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RMT-200-HD

20-Inch High Definition Video Monitor

User Guide

Part Number 821700, Revision D

panorama®

the video division of Wohler

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RMT-200-HD User Guide

Introduction

Overview

The RMT-200-HD monitor is an ideal solution for viewing many different types of HD/SD-SDI (up to 1080i and 720p) or analog video and computer input. By using a 1680 x 1050 TFT/LCD screen, a perfect medium is reached in the scaling and interpolation process, providing superb imaging regardless of video format.

This monitor comes with many in-monitor display features including IMD, tally, time-code, format display, waveform and area/title safe.

The RMT-200-HD also provides a host of audio tools including level metering and built-in speaker monitoring of its dual stereo analog inputs or SDI embedded audio.

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, "Unpacking and Installation" 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.

Unpacking and Installation

Unpack the RMT-200-HD monitor and inspect for any apparent physical damage that may have occurred in transit. In addition to the monitor, the package should contain:

- The monitor
- A power cord, and
- A warranty card
- Optional: A rack-mount frame and VESA-100 mount.

Note: We recommend you retain the shipping carton for future use.

To assemble for rack mounting, follow the instructions below.

1. Place the monitor screen down on a soft surface, to install the rack ears and VESA-100 mount.
2. Since the monitor comes already assembled for the table top option, remove the screws to remove the table stand.
3. Attach the external component of the VESA-100 mount to the rack ears.
4. Attach the internal component of the VESA-100 mount to the monitor.
5. Install the monitor into a 19" rack.
6. Connect the required signals. For BNC connections use 75 ohm-rated connectors.
7. Connect A.C. mains power using the included EIC power cord. Please ground the unit to ensure proper operation.

Features

Interlaced signals are processed by using a 3D comb filter and 3D de-interlacer. Analog signals are internally digitized with a high quality 10-bit over sampled analog to digital converter.

Video inputs are provided for serial digital interface (SDI, two inputs) and DVI-I digital sources plus VGA (using DVI connector), component (YPrPb), Y/C, and CVBS analog signals. In addition to sixteen channels of SDI embedded audio, four channels of unbalanced analog audio are accepted with unbalanced outputs available for two channels.

Up to four bar graph audio meters per side can be superimposed on the screen for A/V functionality. Metered Channels 1 and 2 are also available for use with internal speakers. The GPI style tri-color tally is provides red/green/orange indication using an industry standard RJ45 connection.

- 1680 x 1050 screen resolution (16:10 native aspect)
- Monitors video from SDI, DVI-I, VGA, Component (YPrPb), Y/C, and CVBS analog signals (high quality 10-bit over sampled analog to a digital converter)
- Audio monitoring from internal speakers or headphones
- Tri-color tally light
- Two HD/SD-SDI inputs with selected channel loop out
- Four analog audio inputs, two analog audio outputs
- Eight audio meters, IMD and time code on screen display
- Built-in speakers with headphone mute
- Native pixel-to-pixel capability or standard scaling
- Audio decoding and display of up to eight channels of SDI
- Full gamma color calibration

Specifications

Physical Specifications

Table 1–1 lists the specifications for the RMT-200-HD monitor.

Table 1–1 Monitor Specifications

Specifications	Value / Domain
Power	40 W, 110/220 AC (50 to 60 Hz)
Dimensions (Without Stand)	19.38" W x 14.5" H x 7.5" D (492.2 mm x 368.5 mm x 190mm)
Weight	Monitor: 21 .bs. (9.52 kg.) Table Stand: 2 lbs. (.91 kg) Rack Frame: 3 lbs. (1.36)
Inputs	2 HD/SD-SDI with loop through (BNC) 1 Video: Component CVBS (BNC) 1 Configurable Video: Y/C, YPbPr, Composite (BNC) 1 Configurable HDMI, VGA, DVI (DVI-I) 1 AES Audio (XLR) 4 Audio (RCA) GPI (RJ45) 1 loop through (RS485)
Outputs	1 HD/SD-SDI Re-clocked active loop through 2 Audio selected embedded or external audio
Active Viewing Area	20.1" diagonal (17.07" H x 10.66" V (433.44 mm H x 270.9 mm V)
Resolution	1680 H x 1050 V
Pixel Pitch	0.258 mm H x 0.258 mm V
Pixel Response	<6.5 ms
Contrast	700:1
Color Depth	16.7 million
Brightness	470 cd/m^2
Backlight	White CCFL
Backlight Life (hrs)	10,000
Color Temperature	D55, D65, D93
Viewing Angles	178° H x 178° V
Operating Temperature	32° F to 122° F (0° C to 50° C)

Figures 1–1 through 1–2 below illustrate the dimensions of the unit's features.

