

## Model No. M-LYNX-702W

Dual 7" High Resolution Rack Mount  
Display with Waveform



## Operating Instructions

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### IMPORTANT SAFETY INSTRUCTIONS:

- Please read User Guide before using this product.
- Please keep User Guide for future reference.
- Please read the cautions to prevent possible danger and loss of property.

### CAUTIONS:

1. Please do not place the display screen towards the ground to avoid scratching the LCD surface.
2. Please avoid heavy impact.
3. Please do NOT use chemical solutions to clean this product. Simply wipe with a clean soft cloth to maintain the brightness of the surface.
4. Please do not block any vent hole.
5. Please follow the instructions and trouble-shooting to adjust the product. Internal adjustments or repairs must be performed by a qualified technician.

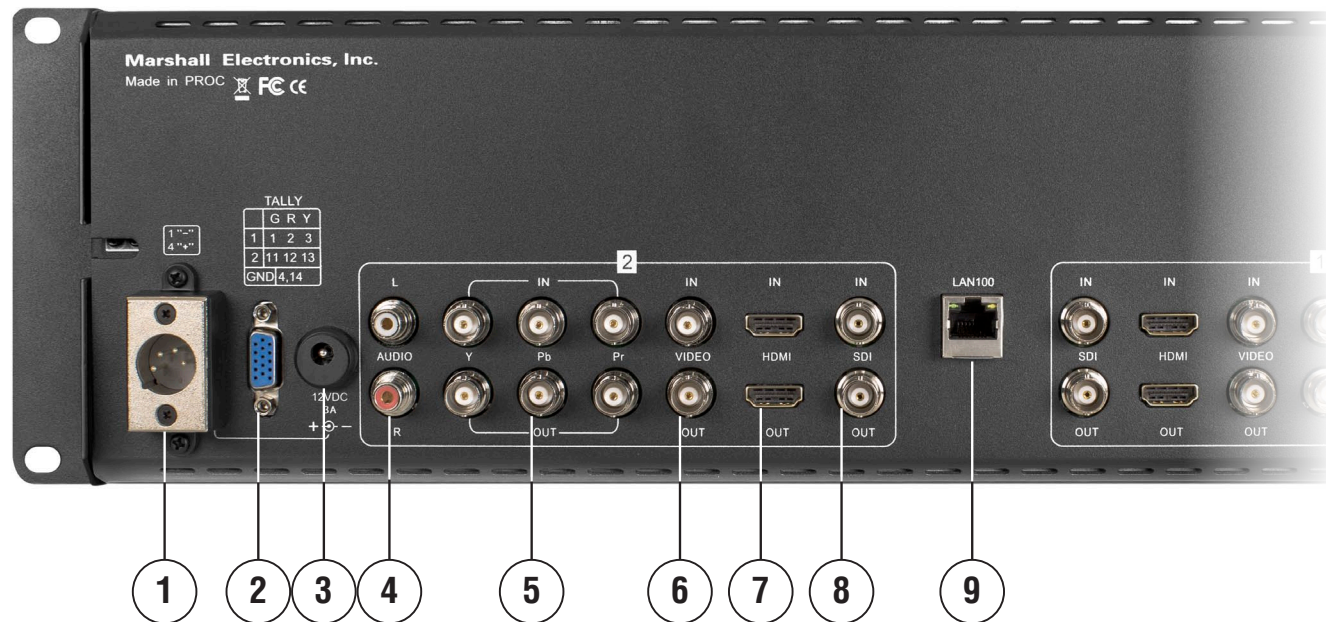
## 1. PRODUCT DESCRIPTION

### FRONT PANEL FEATURES



1. Rackmount ears with tilt capability
2. Handle
3. Headphone jack. Accepts standard 3.5mm mini-phone plug.
4. POWER button (Lights red in standby mode; green when operating).
5. INPUT select button cycles through HDMI, SDI, YPbPr and Video.
6. F1~F4 user-defined function buttons (lighted when selected).  
Short Cut: Long press on any function button (3-5 seconds) pops up menu for setting user-defined functions. Pressing the Menu knob confirms the selection.
7. Menu Knob

