
MADI-8

8-Channel MADI Monitor

User Guide

Part Number 821071, Revision A



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This document is intended to be printed on a duplex printer, such that the copy appears on both sides of each page. This ensures that all new chapters start on a right-facing page.

This document looks best when printed on a color printer since some images may be indistinct when printed on a black and white printer.

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MADI-8 User Guide

Introduction

Overview

This document describes how to install, configure, and use the MADI-8 8-channel MADI monitor.

The purpose of the MADI-8 monitor is to allow you to hear any eight channels out of a 56- or 64-channel MADI stream. Eight presets make this quick and simple.

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Safety

Important Safety Instructions

1. Read, keep, and follow all of these instructions; heed all warnings.
2. Do not use this equipment near water, rain or moisture.
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 attempt to plug the unit into a two-blade outlet (with only two prongs of equal width).

IMPORTANT: By design, this monitor 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.

7. Protect the power cord from being walked on or pinched, particularly at plug's source on the equipment and at the socket.
8. Use only the attachments/accessories specified by the manufacturer.
9. Unplug the equipment during lightning storms or when unused for long periods of time.
10. Use of a cart is neither recommended nor approved by Wohler.
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.
 - Objects have fallen onto the equipment; or the equipment has been exposed to rain or moisture, or liquid has been spilled onto the equipment.
 - The equipment does not operate normally.
 - The equipment has been dropped.

Safety Symbols

WARNING:



The symbol to the left warns of electric shock hazard inside the unit. Disconnect the power cord before removing access panels when installing upgrades. Only qualified service personnel are to operate the equipment with covers removed, and are to exercise caution to avoid personal injury.

Installation Recommendations

Mounting

The unit is designed to install into a standard 19" rack mounted at ear level for best high frequency response and visual observation of the display screen. Please adhere to the following clearances:

Clearance	Surface
24"	Front
3"	Rear
2"	Sides
1.75"	Top and Bottom (if either radiates heat)
0"	Top and Bottom (if no heat)

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. Otherwise, allow a 1RU (1.75" / 44.45mm) space above and below the unit for air circulation.

Important:

To reduce noise, the monitor does not have any fans. As a result, the heat generated by the class D power amplifiers, power supplies, and other components is vented by slots in the side of the unit. Therefore, as a safety precaution, you must allow proper ventilation on both sides of the unit.

Sympathetic Vibration

Sympathetic vibration from other equipment (cables, etc.) in the rack may be serious enough to interfere with the unit's sound quality. The use of thin card stock and/or felt or foam weather-stripping type materials between adjacent vibrating surfaces, or tying up loose cables, etc., may be required to stop vibrations external to the unit.

Mechanical Bracing

The 1RU chassis is securely attached to the front panel. In addition, the chassis has mounting tabs through which you attach it to the rack rail. This feature will reduce or eliminate rear bracing requirements in many mobile/portable applications. The weight of internal components is distributed fairly evenly around the unit.

Electrical Interference

Be careful to apply proper input termination settings and avoid mismatched cable types and other similar causes of undesired reflections in digital signal systems. If severe enough, such reflections can result in corruption of the digital data stream. As with any audio equipment, maximum immunity from electrical interference requires the use of shielded cable; however, satisfactory results can sometimes be obtained without it. The internal circuitry ground is connected to the chassis.

Power

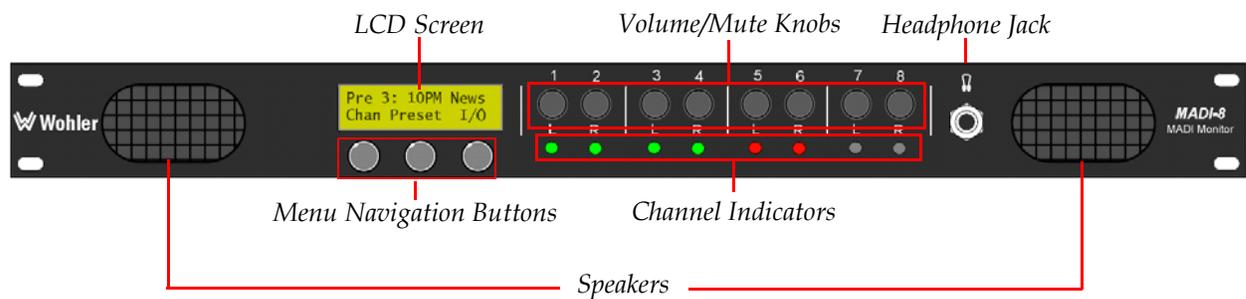
The unit comes with a standard internal power supply and connects an A/C mains power source (60W, 100 to 240 VAC, $\pm 10\%$, 50/60Hz) through the IEC connector provided on the rear panel of the unit.

