

21.5" 3DLUT Broadcast Monitor



User Manual

Product Overview

Thank you for using our broadcast monitor. This monitor adopts digital signal processing circuit and professional LCD screen, which makes it low power consumption, stable performance etc. It also has strong compatibility, adjustable color temperature control.

The monitor supports dynamic UMD, supports TSL and IMAGE VIDEO protocols, with custom 3D LUT, focus assist, embedded audio, histogram, false colors, over exposure, time code, picture-in-picture, anamorphic mode, pixel to pixel, center marker, safety marker, image freeze and other functions.

The monitor is equipped with 3G-SDI, HDMI2.0, HDMI1.4, RS485, GPI, DP (DisplayPort) to meet different user needs.

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

CAUTION

1. Please use the adapter in the accessory, and use the qualified battery if need.
2. Please do NOT expose this product directly in the sunlight, heat, and humid conditions.
3. Please keeps 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. To avoid damaging the product, please do not take apart or repair the unit by yourself without adjustable component in the unit.

Product Feature

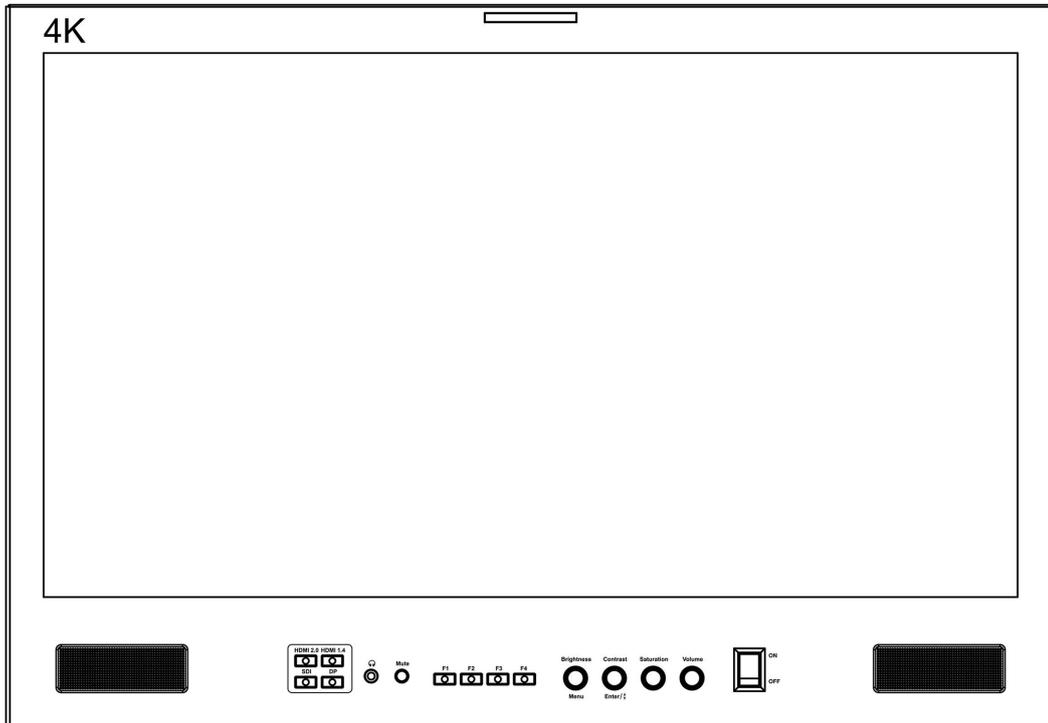
- 21.5" LCD, 1920x1080, H/V 178° viewing angle
- 3G-SDI, HDMI2.0, HDMI1.4 monitoring
- User 3DLUTs upload via USB
- Up to 16-ch embedded audio meters
- Support dynamic UMD, TSL and IMAGE VIDEO protocols
GPI control
- Histogram, focus assist, false colors, over exposure, time code, picture in picture, over scan, anamorphic mode, image zoom, pixel to pixel, center marker, safety marker, check field, image freeze, adjustable Gamma selection etc.
- Support LED TALLY
- Selectable color temperature presets
- Panel buttons F function custom settings
- Front panel stereo earphone output, built-in speaker

