Marshall

ML-454

Quad 4.5" Rack Mount Monitor with 3G-SDI, HDMI and Composite Inputs

User Manual

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1. OVERVIEW

The ML-454 provides four independent wide-screen displays in only 2RU rack height and very slim 1.4"(35.8 mm) depth. Each display has inputs for 3GSDI, HDMI and standard composite (CVBS) analog video sources. The SDI digital inputs provide active loop-through connections while the composite input is self-terminating with passive loop-through.

Controls are conveniently placed on the front panel (computer not required). Menus are straight-forward and intuitive. Front panel headphone jacks allow monitoring of embedded digital audio (SDI and HDMI) as well as analog audio (for composite video AV input). On-screen three-color tally borders operate from standard GPI connections (contact closure or open-collector pull-down) for maximum compatibility with existing systems.

2. UNPACKING

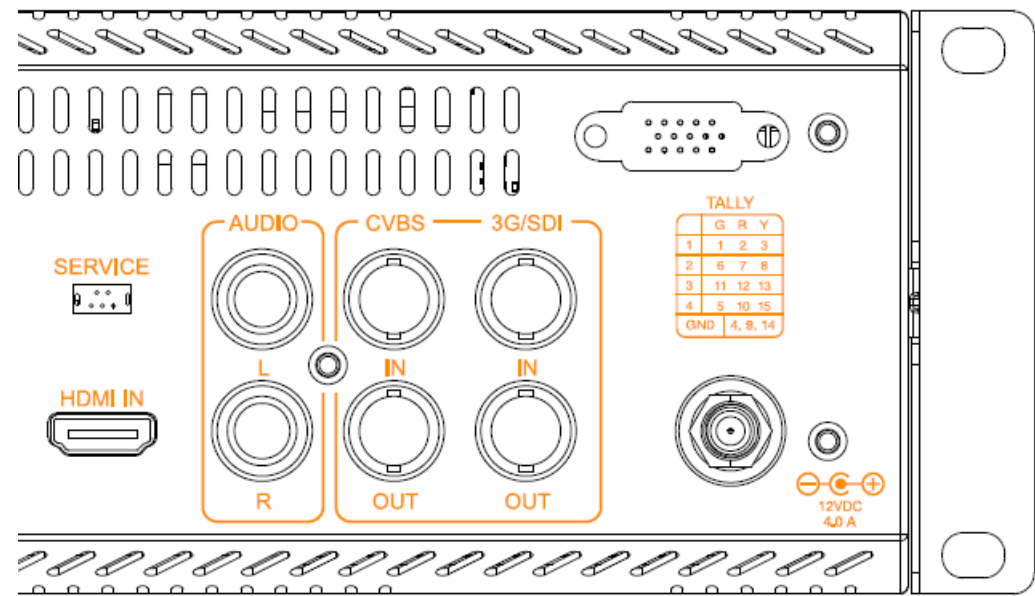Carefully unpack the ML-454 monitor and verify the following items are included:

1. ML-454 Monitor
2. 12 Volt Power supply with AC cord. ML-454PS

Inspect the unit for any physical damage that may have occurred during shipping. Should there be any damage, immediately contact Marshall Electronics at (800) 800-6608. If you are not located within the continental United States, call +1 (310) 333-0606.

3. INSTALLATION

The ML-454 is designed to mount in a standard 19"equipment rack using the pre-installed mounting ears. Once mounted, the monitor may be tilted to the ideal viewing position. Care should be taken to allow sufficient slack in cables attached to the monitor so as not to bind when the monitor is tilted. Also, check that the ventilation holes are not obstructed by other equipment in the rack.
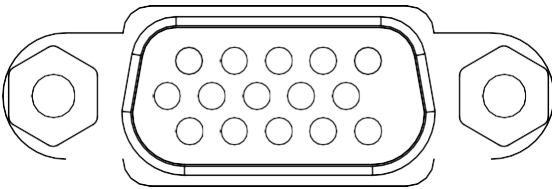
CONNECTIONS, POWER AND INITIAL SETUP

Note: Each screen has its own individual complement of video input connections.

Power and TALLY connections go to all screens

1. Power Connector

Connect the 12V DC input to the power input connector. Power can be supplied from the included power supply, or from a variety of DC sources supplying at least 4.0 Amps at 12 Volts. (Average power consumption 2.0 Amps at 12 Volts)

2. TALLY Connector

The tally light above each monitor is controlled by grounding the appropriate pin on the Tally connector as shown in the table. **Caution:** External power should never be applied to the Tally connector. (The Tally connector has the same "footprint" as a VGA connector.)

