21.5” Carry-on Broadcast Monitor

High Brightness 1000nit



User Manual

Foreword

Thank you for purchasing our high bright carry-on broadcast monitor. Please read this manual carefully before using the unit. Have a great experience!

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

- Full HD panel, viewing details with confidence
- High bright 1000nit, visible in sunlight
- Portable protective case, easy to handle various tasks
- Intuitive buttons operation, 4 custom function shortcut buttons to improve work efficient

- Support 4K@60 HDMI Input and Output
- Under HDMI signal the audio meter level can be display max 8 channels; under SDI signal can be display max.16 channels
- HDR monitoring, what you see is what you get
- Custom 3D-LUT, preview film look
- With Waveform, Histogram, Focus Assist, Monochrome etc. functions, help you accurately exposure and focus every shot
- Dual speakers
- Built-in front and rear Tally light, enhance team cooperation
- Multiple power supply ways (DC IN, XLR , V-mount battery plate)

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1. Portable Protective Case

1.1. Rotate the butterfly lock to easy disassembly the front or rear cover



1.2. The top, left and right side of the protective case are with 1/4, 3/8 screw thread can be extend to mount wireless transmission or other device

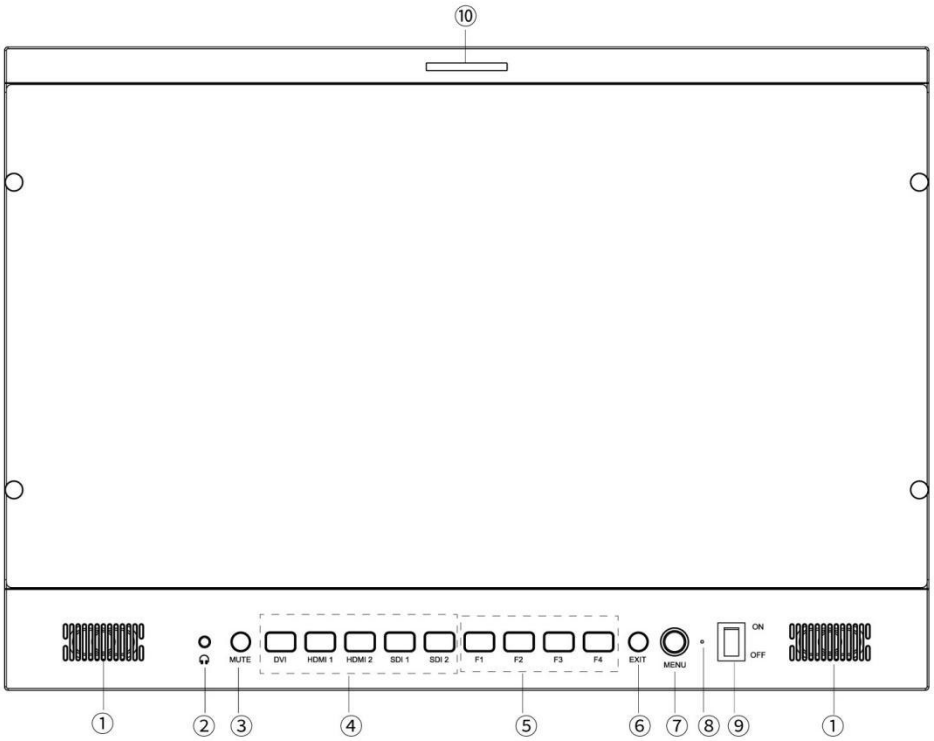


1.3. The bottom of case built-in hidden stand support up to 30cm, ensure enhanced stability on any flat surface such as desks, floors,and other areas, allowing for a secure standing position.



