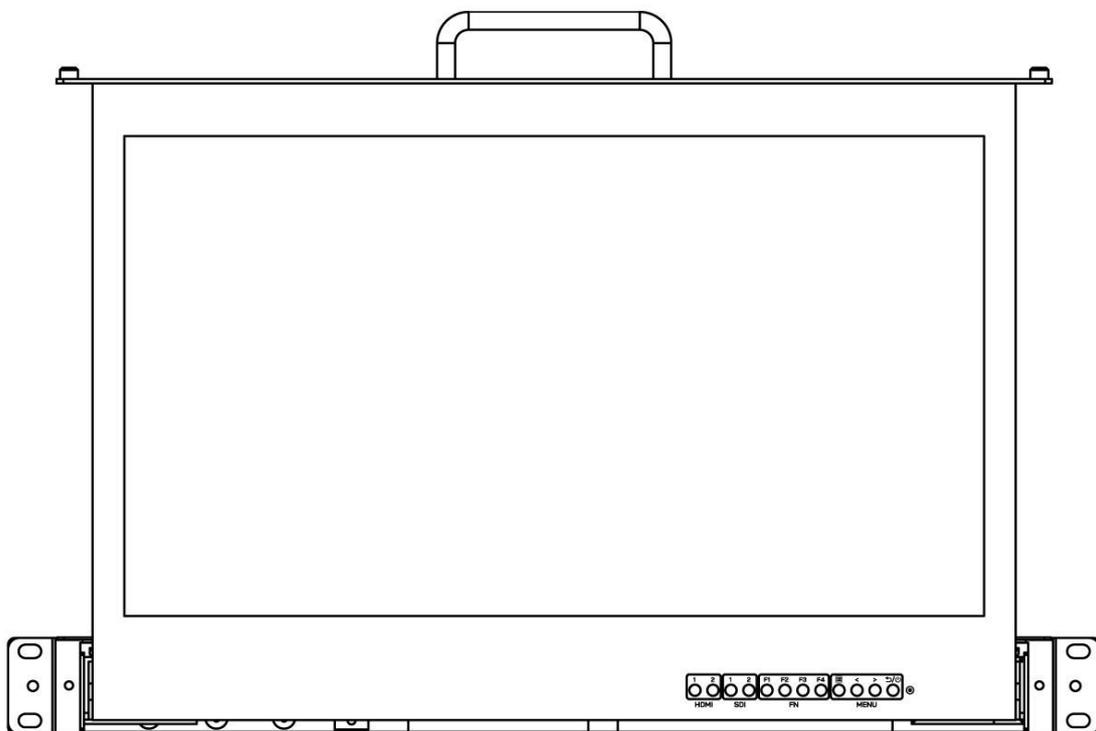# 17.3" 1RU FHD Pull-out Rackmount Monitor

User Manual

Foreword

Thank you for purchasing our pull-out rackmount monitor. Please read this manual carefully before use the product and comply with the safety cautions. Wish you a pleasant experience!

