

# 3G-SDI Broadcast Monitor

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Quad Split LCD Display

15.6"/17.3"/21.5"



## User Manual

## **Product Overview**

Thank you for purchasing our broadcast monitor . The monitor adopt digital signal processing circuit and professional LCD screen, which makes it stable performance and low radiation etc., also has strong compatibility, adjustable color temperature control.

Our monitor is equipped with serial digital interface signals 4xSDI, HDMI, RS485, GPI etc. With advanced features including Image Split Display, 3D-LUT, Waveform, Vector scope, Histogram, False Colo etc. It is an ideal choice for on-site monitoring and post-production by the crew director.

**To insure best use of the unit, please read the user's manual carefully.**

## **CAUTION**

1. Please use the adapter attached in the accessory, if necessary, please use qualified adapter.
2. Please do NOT expose this product directly in the sunlight, heat, and humid conditions.
3. Please keep the monitor away from the strong light while using this product to ensure the image effect and long-term use.
4. Please avoid heavy impact or drop onto the ground.
5. Please do NOT use chemical solutions to clean this product.  
Please wipe the monitor with a clean soft cloth to maintain the brightness of the surface.
6. No adjustable components are in the monitor. Please do not take apart or repair the unit by yourself, to avoid the damage of the product.

# Product Feature

- ◆ FHD Resolution 1920x1080 IPS
- ◆ Multiple display mode(1P, PIP, 4P)
- ◆ Support 3D LUT Log to REC.709 and user 3D LUT upload (up to 36)
- ◆ Support HDR monitoring
- ◆ With Waveform, Vector scope, RGB Histogram, Focus Assist, Monochrome etc. functions, can help you accurately exposure and focus every shot.
- ◆ In quad split display mode, SDI audio supports 4 channels and 4 time codes
- ◆ In single display mode, SDI audio supports 16 channels
- ◆ Supports GPI control, dynamic UMD
- ◆ In PIP/quad display mode can be switching signal freely
- ◆ User custom menu saving function

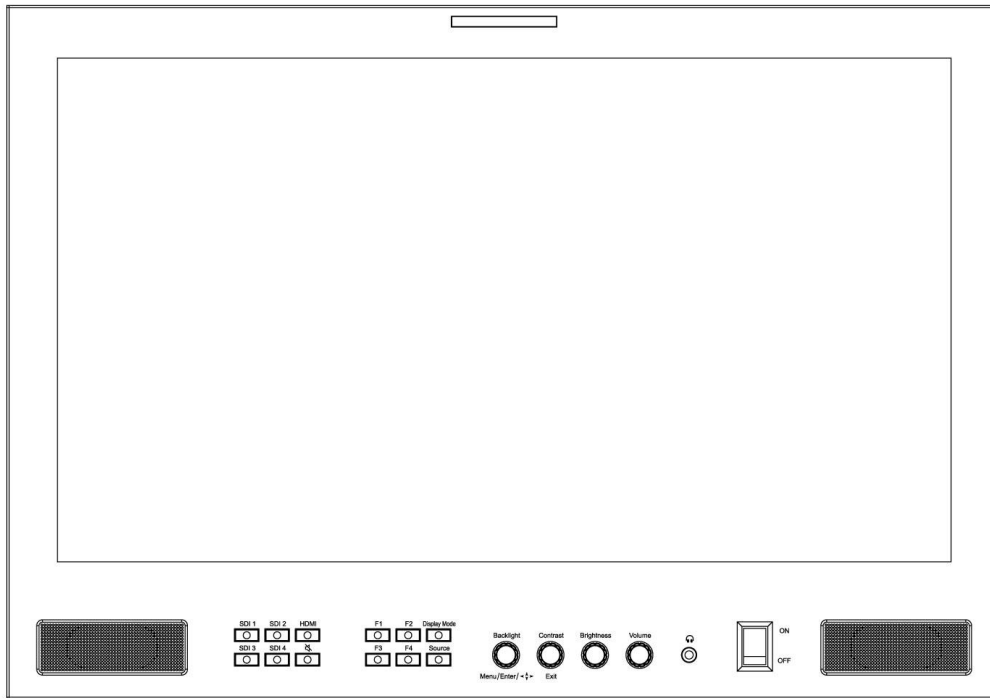
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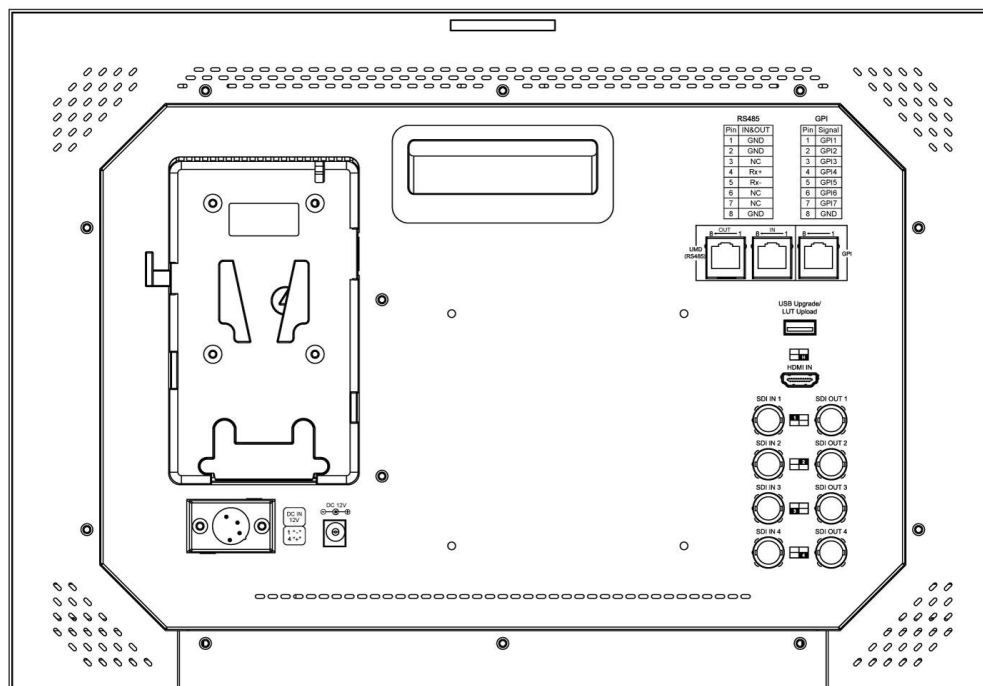
# 1. Product Description (Take 17.3" as an example)