Tally	Green Light	Red Light	Yellow Light
Screen #1	1	2	3
Screen #2	6	7	8
Screen #3	11	12	13
Screen #4	5	10	15
GND	4, 9, 14		

Plug the included power supply into an AC power source (100 – 240 Volts @ 50/60 Hz). Attach the power connector to the back of the monitor.

Connect the required cables for video signal input and output.

The monitor defaults to "ON" when power is connected. The Marshall name will first appear then the video will be automatically detected and displayed on the screen. If the video does not appear, press the INPUT button on the front panel to select an active source. SDI and CVBS inputs have active loop through connections. Active loop-through does not work if main power is removed from the monitor. Front power buttons have no effect on loop-through operation.
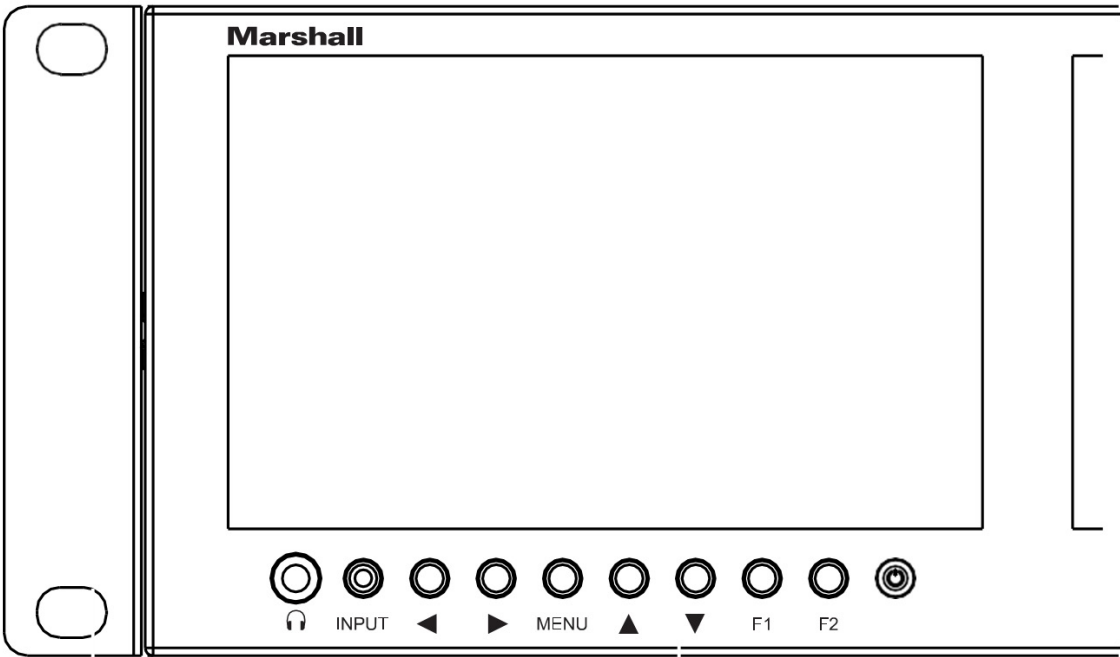
4. BASIC OPERATION

When main power is first applied to the ML-454, the input selection defaults to the last used source. To see other sources, press the Input button to cycle through three choices: HDMI, SDI and AV (CVBS composite analog).

Headphone audio level may be quickly adjusted any time by pressing the ◀ and ▶ buttons.

The power button for each screen is located just above the headphone jack. The button lights up green when the screen is ON.

To confirm that main power is being supplied to the internal components, a red LED light for each screen is visible through the ventilation holes on top.

FRONT PANEL CONTROLS

🎧 – Headphone Jack

INPUT – Select HDMI, SDI, AV sources

◀ ▶ – Headphone Volume and Menu navigation

MENU – Open / Back / Close the main menu window

▲ ▼ – Menu Navigation

F1 & F2 – Turn User Programmed Function On/Off

⏻ – Power On/Off

5. MENU FUNCTIONS

When the Menu button is pressed, a screen similar to this picture appears showing five Main Menu categories.

Use the ▲▼ arrow buttons to move to the desired category.

1. Video

Adjust appearance: chroma saturation, brightness, etc.

Pic. Mode: Select between three Presets and User setting.

Standard: Settings are in their mid-range. **Dynamic:** Contrast is boosted.

Mild: Contrast and Saturation are reduced.

User: Brightness, Contrast, Saturation and Sharpness can be adjusted individually.

Color Temp: Select 6500, 9300 or User.

6500: Display white balance approximates 6500K (standard). **9300:** Display white balance approximates 9300K (cool).

User: Red, Green and Blue gains may be adjusted to achieve the desired white balance.

Tint: Used to correct issues with composite video sources. All colors are affected. Tint is generally not applicable to digital video sources.

2. Function

Select On-screen markers, aspect ratio, image flip, peaking filter and other assistance tools.