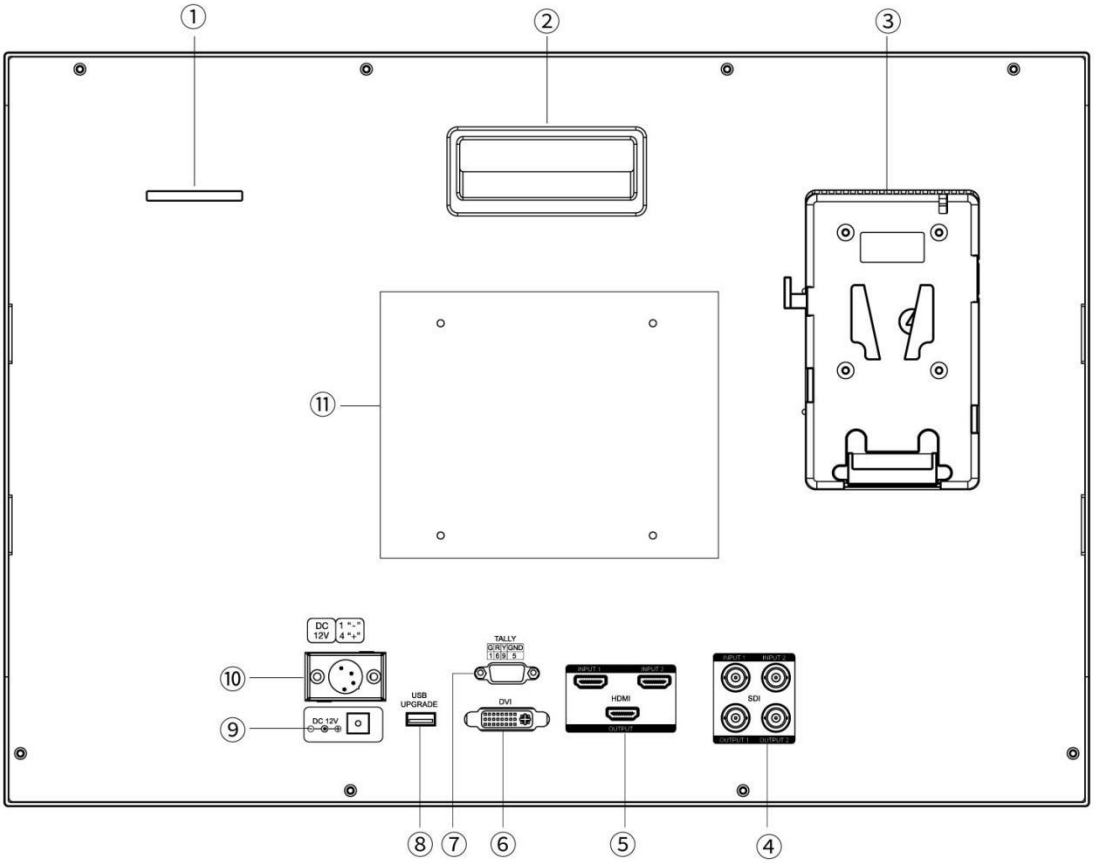
2. Panel Instruction

2.1 Front Panel



Number	Instruction
①	Speaker
②	3.5mm headphone jack
③	**Mute Key** When the menu is not displayed, press it to turn on mute. When turned on, the button will display a green constant light; closed the mute function , the button light turn off
④	**Signal Input Selection** When the menu is not displayed, the signal input source can be selected. After selection, the button will display a green constant light.
⑤	**Custom Function Key** Users can enter the main menu **User Option - Shortcut Key** to set F1~F4 as common function keys. After setting and close menu, simply press to turn on or off the function
⑥	Return/Exit menu
⑦	**Function when OSD is displayed** Rotate to select the desired function or parameter, and press confirm after selection **Function when OSD is not displayed** Rotate to adjust volume or backlight (can be set to volume or backlight in the menu **User Option - Left Right Key Set)** Press to enter main menu
⑧	**Power Indicator** After the monitor is properly connected to the power, turn on power switch the indicator display red, and display green after input signal
⑨	Power ON/OFF
⑩	Tally Indicator（Red、Green、Yellow）

1.2 Rear Panel



Number	Instruction
①	Tally Indicator（Red、Green、Yellow）
②	Handle
③	V-mount Battery Plate
④	2*3G-SDI Signal Inputs and Outputs
⑤	2*HDMI Signal Inputs，1*HDMI Signal Output
⑥	DVI Signal Input (VGA input from this port after conversion module signal conversion)
⑦	Tally (Indicator) Signal Input

⑧	LUT File/Upgrade File Importing port
⑨	The direct DC plug-in power input port supply
⑩	4-pin XLR DC power input
⑪	VESA Holes （100x100mm）

2.3 Power Input Way

There are three ways of power supply to our monitor:

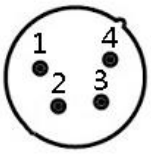
a. Powered by the direct plug-in power input port supply.

