All TVLogic products are manufactured in Korea

Professional 4K/UHD LCD Monitor
LXM Series

Operation Manual V1.2

LXM-180U / LXM-180P / LXM-240U / LXM-240P / LXM-320P / LXM-550U

TVLogic® Always ON-AIR

FCC (Federal Communications Commission)

This equipment has been tested and found to comply with the limits for class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interface when the equipment is operated in a commercial environment.
This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential to correct the interference at his own expense

CAUTION: Change or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Disposal of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with separate collection systems)
This symbol on the product or on its packing indicates that this product shall not be treated as household waste.
Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.
By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.

Contents

01 CAUTION

- Power Requirements
  LXM-180U/180P/240U/240P
  : AC 100~240V(50~60Hz) / DC 12V~24V
  LXM-320P/550U
  : AC 100~240V(50~60Hz)
- Apply waterproof measures when using the monitoroutdoors.
- All operating instructions must be read and understood before the product is operated.
- These safety and operating instructions must be kept in a safe place for future reference.
- All warnings on the product and in the instructions must be observed closely.
- All operating instructions must be followed.
- Do not use attachments not recommended by the manufacturer.
  Use of inadequate attachments can result in accidents.
- This product must be operated on a power source specified on the specification label.
  If you are not sure of the type of power supply used in your home, consult your dealer or local power company. For units designed to operate on batteries or another power source, refer to the operating instructions.
- The power cords must be routed properly to prevent people from stepping on them or objects from resting on them. Check the cords at the plugs and the product.
- Do not overload AC outlets or extension cords. Overloading can cause fire or electric shock.
- Never insert an object into the product through vents or openings. High voltage flows in the product, and inserting an object can cause electric shock and/or short internal parts.
  For the same reason, do not spill water or liquid on the product.
- If any of the following conditions occur, unplug the power cord from the AC outlet, and request a qualified service person to perform repairs.
  a. When the power cord or plug in damaged.
  b. When liquid was spilled on the product or when objects have fallen into the product.
  c. When the product has been exposed to rain or water.
  d. When the product does not operate properly as described in the operating instructions.
  Do not touch the controls other than those described in the operating instructions.
  e. When the product has been dropped or damaged.
  f. When the product displays an abnormal condition.
  Any noticeable abnormality in the product indicates that the product needs servicing.
- In case the product needs replacement parts, make sure that the service person uses replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. Use of unauthorized parts can result in fire, electric shock and/or other danger.
- Upon completion of service or repair work, request the service technician to perform safety checks to ensure that the product is in proper operating condition.
- The power cord plug shall be connected to a MAINS socket outlet with a protective earthing connection.
- When mounting the product be sure to install the product according to the method recommended by the manufacturer.
- Do not attempt to repair the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified service person to perform servicing.
- Unplug the power cord from the AC outlet before cleaning the product. Use a damp cloth to clean the product.
  Do not use liquid cleaners or aerosol cleaners.
- Unplug the power cord from the AC outlet if you do not use the product for considerably long time.
- Do not use the product near water, such as bath tub, washbasin, kitchen sink and laundry tub, swimming pool and in a wet basement.
- Keep the product away from direct sunlight.

01 CAUTION

- Do not place the product on an unstable cart, stand, tripod or table. Placing the product on an unstable base can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the product. When mounting the product on a wall, be sure to follow the manufacturer's instruction. Use only the mounting hardware recommended by the manufacturer.
- When relocating the product placed on a cart, it must be moved with the utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.
- Infrared devices can cause noise or malfunction under condition as below.
  a. Parts of the body come into contact with the infrared transmitter or acoustic device.
  b. Obstacles can cause electrical changes if there is a partition in the middle or in the wall.
  c. Exposure to radio interference from medical equipment, microwave ovens, wireless LAN devices, etc. with the same frequency band.
- The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product.
  Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings.
  This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.
- When installing the product on the rack, the inside of the product would be overheated due to heat from other devices nearby and the decreased air circulation, which could damage to the monitor. To prevent the damage, please have enough space for the monitor and use fans to avoid heat and maintain the operating temperature.
  (Refer to the specifications of the product).
- The LCD panel used in this product is made of glass.
  Therefore, it can break when the product is dropped or applied with impact. Be careful not to be injured by broken glass pieces in case the LCD panel breaks.
- Keep the product away from heat sources such as radiators, heaters, stoves and other heat generating products (including amplifiers).
- If the still image is displayed on the screen in the same position for a long period of time, the permanent burn-in on the LCD panel may occur. So, do not display characters or markers continuously.
  If the video signals or image patterns are continuously displayed at the maximum or high level of luminance, the image smearing or flicker may occur on the screen because of the LCD panel's structure and characteristics of materials used.
  When the permanent burn-in, image smearing, or other damages happen on the LCD panel due to the improper use by the end user, the warranty service is not applied.

WARNING

<Main Switch>

| means Power on when pressing

○ means Power off when pressing

<Beside critical components in circuit diagram>

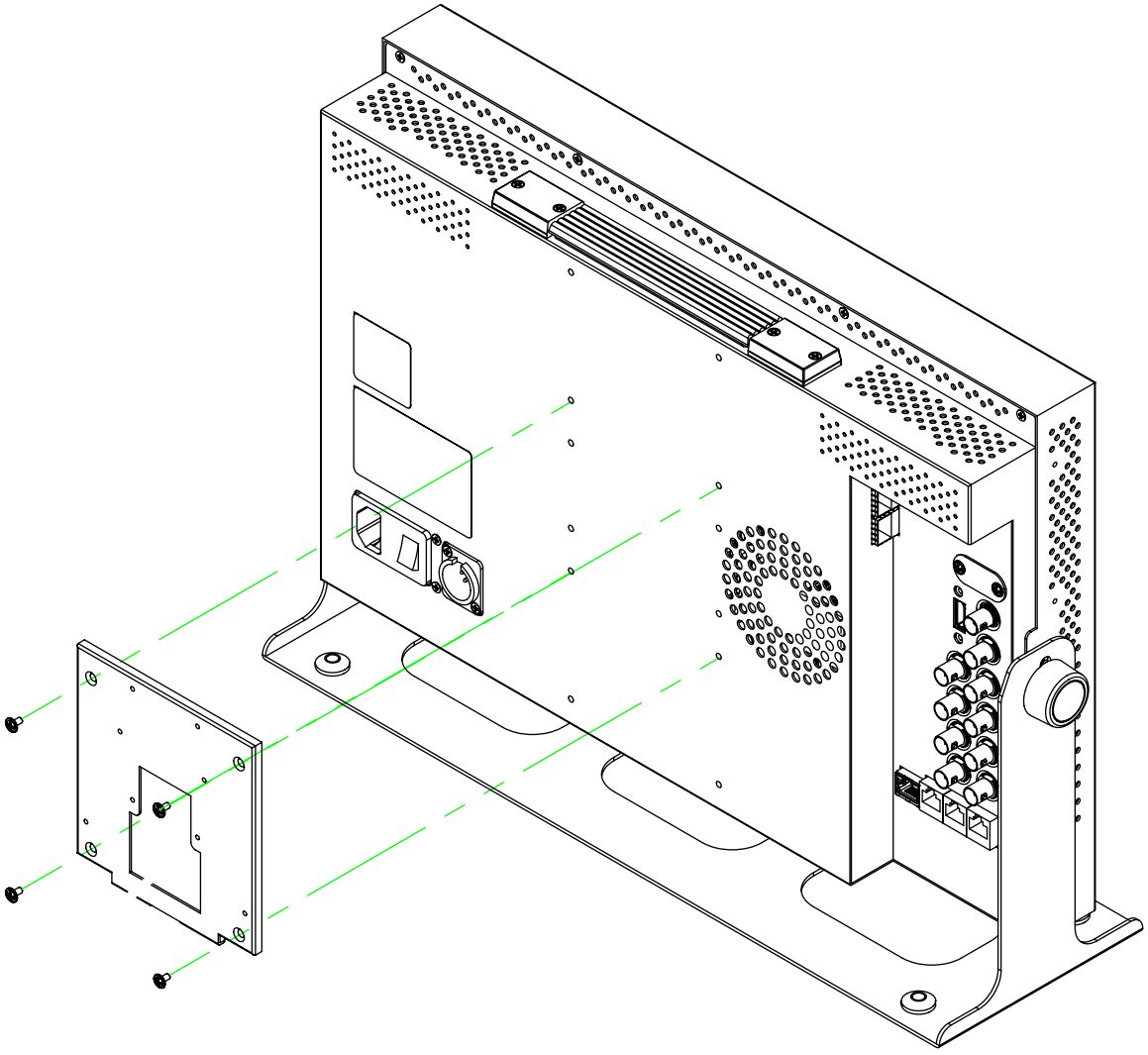
To identify any terminal which is intended for connection to an external conductor for protection against electric shock in case of a fault, or the terminal of a protective earth (ground) electrode.

<Near the main terminal block>

This mark indicates the possibility of injury or damage to property.

01 CAUTION

VESA WALL MOUNTING : LXM-180U

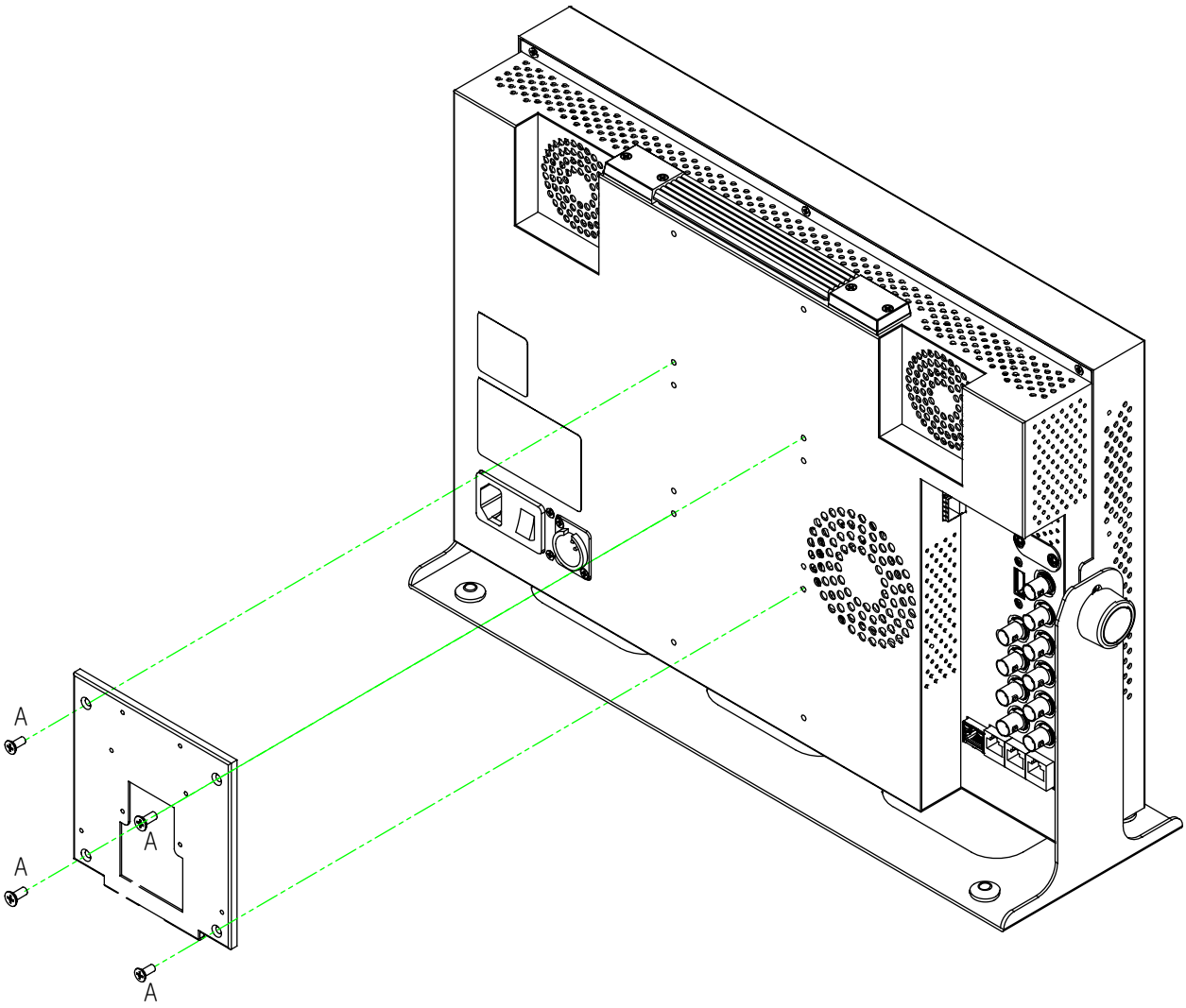


< Guide about VESA Mounting Screws >

- When mounting on the wall bracket, fix the monitor using 4 pieces of M4.0 x 10mm screws.
- Use the 100mm x 100mm VESA MOUNTING tap holes on the rear housing.

01 CAUTION

VESA WALL MOUNTING : LXM-180P

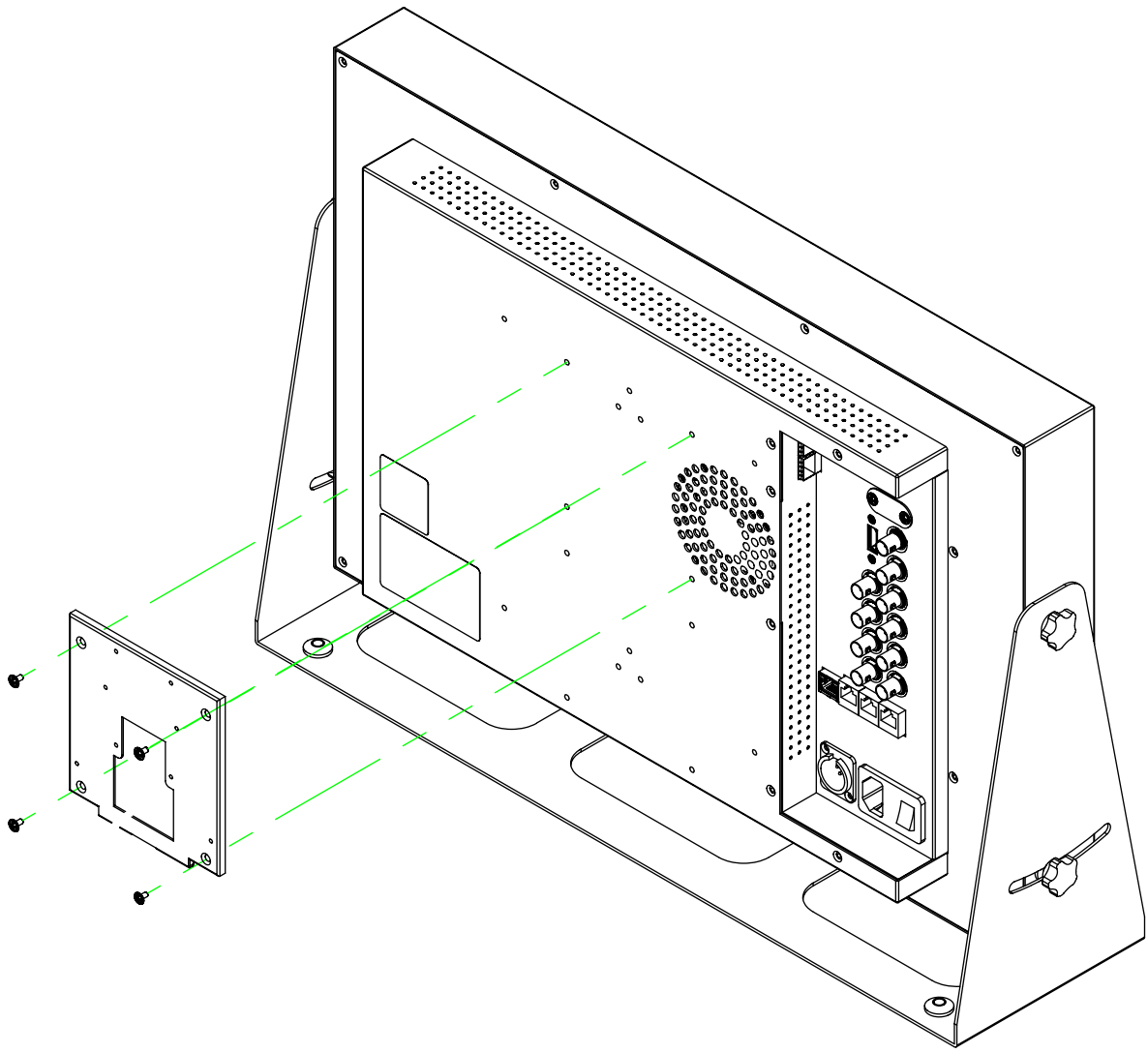


< Guide about VESA Mounting Screws >

- When mounting on the wall bracket, fix the monitor using 4 pieces of M4.0 x 10mm screws.
- Use the 100mm x 100mm VESA MOUNTING tap holes on the rear housing.

01 CAUTION

VESA WALL MOUNTING : LXM-240U

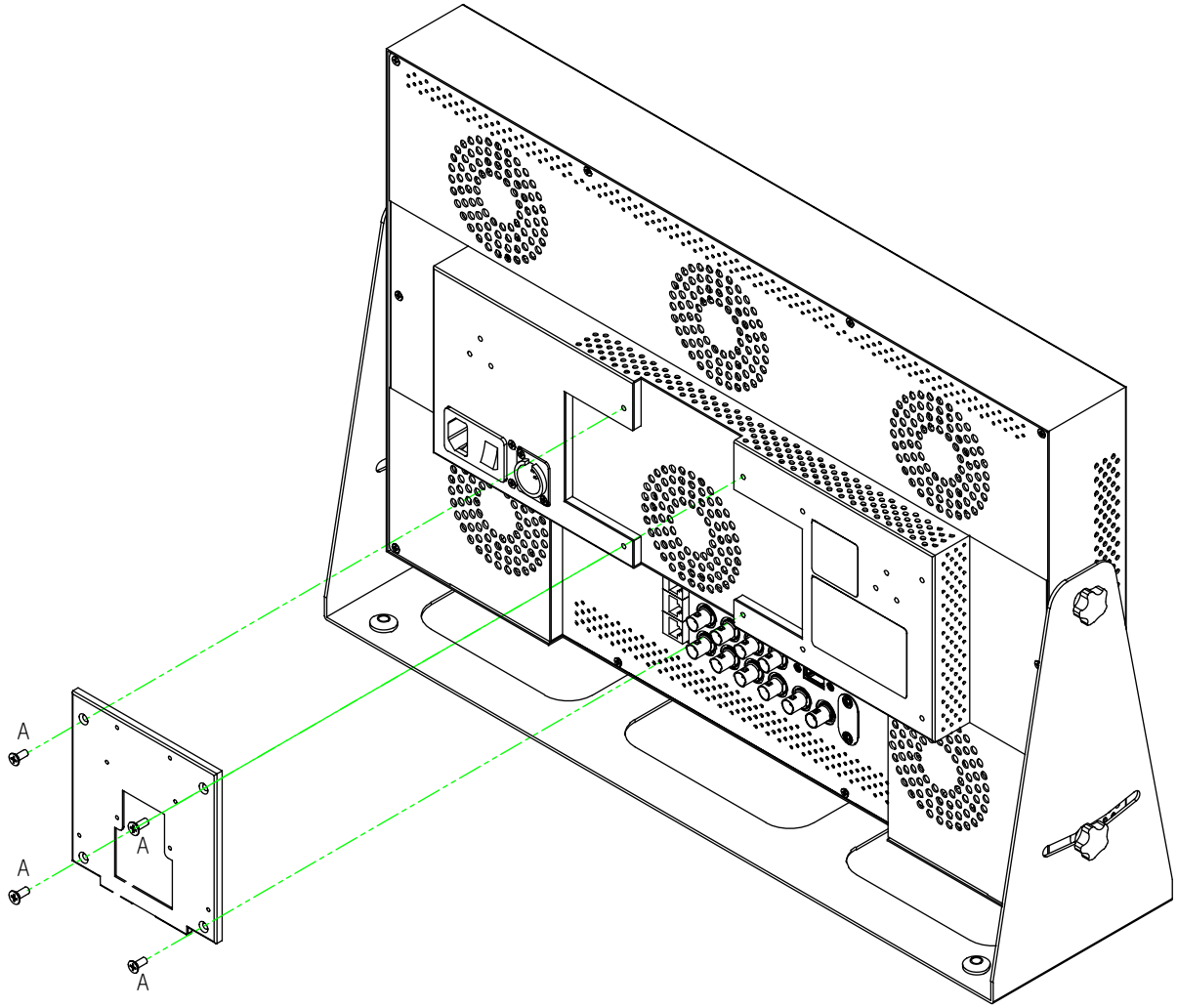


< Guide about VESA Mounting Screws >

- When mounting on the wall bracket, fix the monitor using 4 pieces of M4.0 x 10mm screws.
- Use the 100mm x 100mm VESA MOUNTING tap holes on the rear housing.

01 CAUTION

VESA WALL MOUNTING : LXM-240P



< Guide about VESA Mounting Screws >

- When mounting on the wall bracket, fix the monitor using 4 pieces of M4.0 x 10mm screws.
- Use the 100mm x 100mm VESA MOUNTING tap holes on the rear housing.

01 CAUTION

VESA WALL MOUNTING : LXM-320P / LXM-550U

< LXM-320P Guide about VESA Mounting Screws >

- When mounting on the wall bracket, fix the monitor using 4 pieces of M8.0 x 15mm screws.
- Use the 400mm x 200mm VESA MOUNTING tap holes on the rear housing.

< LXM-550U Guide about VESA Mounting Screws >

- When mounting on the wall bracket, fix the monitor using 4 pieces of M8.0 x 15mm screws.
- Use the 400mm x 400mm VESA MOUNTING tap holes on the rear housing.

Precautions about Mounting on the Wall

- Do not install the monitor anywhere other than a vertical wall.
- Do not install the monitor in a place subject to vibration or impact. The product may fall and be damaged.
- Do not install the monitor next to a sprinkler detector, as it may sense the heat from the monitor and get activated.
- Do not install the monitor near high-voltage cables. The product may be interfered with by high-voltage cables and the screen may not display properly.
- Do not install the monitor near heating devices, as this may cause the product to overheat and malfunction.
- Check the stability of the wall.
- If the wall is weak, reinforce the wall before installation.
- Do not drill into the wall and install the monitor inside.
- Before installing the wall mount, be sure to connect the signal cables and the power cord to the monitor.
- If it is not a cement wall, contact a professional company to check whether installation is possible before installing.
- Do not install the monitor tilted more than 15 degrees.
- Using screws longer than the standard length may damage the internal components of the monitor.
- Do not attach the wall bracket with excessive force. The product may be damaged or fall and cause injury.
- Vidente is not responsible for any damage to the monitor or injury resulting from using inappropriate screws or attaching the wall bracket with excessive force.
- To mount the monitor on the wall, you must use a wall bracket that can be installed more than 10cm away from the wall and have the payload below.
  (LXM-320P: over 25kg / LXM-550U: over 40kg)
- To install the monitor using a wall mount bracket, remove the stand from the monitor.
- Do not install the wall bracket while the monitor is turned on. It may result in injury from electric shock.