When the mains plug or appliance coupler is used as the disconnect device, the disconnect device should remain operable.

Front Panel

This section describes the features and controls on the MADI-8 monitor's front panel.

Figure 1–1 MADI-8 Front Panel

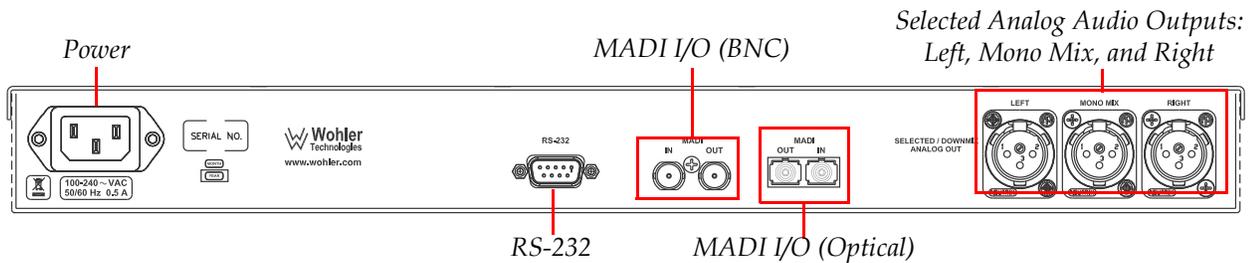


- **LCD Screen:** This screen displays the name of the current preset and provides configuration and preset programming. This screen also visually displays volume increases and decreases (6 dB per character) for the **Volume/Mute** knobs for at least three seconds.
- **Volume/Mute Knobs:** Rotating each volume knob increases and decreases the volume of the selected channel in 1 dB steps. Pressing the knob mutes the channel until you press the knob again and returns to the previous volume. Also the LCD screen shows the channel number and name and indicates that the channel is muted.
- **Menu Navigation Buttons:** The navigation buttons allow you to select the channels you want to hear and create, edit, and recall presets.
- **Channel Indicators:** This LEDs display green when a selected channel is audible in the front panel speakers, red when the channel is muted, and off when no audio signal is present.
- **Speakers:** The internal speaker system is comprised of two full-range speakers (left and right) that reproduce the selected 8 channels.

Rear Panel

This section describes the connectors on the MADI-8 monitor's rear panel.

Figure 1–2 MADI-8 Rear Panel



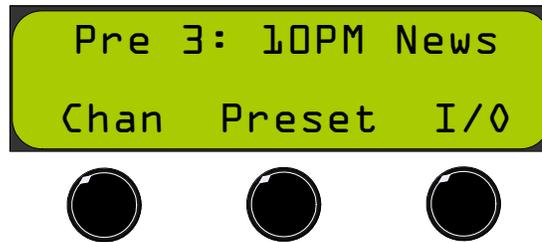
- **Power:** This connector accepts a standard IEC power cord.
- **RS-232 (DB-9):** This connector is used for software updates for the monitor.
- **MADI I/O (BNC):** These connectors accept a standard MADI digital audio signal. The output is a re-clocked loop-through.
- **MADI I/O (Optical):** These connectors accept a standard MADI optical signal. The output is a re-clocked loop-through.
- **Selected Analog Audio Outputs (XLR: Left, Mono Mix, and Right):** These connectors output the selected channel outputs in analog format.

Functionality

Configuring the MADI-8 MADI monitor is quick and simple. Typically you will press one of the three navigation buttons (a.k.a. soft key buttons) to enter a menu, and then use one of the eight **Volume/Mute** knobs (each one corresponding to a monitoring channel) to make further adjustments.