Figure 1–1 Front View

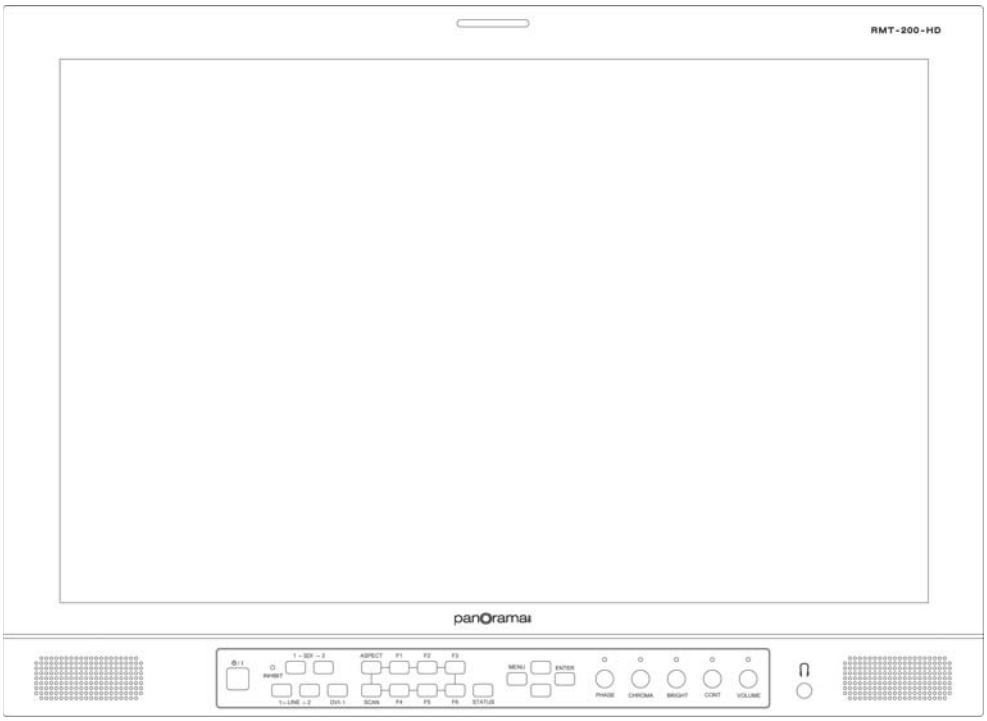
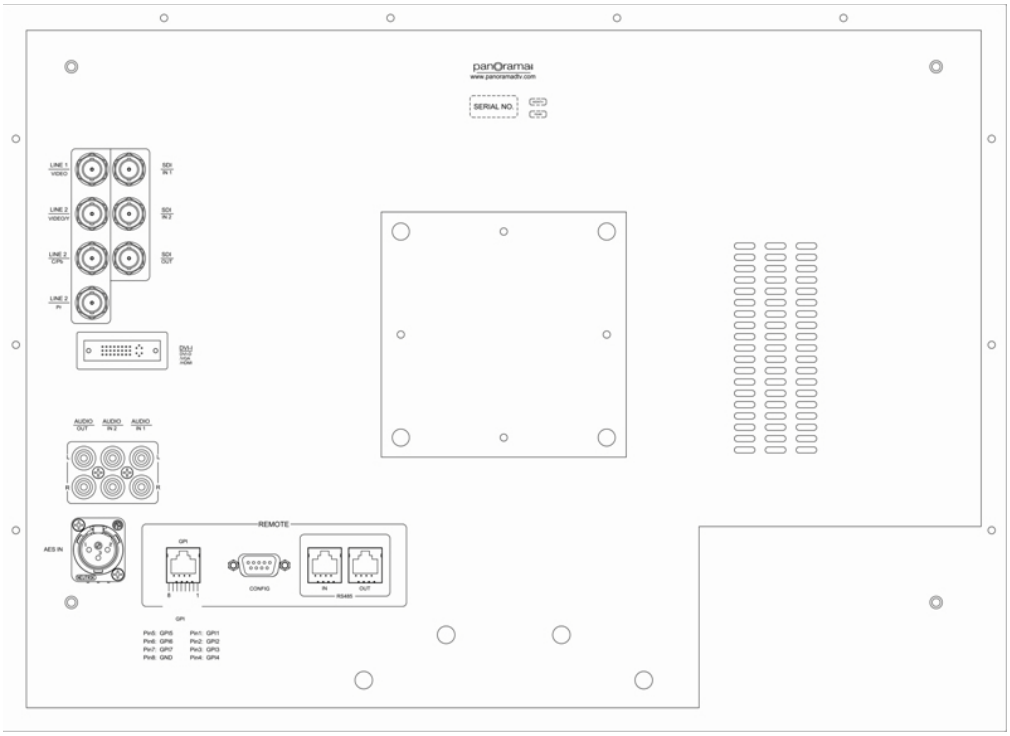


Figure 1–2 Rear View



Input/Output Specifications

Table 1–2 Signal Inputs, Frame Rate, and Color Matrix

Signal Type	Overscan		Native		Full Normal		Frame Rate	Color Matrix
	Input	Output	Input	Output	Input	Output		
NTSC	684x462	1680x945(16:9) 1400x1050 (4:3)	720x487	720x480	720x487	1680x945 (16:9), 1400x1050 (4:3)	60	601
PAL	684x548	1680x945 1400x1050	720x576	720x576	720x576	1680x945 1400x1050	50	601
SECAM	684x548	1680x945 1400x1050	720x576	720x576	720x576	1680x945 1400x1050	50	601
NTCS-4.43	684x462	1680x945 1400x1050	720x487	720x480	720x487	1680x945 1400x1050	60	601
PAL-M	684x462	1680x945 1400x1050	720x487	720x480	720x487	1680x945 1400x1050	60	601
480I60	684x462	1680x945 1400x1050	720x487	720x480	720x487	1680x945 1400x1050	60	601
576I50	684x548	1680x945 1400x1050	720x576	720x576	720x576	1680x945 1400x1050	50	601
480P60	684x462	1680x945 1400x1050	720x487	720x480	720x487	1680x945 1400x1050	60	709
576P50	684x548	1680x945 1400x1050	720x576	720x576	720x576	1680x945 1400x1050	50	709
720P24	1216x684	1680x945	1280x720	1280x720	1280x720	1680x945	48	709
720P25	1216x684	1680x945	1280x720	1280x720	1280x720	1680x945	50	709
720P30	1216x684	1680x945	1280x720	1280x720	1280x720	1680x945	30	709
720P50	1216x684	1680x945	1280x720	1280x720	1280x720	1680x945	50	709
720P60	1216x684	1680x945	1280x720	1280x720	1280x720	1680x945	60	709
1035I60	1216x684	1680x945	1920x1035	1680x1035	1920x1035	1680x945	60	709
1080I60	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	60	709
1080I50	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	50	709
1080P24	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	48	709
1080P25	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	50	709
1080P30	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	60	709
1080P50	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	50	709
1080P60	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	60	709
1080SF24	1824x1026	1680x945	1920x1080	1680x1050	1920x1080	1680x945	48	709
VGA	–	–	–	–	1680x1050	–	60 - 75	–
SVGA	–	–	–	–	1680x1050	–	60 - 75	–
XGA	–	–	–	–	1024x768	–	60 - 75	–
SXGA	–	–	–	–	1280x1024	–	60 - 75	–
UXGA	–	–	–	–	1600x1200	–	60	–
WUXGA	–	–	–	–	1920x1200	–	60	–

Table 1–3 below lists the signal formats that can be displayed on the RMT-200-HD.