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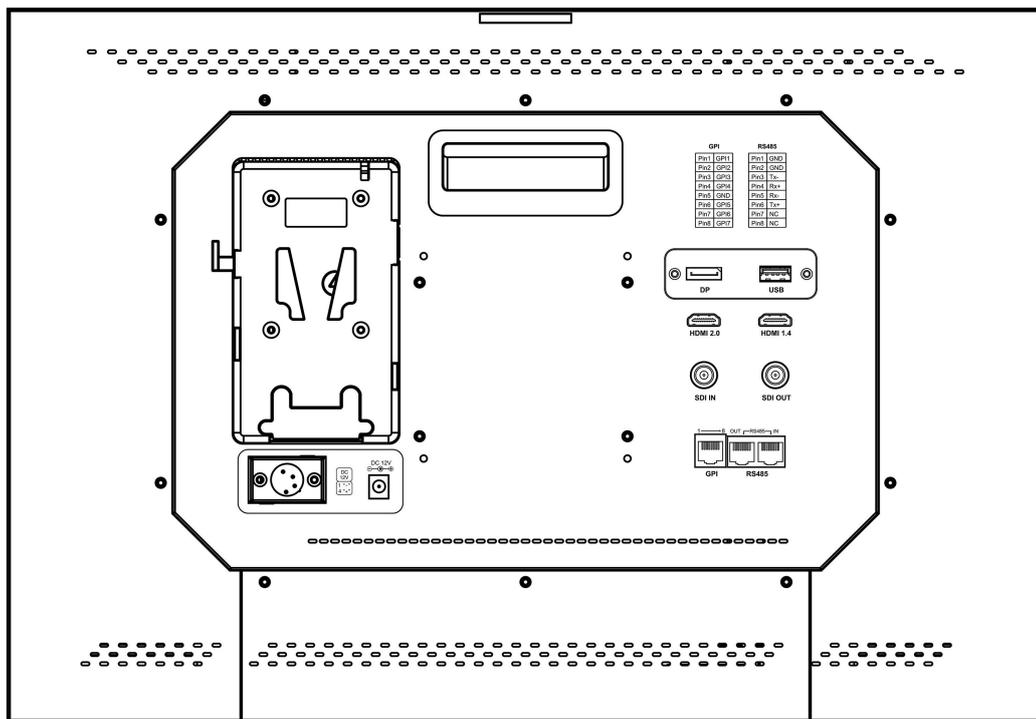
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1. Product Description

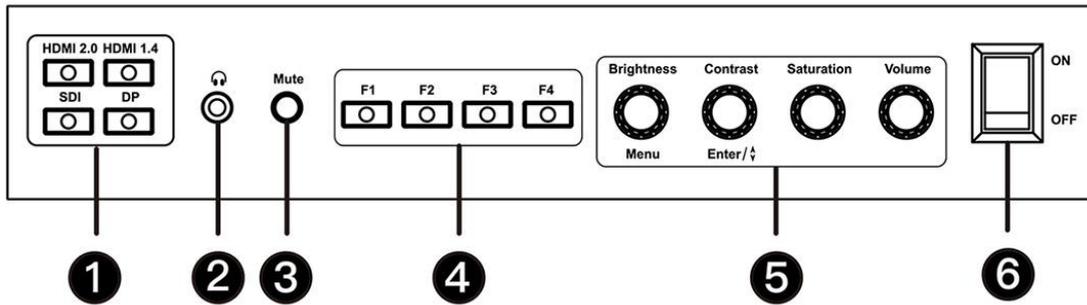
1.1 Front Panel



1.2 Rear Panel



1.3 Panel Button Instruction



❶ Input Selection Button

HDMI2.0, HDMI1.4, SDI and DP signal selection.

❷ Stereo Headphone Jack

❸ MUTE Button

❹ User-Definable Function Buttons

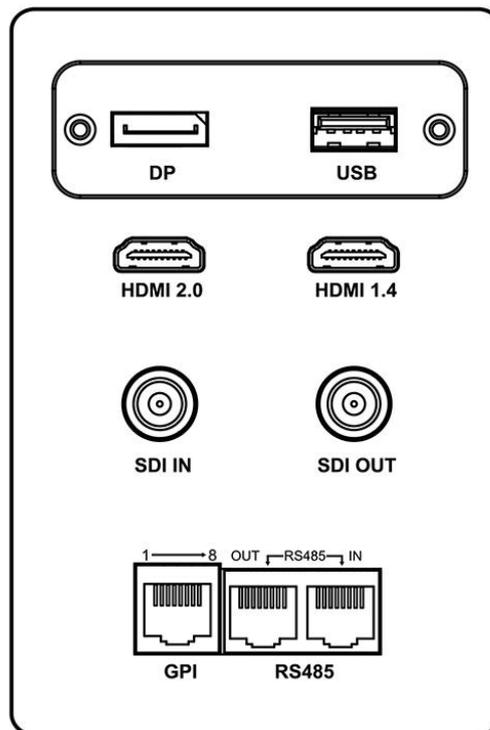
You can enter the **Function Key** bar to set the functions.