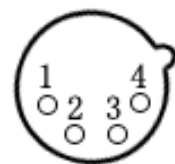
BACK PANEL FEATURES



Note: Each screen has its own full complement of video input connections.  
Power, TALLY and LAN connections go to both screens

**1. 4-pin Power Connector**

4-pin XLR DC power input compatible with typical broadcast television camera 12-volt power supplies. Caution: Some 4-pin power supplies provide 24 volts. These are NOT compatible with this monitor. Please check the label on the power supply before connecting.



Pin number	Signal
①	GND
②	No connection
③	No connection
④	+12V

**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.



Screen #1	Tally	Screen #2	Tally
1	Green Light	11	Green Light
2	Red Light	12	Red Light
3	Yellow Light	13	Yellow Light
4	Ground	14	Ground

**3. Barrel Power Connector**

POWER+12V



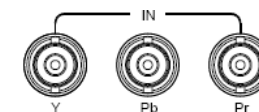
12V DC power input barrel connector. Plug the supplied DC power adapter here. (Center pin is +)  
**Important: Please connect only one type of power supply at a time to this monitor.**

**4. Analog Audio “RCA” Connectors**



Audio left and right inputs. These audio inputs are active whenever Video or YPbPr are selected as the video sources. This audio may be monitored at the Headphone jack.

**5. Component Analog “BNC” Connectors**



YPbPr input for component analog video sources YPbPr loop out.

**6. Composite Analog “BNC” Connectors**



Video input and loop out. Used for NTSC or PAL composite (CVBS) video sources.

**7. HDMI Digital Video Connectors**



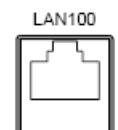
HDMI input and loop out. Embedded audio may be monitored at the Headphone jack and visually monitored on-screen.

**8. Serial Digital “BNC” Connectors**



SDI input and loop out. Compatible with SDI, HD SDI and 3G SDI inputs. Embedded audio may be monitored at the Headphone jack and visually monitored on-screen.

**9. Ethernet LAN “RJ-45” Connector**



LAN port. The monitor can be operated from a PC using the application provided on the included CD.

## 2. MENU SETTINGS

Press MENU knob on the monitor and function menus will pop-up on the screen. Rotate left or right to select an option. Then press the knob again to open the selection. When an arrow pointer appears in the menu, turn the Menu knob again to access the item or to confirm a selection.

### 1. PICTURE

PICTURE		
	Brightness	50
	Contrast	50
	Saturation	70
	Tint	50
	Sharpness	50
	Volume	50
	Color Temp.	
	Exit	

This page provides controls for typical picture adjustments. **Short Cut:** Most of these selections are also directly available from the front panel by turning the Menu knob without pressing it first.

Brightness	0 - 100	
Contrast	0 - 100	
Saturation	0 - 100	
Tint	0 - 100	
Sharpness	0 - 100	
Volume	0 - 100	
Color Temp	6500°K/7300 °K/9300 °K/User	
	Red	0-255 When User is selected, Red, Green and Blue adjustments are available
	Green	0-255
	Blue	0-255
Exit		

**Brightness** – used to establish the correct black level in the picture

**Contrast** – establishes the range of dark to light areas in the picture

**Saturation** – sets the amount of color information in the picture.

**Tint** – this function is designed to remove color errors in composite analog (NTSC, PAL) signals. A better choice for component and digital signals is to use Color Temp / User to establish the correct color tones

**Sharpness** – adds synthetic “detail” to the image. HD images should require very little added sharpness

**Volume** – controls the Headphone volume

**Color Temp** – this setting provides three different presets for white balance approximating different common color “temperatures”. More precise white balance may be obtained by selecting the User setting and adjusting Red, Green or Blue highlights as desired.