Table 1–3 Usable Input Signals

Format	SDI	Video	Y/C	YPbPr	HDMI	DVI	VGA
NTSC	–	Yes	Yes	–	–	–	–
PAL	–	Yes	Yes	–	–	–	–
SECAM	–	Yes	Yes	–	–	–	–
NTCS-4.43	–	Yes	Yes	–	–	–	–
PAL-M	–	Yes	Yes	–	–	–	–
480I60	Yes	–	–	Yes	Yes	–	–
576I50	Yes	–	–	Yes	Yes	–	–
480P60	–	–	–	Yes	Yes	–	–
576P50	–	–	–	Yes	Yes	–	–
720P24	Yes	–	–	–	Yes	–	–
720P25	Yes	–	–	–	Yes	–	–
720P30	Yes	–	–	–	Yes	–	–
720P50	Yes	–	–	Yes	Yes	–	–
720P60	Yes	–	–	Yes	Yes	–	–
1035I60[a]	Yes	–	–	Yes	Yes	–	–
1080I60	Yes	–	–	Yes	Yes	–	–
1080I50	Yes	–	–	Yes	Yes	–	–
1080P24	Yes	–	–	Yes	Yes	–	–
1080P25	Yes	–	–	Yes	Yes	–	–
1080P30	Yes	–	–	Yes	Yes	–	–
1080P50	–	–	–	–	Yes	–	–
1080P60	–	–	–	–	Yes	–	–
1080SF24	Yes	–	–	Yes	Yes	–	–
VGA	–	–	–	–	–	Yes	Yes
SVGA	–	–	–	–	–	Yes	Yes
XGA	–	–	–	–	–	Yes	Yes
SXGA	–	–	–	–	–	Yes	Yes
UXGA	–	–	–	–	–	Yes	–
WUXGA	–	–	–	–	–	Yes	–

a The unit supports the input signal 1035I60 but will display in 1080I60 format.

The functionality of the front panel buttons varies depending on the input terminal and/or the input signal type. The detailed corresponding relationships are listed in Table 1–4 below.

Table 1–4 Button/Signal-Terminal Relationships

Relationship		Input Signal							
Source	Function	Video	Y/C	Ypbpr	SDI SD	SDI HD	VGA	DVI-D	HDMI
Buttons	Scan	Yes	Yes	Yes	Yes	Yes	Full	Full	Yes
	Aspect	Yes	Yes	–	Yes	–	–	–	Yes
	Status	Yes	Yes	Yes	Yes	–	Yes	Yes	–
Hot Keys/ Sub menus	Mono	Yes	Yes	Yes	Yes	Yes	–	–	Yes
	Blue Only	Yes	Yes	Yes	Yes	Yes	–	–	Yes
	Auto Adjust	–	–	–	–	–	Yes	–	–
	H/V Delay	Yes	Yes	Yes	Yes	Yes	–	–	Yes
	Waveform	–	–	–	–	–	–	–	–
	Audio	Yes	Yes	Yes	Yes	Yes	–	–	Yes
	Marker	Yes	Yes	Yes	Yes	–	–	–	–
Sub menus	UMD	Yes	Yes	Yes	Yes	–	–	–	–
	Format	–	–	–	–	–	–	Yes	–
	Meter (H/	Yes	Yes	Yes	Yes	–	–	–	–
	Aperture	Yes	Yes	Yes	Yes	–	–	–	–
	Compo Level	SMPTE	SMPTE	480I60[a]	SMPTE	–	SMPTE	SMPTE	SMPTE
	B.Light	Yes	Yes	Yes	Yes	–	Yes	Yes	Yes
	Dot Phase	–	–	–	–	–	Yes	Yes	–
	H Position	–	–	–	–	–	Yes	Yes	–
	V Position	–	–	–	–	–	Yes	Yes	–
	Audio	Ext	Ext	Ext	Ext/Ebd	Ext/Ebd			Ext/Ebd
	Time Code	–	–	–	Yes	Yes	–	–	–
Rotary Knobs	Phase	NTSC	NTSC	–	–	–	–	–	–
	Chroma	Yes	Yes	Yes	Yes	Yes		–	Yes
	Bright	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Contrast	Yes	Yes	Yes	Yes	–	Yes	Yes	Yes
	Volume	Yes	Yes	Yes	Yes	–	–	–	–

a In the submenu of Menu Configuration Area, the Compo level function is adjustable only when the signal format is Ypbpr: 480I60. For any other signal formats, its default format is SMPTE and can not be adjusted.

Table 1–5 Y Signal Input Component Levels

Function	Beta 7.5	SMPTE	Beta 0
SETUP	53.37mV	0mV	0mV
Y	714.29 mV Peak Luma,100% White	700.00 mV Peak Luma,100% White	714.30 mV Peak Luma,100% White
SYNC	-286 mV	-300 mV	-286 mV
PB/PR	700.00 mVp-p (75% Color Bars)	525.00 mVp-p (75% Color Bars)	756.80 mVp-p (75% Color Bars)
	933.34 mVp-p (100% Color Bars)	700.00 mVp-p (100% Color Bars)	1009.0 mVp-p (100% Color Bars)

Table 1–6 Analog Video Input Specifications

Parameter	Value
Impedance	75 Ω
Input Level	1 Vp-p nominal
Maximum Input Level	2.5 Vp-p centered @ 0V