**Note:** Different sizes are slightly different in appearance, please refer to the actual product.

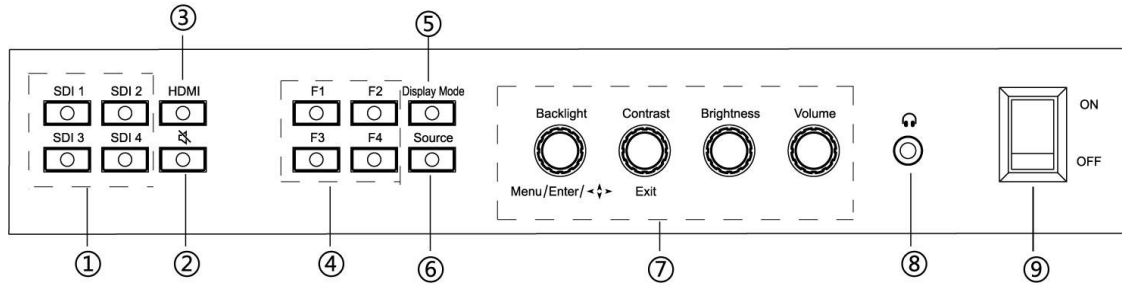
## 1.1 Front Panel



## 1.2 Rear Panel



### 1.3 Panel Button Instructions



①. **SDI1-SDI4:** 4xSDI signal input selection

②. : Mute button

③. **HDMI:** HDMI signal input selection

④. **F1-F4:** User custom shortcut button

Enter “Shortcut” of main menu to set the functions.

