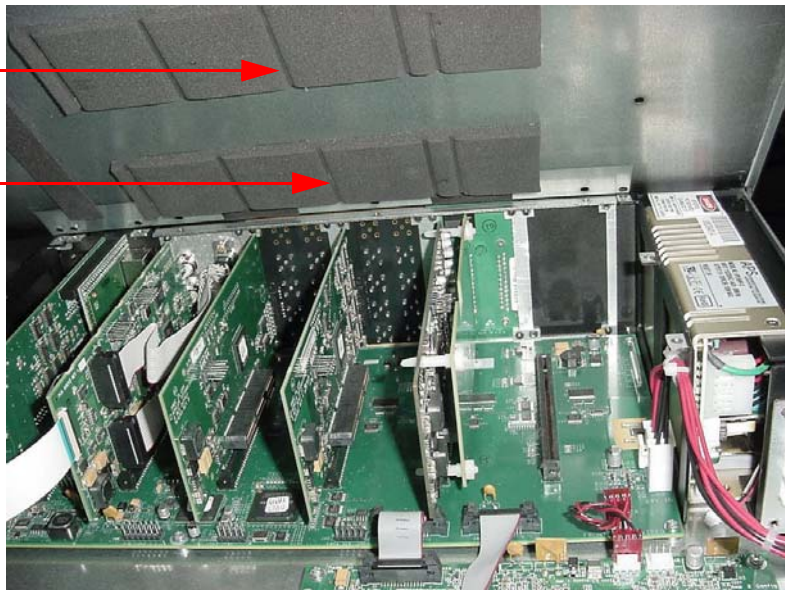
Figure 3–22 Seating the 3G Card in the Slot



8. Peel the adhesive backing from the two pieces of additional foam and attach them to the corresponding area of the existing foam on the interior of the top cover as shown in Figure 3–23 below.

Figure 3–23 Adding the Foam to the Top Cover

In the example shown, we added the card to Slot 3. Add the extra foam blocks to the top cover so that the foam straddles the new card.



9. Replace the lid and the screws being careful not to shift the cover so much that the new foam blocks detach from the cover.

10. Insert the rear panel cover screws and tighten as shown in Figure 3–24 on page 46.

Figure 3–24 Tightening the Rear Panel Screws

WARNING! Do not attempt to operate the monitor without all rear panel cover plates in place. Doing so will compromise the unit's shielding.

11. Finally, tighten the external nuts on the gold BNC connectors as shown in Figure 3–25 below.

Figure 3–25 Tightening the BNC Nuts

Important: After inserting a new card into the monitor, the software will automatically recognize the new card and automatically implement all appropriate changes to the menu system. No software upgrades or further modifications are necessary.

Adding a Non-3G Card I/O Module

To add a new I/O module, follow the instructions below.

Note: It may prove helpful to place the monitor with the rear panel facing you for this procedure.

1. Place the monitor on a solid, static-free surface and remove the power cord(s).
2. Using a small Phillips screwdriver, remove the top cover.
3. Remove the blank cover plate from the rear panel for the new I/O module's slot.

Important: Keep the blank cover plate for future use. We recommend taping it to the side of the monitor; but do not cover the air vent.

4. Remove the new I/O module from its shipping container being careful to remain grounded.
5. Insert the new I/O module in the empty slot until the I/O module snaps in securely.
6. Attach the rear panel connectors to the card and screw it to the rear panel frame.
7. Replace the lid and the screws.

Important: After inserting a new card into the monitor, the software will automatically recognize the new card and automatically implement all appropriate changes to the menu system. No software upgrades or further modifications are necessary.

WARNING! Do not attempt to operate the monitor without all rear panel cover plates in place. Doing so will compromise the unit's shielding.

Removing an I/O Module

CAUTION! Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling the circuit boards in high static environments such as carpeted areas, and when synthetic or wool fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from a frame, and always exercise proper grounding precautions when handling circuit boards.

Decision Point:

If you would like to remove a 3G Option Card, continue on to Removing a 3G Option Card immediately below.

Otherwise, if you would like to remove a different type of I/O module, then continue on to Removing a Non-3G I/O Module on page 49.

Removing a 3G Option Card

To add a new 3G card, follow the instructions below.

Note: It may prove helpful to place the monitor with the rear panel facing you for this procedure.

1. Place the monitor on a solid, static-free surface and remove the power cord(s).
2. Using the needle-nose plyers, loosen the nuts on the gold BNC connectors and remove them.
3. Using a small Phillips screwdriver, remove the top cover.
4. Unseat the card from the slot and remove the card (still connected to the rear panel) through the rear panel opening.
5. Cover the rear panel opening with a blank rear panel cover.
6. Insert the rear panel cover screws and tighten.

WARNING! Do not attempt to operate the monitor without all rear panel cover plates in place. Doing so will compromise the unit's shielding.

7. Replace the lid and the screws.

Important: After removing a card from the monitor, the software will automatically recognize the new configuration and automatically implement all appropriate changes to the menu system. No software upgrades or further modifications are necessary.

Note: All presets will be set to a factory default appropriate for the new arrangement of cards.

Removing a Non-3G I/O Module

To remove an I/O module, follow the instructions below.

1. Place the monitor on a solid, static-free surface and remove the power cord(s).

Note: It may prove helpful to place the monitor with the rear panel facing you for this procedure.

2. Using a small Phillips screwdriver, remove the top cover.

3. Unscrew the rear panel adaptor from the rear panel.

4. Being careful to remain grounded by remaining in contact with the monitor's frame, carefully disconnect the rear panel adaptor from the I/O module and place it on a static-free surface.

5. Again, being careful to remain grounded, remove the I/O module from its slot and place it on a static-free surface.

6. Screw in a blank rear panel adaptor cover over the empty slot's rear panel space.

WARNING! Do not attempt to operate the monitor without all rear panel cover plates in place. Doing so will compromise the unit's shielding.

7. Replace the lid and the screws.

Important: After removing a I/O module from the monitor, the software will automatically adjust by removing all appropriate input sources and output options from the menu system. No software modifications are necessary.

Note: All presets will be set to a factory default appropriate for the new arrangement of cards.

Option Kits

Table 3–7 below lists the option kits with their respective hardware components for your convenience. Please contact your Wohler sales representative for further information.

Table 3–7 Part Numbers for Optional Hardware/Kits

Part Number	Description
829020	**3G/HD/SD-SDI Option Kit** Note: The 3G/HD/SD-SDI I/O Module does not have a *separate* rear panel adaptor. The I/O module and the rear panel connectors are all on one piece of hardware. (includes 256755, 919307, and 750645)
256755	3G SDI Rear Cover Plate
919307	3G SDI I/O Module
750645	2 Cables (15-Pin VGA Female to IDC 16 Pos Female 6" LG)
829006	**HD/SD-SDI Option Kit** (includes 256455-03, 919256-1, and 919275)
256455-03	HD/SD-SDI Rear Cover Plate
919256-1	HD/SD-SDI Rear Panel Adaptor
919275	HD/SD-SDI I/O Module
829001	**AES Input Option Kit** (includes 256455-01, 919256, and 919282)
256455-01	AES Input Rear Cover Plate
919256	AES Input Rear Panel Adaptor
919282	AES Input I/O Module
829002	**AES Output Option Kit** (includes 256455-02, 919256, 919283)
256455-02	AES Output Rear Cover Plate
919256	AES Output Rear Panel Adaptor
919283	AES Output I/O Module
829010	**Analog I/O Option Kit** (includes 256885, 919277, and 919285)

Table 3–7 Part Numbers for Optional Hardware/Kits

Part Number	Description
256885	Analog I/O Rear Cover
919277	Analog I/O Rear Panel Adaptor
919285	Analog I/O Module
829014	**Dolby D/E Option Kit** Note: The Dolby D/E Card is a daughter card to the system control board (P/N 919252), so it does not have a rear panel adaptor or a rear panel cover plate. [includes 919210, 281422 (x4), and 285050 (x2)]
919210	Dolby D/E Decoder Module
281422	4 Screws (4-40 x 3/16")
285050	2 Standoffs (Rnd 4-40 x 3/16" x 1/4" Brass F-F)
829013	**Redundant Power Supply Option Kit** (includes 760033 and 600001)
760033	Power Supply
600001	Power Cord
829015	**Harness DB25 to Female XLR Option Kit** (includes 751017)
751017	Cable (DB25 to Female XLR)
829016	**Harness DB25 to Male XLR Option Kit** (includes 751018)
751018	Cable (DB25 to Male XLR)
Other Optional Hardware	
256262	Blank Rear Cover Plate (does not include additional screws)

CHAPTER 4
Efficiency Enhancements

Introduction

Overview

This chapter describes the processes of creating presets and hot keys. These features allow you to configure the AMP2-16-3G and AMP1-E16-3G and then save those settings for immediate recall.

Topics

Presets

Overview

Modifying the menu settings allows you to configure the entire AMP2-16-3G to function exactly the way you want it to for your specific application. This complete system configuration is called a *preset*. After saving the preset, you can then quickly recall it by pressing a single knob. Moreover, the AMP2-16-3G has the capacity to hold eight presets; that is, eight complete system configurations.

Saving Presets

You can save new configuration changes to the same preset or to a different one. If you would like to have two presets that are largely the same except for certain settings, set up one of them first and save it to the first preset. Then make the changes that differentiate the two presets and save this to a second preset. You can then recall either preset as you need it.

1. Once you have the monitor configured the way you want it, press the **Manage Presets** knob (from the **Configuration Selection Menu**) to display the **Preset Management Menu**.

2. Rotate the **Save Current Config** knob to display the preset number you want to save the configuration to.

3. Finally, press the **Save Current Config** knob to save the current configuration.

4. To return to the **Main Screen**, press the **Save/Exit** button twice.

Recalling Presets

You can recall the preset of your choice at any time in several different ways:

1. From the **Configuration Selection Menu**, rotate the **Recall Preset** knob to scroll through the available presets, and then *press* the knob after displaying the preset you want. Now the complete system configuration saved in that preset becomes the current configuration of the monitor.

2. Using the **Main Screen Hot Key Configuration Menu**, you can assign any of the eight hot keys surrounding the **Main screen** to function as a preset changer. This is the quickest way to change the presets because it only involves pressing a single hot key.

3. Again using the **Main Screen Hot Key Configuration Menu**, you can assign one of the eight hot keys surrounding the **Main screen** to become a selectable preset. To use this hot key, rotate it to select the desired preset, then press it. This selected preset will then take effect.

Naming or Renaming a Preset

This section describes how to name or rename a preset, hot key, or cluster.

Note: The label allows for a maximum of seven characters.

1. From the **Configuration Selection Menu**, press the **Manage Presets** knob to display the **Preset Management Menu**.

2. In the **Preset Management Menu**, press the **Rename Preset** knob.

3. If needed, press the **Backspace** knob until the unwanted text of the current label disappears.

4. Use the **Shift** button to toggle between upper and lower case letters. Note that the symbols (on the bottom row) remain constant.

Label Example

In this example, we will create a label: *Studio*.

1. Press the **Shift** knob (or rotate it to the left) to display the upper case character set.

2. *Rotate* the **Select Horiz** and/or the **Select Vert** knob until the *S* is highlighted.

3. *Press* the either the **Select Horiz** or the **Select Vert** knob to select the character.

4. Press the **Shift** knob (or rotate it to the right) to display the lower case character set.

Label Example (Continued)

5. *Rotate* the **Select Horiz** and/or the **Select Vert** knob until the *t* is highlighted.

   Repeat this process for each character of the label. To correct mistakes, press the **Backspace** knob.

6. To save the new label, press the **Save / Exit** button.

7. To verify your changes, look at the text next to the knob you changed. You should now see the new name.

8. Press the **Save / Exit** button repeatedly to save your changes and return to the **Main Screen**.

Clearing a Preset

1. From the **Configuration Selection Menu**, press the **Manage Presets** knob to display the **Preset Management Menu**.

2. Press the **Clear Preset** knob.

3. Rotate the **Clear Preset** knob to highlight the preset you want to clear.

4. Press the **Clear Preset** knob to select the preset.

Important: The monitor will display a warning message to let you know that once you have cleared a preset, it cannot be undone. Also, you must respond by pressing the **Clear Preset** button again before the warning disappears (approximately five seconds) or your request to clear the preset will be cancelled and you will have to start over by pressing the **Clear Preset** button again.

Recalling a Preset On Power Up

You can define how the AMP2-16-3G configures itself the next time it comes back up after a power failure or deliberate power shut down.

1. From the **Configuration Selection Menu**, press the **Manage Presets** knob to display the **Preset Management Menu**.

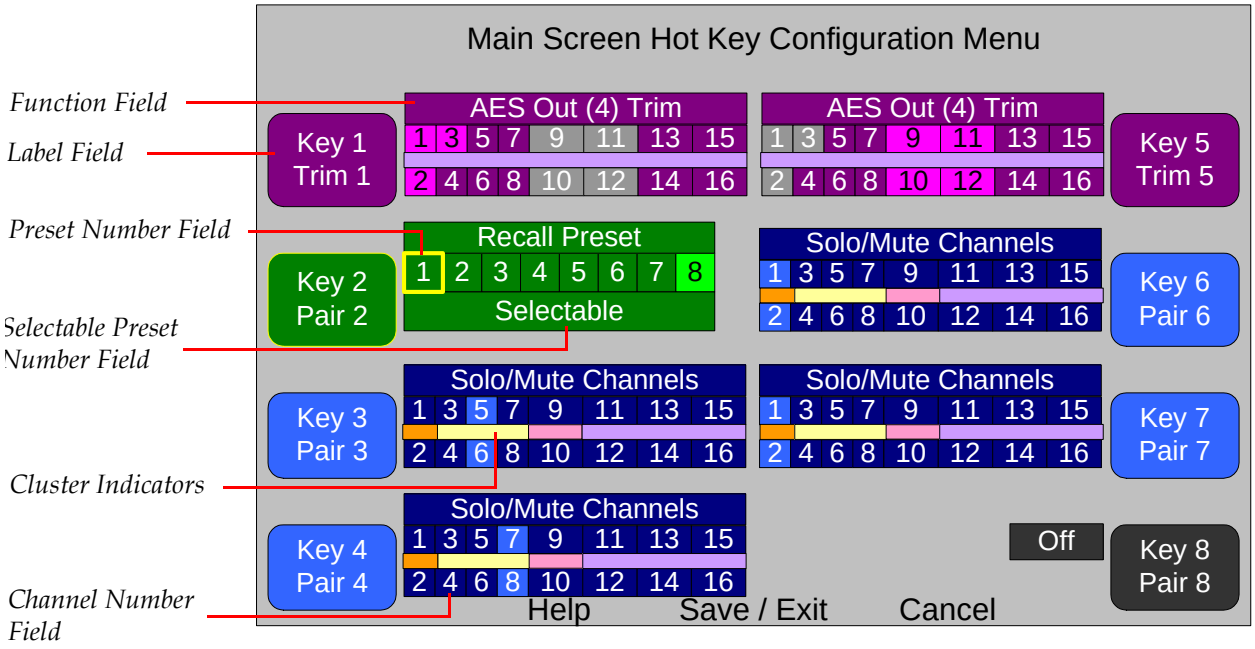
2. After the **Preset Management Menu** appears, rotate the **Recall on Power Up** knob to highlight the preset to be recalled at power up, and press the knob to select it.

Hot Keys

Overview

Hot keys allow you to make immediate configuration changes "at the touch of a button" without using the menu system. You set up hot keys on the **Main Screen Hot Key Configuration Menu** shown in Figure 4–1.

Figure 4–1 Main Screen Hot Key Configuration Menu



Hot Key Types

Hot keys can be:

- Defined presets,
- Selectable presets,
- Trims,
- Solos and mutes, or
- Off.

Presets

Presets can be fixed or selectable. For more information on creating a preset, refer to Presets on page 54.

Mutes and Solos

A **muted** hot key identifies the channels that are silenced when the knob is pressed and leaves all other channels audible. A **solo** hot key identifies the channels that are audible while all other channels are silenced. As you can see, these two functions are inverses of each other. Using hot keys to solo and/or mute becomes extremely useful when trying to identify specific sounds that may exist in one channel but not in another. Note that both the mute and the solo functions allow you to select more than one channel. Moreover, you can assign a knob to be a **Solo** *and* a **Mute** since you can **Solo** by turning the knob to the left, or **Mute** by turning it to the right.

Trims

In some applications it can be advantageous to have the **Channel Trim** controls accessible on the **Main Screen**. This would allow you to adjust the mix levels quickly without getting into the menu structure. To set up this function, navigate to the **Hot Key Configuration Menu** to reassign some hot keys as **Channel Trim**s.

Note that in the Figure 4–1 on page 57 above, the upper left hot key is set to control source Channels 1, 2, and 3 of the AES Output Card in Slot 4. The upper right hot key is set to control source Channels 9, 10, 11, and 12 of the same card. Note that each source channel may be controlled by only one hot key. For example, the upper left hot key

cannot select any of the source channels that are already selected by the upper right hot key. Consequently these channel selections are disabled.

Off Hot Key

When you set a hot key to **Off**, it is completely disabled and has no functionality.

Defining/Modifying a Hot Key

1. From the **Configuration Selection Menu**, press the **Configure Main Screen** knob to display the **Main Screen Configuration Menu**.
2. Press the **Configure Hot Keys** knob to display the **Main Screen Hot Key Configuration Menu**.
3. Press one of the knobs to select its associated hot key. Notice that the knob label is now highlighted.
4. Rotate the knob until the function field displays either **Solo / Mute Channels, Trim**, **Recall Preset,** or **Off.**
5. Press the knob repeatedly to step through these options until the one you want is highlighted.

Decision Point:

If you want to set a preset hot key, continue on with Preset Hot Keys on page 60.

Otherwise, if you want to set a solo or mute hot key, continue on to Solo/Mute Hot Keys on page 60.

If you want to set a channel trim hot key, continue on to Trim Hot Keys on page 61.

Preset Hot Keys

1. Rotate the knob again to step through each of the preset numbers, or **Selectable**.

Preset Hot Key Example

In this example we will modify the bottom, left-hand knob so that it becomes a selectable preset.