Table 1–7 SDI Video Input Specifications

Parameter	Value
Signal Standard	SMPTE292M, SMPTE259M, ITU-R BT656; 270Mbps (525/625 SD component) 1485 Mbps (HD)
Impedance	75 Ω
Return Loss	>18dB 5 MHz to 540 MHz
Equalization	Automatic equalizing to 30dB @ 270 Mb/s

Table 1–8 SDI Video Output Specifications

Parameter	Value
Signal Standard	SMPTE292M, SMPTE259M, ITU-R BT656; 270Mbps (525/625 SD component) 1485 Mbps (HD)
Impedance	75 Ω
Return Loss	>18dB 5 MHz to 540 MHz
Signal Level	800 mV ± 10%
Overshoot	<10% of amplitude
Jitter	<0.2 UI (740 ps) peak, typical <500 ps
Rise and Fall Time	400 to 1500 ps (20% to 80% of amplitude)
DC Offset	0 V ± 0.5 V

Note: All specifications are subject to change without notice.

Table 1–9 AES Digital Audio Input Specifications

Parameter	Value
Connector	XLR socket type
Maximum Input Signal	10 V (peak to peak)
Sensitivity	<200 mV
Imedance	110 ohm ± -20% (0.1 to 6 MHz)
CMR	0 to 7 V (to 20 kHz)

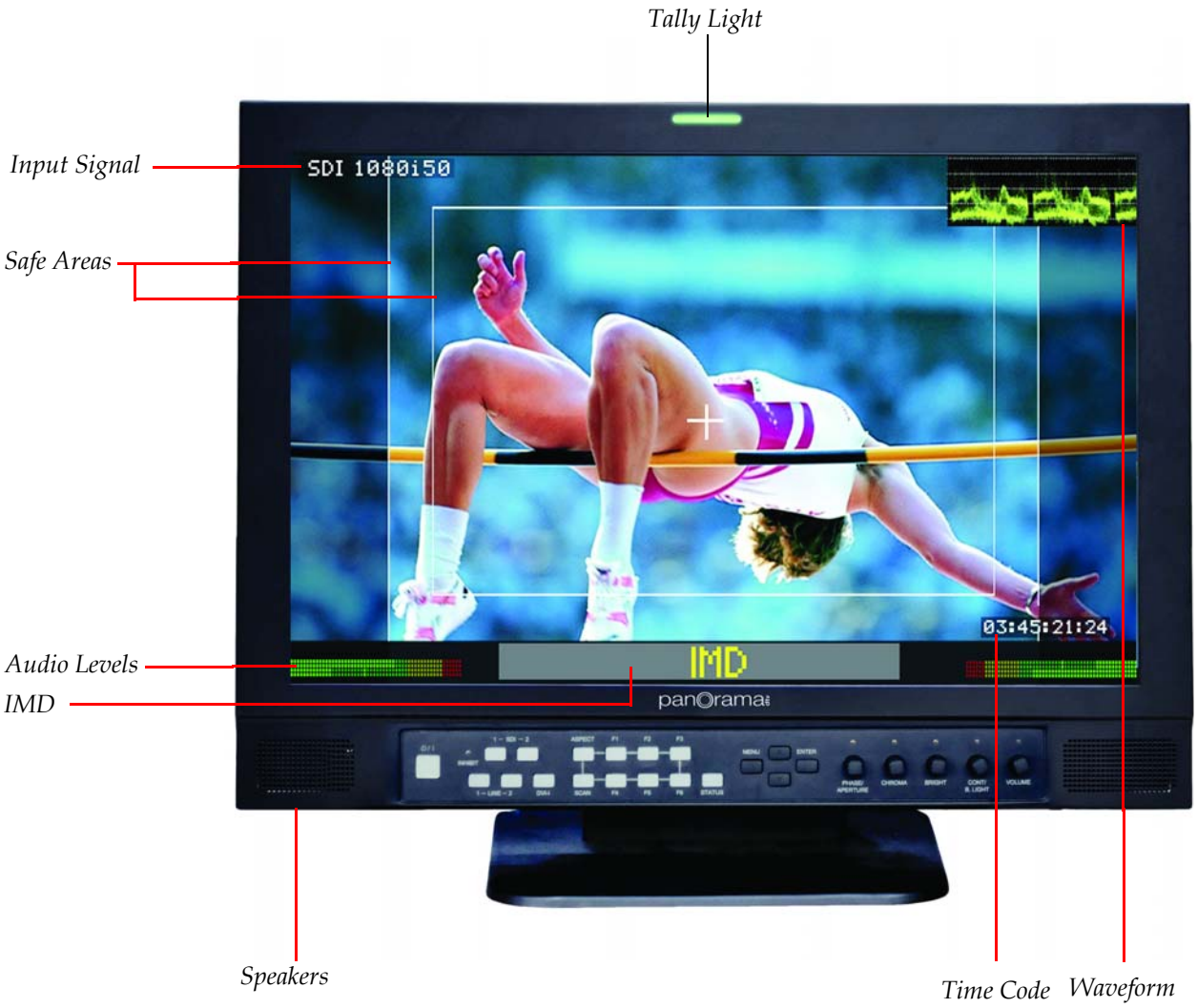
Using the RMT-200-HD

Front Panel

The RMT-200-HD monitor provides a variety of in monitor data including signal type, waveform, IMD (In-Monitor Display), audio meters, and time code. It also includes a three-color tally light above the display. Figure 1–3 illustrates the front panel features, and Figure 1–4 illustrates the front panel controls.

- **Tally Light**: This tri-color (red/green/amber) light is controlled through an RJ45 connector on the rear panel. For more information about the RJ45 connector, refer to "Rear Panel" on page 15.
- **Input Signal**: The input signal is automatically detected.
- **Safe Areas**: Multiple safe areas are configurable in the **OSD Menu**.