⑤. **Display Mode:** full screen, PIP, quad

⑥. **Source:** Switch signal under PIP and quad display mode

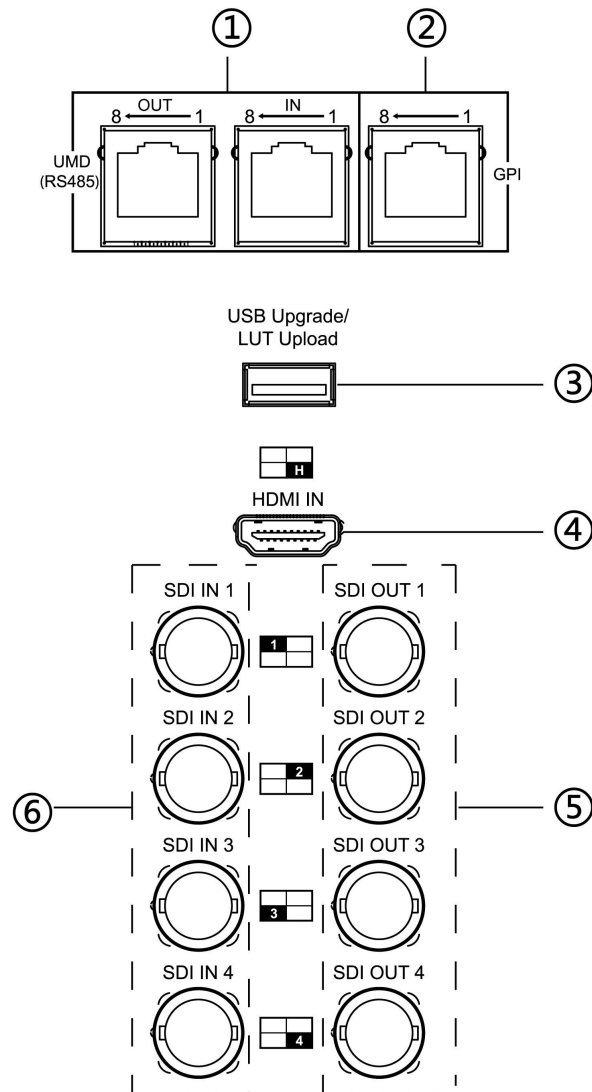
⑦. Multifunctional Knobs

Knobs	Function when OSD is not displayed	Function when OSD is displayed
Backlight Menu/Enter/↔	Rotate it to adjust Backlight (Achieved with the <b>Color's Backlight/Contrast/Brightness</b> ). Press it to bring up the main menu.	Rotate it to select the main menu or sub-menu option up and down; Press the knob to enter the sub-menu or sub-menu parameter value adjustment; enter the sub-menu parameter value adjustment, then rotate the knob to adjust the parameter value. After the parameter value is adjusted, press the knob to confirm and exit the current parameter setting.
Contrast Exit/↔	Rotate it to adjust Contrast (Achieved with the <b>Color's Color's Backlight /Contrast/ Brightness</b> ).	Press it to exit the current menu or exit the main menu.
Brightness	Rotate it to adjust Saturation(Achieved with the <b>Color's Color's Backlight /Contrast/ Brightness</b> ).	/
Volume	Rotate it to adjust Volume.	/

⑧. 🎧 : Earphone jack output port

⑨. **Power ON/OFF**

## 1.4 Rear Interfaces Instruction



①. **RS485 IN/OUT:** RS485 signal input/output

②. **GPI:** GPI control interface

③. **USB Upgrade/LUT Upload:** For firmware upgrade and importing 3D LUTs

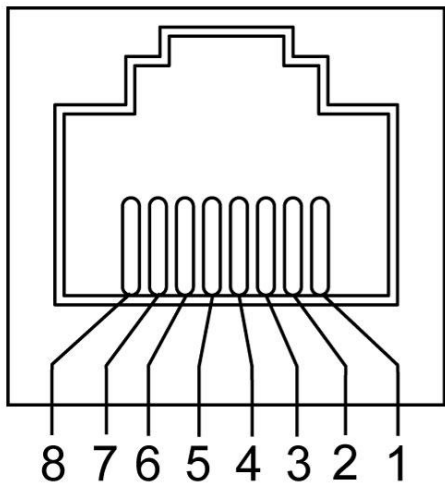
④. **HDMI IN:** HDMI signal input

- ⑤. 3G-SDI IN1~4:4xSDI signal inputs
- ⑥. **3G-SDI OUT1~4**: 4xSDI signal outputs

## 1.5 GPI & UMD Connection and Use

### (1) GPI Interface

Please connect the devices according to the pin definition, and pay attention to the common ground problem between the connected devices. Follow the steps below to enable the GPI control function, and set each GPI function at the same time.