1. On the **Main Screen Hot Key Configuration Menu**, press the bottom, left-hand knob to highlight the knob's label.
2. Rotate the knob until the function field displays either **Solo / Mute Channels, Trim**, **Recall Preset,** or **Off.**
3. Press the knob repeatedly until **Recall Preset** displays.
4. Now, rotate the knob again to highlight **Selectable**.
5. Press the knob again to select **Selectable**.

Solo / Mute Hot Keys

1. Rotate the knob again to step through each of the channel numbers.
2. To select a channel for this function, press the knob when the channel you want is highlighted. Unselecting a channel works the same way.

Solo / Mute Hot Key Example

In this example we will modify the bottom, right-hand knob to solo/mute Channel 4 and Channel 8.

1. On the **Main Screen Hot Key Configuration Menu**, press the bottom, right-hand knob to highlight the knob's label.
2. Rotate the knob until the function field displays either **Solo / Mute Channels, Trim**, **Recall Preset,** or **Off.**
3. Press the knob repeatedly until **Solo / Mute Channels** displays.
4. Now, rotate the knob again to highlight Channel 4.
5. When Channel 4 is highlighted, press the knob to select it.

6. Now rotate the knob again until you highlight Channel 8.
7. When Channel 8 is highlighted, press the knob to select it.
8. Use this same procedure to unselect any channels that are selected that you do not want to solo or mute.
9. Before moving onto the **Label Menu**, verify that only Channel 4 and Channel 8 are highlighted.

Trim Hot Keys

1. Press the knob until the function you want is highlighted, in this case **Trims**.
2. To select a channel for this function, press the knob when the channel you want is highlighted. Unselecting a channel works the same way.

Trim Hot Key Example

In this example we will modify the bottom, right-hand knob to trim the monitor mixer Channels 1 and 2.

1. On the **Main Screen Hot Key Configuration Menu**, press the bottom, right-hand knob to highlight the knob's label.
2. Rotate the knob until the function field displays either **Solo / Mute Channels, Trim**, **Recall Preset,** or **Off.**
3. Press the knob repeatedly until **Mon Mix Trims** displays.
4. Now, rotate the knob again to highlight Channel 1.
5. When Channel 1 is highlighted, press the knob to select it.
6. Now rotate the knob again until you highlight Channel 2.
7. When Channel 2 is highlighted, press the knob to select it.
8. Use this same procedure to unselect any channels that are selected that you do not want to solo or mute.
9. Before moving onto the **Label Menu**, verify that only Channel 1 and Channel 2 are highlighted.

Naming/Renaming a Hot Key

Once you have successfully defined a hot key's functionality, you can rename the label that displays on the **Main Screen**.

1. From the **Configuration Selection Menu**, press the **Screen Display Menu** knob to display the **Screen Display Menu**.
2. Press the **Hot Key Menu** knob to display the **Main Screen Hot Key Button Configuration Menu**.
3. To select a knob to define, press that knob to highlight its name.
4. Press the knob again to display the **Label Menu**.

Hot Key Naming Example

In this example we will rename the same knob to match the functionality we just defined in the previous example: *Ch 4&8*.

1. Assuming you are on the **Main Screen Hot Key Button Configuration Menu**, press rotate the knob until the knob's label is highlighted.
2. Press the knob to display the **Label Menu**.
3. Press the **Backspace** knob repeatedly until all the unwanted characters are erased.
4. Press the **Shift** knob until the upper case character set is displayed.
5. Rotate the **Select Horiz** and/or **Select Vert** knobs until the *C* is highlighted.
6. Press either the **Select Horiz** or the **Select Vert** knob to select it.
7. Rotate the **Select Horiz** and/or **Select Vert** knobs until the *h* is highlighted.
8. Press either the **Select Horiz** or the **Select Vert** knob to select it.
9. Repeat this process until all the characters appear in the label.
10. Press the **Save/Exit** button.

11. When the **Main Screen Hot Key Configuration Menu** appears, verify the label for the knob reads: *Key 8 Ch 4&8*.

Copying Presets to Another Monitor

If you have purchased more than one AMP2-16 Series monitor, you may want to copy your presets from one monitor to another one. If so, follow the instructions below.

Important: Verify that you have, in fact, saved your configurations to presets. See Saving Presets on page 54 for details.

Preset Files

A *preset file* contains all eight presets, and all other saved settings of the current system configuration (whether saved as a preset or not) of an AMP2-16 Series monitor.

Verifying Compatibility

Important: If the two AMP2-16-3Gs or AMP2-E16-3s are not compatible, you should not attempt to copy the preset file. Doing so will reset the duplicated AMP2-16-3G or AMP2-E16-3 to the factory defaults.

You can determine whether two AMP2-16 Series monitors are compatible based on three characteristics:

- The contents and arrangement of I/O modules
- The presence/absence of a Dolby D/E Card
- The **NvRam Table Version**

To verify that the two AMP2-16 Series monitors are compatible, follow the steps below.

1. Power up the first AMP2-16 Series monitor and navigate to the **Unit Information Menu**.

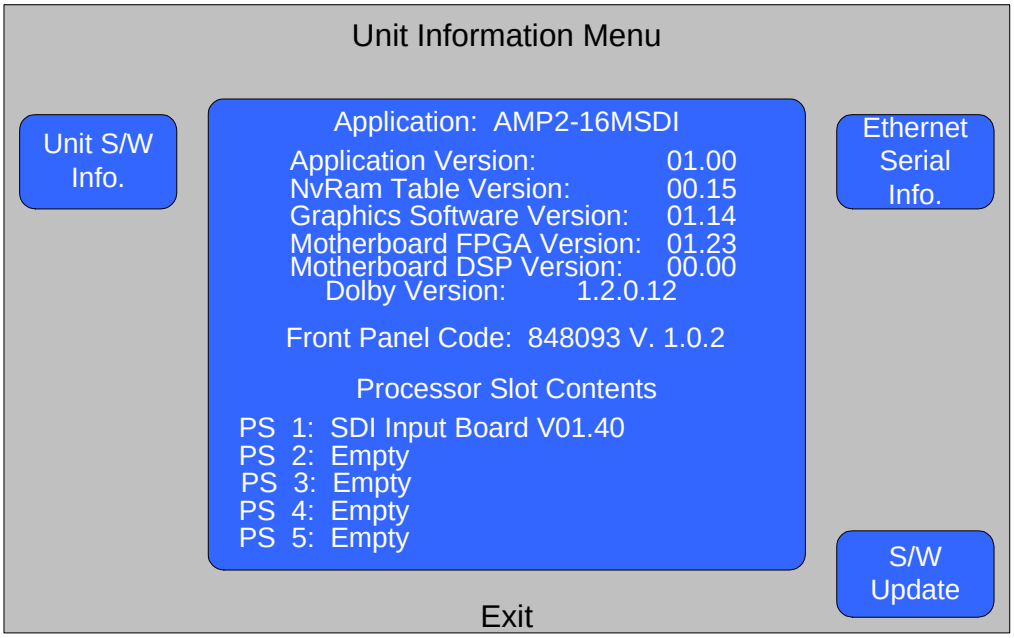
   A. When the **Main Screen** appears, press the **Save / Exit** button to display the **Configuration Selection Menu**.

   B. When the **Configuration Selection Menu** appears, press the **Options** knob to display the **Option Configuration Menu**.

   C. When the **Option Configuration Menu** appears, press the **Config HW** knob to display the **Hardware Configuration Menu**.

   D. When the **Hardware Configuration Menu** appears, press the **Unit Info** knob to display the **Unit Information Menu** as shown in Figure 4–2 below.

Figure 4–2 Unit Information Menu



2. When the **Unit Information Menu** appears, make a note of the following:

   NvRam Table Version: _____

   Dolby Version: _____

PS 1: _____

PS 2: _____

PS 3: _____

PS 4: _____

PS 5: _____

3. Power up the second AMP2-16 Series monitor and repeat the previous Steps (1 through 2) above.

Decision Point:

If all seven lines are the same for both units (line for line), then they are compatible. Continue on to Backing Up the Saved Presets immediately below.

Otherwise, if *not* all of the lines in Step 2 are the same, then this procedure will not work. You can do one of two things:

- Manually configure the second AMP2-16 Series monitor, or
- If the units have the same hardware in the same slots, then you can upgrade the software on one, or both units so that the **NvRam Table Version**s match. Then after reconfiguring the first one manually, you can use this procedure to copy its preset file to the second one.

Backing Up the Saved Presets

Note: These instructions assume that neither of the AMP2-16 Series monitors have been configured to connect to your PC. If they have already been configured, skip only Step 2.

1. Create a folder on your PC's desktop called **Presets**.
2. Follow the instructions in Appendix B on page 119 to establish connectivity to the AMP2-16 Series monitor.
3. Follow the instructions in Appendix C on page 127 to set up the AMP2-16 Series monitor for an FTP file transfer.
4. Press the F5 key to refresh the window.

5. Drag and drop the **Presets.S19** file from the AMP2-16 Series monitor to the **Presets** folder on the desktop.

6. We recommend that you rename the file so you can distinguish multiple presets files. You must, however, maintain two parts of the filename (both of which are case-sensitive):
   - The word **Presets** (plural) must appear in the filename.
   - The file's extension must be **.S19**.

Important: If the new filename does not meet the requirements listed in Step 6 above, the AMP2-16-3G/AMP2-E16-3G will not accept the file.

Examples:

Acceptable filenames:
- My Presets.S19
- 090909 Presets.S19

Unacceptable filenames:
- My Preset Set.S19
- My presets.s19

7. Once the file is copied, disconnect the AMP2-16 Series monitor from the PC.

Important: This concludes this half of the preset copying procedure. Continue on to Copying the Presets to Another Monitor immediately below.

Copying the Presets to Another Monitor

1. Connect the destination AMP2-16 Series monitor to your PC.

2. Follow the instructions in Appendix B on page 119 to establish connectivity to the AMP2-16 Series monitor.

3. Follow the instructions in Appendix C on page 127 to set up the AMP2-16 Series monitor for an FTP file transfer.

4. Drag and drop the **Presets.S19** file (or the file you renamed in Step 6 on page 66) from your **Presets** folder to the AMP2-16 Series monitor.

   Note: Transferring the preset file to the AMP2-16 Series monitor will reset it and then it will return to the ftp-enabled state.

5. Press the **Help** (left) navigation button on the AMP2-16 Series monitor to restart it and load the new presets into memory.

Important: This concludes the entire preset copying procedure.

CHAPTER 5
Menu List

Introduction

Overview

This chapter provides an in-depth description of all the menus and all their respective options and functions.

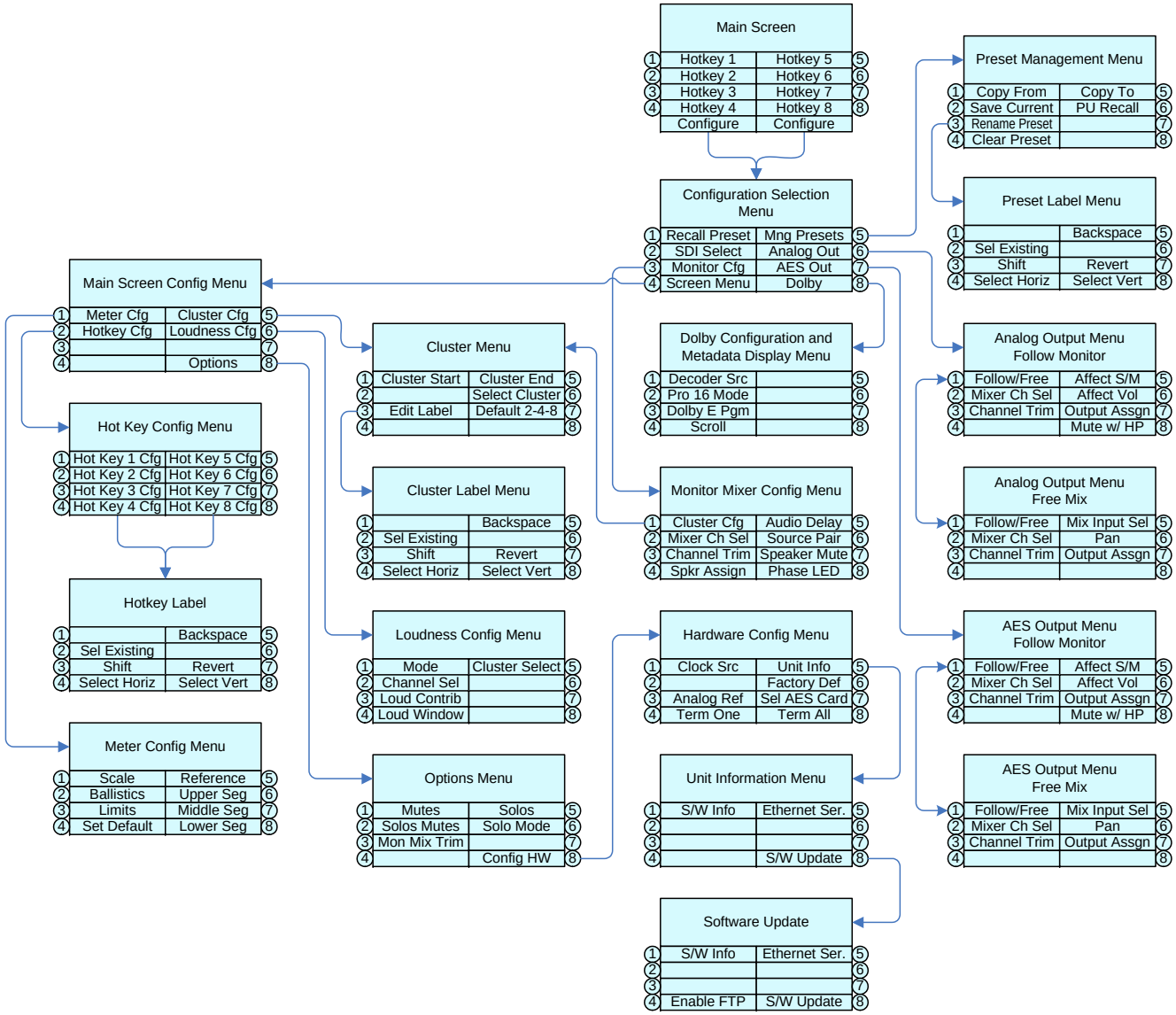
Note: The menus are listed alphabetically for easy reference.

Topics

Menu Navigation Overview

The configuration menus (shown in Figure 5–1 on page 69) appear on the AMP2-16-3G and AMP2-E16-3G to display information and to allow you to configure the operation of the monitor.

Figure 5–1 Menu Tree



AES Output Configuration Menu

This menu allows you to:

- Select the source of each of the eight AES output channel pairs,
- Adjust the level of each channel, and
- Mix or direct sources to outputs.

The menu can take one of two forms depending on what channel pair you want to send to the output port:

- The same input pair selection that is audible on the speakers (*Follow Monitor* mode), or
- Any other pair selection (*Free Mix* mode).

Common Controls

Follow Monitor/Free Mix: Pressing this knob toggles between the menu display shown in Figure 5–2 below, and the display shown in Figure 5–3 on page 71.

Figure 5–2 AES Output Configuration - Free Mix

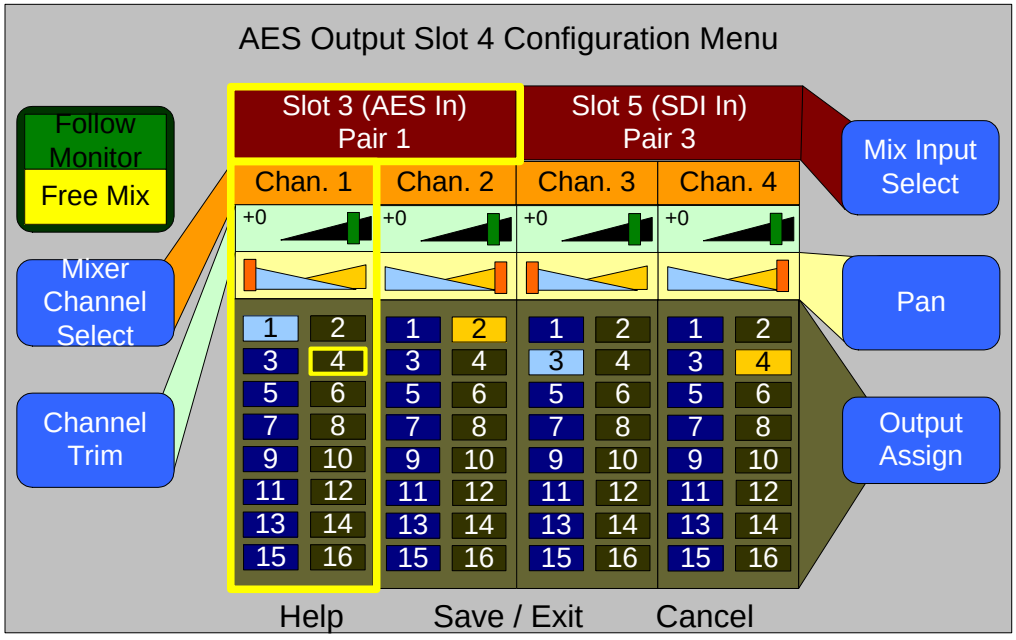


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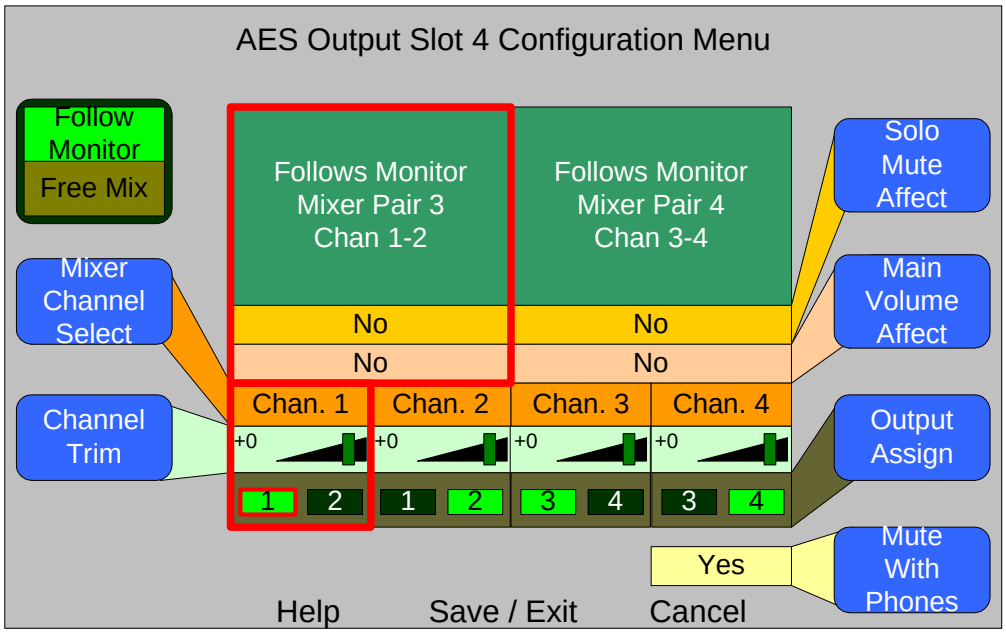
Figure 5–3 AES Output Configuration - Follow Monitor



In *Follow Monitor* mode you can direct the channels in the **Monitor Mixer Configuration Menu** (Figure 5–16 on page 92) to be output through the AES Output Card.