Cautions

- ● Please avoid the heavy impact and drop onto the ground when move the product.
- ● Please use the qualified adapter or battery if need.
- ● To avoid damaging the product, please do not take apart or repair the unit by yourself without the adjustable components in the unit.
- ● To maintain the LCD screen better, please notice the ways as below to avoid the scratch, the discoloration and the other damages.
  1. Please refrain from using the hard objects to hit the screen.
  2. Please do not force to wipe the screen.
  3. Please do not use the chemical solutions to clean the screen.
  4. Please do not spray any detergent on the screen.
  5. Please do not write on the screen directly.
  6. Please do not stick on the screen.
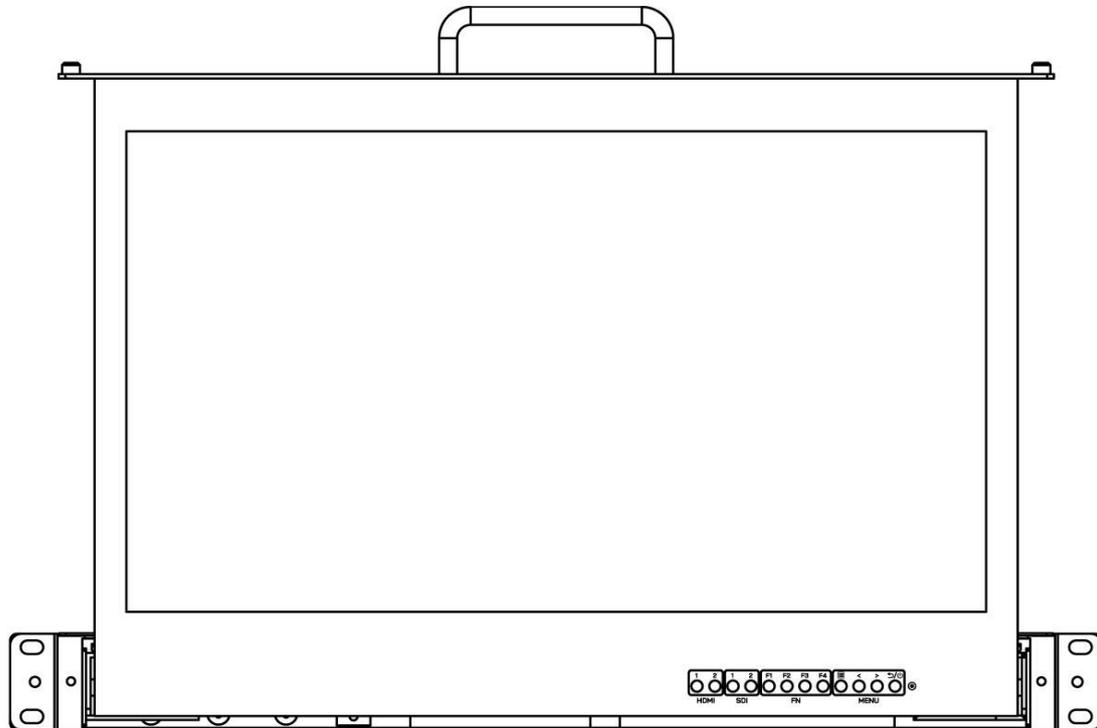 7. Please simply wipe with a clean soft cloth and make sure no water on the screen.

Key Features

◆ 1RU pull-out rackmount design with full metal housing, ideal for broadcast, on-site monitoring and live broadcast van

◆ 17.3" FHD IPS, view details with confidence

◆ Multiple display mode(1P, PIP, 4P)

◆ Custom 3D-LUT, preview film look

◆ HDR monitoring, what you see is what you get

◆ With Waveform, Vector scope, RGB Histogram, Focus Assist, Monochrome etc. functions, can help you accurately exposure and focus every shot

◆ Supports GPI control, dynamic UMD

◆ In single display mode, SDI audio supports 16 channels

◆ 4 Menu user for quick switch
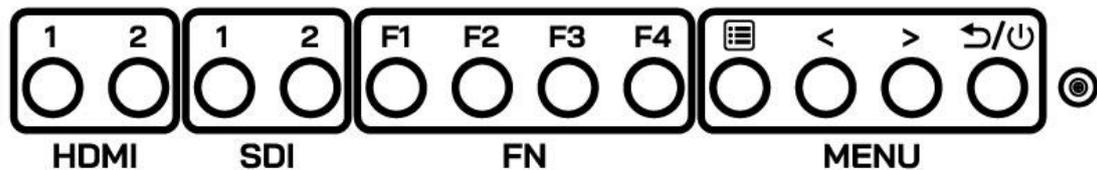◆ Headphone stereo output is convenient for monitoring

CONTENTS

1. Product Description

1.1 Front Panel

● **Button Instruction**

Button	Function when OSD is not displayed	Function when OSD is displayed
◎	Power/Signal indicator light	
�/⏻	Power ON/OFF	Return/Exit menu
<	Decrease the volume/backlight (enter menu **Shortcut--Up/ Down** to set as volume or backlight)	Previous menu item selection; Decrease or adjust value of selected parameter

>	Increase the volume/backlight (enter menu **Shortcut--Up/ Down** to set as volume or backlight)	Next menu item selection; Increase or adjust value of selected parameter
⊞	Display OSD main menu	Confirm Key
FN	Custom function button F1~F4	
SDI	Signal input selection for SDI 1 & SDI 2	
HDMI	Signal input selection for HMDI1 & HDMI 2	