Figure 1–3 Front Panel Features



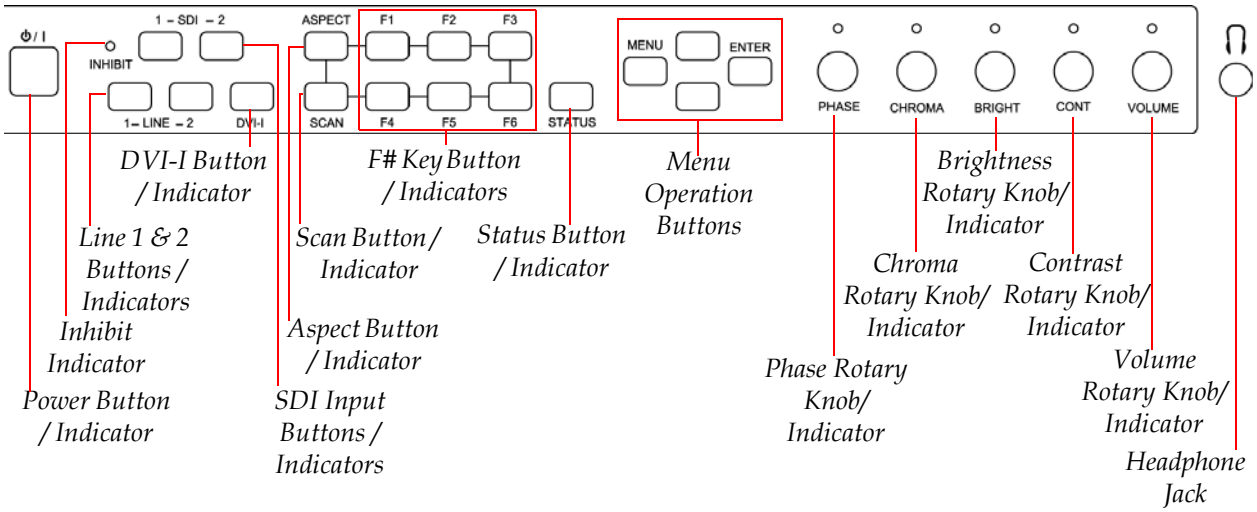
- **Audio Levels:** Levels are displayed on up to eight meters in pairs as two or four meters on each side.
- **IMD:** The **OSD Menu** provides settings to customize the **IMD** (In-Monitor Display) text area to show a line of characters, numbers, and/or some symbols. The IMD displays in a 4:3 image and below a 16:9 image.
- **Speakers:** Audio may be selected for monitoring through the left and right speakers.
- **Time Code:** The de-embedded time code from the HD/SD-SDI source displays in the bottom right corner.
- **Waveform**: The signal waveform is configurable in the **OSD Menu**.

Button / Indicators

- **Power (Button/Indicator)**: As an indicator, the **Power** button glows green when power is on (switch is on the back panel) and a signal is detected. It glows red when the power is on and no signal is present. As a control, it turns the signal display on the monitor on and off.

- **Inhibit (Button/Indicator)**: This indicator glows green when the control panel buttons have been locked and the system must be unlocked through the **OSD Menu**.

Figure 1–4 Front Panel Controls



- **SDI Input 1/2 (Button/Indicator)**: This indicator glows green when this input is selected for display on the monitor. As a control, this button selects the SDI signal for display to the monitor.

- **Line 1/2 (Button/Indicator)**: This indicator glows green when this input is selected for display on the monitor. As a control, this button selects the signal for display to the monitor. You can select from three signal types for Line 2 in the USER CONFIG menu of the **OSD Menu**.

- **DVI-I (Button/Indicator)**: This indicator glows green when this input is selected for display on the monitor. As a control, this button selects the signal for display to the monitor. Select from three signal types in the USER CONFIG menu of the **OSD Menu**.

- **Aspect (Button/Indicator)**: This indicator glows green when a non-default aspect ratio has been selected for this signal. As a control, this button toggles between 4:3 and 16:9.

- **F1 through F6 (Buttons/Indicators)**: These indicators glow green when any of them are used to modify the default values of the functions to which they have been programmed. Use the USER CONFIG menu in the **OSD Menu** to modify the functions to which they have been assigned.

- **Status (Button/Indicator)**: Pressing this button toggles the status display (not a menu) on and off to the monitor. If the button is not pressed a second time, the status will disappear after several seconds.

OSD Menu Buttons

- **Menu (Button)**: Pressing the **Menu** button displays the OSD menu. Refer to Using the OSD Menu on page 19 for more details.

- **Up/Down (Buttons)**: Pressing these buttons after pressing the **Menu** button navigates through the menus and submenus up or down respectively. Neither of these buttons functions when the **OSD Menu** is not displayed on the monitor.

- **Enter (Button)**: The **Enter** button selects menus, submenus, and option values in the **OSD Menu**. This button only functions when the **OSD Menu** is displayed on the monitor.

Rotary Knob / Indicators

The rotary knobs on the right side of the monitor's control panel have multiple functions most of which are very similar and are listed immediately below:

1. **Pushing the knob**: Displays the current setting.

   Note: Pushing the **Volume** knob has a different function. See below.

2. **Rotating the knob**: Increases or decreases the value.

3. **Indicator glows amber**: If you select a value other than the default.

- **Phase (Rotary Knob/Indicator)**: Modifies the sharpness.

- **Chroma (Rotary Knob/Indicator)**: Modifies the color saturation.

- **Brightness (Rotary Knob/Indicator)**: Modifies the brightness.

- **Contrast (Rotary Knob/Indicator)**: Modifies the contrast.

- **Volume (Rotary Knob/Indicator)**: Modifies the audio volume. Pushing the **Volume** knob steps through the current setting, muting the audio, and restoring the music and removing the setting display.