When the screen is in normal operation, it displays the name and number of the current preset and the soft key labels. See [Figure 1–3 on page 7](#).

Figure 1–3 Normal Operation: LCD Displays Preset Number and Name, and Soft Key Button Functions)

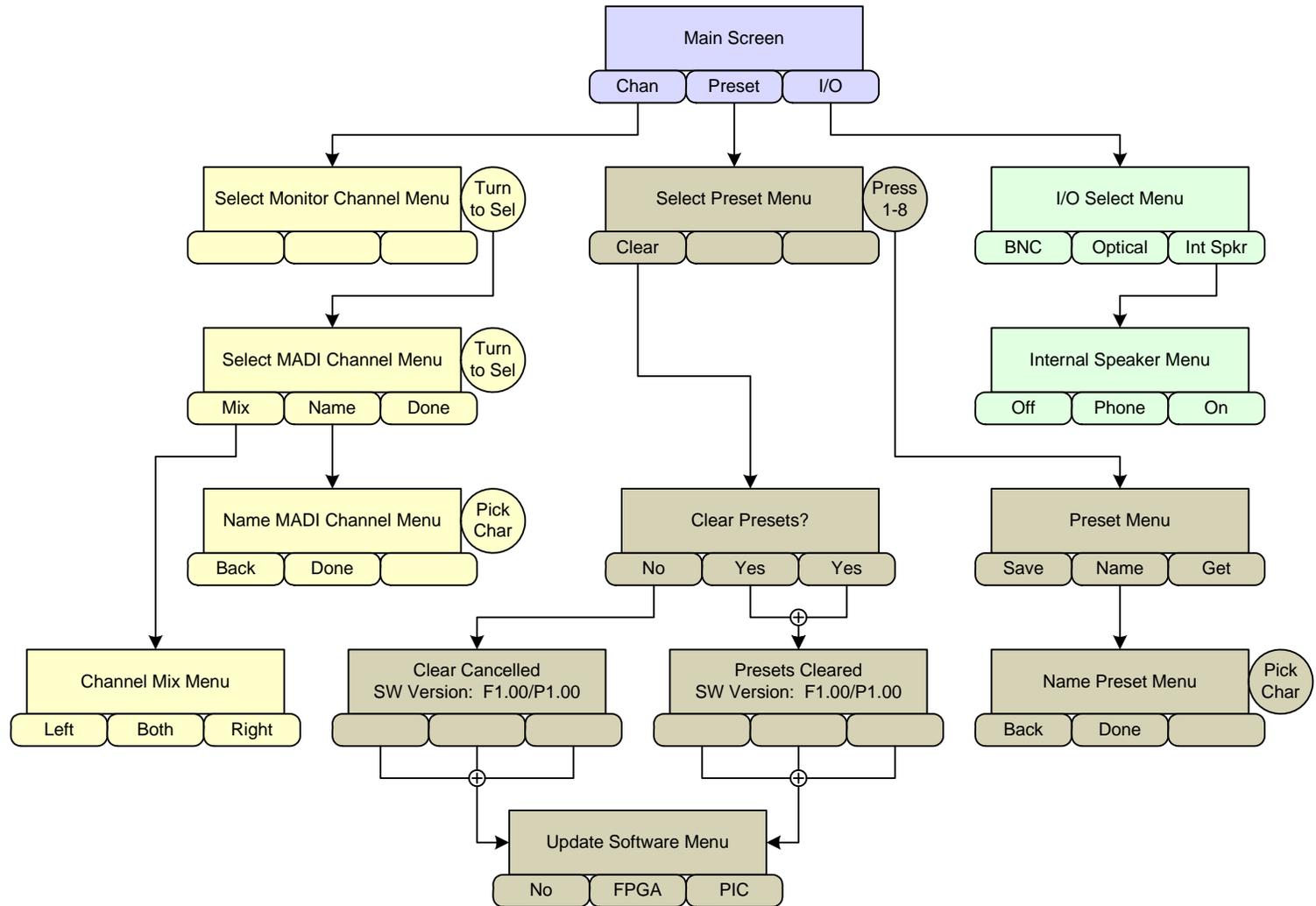


Menu Tree

Figure 1–4 on page 8 illustrates the menu structure of the MADI-8 setup menus. You can use this diagram to make system changes quickly and easily. Generally, the features include:

- Selecting the audio input from the available input connectors and/or the output mode to the XLR connectors (pale green)
- Assigning audio channels to monitoring channels, naming the monitoring channels, and/or selecting the speaker mix (pale yellow)
- Creating, modifying, clearing, and/or recalling presets (beige)

Figure 1-4 MADI-8 Menu Tree



Selecting Audio Inputs and Internal Speaker Mode

This section describes the steps to select either the BNC or optical the inputs, and how to select the operation of the internal speaker.

Selecting the Audio Inputs

Important: You can select the inputs from either the BNC connectors or from the optical connectors; but you cannot select inputs from both.

Figure 1–5 Normal Operation: LCD Displays Preset Number and Name and Soft Key Button Functions)



1. From the **Main Screen**, press the **I/O** button (Figure 1-5 above) to display the **Input Setting** menu (Figure 1-6 below).

Figure 1–6 Audio Input Selection



2. Press the **BNC** button (Figure 1-6) to select the audio coming in on the BNC connectors, or press the **Optical** button to select the audio coming in on the optical connectors. Note that as soon as you press one of these buttons, the system will display an asterisk next to it to indicate that this is the selected input.
3. Once you have selected the audio input stream, you can either continue on to [Selecting the Internal Speaker Mode on page 10](#), or to [Assigning Audio Channels to Monitor Channels on page 11](#) to select up to eight channels to output to the speakers.

Selecting the Internal Speaker Mode

Figure 1–7 Audio Input Selection



1. Press the **Int Spkr** button (Figure 1-7 above) to display the **Internal Speaker** menu shown in Figure 1-8 below.

Figure 1–8 Selecting the Output Mode Function



2. Press one of the following buttons:
 - Note:** After making one of the following selections, the system will save your changes and exit the menu.
 - A. On:** Press the **On** button to keep the internal speakers on all of the time, regardless of whether the headphone is plugged in.
 - B. Phone:** Press the **Phone** button to keep the internal speakers on only when no headphone is plugged in. This is the default setting.
 - C. Off:** Press the **Off** button to keep the internal speakers off at all times. This setting is useful if the analog outputs are used to drive an external speaker system.

Assigning Audio Channels to Monitor Channels

This section describes the steps for assigning audio channels to speaker monitoring channels, naming the selected channels, and then mixing them for optimal audio output.

Selecting Channels for Monitoring

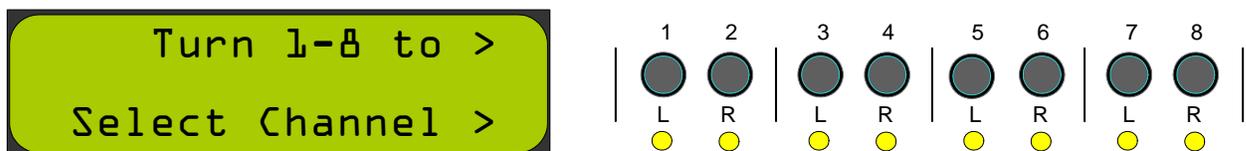
Figure 1–9 Normal Operation: LCD Displays Preset Number and Name and Soft Key Button Functions)



1. While the screen is in normal operation (Figure 1-9 above) press the **Channel** button.

Note: The LEDs will blink yellow indicating that they are now to be used in conjunction with the display menu.

Figure 1–10 Selecting Monitoring Channel



2. After pressing the **Channel** button, rotate the first **Volume/Mute** knob (for Channel 1) until the LCD displays the audio channel number you want to assign to monitoring Channel 1.

Note: The **LED 1** will turn steady yellow as soon as you rotate the Channel 1 **Volume/Mute** knob. All the other LEDs except **LED 1** will turn red.

In addition, all the other audio channels will be temporarily muted and only the audio from this monitoring channel will be output to both speakers.