2. Rear Panel
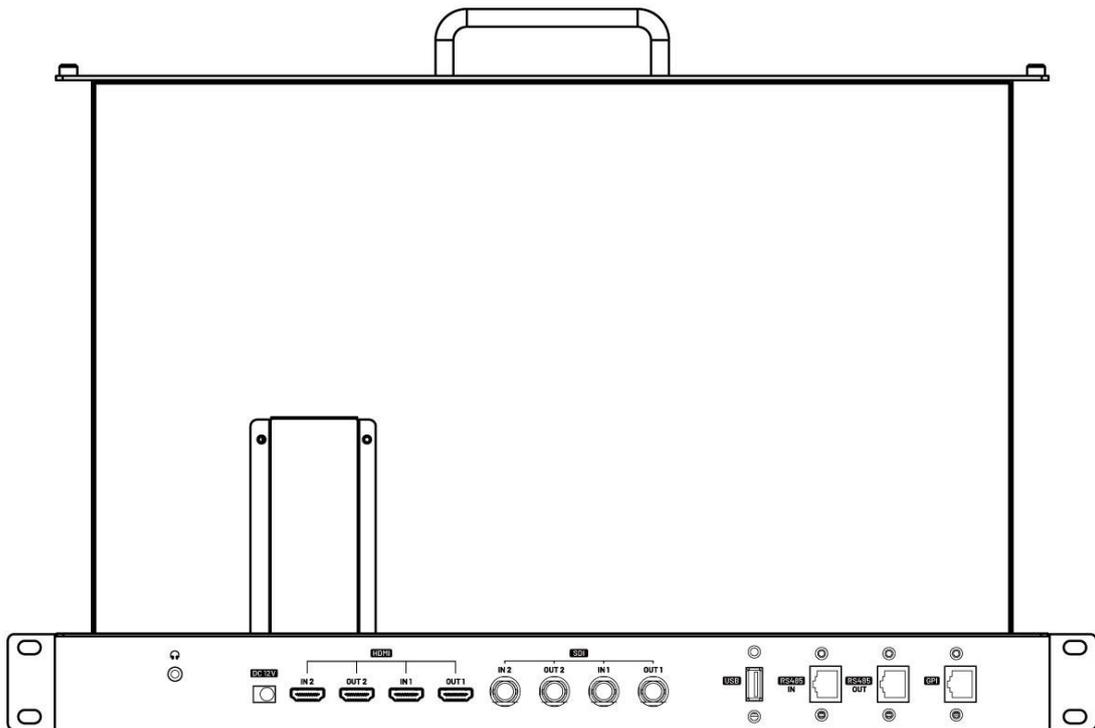
● Interfaces Instruction
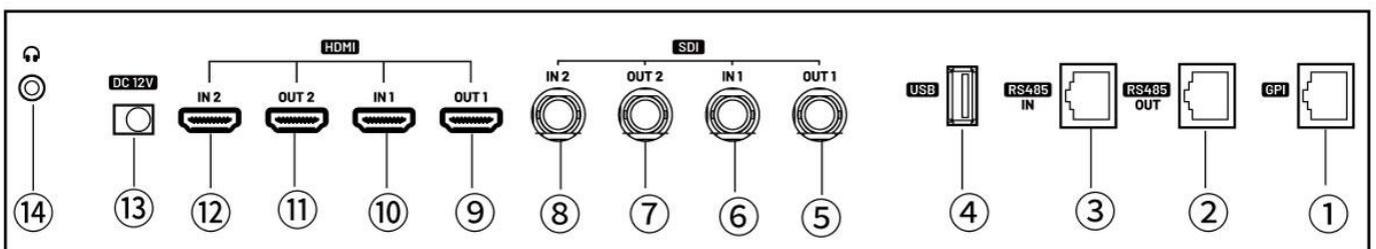
① GPI control interface　　⑧ SDI Input 2

② RS485 signal output　　⑨ HDMI 1.3 Output

③ RS485 signal input　　⑩ HDMI 1.3 Input

④ USB upgrade/LUT import　⑪ HDMI 2.0 Output

⑤ SDI Output 1　　⑫ HDMI 2.0 Input

⑥ SDI Input 1　　⑬ DC 12V Power Input

⑦ SDI Output 2　　⑭ 3.5mm Headphone Jack

1.3 1RU Drawer Rack Design

The all-metal 1RU drawer rack design not only can save the space of rack greatly with a 17.3 inch monitor, but also viewed from different angles when monitoring.