Center Marker: Places a cross marker in the exact center of the image.

Safety Marker: Creates a border to indicate a safe area for camera framing

Adjustable from 80% to 96% and 2.35 wide aspect.

Marker Color: Select the high contrast marker color according to different image. Color choices are: Red, Green, Blue, Black and White.

Check Field: Use the ◄ ► to display a single primary color or no color (monochrome).

Peaking Filter: This is a tool to assist setting sharp focus on a video camera. When this mode is ON, the picture will be monochrome with a red border around objects in the image. As the camera lens is adjusted, the red border will be brighter or dimmer. Brighter = sharper focus.

Aspect Ratio: Select the displayed aspect ratio to fit the source.

Full Screen: Picture is fit to just meet the edges of the display area.

Pixel to Pixel: Image pixels are mapped 1:1 to display pixels. (Scaling off). In most cases, this will have the appearance of expanding the image.

4:3: Video is fit into a 4:3 window. This is a common setting for Standard Definition video.

16:9: Video is fit into a 16:9 window. This is the standard aspect ratio for HD video.

Zoom 1: Picture is enlarged and cropped a small amount.

Zoom 2: Picture is enlarged and cropped twice as much as Zoom 1.

Image Flip: Flip the displayed image to compensate for special lenses or mirrors.

Use the ▲ ▼ buttons to choose:

H_V Flip: Combines H Flip and V Flip modes

H Flip: Image is flipped left to right (mirror).

V Flip: Image is flipped top to bottom.

Image Freeze: Holds the current image on screen until Freeze is turned off.

Zoom All: Expands the picture on the screen in all directions by tapping the ► button Default setting is "0".

U/D Zoom: Expands the picture on screen vertically using the ◄ ► buttons.

L/R Zoom: Expands the picture on the screen horizontally using the ◄ ► buttons.

Scan Mode: Adjustable items are Standard & OverScan.

Overscan: allows checking the picture out to the edges.

3. OSD

On-Screen Display functions (menu position, etc.)

OSD Horizontal Position: Adjust horizontal position of Menus

OSD Vertical Position: Adjust vertical position of Menus

OSD Menu Transparency: Adjust the menu background

OSD Timeout: Set the number of seconds menu items will remain on the screen.

Input Format OSD: Signal format/frame rate display

4. Setting

Choose menu language, factory reset and upgrade mode

Language: Select the On-screen language for menus and messages.

Backlight: Adjust the brightness of screen backlight. Compensates for ambient lighting

Factory Reset: Press the ► button to set the display back to its original (default) state.

USB Upgrade: Initiate firmware update from a computer attached to the USB port.

5. Function Presets

Program the user Function buttons.

User buttons allow the quick selection of a function without entering the menu system

F1 & F2: Use the ◄ ► and ▲ ▼ buttons to choose a function from this list:Check Field Peaking Filter Aspect Ratio Image Flip Image Freeze Scan Mode

Center Marker	Aspect Ratio
Safety Marker	Image Flip
Marker Color	Image Freeze
Check Field	Scan Mode
Peaking Filter	

6. SPECIFICATIONS

Panel size	4.5-inch TFT LCD
Resolution	1280 x RGB x 800
Backlight type	LED, Adjustable Brightness
Dot pitch	0.07575(H) x 0.02525(W)mm
Aspect radio	16:10
Panel Bit Depth	True 8-bits (not dithered)
Brightness (cd/m²)	470
Contrast	900:1
Viewing angles	80°/80°(L/R) 80°/80°(U/D)
Inputs	HDMI / 3GSDI / CVBS / Audio(L/R)
Outputs	3GSDI / CVBS Loop Out
AV	PAL - 4.43 / NTSC - 3.58
HDMI	480i /480p /576i /576p (59.94/50) 720p (60/59.94/50/30/29.97/25/24/23.98) 1080i (60/59.94/50) 1080p (60/59.94/50/30/29.97/25/24/23.98)

3G-SDI	ITU-R BT.656	576i
	SMPTE-125M	480i
	SMPTE-274M	1080i (60/59.94/50) 1080p (30/29.97/25/24/23.98)
	SMPTE-296M	720p (60/59.94/50/30/29/25/24/23.98)
	SMPTE-424M	1080i (60/59.94/50) 1080p (60/59.94/50)

Earphone jack	Stereo 3.5mm
Input voltage	DC: 10~24 V (Typical 12 V)
Power consumption	28 W (Typical)
Power Connector	5.5 mm x 2.1 mm locking coaxial
Dimensions	19.0" W x 3.3" H x 1.4" D 482.5mm W x 84mm H x 35.8mm D
Weight (main body)	3.53lbs, 1.6kg

For Warranty information please refer to Marshall website page:

https://marshall-usa.com/company/warranty.php

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