In *Free Mix* mode you can mix and output any combination of channel pairs into any combination of output channels, or you can turn the output pair **Off** altogether. Adding a Dolby D/E Card adds the five decoded Dolby output pairs, so you can select one of many inputs (up to four other processor cards at 8 channel pairs each, plus five Dolby output pairs). You will see the choices displayed as **Slot x (<card name>) Channel y** or **Dolby Decoder Pair z**. (This mode is represented by all the other lines coming into this menu in Figure 2–3 on page 17.)

Setting the channel pair to **Off** disables the other adjustments for that channel pair.

- **Mixer Channel Select**: Rotating this knob moves a highlight between the source channels and pairs. Other controls then affect the selected channel and pair.

- **Channel Trim**: Rotaing this knob changes the gain on the selected channel. The number inside the light green box changes and the trim handle moves accordingly. This control has a range of -60 dB to

+12 dB (inclusive) in 1 dB increments. You can mute the channel by turning the knob counterclockwise beyond -60 dB. Pressing and holding this knob returns the setting to 0 dB.

- **Output Assign**: Rotating this knob moves a highlight between possible output channel numbers and between channels and pairs. Pressing the knob enables or disables the highlighted channel.

- **Mute with Phones:** Pressing or rotating this knob selects **Yes** or **No**, and determines whether the output port is controlled by the presence of a plug in the front panel headphone jack.

Follow Monitor Mode Controls

- **Solo/Mute Affect:** Pressing or rotating this knob selects **Yes** or **No**, and determines whether the selected pair is affected by solo or mute operations on the **Main Screen**.

- **Main Volume Affect:** Pressing or rotating this knob selects **Yes** or **No**, and determines whether the selected pair is controlled by the front panel **Volume** control.

Free Mix Mode Controls

- **Mix Input Select:** Rotating this knob selects between any input card sources, the monitor mix sources, and any Dolby decoder sources (if the Dolby D/E Card is installed).

- **Pan**: Rotating this knob changes the relative gain on the selected channel to the selected odd and even numbered output channels, allowing the customer to pan the selected input between the odd and even numbered output channels. Pressing and holding this knob for a second returns the setting to the center, providing equal signal levels to all selected output channels.

Analog Output Configuration Menu

This menu allows you to:

- Select the source of each of the four analog output channel pairs,
- Adjust the level of each channel, and
- Mix or direct sources to outputs.

The menu can take one of two forms depending on what channel pair you want to send to the output port:

- The same input pair selection that is audible on the speakers (*Follow Monitor* mode), or
- Any other pair selection (*Free Mix* mode).

Common Controls

Follow Monitor/Free Mix: Pressing this knob toggles between the menu display shown in Figure 5–2 below, and the display shown in Figure 5–3 on page 71.

Figure 5–4 Analog Output Configuration - Free Mix

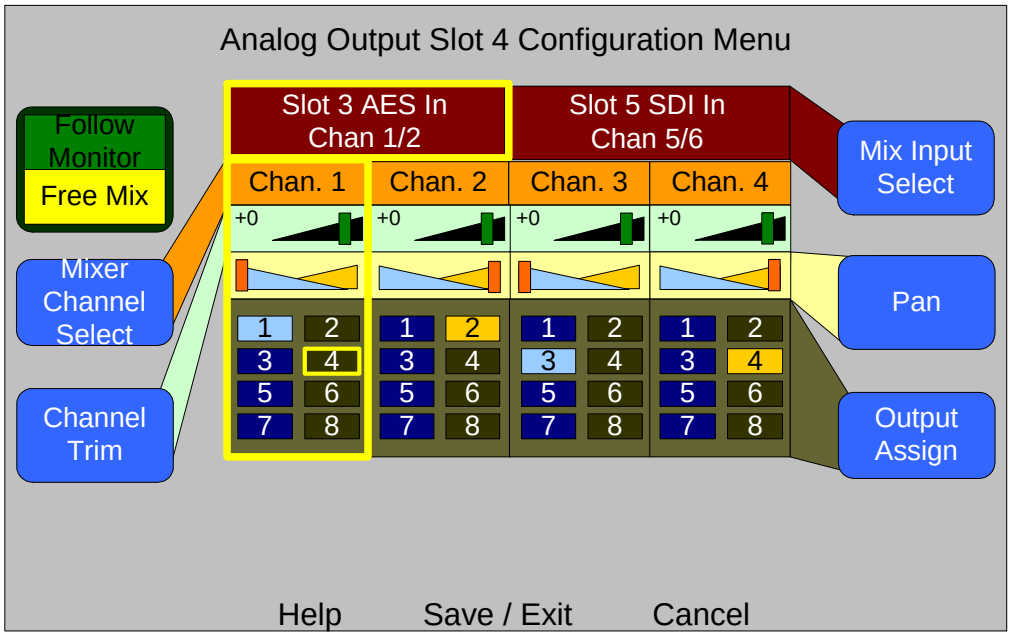
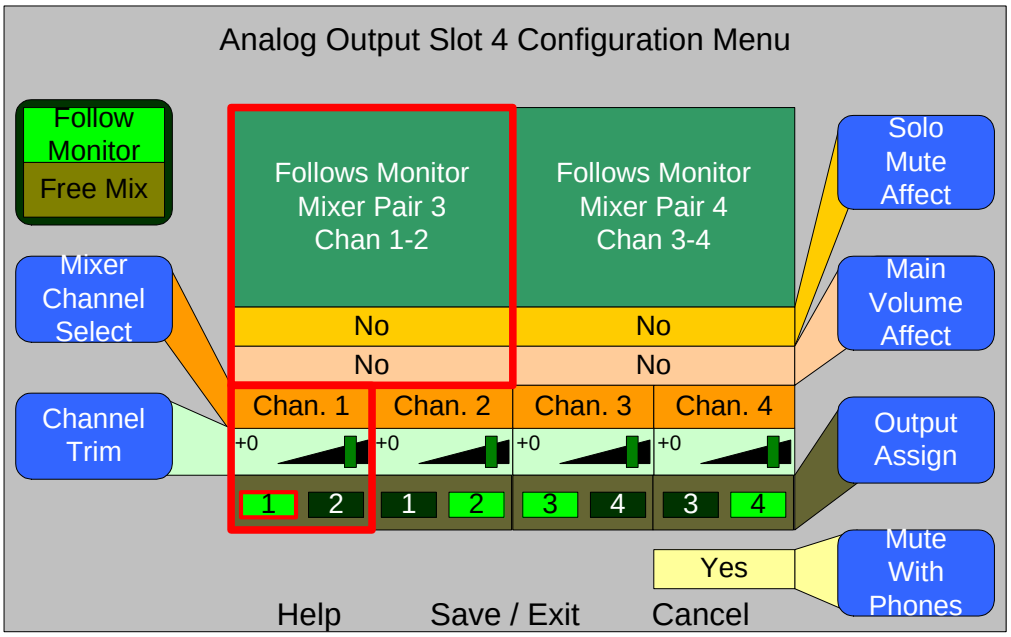


Figure 5–5 Analog Output Configuration - Follow Monitor



In *Follow Monitor* mode you can direct the channels in the **Monitor Mixer Configuration Menu** (Figure 5–16 on page 92) to be output through the Analog Output Card or the AES Output Card.

In *Free Mix* mode you can mix and output any combination of channel pairs into any combination of output channels, or you can turn the output pair **Off** altogether. Adding a Dolby D/E Card adds the five decoded Dolby output pairs, so you can select one of many inputs (up to four other processor cards at 8 channel pairs each, plus five Dolby output pairs). You will see the choices displayed as **Slot x (<card name>) Channel y** or **Dolby Decoder Pair z**. (This mode is represented by all the other lines coming into this menu in Figure 2–3 on page 17.)

Setting the channel pair to **Off** disables the other adjustments for that channel pair.

- **Mixer Channel Select**: Rotating this knob moves a highlight between the source channels and pairs. Other controls then affect the selected channel and pair.

- **Channel Trim**: Rotaing this knob changes the gain on the selected channel. The number inside the light green box changes and the trim handle moves accordingly. This control has a range of -60 dB to

+12 dB (inclusive) in 1 dB increments. You can mute the channel by turning the knob counterclockwise beyond -60 dB. Pressing and holding this knob returns the setting to 0 dB.

- **Output Assign**: Rotating this knob moves a highlight between possible output channel numbers and between channels and pairs. Pressing the knob enables or disables the highlighted channel.

- **Mute with Phones:** Pressing or rotating this knob selects **Yes** or **No**, and determines whether the output port is controlled by the presence of a plug in the front panel headphone jack.

Follow Monitor Mode Controls

- **Solo/Mute Affect:** Pressing or rotating this knob selects **Yes** or **No**, and determines whether the selected pair is affected by solo or mute operations on the **Main Screen**. This knob is disabled on the **Input Pair Select** screen.

- **Main Volume Affect:** Pressing or rotating this knob selects **Yes** or **No**, and determines whether the selected pair is controlled by the front panel **Volume** control. This knob is disabled on the **Input Pair Select** screen.

Free Mix Mode Controls

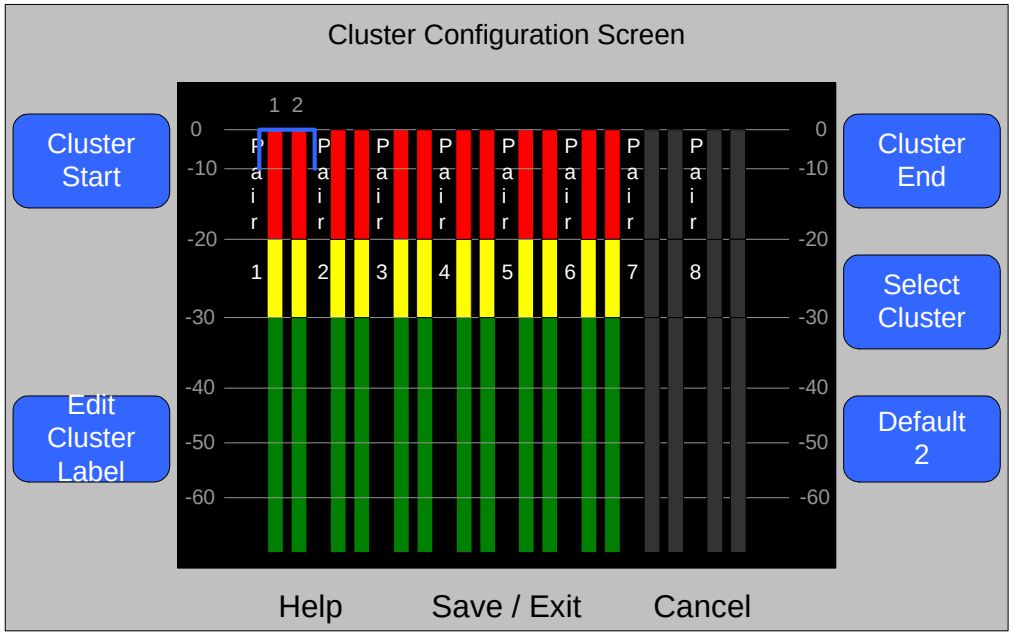
- **Mix Input Select:** Rotating this knob selects between any input card sources, the monitor mix sources, and any Dolby decoder sources (if the Dolby D/E Card is installed).

- **Pan**: Rotating this knob changes the relative gain on the selected channel to the selected odd and even numbered output channels, allowing the customer to pan the selected input between the odd and even numbered output channels. Pressing and holding this knob for a second returns the setting to the center, providing equal signal levels to all selected output channels.

Cluster Configuration Screen

The **Cluster Configuration Screen** allows you to define and select clusters for display on the **Main Screen**.

Figure 5–6 Cluster Configuration Screen



Note: When you turn off channels in the **Monitor Mixer Configuration Menu**, they will appear grey on the **Cluster Configuration Screen** as shown above on the right. Moreover, they will not appear at all on the **Main Screen** and the remaining meters will automatically adjust to display evenly in the window.

- **Cluster Start:** Rotating this knob moves the left side of the bracket so you can select the starting channel of a cluster. Pressing this knob sets the new cluster.

- **Edit Cluster Label:** Pressing this knob proceeds to the **Label Menu** so you can enter or change the cluster label, shown in Figure 5–6 as **Pair 1**. If a partial cluster or multiple clusters is bracketed, then this knob is disabled.

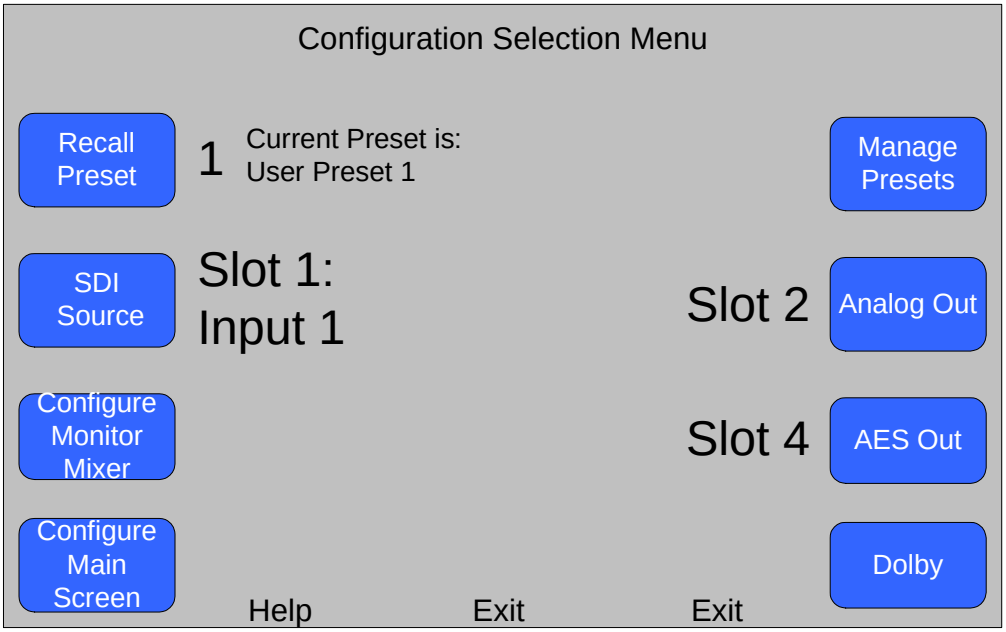
- **Cluster End:** Rotating this knob moves the right side of the bracket to select the ending channel of a cluster. Pressing this knob sets the new cluster. Channels from other existing clusters are automatically removed and added to the one being set.

- **Select Cluster:** Rotating this knob moves the bracket from cluster to cluster so you can adjust each one.
- **Default 2-4-8:** Rotating this knob configures the meters into clusters of two, four, or eight. Pressing this knob reformats the screen to form two clusters of eight channels each, four clusters of four channels each, or eight clusters of two channels each.

Configuration Selection Menu

The **Configuration Selection Menu** allows you to modify meters, audio, and Dolby configurations and it allows you to select and modify audio outputs

Figure 5–7 Configuration Selection Menu



- **Recall a Preset:** Rotating this knob steps through each of the eight user-defined presets. Pressing the knob recalls the preset shown.
- **SDI Source**: This knob appears when one or more 3G SDI cards is installed. Rotating the control selects the card slot to configure, if the monitor contains more than one 3G SDI card. Pressing this knob selects Source 1 or 2 for that card.

- **Configure Monitor Mixer:** Pressing this knob displays the **Monitor Mixer Configuration Menu** where you can define the relationships of channels to speakers as well as solo/mute assignments, and meter clusters.

- **Configure Main Screen:** Pressing this knob displays the **Main Screen Configuration Menu** where you can change various parameters displayed on the **Main Screen**.

- **Manage Presets:** Pressing this knob displays the **Preset Management Menu** where you can save, name, and manage presets.

- **Analog Output:** This selection only appears if one or more Analog Output Cards are installed in the system. If one card is installed, pressing this knob displays the **Analog Output Menu** where you can configure output parameters. If more than one analog output card is installed, then a card slot number appears (with the card's slot number) beside the knob label. Rotate the knob to select the analog card you want to configure and then press the knob to display the **Analog Output Menu**.

