LCD Rack Monitor

PRM-902F / PRM-102F

MULTI-CHANNEL LCD RACK MONITOR

User's Manual

postium®

Instructions on installation.

Please read the following instructions before installing the monitor.
Avoid installing the monitor in the following places.

- Do not install the monitor near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.
- Do not install the monitor in excessively dusty and humid environments.
- Should any solid object or liquid fall into the monitor, turn the monitor off first and then unplug it.
- Do not install the monitor near the source of high frequency or of high electromagnetic waves and around power lines. This may cause the malfunction and slow down the performance of the monitor.
- Do not install the monitor in places where extreme environmental changes often occur.
- Do not place the monitor on an unstable cart, stand, or table. It may fall, causing serious injury to a child or adult and serious damage to the product.
  (The monitor should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer such as OB vans.)
- Do not install the monitor in locations where enough space cannot be provided around it as heat may build up inside, preventing normal operation. The lack of ventilation may damage the monitor. (Be particularly cautious when the monitor is mounted on the wall)

Precautions on safety

- Do not push any objects of any kind into the monitor through openings as they may touch dangerous voltage points or short-circuit the parts, which could result in a fire or an electric shock.

- Do not drop or place heavy objects on the monitor. A strong impact or force may damage and break the product.

- Do not use the power cord for AC and DC adaptor at the same time. This may cause the malfunction of the monitor.

- Remove the AC power from the monitor first when the monitor needs to be connected for the update or with external devices. Then, connect the cables and turn the monitor on. If the monitor is connected with external devices when AC power is connected, it may cause the malfunction of the monitor.

- Unplug the monitor and contact the A/S team when the monitor emits smoke or unusual smell and sound.

- Do not attempt to service this monitor yourself, as opening or removing covers may expose you to dangerous voltages and other hazards. Refer to all service to qualified service personnel, otherwise the monitor won't be covered by the warranty.

- The monitor is not covered by the warranty for the problems caused during the process of calibrating and adjusting the gamma and colors done by users.

First of all, we express our gratitude for your choice to purchase this monitor. Please take your time reading through the installation and operational instructions. Refer servicing to our service or sales teams if you have any trouble understanding the manual or experience problems with the monitor.

Contents

1. Product Overview

This product receives the standard 3G/HD/SD-SDI input signals and Composite, Component and HDMI input signals and displays the images on the LCD Panel with a particular function which converts HDMI input signal into SDI and SDI input signal into HDMI. As a high performance color video monitor, this product is suitable for television stations or video production houses, where precise color reproduction is required.

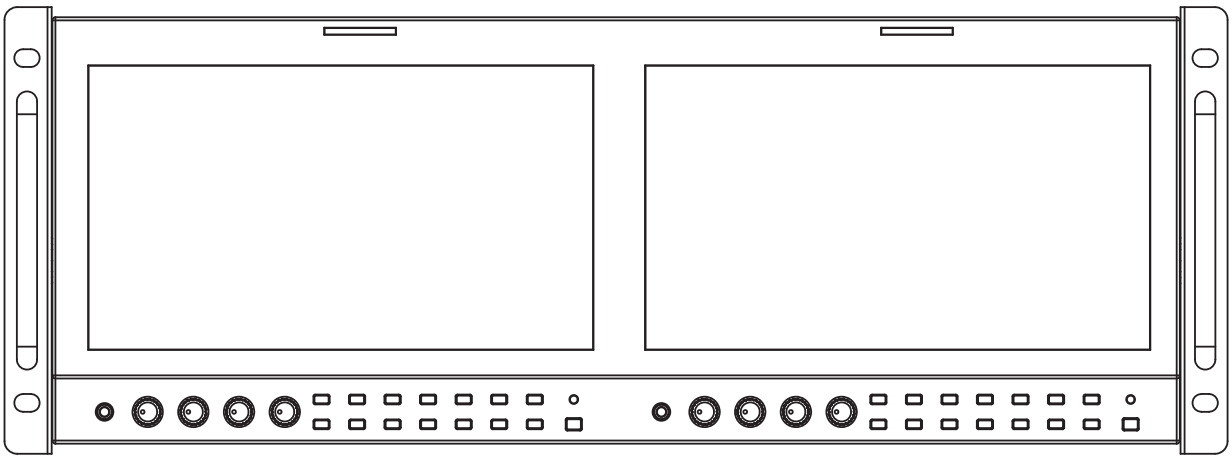
2. Features

- Color Calibration for optimal luminance, gamma, color temperature
- Supporting 3G-SDI (Level A/B)
- 10-bit Signal Processor
- HDMI-to-SDI & SDI-to-HDMI Converter
- Horizontal/Vertical Level Meters
- Ethernet
- Auto Color Temperature Adjustment
- PIP, PAP(Between analog and digital input)
- USB Memory Update
- Focus Assistance
- False Color
- Waveform
- Vector scope
- Closed Caption (CEA-608/708)
- Time Code(Except 3G Level B)
- 8~16ch Audio Level Meter
- Exposure Range Check
- UMD Mode
- Various Markers (EBU, 4:3, 16:9, 1.85:1, 2.35:1, etc.)
- H/V Delay, Pixel-to-Pixel View, Zero/Under/Over Scan, Blue/Mono
- R/G/B/W Internal Patterns
- Rack Mount

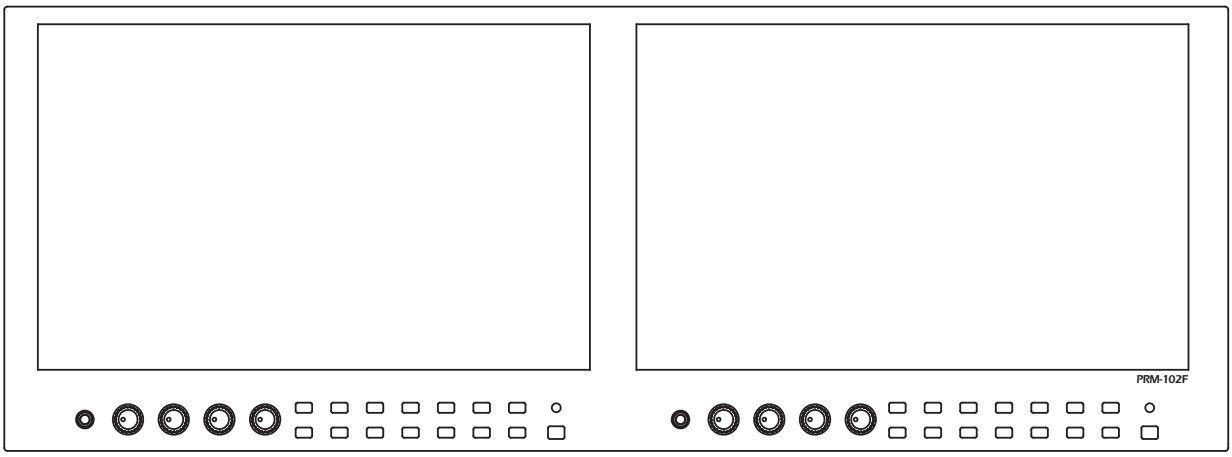
3. Controls and Functions

3-1. Front Panel (PRM-902F / PRM-102F)

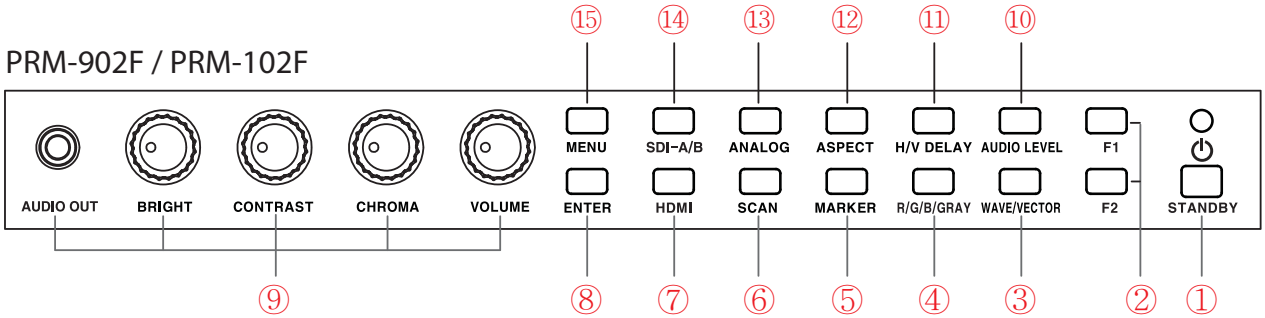
PRM-902F Front



PRM-102F Front



PRM-902F / PRM-102F



①--STANDBY : Press for a second to turn on the power and the indicator is on. Press again to turn off the power.

②--F1/F2 : User-preferred functions are saved on the F1 & F2. The settings for the functions are managed under System Menu.

③--WAVE / VECTOR : To display Waveform or Vector Scope. The mode is switched on in the following order: Waveform -> WFM Parade -> Vector ->WFM / VS -> WFM Parade / VS -> Wide WFM -> Full WFM -> Full VS -> OFF.

④--R/G/B/GRAY : To display the pictures in either Red or Green or Blue or Gray(only the Luminance is displayed). The mode is switched in the following order: Red -> Green -> Blue -> Gray -> Off.

⑤--MARKER : To activate or deactivate the settings of Marker.