Please select DC power plug 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. Customers can choose different battery plates according to their needs. (If the customers have no requirement on the battery, the factory assembles Sony V-Mount Plate by default).

❖ Battery Plates



Panasonic Anton Plate



Sony V-Mount Plate

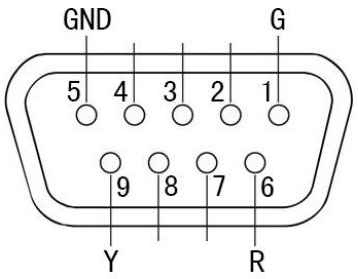
We assemble the suitable battery plate for the customers according to the different requirements of the batteries**.** If the customers have no requirement on the battery, the factory assembles Sony V-Mount Plate by default.

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.

2.4 TALLY Indicator Connection



Indicator colors	Pin connection
Green	1-5
Red	6-5
Yellow	9-5

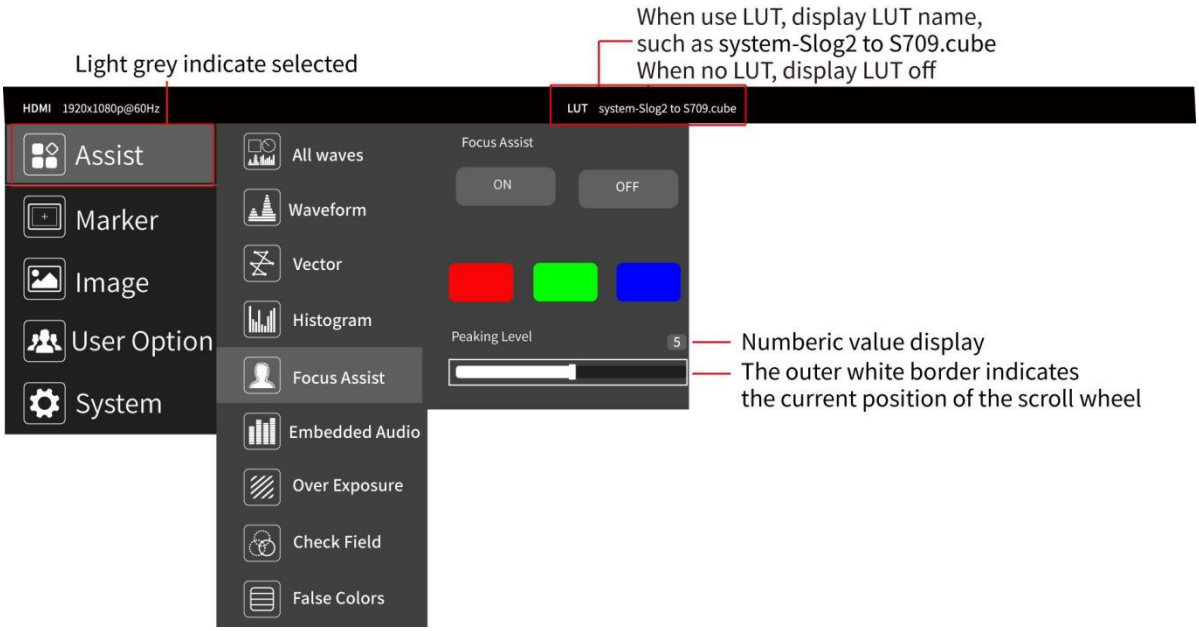
3. Menu Operation Instruction

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

3.1 Press **MENU** knob to enter OSD main menu, and rotate it to select the first level menu, the icon will turn gray after selected, press **MENU** knob confirm to enter the secondary menu.