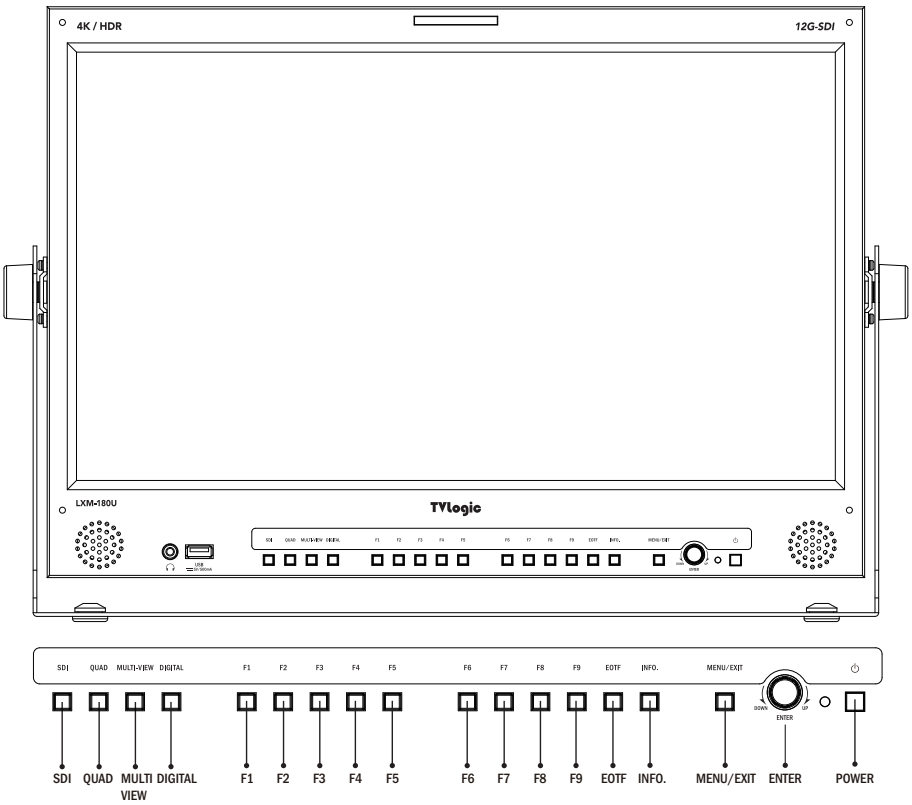
02 MAIN FEATURES

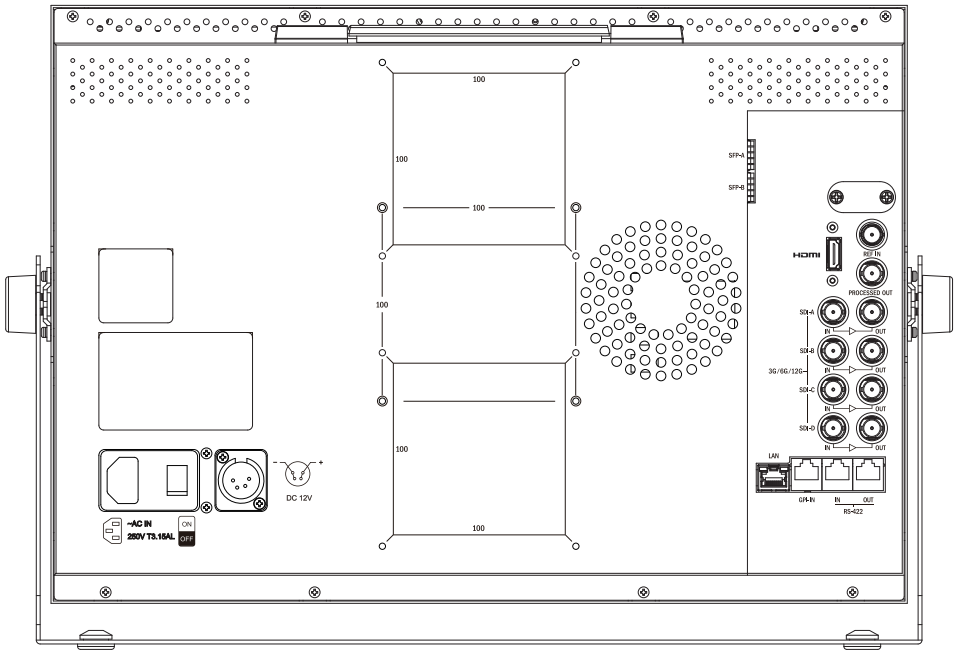
LXM series monitors contain the following features.

- **Support Various Interfaces**
  - This product supports various input and output interfaces below.
    4 x 12G-SDI Input
    2 x SFP Input
    1 x HDMI(2.0) Input
    1 x Reference Input
    4 x 12G-SDI Output
    1 x Processed Output
- **HDR Monitoring**
  - The LXM series monitors support various HDR EOTFs, including PQ and HLG, which allow the monitors to display HDR content accurately and faithfully.
- **HDR vs SDR Comparison** (To be supported)
  - In Picture-by-Picture mode, the LXM series monitors allow users to display the same vide side by side, apply HDR on one side and SDR on the other side, and compare the images.
- **Accurate Color Reproduction with Wide Color Gamut**
  - The LXM series monitors offer exceptional color performance with a DCI-P3 color space coverage of 98% and the ability to display 1.073 billion colors.
- **Custom 3D LUT Import**
  - With the LXM series monitors, users can load and apply their own 3D LUT files, generated by color grading tools.
- **Quad-View Display**
  - The LXM series monitors support the Quad view display, allowing up to four different video inputs to be shown on a single screen simultaneously.
    Four different 12G-SDI videos can be displayed.
- **Auto Detection of SDI Payload ID**
  - This function enables the LXM monitors to detect EOTF and Color Space information from the video payload ID using SMPTE ST 352 automatically when an SDI signal is connected.
- **Reference Input for Genlock** (To be supported)
  - The LXM series monitors are equipped with a Reference input for genlock.
- **Various Audio Monitoring Functions**
  - The LXM series monitors offer the various audio monitoring tools such as Audio Level Meter and Audio Phase Meter.
- **Various Scope**
  : Waveform, Vector Scope, (Histogram*)
  - The LXM can display the input signal's Waveform, VectorScope, and Histogram. Both the Waveform and VectorScope offer multiple modes and can be shown simultaneously. (*Histogram: To be supported)
- **Fast Mode** (To be supported)
  - This function can be used to minimize the de-interlacing processing time delay and improves the quality of fast moving and fine details under interlaced format.
- **Processed Output** (To be supported)
  - This output port provides additional flexibility in color management and monitoring with the following modes.
    - 3G-SDI Quad Link Input to 12G-SDI Single Link Output
    - 12G-SDI Input to 3G-SDI Down Scaling Output
    - HDMI/SFP Input to SDI Output
    - Camera LUT Applied Image Output
    - Custom 3D LUT Applied Image Output
- **Firmware Update via Ethernet**
  (To be supported)
  - All LXM monitors can be connected to Ethernet, enabling convenient remote firmware updates over the network.
- **Closed Caption (CC-608, CC-708, OP47)**
  (To be supported)
- **Video Range**
- **Blue/Mono Only**
- **H/V Delay**
- **H Flip, V Flip**
- **Timecode Display**
- **Marker**
- **Luma(Y') Zone Setting** (To be supported)
- **Focus Assist / Range Error**
- **Scan / User Aspect**
- **Dynamic UMD / Tally**
- **Remote Control via Ethernet, RS-422, GPI**