⑥--SCAN : To select the display mode of Scan screen. The display modes are Zero Scan, Under Scan, Over Scan and Zoom Scan.

⑦--HDMI : To select HDIM input.

⑧--ENTER : To select the categories under OSD MENU.

⑨--VIDEO Attribute : To open the setting menu for Brightness, Contrast, Chroma, Volume and Audio.

⑩--AUDIO LEVEL : To activate Audio Level Meter.

⑪--H/V DELAY : To check the data carried outside the active range of the input signal. The delay modes are H Delay, V Delay, H/V Delay and Off.

⑫--ASPECT : To change the size of the screen to 16:9 or to Native Ratio when Analog (Composite, Component, S-Video), HDMI (SD), SD-SDI (NTSC / PAL), 2Ksf or 2Kp format is in. This function doesn't work under the following conditions: 1) When HD-SDI and HDMI of 1080p, 720p is 16:9 source. 2) Under DVI and VGA channel.

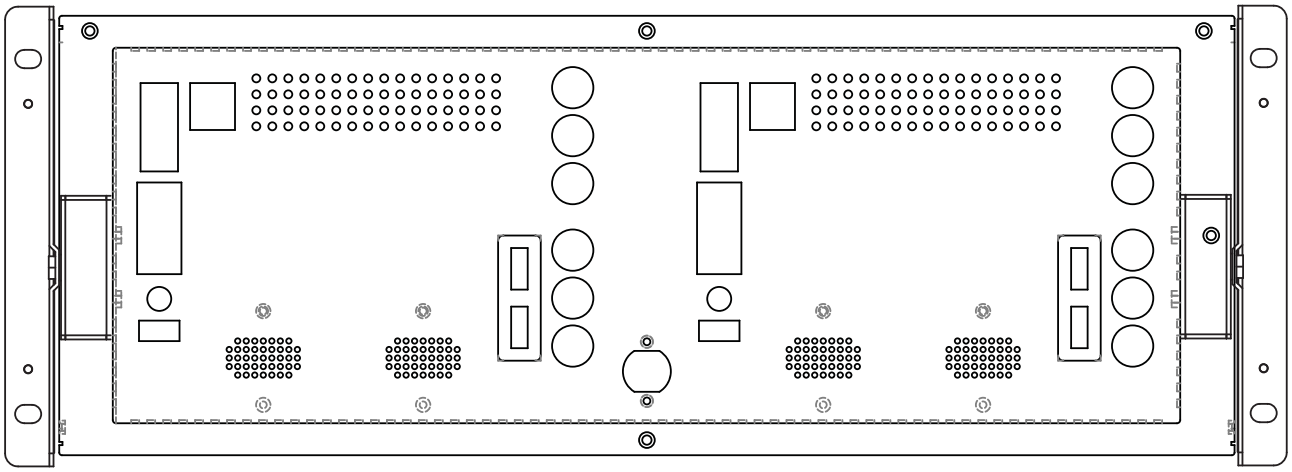
⑬--ANALOG : To select a desired Analog input. The inputs are switched in the following order: CVBS1 -> CVBS2 -> CVBS3 -> SVIDEO -> RGB ->YPbPr -> VGA. OSD LOGO window appears at the top left.

⑭--SDI-A/B : To select SDI chA or chB input and a separate OSD LOGO window appears.

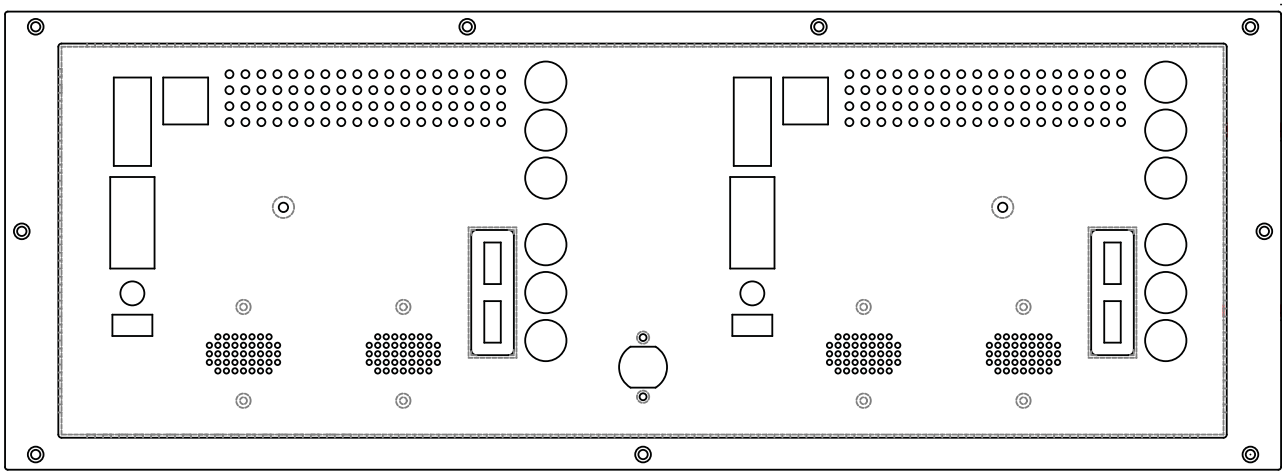
⑮--MENU : To activate OSD Menu.

3-2. Rear Panel (PRM-102F,PRM-902F)

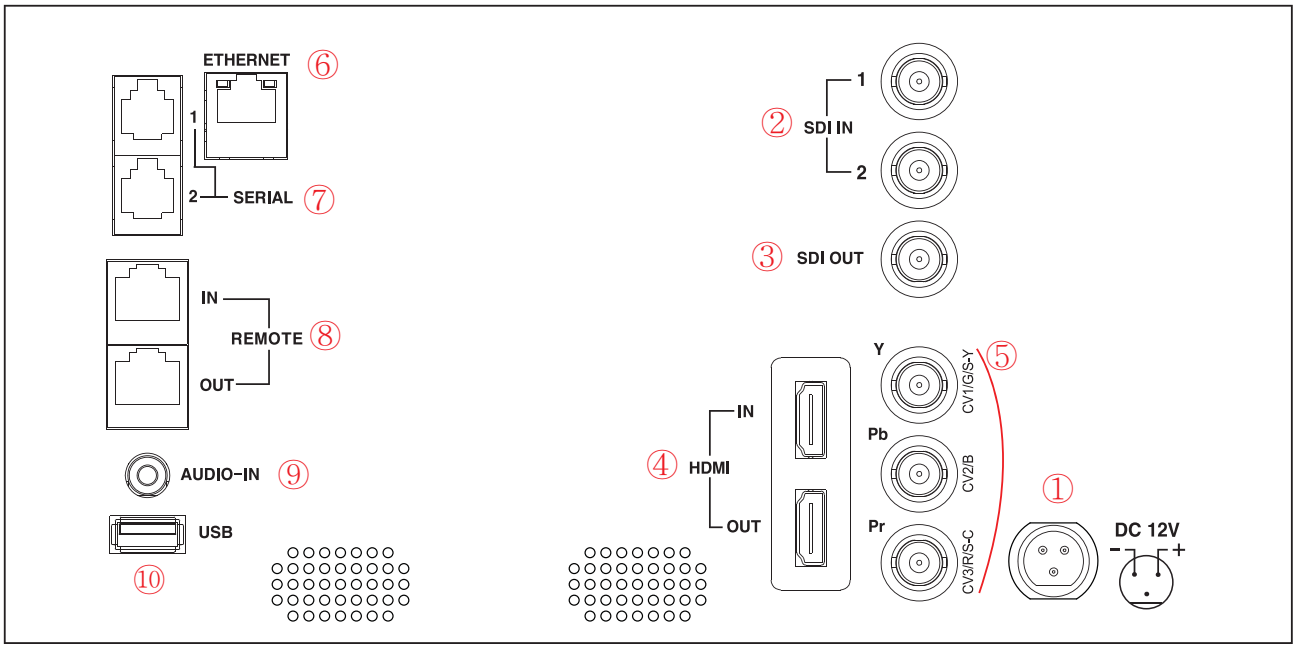
PRM-902F Rear



PRM-102F Rear



PRM-902F / PRM-102F



①--AC POWER : Connects the supplied AC power cord.
②--SDI A,B input port (BNC) : Used for the input of HD/SD-SDI signals and for the SDI signal input which contains audio signals as well.
③--SDI-LOOP OUT port (BNC) : Used for the output of HD/SD-SDI input signals. There is no output of any kind when the monitor is off (Active Select Output).
④--HDMI input & output port : Used for the input or output of HDMI signals.
⑤--Component, Composite Input (BNC) : Used for the input of YPbPr, CVBS1,2,3 and R,G,B.
⑥--ETHERNET (RJ-45 Jack) : Used when the monitor needs to be controlled remotely.
⑦--UPDATE Port (RJ-11 Jack) : Used when the program of the monitor needs to be modified or controlled.
⑧--REMOTE : Used when the monitor is remotely controlled.
⑨--AUDIO : Used for the input of external audio and for the output of embedded audio signals.
⑩--USB : Used when the firmware program needs to be updated or modified.

3-3. How to save a function on F1, F2

Certain functions can be saved on F1 and F2 on the front of the monitor.
The settings can be managed under System Menu. The following is the list of functions that can be selected and saved on F1 and F2.