Assigning Audio Channels to Monitor Channels

3. Once you begin rotating the **Volume/Mute-Channel 1** knob, the display will scroll through the available channels. Available options are **Channels 1** through **64** and **None**.

Note: If you need to adjust the volume of this channel, press the **Volume/Mute** knob and then rotate to adjust the volume.

Figure 1–11 Selecting Audio Channel



4. Press one of the following buttons:
 - A. **Mix:** Press the **Mix** button to direct the audio output to the left, right, or both speakers. Continue on to [Mixing Channels on page 13](#).
 - B. **Name:** Press the **Name** button to label this channel. Continue on to [Naming Selected Channels](#) immediately below.
 - C. **Done:** Press the **Done** button to save your changes and exit this menu.

Naming Selected Channels

Figure 1–12 Naming Channels



1. Press one of the following buttons:
 - A. **Back:** Press **Back** to backspace the current character.
 - B. **Done:** Press **Done** to save your changes and exit this menu.

Assigning Audio Channels to Monitor Channels

- C. **Pick:** Press **Pick** to begin selecting characters for the channel name (up to 10 characters). The default channel name is blank.
2. Rotate the current **Volume/Mute** knob to scroll through the characters. Press the knob to select the currently displayed character and advance to the next character.

Note: The character set includes all upper and lower case letters, numerals, and some symbols.
 3. When you have completed the channel name, press the **Done** button to save your changes and exit this menu.

Mixing Channels

Figure 1–13 Selecting the Speaker Mix



Note: By default, all odd-numbered channels are directed to the left speaker, and all even-numbered channels are directed to the right speaker.

Press one of the following buttons:

Note: After making one of the selections listed below, the system will save your changes and exit to the **Main Screen**.

- A. **Left:** Press **Left** to send this audio channel to the left speaker.
- B. **Both:** Press **Both** to send this audio channel to both speakers.
- C. **Right:** Press **Right** to send this audio channel to the right speaker.

Presets

Modifying the system’s settings allows you to configure the entire MADI-8 monitor 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 MADI-8 monitor has the capacity to hold eight presets; that is, eight complete system configurations.

By default, the MADI channels are assigned to the system’s monitoring channels in each preset as shown in [Table 1-1](#) below.

Table 1-1 MADI-8 Preset Defaults

Preset Number	MADI Monitoring Position							
	1	2	3	4	5	6	7	8
1	1	2	3	4	5	6	7	8
2	9	10	11	12	13	14	15	16
3	17	18	19	20	21	22	23	24
4	25	26	27	28	29	30	31	32
5	33	34	35	36	37	38	39	40
6	41	42	43	44	45	46	47	48
7	49	50	51	52	53	54	55	56
8	57	58	59	60	61	62	63	64

Creating a New Preset

Figure 1-14 Normal Operation



1. To create a new preset, press the **Preset** soft key ([Figure 1-14](#) above). The LEDs will blink yellow to indicate that they now indicate that one of the **Volume/Mute** knobs must be pressed.

Figure 1–15 Preset Function Initialization



2. Press the **Volume/Mute** knob that corresponds to the preset you want to create. (Each of the eight presets corresponds to each of the eight **Volume/Mute** knobs.) The LED for the selected preset will glow steady yellow and the other LEDs will turn off.

Figure 1–16 Creating a New Preset



3. Press one of the following buttons:
 - **Save:** Press **Save** to save this preset.
 - **Name:** Press **Name** to enter a label for this preset. Continue on to [Naming a Preset](#) immediately below.
 - **Get:** Press **Get** to recall this preset. Continue on to [Recalling a Preset on page 16](#).

Naming a Preset

Figure 1–17 Creating a New Preset



After pressing the **Name** button, the system displays the text entry menu ([Figure 1-18 on page 16](#)) indicating that **Volume/Mute 1** knob has been temporarily re-purposed to select text. **LED 1** will blink yellow at the same rate as the blinking text cursor on the screen.

Figure 1–18 Creating the Preset Name



1. Press one of the following buttons:
 - A. **Back:** Press **Back** to backspace the current character.
 - B. **Done:** Press **Done** to save your changes and exit this menu.
 - C. **Pick:** Press **Pick** to begin selecting characters for the channel name (up to 10 characters). The default channel name is blank.
2. Rotate the current **Volume/Mute** knob to scroll through the characters. Press the knob to select the currently displayed character and advance to the next character.