03 CONTROLS, INDICATORS, CONNECTIONS

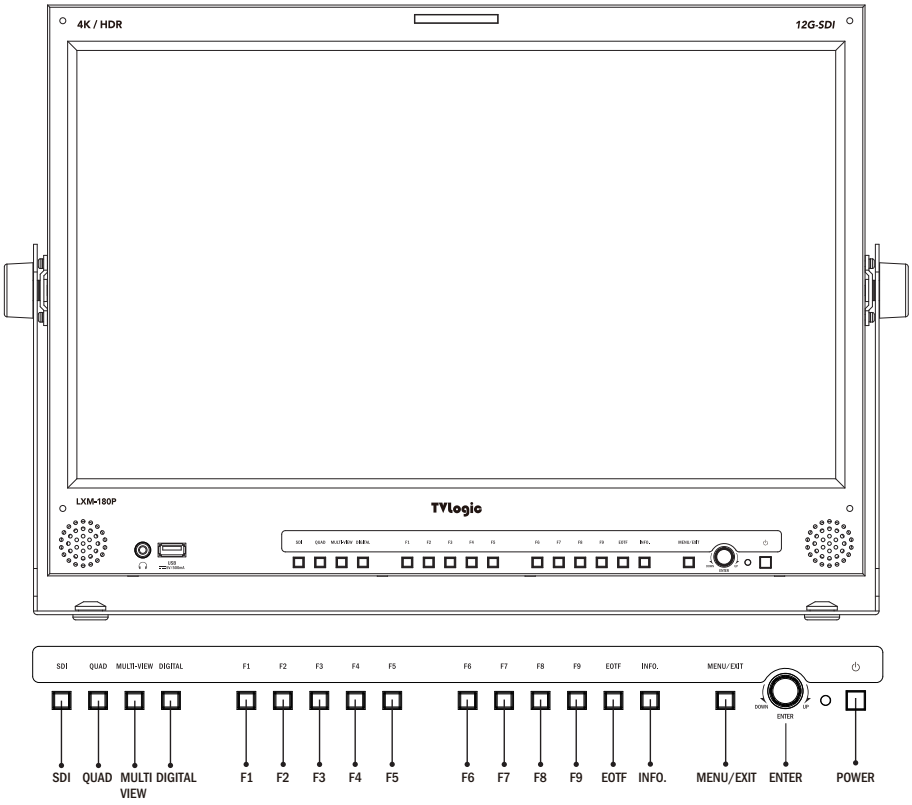
LXM-180U : FRONT & REAR

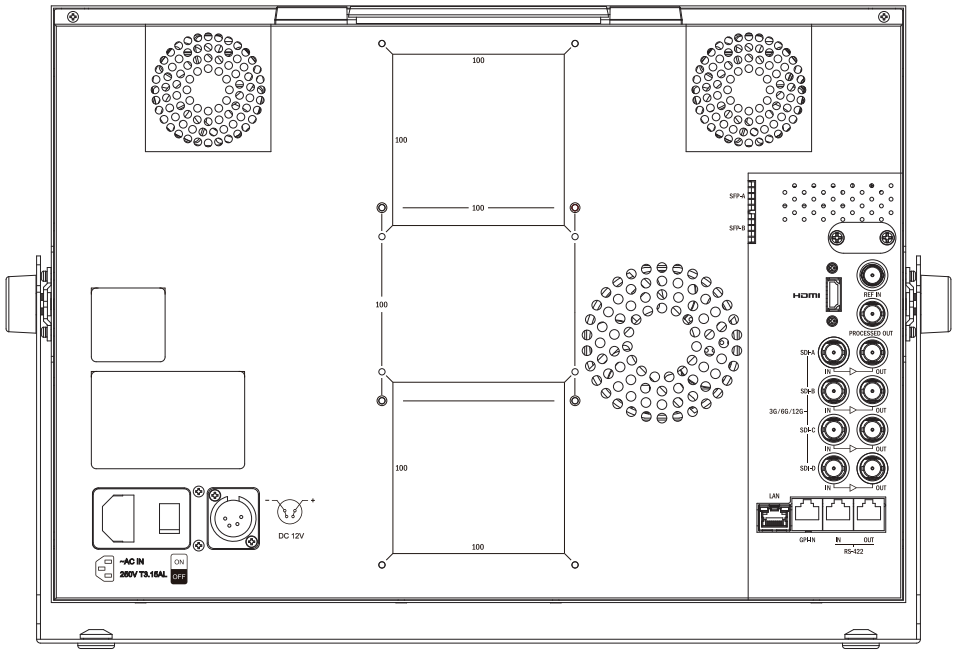


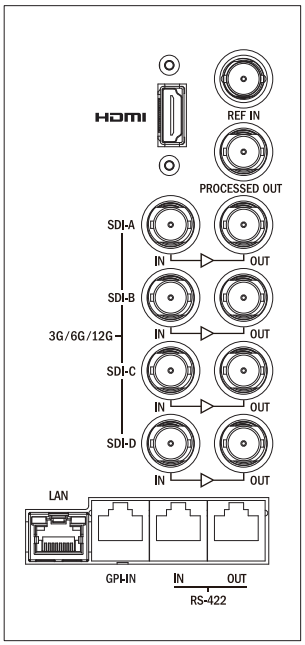


03 CONTROLS, INDICATORS, CONNECTIONS

LXM-180P : FRONT & REAR

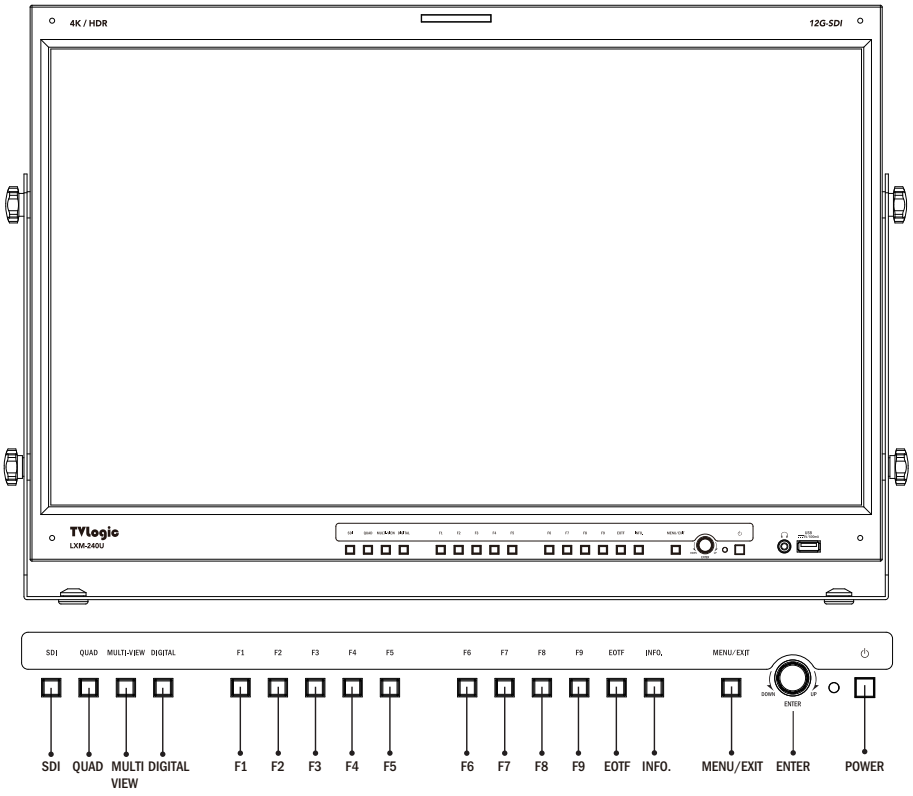


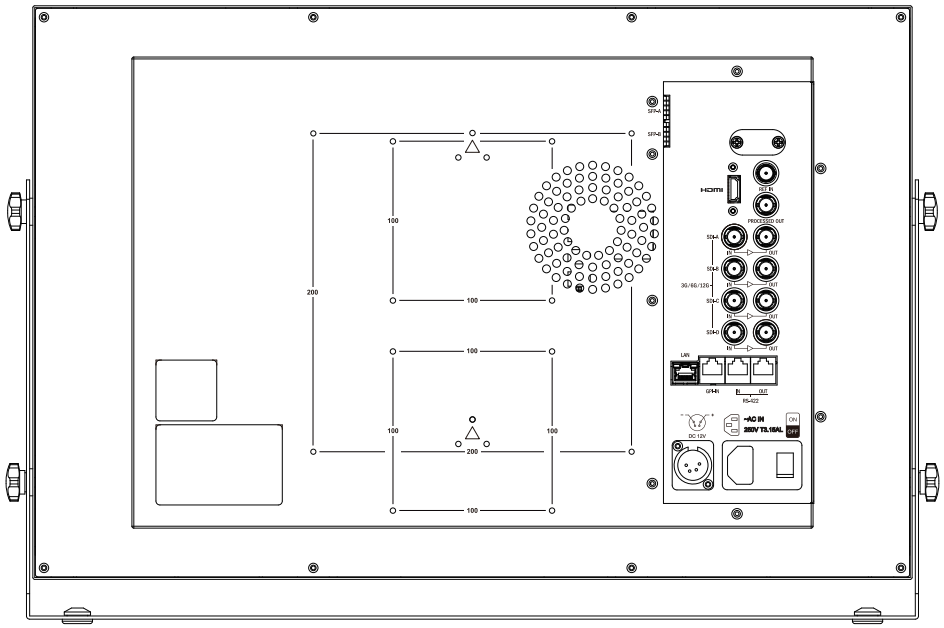


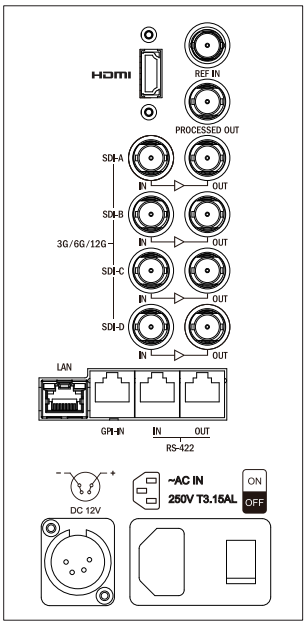


03 CONTROLS, INDICATORS, CONNECTIONS

LXM-240U：FRONT & REAR

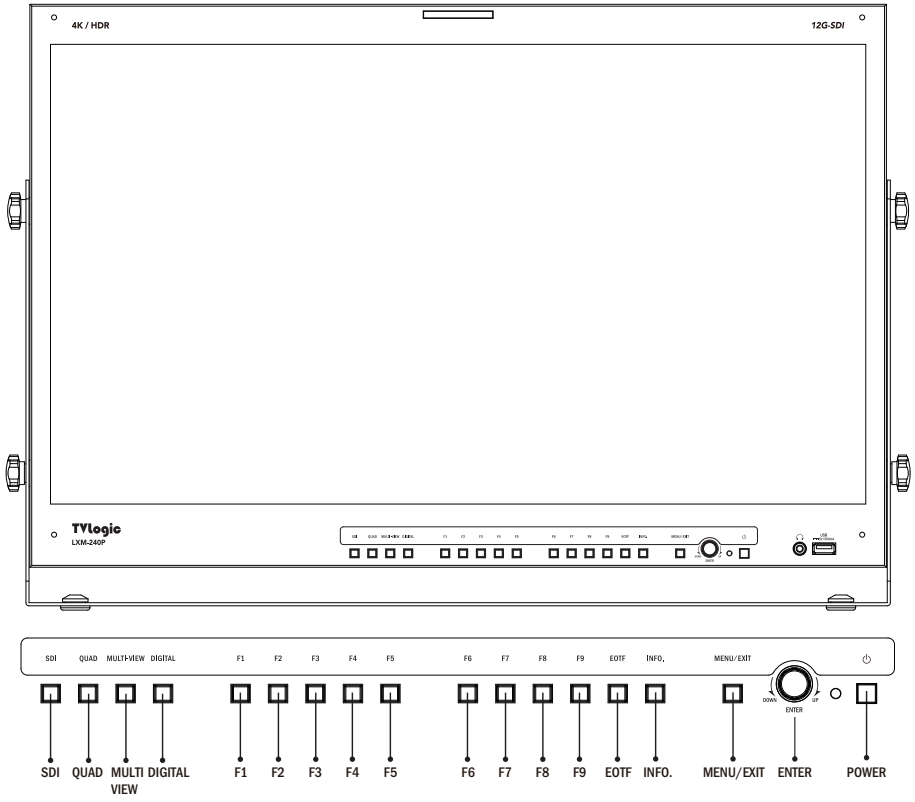


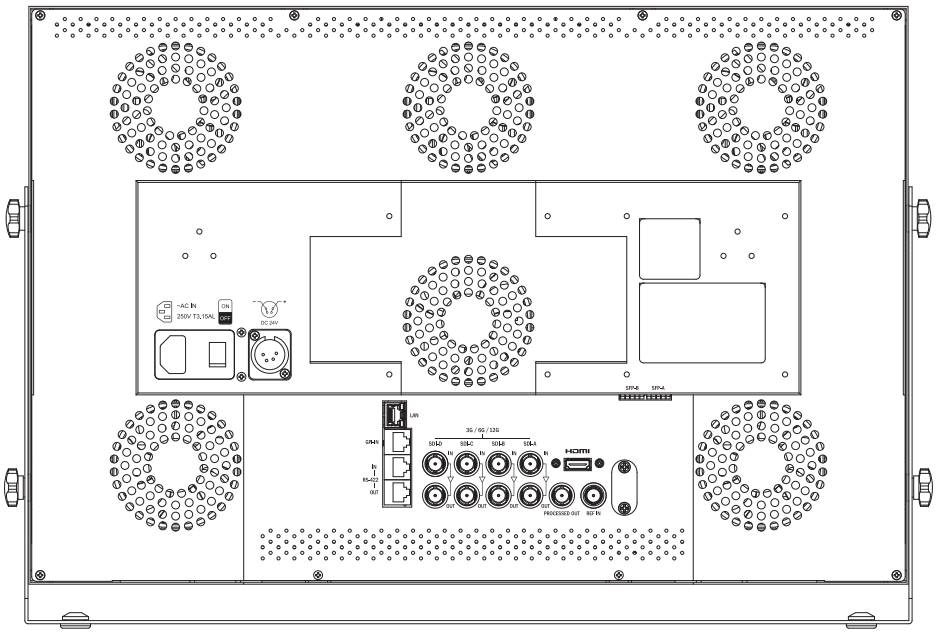


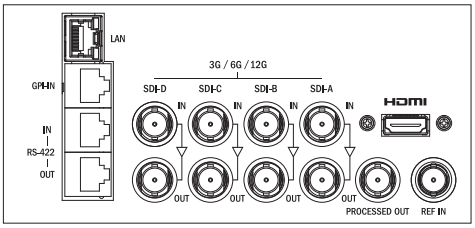


03 CONTROLS, INDICATORS, CONNECTIONS

LXM-240P : FRONT & REAR

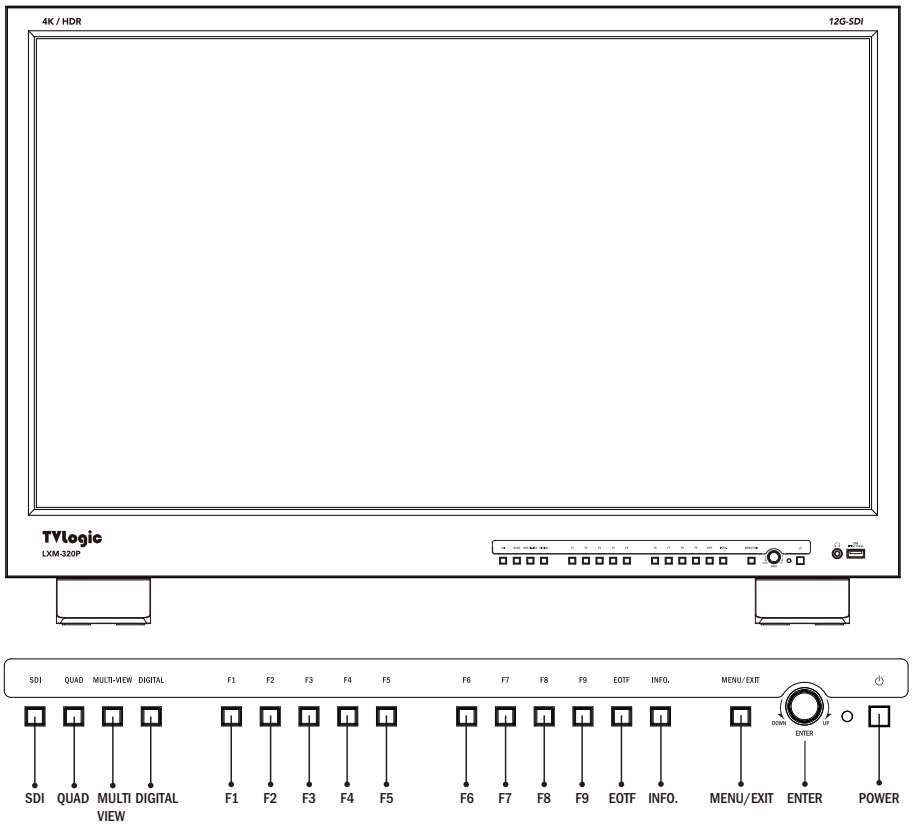


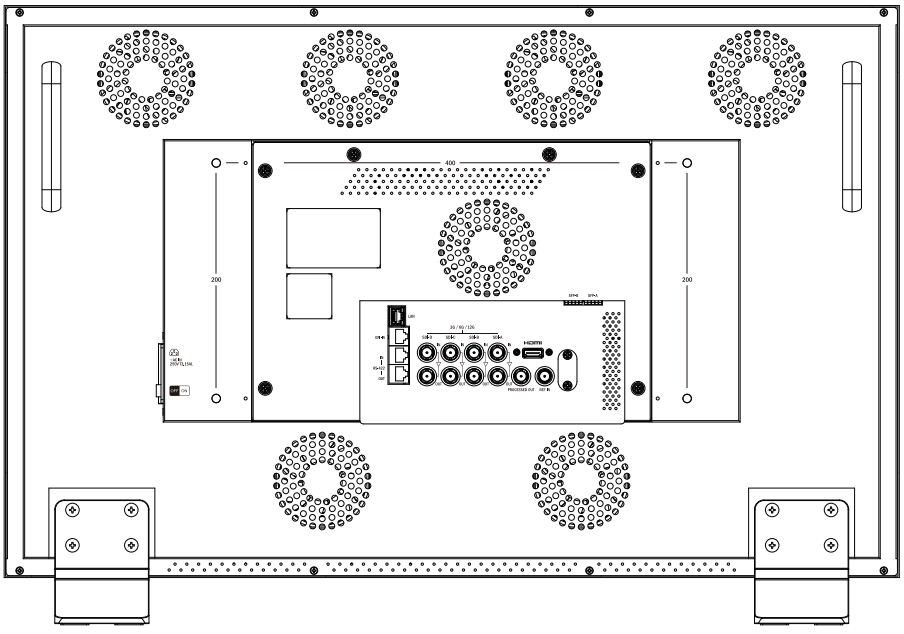


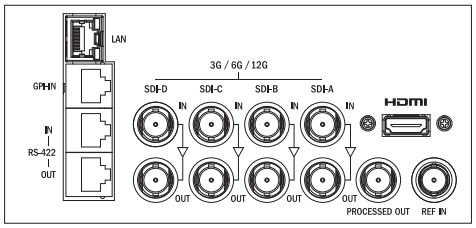


03 CONTROLS, INDICATORS, CONNECTIONS

LXM-320P : FRONT & REAR

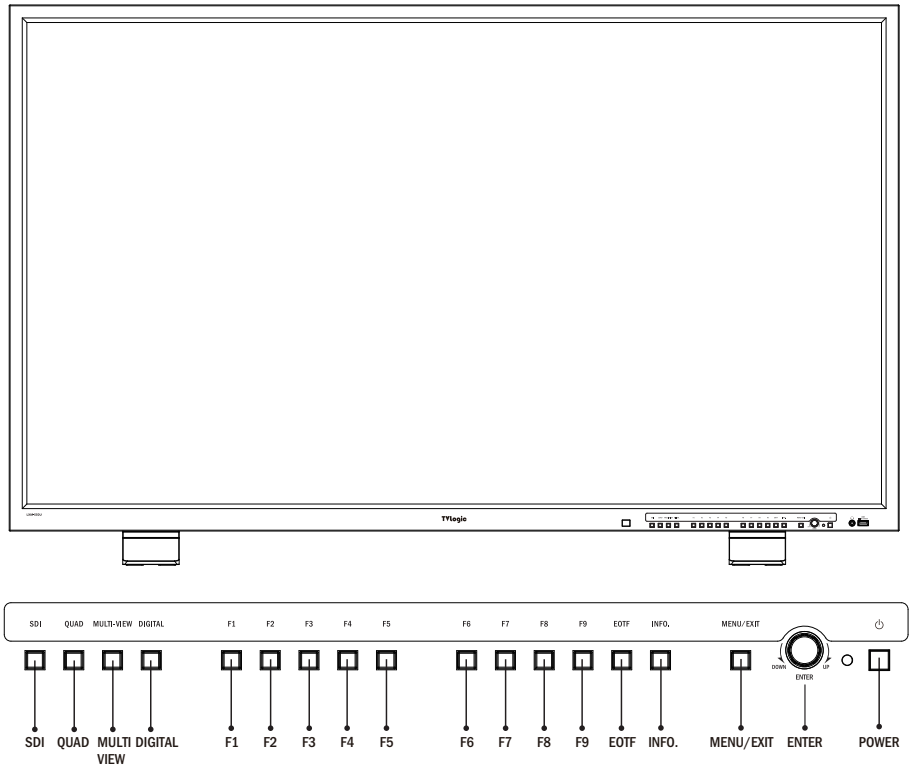


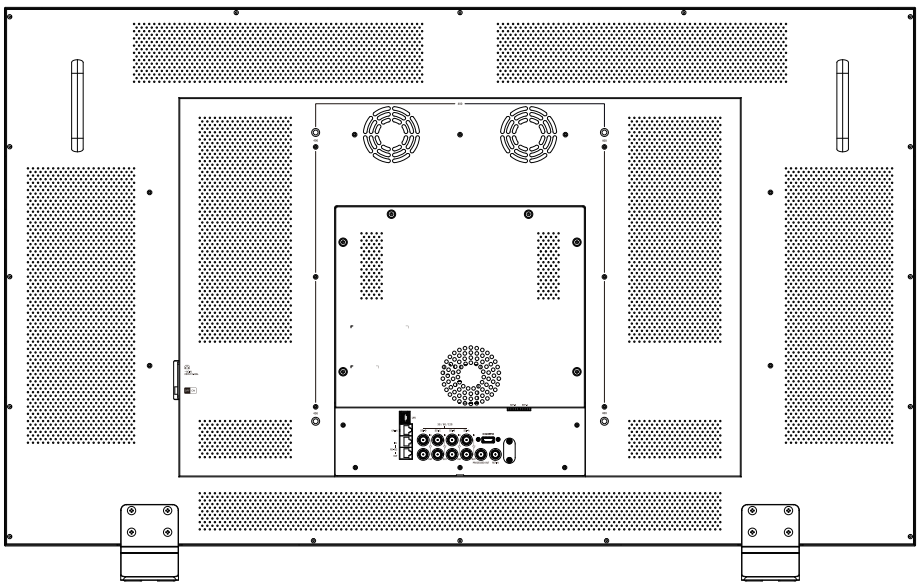


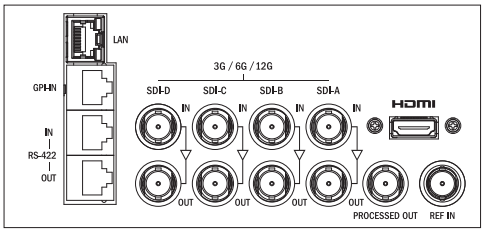


03 CONTROLS, INDICATORS, CONNECTIONS

LXM-550U：FRONT & REAR







03 CONTROLS, INDICATORS, CONNECTIONS

FRONT

- **SDI**
  - Select the SDI input.
  - The previously selected SDI input video is displayed.
  - Press the button to move through the modes
    : SDI-A → SDI-B → SDI-C → SDI-D

- **QUAD**
  - Select this mode when monitoring the Quad-Link Square Division input signal or the Quad-Link 2-Sample Interleave input signal.

- **MULTI-VIEW**
  - Select this mode when monitoring 2 or 4 different SDI/HDMI/SFP input signals at the same time.

  *For more information on this button, refer to "06 Function Details [1] Multi-View Settings" in page 49.

- **DIGITAL**
  - Select the HDMI or SFP-1 or SFP-2 input.

- **F1 to F9**
  - Shortcut buttons to activate preassigned functions immediately.

  *For more information on these buttons, refer to "06 Function Details [2] [INFO] button & [Function] button" in page 51.

- **EOTF**
  - Select the EOTF among 2.2, 2.4, 2.6, PQ(ST-2084), HLG, S-LOG3, sRGB.

- **INFO**
  - Display the signal information window.
  - When pressing this button, the function list which shows the currently assigned function to all Function buttons also appears.

  *For more information on these buttons, refer to "06. Function Details [2] [INFO] button & [Function] button" in page 51.

- **MENU/EXIT**
  - Display and set the OSD menu.
  - When the OSD menu is activated, press this button to exit from the menu.

- **ENTER(UP/DOWN)**
  - Move up and down through the menus during the OSD menu activation and also to increase and decrease the value of the selected feature.
  - Press the Knob to confirm a chosen value or mode.
  - When the OSD menu is not activated, pushing this knob gives the direct access to adjust the values of [VOLUME], [BRIGHT], [CONTRAST], [BACKLIGHT]. Turn the Knob to left or right to adjust the value.

- **POWER INDICATOR**
  - Indicates the condition and power status of the monitor.
  - The lamp turns off when the power is disconnected.
  - If this button is pressed shortly, the POWER LED turns red and the monitor goes into the standby mode.
    In the standby mode, the backlight turns off but the main board is in operation.
  - If this button is pressed for 3 seconds, the monitor turns off.

- **USB**
  - This terminal is used to upgrade the firmware or connect the monitor to the PC for color calibration using the calibration software provided by TVLogic.

- **AUDIO OUT (Phone Jack)**
  - Stereo audio of the currently selected input signal is output.
  - The output audio can be selected in the [EM. AUDIO LEFT] and [EM. AUDIO RIGHT] menu.

03 CONTROLS, INDICATORS, CONNECTIONS

REAR

- **SDI-A/B/C/D Input (BNC)**
  - SDI signal input connector.
  - All four SDI inputs support 12G/6G/3G/ HD-SDI signals.

- **SDI-A/B/C/D Output (BNC)**
  - SDI signal loop-out connector.
  - All four SDI outputs support 12G/6G/3G/ HD-SDI signals.

  * SDI Output is not activated when the monitor is turned off or in Standby mode.

- **HDMI Input**

- Input connector for HDMI signal.

- **SFP-A/B Input**

- Input connector for SFP optical signal.

- **REF Input** (To be supported)

- Reference Input for genlock

- **PROCESSED Out (SDI)** (To be supported)

- The LUT applied images or the downscaled images or the format converted images are output to this PROCESSED Out port.

* For more information on this port, refer to "06 Function Details [4] Processed Output" in page 56.

- **LAN**

- Control the monitor with a protocol provided by TVLogic or the TSL 5.0 protocol.

- **GPI-IN** (RJ-45)
  - Control the monitor externally. The desired functions can be assigned to each pin.
  - Functions can be changed in the GPI section of the OSD menu.

- **RS-422 IN/OUT** (RJ-45)
  - Control the monitor with the software provided by TVLogic or with the external UMD equipment.

- **AC IN**
  - Connect the supplied AC power cord.
  - AC 100 ~ 240V (50/60Hz)

- **DC IN**
  - Connect the DC power supply.
  - LXM-180U/180P/240U/240P: DC 12V ~ 24V
  - LXM-320P/550U: Not supported

<WARNING!!>
When using the product make sure to ground, whenever possible, before connecting the input signal cable in order to prevent any possible damage to the product or connected devices. The damage may include signal noise, malfunction of main board or display panel. And the connected devices such as camera or video source player may also be influenced through signal cable. Please check if the AC power source and the power extender or power distributor is grounded.

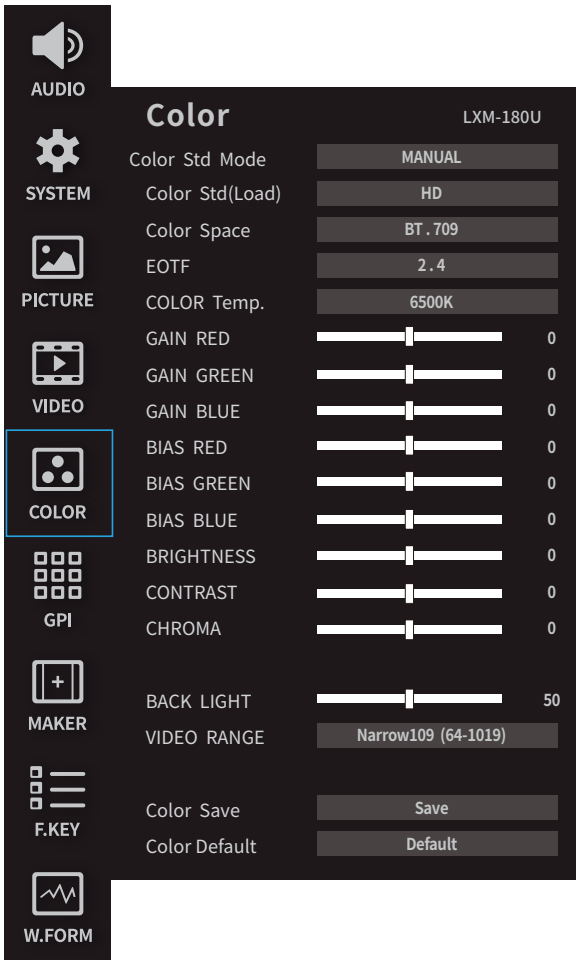
04 MENU TREE & ADJUSTMENT

MENU CONSTRUCTION & MENU CONTROL & MENU CONTROL SEQUENCE & MENU TREE

[1] Menu Construction

- **This product can be controlled and set system-wise through OSD displayed on the screen.**

- **The menu construction of this product is displayed as follows.**



[2] Menu Control

- **You can control various functions using MENU, KNOB, and other buttons on the front of the monitor.**

[3] Menu Control Sequence

- **Menu control sequence follows the order below.**

1. Press the MENU button to activate the OSD menu.
2. Move to a desired menu by rotating the Knob.
3. Press the Knob to select the menu and move to a sub menu by rotating the Knob.
4. Press the Knob to select the desired sub menu.
   (The selected sub menu will be highlighted.)
5. Press the Knob or MENU button to save the new value after adjusting the desired value by rotating the Knob.
6. Press the MENU button to return to the previous menu, and if there is no previous menu, the OSD menu will be removed from the screen.

04 MENU TREE & ADJUSTMENT

MENU CONSTRUCTION & MENU CONTROL & MENU CONTROL SEQUENCE & MENU TREE

[4] Menu Tree

COLOR	COLOR STD MODE
	COLOR STD(LOAD)
	COLOR SPACE
	EOTF
	COLOR TEMP.
	GAIN RED
	GAIN GREEN
	GAIN BLUE
	BIAS RED
	BIAS GREEN
	BIAS BLUE
	BRIGHTNESS
	CONTRAST
	CHROMA
	BACK LIGHT
	VIDEO RANGE
	COLOR SAVE
	COLOR DEFAULT
GPI	PIN 1
	PIN 2
	PIN 3
	PIN 4
	PIN 5
	PIN 6
	DHCP
	ID ADDRESS
	SUBNET MASK
	GATEWAY

GPI	PORT NO.
	SETTING APPLY
	UMD DISPLAY
	UMD POSITION
	UMD FONT SIZE
	D-UMD TALLY TYPE
	TALLY1 COLOR
	TALLY2 COLOR
	TALLY3 COLOR
	TALLY4 COLOR
	GROUP ID
	CHANNEL 1
	MONITOR ID
	UMD CHARACTER
	UMD CHAR. COLOR
	CHANNEL 2
	MONITOR ID
	UMD CHARACTER
	UMD CHAR. COLOR
	CHANNEL 3
	MONITOR ID
	UMD CHARACTER
	UMD CHAR. COLOR
	CHANNEL 4
	MONITOR ID
	UMD CHARACTER
	UMD CHAR. COLOR

04 MENU TREE & ADJUSTMENT

MENU CONSTRUCTION & MENU CONTROL & MENU CONTROL SEQUENCE & MENU TREE

[4] Menu Tree

MARKER	MARKER
	CENTER MARKER
	SAFETY AREA
	FIT MARKER
	MARKER MAT
	MARKER COLOR
	MARKER THICKNESS
	USER MARKER H1
	USER MARKER H2
	USER MARKER V1
	USER MARKER V2
FUNCTION KEY	KEY LED
	F1 KEY MAPPING
	F2 KEY MAPPING
	F3 KEY MAPPING
	F4 KEY MAPPING
	F5 KEY MAPPING
	F6 KEY MAPPING
	F7 KEY MAPPING
	F8 KEY MAPPING
	F9 KEY MAPPING

WAVEFORM & FOCUS	WAVE FORM DISPLAY
	WAVE FORM INTENSITY
	WAVE FORM TRANS.
	WAVE FORM COLOR
	LINE WAVE FORM
	SELECT LINE POSITION
	LUMA(Y') ZONE CHECK
	LUMA(Y') ZONE ADJUST
	FOCUS ASSIST
	FOCUS ASSIST COLOR
	FOCUS ASSIST LEVEL
	RANGE ERROR
	Y MAX
	Y MIN
	C MAX
	C MIN
	BLINK
	COLOR
	GRID

04 MENU TREE & ADJUSTMENT

MENU CONSTRUCTION & MENU CONTROL & MENU CONTROL SEQUENCE & MENU TREE

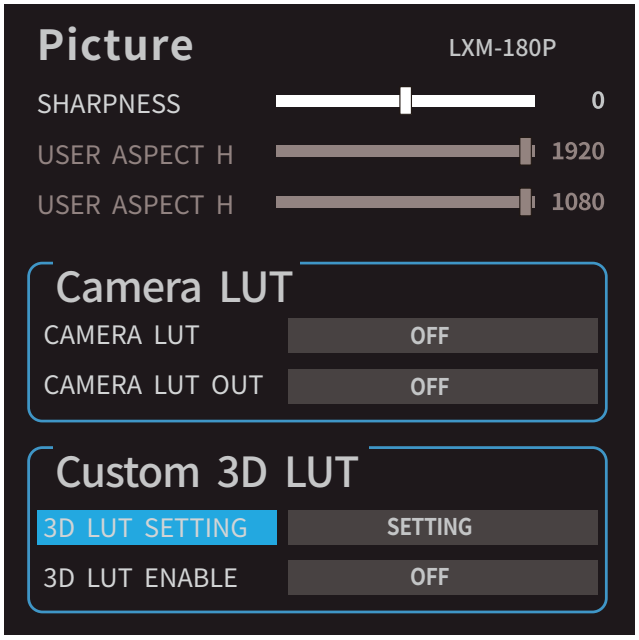
[4] Menu Tree

AUDIO	LEVEL METER ENABLE
	LEVEL METER SELECT
	LEVEL METER DISPLAY
	LEVEL METER REFERENCE
	LEVEL METER DECAY TIME
	LEVEL METER SIZE
	LEVEL METER POSITION
	VOLUME
	EM. AUDIO LEFT
	EM. AUDIO RIGHT
SYSTEM	KEY LOCK NUMBER
	KEY LOCK ENABLE
	OSD DISPLAY
	INTERNAL PATTERN
	ECO MODE TIMER
	ECO MODE LEVEL
	OSD BLEND
	CONFIG. DATA
	SET DEFAULT
	S/W UPGRADE
	VERSION
	SERIAL NUMBER

PICTURE	SHARPNESS
	USER ASPECT H
	USER ASPECT V
	CAMERA LUT
	CAMERA LUT OUT
	CUSTOM 3D LUT
VIDEO & DISPLAY	EHS(DE-INT) MODE
	FAST MODE
	3G FORMAT
	TIME CODE ENABLE
	BLUE ONLY
	H/V DELAY
	H/V FLIP
	QUAD MODE
	CLOSED CAPTION
	CC INFO
	DECODE CHANNEL (608)
	CAPTION SERVICE (708)
	TELETEXT PAGE

05 MENU OPERATIONS

[1] PICTURE



- **SHARPNESS**
  - Adjust the sharpness level of the image.
  - Adjustable range:

- **USER ASPECT H** (To be supported)
  - Adjust the aspect ratio of the displayed image by setting the horizontal size of the screen.
  - Adjustable range: **[0] to [1920]**
  - Activated only when the [SCAN] mode is set to [USER ASPECT].

- **USER ASPECT V** (To be supported)
  - Adjust the aspect ratio of the displayed image by setting the horizontal size of the screen.
  - Adjustable range: **[0] to [1080]**
  - Activated only when the [SCAN] mode is set to [USER ASPECT].

Note

- USER ASPECT function supports the 1920 x 1080 HD signals only.

- **Camera LUT**
  - Apply the preloaded camera LUT for the input signal.

CAMERA LUT

- Select the desired camera LUT to apply to the input signal.
- Selectable mode:
  [OFF], [LOG-C], [C-LOG], [S-LOG1], [S-LOG2], [S-LOG3], [RED GAMMA3], [RED GAMMA4]

Note

- The selected CAMERA LUT is applied to the image which is currently displayed on the screen.
- The CAMERA LUT function is supported in the Single link video mode and the Quad linke video mode.
  In the Multi-View mode, this function is not supported.

CAMERA LUT OUT

- **[OFF]**: The original input video is output by the SDI Output ports.
- **[ON]**: The camera LUT applied image is output by Processed Output port

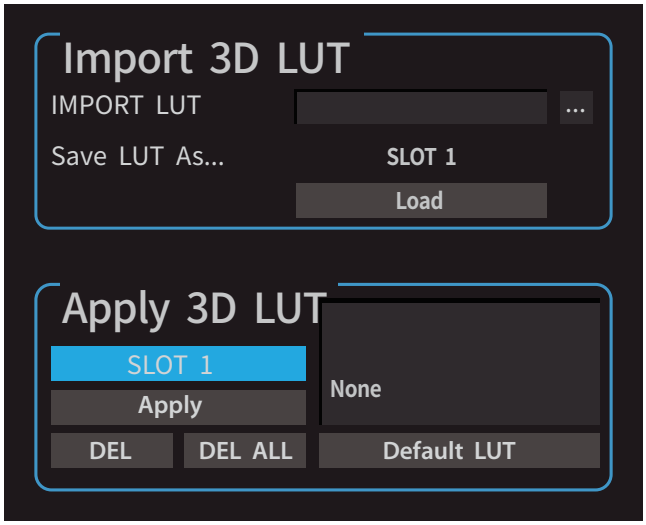
- **CUSTOM 3D LUT**
  - Allow users to import the 3D LUT files which are created with a color grading tool or other software to the monitor and then apply them to the input video.