The list of functions that can be assigned.

- FOCUS Assist
- FOCUS Assist BOX Size
- False Color
- Exposure Range Check
- Time code & Tally
- SDI Audio Ch 1/2 &Ch 3/4
- Audio Mute On/Off
- Aspect Mode
- Zoom Mode
- 1:1 Scan On/Off
- Caption Display
- Time code
- Audio Level Meter
- Freeze On/Off
- UMD Display
- Front Button LED On/Off
- Video Loss

4. STATUS DISPLAY

This function displays the operational status of the monitor on the screen. Some of the displays are not supported depending on the product models

1) Audio Level Meter Display : Turns on or off Audio Level Meter Display under Audio MENU.
   - ▶ On : Displays odd-numbered channels on the left and even-numbered channels on the right.
   - ▶ Off : Turns off the display of level bar.
   - ▶ Level Meter Position : Selects the position of level meter either at the Top or Bottom of the screen.

2) Waveform Monitor / Vector Scope Display : Turns on or off Waveform/Vector Scope Display using WAVE/VECTOR button on the front.
   - ▶ W-FORM / VECTOR Position : Selects the position of the display either at the Left Bottom or at the Right Bottom by using Knob on the front.
     Display position is automatically switched every time the Up or Down button is pressed.

Afterimage of pictures might appear when the signal format is in SDI 2Ksf and the pattern is either circle or H line, and when there is no change in the pictures for extended time. If this is the case, change the input signals and the afterimage will disappear.
Under the circle pattern signals in HD-SDI format, certain areas might be displayed as smeared in the process of scaling.

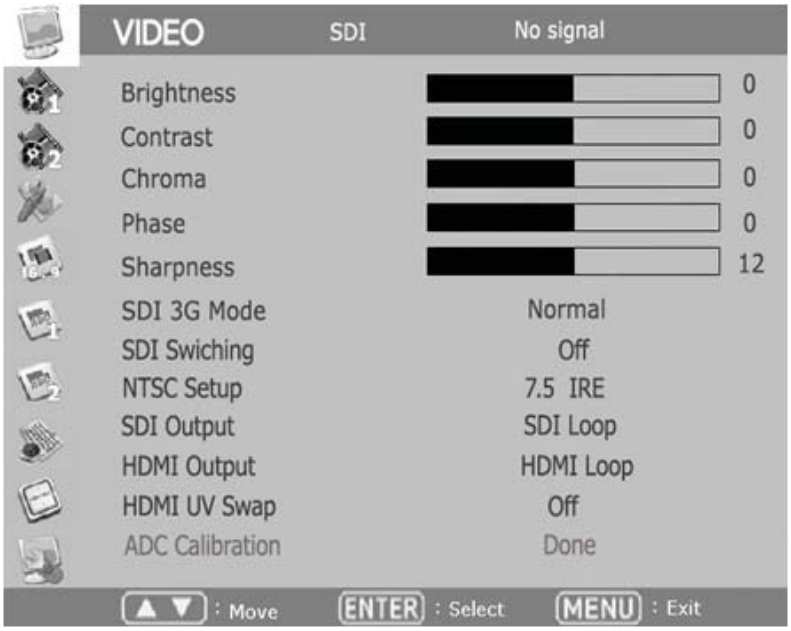
5. How to Set OSD Menu

1. Press Menu button and OSD Menu opens up.
2. Use Knob KEY to move UP(CW) ▲ or DOWN(CCW) ▼. Press Knob KEY to enter.
3. Rotate Knob KEY to adjust the settings.
4. Press Menu to go back to the previous category.
   Press Menu for 3 seconds to exit the OSD Menu.

The Menu may disappear on no input signal or with unstable input signals. Under the unstable input signals, there can be delays or malfunction when setting the Menu.

Menu setting is saved differently according to different signal input modes. Therefore, when changing the setting, make sure to check the signal input mode first.

5-1. VIDEO



- Brightness : Adjusts the brightness of the screen.
- Contrast : Adjusts the contrast of the screen.
- Chroma (HUE) : Adjusts the chroma(HUE) of the screen.
- Phase : Adjusts the phase of the screen.
- Sharpness : Adjusts the sharpness of the screen.

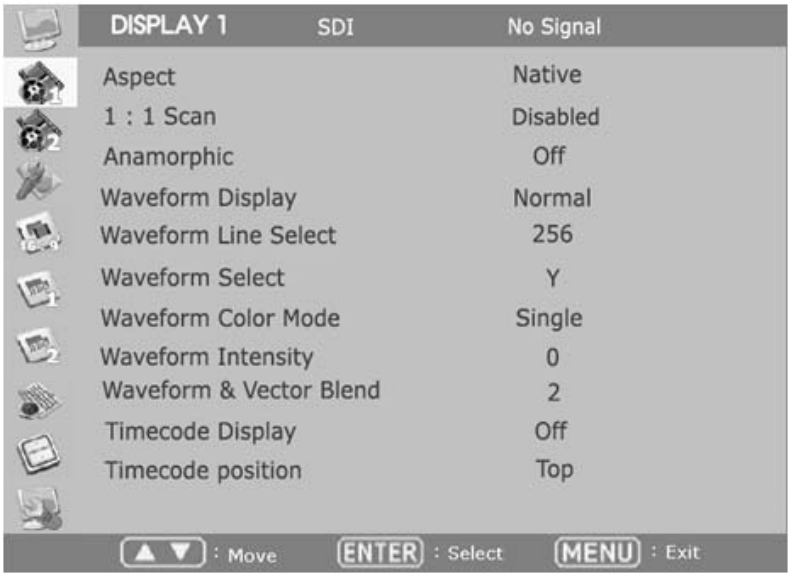
- SDI 3G Mode : Selects the mode when 3G-SDI signal is in.
- SDI Switching : When the input signal coming from Matix or Routing Switcher is changed, SDI Switching lowers a chance of changes on the screen and guarantees smooth and stable pictures.
  - Off : When the input signal is changed, there might be some blinking on the screen.
  - On : Minimizes a chance of changes on the screen and guarantees smooth and stable pictures.
- NTSC Setup : Selects either 0 IRE or 7.5 IRE. 7.5IRE -> Works on NTSC or SD YUV.
- SDI Output : Selects the SDI output from either SDI Loop or HDMI Conversion.
- HDMI Output : Selects the HDMI output from either HDMI Loop or SDI Conversion.
- HDMI UV Swap : When the HDMI Mode is normal and the input signal is that of the graphic resolution, UV signal might be displayed as swapped. Turn HDMI UV Swap on to display the correct colors.

The signals which SDI 3G Mode supports are as follows (SMPTE-425M) :

- A_MS1_YCbCr422_10 : 3G SDI Level-A Mapping Structure 1 –YCbCr 4:2:2/10 bit
- A_MS2_YCbCr444_10 : 3G SDI Level-A Mapping Structure 2 –YCbCr 4:4:4/10 bit
- A_MS2_RGB444_10 : 3G SDI Level-A Mapping Structure 2 – RGB 4:4:4/10 bit
- A_MS3_YCbCr444_12 : 3G SDI Level-A Mapping Structure 3 –YCbCr 4:4:4/12 bit
- A_MS3_RGB444_12 : 3G SDI Level-A Mapping Structure 3 – RGB 4:4:4/12 bit
- A_MS4_YCbCr422_12 : 3G SDI Level-A Mapping Structure 4 –YCbCr 4:2:2/12 bit
- B_MS1_YCbCr422_10 : 3G SDI Level-B Mapping Structure 1 –YCbCr 4:2:2/10 bit
- B_MS2_YCbCr444_10 : 3G SDI Level-B Mapping Structure 2 –YCbCr 4:4:4/10 bit
- B_MS2_RGB444_10 : 3G SDI Level-B Mapping Structure 2 – RGB 4:4:4/10 bit
- B_MS3_YCbCr444_12 : 3G SDI Level-B Mapping Structure 3 –YCbCr 4:4:4/12 bit
- B_MS3_RGB444_12 : 3G SDI Level-B Mapping Structure 3 – RGB 4:4:4/12 bit
- B_MS4_YCbCr422_12 : 3G SDI Level-B Mapping Structure 4 –YCbCr4:2:2/12 bit
- B_2X_DS1_YCbCr422_10 : 3G SDI Level-B Data Stream 1 –YCbCr4:2:2/10 bit, Dual Link SMPTE-372M
- B_2X_DS2_YCbCr422_10 : 3G SDI Level-B Data Stream 2 –YCbCr 4:2:2/10 bit, Dual Link SMPTE-372M

In case of 3G Level signals, make sure to manually set the proper format to have the signal read correctly. If the signal isn't read correctly, restart the monitor or change to another channel.

5-2. DISPLAY1



• Aspect : Selects the aspect ratio of the screen when a format is in. The ratios to choose from are 16 : 9 , 4:3, and Native Ratio. If the 1080i, 1080p, 720p of HD-SDI and HDMI is 16:9 source, there will be no change on the screen even Aspect 16:9 is selected.

•1:1 Scan : ON -> Displays the picture in 1:1 Pixel mapping under SD mode.
OFF -> Displays the picture in accordance with the size of LCD under SD mode.
* This doesn't function under HD mode.