Step:

①. Loosen the locking screws on both sides of the monitor frame counterclockwise.

②. Grasp the handle of the monitor and slowly pull it out. Never use excessive force to tear the machine.

③. After the monitor is fully extracted, turn it up to the proper angle.

1.4 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
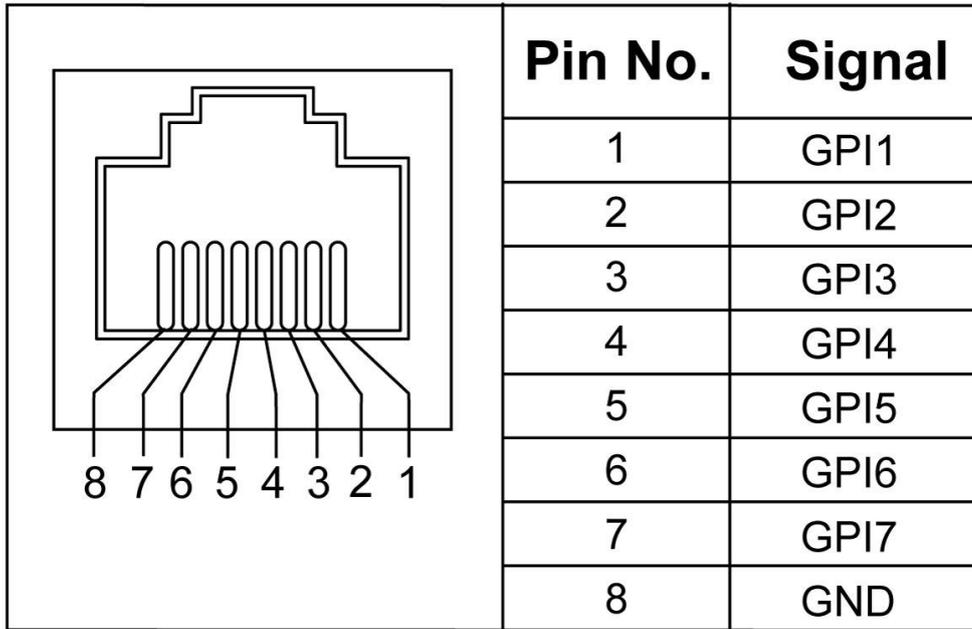
GPI Setting Options: Tally R, Tally G, Nine Grid, Safety Marker, Center Marker, Video Aspect, Marker Mat, Anamorphic Mode, Focus Assist, Zebra, Monochrome

(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
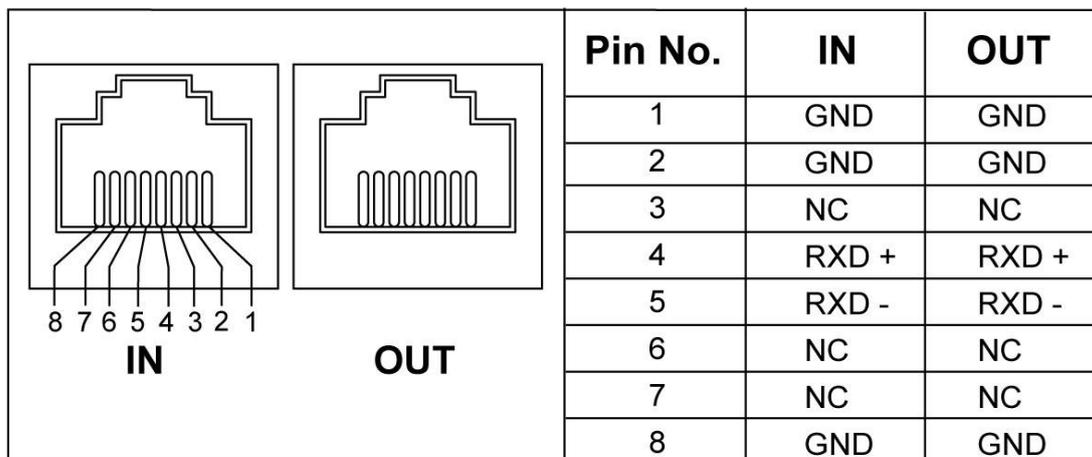
1.5 Power Supply

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

You can use the standard DC 12V/3A power adapter or select

DC power plug 5.5*2.1mm supply and the polarity is as image

below:

2. Menu Operation Instruction

After correctly connect to the power supply, the indicator will

turn Red, and the monitor will turning on automatically. The

indicator will turn Green after the signal input.