Note

- The selected 3D LUT is applied to the image which is currently displayed on the screen.
- The Custom 3D LUT function is supported in the Single link video mode and the Quad link video mode.
  In the Multi-View mode, this function is not supported.

05 MENU OPERATIONS

[1] PICTURE



- **Import 3D LUT**
  - Load and save the 3D LUT files to the monitor.

Note

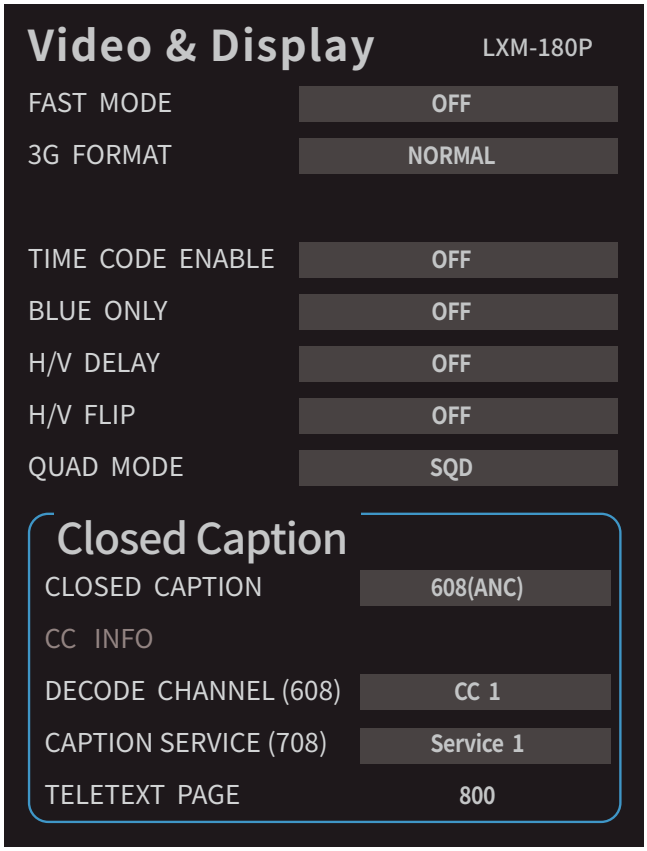
- Up to 10 3D LUT files can be saved from SLOT 1 to SLOT 10.
- The File System of the USB Flash Drive should be FAT32.
- Supported 3D LUT Formats: Cube
- Number of lattice points: 17 or 33

- **Apply 3D LUT**
  - Apply the imported 3D LUT files to the input video.
  - Delete the 3D LUT files which are saved on the slots.

*For more information on this function, refer to "06 FUNCTION DETAILS [3] Import and Apply Custom 3D LUT" in page 52.

05 MENU OPERATIONS

[2] VIDEO & DISPLAY



- **FAST MODE** (To be supported)
  - This function minimizes the time delay between arrival of the serial electrical signal at the monitor input and the light output from the screen.
  - Since this function is to minimize the deinterlacing delay, it is not effective under progressive format.
  - This function is useful when the input signal is the fast moving video, and also useful to reduce the delay time between the video and the audio.

- **3G FORMAT**
  - Select the format of 3G input signal.
  - Selectable mode:
    [NORMAL]
    [MODE A 444 10BIT_YCbCr]
    [A 444 10BIT_RGB]
    [A 444 12BIT_YCbCr]
    [A 444 12BIT_RGB]
    [A 422 12BIT_YCbCr]
    [B 444 10/12BIT_YCbCr]
    [B 444 10/12BIT_RGB]
    [B 422 12BIT_YCbCr]
    [B 422 10BIT_YCbCr 60P]
  - Automatically detect the signal when the payload signal appears in NORMAL mode.

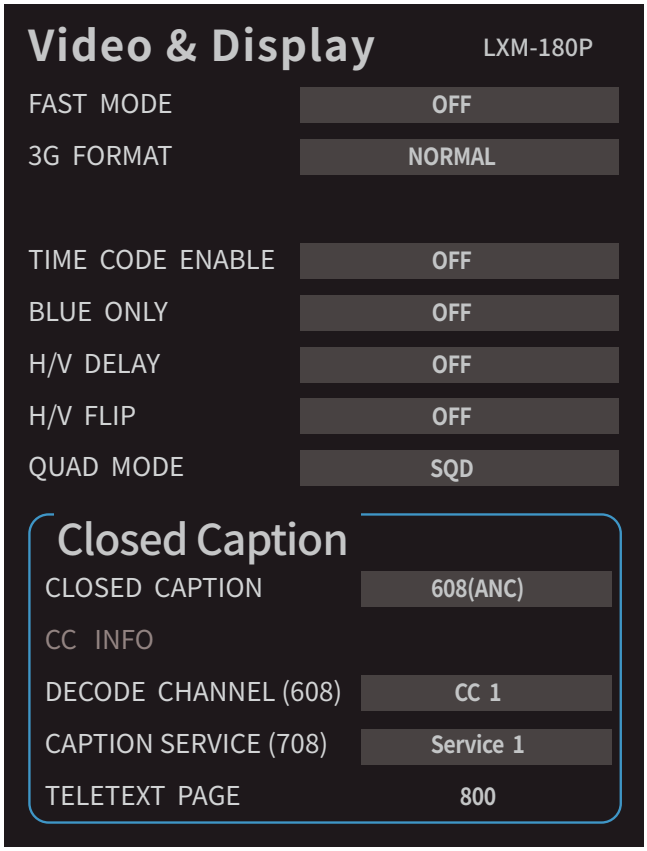
- **TIME CODE ENABLE**
  - Display the time code embedded on the SDI signal.
  - **[LTC]**: Display the time code in LTC format.
  - **[VITC]**: Display the time code in VITC format.

- **BLUE ONLY**
  - **[BLUE]**: Remove red and green from the input signal and display only the blue signal in monochrome.
  - **[MONO]**: Display the input signal only in monochrome (black and white).

- **H/V DELAY**
  - Check the blanking area of horizontal sync and vertical sync.
  - **[H-DELAY]**: Display the blanking area of horizontal sync.
  - **[HV-DELAY]**: Display the blanking area of horizontal and vertical sync.

05 MENU OPERATIONS

[2] VIDEO & DISPLAY



- **H/V FLIP**
  - Flip the displayed image horizontally and/ or vertically.
  - **[H-FLIP]**: The input video is flipped horizontally.
  - **[V-FLIP]**: The input video is flipped vertically.
  - **[HV-FLIP]**: The input video is flipped horizontally and vertically.

- **QUAD MODE**
  - Set the image division of the SDI dual-link or quad-link 4K/UHD input signal.
  - **[SQD]**: Select to receive the images of the quad-link square division system.
  - **[2SI]**: Select to receive the images of the dual-link or quad-link 2-sample interleave system.

- **CLOSED CAPTION** (To be supported)
  - Set the closed caption function.
  - Selectable mode: **[OFF], [608(ANC)], [608(Line21)], [708], [OP47]**

Note

- The Closed Captions which meet 608: CEA-608-B, 708: CEA-708-C, OP47 standard are only displayed on the screen.
- Closed Caption is available only when the input signal is the HD-SDI single link.

- **CC INFO** (CLOSED CAPTION INFO)
  - Displays the Closed Caption information which the monitor currently receives.

- **DECODE CHANNEL (608)**
  - Set the channel of Closed Caption 608.
  - Selectable mode: **[CC 1], [CC 2], [CC 3], [CC4]**

- **CAPTION SERVICE (708)**
  - Set the service of Closed Caption 708.
  - Selectable mode: **[Service 1] to [Service 6]**

- **TELETEXT PAGE**
  - Set the page of OP47.
  - Selectable range: **[801] to [8FF]**

05 MENU OPERATIONS

[3] COLOR

- **Color Std Mode**
  - Select the color standard mode.
  - **[AUTO]**: Detect Color Space and EOTF information from the video payload ID based on SMPTE ST 352 and adjust the sub menus like [Color Std(Load)], [Color Space], [EOTF] [COLOR Temp.], [VIDOE RANGE] automatically.

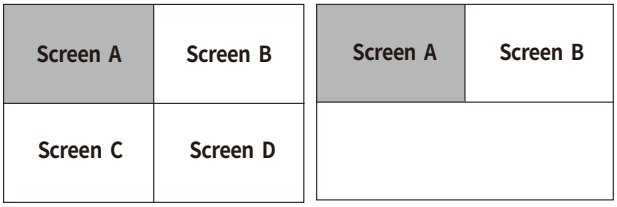
Note

- When [Color Std Mode] is set to [AUTO], if the SDI input signal doesn't include the payload ID, the [Color Std(Load)] is set to the [HD] mode.
  - **[MANUAL]**: When [MANUAL] is selected, all sub menus from [Color Std(Load)] to [VIDEO RANGE] are adjustable.

- **Color Std(Load)**
  - Select the color standard for the displayed video.
    The standard value of [Color Space], [EOTF], [COLOR Temp.], [VIDEO RANGE] are automatically loaded based on each selected color standard.
  - Selectable mode: **[HD], [UHD], [DCI], [PQ], [PQ-P3], [HLG], [USER 1]~[USER 10]**

Note

- After a [Color Std(Load)] mode is selected, the settings of the sub menus from [Color Space] to [VIDEO RANGE] can be adjusted.
- After a [Color Std(Load)] mode is selected, if any setting value from [Color Sapce] to [VIDEO RANGE] is changed from the default value, '*' mark appears next to the selected [Color Std(Load)] mode.
  ex. [HD] → [HD*]
- After you load a color standard and change the settings in the sub menus like [EOTF], [Color Temp.], etc., you can save the changed settings in [USER 1] to [USER 10] and then recall it later.
- In Quad-View mode and Picture-by-Picture mode, if the setting of [Color Std(Load)] is changed, it is applied to SCREEN A.



[Quad-View Mode] [Picture-by-Picture Mode]

05 MENU OPERATIONS

[3] COLOR

- **Color Space**
  - Select the standard color space.
  - Selectable mode: **[BT.709], [BT.2020], [DCI-P3], [S-GAMUT3], [NATIVE]**

- **EOTF**
  - Select the electrophotic conversion functions (Gamma or HDR curve).
  - Selectable mode: **[2.2], [2.4], [2.6], [PQ(ST-2084)], [HLG], [S-LOG3], [sRGB]**

- **COLOR Temp**
  - Set the color temperature.
  - Selectable mode: **[3200K], [5000K], [5600K], [6000K], [6300K], [6500K], [9300K], [CUSTOM 1], [CUSTOM 2]**

- **GAIN RED/GREEN/BLUE Gain(or Picture, Contrast)**
  - Adjust Red/Green/Blue Gain (or Picture, Contrast) level.
  - Selectable range: **[-256] to [256]**

- **BIAS RED/GREEN/BLUE**
  - Adjust Red/Green/Blue Bias (or Offset). Bias adjustment mainly affects the black level.
  - Selectable range: **[-100] to [100]**

- **BIGHTNESS**
  - Adjust the brightness(offset) setting level of the current screen.
  - Selectable range: **[-100] to [100]**

- **CONTRAST**
  - Adjust the contrast(gain) setting level of the current screen.
  - Selectable range: **[-100] to [100]**

- **CHROMA**
  - Adjust the chroma(color saturation) setting level of the current screen.
  - Selectable range: **[-100] to [100]**

- **BACK LIGHT**
  - Adjust the current value of the backlight of the LCD panel.
  - Selectable range: **[0] to [100]**

Note

- The default backlight value is saved to the monitor after calibration.
- The backlight value is changed depending on the selected [Color Std(Load)] mode.

05 MENU OPERATIONS

[3] COLOR

- **VIDEO RANGE**
  - Select the video range of the input signal.
  - Selectable mode: **[Narrow (64-940)], [Narrow109 (64-1019)], [Full (0-1023)]**

Note

- The different Color settings can be adjusted for each input video: SDI-1, SDI-2, SDI-3, SDI-4, HDMI, SFP-1, SFP-2. The Color settings adjusted for each input video are maintained even after the monitor turns off and on.

- **Color Save**
  - Save the changed setting values from [USER 1] to [USER 10].
  - Saving range is from [Color Std (Load)] to [VIDEO RANGE]

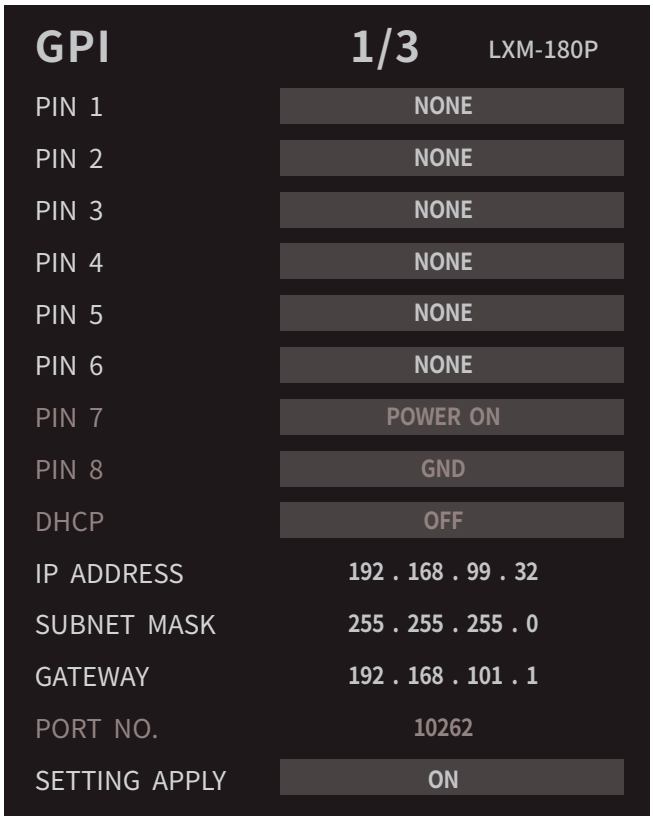
- **Color Default**
  - Return the changed settings from [Color Space] to [VIDEO RANGE] to the default values.

***Default Values**

Color Standard	Color Space	EOTF	COLOR Temp.	Video Range
HD	BT.709	2.4	6500K	Narrow109 (64~1019)
UHD	BT.2020	2.4	6500K	Narrow109 (64~1019)
DCI	DCI-P3	2.6	6500K	Full (0~1023)
PQ	BT.2020	PQ(ST-2084)	6500K	Narrow (64-940)
PQ-P3	DCI-P3	PQ(ST-2084)	6500K	Full (0~1023)
HLG	BT.2020	HLG	6500K	Narrow (64-940)

05 MENU OPERATIONS

[4] GPI



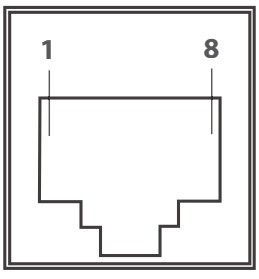
- **PIN 1 ~ PIN 6** (To be supported)
  - Activate and deactivate the REMOTE function.
  - The user can connect an RJ-45 jack to the REMOTE terminal on the rear of the monitor and assign a function to each pin.
  - The selectable functions for PIN 1 to PIN 6 are as shown on the Right.
  - PIN 7 is fixed to POWER ON/OFF, and PIN 8 is to fixed to GND(ground).

Note

- The pin positions are as follows.

REMOTE (RJ-45)

1: Pin1
2: Pin2
3: Pin3
4: Pin4
5: Pin5
6: Pin6
7: Pin7
8: GND

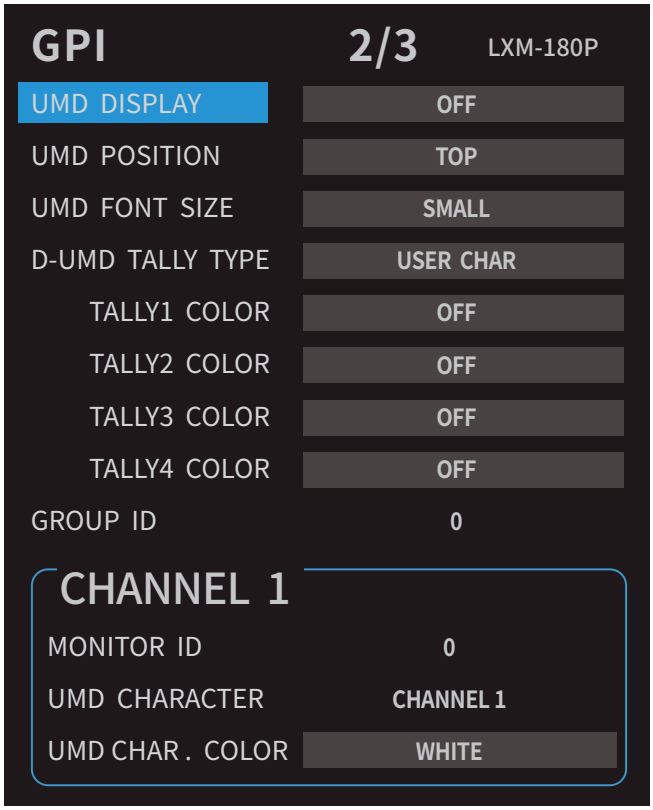


- **DHCP**
  - Activate and deactivate the DHCP mode.
  - Selectable mode: **[OFF], [ON]**
- **IP ADDRESS** (To be supported)
  - Set the IP address connected to the monitor.
- **SUBNET MASK**
  - Set the Subnet Mask connected to the monitor.
- **GATEWAY**
  - Set the Gateway number connected to the monitor.
- **PORT NO.**
  - Set the port number of the monitor.
- **SETTING APPLY**
  - Apply the changed values of IP Address, Subnet Mask, Gateway, Port No.

PIN NO.	Assignable Functions
PIN 1 ~ 6	NONE SDI A CHANNEL SDI B CHANNEL SDI C CHANNEL SDI D CHANNEL SDI A CHANNEL SDI B CHANNEL HDMI CHANNEL PBP CHANNEL MULTIVIEW 1:1 SCAN, ASPECT H/V DELAY, BLUE ONLY, MONO 16:9 MARKER, 4:3 MARKER 4:3 ON AIR MARKER 15:9 MARKER, 14:9 MARKER 13:9 MARKER, 1.85:1 MARKER 2.35:1 MARKER 1.85:1_4:3 MARKER CENTER MARKER SAFETY AREA 80% SAFETY AREA 85% SAFETY AREA 88% SAFETY AREA 90% SAFETY AREA 93% SAFETY AREA 100% TALLY R, TALLY G
PIN 7	POWER ON/OFF CONTROL
PIN 8	GND

05 MENU OPERATIONS

[4] GPI



- **UMD DISPLAY**
  - Set the UMD mode.
  - **[UMD]**: Display the 8 characters which the user set in [UMD CHARACTER] menu.
  - **[ANC]**: Display the characters embedded in SDI signal.
  - **[D-UMD(TSL3 S-8C)]***: Display the 8 characters and the tally signal which are input by TSL protocol V3.1.
  - **[D-UMD(TSL3 S-16C)]***: Display the 16 characters and the tally signal which are input by TSL protocol V3.1.
  - **[D-UMD(TSL3 D-8C)]***: Display a pair of 8 characters and a pair of the tally signals which are input by TSL protocol V3.1.
  - **[D-UMD(TSL5 S-8C)]***: Display the 8 characters and the tally signal which are input by TSL protocol V5.0.
  - **[D-UMD(TSL5 S-16C)]***: Display the 16 characters and the tally signal which are input by TSL protocol V5.0.
  - **[D-UMD(TSL5 D-8C)]***: Display a pair of 8 characters and a pair of the tally signals which are input by TSL protocol V5.0.
  - **[Ember+]***: Display the characters and tally signals based on Ember+ protocol.

Note

- In Multi-View mode and Picture-by-Picture mode, [UMD], [ANC], [D-UMD(TSL3 S-8C)], [D-UMD(TSL5 S-8C)] modes are only activated.

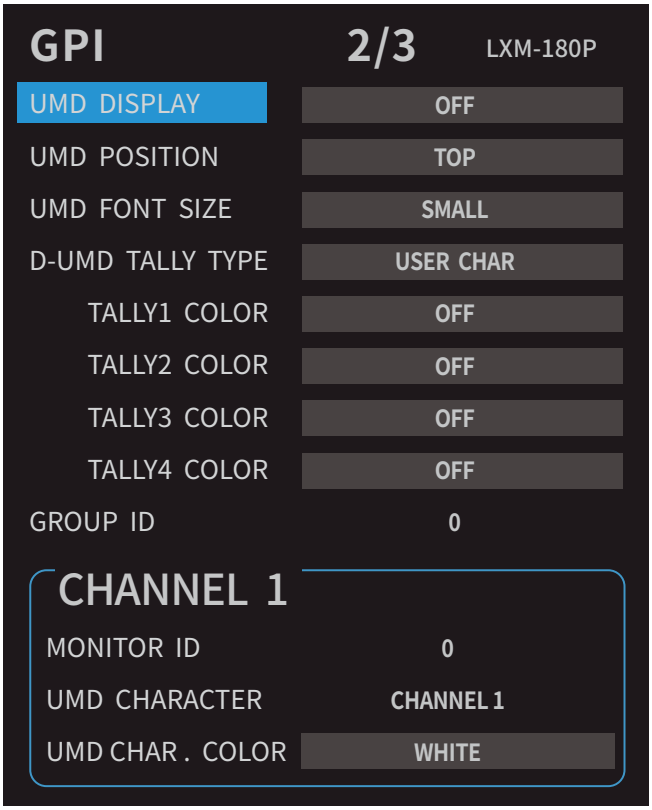
(* Dynamic UMD functions: To be supported)

- **UMD POSITION**
  - Set the display position of the UMD.
  - Selectable mode: **[TOP]**, **[BOTTOM]**

- **UMD BG. TRANS**
  (UMD Background Transparency)
  - Adjust the transparency of the UMD background.
  - [OPAQUE]: The background becomes black. The displayed image is covered by the UMD background.
  - [TRANS]: The background becomes translucent. The displayed image is translucently displayed behind the UMD background.
  - [SCALE DOWN]:

05 MENU OPERATIONS

[4] GPI



- **UMD FONT SIZE**
  - Adjust the size of UMD character font.
  - Selectable mode: **[SMALL], [NORMAL], [LARGE]**

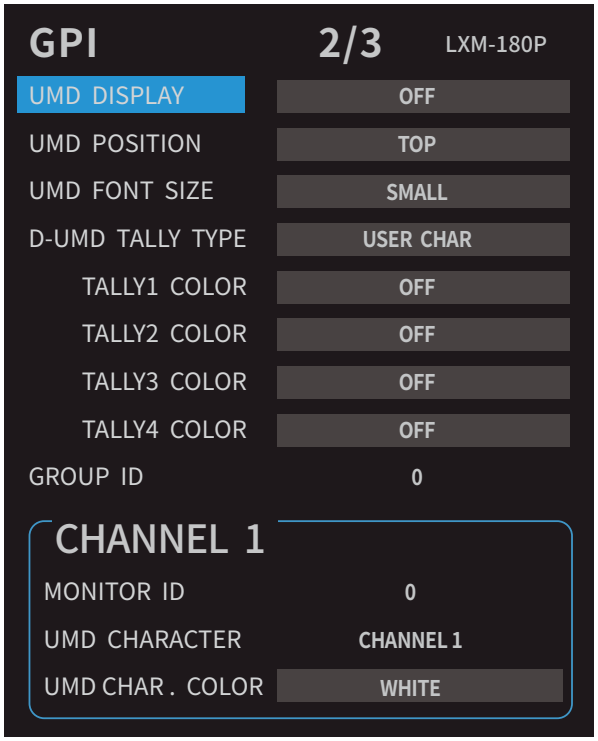
- **D-UMD TALLY TYPE**
  - Adjust the various modes of tally operation.
  - The operation of sub menus varies depending on the settings in [UMD DISPLAY]
  - **[DEFAULT]**: Original TVLogic managing method (VRT)
  - **[USER COLOR]**: The user can set each tally color.
  - **[CHARACTER]**: Show tally in the letter color. The operation is the same as [DEFAULT].
  - **[BG. COLOR]**: Show tally in the letter background color. The operation is the same as [DEFAULT].
  - **[USER TALLY]**: This mode receives the signal fed as bit0 and bit1 of TSL Protocol control byte, adjusts the color the user wants, and then shows the tally. Selectable mode: **[Off], [White], [Red], [Green], [Blue], [Yellow], [Cyan]**
  - **[USER CHAR]**: Show tally in letter color. The method is the same as [USER TALLY].
  - **[USER BG.]**: Show tally in letter background color. The method is the same as [USER TALLY].

