Multi Format
4K LCD Monitor

Operation Manual_v1 .3

LUM-171G

TVlogic Always ON-AIR

MULTI

Contents

1. Caution

- **Always use set voltage.**
- **AC 100 ~ 240V (1.6A/50~60Hz)**
- **DC 12V**

- All operating instructions must be read and understood before the product is operated.

- These safety and operating instructions must be kept in 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 product.

- In case of using other DC 12V/24V (LVM-176W), 12V (LVM-246W)adapters instead of the standard adapter provided by the manufacturer, please check the proper load capacity (or current capacity) and use an adapter with stable voltage.

- 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.

- Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified service person to perform servicing.

- If any of the following conditions occurs, 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 a 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. Improper adjustment of controls not described in the instructions can cause damage, which often requires extensive adjustment work by a qualified technician.
  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.

1. Caution

- 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.

- When mounting the product on a wall or ceiling, be sure to install the product according to the method recommended by the manufacturer.

- 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 bathtub, washbasin, kitchen sink and laundry tub, swimming pool and in a wet basement.

- Keep the product away from direct rays of the Sun-light.

- 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.

- 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.

- 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).
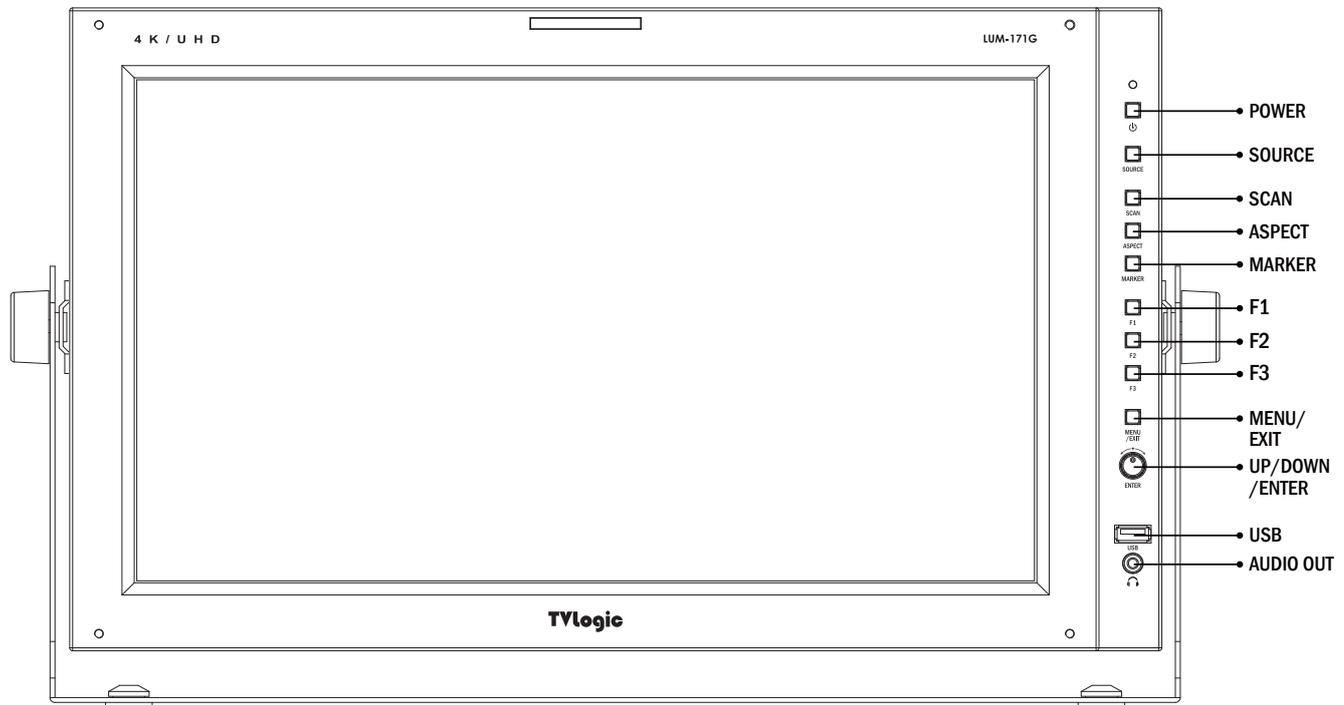
2. Main Features