	Pin No.	Signal
	1	GPI1
	2	GPI2
	3	GPI3
	4	GPI4
	5	GPI5
	6	GPI6
	7	GPI7
8	GND	

**GPI Setting Options: Tally R, Tally G, Nine Grid, Safety Marker, Center Marker, Center Marker, Video Aspect, Marker Mat, Anamorphic Mode, Focus Assist, Zebra, Monochrome**



## (2) RS485 Interfaces

Monitor supports RS485 port to input UMD signal, the interface definition is as below:

Pin No.	IN	OUT
1	GND	GND
2	GND	GND
3	NC	NC
4	RXD +	RXD +
5	RXD -	RXD -
6	NC	NC
7	NC	NC
8	GND	GND

### 1.6 Power Input Way

There are three ways of power supply to our monitor:

#### a. Powered by the direct plug-in power input port supply.

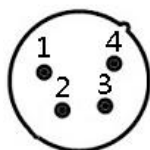
Please select DC power plug 5.5\*2.1mm supply and the polarity



is as image below:

#### b. Via 4 pin XLR interface power supply, to share power with the camera or via power adapter input.

Polarity of the 4-pin XLR power input as below image, please note the polarity of the power input, otherwise it may damage monitor.



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

#### c. Add battery to the monitor battery plate to supply the power.

The product back case including battery plate is available for two types of batteries. Users can choose different battery plates according to their needs. (If the users have no requirement on the battery, the factory assembles Sony V-Mount Plate by default).

## 1.7 Battery Plates



**Panasonic Anton Plate**



**Sony V-Mount Plate**

We assemble the suitable battery plate for the customers according to the different requirements of the batteries. If the customers have no requirement on the battery, the factory assembles Sony V-Mount Plate by default.

**Remark:** According to the different specification of the battery, the capability is different, and the working time for the monitor will be different. Higher capability (working time) will be longer.

Without the charging circuit design for the monitor, please remove the battery to charge with the battery charger.

**Suggestion: Better to remove the battery if don't use this product in a long time.**

## 2. Menu Operation Instructions

After the monitor is properly connected to power and signals, turn on the monitor power switch.

Main Menu	Submenu	Parameter Values
SDI		Resolution: 1920x1080p@30hz
Assist	Focus Assist	high
Marker	Focus Color	yellow
Waves	Zebra	OFF
Image	Monochrome	OFF
Window	False Color	OFF
External	Timecode	OFF
Shortcut		
Color		
System		

### Steps:

- ①. Press the  $\text{Menu/Enter}/\left\langle \begin{smallmatrix} \blacktriangle \\ \blacktriangledown \end{smallmatrix} \right\rangle$  knob to bring up the main menu. Then rotate the  $\text{Menu/Enter}/\left\langle \begin{smallmatrix} \blacktriangle \\ \blacktriangledown \end{smallmatrix} \right\rangle$  knob to select the main menu option.
- ②. Press the  $\text{Menu/Enter}/\left\langle \begin{smallmatrix} \blacktriangle \\ \blacktriangledown \end{smallmatrix} \right\rangle$  knob to enter the submenu, then rotate the  $\text{Menu/Enter}/\left\langle \begin{smallmatrix} \blacktriangle \\ \blacktriangledown \end{smallmatrix} \right\rangle$  knob to select the sub-menu option. After selection, press the  $\text{Menu/Enter}/\left\langle \begin{smallmatrix} \blacktriangle \\ \blacktriangledown \end{smallmatrix} \right\rangle$  knob again to enter the sub-menu parameter value adjustment, and rotate the  $\text{Menu/Enter}/\left\langle \begin{smallmatrix} \blacktriangle \\ \blacktriangledown \end{smallmatrix} \right\rangle$  knob to adjust the sub-menu parameter value.

- ③. After adjusting the parameter, press the **Menu/Enter/↔** knob to confirm and exit the current parameter setting. Then rotate the **Menu/Enter/↔** knob to enter the next adjustment.
- ④. After the adjustment is completed, press the **Exit** knob to exit the submenu, and press it again to exit the main menu.