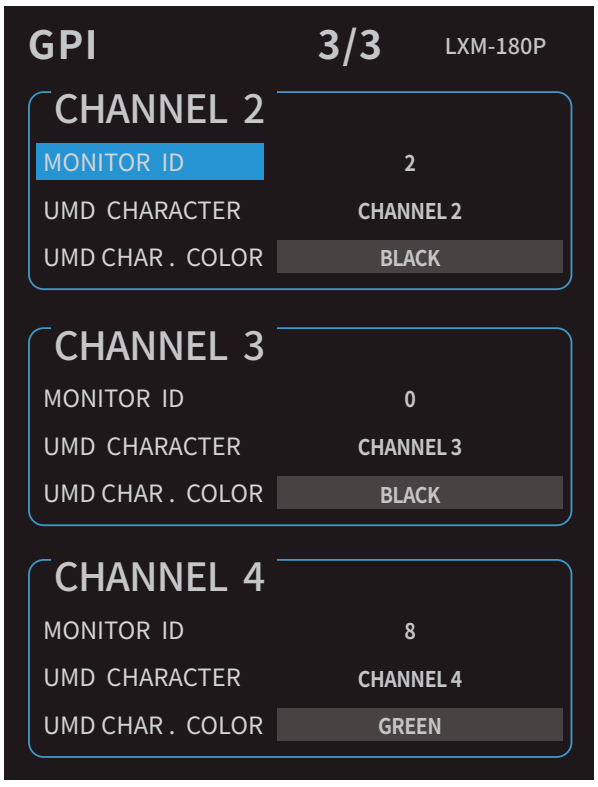
TALLY1 COLOR ~ TALLY4 COLOR
- This menu sets the color of the input condition for byte0, byte1 in TSL Protocol Control Byte.
- Selectable color: **[Off], [White], [Red], [Green], [Blue], [Yellow], [Cyan]**

- **GROUP ID**
  - Used for grouping the monitors and controlling the monitors by group when you control the monitors with the protocol provided by TVLogic, using RS-422/485 communication or Network.
  - Selectable value: **[0] to [16]**

05 MENU OPERATIONS

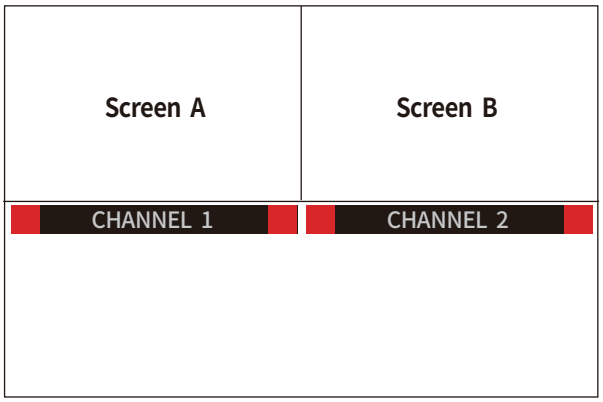
[4] GPI



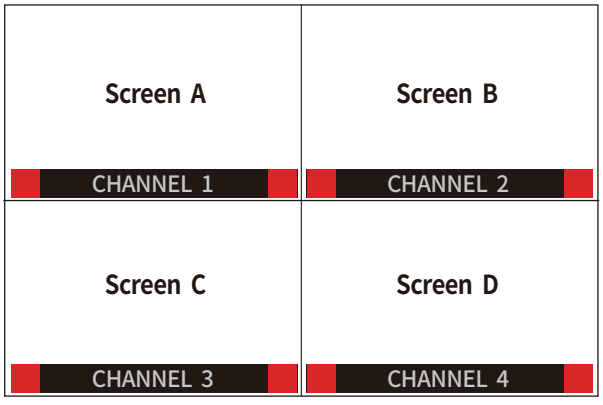


- **CHANNEL 1/2/3/4**
  - Adjust UMD character and UMD character color.
  - These settings are adjustable when [UMD DISPLAY] mode is selected to [UMD] and [ANC].
  - In the single video mode, [CHANNEL 1] is displayed.
  - In the Picture-by-Picture mode, [CHANNEL 1] and [CHANNEL 2] are displayed.
  - In Multi-View mode, [CHANNEL 1] to [CHANNEL 4] are displayed.

[Picture-by-Picture Mode]

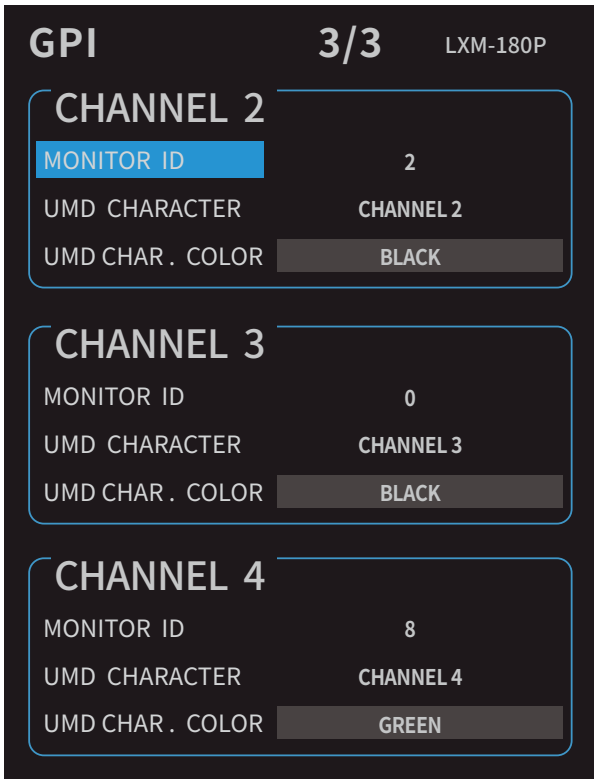


[Multi-View Mode]



05 MENU OPERATIONS

[4] GPI



- **MONITOR ID**
  - Set the ID of each monitor when you control monitors with TVLogic control protocol using RS-422/485 communication or Network or when you set and use Dynamic UMD mode in [UMD DISPLAY] menu.
  - Selectable mode: [0] to [124]

Note

- In Quad-View mode and Picture-by-Picture mode, make sure to assign the different ID number to each channel.

- **UMD CHARACTER**
  - Set the characters to be displayed on the UMD.
  - Available characters are lowercase and uppercase alphabet letters, numbers, and special symbols.

- **UMD CHAR. COLOR** (UMD Character Color)
  - Set the character color of UMD.
  - Selectable mode: **[BLACK], [WHITE], [RED], [GREEN], [BLUE], [YELLOW], [CYAN], [MAGENTA]**

05 MENU OPERATIONS

[4] GPI

<Dynamic UMD Protocol (TSL V3.1)>

* Transmission (18 Byte) (PC or Device -> Monitor)

HEADER (1 BYTE)	CONTROL BYTE(1 BYTE)	DISPLAY DATA (16 BYTE)

* **[HEADER]** : Display address (0~126) + 80 hex.
* **[CONTROL BYTE]**
  bit 0 : Tally 1 (1=on, 0=off)
  bit 1 : Tally 2 (1=on, 0=off)
  bit 2 : Tally 3 (1=on, 0=off)
  bit 3 : Tally 4 (1=on, 0=off)
  bit 4 : bright data (Not used)
  bit 5 : bright data (Not used)
  bit 6 : reserved (Not used)
  bit 7 : cleared to 0 (Not used)

* **[DISPLAY DATA]** : 16 displayable ASCII characters.

05 MENU OPERATIONS

[4] GPI

• Tally Type - Default

- TSL_S8C(Single 8 Characters) & TSL_S16C(Single 16 Character)

Bit 1 (Tally2)	Bit 0 (Tally1)	Operation
0	0	
0	1	
1	0	
1	1	

- TSL_D8C(Dual 8 Character)

Bit 3 (Tally4)	Bit 2 (Tally3)	Operation
0	0	
0	1	
1	0	
1	1	

• D-UMD Tally Type - USER COLOR

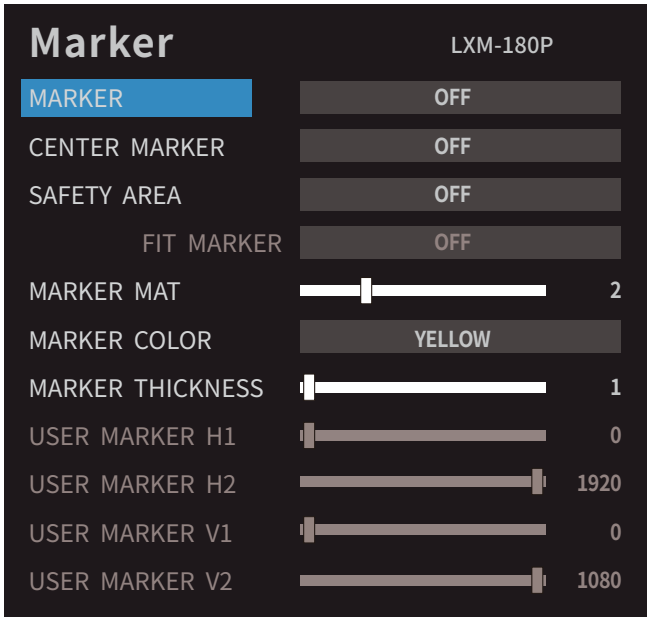
- Allows to set the color of TALLY1 to TALLY4.

When [UMD DISPLAY] is set to [D-UMD(TSL-D8C) and [D-UMD TALLY TYPE] and [TALLY1 to TALLY4 COLOR] are set as follows, tallies are displayed like the image below.

D-UMD TALLY TYPE	USER COLOR
TALLY1 COLOR	RED
TALLY2 COLOR	GREEN
TALLY3 COLOR	RED
TALLY4 COLOR	YELLOW

05 MENU OPERATIONS

[5] MARKER



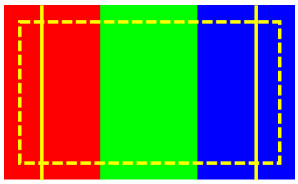
***MARKER lines are shown on the screen only when the MARKER function is assigned to one of the function buttons and then it is set ON.**

- **MARKER**
  - Select the marker type when the MARKER is displayed on the screen.
  - Selectable mode: **[OFF], [16:9], [4:3], [14:9], [13:9], [1.85:1], [2.35:1], [1.85:1_4:3], [USER]**

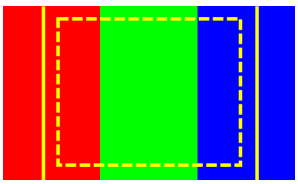
- **CENTER MARKER**
  - Display the Center Marker on the screen.
  - Seletable mode: **[OFF], [ON]**

- **SAFETY AREA**
  - Select the size of the Safety Area.
  - When a mode is selected, the dotted line appears on the screen.
  - Selectable mode: **[95%], [93%], [90%], [88%], [85%], [80%], [4:3 95%], [4:3 93%], [4:3 90%], [4:3 88%], [4:3 85%], [4:3 80%], [EBU ACTION 16:9], [EBU GRAPHIC 16:9], [EBU ACTION 14:9], [EBU GRAPHIC 14:9], [EBU ACTION 4:3], [EBU GRAPHIC 4:3]**

- **FIT MARKER**
  - When the marker type is selected in the [MARKER] menu, this function activates.
  - **[OFF]**: The selected Safety Area is displayed in the proportion of the whole screen.
  - **[ON]**: The selected Safety Area is displayed inside the Marker maintaining its proportion.



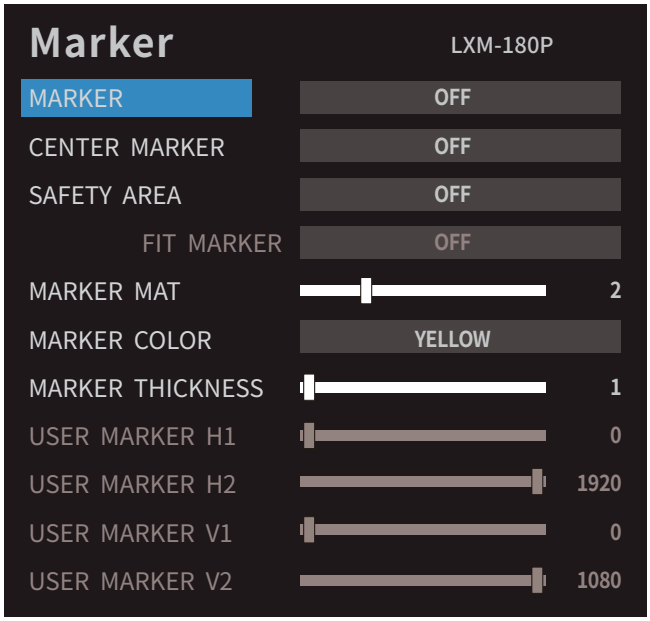
- MARKER : 4:3
- SAFETY AREA : 90%
- FIT MARKER : **OFF**



- MARKER : 4:3
- SAFETY AREA : 90%
- FIT MARKER : **ON**

05 MENU OPERATIONS

[5] MARKER



- **MARKER MAT**
  - Set the transparency level outside of the MARKER area.
  - Adjustable level: **[0] to [7]** (Increments of 1)
  - The higher the level is, the darker the outside of the MARKER area is.

- **MARKER COLOR**
  - Set the color of the MARKER lines.
  - Selectable mode: **[WHITE], [YELLOW], [CYAN], [GREEN], [MAGENTA], [RED], [BLUE], [BLACK]**

- **MARKER THICKNESS**
  - Set the thickness of the MARKER lines.
  - Adjustable level: **[0] to [7]** (Increments of 1)

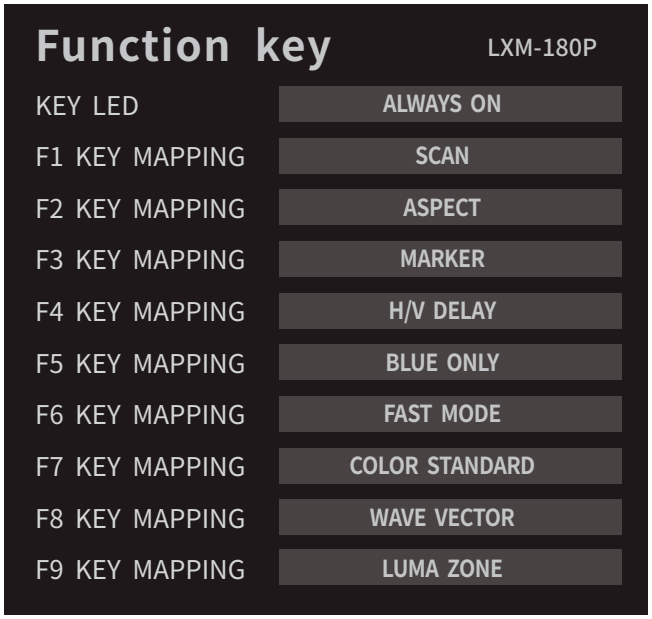
- **USER MARKER** (To be supported)
  - When the [MARKER] is set to [USER] mode, the User Marker is activated.

- **USER MARKER H1/ H2**
  - Set the position of the first(upper) and second(lower) horizontal marker lines.
  - Adjustment range
    LXM-180U: **[0] to [1920]**
    LXM-180P/240U/240P/320P/550U: **[0] to [3840]** (Increments of 1)

- **USER MARKER V1/ V2**
  - Set the position of the first(left) and second(right) vertical marker lines.
  - Adjustment range
    LXM-180U: **[0] to [1080]**
    LXM-180P/240U/240P/320P/550U: **[0] to [2160]** (Increments of 1)

05 MENU OPERATIONS

[6] FUNCTION KEY



- **KEY LED**
  - Adjust the operation of the Key LED on the front of the monitor.
  - **[OFF]**: The Key LEDs and the backlight of Key names keep turning off.
  - **[ONESHOT KEY]**: When a Key is pressed, its Key LED turns on for 5 seconds and then it turns off. The backlight of Key names keeps turning off.
  - **[ONESHOT KEY/NAME]**: When a Key is pressed, its Key LED and the backlight of Key names turn on for 5 seconds and then turn off.
  - **[ALWAYS ON]**: The Key LEDs and the backlight of Key names keep turning off.

- **FUNCTION KEY MAPPING**
  - Assign the desired function to [F1] to [F9] button.
  - The selectable functions are listed on the right.
  - The factory default settings are as follows.

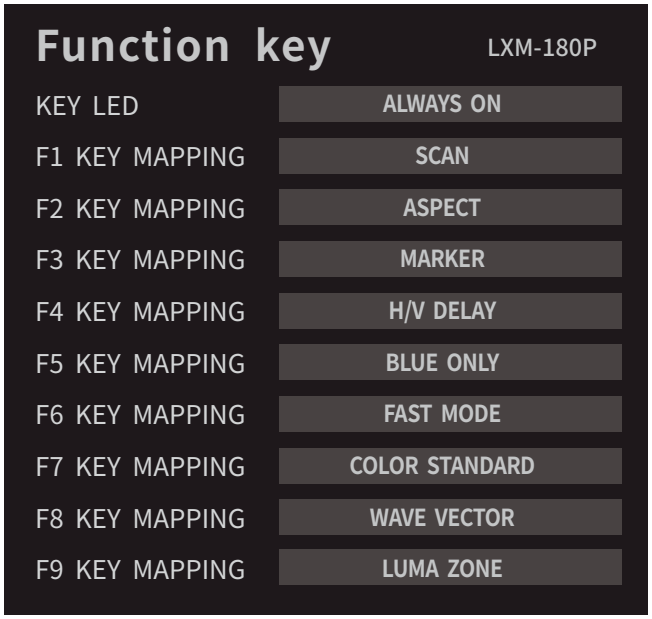
  F1: SCAN
  F2: ASPECT
  F3: MARKER
  F4: H/V DELAY
  F5: BLUE ONLY
  F6: FAST MODE
  F7: COLOR STANDARD
  F8: WAVE VECTOR
  F9: LUMA ZONE

Note

- Direct access for function assignment: When the OSD window doesn't appear, if you push a Function button for about 3 seconds, the currently assigned function and the selectable function list appear.

05 MENU OPERATIONS

[6] FUNCTION KEY



[SCAN]
- Change the scan mode.
- **[ZERO SCAN]**: The original video image is displayed.
- **[1:1 SCAN]**: The video image is displayed pixel to pixel on the screen.

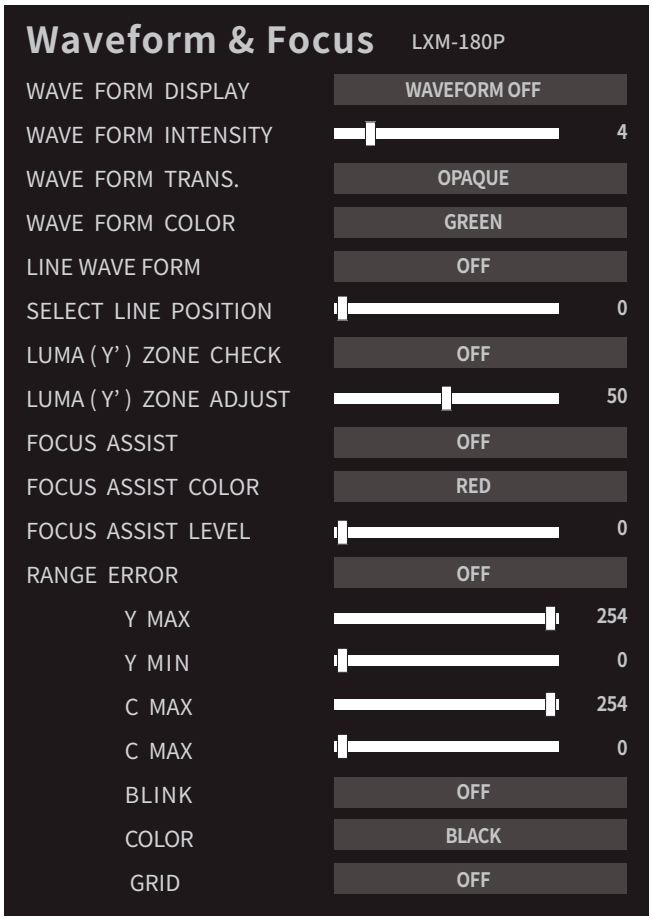
[ASPECT]
- Change the aspect ratio of the video image.
- This function is supported with the 1920 x 1080 HD video signal only.
- Selectable mode: [Auto Aspect], [Full Screen], [16 : 9], [4 : 3], [2.35 : 1], [1.85 : 1], [15 : 9], [16 : 10], [1.3 : 1], [1.65 : 1], [1.8 : 1], [2 : 1], [Anamorphic1.3x], [Anamorphic1.5x] [Anamorphic2.0x], [2.35 : 1 ZOOM]

***Function List**

SCAN
ASPECT
MARKER
H/V DELAY
BLUE ONLY
FAST MODE
COLOR STANDARD
WAVE VECTOR
LUMA ZONE
AUD LEVEL METER
FOCUS ASSIST
CUSTOM LUT
TIMECODE
RANGE ERROR
H FLIP
V FLIP
MAX BRIGHT
COLOR-HD
COLOR-UHD
COLOR-DCI-P3
COLOR-PQ
COLOR-HLG
COLOR-SLOG3
COLOR-#1
COLOR-#2
COLOR-#3
COLOR-#4
COLOR-#5
COLOR-#6
COLOR-#7
COLOR-#8
COLOR-#9
COLOR-#10

05 MENU OPERATIONS

[7] WAVEFORM & FOCUS



- **WAVE FORM DISPLAY**
  - Select the mode of Waveform and Vector Scope.
  - Waveform displays the shape and form of luminance level of the signal.
  - Vectorscope displays the color components 'B-Y' and 'R-Y'of the input signals onto the X-Y axis. Two different types of Vetorscopes are displayed according to SD, HD or UHD/4K input signals.
    100% and 75% scales are indicated on the Vetorscope.
  - Selectable mode: **[WAVEFORM], [VECTOR SCOPE], [WAVE VECTOR], [WAVEFORM YCbCr], [WAVEFORM R,G,B]**

- **WAVE FORM INTENSITY**
  - Adjust the brightness level of Waveform and Vector Scope display.
  - Selectable level: **[1] to [15]** (Increments of 1)

- **WAVE FORM TRANS** (Waveform Transparency)
  - Adjust the transparency level of the Waveform and Vector Scope.
  - Selectable mode: **[OPAQUE], [BLEND]**

- **WAVE FORM COLOR**
  - Select the color of Waveform and Vector Scope.
  - Selectable mode: **[GREEN], [WHITE], [NAVY], [BROWN], [LIGHTGREEN], [VIOLET]**

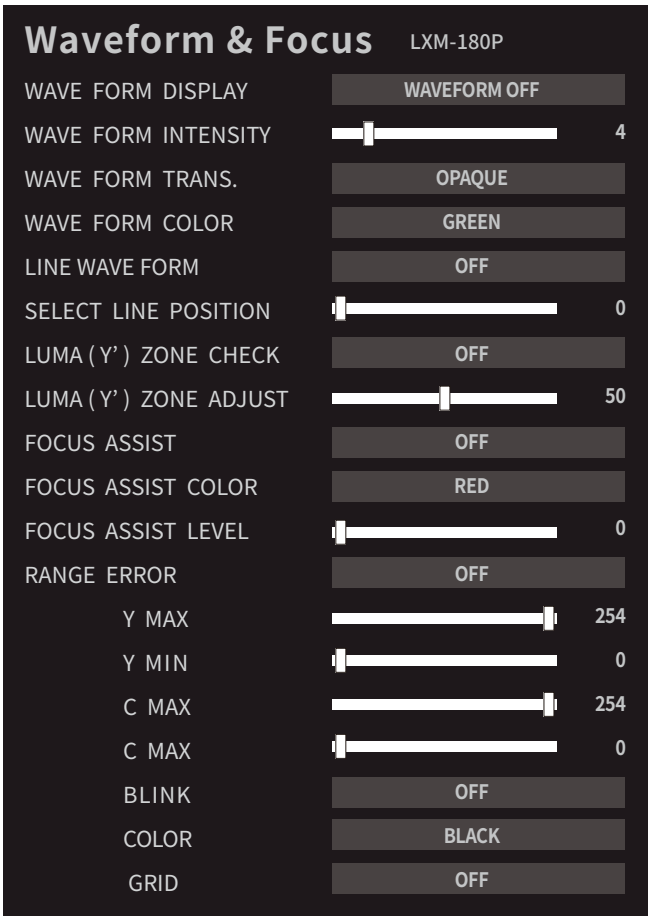
- **LINE WAVE FORM**
  - Display the data of the specific line.
  - [OFF]: The Waveform and Vector Scope for the whole screen are displayed.
  - [ON]: The Waveform and Vector Scope of the specific line which is selected in [SELECT LINE POSITION] are displayed. The selected line keeps appearing on the screen.
  - [ON(5sec.)]: The selected line appears on the screen for 5 seconds and then disappears. Even though the selected line disappears, the Line Waveform function keeps operating.