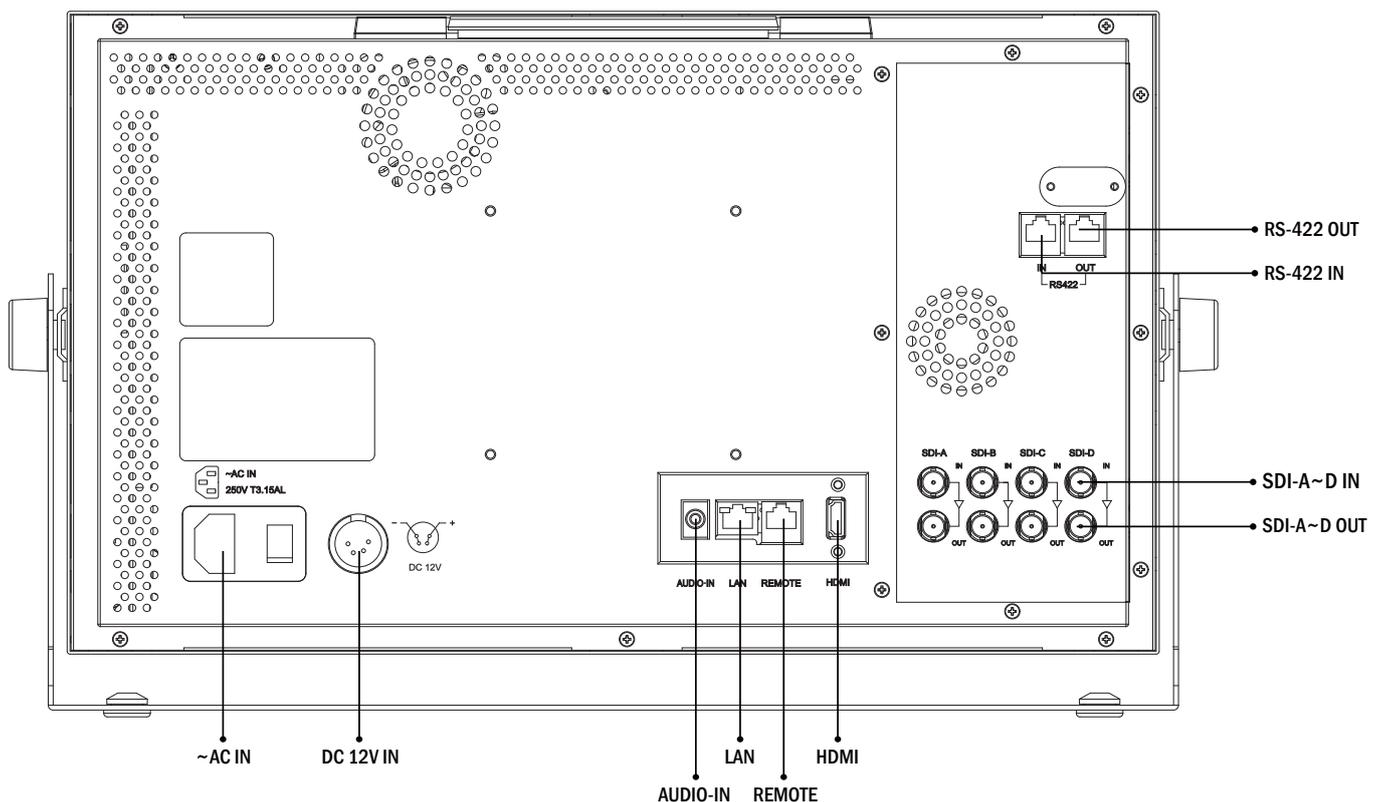## LUM-171G Monitor contains the following features :

- **Compatible with various SDI signal formats**
  - This product is compatible with various SDI signals - 720P, 1080p.