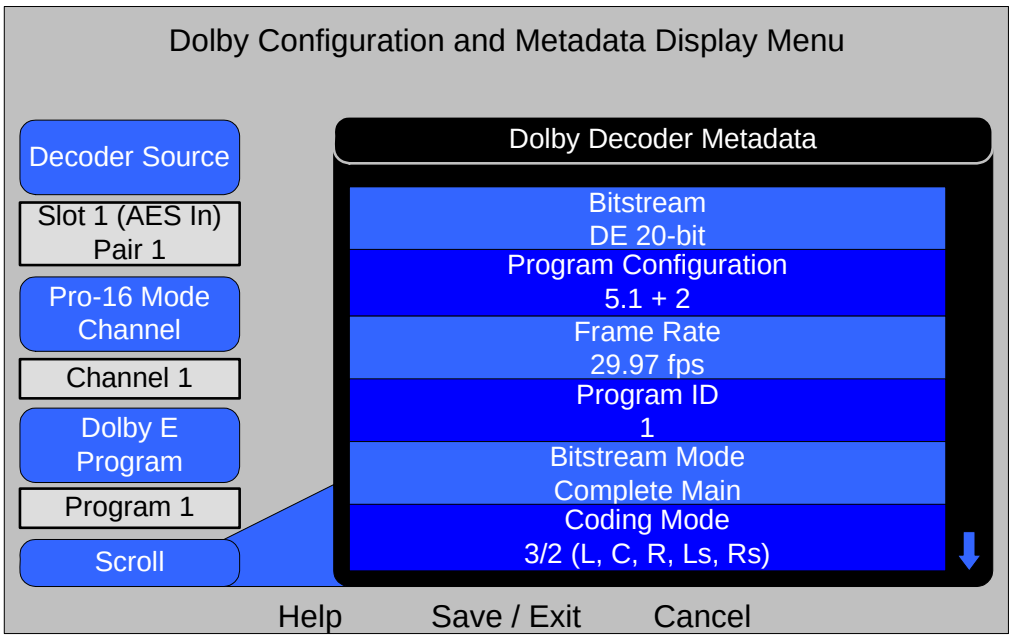
- **AES Output:** This selection appears if one or more AES Output Cards are installed in the system. If one card is installed, pressing this knob displays the **AES Output Menu** where you can set up output parameters for it. If more than one card AES output card is installed, then a card slot number appears (with the card's slot number) beside the knob label. Rotate the knob to select the analog card to set up and then press the knob to display the **AES Output Menu**.

- **Dolby:** Pressing this knob displays the **Dolby Configuration and Metadata Display Menu** where you can configure the Dolby D/E Card (if equipped) and display live Dolby metadata. If the AMP2-16-3G is not equipped with a Dolby D/E Card, then this label does not display.

Dolby Configuration and Metadata Display Menu

This menu allows you to select and configure Dolby decoded metadata.

Figure 5–8 Dolby Configuration and Metadata Display Menu



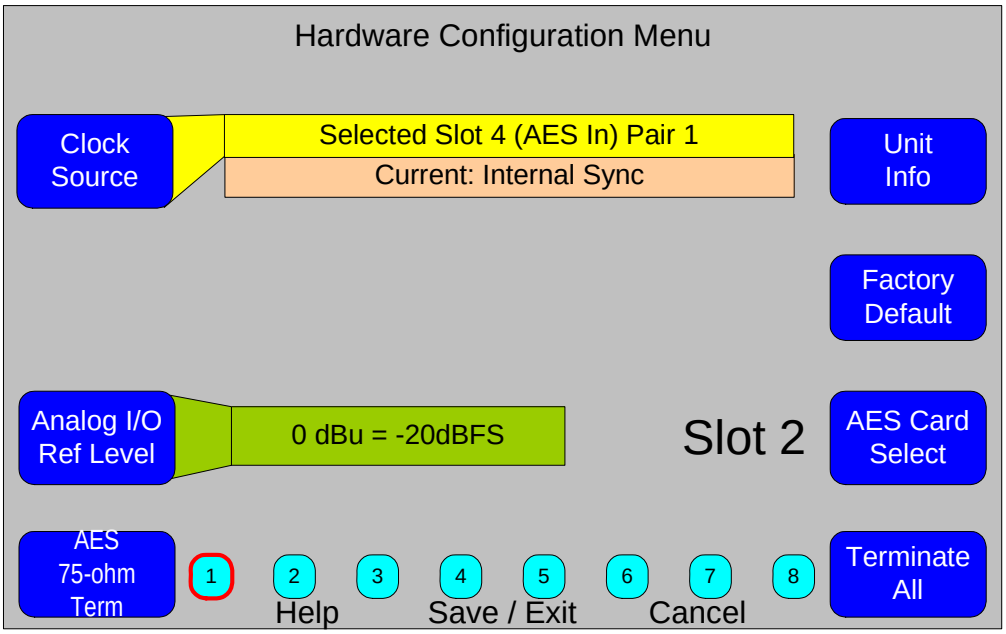
- **Decoder Source:** Rotating this knob selects the source of the Dolby D/E Card. The source choices include all available AES input pairs and all available SDI de-embedded pairs.
- **Pro-16 Mode Channel:** Rotating the knob selects the **Pro-16 Mode Channel**.
- **Dolby E Program:** Rotating this knob selects the Dolby E program. If the selected program is not available, the metadata from Program 1 will display.
- **Scroll:** Rotating this knob scrolls the list of available Dolby metadata up or down. The arrows at the right of the list indicate whether there is more data above or below.

Hardware Configuration Menu

The menu allows you to select a clock source, set reference levels and add or remove AES signal termination. It also provides a link to the **Unit Information Menu**.

Note: These settings are not stored or recalled as part of a preset.

Figure 5–9 Hardware Configuration Menu



- **Clock Source:** Rotating this knob selects the input source for audio clocking. If there is only one input card, this is automatically set to that card. If the currently-selected source is unlocked, the system will automatically choose another locked source. When this happens, the current source and the selected source fields will be different.

- **Analog I/O Reference Level:** Rotating this knob allows you to select from any of the following eight analog I/O reference levels:
  - -22 dBFS = +4 dBu
  - -20 dBFS = +4 dBu
  - -18 dBFS = +4 dBu
  - -16 dBFS = +4 dBu
  - -20 dBFS = +8 dBu

  - -20 dBFS = 0 dBu
  - -18 dBFS = 0 dBu
  - -9 dBFS = +6 dBu

- **AES 75 ohm Termination:** This knob only appears when at least one AES Input Card is present. Rotating the knob moves the highlight from one AES pair to another. Pressing the knob toggles a 75 ohm termination on each pair on or off.

- **Unit Info:** Pressing this knob displays the **Unit Information Menu** where you can display the version of the various software components in the system and/or update those software components.

- **Factory Default:** Pressing this knob displays a diamond-shaped warning that explains that all the presets and options will be lost. Pressing this knob a second time clears the memory and returns the unit to its factory defaults. If the knob is not pressed a second time, the warning times out after five seconds.

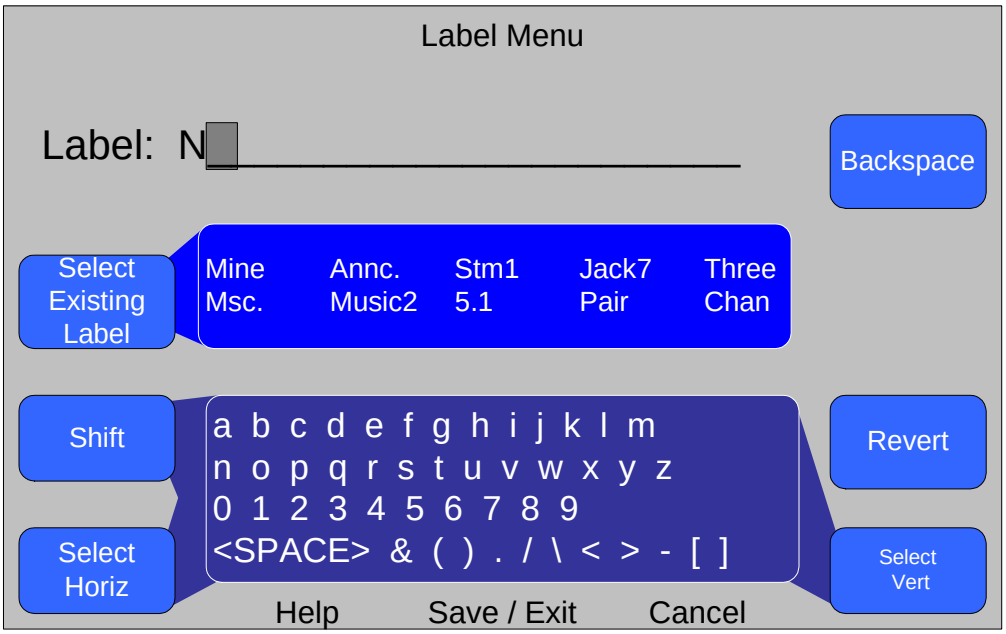
- **AES Card Select:** This knob only appears when one or more AES Input Cards are present. Rotating the knob selects the slot number of the cards.

- **AES Terminate All:** This knob only appears when at least one AES Input Card is present. Pressing this knob toggles all eight AES terminations on or off.

Label Menu

This menu allows you to modify the knob labels for clusters, presets, and hot keys.

Figure 5–10 Label Menu



- **Select Existing Label:** This knob allows you to use an existing label to create a new one rather starting from scratch. Rotating the knob left and right moves the cursor left and right among the labels. Pressing the knob replaces the label in the **Label** field with the selected label.

- **Shift**: Pressing this knob toggles between upper and lower case letters. Rotating it left selects upper case; rotating it right selects lower case. The letters inside the dark area of the screen change accordingly.

- **Select Horiz**: Rotating the knob moves the cursor inside the character field horizontally. If the cursor goes off the right edge, the cursor is advanced to the beginning of the next line. Similarly, if the cursor goes off the left edge, the cursor retards to the end of the previous line. The cursor wraps to and from the last character (‘]’) to the first character (‘A’).

  Pressing this knob selects the letter or symbol in the character field, and places it in the next character location in the **Label** field. The cursor in the **Label** field is advanced one character.

- **Backspace**: Pressing this knob deletes the character immediately to the left of the cursor in the **Label** field.

- **Revert**: Pressing this knob recalls the previous label, and allows you to continue editing.

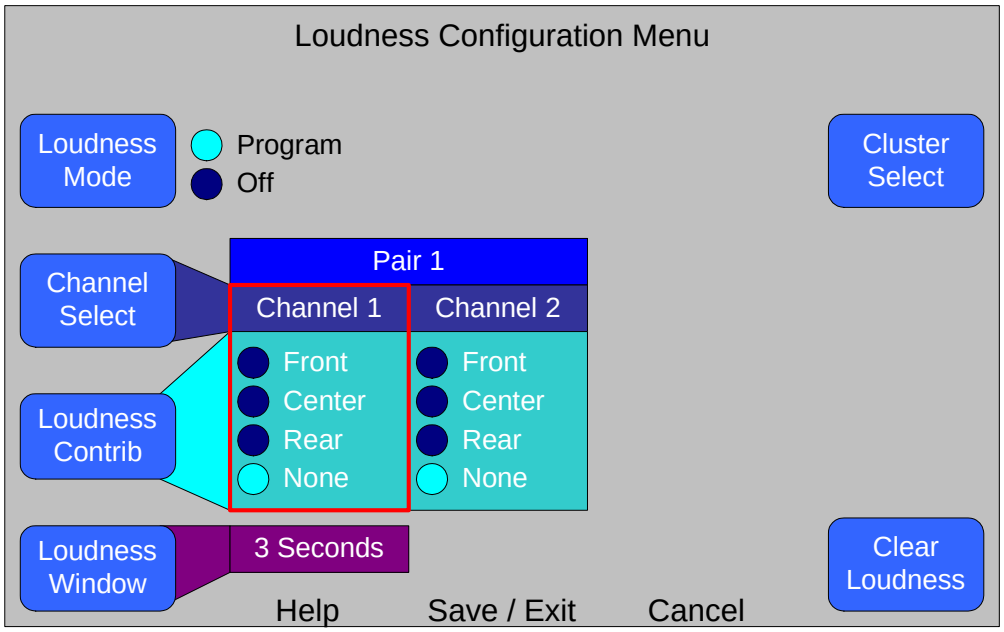
- **Select Vert**: Rotating this knob moves the cursor within the character field vertically. If the cursor goes beyond the bottom edge, it is advanced one space to the right, and reappears at the top line. If the cursor goes above the top line, it is retarded one space to the left. The cursor wraps to and from the last character (*]*) to the first character (*A*).

  Pressing this knob selects the letter or symbol in the character field, and places it in the next location in the **Label** field. The cursor in the **Label** field is advanced one character.

Loudness Configuration Menu

The two modes of the **Loudness Configuration Menu** are controlled by rotating the **Loudness Mode** knob. Pushing the button has no effect. Figure 5–11 shows the **Loudness Mode** set to **Program**.

Figure 5–11 Loudness Configuration Menu (Program Mode)



- **Loudness Mode**: Rotating this knob selects the loudness mode.

- **Channel Select**: Rotating this knob moves the box from channel to channel. Pushing the knob has no effect. The channels scroll left and right as necessary.

- **Loudness Contribution**: Rotating the knob moves the box around within the contribution fields to allow you to select how the channel contributes to the loudness measurement.

  In **Program Loudness Mode**, there is no difference between the contribution of a front channel or a center channel. Nonetheless, the system allows, at most, one center channel designation with the cluster.

- **Loudness Window**: This knob is active only when **Program Loudness Mode** is selected. Rotating the knob adjusts the averaging time in 1 second increments, between values of 1 and 60 seconds.

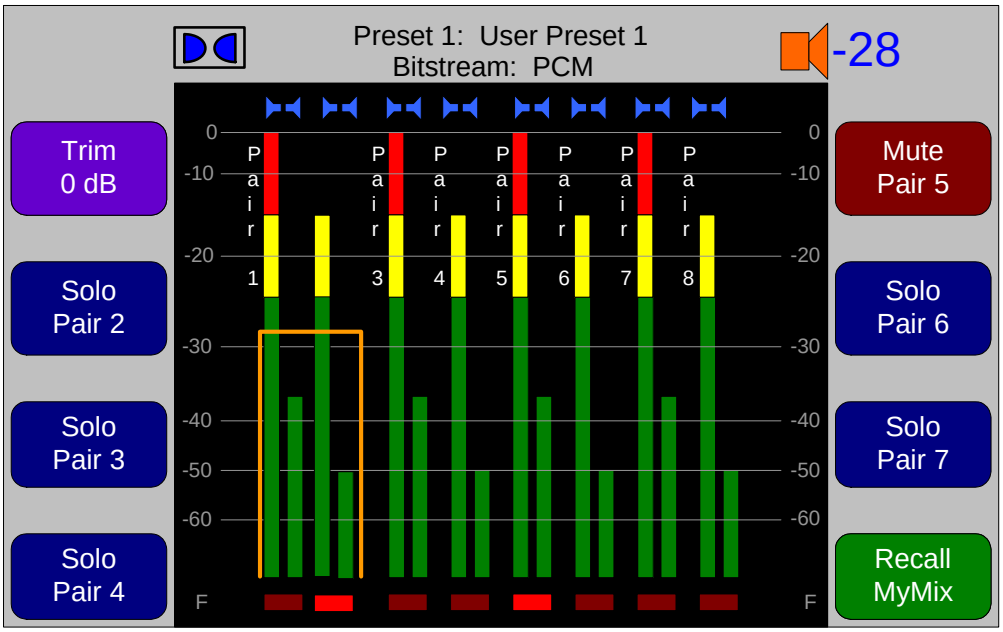
- **Cluster Select**: Loudness may only be displayed for one cluster at a time. Turn this knob to select the desired cluster. When any of the channels of the currently displayed cluster has a loudness value other than **None**, this knob is disabled.

- **Clear Loudness**: Pressing this knob sets the loudness contribution of all of the channels in this cluster to **None**, allowing you to change clusters.

Main Screen

In the following screen, the Dolby symbol will appear above the left side of the meter window if the Dolby decoder module is installed and the card has a selected input. Also, a line of Dolby metadata identifying the Dolby bitstream (or PCM) will display centered under the preset name and number at the top of the screen. The loudness symbol, level, and graph will only appear if a loudness cluster is set.

Figure 5–12 Main Screen



On the **Main Screen Hot Key Configuration Menu**, you can assign the rotary knobs to be either **Solos** or **Mutes** for a programmable set of channels, or to be preset changers. You can change the knob names in the **Label Menu** (See the Label Example on page 55.).

Solos and Mutes

When you rotate a **Solo** or **Mute** knob, you can **Solo** the selected channels by turning the knob to the left, or **Mute** the same channels by turning the knob to the right. When you press a **Solo / Mute** knob, the speaker symbol above the corresponding level meter(s) will change to indicate that the **Solo** or **Mute** function is affecting that channel. If a channel is both Soloed and Muted, then the **Mute** function overrides.

Sometimes, you may only want to hear or mute only one of the channels. Turning the **Solo / Mute** knob when it is soloed or muted effectively steps the **Solo** or **Mute** function through the controlled channels one at a time. Settings in the **Option Configuration Menu** determine whether:

- You will hear the soled or muted, singled out channel on both of the speakers, or only on one speaker (in place); and
- Pressing the **Solo / Mute** knob automatically latches either:

- **Momentarily**, when you press and hold the knob, or
- **Always**, when you quickly press the knob and release it, so that it will stay on until you press it again. (Refer to the Option Configuration Menu on page 94 for details).

Presets

When assigned as a preset changer, the action of the knob is momentary and is no longer governed by the setting in the **Option Configuration Menu**.

Individual Presets

If a knob is assigned as an individual preset changer, the background color of the knob label will change when you recall the preset. Once you press a preset, reconfiguring the system to the preset's settings is instantaneous.

Selectable Presets

If the preset changer is assigned as selectable, rotating it will display the number and label of the selected preset above the meters. (The meters continue to operate throughout this process.) Pressing it will then recall that preset. If the knob isn't rotated or pressed again for three seconds, the preset change times out and the screen returns to normal.

Note: If you press or rotate a second knob during this process, it will overrride the first knob and the screen immediately returns to normal.

Channel Trims

If a knob is assigned as a channel trim, then rotating the knob clockwise increases the gain on the selected channel(s). Rotating the knob counterclockwise decreases the gain.