• Anamorphic : Resizes and displays the resized pictures in 11 different display modes.
The display modes are 3.56:1, 2.74:1, 2.59:1, 2.55:1, 2.40:1, 2.39:1, 2.35:1, 1.85:1, 1.75:1, 1.66:1, and 1.37:1.

• Waveform Display : Selects the display mode of Waveform.
- Normal : Displays the Waveform of the whole picture.
- Line Select : Displays the Waveform of a certain line of the picture.

• Waveform Line Select : Adjusts the settings of the Line, when Line Select mode is selected.

• Waveform Select : Selects the color display mode of Waveform from Y, Cb and Cr.
The selected color display will be displayed in the Waveform window.

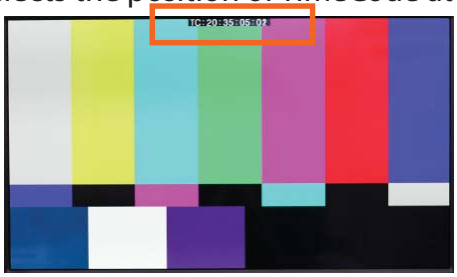
• Waveform Color Mode : Selects the Waveform color mode between either Single and Mix.

• Waveform Intensity : Adjusts the color intensity of Waveform Display from 0 to 63.

• Waveform& Vector Blend : Adjusts the transparency of Waveform and Vectorscope windows from level 0 to 6.

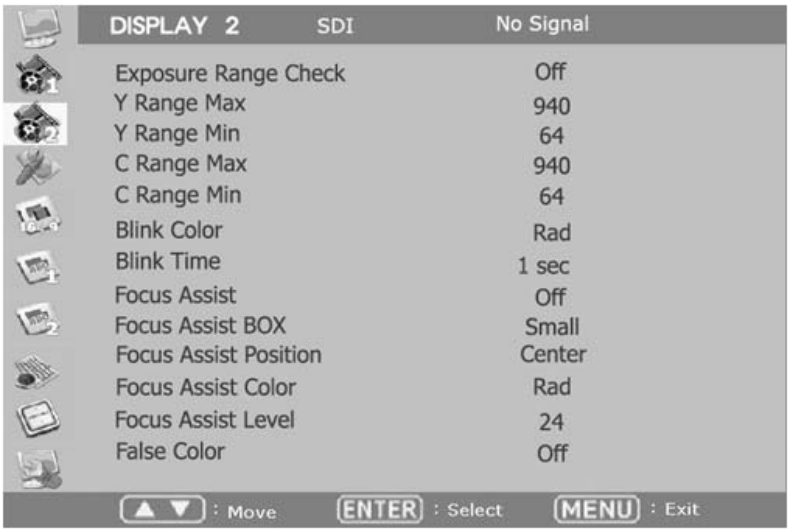
• Timecode Display : Displays the TC(Time Code) data carried in HD/SD-SDI signals on the screen. It is displayed in a Hour:Min:Sec:Frame form. 

• Timecode Position : Selects the position of TimeCode at either Top or Bottom of the screen.



YCbCr : YCbCr is one of the digital color reproduction standards.
Y is for luminance, Cb for blue intensity and Cr for red intensity.

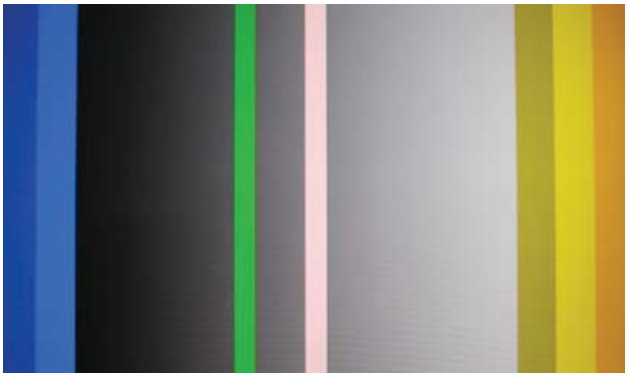
5-3. DISPLAY2



- Exposure Range Check : Displays the over-exposed or under-exposed areas of Y, C Level on the screen.
  The values for the exposure range check are Y, Cb, Cr, and Off Mode.
- Y Range Max & Min : Sets the maximum or the minimum value of Y range.
- C Range Max & Min : Sets the maximum or the minimum value of C range.
- Blink Color : Selects the blinking color of Video range areas. The colors to choose from are Black, Blue, Green and Red.
- Blink Time : Sets the blinking time from 1 to 5 second.
- Focus Assist : Highlights and marks the boundaries of the picture being displayed.
- Focus Assist Box : Selects the size of the Focus Assist Box highlighting the picture being displayed.
- Focus Assist Position : Adjusts the position of the Focus Assist Box.
- Focus Assist Color : Selects the color of the marked boundaries of the picture.
  The colors to choose from are Blue, Green and Red.
- Focus Assist Level : Selects the color level which will highlight the boundaries from 0 to 48 levels.

- False Color : Displays the picture in specific colors in accordance with the Y (Luminance) value range.

False Color OFF



False Color ON

75% Red	100% ↑
Orange	100.0% 93.8%
100% Yellow	93.8% 87.5%
75% Yellow	87.5% 81.3%
Gray 1	
Skin Tone	51.5% 48.5%
Gray 2	
75% Green	40.6% 37.6%
Gray 3	
Light Blue	12.5% 6.3%
Dark Blue	6.3% 0.0%
Purple	0% ↓

False Color Table

When the input signal happens to be in 10bit or 12 bit dither formant, instead of 8bit format, particular gradient patterns can't be displayed clearly.

5-4. COLOR

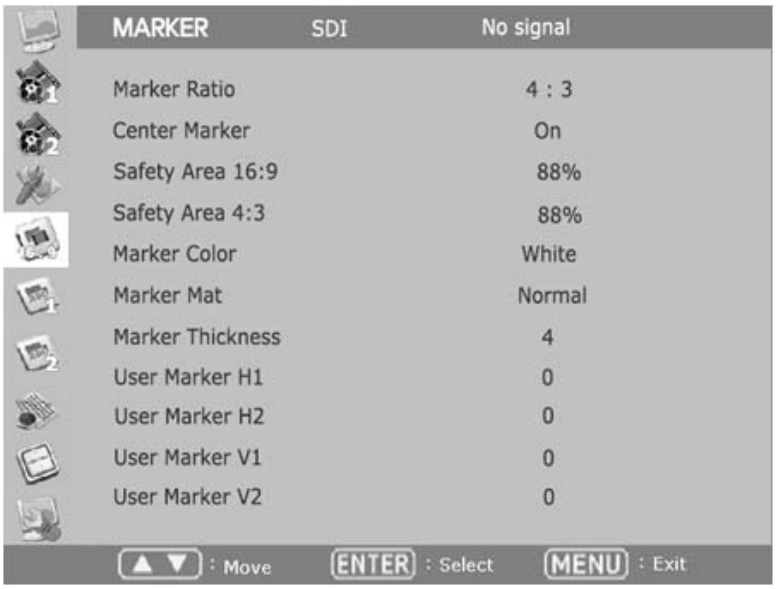
- Dithering : Displays the gradation changes of the picture more smoothly and softly.
- Auto Color Temperature : Adjusts the color temperature automatically following the temperature changes around the monitor.

There can be a margin of error, depending on conditions of the environment around.

- Color Temperature : Adjusts the color temperature or white balance of the screen. There are 6 modes: VAR, 3200°K, 5400°K, 6500°K,9300°K, and USER. All, except USER mode, are already set before shipping and can't be altered by users. However, under USER mode, users can change RGB gain and bias and adjust the color temperature.

Color Matrix Parameters are set based on ITU Standard Color. Considering the nature of LCD Panel, the optimal color reproduction has been made possible based on EBU Color setting and on the standards of SDTV (ITU-R BT.601) and HDTV (ITU-R BT.709).
It is recommended to use professional calibration devices to adjust the Color Temperature (White Balance) for the accurate outcome.

5-5. MARKER



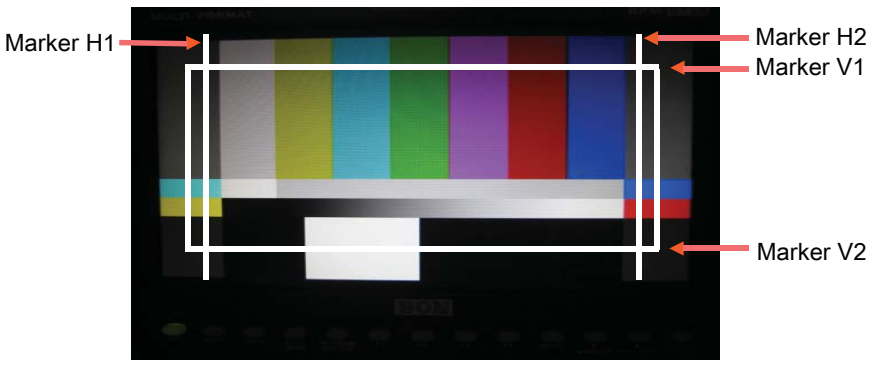
- Marker Ratio : Selects the type of Markers. The types to choose from are 4:3, 4:3 ON AIR, 16:9, 15:9, 14:9, 13:9, 1.85:1, 2.35:1, User1, User2, User3, and OFF.
- Center Marker : Turns on or off the display of center marker (+).
- Safety Area 16:9 , 4:3 : Safety Area 16:9 selects the size of the safety area on HD screen, when the input signal is in 16:9. Safety Area 4:3 selects the size of the safety area on SD screen, when the input signal is in 4:3.