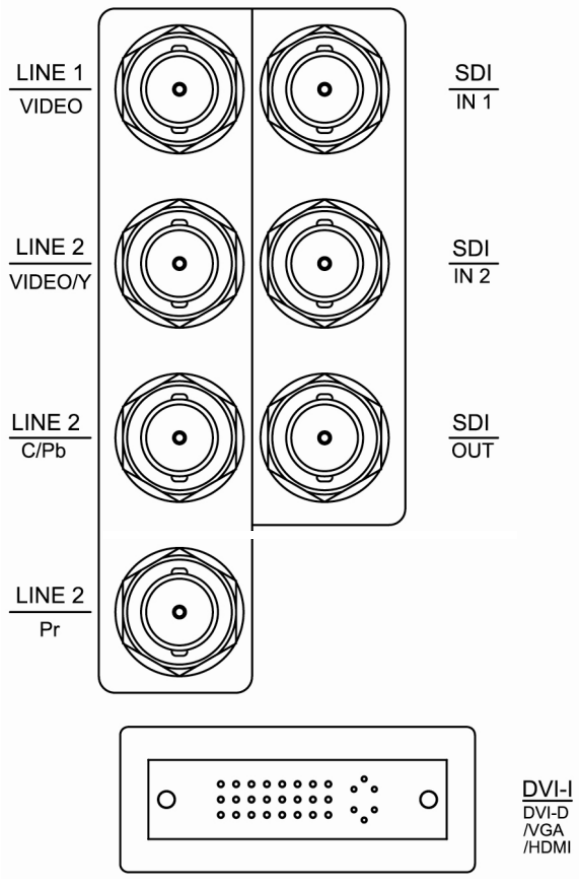
Other Front Panel Features

Headphone Jack: Monitor the assigned left/right stereo audio channels with stereo headphones from this mini-stereo connector. The speakers will mute when the headphones are plugged in.

Rear Panel

Figure 1–5 illustrates the left rear panel connectors, and Figure 1–6 illustrates the right rear panel connectors.

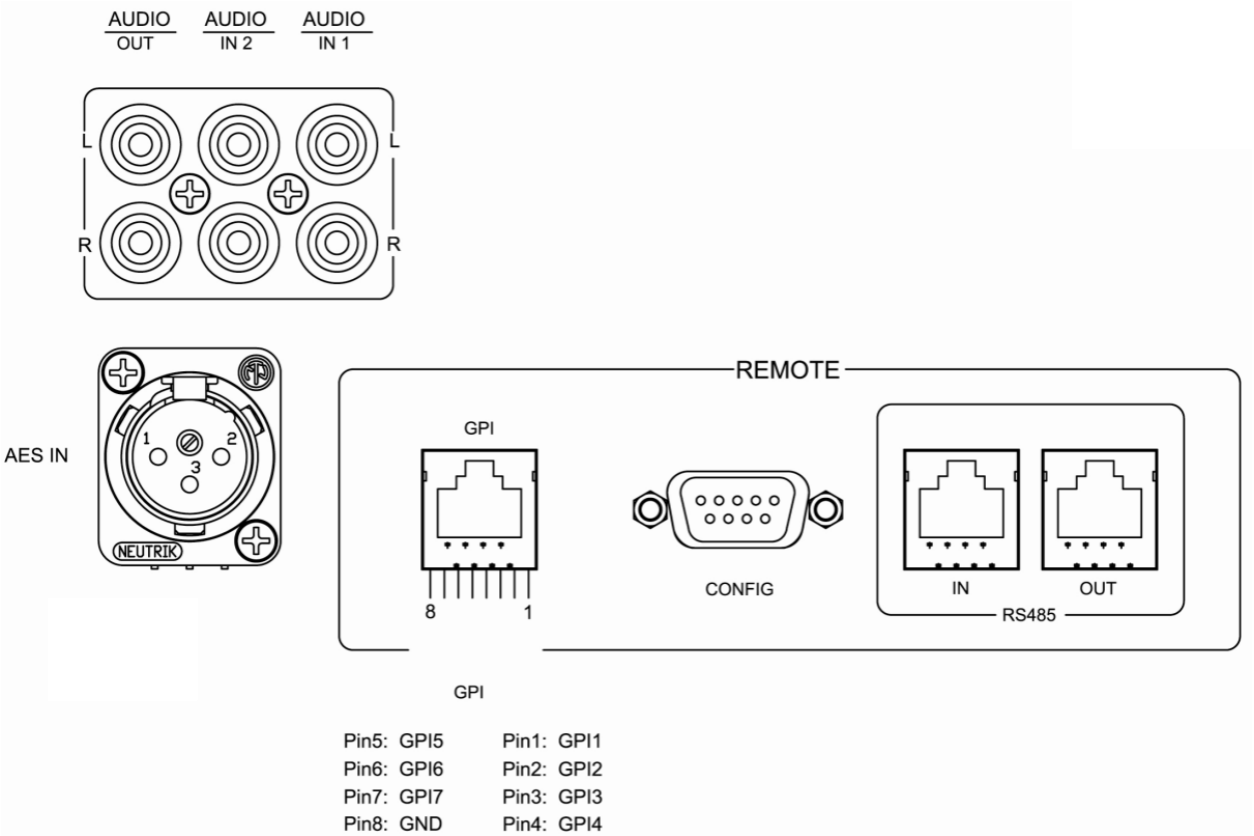
Figure 1–5 Rear Panel (Left Side Top)



- **Line 1 (Video)**: Input jack for analog composite video signal only.
- **LINE2 (Video/Y)**: Input jack for analog composite video input signal, or luminance (Y) signal of Y/C or YPrPb.
- **Line 2 (C/Pb)**: Input jack for Chroma (C) signal of Y/C or Pb (Blue) component of YPrPb.
- **Line 2 (Pr)**: Input jack for Pr (Red) component of YPrPb.
- **SDI Inputs 1 and 2**: SD-SDI input signal on BNC jacks.
- **SDI Output**: Output jack for selected SDI signal.
- **DVI-I(DVI-D/VGA/HDMI)**: Input jack for DVI analog/digital and requires an adapter for VGA or HDMI input signal.

Note: The DVI-I signal type must be set in the USER CONFIG menu of the **OSD Menu** to function correctly.