### 3. Menu Function Instructions

#### ● Assist

<b>Focus Assist</b>	<b>OFF, high, low, user</b> Under user, you can adjust Focus Level (1~10) and Focus Color (yellow, red, green, blue, white)
<b>Zebra</b>	<b>OFF, 70IRE, 80IRE, 90IRE, user</b> Under user, you can adjust Percent (0~99)
<b>Monochrome</b>	<b>OFF, gray, red, green, blue</b>
<b>False Color</b>	<b>OFF, ON</b>
<b>Timecode</b>	<b>OFF, ON</b>

#### ● Marker

<b>Nine Grid</b>	<b>OFF, ON</b>
<b>Safety Marker</b>	<b>OFF, 70%, 80%, 90%, 16:9, 16:10, 4:3, 5:4, 1.85:1, 2.35:1 user</b> Under user, you can adjust Horizontal (1%~100%), Vertical (1%~100%) and Color (yellow, cyan, purple, red, green, blue, white, black)

<b>Center Marker</b>	<b>OFF, ON</b>
<b>Marker Mat</b>	<b>OFF, 16:9, 16:10, 4:3, 1.85:1, 2.35:1</b>

● **Waves**

<b>Dock</b>	<b>left, right</b> After All Waves turning on, you can adjust its position
<b>All Waves</b>	<b>OFF, ON</b>
<b>Parade</b>	<b>OFF, RGB Parade, Y, YUV Parade</b>
<b>Vector</b>	<b>OFF, ON</b>
<b>Histogram</b>	<b>OFF, ON</b>
<b>RGB Histogram</b>	<b>OFF, ON</b>
<b>Audio Meter</b>	<b>OFF, ON</b>

● **Image**

<b>HDR</b>	<b>OFF, ON</b> After HDR turning on, you can use Gamma and Gamut for company RED, ARRI, Sony, Canon, Panasonic, Fujifilm, Bolex
<b>LUT</b>	<b>OFF, ON</b> After LUT turning on, you can select the built-in LUTs (SLOG2, SLOG3, LOGC, VLOG) Import: import custom LUTs (up to 36), copy the LUT files to USB flash drive , then insert it to USB port and confirm <b>via</b> Menu/Enter/↵ knob.
<b>Scan mode</b>	<b>Under Scan, Over Scan</b>
<b>Video Aspect</b>	<b>auto, 16:9, 16:10, 4:3, 5:4, 1.85:1, 2.35:1, user</b>

	Under user, you can adjust Width (100%~200%), Height (100%~200%)
<b>Anamorphic Mode</b>	<b>OFF, 1.25X, 1.33X, 1.5X, 2.0X, 2.0X mag</b>
<b>Zoom</b>	<b>OFF, 4X, 9X, 16X</b>
<b>Freeze</b>	<b>OFF, ON</b>
<b>Pixel to Pixel</b>	<b>OFF, ON</b>

● **Window**

<b>Display Mode</b>	<p><b>full screen, PIP, quad</b></p> <p><b>Under full screen mode</b></p> <p><b>Input:</b> HDMI, SDI1, SDI2, SDI3, SDI4</p> <p><b>Audio Out CH.:</b> 1&amp;2, 3&amp;4, 5&amp;6, 7&amp;8, 9&amp;10, 11&amp;12, 13&amp;14, 15&amp;16 (only for SDI signal)</p> <p>Under PIP mode</p> <p><b>Main Win.:</b> HDMI, SDI1, SDI2, SDI3, SDI4</p> <p><b>Sub Win.:</b> HDMI, SDI1, SDI2, SDI3, SDI4</p> <p>You can adjust Position (left-top, right-top, left-bottom, right-bottom) and Size ( small, large) for sub window.</p> <p><b>Audio Out:</b> Main Win., Sub Win.</p> <p><b>Audio Out CH.:</b> 1&amp;2, 3&amp;4, 5&amp;6, 7&amp;8, 9&amp;10, 11&amp;12, 13&amp;14, 15&amp;16 (only for SDI signal)</p> <p><b>Split:</b> OFF, ON</p> <p>After Split turning on, you can choose Color (yellow, cyan, purple, red, green, blue, white, black)</p> <p>Under quad mode (supports SDI1~4 input or SDI1~3+HDMI)</p> <p><b>Window4:</b> SDI4, HDMI (the SD4 or HDMI can be selected in</p>
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	<p>Window 4)</p> <p><b>Audio Out:</b> Window1, Window2, Window 3, Window4 for optional</p> <p><b>Audio Out CH.:</b> 1&amp;2, 3&amp;4, 5&amp;6, 7&amp;8, 9&amp;10, 11&amp;12, 13&amp;14, 15&amp;16 (only for SDI signal)</p> <p><b>Split:</b> OFF, ON</p> <p>After Split turning on, you can choose Color (yellow, cyan, purple, red, green, blue, white, black)</p>
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● External