Main Menu	Submenu		Parameter Values
Assist	Focus Assist	OFF	OFF
Marker	Zebra	OFF	high
Waves	Monochrome	OFF	low
Image	False Color	OFF	user
Window	Timecode	OFF	
External			
Shortcut			
Color			
System			

Steps:

①. Press ▦ key to enter the main menu, then press "<" or ">"

key to select the main menu option.

②. Press ▦ key to enter the sub-menu after selected, press "<"

or ">" key to select the sub-menu option. After selection, press

▦ key to enter the parameter value adjustment, and press "<"

or ">" key to select the function or adjust the parameter value,

press ▦ key to confirm after selection.

③. Press ↩/⏻ to return or exit menu

3. Menu Function Instructions

● **Assist**

Focus Assist	**OFF, high, low, user** Under user, you can adjust Focus Level (1~10) and Focus Color (yellow, red, green, blue, white) It highlights the areas that are in focus so you are able to quickly focus the camera and not miss crucial shots.
Zebra	**OFF, 70IRE, 80IRE, 90IRE, user** Under user, you can adjust Percent (0~99) Areas of the image over a certain threshold are filled with a striped pattern to dramatically highlight areas where too much light is falling on the image sensor.
Monochrome	**OFF, gray, red, green, blue**

	When enabled, hue and saturation adjusted quickly and accurately
False Color	**OFF, ON** An image that depicts an object in colors that differ from those a photograph (a true color image) would show.
Timecode (only for SDI)	**OFF, ON** Same as camera time code consists of four groups of numbers, which respectively represent hours, minutes, seconds and frames. Through the time code, you can quickly find a specific frame in the video, so that in the later multi-camera editing, you can use the time code function to quickly align the video materials shot at different camera positions at the same time, saving post-production time.

● **Marker**

Nine Grid	**OFF, ON** The area of the picture can be divided into 9 equal grids.
Safety Marker	**OFF, 70%, 80%, 90%, 16:9, 16:10, 4:3, 5:4, 1.85:1, 2.35:1 user** Under user, you can adjust Horizontal (1%~100%), Vertical (1%~100%) and Color (yellow, cyan, purple, red, green, blue, white, black)
Center Marker	**OFF, ON**
Marker Mat	**OFF, 16:9, 16:10, 4:3, 1.85:1, 2.35:1**

● **Waves**

Dock	**left, right** After All Waves turning on, you can adjust its position to left

	or right
All Waves	**OFF, ON** After turning on, waveform, vector, histogram and embedded audio will be shown.
Parade	**OFF, RGB Parade, Y, YUV Parade** This essential feature assists with the calibration of professional video cameras. It shows the overall brightness of the image assisting the video professional in correcting exposure. The waveform feature also checks the evenness of the lighting when lighting a chromakey or background.
Vector	**OFF, ON** Shows how saturated the image is and where the pixels in the image land on the color spectrum.
Histogram	**OFF, ON** A quantitative tool to check the picture brightness, display different color for different brightness
RGB Histogram	**OFF, ON** It can display the graphic of color tone distribution, can intuitively display the exposure status of the image, and display overlapping histograms in red, green, and blue channels
Audio Meter	**OFF, ON** After turning on, under HDMI signal display 2 channels; Under SDI signal display 16 channels for full screen, display 4 channels for multi-view mode