### 2. MARKER

MARKER		
	Marker Enable	ON
	Center Marker	ON
	Aspect Marker	OFF
	Screen Marker	95%
	Marker Color	Red
	Marker Mat	1
	Thickness	2
	Exit	

This page offers controls for setting various on-screen markers.

ITEMS	OPTIONS
Marker Enable	ON / OFF
Center Marker	ON / OFF
Aspect Marker	OFF / 16:9 / 4:3 / 14:9 / 13:9 / 15:9 / 1.85:1 / 2.35:1
Screen Marker	OFF / 95% / 93% / 90% / 88% / 85% / 80%
Marker Color	Red / Green / Blue / White / Black
Marker Mat	OFF / 1 - 6
Thickness	1 - 7
Exit	

**Marker Enable** – this is the master control to turn all markers on or off.

**Center Marker** – places a “+” mark in the exact center of the display. (Useful for checking camera or graphics positioning.)

**Aspect Marker** – places borders on screen representing various typical video and cinema aspect ratios. This does not change the displayed aspect ratio. That setting is in the Video menu.

**Screen Marker** – places a border around the edge of the screen to be used as a guide during video production.

**Marker Color** – the Center, Aspect and Screen marker colors can be changed.

**Marker Mat** – changes the background just behind the markers.

**Thickness** – sets the width of the markers. Adjust as desired for best visibility.

### 3. VIDEO

VIDEO		
	Aspect Ratio	Full Screen
	H/V Delay	OFF
	Check Field	OFF
	Pixel-to-Pixel	OFF
	Underscan	OFF
	Zoom	OFF
	Image Flip	OFF
	Image Freeze	OFF
	PIP	
	Exit	

This page provides controls for picture size, position and related functions including image flip, image freeze and Picture-In-Picture (PIP).

ITEMS	OPTIONS
Aspect Ratio	Full screen / 4:3 / 16:9 / 1.85:1 / 2.35:1
H/V delay	OFF / H&V / H / V
Check Field	OFF / Mono / Red / Green / Blue
Pixel-to-Pixel	ON / OFF
Underscan	ON / OFF
Zoom	OFF / x2 / x4 / x6 / x8
Image Flip	OFF / H&V / H / V
Image Freeze	ON / OFF
PIP	Small, Medium, Large PIP (picture-in-picture). PBP (picture-by-picture)
Exit	

**Aspect Ratio** – allows changing the aspect ratio (shape) of the picture to match the incoming video. Settings are available for various video and cinema styles.

**H/V delay** – shifts the picture vertically and horizontally to allow viewing the vertical and horizontal blanking areas

**Check Field** – displays the picture in monochrome (black & white) or in individual primary colors. Useful for color analysis and trouble shooting.

**Pixel-to-Pixel** – displays the incoming video with a 1:1 pixel match. This provides the clearest resolution but usually changes the size of the image. This turns of up/down “scaling”. For example: a video input that has fewer pixels than the LCD display will appear to shrink while a video input that has more pixels will appear to expand. In either case, the image is shown in it’s “true” resolution.

**Underscan** – shrinks the image slightly to allow viewing the edges.

**Zoom** – expands the picture digitally. It is normal for picture quality to degrade as the picture is expanded.

**Image Flip** – the picture can be reversed top to bottom, left to right or both. This can be a useful tool when viewing images shot through mirrors or from cameras mounted upside-down.

**Image Freeze** – holds the current picture on screen.

**PIP** – Picture-in-Picture functions consist of two images on the screen at the same time. One image must be from a digital source (HDMI, SDI) and the other image must be from an analog source (YPbPr, Video).

4. CAMERA AUX & AUDIO

CAMERA AUX&AUDIO		
	Peaking	OFF
	Peaking Color	Red
	Peaking Level	50
	False Color	OFF
	Exposure	OFF
	Exposure Level	85
	Histogram	OFF
	Audio Meter	OFF
	Exit	

This page offers settings to assist with camera setup, focus and exposure adjustments. Audio metering can be set here as well.