❺ Multifunctional Knobs

Knobs	Function when OSD is not displayed	Function when OSD is displayed
Brightness Menu	Rotate it to adjust Backlight (Achieved with the System's Bright/Contrast/Saturation unlocked). Press it to bring up the main menu.	Press it to exit the current menu or exit the main menu.
Contrast Enter/↕	Rotate it to adjust Contrast (Achieved with the System's Bright/Contrast/Saturation unlocked).	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.
Saturation	Rotate it to adjust Saturation (Achieved with the System's Bright/Contrast/Saturation unlocked)..	/
Volume	Rotate it to adjust Volume.	/

❻ Power ON/ OFF Button

1.4 Rear Interfaces Instruction



DP: DisplayPort input

USB: For importing 3DLUT and firmware upgrade

HDMI2.0: HDMI signal input, up to 4K@60Hz

HDMI1.4: HDMI signal input, up to 4K@30Hz

SDI IN: SDI signal input

SDI OUT: SDI signal output

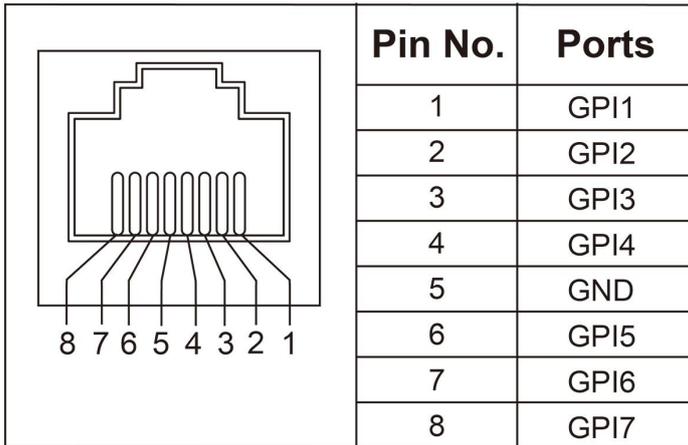
GPI: GPI control interface

RS485 IN/OUT: RS485 signal input/output

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.



GPI Setting Options: Red Tally, Green Tally, HDMI2.0, HDMI1.4, SDI, DP, Center Marker, safety Marker, Ratio Marker, Check Field, Image Freeze, ZoomNx Switch, False Color, Focus Assist, Over Exposure, Histogram, Audio Meters, Time Code

Color Management	GPI1	Red Tally
Video & Audio	GPI2	Green Tally
Display	GPI3	HDMI2.0
Multiwindow	GPI4	HDMI1.4
OSD	GPI5	SDI
IMD	GPI6	DP
GPI	GPI7	Image Freeze
Function		
Function Key		
System		

(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	TXD -	RXD -
4	RXD +	TXD +
5	RXD -	TXD -
6	TXD +	RXD +
7	NC	NC
8	NC	NC

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.

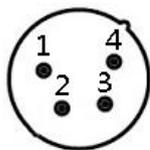
Please select DC power plug 5.5*2.1mm supply and the polarity is



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
HDMI2.0		Resolution: 3840x2160p@30Hz
Color Management	Center Marker	Off
Video & Audio	Safety Makrer	Off
Display	Ratio Marker	Off
Multiwindow	Ratio Marker Trans.	1
OSD	Marker Color	Red
IMD	Mark Width	3
GPI	Check Field	Off
Function	Image Freeze	Off
Function Key	Focus Assist	Off
System	Peaking Color	Red
Window1: Input Source:HDMI2.0 Resolution:3840x2160p@30Hz		Window2: Input Source: Resolution:

Steps:

- ①. Press the **MENU** knob to bring up the main menu. Then rotate the **Enter/↕** knob to select the main menu option.
- ②. Press the **Enter/↕** knob to enter the submenu, then rotate the **Enter/↕** knob to select the sub-menu option. After selection, press the **Enter/↕** knob again to enter the sub-menu parameter value adjustment, and rotate the **Enter/↕** knob to adjust the sub-menu parameter value.
- ③. After adjusting the parameter, press the **Enter/↕** knob to confirm

and exit the current parameter setting. Then rotate the **Enter/↕** knob to enter the next adjustment.