- **Compatible with various Digital signal formats**
  - This product is compatible with various HDMI Digital signals- 50p, 59.94p, 60p.

- **4K(SMPTE 428-1-2006 : 4096 x2160@24p / SMPTE ST 2036-1:2009 : 3840x2160 @23.98p~ 60p) support**
  - 6G/ 12G is supported only in SDI A, SDI B modes.

- **Cooling Fan support**
  - Helps maintain optimal internal operating temperature.

- **Remote control function**
  - This product can simply be remote controlled by cable connection without additional peripheral equipment attached to unit.

- **RS422 protocol support**
  - This product supports protocols provided by TVLogic.

- **Ethernet & USB support**
  - Supports Ethernet and USB connection for program download, monitor control and color calibration.

- **HDMI(2.0) support**
  - 1 x HDMI(2.0) input is available without additional equipment.

- **3G-SDI support**
  - Supports 3G-SDI YCbCr/RGB 4:4:4 and YCbCr 4:2:2 formats.

- **Additional features**
  - Wide Viewing Angle, Active Loop Through(SDI), VESA Mounting Standard and OSD user interface.
  - * Max. Brightness: 450cd/m^2, Contrast ratio: 1400:1

- **Various Color Gamut support**
  - Supports ITU-R BT. Rec.709, SMPTE-C, EBU, DCI-P3(Color standard of digital cinema), Rec.2020, and Panel Native.

3. Controls & Functions

LUM-171G: FRONT

- POWER
- SOURCE
- SCAN
- ASPECT
- MARKER
- F1
- F2
- F3
- MENU/EXIT
- UP/DOWN/ENTER
- USB
- AUDIO OUT

LUM-171G : REAR

- RS-422 OUT
- RS-422 IN
- SDI-A~D IN
- SDI-A~D OUT
- ~AC IN
- DC 12V IN
- LAN
- HDMI
- AUDIO-IN
- REMOTE

3. Controls & Functions

FRONT

● **[SOURCE] Button**
  - Used to select an input signal among HDMI, SDI-A, SDI-B, SDI-C, SDI-D, 2SI(2CH), 2SI(4CH), UD MODE(4CH).

● **[F1 ~ F3] Button/Lamp**
  - Shortcut keys for KEY MAPPING features in the OSD MENU.
  - Selectable options are as follows:

  1). BLUE ONLY
  - Activates in the order: BLUE ONLY – MONO.
  - BLUE ONLY : Used to remove red and green from the input signal and display the screen only under a blue signal.
  - MONO : Used to remove all colors from the input signal and display the screen only under white and black signal.

  2). H/V DELAY,
  - Used to check horizontal and vertical sync. simultaneously by moving the screen   up/down/left/right.
  - In this mode, the brightness of image automatically increase for easy verification of synchronized signals.

  3). COLOR TEMP
  - Used to controls the color temperature and allows instant access to preset the color temperature settings.

  4). AUDIO LVM
  - Used to activate/deactivate the Audio Level Meter.

  5). TIME CODE
  - Used to activate/deactivate the Time Code.

  6). LUMA ZONE
  - Used to activate/deactivate the Luma Zone function.

  7). FOCUS ASSIST
  - Used to activate/deactivate the Focus Assist (Mono / Color) function.

  8). WAVEFORM
  - Used to activate/deactivate various forms of Waveform and Vectorscope.
  - Waveform only, Vectorscope only, Waveform+Vectorscope, Waveform Wide

  9). RANGE ERROR
  - Used to activate/deactivate the Range Error function.

  10). CAMERA LUT
  - Used to activate/deactivate the Camera LUT function.

  11). Signal Information
  - Used to display SDI input signal information.