ITEMS	OPTIONS
Peaking	ON / OFF
Peaking Color	OFF / H&V / H / V
Peaking Level	OFF / Mono / Red / Green / Blue
False Color	ON / OFF
Exposure	ON / OFF
Exposure Level	0 - 100
Histogram	OFF / H&V / H / V
Audio Meter	ON / OFF
Exit	

**Peaking** - adds a colored edge to picture details making it easy to identify which areas are in sharpest focus.

**False Color** - a method to show each brightness in the picture with a different color. It provides a quick way to tell if one part of a picture is too bright or too dark.

**Exposure** - creates “zebra” lines in the brightest areas of the picture. This mimics a feature that is commonly found in broadcast camera viewfinders which provides a quick way to check for over-exposure.

**Histogram** - is a graphical representation of the tonal range within a picture. This mimics a feature commonly found in DSLR cameras.

**Audio Meter** - shows an on-screen bar graph of two audio channels (typically Left and Right) from either an HDMI or SDI digital source.

5. WAVEFORM

WAVEFORM		
	Waveform Mode	OFF
	Waveform Scale	Auto
	Colorize Waveform	ON
	Limits	OFF
	Limit Maximum	255
	Limit Minimum	0
	Vectorscope Targets	100%
	Exit	

The Waveform page offers adjustments for the on-screen Waveform and Vectorscope displays.

ITEMS	OPTIONS
Waveform Mode	OFF / Y/Luma / YCbCr / RGB / Vector / Default
Waveform Scale	Auto / mV / %IRE
Colorize Waveform	ON / OFF
Limits	ON / OFF
Limit Maximum	0 – 255
Limit Minimum	0 – 254
Vector scope Targets	OFF / 75% / 100%
Exit	

**Waveform Modes:**

**Y/Luma** – a graphic representation of the brightness from left to right across the picture. This is the most common setting and is particularly useful for adjusting lenses and lighting.

**YCbCr** – a graphic representation of the Luminance plus the color components in the video signal. Useful for equipment adjustment and confirming proper operation.

**RGB** – a graphic representation of the three primary color components of video picture. Useful for making equipment adjustments.

**Vector** – a graphic representation of the colors in a picture. Brightness levels are not shown. The vector display is used with color charts or test signals. It is of little value during a video production.

**Default** – creates reduced size representations of each waveform listed above. In this mode, the video picture is visible at the same time as the waveforms.

**Colorize Waveform** - When ON, the waveforms will have unique colors to make it easy to identify what is being graphed. When OFF, all waveforms will be white on black.

**Limits** – when ON, will “cut” the top and bottom of the waveform at the Level Maximum and Minimum (8-bit digital values). This is primarily a troubleshooting tool for digital systems and not typically used during video production.

**Vectorscope Targets** - Vectorscope targets are small boxes that show where test signal color bars are supposed to be. They are meaningful only when they are set to match the source being measured:

- 75% for typical split field color bars (most common)
- 100% for chroma-boosted “100%” color bars

6. SETTING

SETTING		
	Language	English
	LOGO	ON
	Color Bar	OFF
	Backlight	100
	Reset	OFF
	OSD	
	IP Config	
	System	
	ISP	
	Exit	

The Setting page provides a collection of system-level functions including On Screen Display (OSD), Ethernet port settings (IP Config), reset unit to Factory settings (Reset) and firmware update (ISP).

ITEMS	OPTIONS	
Language	English / Español	
LOGO	ON / OFF	
Color Bar	ON / OFF	
Backlight	0 – 100	
Reset	ON / OFF	
OSD	OSD Horizontal position	0 – 100
	OSD Vertical position	0 – 100
	OSD Timeout	5s, 10s, 15s
IP Config	DHCP	
	ON: Obtain an IP address automatically. OFF: Obtain an IP address manually.	
System	Displays current status and firmware level	
ISP	Initiate firmware update.	
Exit		

**Language** – sets on-screen messages to either English or Spanish

**LOGO** – selects whether the Marshall Electronics logo appears at power up

**Color Bar** – places color bars on screen to check the monitor operation

**Backlight** – adjusts the brightness of the LCD backlight. This is different from the “Brightness” control. Backlight is adjusted to compensate for room lighting without upsetting Contrast and Brightness adjustments.