● **Image**

HDR	**OFF, Camera、HLG 709、HLG P3、HLG 2020**

	After select **Camera**, you can use Gamma and Gamut for company RED, ARRI, Sony, Canon, Panasonic, Fujifilm, Bolex HDR can provide more dynamic range and the details of image, it is better to reflect the visual effects in the real environment.
LUT	**OFF, ON** LUT is a table for quickly looking up and output specific color data. By loading different 3D-LUT tables, it can quickly recombine color tone to form different color styles. After LUT turning on, you can select the built-in LUTs (SLOG2, SLOG3, LOGC, VLOG)
Scan mode	**Under Scan, Over Scan**
Video Aspect	**auto, 16:9, 16:10, 4:3, 5:4, 1.85:1, 2.35:1, user** Under user, you can adjust Width (100%~200%), Height (100%~200%) Provides a wide variety of aspect ratio to match different camera anamorphic lenses.
Anamorphic Mode	**OFF, 1.25X, 1.33X, 1.5X, 2.0X, 2.0X mag** Allows you to use anamorphic lenses or adapters and see the image unsqueezed, even if your camera does not de-squeeze in camera.
Zoom	**OFF, 4X, 9X, 16X** It is HD signal in any part, an amplification for high quality close-up
Pixel to Pixel	**OFF, ON** Enable the filmmaker to check the image from the 1:1 signal source without scaling.This feature is essential for capturing optimum detail.
Image Flip	**OFF, H, V, H&V**
Freeze	**OFF, ON**

● Window

Display Mode	**full screen, PIP, quad**
	Under full screen mode
	Input: HDMI1、HDMI 2、SDI1、SDI2
	Audio Out CH.: 1&2, 3&4, 5&6, 7&8, 9&10, 11&12, 13&14, 15&16 (only for SDI signal)
	Under PIP mode
	Main Win.: HDMI1、HDMI 2、SDI1、SDI2
	Sub Win.: HDMI1、HDMI 2、SDI1、SDI2
	You can adjust Position (left-top, right-top, left-bottom, right-bottom) and Size (small, large) for sub window.
	Audio Out: Main Win., Sub Win.
	Audio Out CH.: 1&2, 3&4, 5&6, 7&8, 9&10, 11&12, 13&14, 15&16 (only for SDI signal)
	Split: OFF, ON
	After Split turning on, you can choose Color (yellow, cyan, purple, red, green, blue, white, black)
	Under quad mode
	Audio Out: Window1, Window2, Window 3, Window4
	Audio Out CH.: 1&2, 3&4, 5&6, 7&8, 9&10, 11&12, 13&14, 15&16 (only for SDI signal)
	Split: OFF, ON
	After Split turning on, you can choose Color (yellow, cyan, purple, red, green, blue, white, black)

● External

TSL UMD	OFF, ON After turning on, there are below functions **Version:** V3.1, V4.0 (supports V3.1, V4.0 for RS485) **Baud Rate: 115200, 57600, 38400, 19200** **Address: 0~126** **Displays: 1~4**
GPI	**OFF, ON**
GPI1-GPI7	**Tally R, Tally G, Nine Grid, Safety Marker, Center Marker, Video Aspect, Marker Mat, Anamorphic Mode, Focus Assist, Zebra, Monochrome**

● Shortcut

UP/Down	Backlight, Volume
F1~F4	**Focus Assist, Histogram, Audio Meter, Parade, Vector, All Waves, False Color, Monochrome, Safety Marker, Scan Mode, Video Aspect, Anamorphic Mode, Freeze, Pixel to Pixel, Zebra, Center Marker, Marker Mat, Mute, Nine Grid, Image flip, quad** **How to set the Shortcut buttons F1~F4 on front of panel?** e.g. Press ▦ key to enter main menu, then press "<" or ">" key select "Shortcut", press ▦ key to confirm and <" or ">" key to select F1, press ▦ key to confirm to pop-up function items and select one of them, such as "Focus

	Assist", and press ▦ key to confirm. So when you exit main menu, you could press F1 directly on the front of panel to turn on "Focus Assist" function. Same setting for F2~F4

● Color

Backlight	**1~100** Adjust the screen brightness
Colortemp	**6500K, 9300K, user** Under user, you can adjust the red, green, blue values (0~255)
Brightness	**0~100** Adjust the image brightness
Contrast	**0~100** Adjustment of the ratio between the brightest and darkest parts of the image . When adjusting, pay attention to the sense of hierarchy in the image. If the proportion is too large or too small, it can cause the image to lose its colorful appearance.
Sharpness	**0~100** An index that reflects the clarity of image planes and the sharpness of image edges