- ④. After the adjustment is completed, press the **MENU** knob to exit the submenu, and press it again to exit the main menu.

3. Menu Function Instructions

● Color Management

Color Adjust	Off, On After the Color Adjust is turned on, you can adjust the Log Mode, User 3DLUT, Gama, Color Temp., Contrast, and Saturation.
Color Modes	Rec709 (This monitor Color Modes is only Rec709)
Log Mode	LUT215_Rec709, C-log Standard, C-log Full, S-log2 to Rec709, S-log2 to LC709, S-log2 to LC709TypeA, S-log3 to Rec709, S-log3 to LC709, S-log3 to LC709TypeA, BMD-log to Rec709, BMD-4Klog to Rec709, Off
User 3DLUT	After importing a 3DLUT file through the System's (USB) 3DLut Table Upgrade option, then go to the User 3DLUT option and rotate the Enter/↕ knob to select the file.
Gama	1.8, 2, 2.2, 2.4, 2.6, SRGB, ITUBT.1886
Color Temp.	5700K, 6500K, 9300K, User Under User , you can adjust the red, green and blue values.
Contrast	0~100
Saturation	0~100

● Video & Audio

Input Color Format	Auto, RGB, YUV 4:2:2, YUV 4:4:4, YUV 4:2:0
Range Extension	0-255(PC), 16-235(Video), Auto If the input is YUV, you can set 16-235 to increase the sense of image layering.
Sharpness	0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
SDI Audio Out	pr1, pr2, pr3, pr4, pr5, pr6, pr7, pr8 Channel settings for SDI sound output (speaker or headphone).
SDI-Level B	Link A, Link B

● Display

Aspect Ratio	Auto, 4:3, 16:9, Full Screen
Backlight	0~100
Over Scan	Off, On
Anamorphic	Off, 1.3X, 2.0X, 2.0Xmag, Custom Under Custom , you can customize the anamorphic adjustment: 1.20 ~ 2.00.
ZoomNx Switch	Off, On The ZoomNx function can only be implemented after the ZoomNx Switch is turned on.
ZoomNx	Off, x4, PixelP2P, User1, User2 Under User 1 and User 2 , you can customize the zoom adjustment, L:(0~100) R:(0~100) U:(0~100) D:(0~100) L and R are adjusted simultaneously; U and D can be adjusted separately.

● Multiwindow

Multi-window Modes	Off, PIP Mode, PBP Mode 1, PBP Mode2, Triple Mode, Quad Mode Note: Triple and Quad Modes support up to 1920x1080 60Hz, PIP and PBP Modes support up to 4K 60Hz.
Window Select	Win 1, Win2, Win3, Win4 PIP and PBP Modes have two window options; Triple Mode has three window options; Quad Mode has four window options.
PIP Size	Medium, Small, Large, Huge (Adjust in PIP Mode)
PIP Pos.H	0~100 (Adjust in PIP Mode)
PIP Pos.V	0~100 (Adjust in PIP Mode)
Window Rotation	None, 90° , 270° , H-Mirror, V-Mirror, 180°

● OSD

Language	English, Español, Português, Français, Nederlands, Deutsch, 日本語, 简体中文, 繁體中文
Menu H Pos.	0~100
Menu V Pos.	0~100
Menu Trans.	0, 20, 40, 60, 80, 100
Menu Time	Off, 15s, 30s, 60s
Menu Rotation	0, 90° , 180° , 270°

● **IMD**

IMD Display	Off, On
IMD Color	Red, Green, Blue, Yellow, White, Gray IMD text color selection.
IMD Character	IMD dynamic source name text editing, up to 16 characters.
IMD Protocol	Local, TSL V3.1/TSL V4.0, Image Video
IMD ADD.	0~126 Address the IMD address.
IMD Name	Used under the Image Video protocol, it can edit up to 16 characters.
Baud Rate	115200, 57600, 38400, 19200, 9600, 4800, 2400
OSD TALLY	Off, RG, GR, RGY
IMD TALLY	T1, T2, T1T2, T2T1, T1-, T2-, T1T2-, T2T1- Use under the Image Video protocol, please refer to the Image Video protocol for details.
Tally Source	GPI, TSL, Image Video