The modes to choose from are 95%, 93%, 90%, 88%, 85%, 80%, EBU Action 16:9, EBU Graphic 1 6:9, EBU Action 14:9, EBU Graphic 14:9, EBU Action 4:3, EBU Graphic 4:3, and Off.

- Marker Color : Selects the color of Marker among 6 colors: White, Red, Green, Blue, Gray and Black.

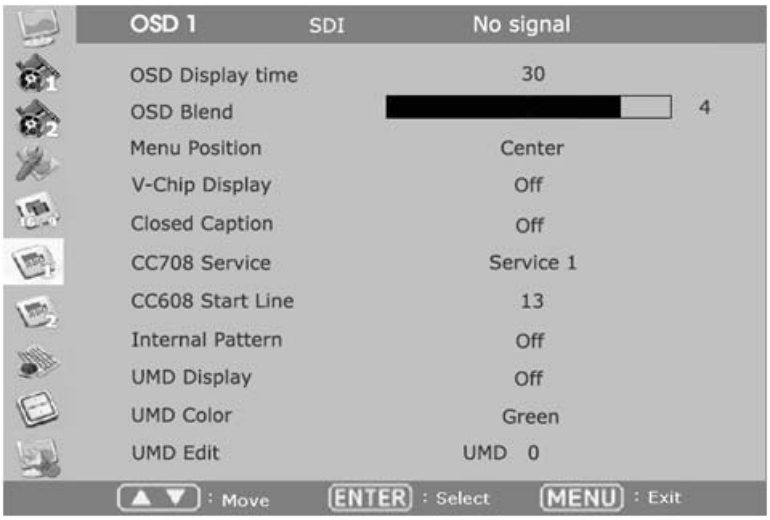
Make sure if Marker button on the front of the monitor is on. When it is on, the sub categories of Marker Menu will be activated and the functions will be displayed on the screen.
If it is off, the functions won't be displayed on the screen even when the sub categories are on.

- Marker Mat : Selects how to display the areas outside of the Safety area. The display modes are Normal, Half, and Black.
- Marker Thickness : Selects the thickness of Marker between 1 to 10 Pixel.
- User Marker H1 : Sets the left position of vertical line of Marker.
- User Marker H2 : Sets the right position of vertical line of Marker.
- User Marker V1 : Sets the upper position of horizontal line of Marker.
- User Marker V2 : Sets the lower position of horizontal line of Marker.



Marker Ratio needs to be either User1, User2 or User3, if the positions of User Marker are manually adjusted.

5-6. OSD 1



- OSD Display Time : Sets the display time(from 0[continuous] to 60 sec) for Menu and other information on the screen.
- OSD Blend : Sets the transparency of Menu from level 0 to 5. The higher the level become the more transparently OSD is displayed.
- Menu Position : Selects the position of Menu on the screen. The position can be at the Left Top, Right Top, Left Bottom, Right, Bottom, and at the Center.
- V-Chip Display: Allows the display of V-Chip Date carried in SD-SDI, Analog Composite signals. V-Chip Data is the rating information which prevents the minors from watching pictures containing the violence and obscenity.
- Closed Caption : Closed Caption in activated only when there is a HD/SD-SDI signal with text information in it. When the text data format of the input signal is compatible with the selected mode, the monitor will analyze the data and display it on the screen. The data will be displayed in 5 different ways, depending on the signal formats (Line21 / Auto, 608 Line21/Manual, 608 VANC, 608 Transcoded, 708)

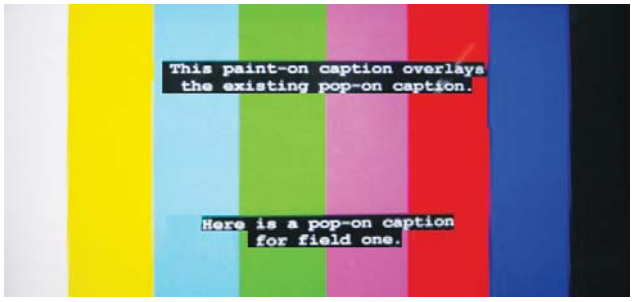
When other data such as MENU, Status information, and Signal information is already displayed on the screen, the Caption Data won't be displayed.

Display of Closed Caption data
-708, 608(Transcoded), 608(VANC),
608(L21)/Manual

- CC708 Service : There are 6 standard services and 57 expanded services.
  - -Service 1 : This is a general caption service, translating the audio of Primary language into the caption.
  - -Service 2 : This is a translated caption service for a Secondary language, containing the translated caption of the Primary language.
  - -Service3, 4 : There has been nothing assigned to the service 3 and 4 yet.
- CC608 Start Line : Selects a certain line which contains Closed Caption 608 information to start the CC data. Users can select the line from 0 to 63 when Closed Caption Menu is set as 608(Line21) / Manual. It is used when there is a change in CC Start Line in the process of copying the SDI signal to Tape through DECK.

Evertz HD9084 : HD-SDI / CC 608 transcoded – CC Line Select																			
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1035i	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
1080i	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	NS	NS	NS	NS	
1080p	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
720p	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
Evertz HD9084 : SD-SDI / CC 608 Line21 – CC Line Select																			
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
480/59.94i				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
576/50i				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

(Note) NS : Meaning "Not Support:, the selected categories are not suppoeted.



CC 708 / CC 608 Transcoded (HD-SDI)

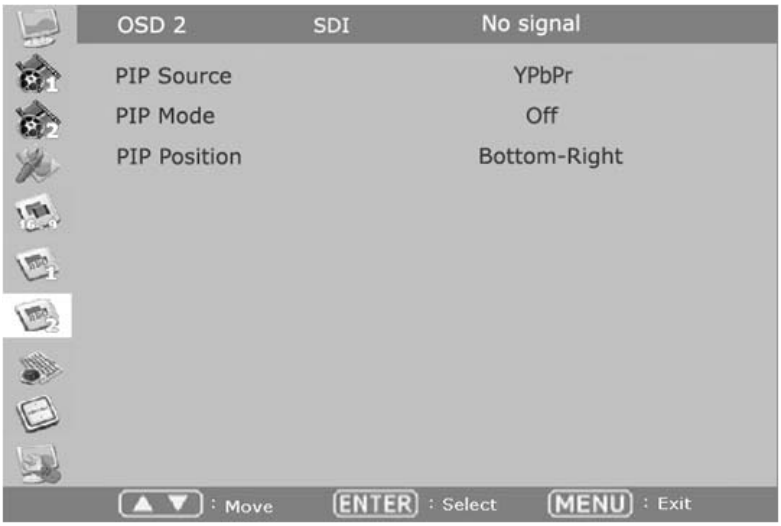
CC 608 Line 21 (SD-SDI)

- Internal Pattern: Displays the signals embedded in the monitor itself. The signal format and resolution is 1920 * 1080 / 30p and the pattern types are as follows: Off, 100% Color Bar, 75% Color Bar, RP219, Blue, Green, Red, and 100%(White) ~ 0% (Black).
- UMD Display : Turns on or off the display of UMD text on the screen.
- UMD Color : Selects the color of text displayed in the UMD window. The colors to choose from are Red, Green, and Amber.
- UMD Edit : Sets or changes the Source ID text displayed on the screen. Max. 10 characters of any kinds of numbers, alphabets and symbols can be used.

UMD Off

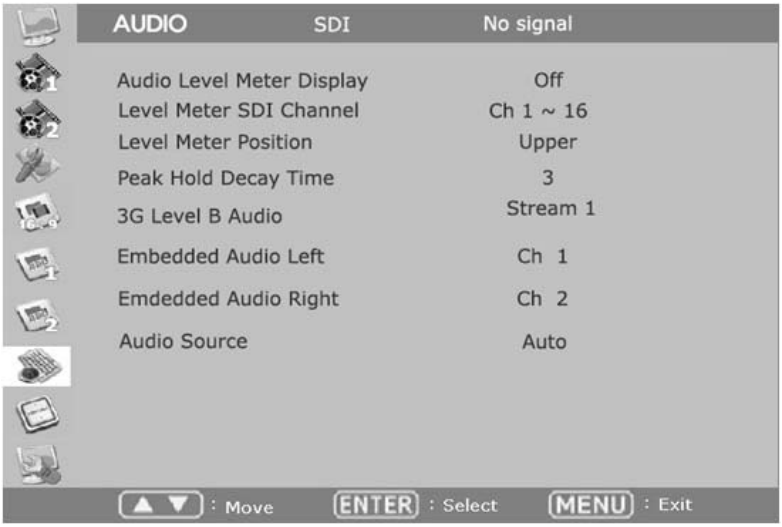
UMD On

5-7. OSD 2



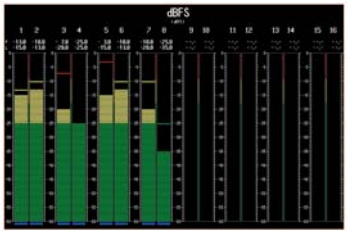
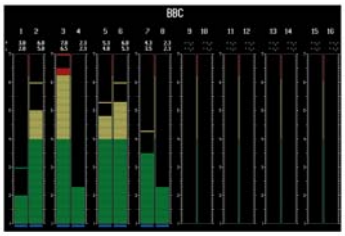
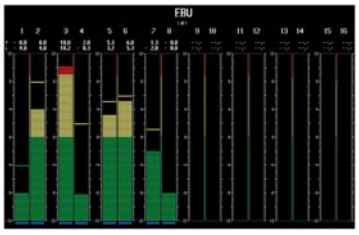
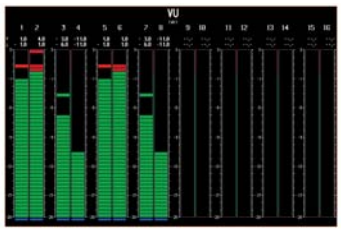
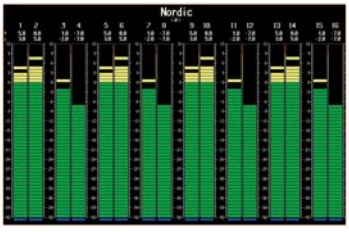
- PIP Source : Selects either a digital or an analog input for Picture in Picture function.
- PIP Mode : Selects the Mode, among Large PIP, Small PIP and Side by Side.
- PIP Position : Selects the position of Sub screen when Dual Display Pip is activated.