Figure 1–6 Rear Panel (Left Side Bottom)



- **Analog Audio Input 1**: Input jacks for the analog audio signal.
- **Analog Audio Input 2**: Input jacks for the analog audio signal.
- **Analog Audio Output**: Output jacks for the analog audio signal.
- **AES In**: Input jack for the AES audio signal.
- **Tally Light Control (GPI - RJ45)**: This connect provides control to the front panel (tri-color) tally light and other remote functions.

Figure 1–7 GPI / Tally Light RJ45 Connector Pin Map

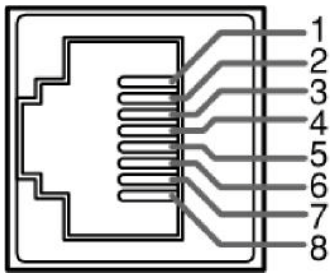


Table 1–10 GPI / Tally Lamp Color / Pin Designations

Tally Lamp Color	GPI 1 Pin	GPI 2 Pin
Green	GND	Open
Red	Open	GND
Orange	GND	GND

Table 1–11 GPI / Tally Lamp Connector Pin Out

Pin	Function
1.	GPI 1
2.	GPI 2
3.	GPI 3
4.	GPI 4
5.	GPI 5
6.	GPI 6
7.	No Connection (NC)
8.	Ground

- **Config (DB9)**: Connector used for factory program.
- **RS485 In (RJ45)**: Input connector for external control.

- **RS485 Out (RJ45)**: Output connector for external control.

Note: The power cord connector on this monitor is on the bottom face of the right side of the back panel.

Note: A power source with the capacity of more than 45W is recommended.

Figure 1–8 DB9 Connector Pin Map

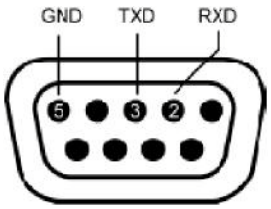


Figure 1–9 RS485 RJ45 Connector Pin Map

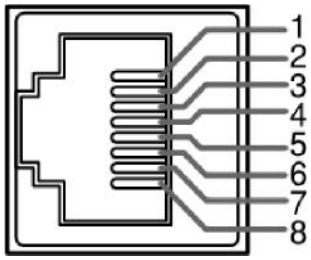


Table 1–12 RS485 Pin Out

Pin	RS485 In Terminal Signal	RS485 Out Terminal Signal
1, 2	GND	GND
3	Tx-	Tx-
4	Rx+	Rx+
5	Rx-	Rx-
6	Tx+	Tx+
7, 8	NC	NC

Using the OSD Menu

A description of how to use the **OSD Menu** follows. Also refer to Table 1–13 below for typical values and domain range.

1. Press the **Menu** button to display the menu.

   Note: If you do not press another button for approximately 10 seconds, the menu will disappear from the screen.

2. Use the **Up** and **Down** buttons to navigate through the seven sub-menu icons. The sub-menus are:
   A. STATUS
   B. COLOR TEMP
   C. MARKER
   D. VIDEO CONFIG
   E. AUDIO CONFIG
   F. USER CONFIG
   G. CONTROL

3. Press the **Enter** button to enter the parameter selections in the chosen sub-menu.

4. Use the **Up** or **Down** buttons to cycle through the sub-menu selections.

5. When the desired option is highlighted, press the **Enter** button to select it.

6. Use the **Up** or **Down** buttons to adjust the parameter value up or down, make a selection, or turn a function on or off.

7. Press the Enter button to save the parameter change and return to the sub-menu level.

Press the **Menu** button to back out of a parameter or sub-menu. Press the **Menu** button again to remove the menu from the screen.

Table 1–13 OSD Menu Structure

Menu	Parameters	Default Value	Domain Range
STATUS	FORMAT	Display only; Non-selectable. The values vary depending on input signal type and configuration settings.	
	COLOR TEMP		
	COMPONENT LEVEL		
	NTSC SETUP		
	SCAN MODE		
	POWER SAVING		
	MODEL		
COLOR TEMP[a]	COLOR TEMP	D65	Selects the color temperature that will become the basis for adjustments where: • D93 = 9300K • D65 = 6500K • D56 = 5600K • USER (Enables the rest of the options)
	RED GAIN	128	0 to 255
	GREEN GAIN		
	BLUE GAIN		
	RED BIAS	0	0 to 64
	GREEN BIAS		
	BLUE BIAS		
	RESET	Resets gain and bias to their factory defaults.	

Table 1–13 OSD Menu Structure (Continued)

Menu	Parameters	Default Value	Domain Range
MARKER[b]	MARKER ENABLE	ON	ON or OFF; When set to OFF, all the other options in this menu are disabled.

	AREA MARKER	16:9	Selects the area marker aspect ratio according to the display aspect:
			• Aspect = 16:9
			  • 4:3 Vertical
			  • 15:9 Vertical
			  • 14:9 Vertical
			  • 13:9 Vertical
			  • 1.85:1 Horizontal
			  • 2.35:1 Horizontal
			• Aspect = 4:3
			  • Off
			  • 16:9

	CENTER MARKER	ON	ON (enabled) or OFF (disabled)
	SAFETY MARKER	OFF	Setting the picture safe area size marker for the aspect ratio (determined by the button to which the aspect function is assigned) and scan control, where: • 80% • 85% • 96% • OFF
	MARKER LEVEL	1	Sets the luminance (white level) to display safety, center, and area marker line, where: • 1 = 50% • 2 = 75% • 3 = 100%

Table 1–13 OSD Menu Structure (Continued)