Note

- When the [LINE WAVE FORM] is activated and the OSD window disappears, you can easily change the position of the line by rotating the [ENTER] knob.

05 MENU OPERATIONS

[7] WAVEFORM & FOCUS



- **SELECT LINE POSITION**
  - Select the specific horizontal line for Waveform and Vector Scope.
  - This menu is available when [LINE WAVEFORM] is activated.
  - The adjustable range varies according to the resolution of the input signal. (SDI signal)
    - PAL: Min. 1, Max. 625
    - NTSC: Min. 1, Max. 525
    - 720p: Min. 1, Max. 750
    - 1080i: Min. 1, Max. 1125
    - 1080p: Min. 1, Max. 1125
    - 2160p: Min. 1, Max. 1125

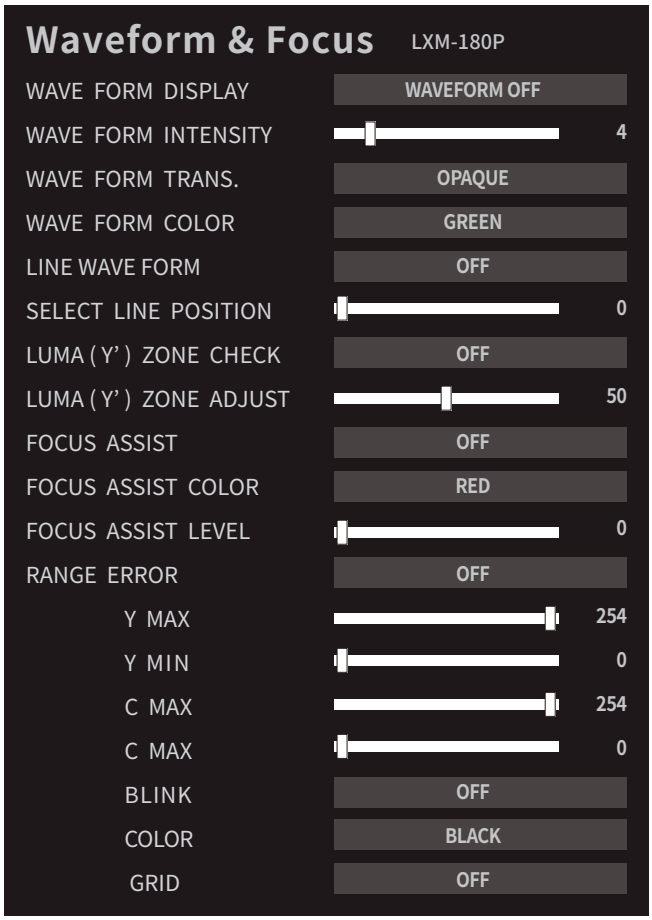
- **LUMA(Y') ZONE CHECK** (To be supported)
  - Analyze the Luma(Y') level of the input image and displays the selected zone on the screen.
  - Selectable mode: **[Color Patt. ON]**, **[Zebra Patt. ON]**
  - After each pixel's Y' level is analyzed, it is displayed as a certain color or zebra pattern according to the Index on the right side of the screen.
  - When a pixel's Y' level is under 0%(16), the pixel is displayed as green color or green diagonal lines, and over 100%(235) as red color or red diagonal lines.
  - When the Y' level of a pixel is between 0~100%, the pixel is displayed as Gray level, except for selected Luma Zone.
  - In the [Color Pattern] mode, the zone the user adjusted is displayed as Yellow (10% lower zone), Pink (±2.5%), Cyan (10% upper zone).
  - In the [Zebra Pattern] mode, ±5% of the selected Y' Level will be displayed as diagonal lines.

  *For more information on this function, refer to "06 FUNCTION DETAILS [5] LUMA(Y') ZONE CHECK" in page 57.

- **LUMA ZONE ADJUST**
  - Set the Y' level to be colored Yellow, Pink and Cyan in [Color Patt. ON] mode, or to set Y' level zone to be displayed with diagonal lines in [Zebra Patt. ON] mode simply by scrolling with the ENTER knob.
  - Selectable range: **[0]**% to **[100]**% (Increments of 1)

05 MENU OPERATIONS

[7] WAVEFORM & FOCUS



- **FOCUS ASSIST**
  - This function helps the shooters to easily find out the exact area in the picture with good focus, simply by adding colors on the shape or boundaries of the object in the picture.
  - **[COLOR ON]**: Only the boudary of the area with good focus is displayed with the designated color.
  - **[MONO ON]**: The image is displayed in black and white, and the boundary of the area with good focus is colored with the designated color.

<FOCUS ASSIST - COLOR ON>

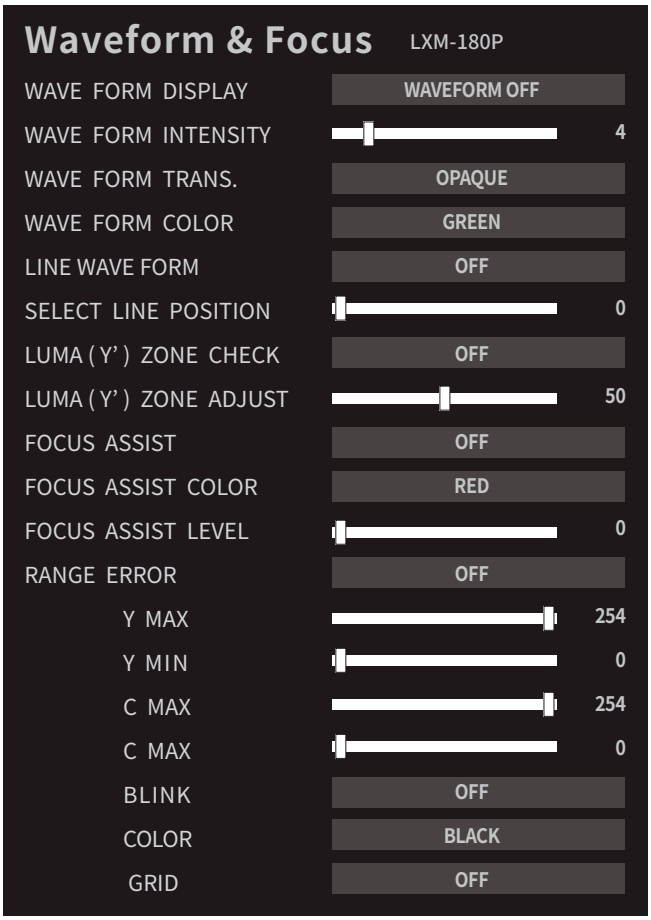
<FOCUS ASSIST - MONO ON>

- **FOCUS ASSIST COLOR**
  - Select a color for Focus Assist.
  - Selectable mode: **[RED]**, **[BLUE]**, **[WHITE]**, **[VIOLET]**

- **FOCUS ASSIST LEVEL**
  - Set the edge difference value between the edges in an image.
  - Adjustable level: **[0]** to **[100]** (Increments of 1) The larger value means the more sophisticated detail detection.
  - The designated color is displayed on the boundaries when the difference of the edges exceeds the previously set value.
  - This feature is available only when the [FOCUS ASSIST] mode is activated.

05 MENU OPERATIONS

[7] WAVEFORM & FOCUS



- **RANGE ERROR**
  - Activate or inactivate Y MAX, Y MIN, C MAX, C MIN, BLINK, COLOR functions.
  - The values of Y MAX, Y MIN, C MAX, C MIN are indicated in Waveform and Vector Scope.
  - If [BLINK] is enabled, the section of image that exceeds the adjusted values of Y MAX, Y MIN, C MAX, C MIN shall blink.

Y MAX
- Set the maximum Luma(Y') level.
- Adjustable level: **[0] to [254]** (Increments of 1)
- Pixels with values exceeding the maximum luma(Y') level blink on the screen and are displayed in red on the Waveform.

Y MIN
- Set the minimum Luma(Y') level.
- Adjustable level: **[0] to [254]** (Increments of 1)
- Pixels with values below the minimum luma(Y') level blink on the screen and are displayed in red on the Waveform.

C MAX
- Set the maximum chroma(C') level.
- Adjustable level: **[0] to [254]** (Increments of 1)
- Pixels with values exceeding the maximum chroma(C') level blink on the screen and are displayed in red on the Vector Scope.

C MIN
- Set the minimum chroma(C') level.
- Adjustable level: **[0] to [254]** (Increments of 1)
- Pixels with values below the minimum chroma(C') level blink on the screen, and are displayed in red on the Waveform.

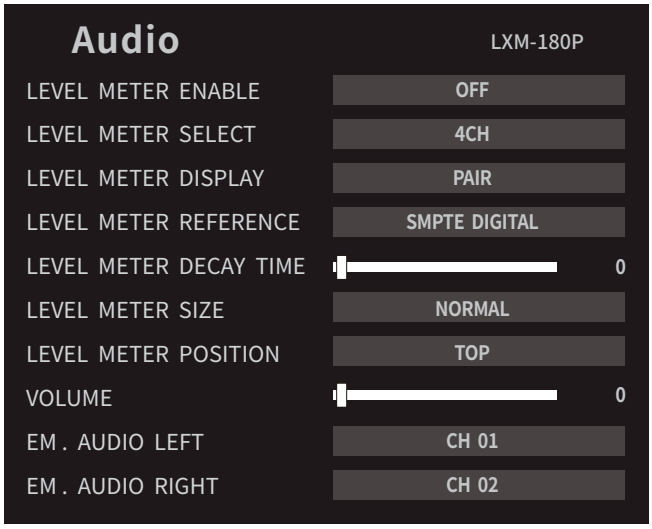
BLINK
- Set whether or not to blink the pixels with values over Y MAX and C MAX or below Y MIN and C MIN.
- [OFF]: The pixels are displayed in the color set in the [COLOR] menu.
- [ON]: The pixels are displayed in the color set in the [COLOR] menu and blink every two seconds.

COLOR
- Set the blink color.
- Selectable mode: **[BLACK], [BLUE], [GREEN], [RED]**

GRID
- Set whether or not to display the pixels with values over Y MAX and C MAX or below Y MIN and C MIN in a grid pattern.
- Selectable mode: **[OFF], [ON]**

05 MENU OPERATIONS

[8] AUDIO



- **LEVEL METER ENABLE**
  - Set whether or not to display the audio level meter.

- **LEVEL METER SELET**
  - Select the number of the displayed audio channels.
  - Selectable mode: **[4CH], [8CH], [16CH]**

- **LEVEL METER DISPLAY**
  - Set the display method of the audio level meter.
  - **[PAIR]**: Odd audio channels are displayed on the left, and even audio channels are displayed on the right.
  - **[GROUP]**: The half audio channels are displayed on the left, and the other half channels on the right.
    ex) In the 16CH mode, channel 1 to 8 are displayed on the left and channel 9 to 16 on the right.

Note

- When the input signal is HDMI, the mode is fixed to [PAIR].

- **LEVEL METER REFERENCE**
  - Select the type of Audio Level Meter standard.
  - Selectable mode: **[SMPTE DIGITAL], [EBU DIGITAL], [SMPTE IRT], [BBC], [EBU], [DIN], [EXP DIN], [NORDIC], [SMPTE VU]**

- **LEVEL METER DECAY TIME**
  - Set the reduction time for max value indication of audio signals.
  - Selectable range: **[0] to [100]** (Increments of 1) The larger number means a longer display time for max value.

- **LEVEL METER SIZE**
  - Set the size of the audio level meter.
  - Selectable mode: **[NORMAL], [LARGE]**

- **LEVEL METER POSITION**
  - Set the position of the audio level meter.
  - [TOP]: The audio level meter is horizontally displayed on the top of the screen.
  - [BOTTOM]: The audio level meter is horizontally displayed on the bottom of the screen.

- **VOLUME**
  - Adjust the audio's output volume to the internal speakers or the phone jack on the front of the monitor.
  - Adjustable range: **[0] to [50]**

- **EM. AUDIO LEFT** (Embedded Audio Left)
  - Set the embedded audio channel for the left speaker or the left audio out of the phone jack on the front of the monitor.
  - Selectable mode: **[OFF], [CH 01] to [CH 16]**

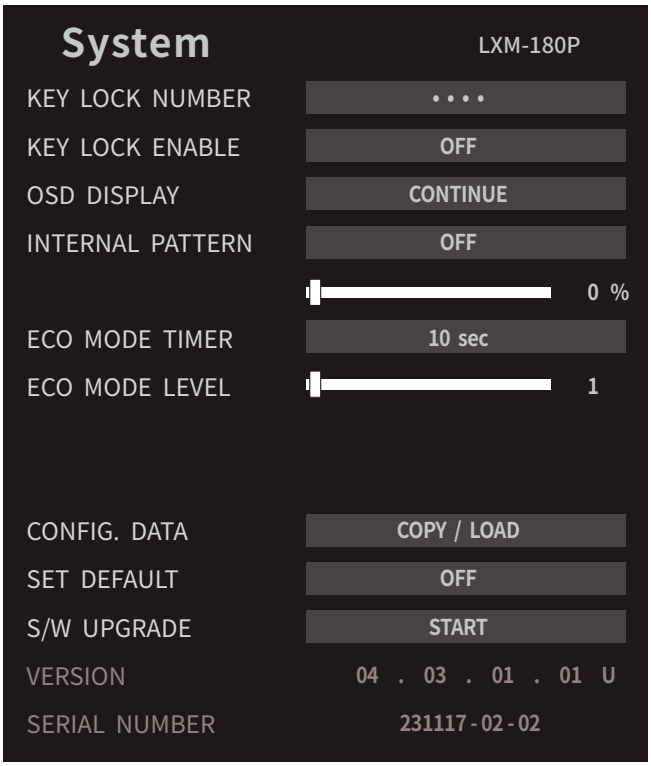
- **EM. AUDIO RIGHT** (Embedded Audio Right)
  - Set the embedded audio channel for the right speaker or the right audio out of the phone jack on the front of the monitor.
  - Selectable mode: **[OFF], [CH 01] to [CH 16]**

Note

- When the input signal is HDMI, the left audio channel is fixed to [CH 01] and the right audio channel to [CH 02].

05 MENU OPERATIONS

[9] SYSTEM



- **KEY LOCK NUMBER**
  - Set a password for the monitor lock function.
  - Up to 16 characters can be set using numbers(0 to 9), lowercase alphabet letters, uppercase alphabet letters.

- **KEY LOCK ENABLE**
  - Block access to the OSD menu and lock the operation of the control buttons except for the power button.
  - When the monitor is locked, if the [MENU] button is pressed, a password input window will appear.
  - Enter the password set through the [KEY LOCK NUMBER] menu to unlock.

- **OSD Display**
  - Set the display time for the OSD menu.
  - Selectable mode: **[CONTINUE], [5 SEC], [10 SEC], [15 SEC], [20 SEC]**

- **INTERNAL PATTERN**
  - Generate the internal WHITE pattern.
  - Selectable range: **[0%] to [100%]** (Increments of 5)

- **ECO MODE TIMER**
  - Decrease the brightness of the screen automatically to reduce the power consumption when there is no signal.
  - When the monitor receives the signal, the brightness of the screen maintains the adjusted level.
  - The time to trigger the ECO MODE can be set.
  - Selectable mode: **[OFF], [10 sec], [30 sec]**

- **ECO MODE LEVEL**
  - Set the brightness level when the ECO MODE operates.
  - Adjustable range: **[1] to [5]** (Increments of 1)

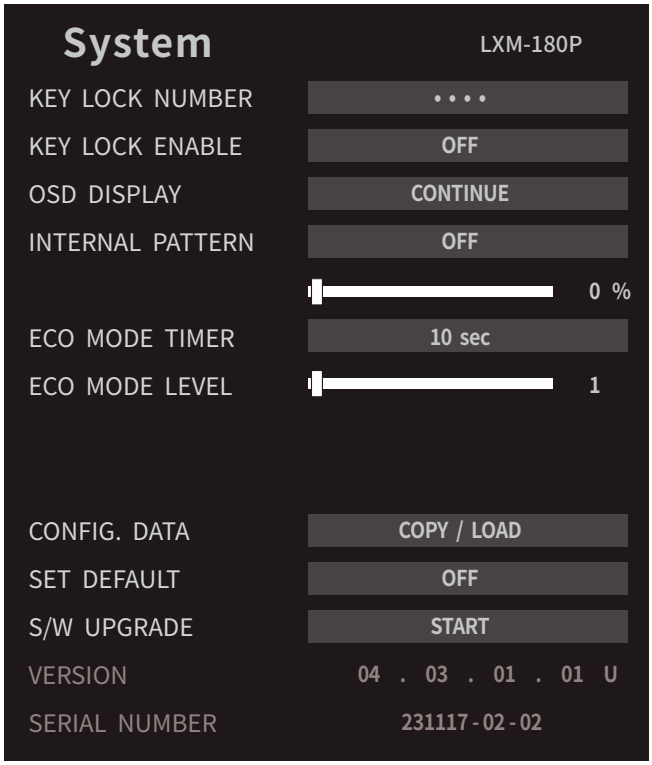
- **CONFIG. DATA** (To be supported)
  - This function allows the user to save the current function settings of the monitor to the USB Flash drive and load the saved configuration data to the monitor.
    [Copy to USB]: Insert the USB Flash Drive, select [START], type the file name, and select [ENTER], then the configuration data is saved to the USB Flash Drive.
    [Load From USB]: Insert the USB Flash Drive, select [START], then the saved configuration data files show up. Select the desired file, then the configuration data is loaded to the monitor.

Note

- All the OSD settings are saved except for Back Light value, imported custom 3D LUT files, Key Lock password.

05 MENU OPERATIONS

[9] SYSTEM



- **SET DEFAULT**
  - Initialize OSD setting values to the factory default except for Key Lock password.
  - All the imported custom 3D LUT files are also deleted.

- **S/W UPGRADE**
  - Upgrade the firmware using the USB Flash Drive.

  *For more information on this function, refer to "06 FUNCTION DETAILS [6] FIRMWARE UPDATE" in page 58.

- **VERSION**
  - Display the current firmware version.

- **SERIAL NUMBER**
  - Display the factory serial number.

06 FUNCTION DETAILS

[1] Multi-View Settings

The LXM series monitors offer an extremely useful and advanced Quad-View Display mode and Picture-by-Picture Display Mode. If you push the [MULTI-VIEW] button, you can select Quad-View mode or Picture-by-Picture mode.

1. Quad-View Display mode

Any video input from SDI-1 to SDI-4, HDMI, SFP-1, SFP-2 can be assigned to any quadrant. Any video format from HD, 3G, 6G, 12G can be displayed to each quadrant. So, four different 12G-SDI videos can be displayed at the same time.

*Functions which can be activated in Quad-View Display mode: Audio Level Meter, UMD

*In Quad-View Display mode, the brightness of the whole screen follows the setting of Color Standard of SDI-1 input.

*The audio of the Channel 1 source only is output from the speakers or the phone jack.

2. Picture-by-Picture Display mode

Any video input from SDI-1 to SDI-4, HDMI, SFP-1, SFP-2 can be assigned to the left and right screen. Any video format from HD, 3G, 6G, 12G can be displayed to each screen. The two different 12G-SDI videos can be displayed at the same time.

Waveform, Vector Scope, Audio Level Meter(16Ch), UMD

Waveform YCbCr, Audio Level Meter(16Ch), UMD

Waveform YCbCr, Audio Level Meter(16Ch), UMD

*Functions which can be activated in Picture-by-Picture Display mode: Waveform, Vector Scope, Audio Level Meter, UMD

*In Picture-by-Picture Display mode, the brightness of the whole screen follows the setting of Color Standard of SDI-1 input.

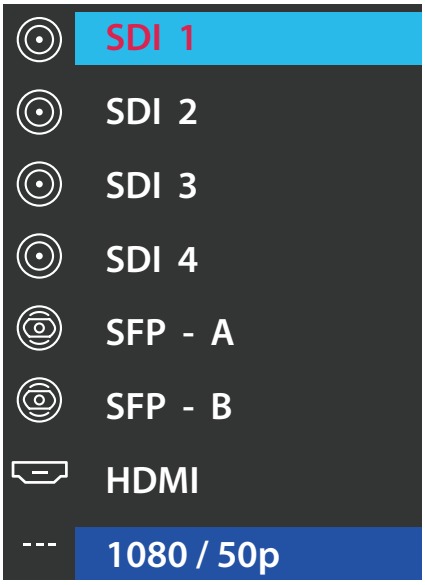
*The audio of the Channel 1 source only is output from the speakers or the phone jack.