3.2 After enter the secondary menu, rotate MENU knob to select the function, and press it confirm to enter three level menu, then rotate MENU knob to select turn on/off the function or select the detail parameter, press MENU knob confirm after selected

3.3 Press **EXIT** button to exit the menu



4. Menu Function Instruction



Assist

	**ON, OFF** After turning on, waveform, vector, histogram and embedded

All Waves	audio will be shown.
 **Waveform**	**ON, OFF** **Mode: RGB, YUV, Y** **Waves Trans.: Off, 25%,50%,75%** 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 scope**	**ON, OFF** Shows how saturated the image is and where the pixels in the image land on the color spectrum.
 **Histogram**	**Histogram: ON, OFF** **Mode: RGB1, RGB2, Y** **Y Histogram** A quantitative tool to check the picture brightness, display different color for different brightness **RGB Histogram** 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
 **Focus Assist**	**ON, OFF** **Focus Color: Red, Green, Blue** After turned on, the **Focus Level (1～10)** and **Focus Color** can be adjusted. It highlights the areas that are in focus so you are able to quickly focus the camera and not miss crucial shots.
	**ON, OFF** Display an audio diagram after enabled to help you understand the audio status being used.

Embedded Audio	**Under HDMI Signal, max display 8 channels** **Mode:** pr1, gp1, gp2, gp12 **Audio Out:** ch1-2, ch3-4, ch5-6, ch7-8 pr1 display1-2 channel, gp1 display 1-4 channel, gp2 display 5-8 channel, gp12 display 1-8 channel **Under SDI Signal, max display 16 channels** **Mode:** pr1, gp1, gp2, gp12, gp3, gp4, gp14 **Audio Out:** ch1-2, ch3-4, ch5-6, ch7-8, ch9-10, ch11-12, ch13-14,ch15-16 pr1 display1-2 channel, gp1 display 1-4 channel, gp2 display 5-8 channel, gp12 display 1-8 channel, gp3 display 9-13 channel, gp4 display 14-16 channel, gp14 display 1-16 channel
 **Over Exposure**	**ON, OFF** After the exposure is turned on, the **Exposure Level (10RE～100IRE),,** can be adjusted.
 **Check Field**	**On, Off** **Mode: red, green, blue, gray** When enabled, hue and saturation adjusted quickly and accurately.
 **False Color**	**ON, OFF** **Mode: Normal, ARRI** An image that depicts an object in colors that differ from those a photograph (a true color image) would show.
 **Time Code** **(Only Under SDI Signal)**	**ON,OFF** **Mode: LTC, VITC** 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

 **Grids**	**ON, OFF** **Mode: 2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8, 9x9** **Color: Red, Green, Blue, Black, White, Gray** The area of the picture can be divided into 4 ,9, 16, 25, 36, 49,64,81 equal grids.
 **Safe Frames**	**ON, OFF** **Mode: 80%, 85%, 90%, 93%, 96%, 2.35:1** **Marker Line Color: Red, Green, Blue, Black, White, Gray**
 **Center Marker**	**ON, OFF** **Marker Line Color: Red, Green, Blue, Black, White, Gray**
 **Ratio Marker**	**ON, OFF** **Mode: 4:3, 13:9, 14:9, 15:9, 16:9, 1.85:1, 2.35:1** **Marker Line Color: Red, Green, Blue, Black, White, Gray** **Modified Mark: 0~5**



Image

 **Scan Mode**	**Under Scan, Over Scan**
 **Aspect Ratio**	**Auto, 16:9, 16:10, 4:3, 5:4, 1.85:1, 2.35:1, Full Screen**
	**ON, OFF** **Mode: 1.33x, 1.6x, 2.0x, 2.0x mag, User**

Anamorphic	**Under User, you can custom adjust nx (1.20x~2.00x)** Allows you to use anamorphic lenses or adapters and see the image unsqueezed, even if your camera does not de-squeeze in camera.
 **Image Flip**	**ON, OFF** **Mode: H Flip, V Flip, H_V Flip**
 **Zoom Mode**	**ON, OFF** **Mode: 2X, 4X, 9X, 16X, User** **Under User, you can adjust 100%~200%** It is HD signal in any part, an amplification for high quality close-up.
 **Image Freeze**	**ON, OFF**
 **P2P** **(Pixel to Pixel)**	**ON, OFF** Enable the filmmaker to check the image from the 1:1 signal source without scaling.This feature is essential for capturing optimum detail.