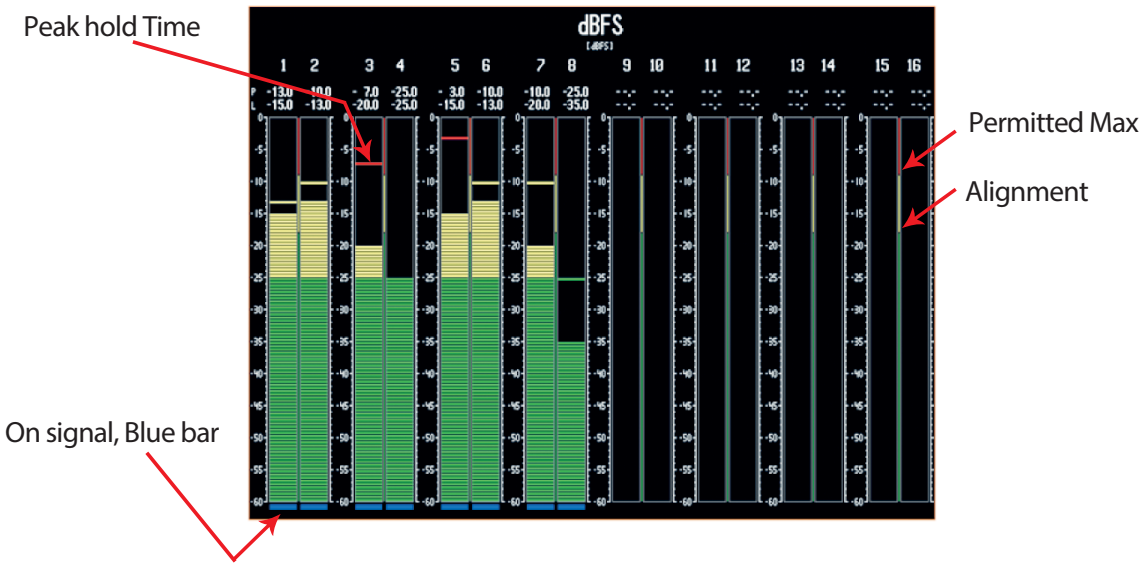
5-8. AUDIO



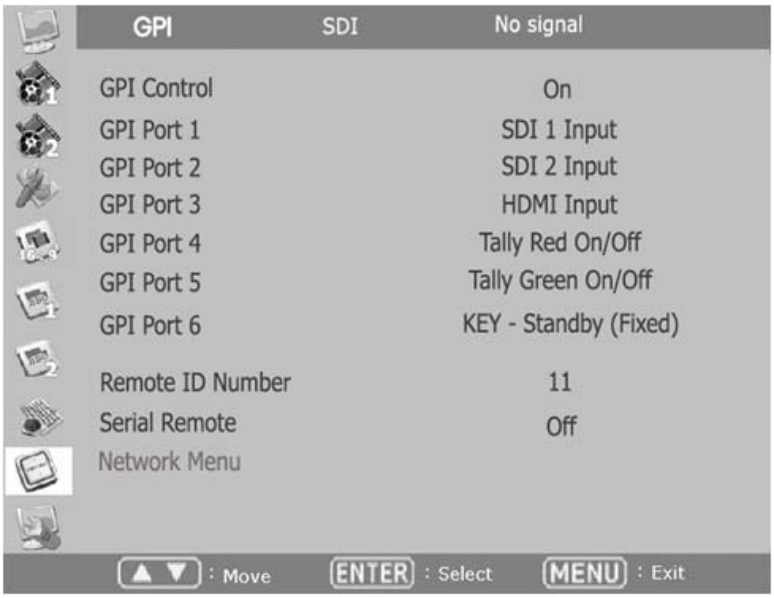
- Audio Level Meter : Turns on or off the embedded audio signals of SDI / HDMI inputs in the form of Level bar on the screen.
- Level Meter SDI Channel : Selects one of the following audio channel groups of the embedded audio signals: 1~4(Group 1), 5~8(Group 2), 9~12(Group 3), 13~16(Group 4), 1~8(Group 1 & 2), 9~16 (Group 3 & 4) and 1~16(Group 1,2,3,4)
- Level Meter Position : Displays the audio level bar either at the Upper or Lower part of the screen.
- Peak Hold Decay Time : Controls the speed rate of Peak Hold Decay Time occurring when the audio volume decreases.
- 3G Level B Audio : Selects one of two signals when there are two audio inputs.
- Embedded Audio Left : Selects the embedded audio channel(CH1 ~ CH16) for the Left audio.
- Embedded Audio Right : Selects the embedded audio channel(CH1 ~ CH16) for the Right audio.
- Audio Source : Selects the audio source among the following: Auto / SDI / Line In/ and HDMI.

- Audio Level Meter Type

OFF	HORIZONTAL	VERTICAL
		
dBFS	BBC	EBU
		
VU	Nordic	
		



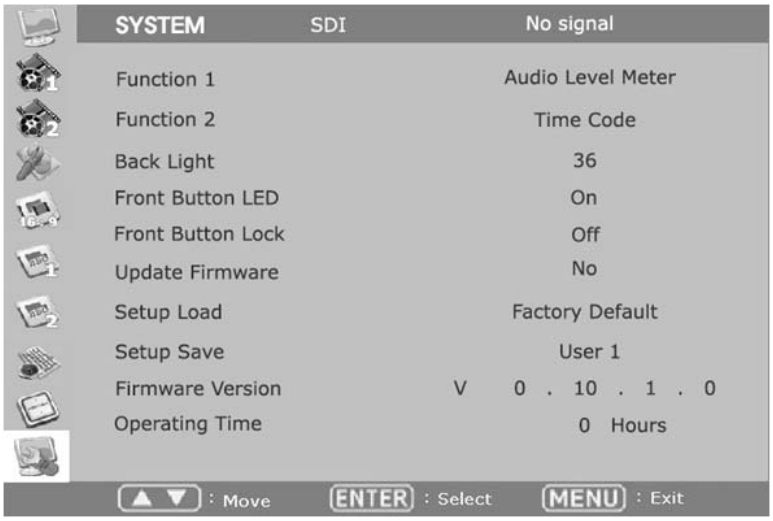
5-9. GPI



- GPI Control : Turns on or off the external monitor controlling function.
  External remote controlling is disabled when GPI control is turned off.
- GPI Port 1, 2, 3, 4, 5, 6 : Assigns the function on each GPI port (RJ-45). The function of each port can't be overlapped. Please refer to 6-1, 2, and 3 for further details.
- Remote ID Number: Assigns the ID for the monitor when remotely controlled through SERIAL PORT (RJ-11) or Wall System Control program. The range for ID Number is from 0 to 99. Or assigns the ID for the monitor when remotely controlled by IR (Optional).
- Serial Remote : Turns on or off the serial remote function using the external serial port.

All front buttons are locked once the Serial Remote function is on.
Press Menu for 3 seconds to exit the Serial Remote ON state.

5-10. SYSTEM



- Function 1, 2: Save certain functions on the front F1 and F2. Please refer to the list of 3-3 for further details.
- Back Light : Controls the back light intensity of the panel from 0 (min.) to 40 (max.). The higher the number is the brighter the back light becomes.
- Front Button LED : Turns on or off the lights of the LED buttons on the front of the monitor.
- Front Button Lock : Activates or deactivates the functions of the LED buttons on the front. -Press Menu for 3 seconds to deactivate the Lock function.
- Update Firmware : - Serial : Used when the firmware update is done via Serial Port. - USB : Used when the firmware update is done via USB Port.
- Setup Load : Selects the monitor settings among Factory Default, User 1/2/3/4. - Factory Default : Sets the monitor on Factory Default. - User 1, 2, 3,4 : Changes the monitor setting to the user-preferred setting of User 1, 2, 3 or 4.
- Setup Save : Saves the current menu settings as User 1, User 2, User 3 and User 4.
- Firmware Version : Displays the version of firmware program and logic program of the monitor. Ex) 0.20.17 0.20 <- Firmware Version Display 17 <- PLD Logic Version Display
- Operating Time : displays the total operating time of the product.