**Reset** – sets all menu items back to the way the unit ships from the factory.

**OSD** – adjusts the position of the on-screen display messages and menus. The amount of time menus remain on screen can also be adjusted.

**IP Config** – opens a sub-menu where the monitor’s IP address can be set.

**System** – displays status messages only. There are no adjustments

**ISP** – works with the application on the enclosed CD to allow firmware updates

**USER FUNCTION SHORT CUT (F1 – F4) MENU**

The monitor front panel has four special function keys marked F1 through F4. These are pre-programmed as short cuts keys per this table:

FUNCTION KEY	STANDARD SHORT CUTS
F1	Peaking
F2	Waveform / Vector
F3	Audio Bars & Phase Scope
F4	Histogram

These function keys may be re-programmed at any time by first pressing the function key for about three seconds. The function key menu will appear at the right side of the screen. Simply rotate the Menu knob to the desired function short cut and press the Menu knob to make the selection.

One of the following shortcuts may be programmed to each function key:

OPTIONAL SHORT CUTS		
Screen Marker	Image Flip	Peaking
Aspect Marker	Zoom	False Color
Check Field	Pixel-to-Pixel	Exposure
Color Bars	Image Freeze	Histogram
Aspect Ratio	Underscan	Audio Meter
PIP	H/V Delay	Waveform

Please refer to the individual menu pages above for details about these functions.

**3. SPECIFICATIONS**

Panel Size	7 inch x 2
Panel Resolution	1280 × 800 pixels
Brightness	400 cd/m <sup>2</sup>
Contrast	800: 1
Viewing Angle	178° / 178°(H/V)
Input Voltage	DC 12V
Input Signal	HDMI, SDI, YPbPr & Video
Power Consumption	≤24W
Operating Temperature	-20°C~60°C
Storage Temperature	-30°C~70°C
Dimension W/H/D	19" x 5" x 1" (482.5×132×25mm)
Weight	5.8lbs (2.65Kg)

**4. INCLUDED ACCESSORIES**

1. DC 12V Power adapter
2. CD with remote operation application
3. Operations Manual

**5. TROUBLESHOOTING**

**1. Power on but no picture:**

Check whether the cables are correctly connected. Also, please use the standard power adapter coming with the product package or other power supply with the correct voltage and pin configuration.

**2. Only black-and-white display:**

Check whether the color saturation and brightness are properly set. If using YPbPr connections, be sure three cables are connected properly. Access the Video menu and make sure Check Field is Off

**3. Wrong or abnormal colors:**

Check whether the cables are correctly connected. Broken or loose pins of the cables may cause a bad connection. If using YPbPr connections, check that the source device is set for Component (YUV) not RGB. Access the CAMERA AUX & AUDIO menu page and check that the False Color mode is OFF.

**4. Picture is “stuck” on screen:**

Access the Video menu page and check that IMAGE FREEZE is off.

**5. Other problems:**

The monitor can be reset to Factory original settings. This is sometimes useful to eliminate the possibility that an improperly set menu item is interfering with the operation. To reset the monitor, access the “SETTING” menu page, press the Menu knob then rotate left or right to select “Reset”. Press the knob once then rotate the knob to cause the unit to reset.

# Warranty

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Marshall Electronics warrants to the first consumer that this M-LYNX-702W, dual 7" rackmountable monitor will, under normal use, be free from defects in workmanship and materials, when received in its original container, for a period of one year from the purchase date. This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, Marshall Electronics reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer.

This warranty does not apply to the product exterior or cosmetics. Misuse, abnormal handling, alterations or modifications in design or construction void this warranty.

No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of Marshall Electronics, beyond the time period described above.

Note: Due to constant effort to improve products and product features, specifications may change without prior notice.

## **Marshall Electronics, Inc.**

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