Note: The character set includes all upper and lower case letters, numerals, and some symbols.
3. When you have completed the channel name, press the **Done** button to save your changes and exit this menu.

Recalling a Preset

Figure 1–19 Creating a New Preset



After pressing the **Get** button, the system changes to the recalled preset and the display returns to normal view, displaying the preset you just selected.

Figure 1–20 Preset Function Initialization

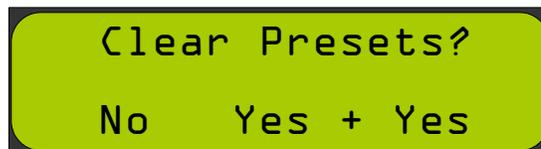


Resetting All Presets to the Factory Defaults

To change an existing preset, press the **Preset** soft key (center navigation button). The LEDs will blink yellow to signify that they now indicate that one of the **Volume/Mute** knobs must be pressed. Alternatively, you can press the **Clear** soft key to reset all presets to the factory default as indicated in [Table 1-1 on page 14](#).

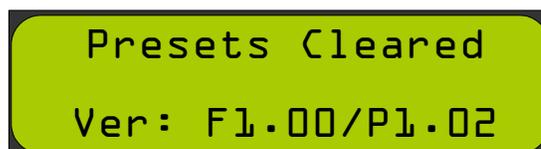
WARNING: Be careful when using this option since it cannot be undone.

Figure 1–21 Reset All Presets to Factory Defaults



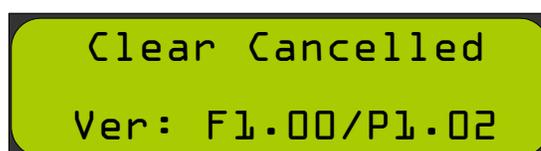
- A. **No:** Pressing No cancels the operation and displays the screen in [Figure 1-22](#) below.

Figure 1–22 Clear All Presets Prompt



- B. **Yes + Yes:** Pressing these two buttons simultaneously resets all the presets to their factory defaults and displays the screen shown in [Figure 1-23](#) below.

Figure 1–23 Clear All Presets Prompt



Updating the Software

Please refer to the upgrade instructions that came with your software upgrade. Should you need assistance, please contact Wohler Customer Support at 1-800-596-4537 or support@wohler.com.

Features

- Coax MADI input and output.
- Optical MADI input and output
- Balanced adjustable or fixed analog outputs.
- Speaker mute for output mix only.
- Channel presence indicators.
- Eight presets (channel names will be shared among all presets).
- Sixteen character X 2 line LCD display.
- One RU shallow depth chassis fits anywhere, even in crowded production trucks.
- Internal power supply with IEC connector.

Specifications

Table 1-2 lists the specifications for the MADI-8 monitor.

Table 1-2 MADI-8 Specifications

Specification	Value
Dimensions (H x W x D)	1.75" x 19" x 4.75" (44.5 mm x 482.6 mm x 120.7 mm)
Shipping weight	5 lbs. (2.3 kg)
Space requirements	1 RU in a standard 19" rack
Power requirements	100 to 240 VAC \pm 10%, 50/60Hz.
Power consumption	Approximately 20 W
Inputs	1 MADI optical 1 MADI BNC 1 RS-232 (DB-9) for software updates
Sample rate	48 kHz
De-multiplexing	8 channels from a 56- or 64-channel stream
Outputs	1 reclocked MADI optical 1 reclocked MADI BNC 1 headphone (1/4" jack) 3 balanced analog audio outputs (left, mono mix, and right) (XLR-M)
Display type	LCD 16-characters by 2 lines
Acoustic frequency response	300 Hz to 10 kHz (\pm 6 dB)
Acoustic distortion	< 2% 300 Hz to 10 kHz
Acoustic output	90 dB SPL @ 2 feet

Technical Functional Overview

Figure 1-24 on page 20 illustrates the overall functionality of the MADI-8.

Figure 1-24 MADI-8 Block Diagram