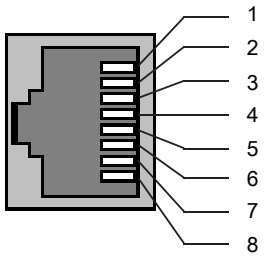
After updating the firmware, make sure to turn the power off and on and set the monitor on Factory Default. (Update Mode is deactivated only after the power is turned off and then on.)

Luminance(Brightness) will be changed if the back light value of LCD Panel is adjusted. In order to stabilize the panel, leave the monitor on for at least 30 minutes for aging.

6. Remote Terminal Assignment

6-1. Remote Terminal(RJ-45) Assignment

The function of each port is assigned under GPI Control Setting Menu.



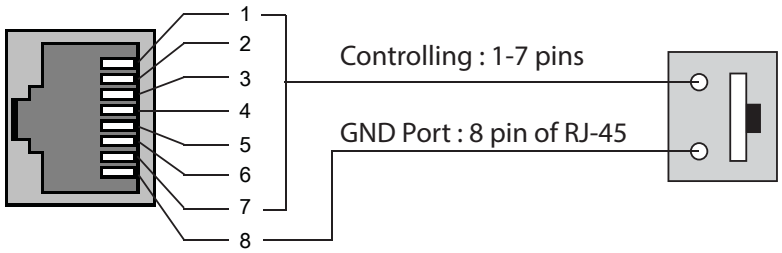
Remote (RJ-45)

Remote PIN Assignment

1PIN	GPI Port 1	5PIN	GPI Port 5
2PIN	GPI Port 2	6PIN	GPI Port 6
3PIN	GPI Port 3	7PIN	GPI Port 7 (External Tally Red Out Only)
4PIN	GPI Port 4	8PIN	COMMON(GND)

6-2. Connection and Use of GPI Port(RJ-45)

Please refer to GPI & Remote Menu for the further details on the assignment of each port.
The connection can be done, using an external switch, as shown in the picture below.



Contact switch can be connected to each pin.

There are two kinds of operations of the contact switch: Edge Operation and Level Operation.
Please refer to 6-3. Remote Terminal Assignment Table for further descriptions.

- *When the monitor needs to be connected for the update or with external devices, remove the AC power from the monitor first. Connect the cables and then turn the monitor on. If the monitor is connected with external devices when AC power is connected, it may cause the malfunction of the monitor.*

6-3. Remote Terminal Assignment (GPI Port)

Port Assignment Items	Function
SDI-1 Input	Switches the input SDI-1
SDI-2 Input	Switches the input SDI-2
HDMI Input	Switches the input HDMI
YPbPr Input	Switches the input YPbPr
CVBS-1 Input	Switches the input CVBS-1
CVBS-2 Input	Switches the input CVBS-2
CVBS-3 Input	Switches the input CVBS-3
KEY-UP ▲	CURSOR UP during Menu Control.
KEY-DOWN ▼	CURSOR DOWN during Menu Control.
KEY- MENU	Switches Menu On/Off
KEY-ENTER	Switches Enter Button ON/OFF
Aspect	Switches Aspect On/Off
1:1 Scan On/Off	Switches 1:1 SCAN Function On/Off
H/V Delay On/Off	Switches H/V Delay Function On/Off
TC Display On/Off	Switches TC Display On/Off
ALM Display On/Off	Switches ALM Display On/Off
Freeze On/Off	Switches Freeze On/Off
Front Button LED On/Off	Switches Front Button LED On/Off.
Tally Red On/Off	Switches Red LED On/Off of Tally Lamp
Tally Green On/Off	Switches Green LED On/Off of Tally Lamp

7. How to Use the Program Update Port

A SERIAL PORT is used as an Updated port under the following situations.

1) When the firmware program of the monitor needs to be updated.
2) When the color temperature of the monitor needs to be measured, calibrated and adjusted.
3) When the monitor needs to be controlled via the Wall System Control Program for PC.

Program update or the use of serial port should be done under the supervision of trained engineers or experts.

● When the monitor needs to be connected for the update or with external devices, remove the AC power from the monitor first. Connect the cables and then turn the monitor on. If the monitor is connected with external devices when AC power is connected, it may cause the malfunction of the monitor.

8. List of Compatible Signal formats (HDMI/COMPOSITE)

NO	Signal input Formats	INPUT		OUTPUT	OUTPUT
		Composite SD-YPbPr	HD-YPbPr HDMI	SDI to HDMI (Convert)	HDMI to SDI (Convert)
1	NTSC	O	O	O	O
2	PAL	O	O	O	O
3	720x576/50i	X	O	O	O
4	720x480/59.94i	X	O	O	O
5	720x480/60i	X	O	X	X
6	720x576/50p	X	O	O	O
7	720x480/59.94p	X	O	O(480i)	O(480i)
8	720x480/60p	X	O	X	X
9	1280x720/23.98p	X	O	O	O
10	1280x720/24p	X	O	O	O
11	1280x720/25p	X	O	O	O
12	1280x720/29.97p	X	O	O	O
13	1280x720/30p	X	O	O	O
14	1280x720/50p	X	O	O	O
15	1280x720/59.94p	X	O	O	O
16	1280x720/60p	X	O	O	O
17	1920x1080/50i	X	O	O	O
18	1920x1080/59.94i	X	O	O	O
19	1920x1080/60i	X	O	O	O
20	1920x1080/23.98p	X	O	O	O
21	1920x1080/24p	X	O	O	O
22	1920x1080/25p	X	O	O	O
23	1920x1080/29.97p	X	O	O	O
24	1920x1080/30p	X	O	O	O
25	1920x1080/50p	X	O	O	O
26	1920x1080/59.94p	X	O	O	O
27	1920x1080/60p	X	O	O	O

8-1. List of Compatible Signal formats(SDI)

NO	Signal input Formats	SD/SD-SDI			
		Single	3G YUV 4:2:2	3G YUV 4:4:4	3G RGB4:4:4
1	NTSC	√	-	-	-
2	PAL	√	-	-	-
3	525/60i(SD)	√	-	-	-
4	625/50i(SD)	√	-	-	-
5	720x480/59.94p	-	-	-	-
6	720x576/50p	-	-	-	-
7	1280x720/23.98p	-	-	-	-
8	1280x720/24p	-	-	-	-
9	1280x720/50p	√	-	√	√
10	1280x720/59.94p	√	-	√	√
11	1280x720/60p	√	-	√	√
12	1920x1035/59.94i	√	-	√	√
13	1920x1035/60i	√	-	√	√
14	1920x1080/50i	√	-	√	√
15	1920x1080/59.94i	√	-	√	√
16	1920x1080/60i	√	-	√	√
17	1920x1080/23.98p	√	-	√	√
18	1920x1080/23.98psf	√	-	√	√
19	1920x1080/24p	√	-	√	√
20	1920x1080/24psf	√	-	√	√
21	1920x1080/25p	√	-	√	√
22	1920x1080/25psf	√	-	√	√
23	1920x1080/29.97p	√	-	√	√
24	1920x1080/29.97psf	√	-	√	√
25	1920x1080/30p	√	-	√	√
26	1920x1080/30psf	√	-	√	√
27	1920x1080/50p	-	√	-	-
28	1920x1080/59.94p	-	√	-	-
29	1920x1080/60p	-	√	-	-
30	2480x1080/23.98p	√	-	-	√
31	2480x1080/23.98psf	√	-	-	√
32	2480x1080/24p	√	-	-	√
33	2480x1080/24psf	√	-	-	√
34	2480x1080/25p	-	-	-	√
35	2480x1080/25psf	-	-	-	√
36	2480x1080/29.97p	-	-	-	√
37	2480x1080/30p	-	-	-	√