06 FUNCTION DETAILS

[1] Multi-View Settings

3. How to select the screen and assign the input

In Quad-View mode or Picture-by-Picture mode, if you push **[F9]** button, the first screen is selected and the input list appears.
You can choose the desired input for the selected screen by turning and pushing [ENTER] knob.
If you push **[F9]** button again, the next screen is selected.

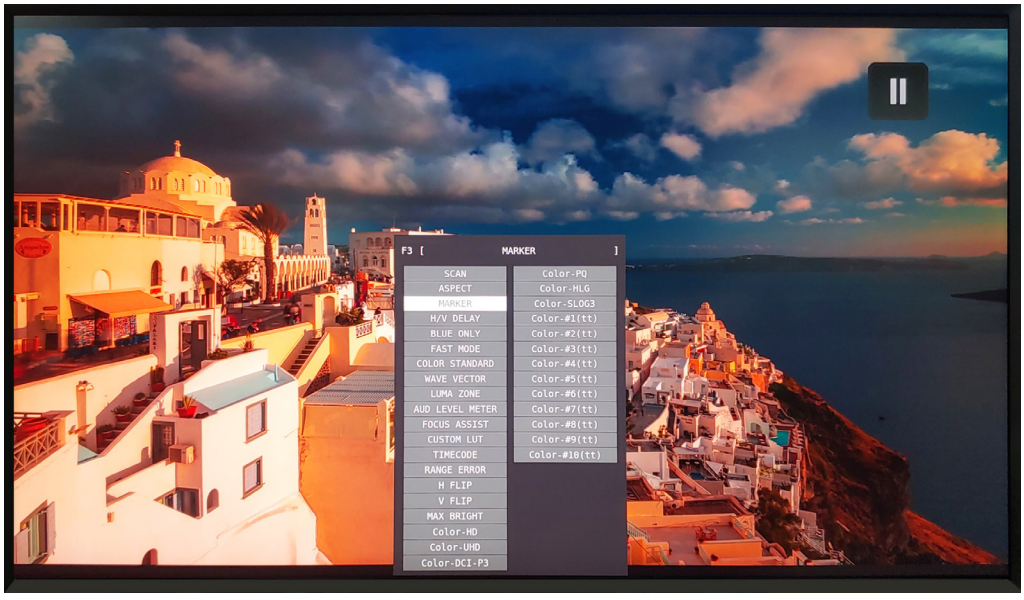


06 FUNCTION DETAILS

[2] INFO Button & Function Button

If you push [INFO] button, the Signal Information windows and the Function button list appear even in Quad-View mode and Picture-by-Picture mode. The Signal Information includes the input signal's format and SDI payload ID.

If you push a Function button for about 4 seconds, the currently assigned function and the selectable function list appear.
You can easily select the desired function by using [ENTER] knob.



06 FUNCTION DETAILS

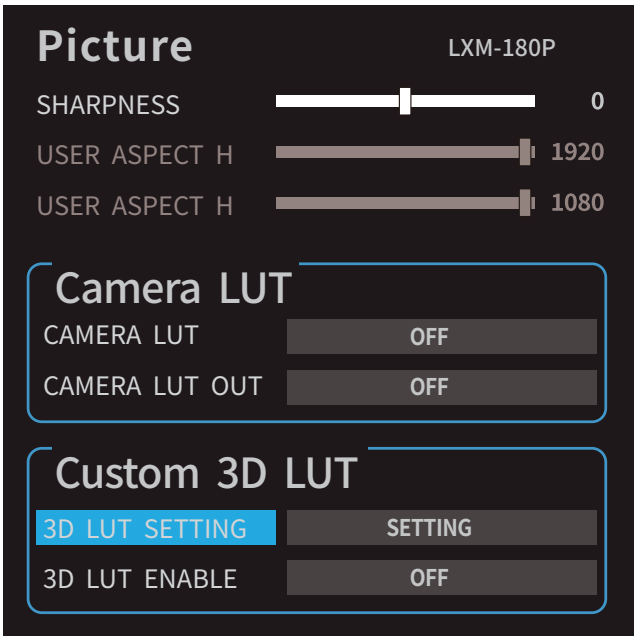
[3] Import and Apply 3D LUT files

- **USB Flash Drive's file system should be FAT32**
- **Supported 3D LUT Format: cube**
- **Number of lattice points: 17 or 33**
- **Length of 3D LUT file: up to 30 letters**

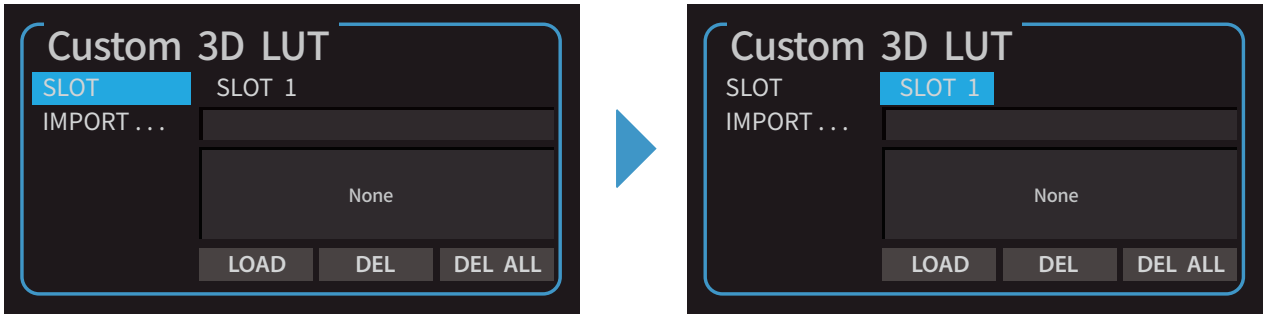
1. Load 3D LUT Files

1) Copy the 3D LUT files to the USB Flash Drive and insert it to the monitor.

2) Go to MENU → PICTURE and click [3D LUT SETTING] using the [ENTER] knob.



3) Select the slot where you would like to load a 3D LUT file.



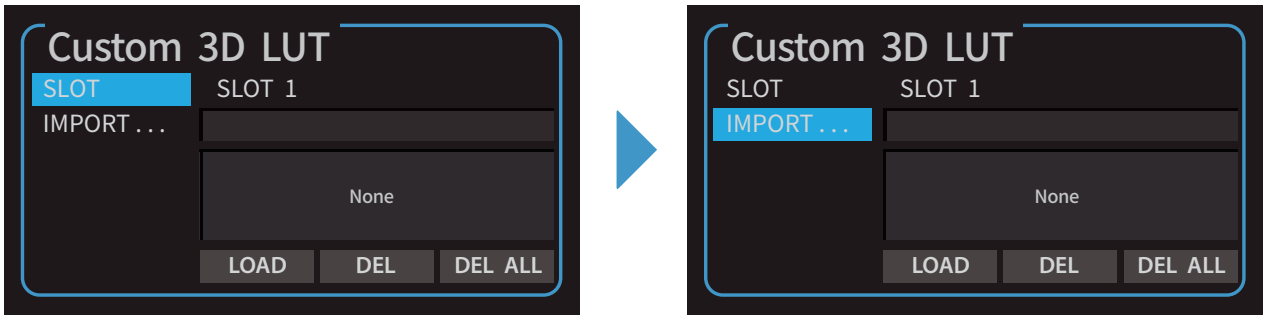
*SLOT 1 to SLOT 10 are available.

06 FUNCTION DETAILS

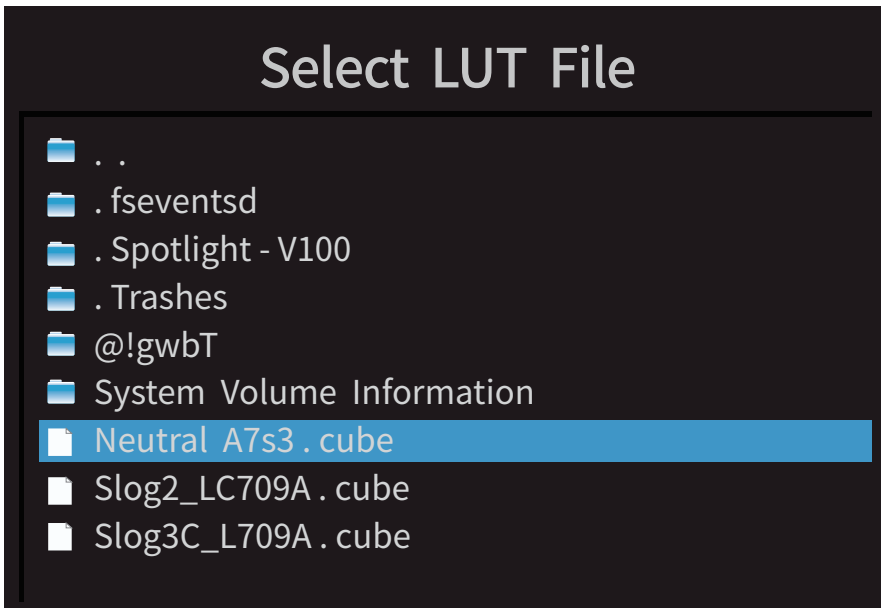
[3] Import and Apply 3D LUT files

1. Load 3D LUT Files

4) Return to [SLOT] by pressing [ENTER] knob and go to [IMPORT]



5) If you click [IMPORT], the 3D LUT file list shows up.

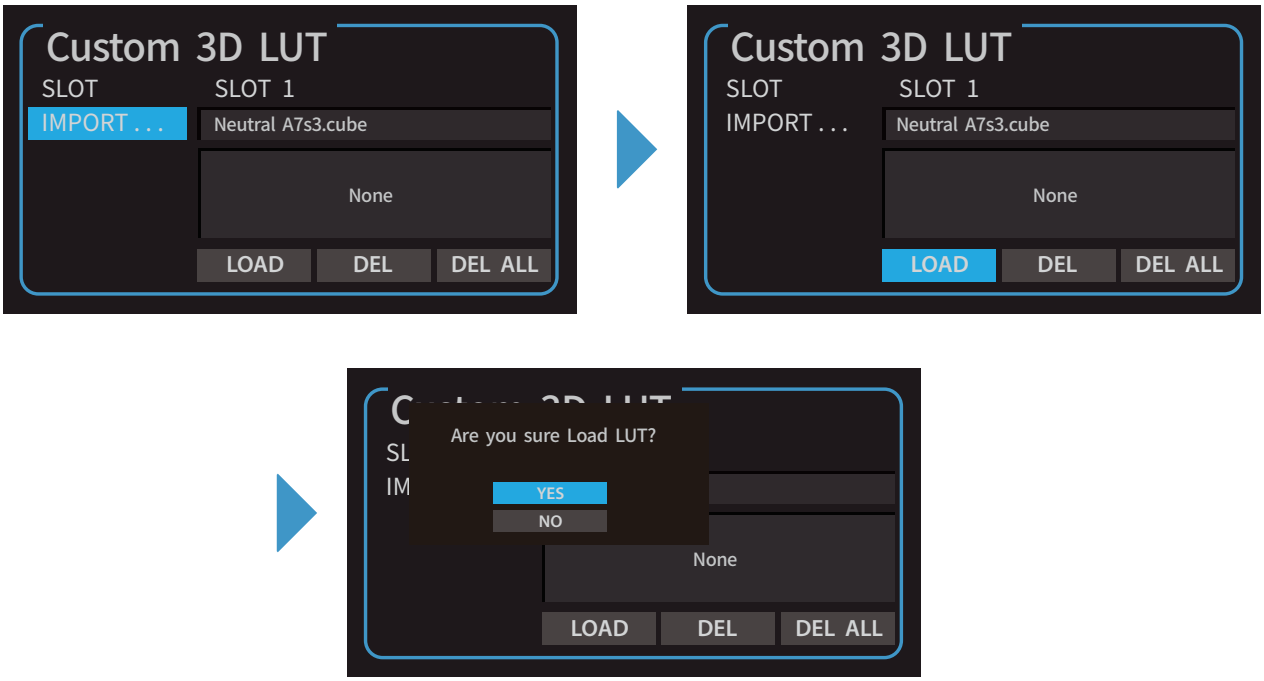


06 FUNCTION DETAILS

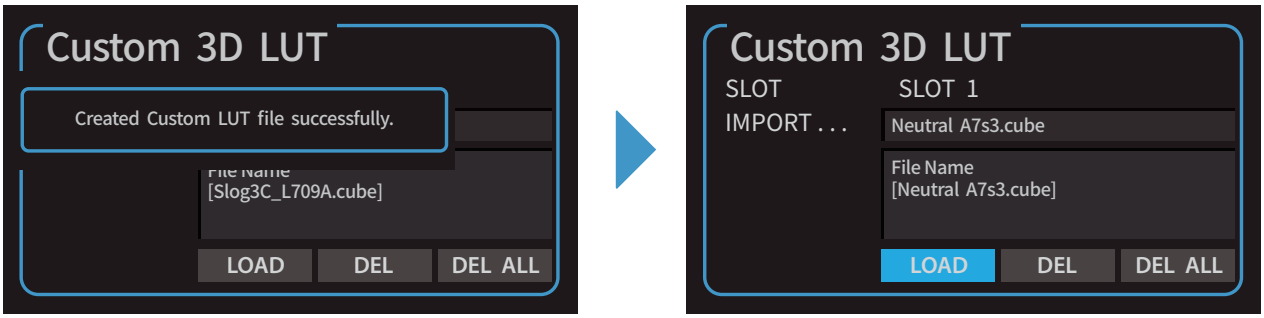
[3] Import and Apply 3D LUT files

1. Load 3D LUT Files

6) Select the 3D LUT file you would like to load, and click [LOAD] and [YES].



7) Loading of a custom 3D LUT file is finished.



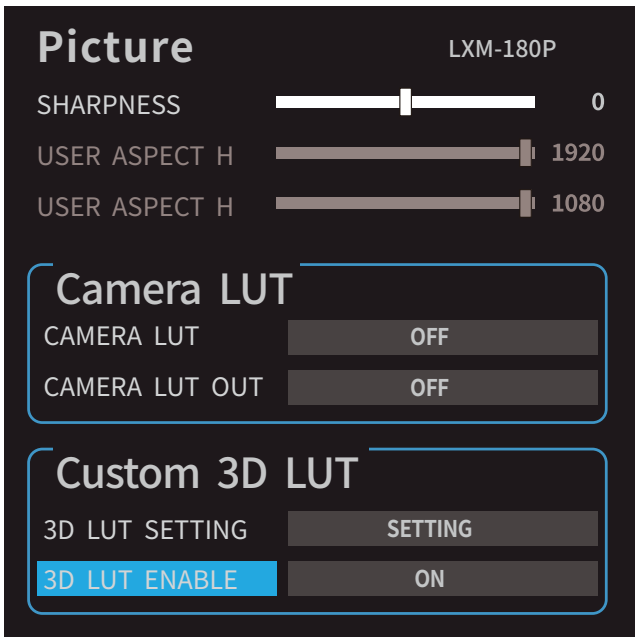
8) If you would like to load other 3D LUT files to other SLOTs, repeat step 3 to step 7.

06 FUNCTION DETAILS

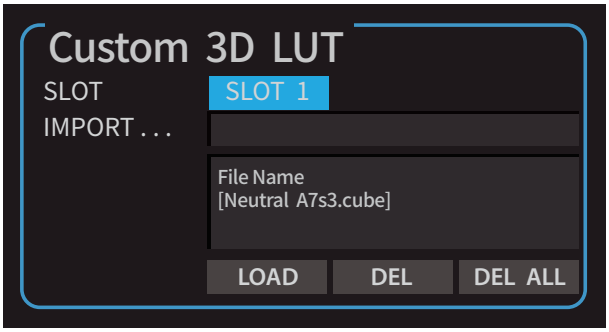
[3] Import and Apply 3D LUT files

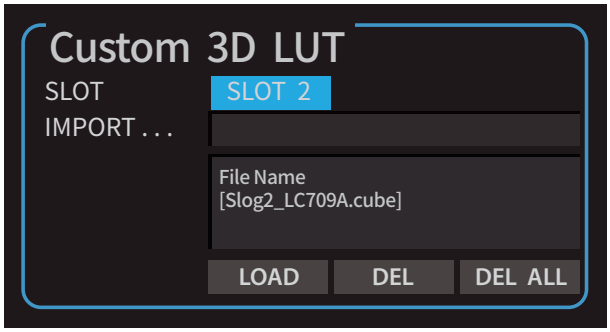
2. Apply the loaded 3D LUT files

1) Set [3D LUT ENABLE] to [ON].



2) Go to [3D LUT SETTING] and select the SLOT you would like to apply. Then, the loaded 3D LUTs are applied on the screen instantly.



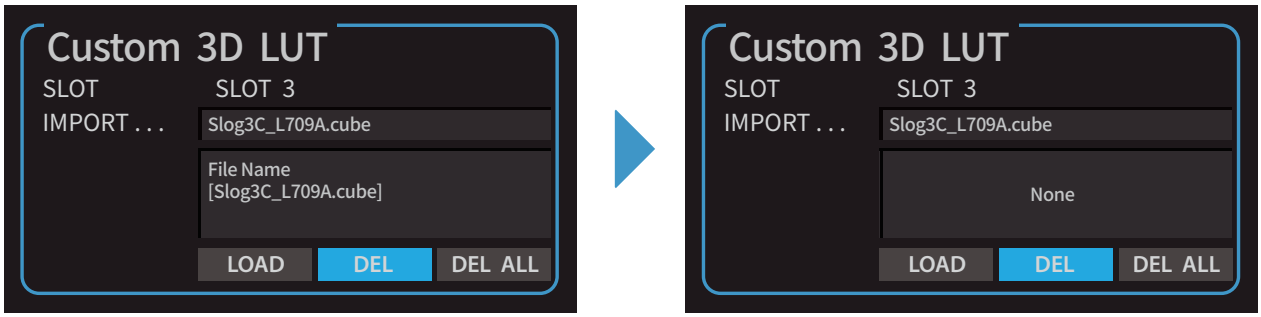


06 FUNCTION DETAILS

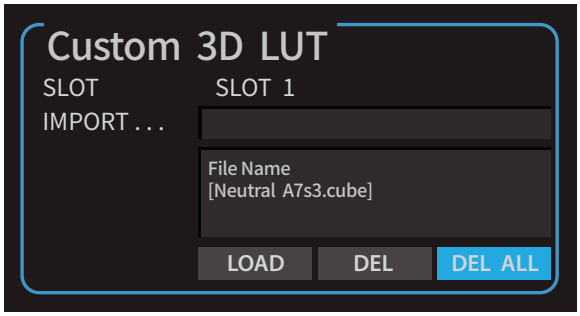
[3] Import and Apply 3D LUT files

3. Delete the loaded 3D LUT files

1) Select the SLOT you would like to delete and click [DEL]. Then, the 3D LUT file loaded on the slot is deleted.



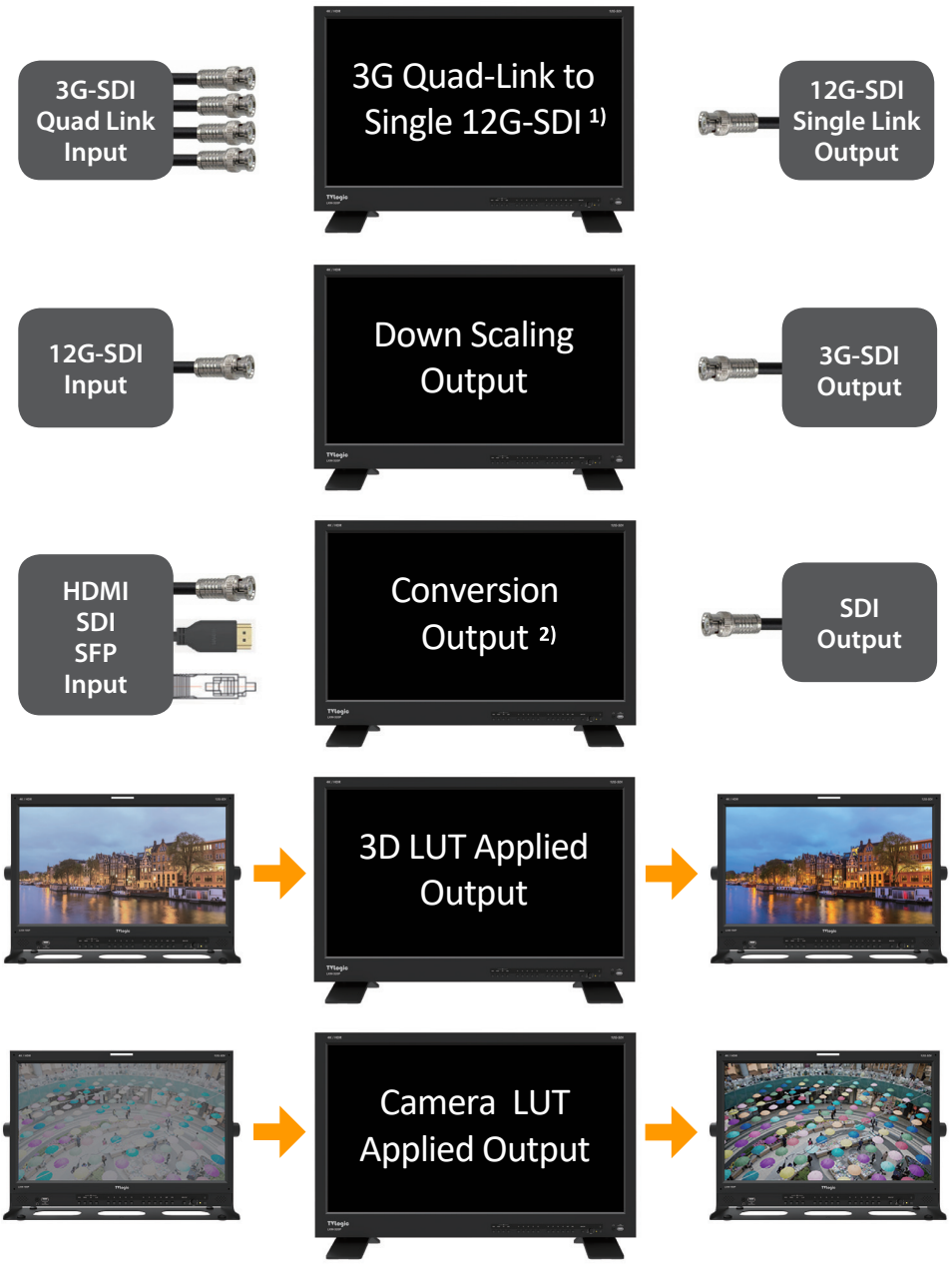
2) If you would like to delete all the loaded 3D LUT files at once, click [DEL ALL].