Off Option

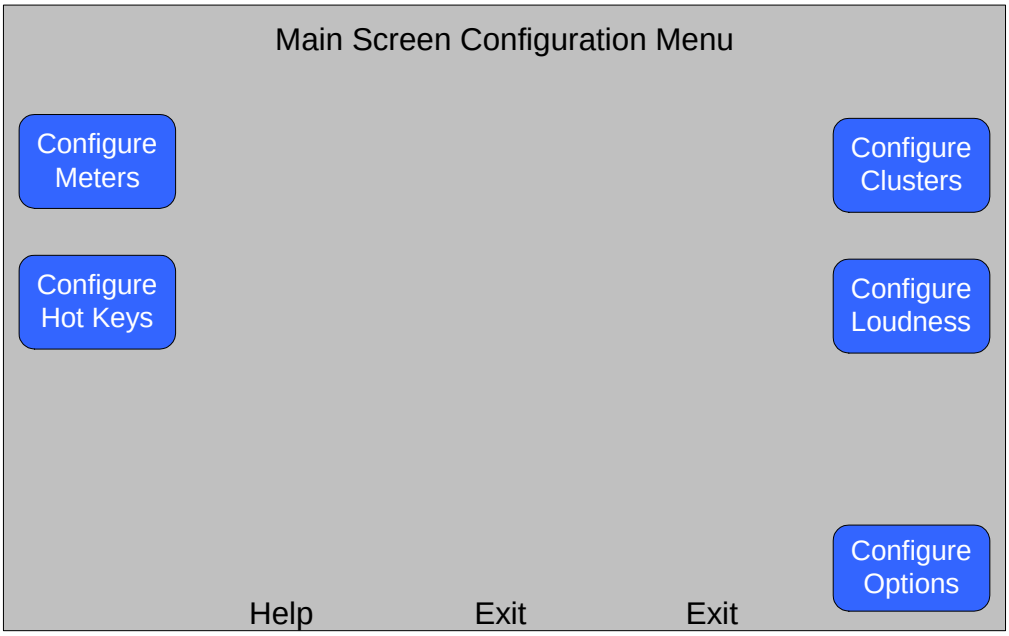
If a knob is not assigned as a preset changer, solo, mute, or channel trim, then the knob is disabled.

Main Screen Configuration Menu

This menu provides links to other menus where you can configure:

- Meters,
- Clusters,
- Hot keys, and
- Loudness settings.

Figure 5–13 Main Screen Configuration Menu



- **Configure Meters:** Pressing this knob displays the **Meter Configuration Menu**.
- **Configure Hot Keys:** Pressing this knob displays the **Main Screen Hot Key Button Configuration Menu** that will set up the function of the eight **Main Screen** hot keys.
- **Configure Clusters:** Pressing this knob displays the **Cluster Configuration Menu** used to define level meter clusters.

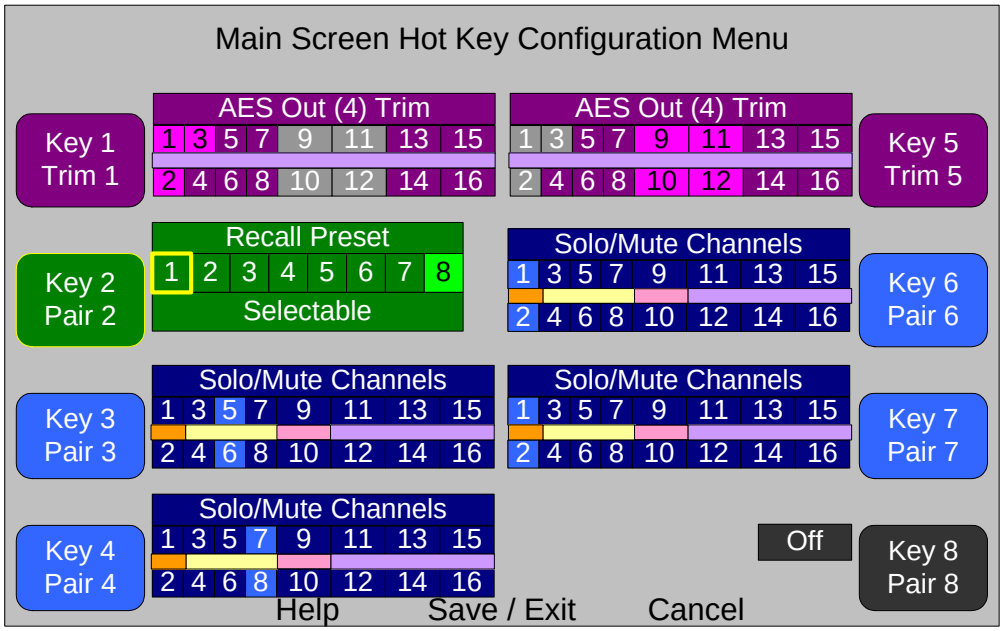
- **Configure Loudness:** Pressing this knob displays the **Loudness Configuration Menu** where you can set up parameters relative to the display of loudness.

- **Configure Options**: Pressing this knob displays the **Option Configuration Menu** where you can figure the functionality of solos, mutes, and channel trims.

Main Screen Hot Key Configuration Menu

This menu allows you to configure the eight hot key knobs on the **Main Screen**.

Figure 5–14 Main Screen Hot Key Button Configuration Menu



Rotary Knobs: Rotating this knob moves the highlight from the knob label itself to the function field and then steps throug the channel numbers.

- Pressing the knob while the highlight is over the knob label displays the **Label Menu** so you can rename the hot key.

- Pressing the knob while the description (**Solo / Mute Channels**, **Recall Preset**, **Trim**, or **Off**) is highlighted steps through these four options. As each option is displayed, the color scheme changes as shown in Figure 5–14 above.

  Note: Multiple trim hot keys cannot adjust the same channels on the same menu, so channels that are not selectable are disabled and grayed out.

- Pressing the knob while a channel is highlighted selects or deselects this channel from the solos/mutes or trims applying to this hot key. Note that you can select multiple channels.

- Colored bars between the two rows of channel numbers indicate the clustering of the channels. Channels that are in the same cluster share the same colored bars. The system automatically selects the colors so that they can be easily differentiated from each other, as well as from the channel number blocks.

- Pressing the knob while a preset is highlighted, selects it and deselects any other preset that was already selected. If you choose **Selectable**, you will be able to rotate the knob to display the available presets on the **Main Screen**. Pressing the knob recalls that preset.

Meter Configuration Menu Screen

This menu allows you to configure the appearance of the **Main Screen** meter characteristics, including:

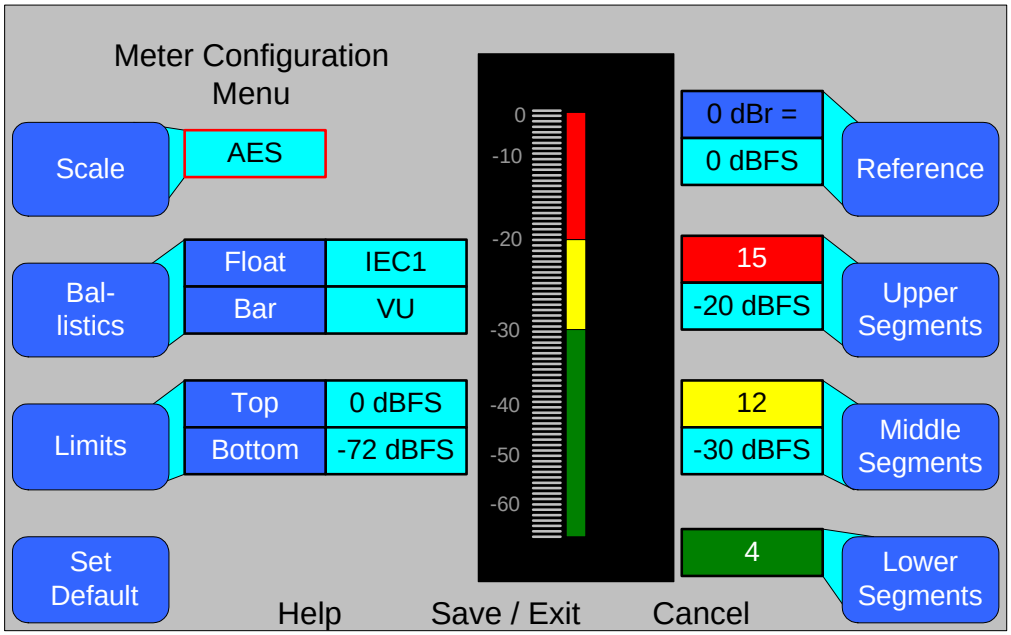
- Scale

- Ballistics

- Limits

- Reference levels, and
- Upper, middle, and lower segment set points, and colors.

Figure 5–15 Meter Configuration Menu Screen



- **Scale**: Rotating this knob steps through the scales for the level meters. Seven selections are available per the following table. Six settings are predefined; a seventh setting is user defined.

Table 5–1 Meter Limits and References

Scale	Bottom Limit	Top Limit	Default Reference	Default Color Bounds		Default Ballistics	
				Lower	Upper	Float	Bar
AES	-72 dBFS	0.0 dBFS	0 dBFS = 0 dBFS	-30 dBFS	-20 dBFS	IEC Type I	VU
VU	-45 dBr	+3.5 dBr	-20 dBFS = 0 dBr	-3 dBr	0 dBr	–	VU
Extd VU	-56 dBr	+16.0 dBr	-20 dBFS = 0 dBr	-10 dBr	0 dBr	–	VU
BBC (EBU)	-13.25 dBr	+13.0 dBr	-18 dBFS = 0 dBr	0 dBr	8 dBr	–	IEC Type II
Nordic	-44 dBr	+12.5 dBr	-18 dBFS = 0 dBr	-10 dBr	0 dBr	–	IEC Type I
DIN	-53 dBr	+5.5 dBr	-15 dBFS = 0 dBr	-5 dBr	0 dBr	–	IEC Type I
Custom	-72 dBr (min) (2)	+20.0 dBr (max) (2)	0 dBFS = 0 dBr	-30 dBr	-20 dBr	IEC Type I	VU

- **Ballistics**: Rotating this knob adjusts the float. Pressing and then rotating adjusts the bar. Ballistic timings are valid only at 48 kHz.

Table 5–2 Meter Timings

Ballistics	Rise	Fall	
		Level Change	Time
VU	Not Specified		
IEC Type I	5 ms to reach -2 dB of settled reading	-20 dB	1.7 sec.
IEC Type II	10 ms to reach -2 dB of settled reading	-24 dB	2.8 sec.
None	Bar or Floating Segment Not Displayed		

- **Limits**: Rotating this knob sets the upper limit of the display. Pressing and then rotating sets the lower limit. Top and bottom limits are adjustable in 1 dB increments. This function is available on the custom meter scale only.

- **Set Default**: Pressing this knob returns all settings on this menu to the original factory settings.

- **Reference**: Rotating this knob adjusts the display reference level. This function is available on all scales except the AES scale.

- **Upper Segment Color**: Rotating this knob cycles the upper color of the displayed sample level meter color through a wide variety of colors. Pressing this knob allows you to adjust the division between the upper and middle segments. Color boundaries are adjustable in 1 dB increments, and have the same range as the bottom and top limits of the meter.

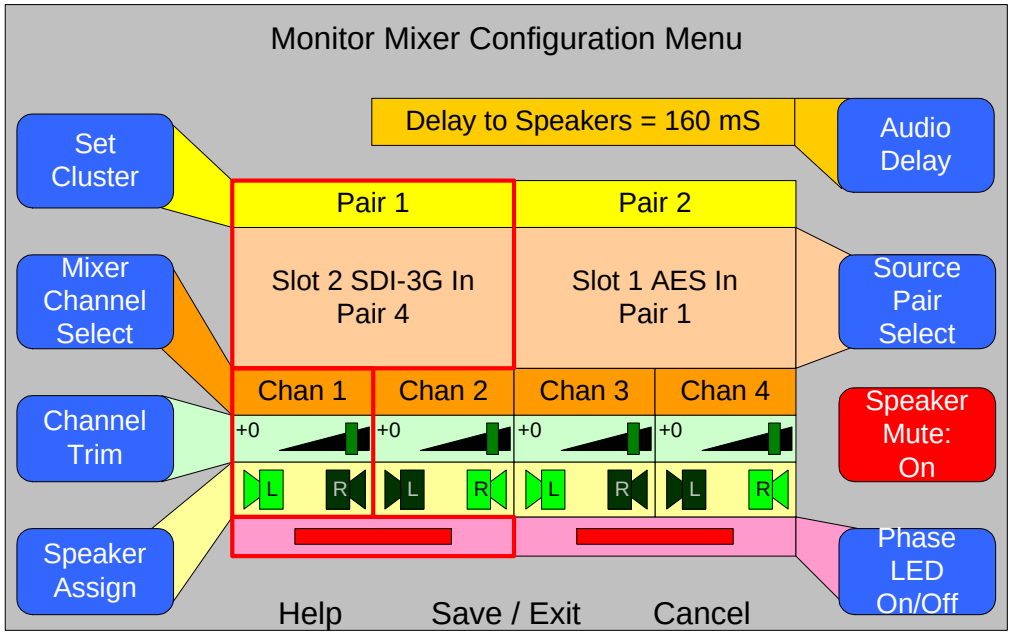
- **Middle Segment Color**: Rotating this knob cycles the middle color of the displayed sample level meter color through a wide variety of colors. Pressing this knob allows adjusting the division between the middle and lower segments. Color boundaries are adjustable in 1 dB increments, and have the same range as the bottom and top limits of the meter.

- **Lower Display Color**: Rotating this knob cycles the lower color of the displayed sample level meter color through a wide variety of colors.

Monitor Mixer Configuration Menu

This menu allows you control the audio monitoring of each channel and to control the phase displays for each channel pair. It also links to the **Cluster Configuration Screen**, where you can configure the clustering of the channels on the **Main Screen**.

Figure 5–16 Monitor Mixer Configuration Menu



With the combination of the **Volume** control, channel clustering, and speaker setting, you has a very powerful, intuitive tool to arrange the metering and monitoring options on the **Main Screen** so users can tell at a glance what is happening with the monitored sources. Individual channels can be displayed or turned off. Channels can also be visible without having to be audible, although the reverse is not true.

- **Set Cluster:** Pressing this knob continues on to the **Cluster Configuration Screen**, where you can configure and label the meter clusters, and how they will display on the **Main Screen**.
- **Mixer Channel Select:** Rotating this knob moves the red selection boxes from side to side, selection the monitor mixer channel and pair to configure.
- **Channel Trim:** Rotating this knob changes the gain. The number inside the box changes and the blinking box moves accordingly.

This knob has a range of -60 dB to +12 dB (inclusive) in 1 dB steps. Pressing and holding this knob for over 1 second returns the setting to 0 dB.

You can mute the channel by turning this knob counterclockwise beyond -60 dB, by turning off both speaker assignments, or by using the solo/mute controls in the **Main Screen**.

- **Speaker Assign:** This knob moves the highlight around the speaker symbols. Pressing the knob enables/disables the highlighted speaker. If both speakers are deselected, the channel turns off and is not displayed on the **Main Screen**. If you want to mute the channel while still displaying the meter, use the **Channel Trim** instead, and leave at least one speaker assigned.

- **Audio Delay**: Rotating this knob allows you to add an audio delay of up to approximately 170 ms in 1 ms increments to the speaker audio. As you turn the knob, the audio delay varies dynamically so that you can audibly determine the correct delay. Pressing the knob toggles between no delay (**Off**) and the current delay setting.

  Note: While adjusting the delay, the monitor may produce a small clicking noise as you turn the knob.

- **Source Pair Select:** Rotating this knob steps you through all the possible source pairs for this particular monitoring channel, or **Off**. Pressing this knob has no effect.

  You can choose any one of the eight channel pairs of any active input or output card, or **Off**. In Dolby-capable units, the five Dolby output pairs will be added. This will select between one of many inputs (five processor cards at 16 channel pairs each plus five Dolby output pairs). The choices are presented to you as **Slot x (<card name>) Pair y** or **Dolby Decoder Pair z**.

  Setting the channel to **Off** disables the other knobs for that channel pair.

  Turning a channel **Off** removes its meter, its associated text, and its phase LED from the **Main screen**. The remaining meters will automatically scale and rearrange themselves to fill the void.

- **Speaker Mute On/Off:** Rotating or pressing this knob turns the knob label on or off. When the **Speaker Mute** is **On**, no sound will emit from the speakers, although the metering will work normally.

This is useful for an external surround sound system, for example. When the **Speaker Mute** is **Off**, the speakers work normally.

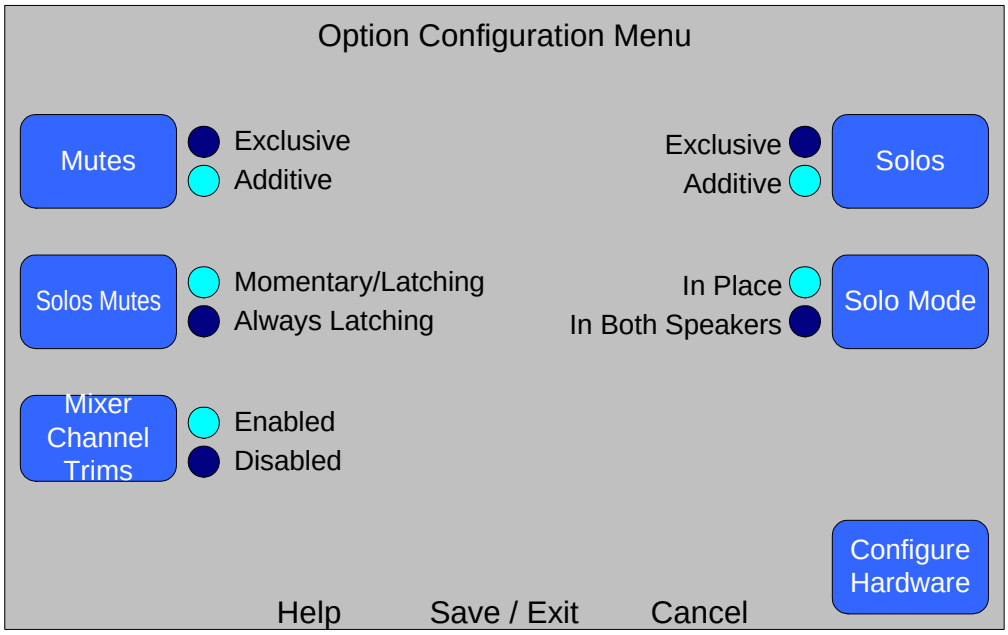
- **Phase LED On/Off:** Rotating or pressing this knob turns the selected phase indicator on or off. The effect is to either enable or disable a phase indicator on the **Main Screen**.