Menu	Parameters	Default Value	Domain Range
MARKER (Continued)	MARKER MAT	OFF	Sets the area marker mat transparency, where: • OFF = Normal background, use line for area marker edge only • HALF = 50% Background brightness • BLACK = Black
VIDEO CONFIG	APERTURE	0	0 to 100
	NOISE REDUCTION	OFF	ON or OFF
AUDIO CONFIG	SOURCE TYPE	NONE	Used to select the audio source type, where: • EXT = Analog audio • EBD = Embed audio (only for SDI or HDMI inputs) • None
AUDIO CONFIG	SPEAKER L	OFF	Selects the audio channel assigned to the left speaker based on the audio source type, where: • If SOURCE TYPE = EXT, then AUD 1L, AUD 1R, AUD 2L, AND ADU 2R • If SOURCE TYPE = EBD and input signal type = SDI, then EBD CH1 - EBD CH16 • If SOURCE TYPE = EBD and input signal type = HDMI, then EBD CH1 - EBD CH8 • OFF
	SPEAKER R		
	REF LEVEL	-20DB	-20DB or -18DB
	OVER LEVEL	-10DB	-10DB, -8DB, -6DB, -4DB, or -2DB
	METER POSITION	VERTICAL	VERTICAL or HORIZONTAL
	METER DISPLAY	ON	ON or OFF
	LEFT METER	METER 1+2	OFF, METER1, or METER 1+2

Table 1–13 OSD Menu Structure (Continued)

Menu	Parameters	Default Value	Domain Range
AUDIO CONFIG (Continued)	RIGHT METER	METER 3+4	OFF, METER3, or METER 3+4
	METER 1-L	OFF	Selects the audio channel assigned to the left speaker based on the audio source type, where: • If SOURCE TYPE = EXT, then AUD 1L, AUD 1R, AUD 2L, AND ADU 2R • If SOURCE TYPE = EBD and input signal type = SDI, then EBD CH1 - EBD CH16 • If SOURCE TYPE = EBD and input signal type = HDMI, then EBD CH1 - EBD CH8 • OFF
	METER 1-R		
	METER 2-L		
	METER 2-L		
	METER 2-R		
	METER 3-L		
	METER 3-R		
	METER 4-L		
	METER 4-R		
USER CONFIG	BACKLIGHT	0	50 through -50
	LINE2 INPUT	VIDEO	VIDEO, Y/C, YPbPr,
	DVI-I DISPLAY	DVI-D	DVI-D, HDMI, VGA
	SCAN MODE	STANDARD	STANDARD or NATIVE
	POWER SAVING	OFF	ON or OFF
	LANGUAGE	ENGLISH	ENGLISH
	COMPONENT LEVEL	SMPTE	Only for 480i60 component input, where: • SMPTE = 100/0/100/0 signal • BETA0 = 100/0/75/0 signal • BETA7.5 = 100/7.5/75/7.5 signal
	NTSC SETUP	0	Only for NTSC signal, where: • 0 = Japan • 7.5 = North America
	FILM MODE	AUTO	AUTO or OFF

Table 1–13 OSD Menu Structure (Continued)

Menu	Parameters	Default Value	Domain Range
USER CONFIG (Continued)	FORMAT DISPLAY	AUTO OFF	Displays the format and scan mode are displayed, where: • ON = Always displayed • AUTO = Displayed for about 10 seconds after change • OFF = Hidden
	UMD DISPLAY (IMD)	OFF	IMD = In Monitor Display: ON or OFF
	UMD COLOR (IMD)	RED	Color of the text characters: RED, GREEN, YELLOW, or WHITE
	UMD CHARACTER (IMD)	N/A	A user-definable input of up to 16 alphanumeric characters (also includes some symbols)
	TC DISPLAY (Time Code)	OFF	Displays the time code, where: • ON • OFF • --:--:--:-- = No time code in ANC
	WFM	OFF	Displays the waveform: ON or OFF
	WAVE FORM POS	TOP LEFT	Determines the location on the monitor where the waveform displays: • BOT LEFT = The waveform will cover the original information on the screen. • BOT RIGHT = The waveform will cover the original information on the screen. • TOP LEFT = The waveform replaces the position of the FORMAT menu. • TOP RIGHT = The waveform replaces the position of the STATUS menu.

Table 1–13 OSD Menu Structure (Continued)

Menu	Parameters	Default Value	Domain Range
USER CONFIG (Continued)	F1 BUTTON	MARKER	Sets the function for the designated button, where: • MARKER = Turns all markers ON or OFF • AUDIO METER = Turns all audio meter displays ON or OFF • WAVE FORM = Turns display ON or OFF • H/V DELAY = Toggles the values OFF, H, V, and H/V • AUTO SETUP = Press to auto-adjust • NATIVE = Toggles NATIVE and OFF • BLUE ONLY = Toggles BLUE and NORMAL • MONO = Toggles MONO (monochrome) and NORMAL • UNDEF = No settings
	F2 BUTTON	AUDIO METER	
	F3 BUTTON	WAVE FORM	
	F4 BUTTON	H/V DELAY	
	F5 BUTTON	AUTO SETUP	
	F6 BUTTON	NATIVE	
	GPI CONTROL	ENABLE	ENABLE or DISABLE
	GPI1	TALLY R	TALLY R, TALLY G, SDI1, SDI2, LINE1, LINE2, DVI-I, H/V DELAY, MONO, BLUE ONLY, NORMAL SCAN, OVER SCAN, NATIVE, ASPECT 4:3, ASPECT 16:9, or MARKER ENABLE
	GPI2	TALLY G	
	GPI3	SDI 1	
	GPI4	SDI 2	
	GPI5	LINE 1	
	GPI6	LINE 2	
	GPI7	MONO	
CONTROL	KEY INHIBIT	OFF	Inhibits the use of all buttons except **Power**, **Menu**, and **Volume**: ON or OFF

a To modify the options in the COLOR TEMP menu, COLOR TEMP must be set to USER.
b MARKER is disabled when SCAN is NATIVE, or the input signal is DVI or VGA.

Technical Functional Overview

Figure 1–10 below illustrates the overall functionality of the RMT-200-HD.

Figure 1–10 RMT-200-HD Block Diagram