06 FUNCTION DETAILS

[4] Processed Output

The LXM series monitors have the separate PROCESSED OUTPUT connector(BNC port), which allows the output of 3D LUT-applied signals and Camera LUT-applied signals. It enables 3G-SDI Quad-Link 12G-SDI to 12G-SDI Single-Link conversion as well as HDMI/SFP to SDI conversion. And, the 12G-SDI input can be downscaled to 3G-SDI output,



1) Input Format : 2-Sample Interleave only Supported.
2) Output Format : YCbCr 4:2:2 1080p/50,59,94,60 2160p/50,59,94,60

06 FUNCTION DETAILS

[5] LUMA(Y') ZONE CHECK

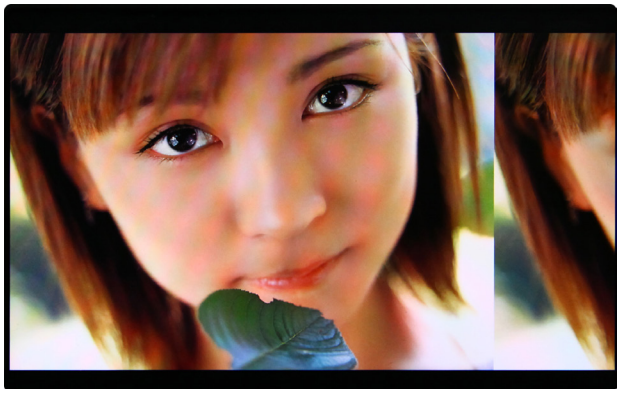
1) COLOR PATTERN TYPE

- Displays the pixels with the designated Luma(Y') levels of the input image in colors. Pixels whose Y' level is over 100% are displayed as Red. Pixels whose Y' level is below 0% are displayed as Green.
- Pixels with Y' levels which are designated by the user are displayed in following colors - yellow, pink, cyan.
- Factory Default Y' (Border line between pink and yellow) level is 70%. The upper 2.5% and lower 2.5% zone from the Y' level set in [LUMA(Y') ZONE ADJUST] menu is displayed in Pink. The upper 10% zone from the Pink zone is displayed in Yellow, and the lower 10% zone from the Pink zone is displayed in Cyan. So, 25% zone is displayed in colors and the other 75% zone is displayed mono and white.

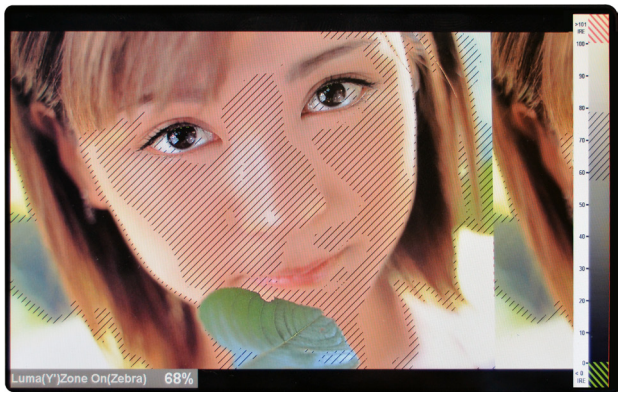
2) LUMA(Y') ZONE CHECK function is convenient to set the exposure or the lighting so that the skin tone or the specific color tone is correctly shot.

3) ZEBRA PATTERN TYPE

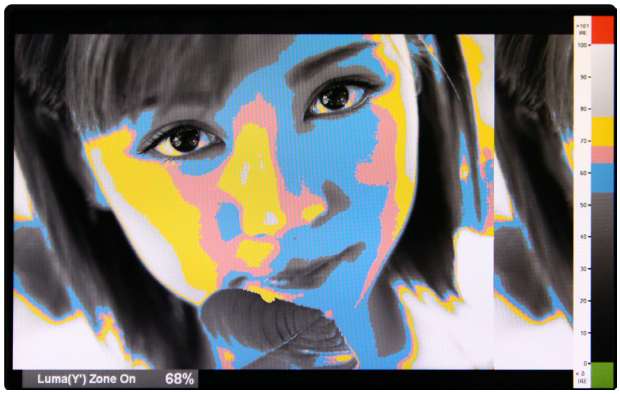
- Displays the pixels with the designated Luma(Y') levels of the input image in zebra pattern. Pixels whose Y' level is over 100% are displayed as red diagonal stripes. Pixels whose Y' level is below 0% are displayed as green diagonal stripes.
- Pixels with Y' levels which are designated by the user are displayed as black diagonal stripes.
- Factory Default Y' level is 70%. The pixels with Y' level from 65% to 75% are displayed as black zebra pattern. So, totally 10% zone is displayed as black diagonal stripes.



<Luma Zone Check OFF>



<Luma Zone Check ON_Zebra Pattern Type>



<Luma Zone Check ON_Color Pattern Type>

06 FUNCTION DETAILS

[6] FIRMWARE UPDATE

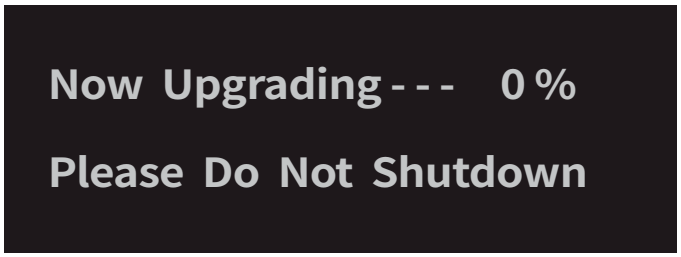
1. Receive the latest firmware file from the official TVLogic dealer or download it from TVLogic website.
   *The firmware file can be used for all LXM models in common.

2. Copy the firmware file to the USB Flash Drive.
   *The firmware file can be used for all LXM models in common.

3. Insert the USB Flash Drive to the monitor.

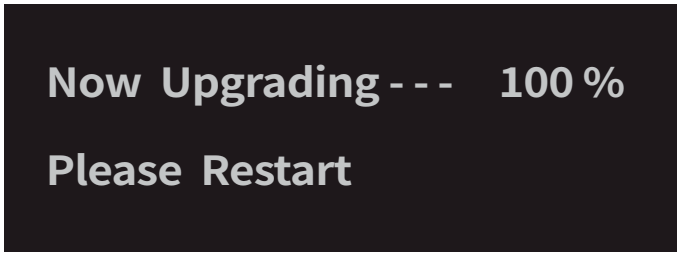
4. Go to **MENU** > **System** > **S/W UPGRADE** > **START**, and push the **ENTER** knob.

5. The firmware update starts with the following message.



*After the loading of the firmware file to the monitor is finished, the firmware update starts. So, when the upgrading is done by over 5%, you can remove the USB Flash Drive from the monitor.

6. When the firmware upgrade is finished, the following message appears.



7. Turn off and on the monitor using the main power switch on the rear.

07 VIDEO SUPPORT RESOLUTION

[1] SDI Input

Interface	Image Format	Signal Format	Sampling Structure	Pixel Depth	Field/Frame Rate	Standards
SD-SDI	720 x 486	4:2:2	YCbCr	8/10-bit	59.94i, 480p	SMPTE 259
	720 x 576				50i, 576p	
HD-SDI	1280 x 720				60p, 59.94p, 50p	SMPTE 292
	1920 x 1080				30p, 29.97p, 25p, 24p, 23.98p	
					30psF, 29.97psF, 25psF, 24psF, 23.98psF	
					60i, 59.94i, 50i, 48i, 47.95i	
	2048 x 1080				30p, 29.97p, 25p, 24p, 23.98p	
					30psF, 29.97psF, 25psF, 24psF, 23.98psF	
					60i, 59.94i, 50i, 48i, 47.95i	
3G-SDI Level A	1280x720	4:4:4	RGB & YCbCr	10-bit	60p, 59.94p, 50p, 30p, 29.97p, 25p	SMPTE 425-1
		4:4:4:4	RGBA & YCbCrA	10-bit	60p, 59.94p, 50p, 30p, 29.97p, 25p	
3G-SDI Level A & B	1920 x 1080	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:4:4	RGB & YCbCr	10/12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4:4	RGBA & YCbCrA	10-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4	RGB & YCbCr	10/12-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:4:4:4	RGBA & YCbCrA	10-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:2:2	YCbCr	12-bit	60i, 59.94i, 50i, 48i, 47.95i	
3G-SDI Level A & B	2048 x 1080	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 425-1
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:4:4	RGB & YCbCr	10/12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4:4	RGBA & YCbCrA	10-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4	RGB & YCbCr	10/12-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:4:4:4	RGBA & YCbCrA	10-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:2:2	YCbCr	12-bit	60i, 59.94i, 50i, 48i, 47.95i	

07 VIDEO SUPPORT RESOLUTION

[1] SDI Input

Interface	Image Format	Signal Format	Sampling Structure	Pixel Depth	Field/Frame Rate	Standards
Quad-Link 3G-SDI 2-S.I. (Level A & Level B)	3840 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 425-5
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
Quad-Link 3G-SDI 2-S.I. (Level A & Level B)	4096 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 425-5
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
Quad-Link 3G-SDI Square Division (Level A & Level B)	3840 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 425-5
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
Quad-Link 3G-SDI Square Division (Level A & Level B)	4096 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 425-5
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
Single-Link 6G-SDI	3840 x 2160	4:2:2	YCbCr	8/10-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 2081-10 Mode 1
Single-Link 6G-SDI	4096 x 2160	4:2:2	YCbCr	8/10-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 2081-10 Mode 1
Single-Link 12G-SDI	3840 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 2082-10 Mode 1
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
Single-Link 12G-SDI	4096 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 2082-10 Mode 1
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	

07 VIDEO SUPPORT RESOLUTION

[2] HDMI Input

Interface	Image Format	Color Space		Color Depth	Field/Frame Rate	CEA-861
SD	720 x 486	4:4:4 4:2:2	RGB & YCbCr	8/10/12 bit	59.94i , 480p	HDMI 1.4
	720 x 576				50i ,576p	
HD	1280 x 720				60p, 59.94p, 50p	HDMI 1.4
	1920 x 1080				60i, 59.94i, 50i	
					30p, 29.97p, 25p, 24p, 23.98p	
					60p, 59.94p, 50p	
UHD	3840 x 2160	4:4:4	RGB & YCbCr	8 bit	30p, 29.97p, 25p, 24p, 23.98p	HDMI 2.0
4K	4096 x 2160	4:4:4	RGB & YCbCr	8 bit	30p, 29.97p, 25p, 24p, 23.98p	HDMI 2.0
UHD	3840 x 2160	4:4:4 4:2:2 4:2:0	RGB YCbCr	8/10 bit	60p, 59.94p, 50p, 48p,	HDMI 2.0
4K	4096 x 2160	4:4:4 4:2:2 4:2:0	RGB YCbCr	8/10 bit	60p, 59.94p, 50p, 48p,	HDMI 2.0

07 VIDEO SUPPORT RESOLUTION

[3] SFP Input (SDI Signal)

Interface	Image Format	Signal Format	Sampling Structure	Pixel Depth	Field/Frame Rate	Standards
SD-SDI	720 x 486				59.94i, 480p	SMPTE 259
	720 x 576				50i, 576p	
HD-SDI	1280 x 720				60p, 59.94p, 50p	SMPTE 292
	1920 x 1080	4:2:2	YCbCr	8/10-bit	30p, 29.97p, 25p, 24p, 23.98p	
					30psF, 29.97psF, 25psF, 24psF, 23.98psF	
					60i, 59.94i, 50i, 48i, 47.95i	
	2048 x 1080				30p, 29.97p, 25p, 24p, 23.98p	
					30psF, 29.97psF, 25psF, 24psF, 23.98psF	
					60i, 59.94i, 50i, 48i, 47.95i	
3G-SDI Level A	1280x720	4:4:4	RGB & YCbCr	10-bit	60p, 59.94p, 50p, 30p, 29.97p, 25p	SMPTE 425-1
		4:4:4:4	RGBA & YCbCrA	10-bit	60p, 59.94p, 50p, 30p, 29.97p, 25p	
3G-SDI Level A & B	1920 x 1080	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:4:4	RGB & YCbCr	10/12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4:4	RGBA & YCbCrA	10-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4	RGB & YCbCr	10/12-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:4:4:4	RGBA & YCbCrA	10-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:2:2	YCbCr	12-bit	60i, 59.94i, 50i, 48i, 47.95i	
3G-SDI Level A & B	2048 x 1080	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 425-1
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:4:4	RGB & YCbCr	10/12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4:4	RGBA & YCbCrA	10-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:4:4	RGB & YCbCr	10/12-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:4:4:4	RGBA & YCbCrA	10-bit	60i, 59.94i, 50i, 48i, 47.95i	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	12-bit	30psF, 29.97psF, 25psF, 24psF, 23.98psF	
		4:2:2	YCbCr	12-bit	60i, 59.94i, 50i, 48i, 47.95i	
6G-SDI	3840 x 2160 4096 x 2160	4:2:2	YCbCr	8/10-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 2081-10 Mode 1
12G-SDI	3840 x 2160 4096 x 2160	4:4:4	RGB & YCbCr	10/12-bit	30p, 29.97p, 25p, 24p, 23.98p	SMPTE 2082-10 Mode 1
		4:4:4:4	RGBA & YCbCrA	10-bit	30p, 29.97p, 25p, 24p, 23.98p	
		4:2:2	YCbCr	8/10-bit	60p, 59.94p, 50p, 48p, 47.95p	
		4:2:2	YCbCr	12-bit	30p, 29.97p, 25p, 24p, 23.98p	

08 PRODUCT SPECIFICATIONS

	LXM-180U	LXM-180P	LXM-240U	LXM-240P	LXM-320P	LXM-550U
LCD Panel						
Size	18.5"	18.4"	23.8"	23.8"	31.5"	54.6"
Resolution	1920 x 1080 (16:9)	3840 x 2160 (16:9)	3840 x 2160 (16:9)	3840 x 2160 (16:9)	3840 x 2160 (16:9)	3840 x 2160 (16:9)
Pixel Pitch	0.213(H) x 0.213(V) mm	0.035(H) x 0.106(V) mm	0.137(H) x 0.137(V) mm	0.137(H) x 0.137(V) mm	0.182(H) x 0.182(V) mm	0.315(H) x 0.315(V) mm
Color Depth	16.7M Colors (8 bit)	1.07B Colors (10 bit)	1.07B Colors (10 bit)	1.07B Colors (10 bit)	1.07B Colors (10 bit)	1.07B Colors (10 bit)
Viewing Angle	178°(H) / 178°(V)	170°(H) / 170°(V)	178°(H) / 178°(V)	178°(H) / 178°(V)	178°(H) / 178°(V)	178°(H) / 178°(V)
Luminance of white	500cd/m2	1000cd/m2	500cd/m2	1000cd/m2	1000cd/m2	700cd/m2
Contrast Ratio	1000 : 1	1000 : 1	1200 : 1	1000 : 1	1000 : 1	1100 : 1
Display Area	408.96(H) x 230.04(V) mm	408.96(H) x 230.04(V) mm	525.7(H) x 295.7(V) mm	527.0(H) x 296.5(V) mm	697.31(H) x 392.23(V) mm	1209.6(H) x 680.4(V) mm
Input						
4 x BNC	12G/6G/3G/HD/SD-SDI A/B/C/D Channel Input					
1 x HDMI	HDMI 2.0 Input					
2 x SFP	SFP A/B Channel Input					
1 x BNC	Reference Input					
Output						
4 x BNC	12G/6G/3G/HD/SD-SDI A/B/C/D Channel Output					
1 x BNC	Processed Output					
Input Signal						
12G-SDI	12Gb/s	12Gb/s	12Gb/s	12Gb/s	12Gb/s	12Gb/s
6G-SDI	6Gb/s	6Gb/s	6Gb/s	6Gb/s	6Gb/s	6Gb/s
3G-SDI	2.970Gb/s	2.970Gb/s	2.970Gb/s	2.970Gb/s	2.970Gb/s	2.970Gb/s
HD-SDI	1.485Gb/s	1.485Gb/s	1.485Gb/s	1.485Gb/s	1.485Gb/s	1.485Gb/s
HDMI 2.0	480p/720p/1080p/2160p	480p/720p/1080p/2160p	480p/720p/1080p/2160p	480p/720p/1080p/2160p	480p/720p/1080p/2160p	480p/720p/1080p/2160p
SDI Input Signal Formats						
SMPTE ST 2082	3840x2160 (60/50/30/25/24p)					
SMPTE ST 2081	3840x2160 (30/25/24p)					
SMPTE ST 2036-1	3840×2160(23.98/24/25/29.97/30/50/59.94/60p)					
SMPTE-425M-A/B	1080p(60/59.94/50/30/29.97/25/24/23.98/30sF/29.97sF/25sF/24sF/23.98sF)					
	1080i(60/59.94/50)					
SMPTE-274M	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	480i (59.94)					
ITU-R BT.656	576i (50)					
SMPTE ST 2048-2	2048x1080(23,98/24/25/29.97/30p/psf, 47.95/48/50/59.94/60p)					
Remote Control & Update						
1 x LAN	RJ-45 Input(Ethernet), Firmware Update & Remote Control					
1 x REMOTE	RJ-45 Input, GPI Control					
2 x RS-422	RJ-45 Input & Output, Monitor Control by TVLogic Protocol or TSL Protocol					
1 x USB	USB A type, Firmware Update					
General						
Audio Out	Internal Speakers (Stereo 3W x 3W) / Analog Stereo (Phone Jack)				-	-
Power	AC100~240V(50~60Hz) DC 12V/24V	AC100~240V(50~60Hz) DC 12V/24V	AC100~240V(50~60Hz) DC 12V/24V	AC100~240V(50~60Hz) DC 14V/24V	AC100~240V(50~60Hz)	AC100~240V(50~60Hz)
Power Consumption	45W	64W	68W	145W	134W	154W
Operating Temperature	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)	-20°C to 60°C (-4°F to 140°F)
Dimensions : Main Body	442.5 x 309 x 84 (mm) 17.42 x 12.16 x 3.30 (inch)	442.5 x 309 x 91.8 (mm) 17.42 x 12.16 x 3.61 (inch)	552.5 x 360.4 x 95.9 (mm) 21.75 x 14.18 x 3.77 (inch)	555.4 x 365 x 94 (mm) 21.86 x 14.37 x 3.70 (inch)	760.3 x 485.8 x 107.1 (mm) 29.93 x 19.12 x 4.21 (inch)	1262 x 746 x 81.4 (mm) 49.68 x 29.37 x 3.20 (inch)
Dimensions : With Stand	489.3 x 332.8 x 137.5 (mm) 19.26 x 13.1 x 5.41 (inch)	489.3 x 332.8 x 137.5 (mm) 19.26 x 13.1 x 5.41 (inch)	586.13 x 388.2 x 150 (mm) 23.07 x 15.28 x 5.90 (inch)	586.13 x 392.8 x 150 (mm) 23.07 x 15.46 x 5.90 (inch)	760.3 x 525.9 x 245 (mm) 29.93 x 20.70 x 9.64 (inch)	1262 x 794.5 x 245 (mm) 49.68 x 31.27 x 9.64 (inch)
Dimensions : Shipping Box	550 x 460 x 300 (mm) 21.65 x 18.11 x 11.81 (inch)	550 x 460 x 300 (mm) 21.65 x 18.11 x 11.81 (inch)	680 x 540 x 300 (mm) 26.77 x 21.26 x 11.81 (inch)	680 x 540 x 300 (mm) 26.77 x 21.26 x 11.81 (inch)	920 x 360 x 695 (mm) 36.22 x 14.17 x 27.36 (inch)	1410 x 410 x 1050 (mm) 55.51 x 16.14 x 41.34 (inch)
Weight (with stand)	6.6kg / 14.55lbs	7.2kg / 15.87lbs	10kg / 22.04lbs	13.2kg / 29.10lbs	15.8kg / 34.83lbs	34.2kg / 75.39lbs
Basic Accessories	AC Power Cord, Stand	AC Power Cord, Stand	AC Power Cord, Stand	AC Power Cord, Stand	AC Power Cord, Stand	AC Power Cord, Stand
Optional Accessories	V-mount, G-mount Acrylic Filter, Sun Hood Rack Mount Kit Carrying Case	V-mount, G-mount Acrylic Filter, Sun Hood Rack Mount Kit Carrying Case	V-mount, G-mount Acrylic Filter Rack Mount Kit Carrying Case	V-mount, G-mount Acrylic Filter Rack Mount Kit Carrying Case	-	-

*The specifications above may be changed without notice.

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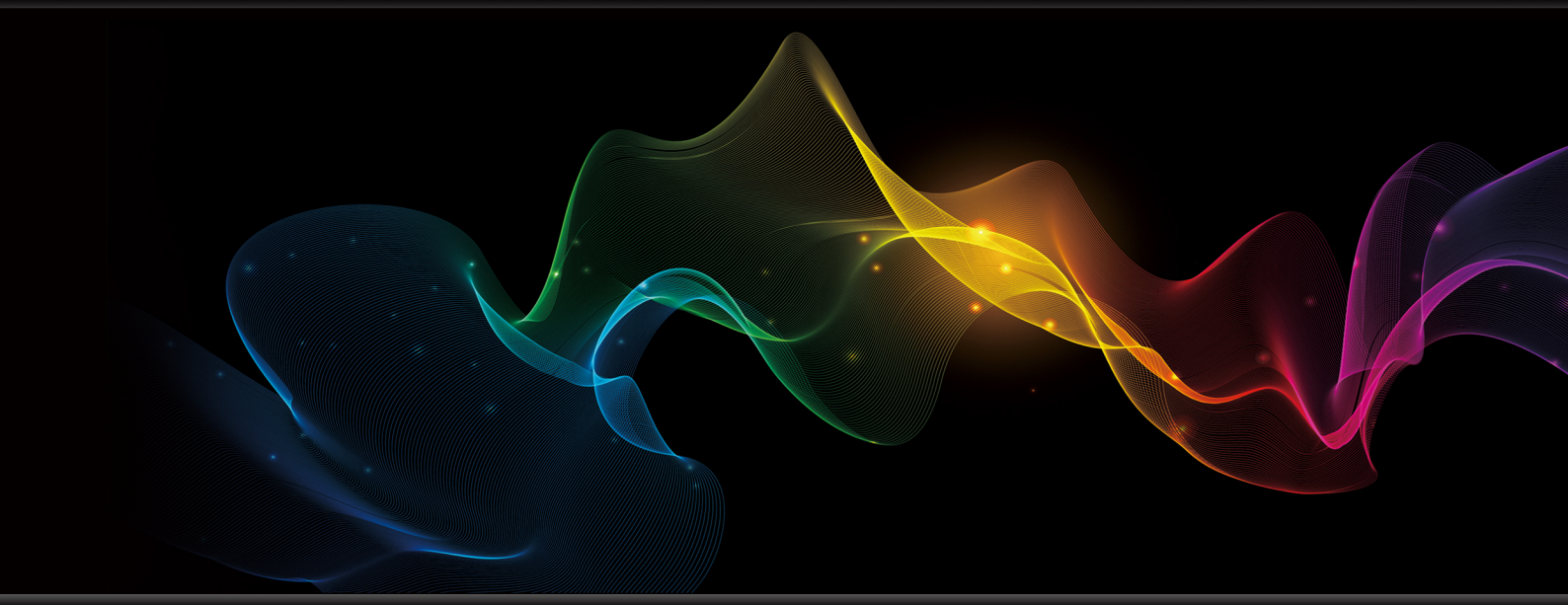

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