  The phase indicators can be enabled for adjacent channels that are part of the same cluster only. A phase indicator can not be enabled for any channel that is off, or for any two channels that are not adjacent to each other, or that are not part of the same cluster. The box is disabled for any phase indicator that cannot be enabled.

Option Configuration Menu

This menu allows you to determine exactly how you want the audio to come through the internal speakers and whether you want to enable the **Main Screen** solos/mutes for this source. It also provides a link to the **Hardware Configuration Menu**.

Figure 5–17 Option Configuration Menu



- **Mutes**: Rotating or pressing this knob determines whether you can select more than one **Mute** at a time on the **Main Screen**.

- **Solos Mutes**: Rotating or pressing this knob determines whether the **Solo / Mute** knobs will automatically be momentary or latching, or whether they will always latch.

    - **Momentary / Latching** means that you can press the knob quickly (for a half a second or less) to keep the **Solo / Mute** on until you press it again to turn it off. On the other hand, if you press and hold the knob down for longer than a half a second, the **Solo / Mute** function will stay on as long as you hold the knob, and then turn off again when you release it.

    - **Always Latching** means that when you press the knob the **Solo / Mute** knob engages and stays that way until you press the knob a second time to disengage the **Solo** or **Mute**.

- **Mixer Channel Trims**: Rotating or pressing this knob determines whether the **Channel Trim** knobs on the **Monitor Mixer Configuration Menu** can be adjusted. Selecting disabled will set all the trim values to 0 dB (unity gain).

- **Solos**: Rotating or pressing this knob determines whether individual solos are heard on both speakers, or as designated by the output selections in the **Monitor Mixer Configuration Menu**.

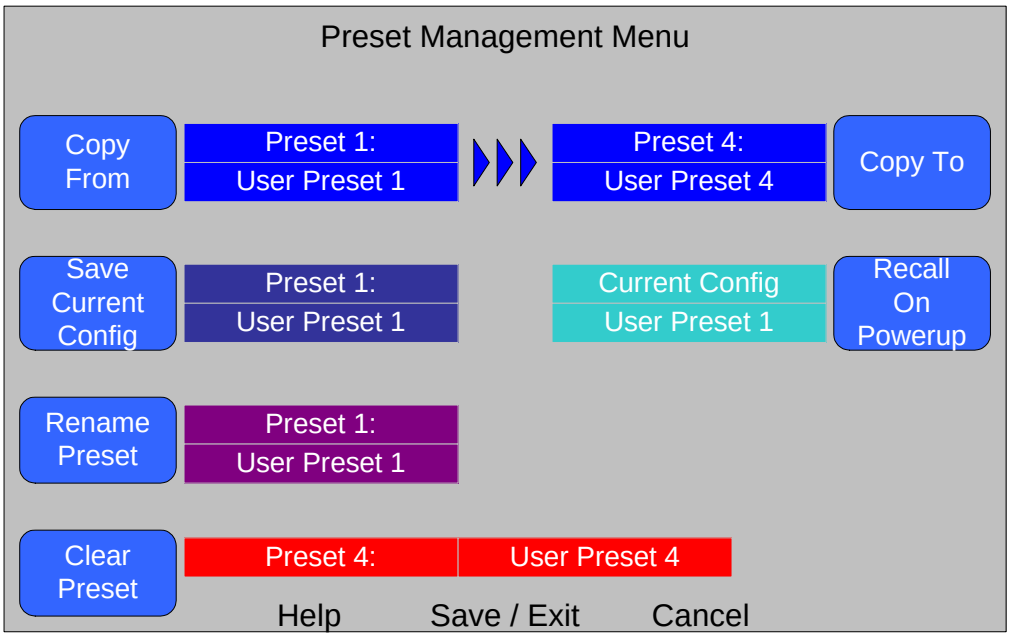
- **Solo Mode**: Rotating or pressing this knob determines whether individual solos are heard on both speakers, or in place on the left or right speaker.

- **Configure Hardware**: Pressing this knob displays the **Hardware Configuration Menu**. Refer to Hardware Configuration Menu on page 80 for more details.

Preset Configuration Menu

This menu allows you to name, save, copy, and clear presets. Presets should be saved after changes are made to them. This menu will also let you set how the system is configured after power is lost and then restored.

Figure 5–18 Preset Configuration Menu



- **Copy From:** Rotating this knob steps through source presets for the copy. Press the knob to copy the preset shown. This knob is to be used in conjunction with the Copy To knob. Pressing either one will copy the indicated preset.
- **Save Current Config:** Rotating this knob selects the preset that will be written or overwritten. Press the knob to save the current state of the unit to the preset shown.
- **Rename Preset:** Rotating this knob allows you to select from any of the presets. Pressing this knob displays the **Label Menu** where you can enter a new name for the preset.
- **Clear Preset:** Rotating this knob allows you to clear any of the presets. Pressing this knob displays a diamond-shaped warning that explains that the preset is about to be cleared. Pressing this knob a second time deletes all unique settings from the preset,

returning it to its factory default settings. If you don't press the knob a second time within five seconds, the system will cancel the operation.

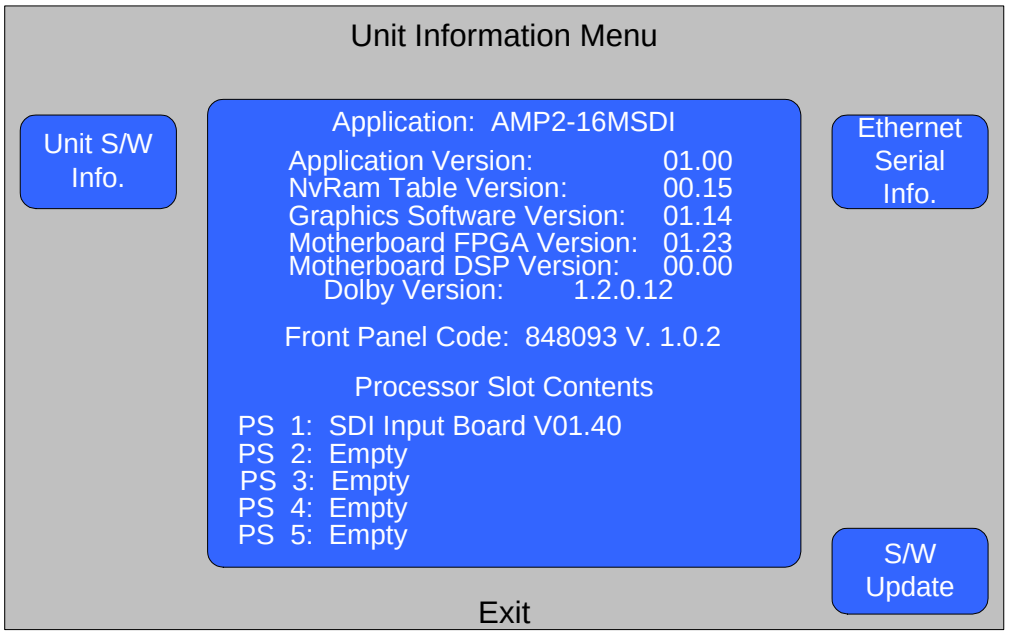
- **Copy To:** Rotating this knob selects the destination preset for the copy. Pressing the knob completes the copy. This knob is to be used in conjunction with the Copy From Knob. Pressing either one will copy the indicated preset.
- **Recall on Power Up**: Rotating this knob allows you to select from any of the presets, plus the last known state of the unit. Thus, after a power failure, or after the unit is unplugged and then subsequently powered up, the unit can either start up in its last known state, or in the selected preset.

Unit Information Menu

This menu allows you to display the current software version of various internal components, upgrade the software of those components, and establish Ethernet and/or serial connectivity from the unit to a PC. Pressing the **S/W Update** knob enables and displays the **ENABLE FTP** knob.

When you first display the **Unit Information Menu**, the **Unit S/W Info.** information will automatically display.

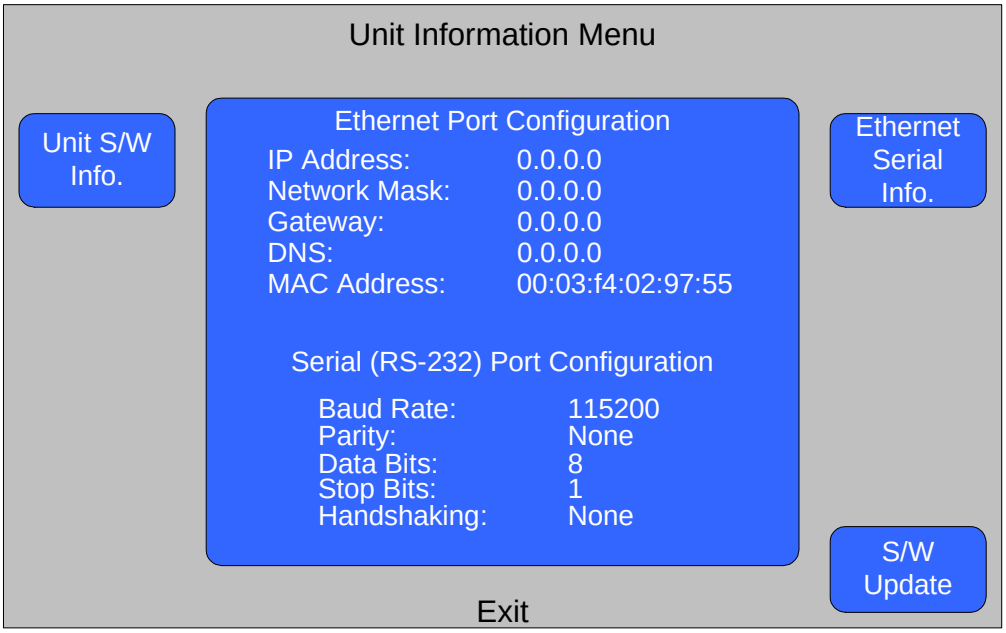
Figure 5–19 Unit Information Menu - (Application)



- **Unit S/W Info.:** Pressing this knob displays the version of each software component in the unit and the I/O modules that this unit contains.

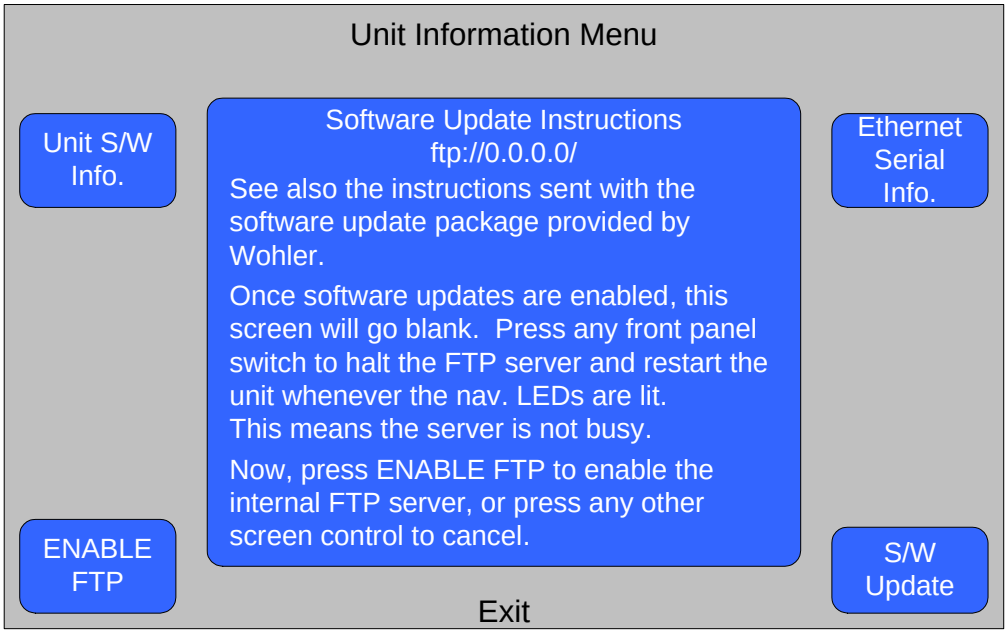
- **Ethernet Serial Info:** Pressing this knob changes this menu to show the Ethernet and serial port information as shown in Figure 5–20 on page 98.

Figure 5–20 Unit Information Menu - (Ethernet)



- **S/W Update:** Pressing this knob displays the **ENABLE FTP** knob and allows you to upgrade the software. See Chapter 6 for details.

Figure 5–21 Unit Information Menu - (Software)



CHAPTER 6
System Maintenance

Introduction

Overview

This procedure details how to establish external connectivity and then how to upgrade new Netburner software and firmware.

Note: It may prove useful to reprint this chapter every time you need to perform an upgrade, since several sections provide fill-in spaces to record existing values.

Topics

Upgrade Requirements

- An AMP2-16 Series monitor connected to PC on a Local Area Network (LAN) or connected to a host computer with a peer-to-peer (P2P) Ethernet connection. Refer to Appendix B on page 119 for instructions.

- The AMP2-16 Series monitor update package; see Appendix A on page 115 for instructions to download it from the Wohler web site: www.wohler.com. The package includes:
  - NetBurner IPSetup V2.0 or later (**IPSetup.exe**).
  - NetBurner AutoUpdate V2.0 or later (**AutoUpdate.exe**).
  - The unit's main processor software (AMP2_16_Vx.xx _APP.s19).

- A host computer running Windows XP connected to the same LAN. (Other Windows operating systems may work, but are untested.)

- If you are using a LAN connection, you will need two standard Ethernet cables—not crossover cables.

  If you are using a P2P connection, you will need a single crossover Ethernet cable.

Important: If you received this package from an e-mail, you will need to change the filename extensions. Anything with a **.wwe** file extension is actually a **.exe** file. Anything with a **.wzp** extension is actually a **.zip**.

- If you are updating the unit's firmware for one of the unit's sub-processors, you will also need one or more of the following files which are also included with the update package. The actual file names will likely have version information appended to them.

WARNING! You may see one of two versions of the AES Input Card and the AES Output Card distinguishable in the **Unit Information window**. The older card will have a software version less than 1.40; the newer version will have a version later than 1.40.

If your software version is less than 1.40, do not upgrade the software. It will render the card inoperable.

  - AesIn_V1.0x.S19 (for 919269 – older AES card)
  - AesIn_Vxx.4x.S19 (for 919282 – newer AES card)

- MB_DSP_Vxx.xx.S19
- AnlgIo_Vxx.xx.S19
- AesOut_Vxx.xx.S19
- Sdi3G_Vx.xx
- Dolby_Vx.x.x.x.S19
- SdiIo_Vxx.xx.S19
- MB_FPGA_Vxx.xx.S19
- Graphics_Vxx.xx.S19

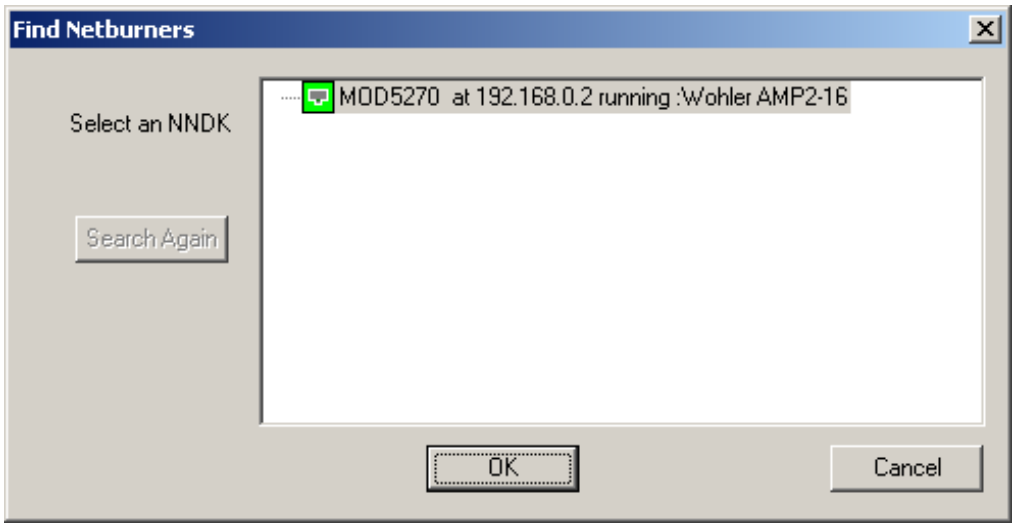
Establishing Connectivity

If you have not already done so, refer to Appendix B on page 119 to establish either a LAN or a peer-to-peer connection from your PC to the AMP2-16 Series monitor.

Upgrading the Netburner Software

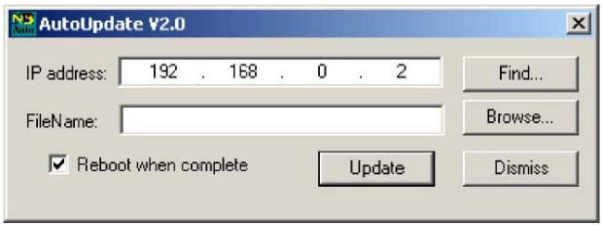
1. Launch the **NetBurner AutoUpdate** utility. Click on the **Find** button. You should see something similar to Figure 6–1 below.