<b>TSL UMD</b>	<p><b>OFF, ON</b></p> <p>After turning on, there are below functions</p> <p><b>Version:</b> V3.1, V4.0</p> <p><b>Baud Rate:</b> 115200, 57600, 38400, 19200</p> <p><b>Address:</b> 0~126</p> <p><b>Displays:</b> 1~4</p>
<b>GPI</b>	<b>OFF, ON</b>
<b>GPI1-GPI7</b>	<b>Tally R, Tally G, Nine Grid, Safety Marker, Center Marker, Video Aspect, Marker Mat, Anamorphic Mode, Focus Assist, Zebra, Monochrome</b>

● Shortcut

<b>F1~F4</b>	<b>Focus Assist, Histogram, Audio Meter, Parade, Vector, All Waves, False Color, Monochrome, Safety Marker,</b>
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	<p><b>Scan Mode, Video Aspect, Anamorphic Mode, Freeze, Pixel to Pixel, Zebra, Center Marker, Marker Mat, Mute, Nine Grid, Parade, Vector</b></p> <p>e.g. When in main menu “Shortcut”, press <b>Menu/Enter/◀▶</b> button to select <b>F1</b>, press <b>Menu/Enter/◀▶</b> button again to pop-up function items and press <b>Menu/Enter/◀▶</b> button to select one of them, such as “Focus Assist”, and press <b>Menu/Enter/◀▶</b> button to confirm. So when you exit main menu, you could press F1 directly on the front of panel to turn on “Focus Assist” function.</p> <p>Same setting for F2, F3, F4</p>
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● **Color**

<b>Backlight</b>	<b>1~100</b>
<b>Colortemp</b>	<b>6500K, 9300K, user</b> Under user, you can adjust the red, green, blue values (0~255)
<b>Brightness</b>	<b>0~100</b>
<b>Contrast</b>	<b>0~100</b>

● **System**

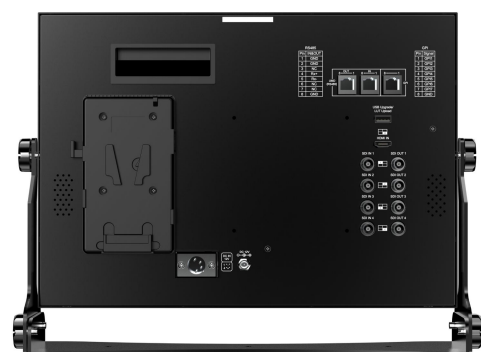
<b>Language</b>	<b>English, 中文, 日本語, Deutsch, Français, Italiano, Español, 한국, Русский</b>
<b>Transparency</b>	<b>OFF, ON</b>



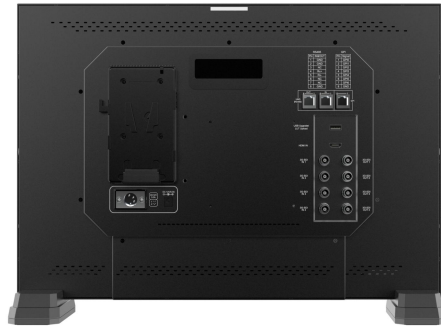
<b>OSD Duration</b>	<b>always, 5s, 10s, 15s, 20s, 25s</b>
<b>Volume</b>	<b>0~100</b>
<b>Mute</b>	<b>OFF, ON</b>
<b>Reset</b>	<p><b>CANCEL, CONFIRM</b></p> <p>Select the <b>Reset</b> option and press the <sup>Menu/Enter/◀▶</sup> knob, then choose <b>CONFIRM</b>. Each analog data will be restored to the factory default state.</p>
<b>Firmware</b>	<p><b>CANCEL, CONFIRM</b></p> <p>After copying the update file to USB flash drive, insert it into the USB port, select <b>Firmware</b> option, and press the <sup>Menu/Enter/◀▶</sup> knob and choose <b>CONFIRM</b> to update firmware</p>
<b>Setting Group</b>	<p><b>1~4</b></p> <p><b>User can set 4 groups custom menu</b></p> <p>After selecting Setting Group option and press the <sup>Menu/Enter/◀▶</sup> knob, then choose any group from 1~4 and press again <sup>Menu/Enter/◀▶</sup> knob to set menu. After setting, it will be saved automatically</p>