● System

Language	**English, 中文，日本語，Deutsch, Français, Italiano, Español, 한국, Русский**

Transparency	OFF, ON
OSD Duration	always, 5s, 10s, 15s, 20s, 25s
Volume	0~100
Mute	OFF, ON
Reset	CANCEL, CONFIRM Each analog data will be restored to the factory default state after confirmed to reset.
Firmware	CANCEL, CONFIRM After copying the update file to USB flash drive(FAT32 format), insert it into the USB port, enter the menu--System --Firmware--Confirm to upgrading. Note: Please do not disconnect the power during the upgrade period. After the upgrade, please manually reboot the monitor and check if it is the latest version.
Setting Group	1~4 User can set 4 groups custom menu Choose any group from1~4 and then set the menu. After setting, it will be saved automatically, you can call it out quickly next time.

4. How to Import Custom LUT

4.1 USB flash drive format

　　Supports FAT32

4.2 Max Files Limit Maximum 36 Lut files

4.3 File requirements

- The LUT file format suffix should be .cube

- Single file not exceeded to 7.9Mb

- Support LUT-3D-Size 16,17,32,33,64,65

Remark: LUT file name must be English or Arabic numerals

4.4 Steps for loading

4.4.1 Make sure the USB flash drive correctly insert

4.4.2 Enter main menu **Image--LUT**-- **Import -- Confirm** to load

the monitor will auto detect the USB flash drive

If there is valid lut file in USB flash drive, the monitor will load LUT files and show "[n] name. The [n] shows the quantity number. The "name" should in LUT files' name. If load successful, the screen will show "complete[n]". [n] Stands for the quantity number for LUT files should under 36.

PS: How to clear up the imported LUTs?

Insert a empty USB flash drive to the monitor, enter main menu **Image--LUT**-- **Import -- Confirm,** the imported LUTs will be clear up.

4. Technical Parameters

Panel Size	17.3" IPS
Resolution	1920x1080 pixels
Dot Pitch	198.9(H)×198.9(V) um
Aspect Ratio	16:9
Color Display	16.7M (8-bit)
Color Gamut	72% NTSC
Brightness	480cd/m²
Contrast	1100:1
Viewing Angle	85°/85°(L/R) 85°/85°(U/D)

Backlight	LED
Response Time	Tr + Tf=16ms
Input	3G-SDI *2, HDMI 1 1.3, HDMI 2 2.0, RS485, USB
output	3G-SDI *2, HDMI 1 1.3, HDMI 2 2.0, RS485
Control Interface	GPI
Audio	3.5mm Stereo Headphone
SDI Support Format	720p (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)
HDMI 2.0 Support Format	480i/576i/480p/576p 720p(60/59.94/50/30/29/25/24/23.98） 1080i(60/59.94/50） 1080p(60/59.94/50/30/29.97/25/24/23.98) 3840x2160p (60/50/30/29.97/25/24/23.98) 4096×2160p (60/50/30/29.97/25/24/23.98)
HDMI 1.3 Support Format	480i/576i/480p/576p 720p(60/59.94/50/30/29/25/24/23.98） 1080i(60/59.94/50） 1080p(60/59.94/50/30/29.97/25/24/23.98)
Input Voltage	DC12~24V
Power Consumption	≦26W
Install Way	Rack-mount
Working Temperature	0℃～50℃
Storage Temperature	-20℃～60℃
Unit Size	485Lx508.5Hx43.5D (mm)
Unit Weight	7.7kg

5. Trouble Shooting

5.1 Only black and white or monochrome picture

① please check saturation, brightness & contrast adjustment.

② Please check "Check Field" is in black, white or monochrome
   image or other condition.

5.2 NO Image after put on the power

① Check if signal cable connecting is in good condition, and if
   monitor is synchronized with the input signal.

② Check signal cable connecting, and make sure to use the
   standard adapter to connect the monitor.

5.3 No sound

① Check if Volume control does not open, try to increase the
   volume.

② Check the signal input source is normal or not.

■ **Remarks:** If there are still other problems, please contact with our
   related technologists.

★As we are improving product features and product performance,
   so if there is any change on the specification without prior notice.