Figure 6–1 Find Netburners Dialog



2. Click to highlight the NetBurner module you want to update, and click **OK**.

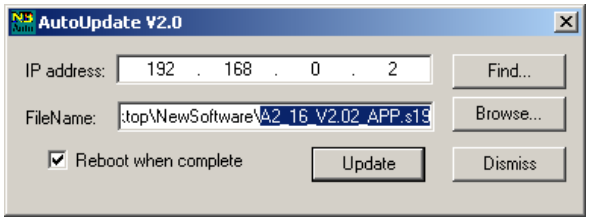
Figure 6–2 AutoUpdate IP Address Input Dialog - Incomplete



3. Click **Browse** and locate the **AMP2_16_Vx.xx_APP.s19** file. (The x's will be replaced with the software version.)

4. Check the **Reboot when complete** check box. The **Autoupdate** dialog box should look like the one in Figure 6–3 below.

Figure 6–3 AutoUpdate IP Address Input Dialog - Complete



5. With the unit fully booted and running, press the **Update** button on the dialog in Figure 6–3. A successful update is indicated by the window in Figure 6–4.

Figure 6–4 Autoupdate Confirmation Dialog

6. Click **OK** and both the dialog box and the **AutoUpdate** utility will close, and the unit will reboot and run the new software.

Upgrading the Sub-Processor Firmware

1. Refer to Appendix C on page 127 to set the system up to transfer files.

2. From here on, drag and drop files from where they are stored on the local host to the unit's FTP window.

Important; If the motherboard FPGA file is to be updated in addition to other files, transfer the MB_FPGA file first.

Important Program only one device at a time. Windows will allow you to drag and drop multiple files, but the FTP server in the monitor cannot handle this. In addition, the files in the monitor are write-only so they cannot be read. In all other respects, the FTP window behaves like any other file/folder window.

Figure 6–5 File Transfer

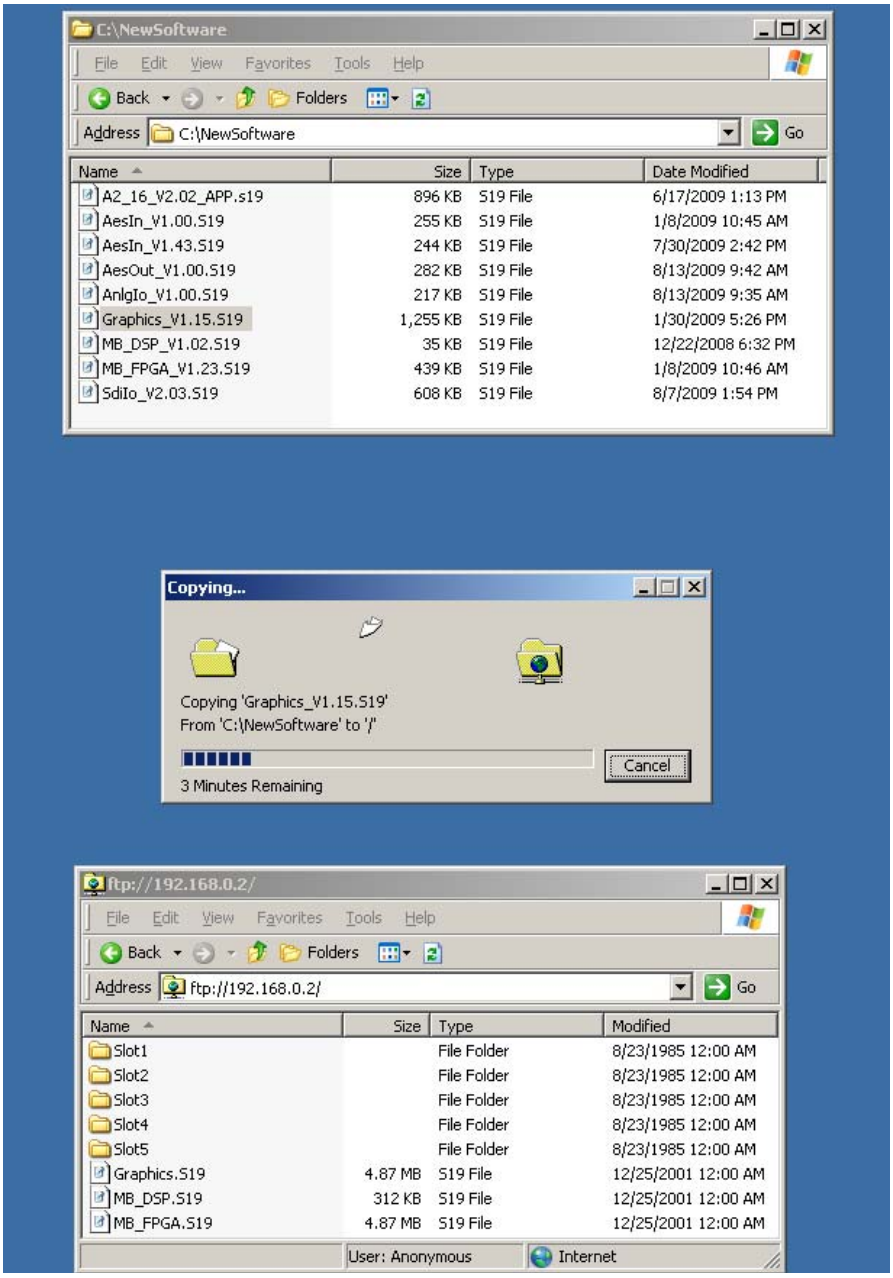
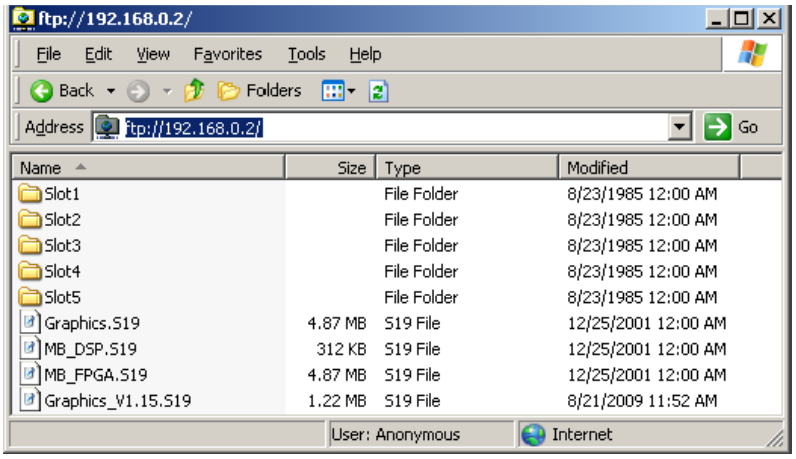


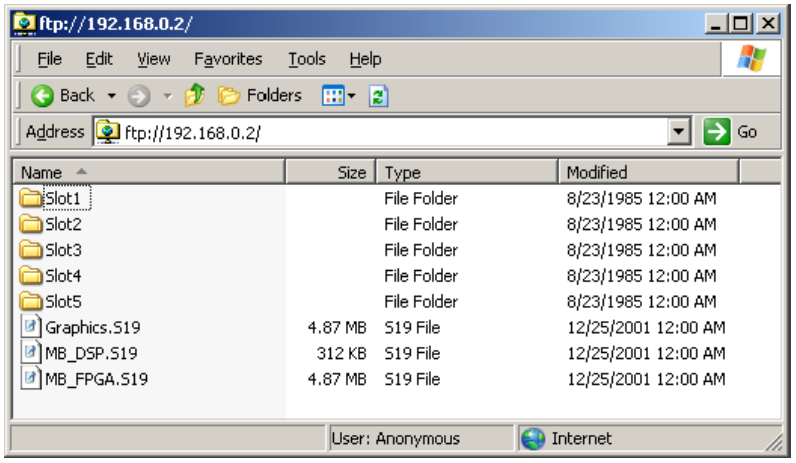
Figure 6–5 above shows a sub-processor being programmed.

Figure 6–6 Copy Completed



3. Once an sub-processor has been reprogrammed, wait about 15 seconds, and press F5 to refresh the window. The window will now appear like the one shown in Figure 6–7.

Figure 6–7 Refreshed Window



4. When all the sub-processors have been reprogrammed, and the front-panel navigation switches are illuminated, press one of the front panel navigation control switches. This will restart the unit.

Important: This concludes the upgrade procedure for both the NetBurner and the sub-processors.

CHAPTER 7
Features and Specifications

Introduction

Overview

This chapter lists the features and specifications for the AMP2-16-3G and the AMP2-E16-3G.

Topics

Features

Product Benefits

- Monitoring of up to 16 channels of embedded audio in a single, multirate SDI signal can be used in the most complex, multi-channel and surround applications: a must for DTV production and signal chain.
- The totally digital system architecture with high fidelity, class D amp provides absolute reproduction of the embedded signal with unsurpassed fidelity in a near field audio monitor.
- You can assign any channel on any input to the left, right, or both speakers. Production tools and needs for monitoring can vary from job to job, so these units provide optimum flexibility in signal monitoring, allowing you to configure the system to your needs for any given production.
- Near field audio monitors are often placed in a signal path. Re-clocked loop output of the SDI signal and demux outputs for eight AES pairs (on unbalanced 75Ω BNC connectors) provide cost savings in signal chain management, with the precision required for the digital infrastructure.
- You can create and store eight user-defined presets of system configurations for quick configuration changes.
- DTV programming requires absolute adherence to standards and requirements. Crucial elements of the audio signal (such as loudness and dial norm) are constantly sampled and instantly displayed on the LCD screen to prompt operators to take appropriate measures.
- You can direct each channel of each chosen channel pair to any or all of the 16 channel outputs of the AES Output card (or eight channel outputs of an Analog Output Card.)
- Production facilities and outside broadcast (OB) operators provide programming for clients on a global basis. Program producer and networks metering standards can be instantly accommodated with metering resolution (210 segments displayed with stereo phase indicators for stereo pairs) that is unmatched in precision. User-selectable meter characteristics include:

- Range
- Scale
- Color thresholds
- Ballistics

Additional Features

- 2RU case for space savings
- 1/4″ (7 mm) Stereo front panel headphone jack
- Optional I/O modules provide a variety of inputs and outputs. The types of I/O modules available include:
  - 3G/HD/SD-SDI Card
  - HD/SD-SDI Card
  - AES Input Card
  - AES Output Card
  - Analog I/O Card
  - Dolby D/E Card
- Stereo phase indicator is present for each stereo input source monitored. Stereo phase indication occurs in adjacent channels in the signal chain before routing to speakers.
- 100 to 240 VAC (± 10%) operation with a self-contained power supply. An identical additional power supply is also available for redundancy.

Compliance

All components comply with UL, CE, and RoHs specifications.

Standards

Loudness measurements comply with ITU-1770/1771 standards.

Specifications

The AMP2-16-3G series monitors meet the following specifications.

Table 7–1 Specifications

Specification	Values/Domains
Power requirements	100 V to 240 V AC ± 10%, 50/60Hz
Power consumption	150 Watts max
Dimensions (H x W x D)	3.5" x 19" x 14.5" (89 mm x 483 mm x 368 mm)
Weight	about 18 lbs.; depends on configuration
Space Required	2 RU (rack unit)
Supplied Accessories	AC Power Cord (North America)
Optional Accessories	See card list in Table 3–1 on page 20.
Level Meters	210 segments
Level Meter Scales	Selectable: • AES, • VU, • Ext. VU, • BBC, • EBU, • Nordic, and • DIN • Custom
Level Meter Characteristics	Selectable: • Meter range • Meter thresholds, • Reference, • Segment Colors, and • Ballistics • Phase Indicators
Peak Acoustic Output	104 dB SPL (@ 2 feet)
Power Output RMS	10 W, 12 W peak (each side)
RMS Center Woofer	11 W, 16 W peak
Frequency Response	60 Hz - 16 kHz (±5 dB) (-10 dB @ 50 Hz, 20 kHz)

Table 7–1 Specifications (Continued)

Specification	Values / Domains
AES/EBU Input Termination	75 Ohms unbalanced, switchable
SDI Input Termination	75 Ohms unbalanced
AES/EBU Input Sampling Rate	32-48kHz, Auto-detecting
Analog Input Impedance	40K Ohms
Hum and Noise	Better than -75dB below full output
Electrical Distortion	<0.15% at any level below limit threshold
Acoustic Distortion	8% or less at worst case frequencies above 300 Hz; typically <2%
Magnetic Shielding	<0.8 gauss any adjacent surface

APPENDIX A
Downloading Software

Introduction

Overview

This appendix explains how to download the update software for the monitor.

Topics

Requirements

To perform this procedure you will need:

- A PC with an Internet connection
- Your product's serial number (if you have not already created a user ID and password for the Wohler web site)

Downloading the File

1. Power up your laptop and launch the web browser.
2. Create a folder on your desktop called **AMP2-16 Upgrade**.
3. Navigate to the wohler web site: www.wohler.com.

Decision Point:

If you already have a member user ID and password for the Wohler web site, then log in by clicking on the Member Sign In link at the top right hand corner of the home page and sign in.

Otherwise, if you do *not* already have a member user ID and password then you must click Register as New User at the top right hand corner of the home page, and enter the requested data. Remember to log in after you have created your account.

4. Once you have successfully logged into the Wohler web site, click **Products** from the home page menu bar.
   A. Move the cursor down the menu to highlight **Audio.**
   B. Then move the cursor to the sub-menu to highlight **SDI**.
   C. Finally, move the cursor to the third menu to click on **AMP2-16-3G** or **AMP2-E16-3G**. (See Figure A–1 on page 117.)

Figure A–1 Selecting the AMP

5. When the monitor's page displays, click on the **Downloads** tab in the middle of the page.

6. double-click **AMP2-16 Upgrade Package (ZIP)** to begin the download.

7. When the **File Download** dialog appears, click **Save**.

8. When the **Save As** dialog appears, navigate to the folder you created in Step 2 on page 116 and click **Save**.

9. After the download is complete, double-click the compressed file on the desktop to display the contents.

Important: This concludes the software download procedure. Return to your previous location in this document.

APPENDIX B
Establishing Connectivity

Introduction

Overview

This appendix explains how to download the update software for the monitor.

Topics

Connectivity Options

The fastest and simplest way to establish connectivity to your AMP2-16-3G or AMP2-E16-3G is through a LAN (local area network).

Decision Point:

If you are *not* connected to a LAN (local area network) then continue on to Connecting Peer-to-Peer on page 123.

Otherwise, if you are connected to a LAN, then continue on to the next decision point below.

Decision Point:

If you already have the **IP Setup Tool** installed on your PC, then continue on to Connecting to a LAN on page 121.

Otherwise, if you do not already have the **IP Setup Tool** then then continue on to the next decision point below.

Decision Point:

If you do *not* have Internet access, then continue on to Connecting Peer-to-Peer on page 123.

Otherwise, if you do have Internet connectivity, then continue on with the instructions immediately following:

A. Follow the instructions in Appendix A on page 115 to download the software upgrade package that contains the **IP Setup Tool**.

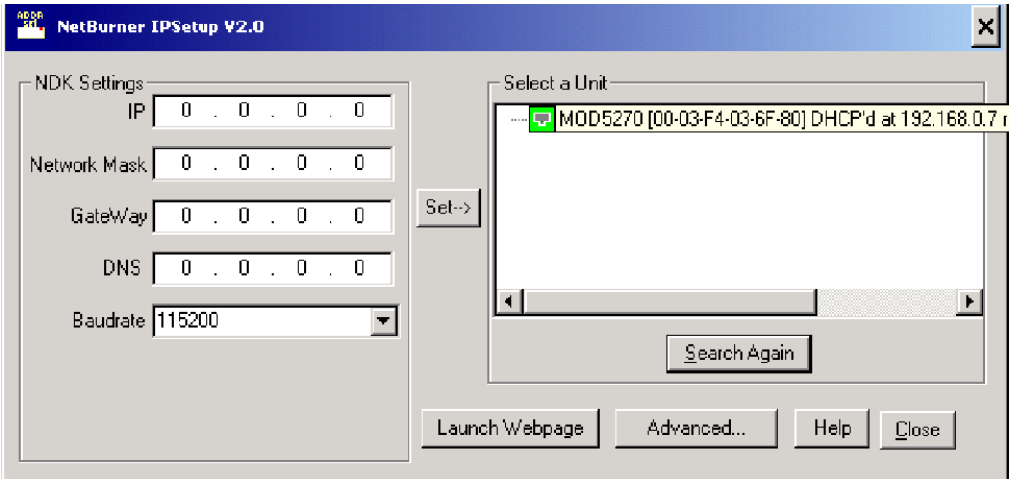
B. Continue on to Connecting to a LAN on page 121.

Connecting to a LAN

Launching the Setup Tool

1. Connect the unit and your host PC to a LAN (local-area network).
2. Run the **NetBurner IP Setup Tool**.
3. You should see something similar to the dialog shown in Figure B–1 below. This dialog shows a NetBurner module fresh from the Wohler factory.

Figure B–1 NetBurner IPSetup Dialog - Unconfigured

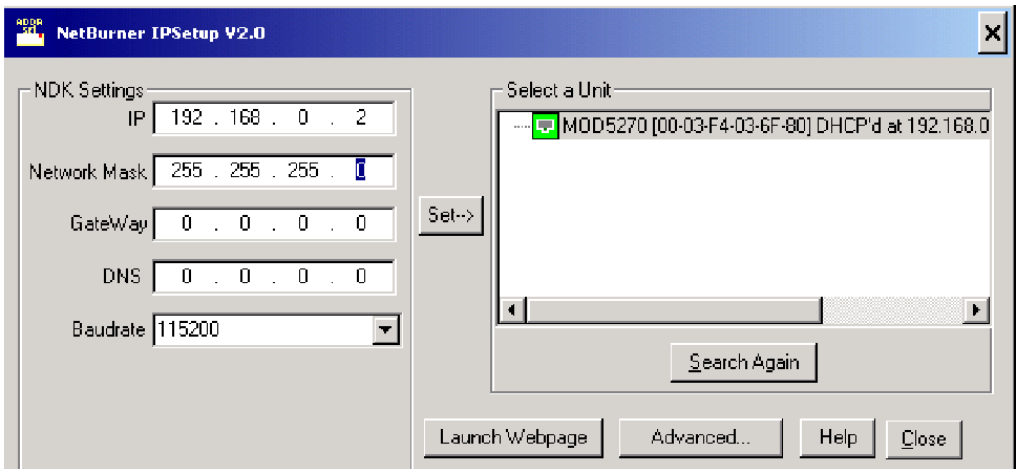


4. If multiple NetBurner modules appear in the **Select a Unit** box, be sure to highlight the unit you are working with.