#### 4. Desktop Optional / Carry-on

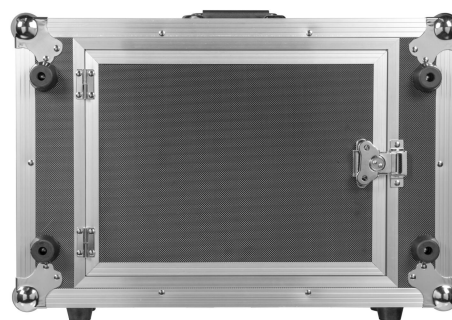
- Desktop (U-shape Bracket)



- Desktop (Stand Feet)



- Carry-on



## 5. Support Signal Formats

Signals	Signal Support Formats
<b>HDMI Input</b>	480i/576i/480p/576p 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)
<b>SDI Input &amp; Output</b>	20p (60/59.94/50/30/29/25/24/23.98) 1080i (60/59.94/50) 1080p (60/59.94/50/30/29.97/25/24/24sF/23.98/23.98sF) 2048x1080i (60/59.94/50) 2048x1080p (60/59.94/50/30/29.97/25/24/23.98)

## 6. Parameters

Panel Size	15.6"	17.3"	21.5"
<b>Resolution</b>	1920×1080 pixels		
<b>Aspect Ratio</b>	16:9		
<b>Pixel Pitch (mm)</b>	0.17925 ×0.17925	0.1989 ×0.1989	0.08265 x 0.24795
<b>Brightness</b>	200cd/m <sup>2</sup>	300cd/m <sup>2</sup>	250cd/m <sup>2</sup>
<b>Contrast</b>	800:1	700:1	1000:1
<b>Viewing Angle</b>	170°(H) 170°(V)	178°(H) 178°(V)	178°(H) 178°(V)
<b>Audio</b>	3.5mm Headphone Jack	3.5mm Headphone Jack, Speaker	3.5mm Headphone Jack, Speaker
<b>Backlight</b>	LED		
<b>Input</b>	HDMI, SDI		
<b>Output</b>	SDI		
<b>Special Function</b>	TALLY indicator		
<b>Working Temperature</b>	-10°C~50°C		

<b>Storage Temperature</b>	-20°C~60°C		
<b>Input Voltage</b>	DC 12		
<b>Power Consumption</b>	≤21W	≤22W	≤37W
<b>Unit Size (mm) (W/O Bracket/Suitcase)</b>	372L×262H×28.4 D(mm)	425L×296H×23D (mm)	511.6L×355.6H× 23.3D (mm)
<b>Unit Weight (W/O Bracket/Suitcase)</b>	1.81kgs	2.84kgs	4.27kgs

## 7. Trouble Shooting

If there is any problem when using the unit, please try following ways to inspect and solve. Please contact us if you still could not solve it or have other problems.

### Without image display

### Trouble shooting

◆ Video cable off or connect incorrectly	Check the quality of the cable, make sure the correct input interface
◆ Without video signal input	Check the signal source and output interface connect is correct or not
◆ Monitor is not be powered on	Check whether the power is connected, put the power switch to “on” position
◆ Supply voltage instability	The power adapter or battery is poor connected with battery plate
◆ self-contained power supply, polarity connect inversely	Reference "Power input way" reconnect

### Image/color display abnormal

### Trouble shooting

◆ Video cable poor contact	Change video cable, try again
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◆ Video signal interfered by external environment	Move to another environment to try again
◆ Menu color saturation adjustment closing	Enter menu to check color, or reset to factory settings
◆ Check Field set in mono or black & white	Reset Check Field, back to the color
◆ Image deformation	Reset the image aspect ratio

### Speaker without sound

### Trouble shooting

◆ Audio cable off or connection properly	Confirm connected with the corresponding input port
◆ Volume adjustment was closed	Reset the volume control and adjust to a proper position
◆ HDMI cable poor connected	Check the quality of cable, or change cable and have a try
◆ No sound after switch video signal	In VGA and DVI state, it needs to input audio signal synchronize.

#### ■ Remark:

- ★ If there are still other problems, please contact with our related technical persons.
- ★ As we are improving our products features, so if there are changes without prior notice.