● **GPI**

GPI1~GPI6	Red Tally, Green Tally, HDMI2.0, HDMI1.4, SDI, DP, Center Marker, Safety Marker, Ratio Marker, Check Field, Image Freeze, ZoomNx Switch, False Color, Focus Assist, Over Exposure, Histogram, Audio Meters, Time Code
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● **Function**

Center Marker	Off, On
Safety Marker	Off, 80%, 85%, 90%, 93%, 96%
Ratio Marker	Off, 4:3, 13:9, 14:9, 15:9, 16:9, 1.85:1, 2.35:1, 1:1
Ratio Marker Trans.	0~6
Marker Color	Red, Green, Blue, Black, White
Mark Width	1~7
Check Field	Off, Colorless, Red, Green, Blue
Image Freeze	Off, On
Focus Assist	Off, On When the Focus Assist function is turned on, you can select the Peaking Color according to the subject.
Peaking Color	Red, Green, Blue
Over Exposure	Off, On After the Over Exposure function is turned on, the Exposure IRE value can be adjusted.
Exposure IRE	50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 100%, 105%
False Color	Off, On
Histogram	Off, On
Audio Meters	Off, pr1 (HDMI) Off, pr1, gp1, gp2, gp3, gp4, gp1-2, gp1-4 (SDI)
Time Code	Off, LTC, VITC

● **Function Key**

F1~F4	Center Marker, Safety Marker, Ratio Marker, Check Field, Image Freeze, ZoomNx Switch, False Color, Focus Assist, Over Exposure, Histogram, Audio Meters Time Code
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● **System**

Bright/Contrast/ Saturation	Unlock, Lock After the Bright/Contrast/Saturation is locked, the shortcut keys of the Brightness, Contrast, and Saturation knobs on the panel are locked and cannot be adjusted.
Voltage Display	Off, On
Keypad Led	Off, On (Panel key lights is on by default)
(USB) 3DLut Table Upgrade	After copying the 3D LUT file to a USB flash drive, insert it into the USB port and support 17x17x17, 33x33x33, 65x65x65 .cube formats. After selecting the (USB) 3DLut Table Upgrade option, press the Enter/▲ knob to import the 3D LUT file. After importing, you can rotate Enter/▲ the knob in the User 3DLUT option of Color Management to select.
(USB) Software Upgrade	After copying the update file to the USB flash drive, insert it into the USB port, select the (USB) Software Upgrade option, and press the Enter/▲ knob to update.
Reset	Select the Reset option and press the Enter/▲ knob. Each analog data will be restored to the factory default state.

4. Support Signal Formats

Video Signals	Support Signal Formats
SDI	480i/576i 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)
HDMI 2.0/ DP	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) 3840×2160p (60/50/30/25/24) 4096×2160p (60/50/30/25/24)
HDMI 1.4	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) 3840×2160p (30/25/24), 4096×2160p (24)

5. Technical Parameters

Panel Size	21.5"
Resolution	1920×1080 pixels
Dot Pitch	248.25×248.25 um
Aspect Ratio	16:9
Brightness	250cd/m ²
Contrast	3000:1
Viewing Angle	89°/89°(L/R) 89°/89°(U/D)

Backlight	LED
Inputs	3G-SDI, HDMI2.0, HDMI1.4, RS485, GPI, DP, USB
Outputs	3G-SDI, RS485
Audio	Headphone, Speaker
Input Voltage	DC 9~24V
Power Consumption	≤27W
Working Temperature	-10°C ~ 50°C
Storage Temperature	-20°C ~ 60°C
Unit Size	511.6Lx355.6Hx36D mm
Unit Weight	4.4kg

6. 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 cannot 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 corrected or not
◆ Monitor cannot 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
◆ Video signal interfered by external environment	Move to another environment to try again
◆ Video input signal amplitude too low	Check signal source video output, or change signal source and have a try.
◆ 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 ratio

◆ Speaker without sound	Trouble shooting
◆ Volume adjustment was closed	Reset the volume control and adjust to a proper position
◆ SDI, HDMI cable poor connected	Check the quality of cable, or change cable and have a try

■ **Remark:**

★ If there are still other problems, please contact with our related technical persons.

★ If there are changes without prior notice as we constantly strive to improve product features and product performance.