Setting the IP Address and Network Mask

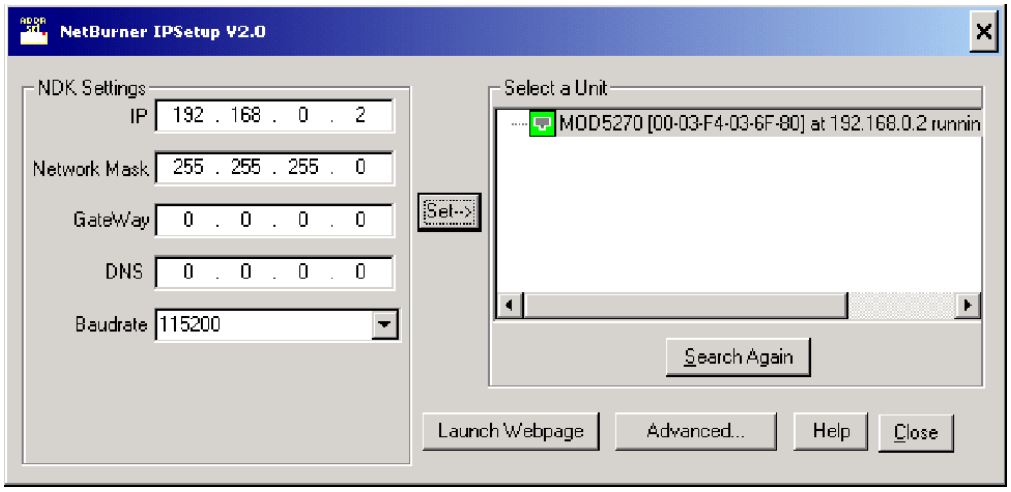
1. An IP address of `0.0.0.0` means the Netburner is using DHCP addressing, and the network will give the module its address (as it has in the example in Figure B–1 above: `192.168.0.7`. With these procedures, you can also enter a fixed network address and mask if desired. You can use any network address and mask approved by your network administrator. For our example, we'll be using the address `192.168.0.2` with the network mask of `255.255.255.0`. Simply type the IP address into the **IP** field and the network mask into the **Network Mask** field.

Figure B–2 NetBurner IPSetup Dialog - With IP Address and Net Mask



2. Press the **Set** button and wait approximately 30 seconds. If the NetBurner module does not appear with the new address, press the **Search Again** button. The window should now look like the one shown in Figure B–3 below.

Figure B–3 NetBurner IPSetup Dialog - New Address Accepted



3. Close the **NetBurner IPSetup** utility by pressing the **Close** button.

Important: This concludes the procedure for establishing network connectivity to the LAN. Return to your previous location in this document.

Connecting Peer-to-Peer

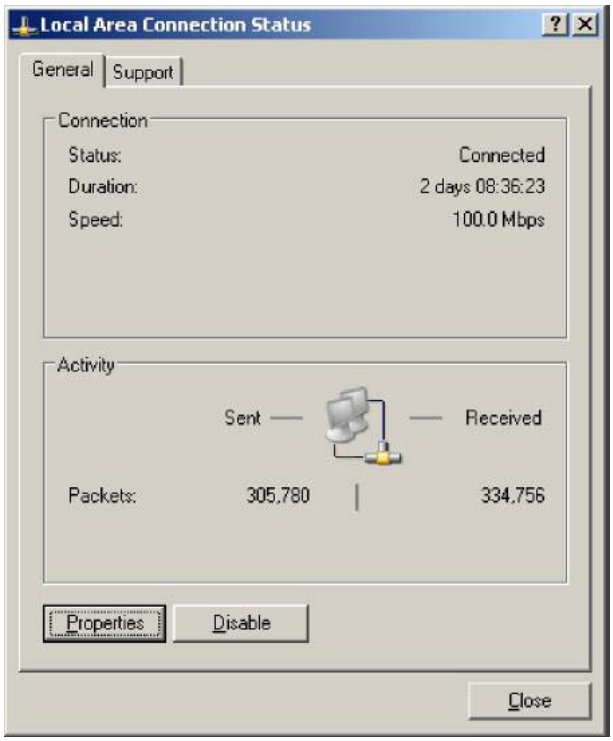
These instructions describe the procedure using a Windows XP machine. Host computers running other operating systems may have these controls in slightly different locations.

1. Connect the crossover cable directly between the unit's Ethernet port and your host computer's Ethernet port.

2. On the host computer, go to the **Control Panel** and double-click on **Network Connections**.

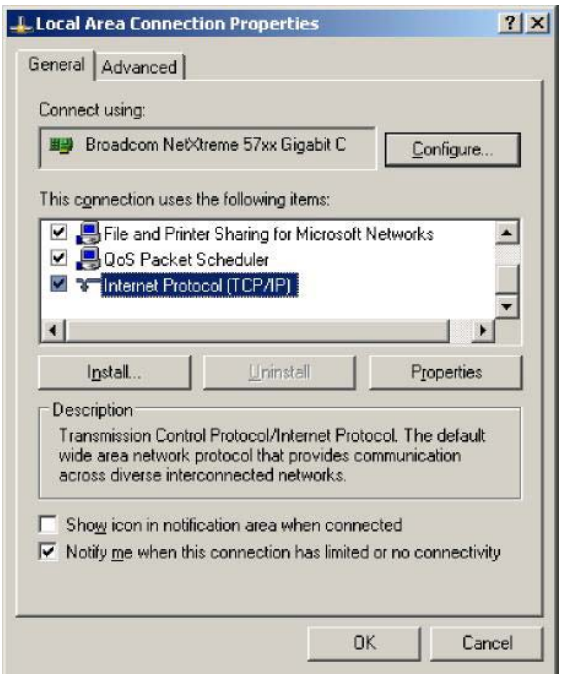
3. Open **Local Area Connection**. If you have more than one Network Interface Card (NIC) in the host machine, select the **Local Area Connection** that corresponds to the NIC connected to the unit. You should see a dialogue like the one in Figure B–4 below.

Figure B–4 Local Area Connection Status Dialog



4. Click the **Properties** button. You should see another dialogue box open like the one in Figure B–5 below.

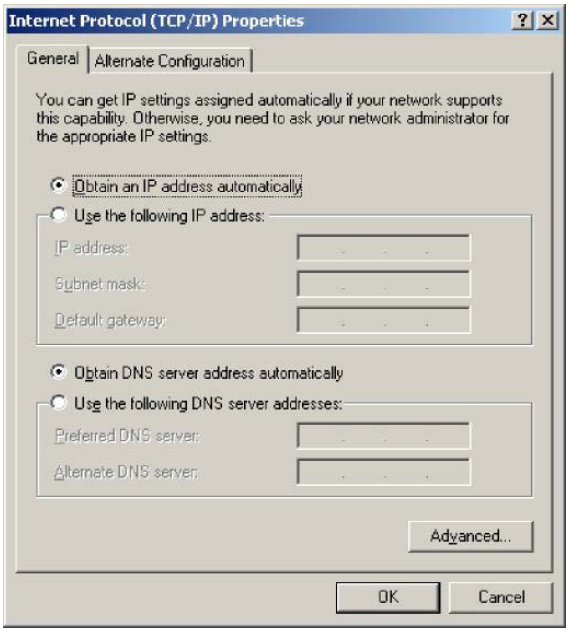
Figure B–5 Local Area Connection Properties Dialog



5. Highlight the **Internet Protocol (TCP/IP)** check box.

6. Click the **Properties** button. You should see another dialogue box like the one shown in Figure B–6 below.

Figure B–6 Internet Protocol (TCP/IP) Properties Dialog - Unconfigured



7. Record any current settings in this dialogue box, because they may need to be changed.

   IP Address: _____

   Subnet Mask: _____

   Default Gateway: _____

   Preferred DNS: _____

   Alternate DNS: _____

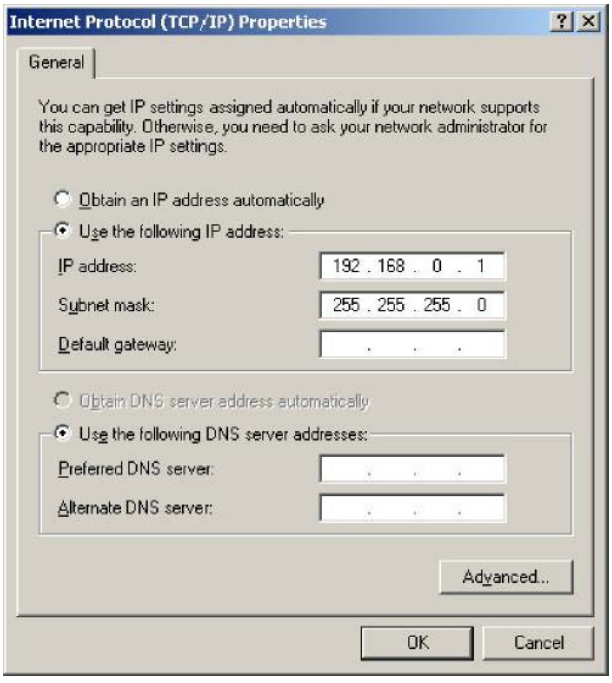
8. Click the **Use the following IP address** radio button.

9. Type in the address `192.168.0.1`.

10. Type in the subnet mask `255.255.255.0`.

11. You can leave the DNS server address fields blank. The dialogue box should now look like the one in Figure B–7 below.

Figure B–7 Internet Protocol (TCP/IP) Properties Dialog - With IP and Subnet Mask



12. Click **OK** and close any LAN or IP setup dialogs you have open.

13. You **must** set a static IP address for the unit as described in Setting the IP Address and Network Mask, Step 1 (page 121). We suggest you enter 192.168.0.2. You must also set the mask to the same value set in Connecting Peer-to-Peer in Step 7 (page 125). We suggest you enter 255.255.255.0.

14. When you are finished with the file transfer(s), you should return all the IP address and network mask fields to their original values.

Important: This concludes the procedure for establishing peer-to-peer network connectivity. Return to your previous location in this document.

APPENDIX C
Setting Up File Transfers

Introduction

Overview

This appendix explains how to set up the AMP2-16-3G or AMP2-E16-3G to transfer files to or from a PC through an Ethernet connection. See Appendix B on page 119 for establishing connectivity to the PC.

Topics

Navigating to the Unit Information Menu

1. Turn the unit on and navigate to the **Unit Information Menu** as shown in Figure C–1 below.

   A. When the **Main Screen** appears, press the **Save/Exit** button to display the **Configuration Selection Menu**.

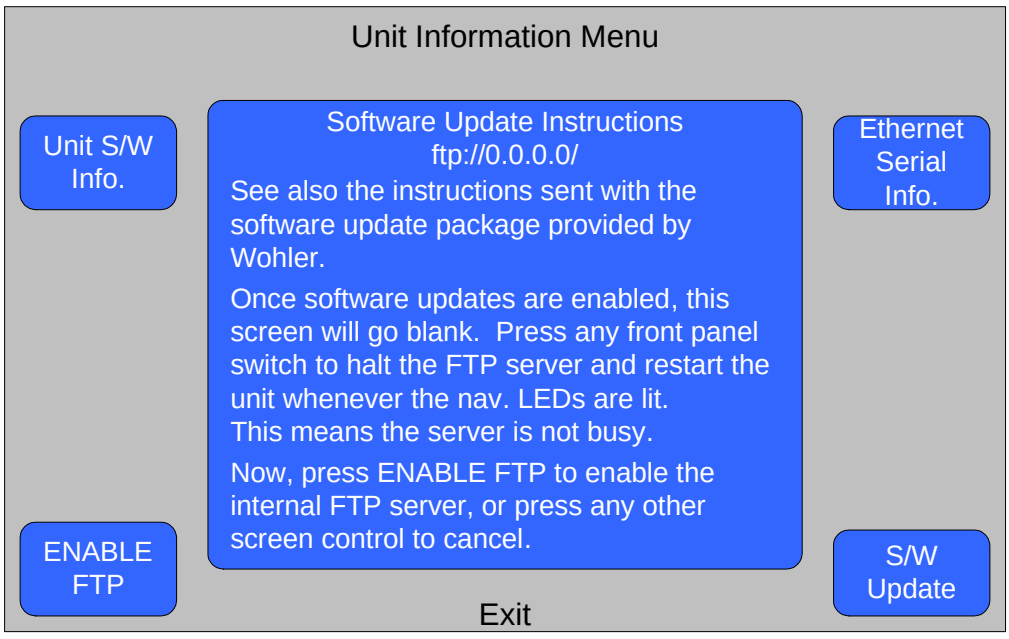
   B. When the **Configuration Selection Menu** appears, press the **Options** knob to display the **Option Configuration Menu**.

   C. When the **Option Configuration Menu** appears, press the **Config HW** knob to display the **Hardware Configuration Menu**.

   D. When the **Hardware Configuration Menu** appears, press the **Unit Info** knob to display the **Unit Information Menu**.

   E. When the **Unit Information Menu appears**, press the **S/W Update** button to display the **ENABLE FTP** button.

Figure C–1 Unit Information Menu



2. Note the line of text at the top of the window with the FTP address. It should read something like `ftp://192.168.0.2/`.

Important: If the address comes up as ftp://0.0.0.0/, the unit is using DHCP in a peer-to-peer connection, or no Ethernet connection exists. Refer to Step 1 in Setting the IP Address and Network Mask on page 121.

Write it here: _____

Enabling FTP Access

1. On the monitor, press the **ENABLE FTP** button.

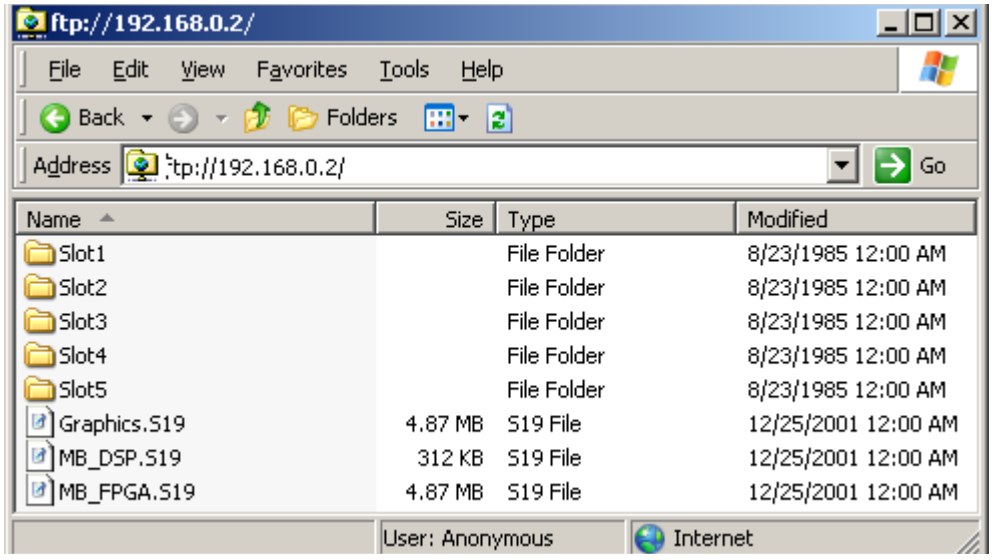
   Note: Pressing the **ENABLE FTP** knob will cause the monitor's display to go dark.

2. On the PC, open **My Computer** from the Windows desktop.

3. In the **Address** line, enter the address you wrote down in Step 2 (on the previous page), exactly as noted. For example, enter `ftp://192.168.0.2`.

4. You will see something similar to the following screen shot in Figure C–2, if the folders are set to detail view. The filename, folder name, and file sizes below are accurate. All other attribute information, especially the dates, are bogus and should be ignored.

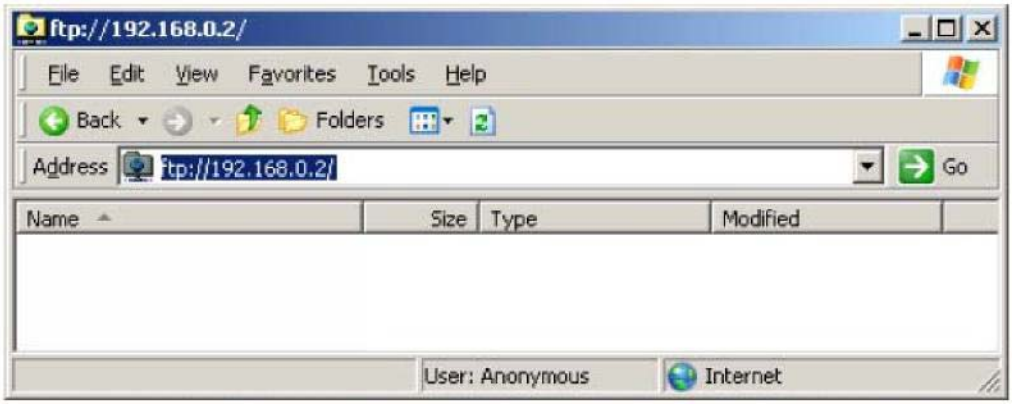
Figure C–2 FTP Location



5. If you see the following dialog similar to the one in Figure C–3 after a minute or so, it means the FTP connection failed. Try power cycling the unit, and repeating the steps (1 through 4) above. When you get back to this point, press the F5 key to refresh the window.

Figure C–3 Failed FTP Connection

Figure C–4 FTP Window



6. Press the F5 key to refresh the window.

Important: You must refresh the file window after each file transfer since Windows caches the file and folder information. If any of the files change, Windows will report the previous information from its cache rather than the current information. Refreshing the folder after each file change resolves this issue.

Important: This concludes the ftp setup procedure. Return to your previous location in this document.