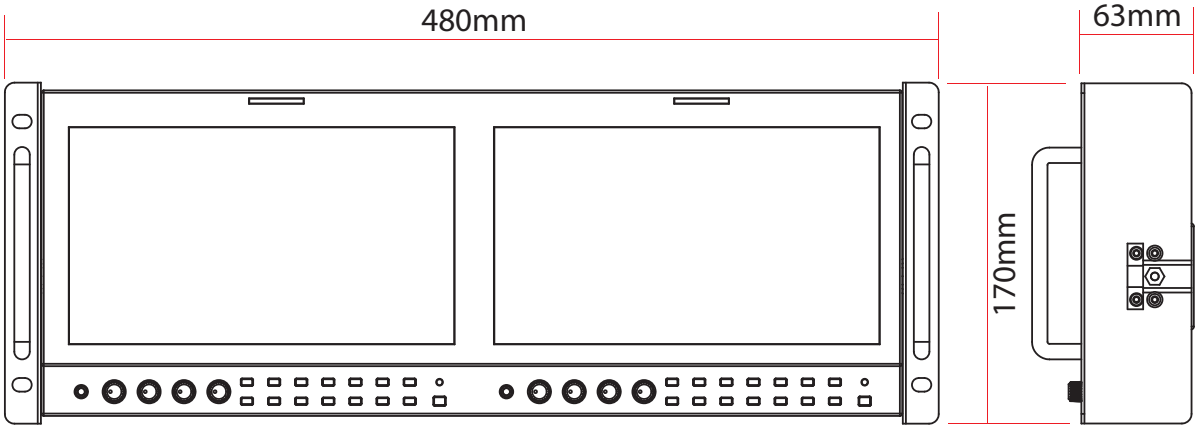
9. Specifications

ITEM		PRM-902F	PRM-102F
Input	2 x BNC	HD/SD-SDI, 3G/1.485G/270M	
	1 x HDMI	HDMI, (with HDCP v.1.1), 19pin Female	
	3 x BNC	Analog(YPbPr/CVBS/S-Video/RGB)	
Output	1 x BNC	Selectable SDI-1/2 Loop-through or HDMI conversion Out	
	1 x HDMI	HDMI (with HDCP v.1.1), 19pin Femaleor SDI conversion Out	
Analog Input Level	Composite	1.0Vp-p(with sync), NTSC/PAL	
	YC(S-Video)	Y :1.0Vp-p, C:0.286Vp-p	
	Component(Y/Pb/Pr)	Y :1.0Vp-p, Pb :0.7Vp-p, Pr :0.7Vp-p	
	Component (R/G/B)	G :1.0Vp-p(with Sync), B :0.7Vp-p, R :0.7Vp-p	
	PC-RGB,Sync Level	R, G, B : 0.7Vp-p, H/V Sync : 4V ± 1Vp-p	
Input Signal Format	SMPTE 425M AB	Level A MS1, MS2, MS3, MS4	
		Level B MS1, MS2, MS3, MS4	
	SMPTE 274M/292M	1080i (60/59.94/50) 1080p(30/29.97/25/24/24sF/23.98/23.98sF)	
	SMPTE 296M	720p(60/59.94/50)	
	SMPTE 260M	1035i(60/59.94)	
	SMPTE 125M/259M	480i(60/59.94), 576i(50)	
	2K, SMPTE 428M	2048 x 1080p(24/24sF/23.98/23.98sF)	
	ITU R-BT.656	576i(50)	
	HDMI	~ 1080p(60)	
Audio In/Out	1 x Phone Jack In	Line In(Stereo)	
	1 x Phone Jack Out	H/P Out(Stereo)	
	1 x Speaker Out	2x0.5W(Stereo)	
LCD	Size	9.0”	10.1”
	Resolution	1920x1080	1920x1200
	Pixel Pitch	0.1035x 0.1035 mm	0.11292x 0.11292 mm
	Color	16.7M(8bit)	16.7M(6bit + Hi-FRC)
	Viewing Angle	R/L:176, U/D:176	R/L:170, U/D:170
	Luminance of White	400 cd/m²	380 cd/m²
	Contrast	700 : 1	800 : 1
	Display Area (H x V)	198.72 x 111.78 mm	216.81x 135.50 mm
	Back Light	LED	LED
General	1 x Ethernet	Control/Update, RJ-45P Input/Output	
	2 xGPD	GPI-7 Port, RJ-45P Jack	
	2 x Serial	RS-422, RJ-11P Jack	
	1 x USB	For firmware update	
	Power Requirements	DC 12V / 4.1A	DC 12V / 3.25A
	Power Consumption	49W	39W
	Operating Temperature	-10°C ~ 40°C	
	Operating Humidity	20% ~ 80% RH	
	Accessories	• Manual(CD) • Cleaner• DC Adaptor • AC Power Cord	

10. Dimensions

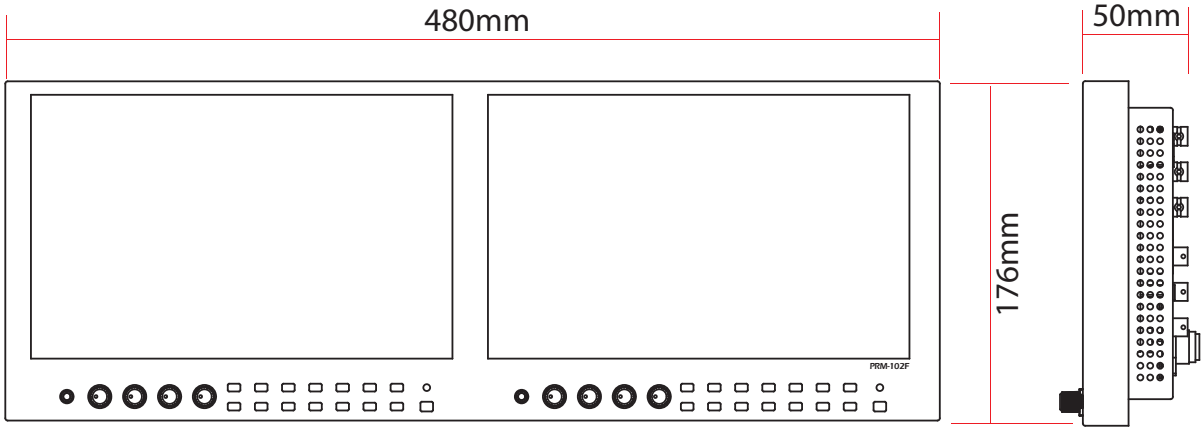
<PRM-902F>

Dimensions(WxHxD) : 480x170x63mm(18.9x6.7x2.4 inch)



<PRM-102F>

Dimensions(WxHxD) : 480x176x50mm(18.9x6.9x1.9 inch)



11. Trouble -shooting

Try the following first if you experience problems using the monitor. Contact us for repairing service if the following possible solutions can't solve the problems.

Symptoms	Possible Solutions.
The monitor isn't turned on.	- Press the Power Switch to restart the monitor. - Try the AC power.
The monitor is turned off while in use. (when running on the battery)	- Check if the power is running low on the battery. (When the battery capacity is low, the monitor might be frequently turned off.)
No picture is displayed on the screen and all LED buttons are lit up.	- Unplug the monitor and then reconnect it. Make sure to restart the monitor. (Contact us for service if this happens 3 consecutive times)
No picture is displayed on the screen but the buttons are working. (There is no Logo nor "No signal")	- Unplug the monitor and then reconnect it. Make sure to restart the monitor. (Contact us for service if this happens 3 consecutive times)
No picture is displayed when the input signal is in. (Startup logo is displayed with no trouble)	- Remove the input cable and see if "No signal" appears or not. => If "No signal" doesn't appear, restart the monitor and see if the startup logo appears or not. => If "No signal" appears, proceed as follows: - After setting the monitor on the Factory Default, select the input again and make sure the input mode is correct. - Try a different input cable. - Make sure the cable is connected to the right port. - Check if the right input format and the right frequency are being used - Try a different input source/device. . => If everything comes out okay, then it means there might be a problem with compatibility. If that is the case, please contact and inform us of the input source/device model.

Symptoms	Possible Solutions.
"No Signal" appears on the screen.	- Unplug the monitor and then reconnect it. Make sure to restart the monitor. - Check the input selection. - After setting the monitor on the Factory Default, select the input again and make sure the input mode is correct. - Try a different input cable. - Check if the input cable is connected correctly. - Check if the right input format and the right frequency are being used. - Try a different input source/device. => If everything comes out okay, then it means there might be a problem with compatibility. If that is the case, please contact and inform us of the input source/device model.
Strange colors are displayed on the startup logo.	- Unplug the monitor and then reconnect it. Make sure to restart the monitor. (Contact us for service if this happens 3 consecutive times.)
Strange colors are displayed on active careen. (no strange colors on the startup logo.)	- Make sure the monitor is on the Factory Default. - Run the Test (Internal) Pattern under Monitor Menu and see if the colors are displayed correctly. => If the colors are correctly displayed, proceed as follows: - Check the input selection. - Try a different cable connected to the input port. - Make sure the cable is connected to the right port when using the component input. - Try a different input source/device. . => If everything comes out okay, then, it means there might be a problem with compatibility. If that is the case, please contact and inform us of the input source/device model.
The picture isn't positioned right	- Set the monitor on the Factory Default. - Unplug it and then reconnect it. Make sure to restart the monitor. - Try a different input source/device. => If everything comes out okay, then it means there might be a problem with compatibility. If that is the case, please contact and inform us of the input source/device model.
Color and brightness look different between the same models.	- check the monitor again after 1 hour of warming up. - check if the gamma and colors are in the same tolerance range.
Color and brightness look different between the different models	- check the monitor again after 1 hour of warming up. - check the specifications and characteristics of the panels.

12. Maintenance

▪ Repair under warranty
- When there are technical or performance problems within 24 months from the purchasing date.
- When a monitor displays the same symptoms within 6 months from the previous repairing date.

▪ Repair not covered by warranty
- When the warranty period has passed but it hasn't been over 4 years since the purchase date.
- When the damage is caused by external force or when the monitor is dropped.
- When the damage is caused by over-voltage or backward voltage.
- When the damage is caused by acts of nature.
- When a monitor is damaged by the user who tried to install a program designed for different models .
- When there have been unauthorized modifications on the product.
- When the damage is caused by user's negligence in adjusting gamma and colors.
- When the problems can be solved by the possible solutions explained in this manual

13. Possible modification on Product

The design, dimensions and specifications of the product are subject to change for the better improvement without any prior notice.

14. Caution on operations

Under certain circumstances, the screen might freeze when setting the menu. If this is the case, turn the monitor off and after 5 seconds, turn it on again. This is caused by the overload in processing high-quality or highly complicated pictures.

15. Caution on installations

Do not install the monitor in locations where enough space cannot be provided around it as heat may build up inside preventing normal operation. Be sure to provide enough space around the unit.

This product has been specially designed for the purpose of broadcasting equipment. As such, it should be used and operated only by persons with related expertise.

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