User Option

 **LUT**	**ON, OFF** 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. **LUT Import: Confirm** **LUT Table: display the built in SLOG2, SLOG3, LOGC, VLOG and the custom LUTs**

 **HDR**	**HDR: ON, OFF** **Mode: HLG1, HLG2, HLG3** HDR can provide more dynamic range and the details of image, it is better to reflect the visual effects in the real environment.
 **Display Adjustment**	**Backlight: 0~100** Adjust the screen brightness **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. **Saturation: 0~100** Adjustment of color concentration **Tint: 0~100** It is the most accurate standard for distinguishing various different colors. Determine what a certain color is actually color via the color appearance.
 **Color Adjustment**	**Color Temp.: 5600K, 6500K, 9300K, User** Under the "**user**", the **red**, **green**, and **blue** values of the image can be adjusted (0~255)
 **Shortcut Key**	**F1~F4** Shortcut List: All Waves, Waveform Vector, Histogram, Embedded Audio, Center Marker, Safe Frames,Grids, Focus Assist, False Colors , Over Exposure, Anamorphic, Image Flip, Aspect Ratio **Set the shortcut function**

	e.g.: Using the MENU knob to select and confirm. Enter main menu --**User Option--Shortcut Key--F1** select one of pop-up functions, such as “All Waves”, press confirm after selected and the icon show light gray. Then when you exit menu, you could press F1 directly on the front of panel to turn on “All waves” function. Same setting for F2~F4
 **Left Right Key Set**	**Backlight, Volume** After selecting one of them, when the menu is not displayed, rotate the **MENU** knob can directly adjust



System

 **Language**	English, 简体中文，Español, Português, Français, Nederlands, Deutsch, 日本語，**繁體中文，한국어로，русский язык**
 **OSD Option**	**OSD Time: off, 15s, 30s, 45s** Select the display time of the menu on the screen **OSD Trans: OFF, 25%, 50%, 75%** Adjust the transparency of the menu picture background on the screen. No Signal: Red, Green, Blue, Black, White, Gray
 **Volume**	**Mute: ON, OFF** Volume: 0~100 Adjusting the speaker volume
	After confirmed, the system back to original setting.

Reset	
 **Firmware Update**	**Firmware Version** **FTY CAL: On/Off** **Confirm** Each monitor has color calibration before ex-factory, the factory calibration button turn on by default. After turning off, the monitor will without has color calibration, suggest don't turn it off. How to upgrade? 1. USB flash driver format Supports FAT32 2. After copying the update file to USB flash driver and inserting it into USB port of the monitor, use MENU knob to select **Confirm** and press to update. 3. The monitor will turn off automatically after finishing, please turn on manually 4. Check the firmware version whether the latest one

5. How to Import Custom LUT

5.1 USB flash driver format

Supports FAT32

5.2 Max Files Limit Maximum 32 Lut files

5.3 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

5.4 Steps for loading

5.4.1 Make sure the USB flash driver correctly insert

5.4.2 Enter main menu **User Option--LUT-- Import -- Confirm** to load

the monitor will auto detect the USB flash driver

If there is valid LUT file in USB flash driver, 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 32.

PS: How to clear up the imported LUTs?

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

6. Support Signal Format

HDMI	720p(60/59.94/50/30/29.97/25/24/23.98) 1080i (60/59.94/50） 1080p(60/59.94/50/30/29.97/25/24/24sF/23.98/23.98sF) 4K 3840×2160p (60/50/30/29.97/25/24/23.98Hz) 4K 4096×2160p (60/50/30/29.97/25/24/23.98Hz)
SDI	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)

7. Parameters

Panel Size	21.5″
Resolution	1920×1080
Dot Pitch (mm)	0.24795 (W) X 0.24795 (H) mm

Aspect Ratio	16:9
Brightness	1000cd/m²
Contrast	1000:1
Viewing Angle	89°/89°(L/R) 89°/89°(U/D)
Backlight	LED
Inputs	2*3G-SDI , 2*HDMI 2.0, DVI-I, Tally
Outputs	2*3G-SDI, 1*HDMI 2.0
Upgrade/LUT	USB2.0
Audio	Speakers, 3.5mm Headphone Jack
Input Voltage	DC 10～24V
Power	≤ 44W
Special Function	TALLY Indicators
Working	0℃ ～ 50℃
Storage	-20℃ ～ 60℃
Unit Size	553.5×394.5×115mm
Unit Weight	9.25kg

8. 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**
◆ Audio cable off or improper connection	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	This monitor is with audio signal only in audio input and HDMI state

■ **Remark:**

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

★ If there are changes without prior notice.