3. Controls & Functions

FRONT

● **[SCAN] Button**
  - Used to activate various scan mode (Zero Scan, 2:1 Scan, 1:1 Scan, Fit Width, Over Scan)

● **[ASPECT] Button**
  - Used to select ASPECT mode. Available aspect modes are 16:9, 4:3, 2.35:1, 1.85:1, 15:9, 16:10 and Auto.

● **[MARKER] Button**
  - Used to activate/deactivate the Marker.

● **[MENU/EXIT] Button**
  - Used to activate/deactivate the OSD menu.
  - Press the MENU button again to deactivate the OSD menu.

● **[UP/DOWN/ENTER] Knob**
  - Used to move up/down through the menus during the OSD menu activation and also to increase/decrease the value of the selected feature.
  - Press the Knob to confirm a chosen value (or mode).
  - May also be used to control the [Brightness]-[Contrast]-[Volume] value during the OSD menu inactivation. Turn the Knob to the left/right to adjust the value.

● **[OPERATE] Lamp**
  - Indicates condition and power status of unit. Light turns off when the power is disconnected.
  - Standby mode is indicated by a red LED light. Normal(active) mode is indicated by a Green LED light.
  - Restores to previous status when monitor power turns off and comes back on.

● **[POWER] Button**
  - Used to turn the power on and off.

● **[Audio out] (PHONE JACK)**
  - Selects the left/right Audio embedded signal output.

● **[USB]**
  - Used to convenient update new functions and programs.
  - Used to calibrate the monitor's color temperature using color calibration tool.

3. Controls & Functions

LUM-171G : REAR

● **[REMOTE] (RJ-45)**
- Provides connection to control equipment
  for external monitor control.
- Features can be changed in the GPI section of
  the OSD menu.

● **[RS422 IN/OUT] (RJ-45)**
- Used to control the monitor with a protocol
  provided by TVLogic.

● **[HDMI]**
- Signal input terminal for HDMI signal.

● **[SDI-A,B,C,D] (BNC)**
- SDI signal input terminal for SDI A,B,C,D
  signal.

● **[Audio in]**
- Used to connect the audio input signal.

● **[LAN]**
- Used to control the monitor with a protocol
  provided by TVLogic.

● **~ AC IN**
- 100 ~ 240V AC 50/60Hz

● **DC IN**
- 12V

<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.

4. Menu Organization & Adjustment

[1] Menu Organization

● **The product may be controlled and set system-wise through OSD displayed on the screen.**

[2] Menu Adjustment

● **You may control various functions using MENU, UP/DOWN and ENTER buttons on the bottom front of the monitor.**

[3] Menu Adjustment Procedure

● **Menu control sequence follows the order below:**

1. Press MENU button to bring the OSD menu on the screen.
2. Display the desired sub menu with the UP/ DOWN button.
3. After selecting a sub menu, press ENTER to select an item with the UP/DOWN button.
4. Press ENTER to select the desired item (verified by highlighted field text turning red)
5. Press ENTER to save the new value after adjusting the value with UP/DOWN button. (Verified by highlighted field returning to default black color)
6. Press MENU to remove OSD menu from the screen.

4. Menu Organization & Adjustment

[4] Menu Tree

PICTURE	Brightness
	Contrast
	Chroma
	Aperture
	Aspect
	3G format
	Video Range Select
COLOR	Color Temp.
	Gain Red
	Gain Green
	Gain Blue
	Bias Red
	Bias Green
	Bias Blue
	Color Copy
	Back Light
	Color Space
	Gamma Curve
	Camera LUT
	Camera LUT Select

GPI	GPI 1 ~ GPI 8
	Group ID
	Monitor ID
	DHCP
	IP Address
	Subnet Mask
	Gateway
	Port No.
	Network settings supply
MARKER	Marker
	Center Marker
	Safety Area
	Fit Marker
	Marker Mat
	Marker Color
	Thickness
	User Marker H1
	User Marker H2
	User Marker V1
	User Marker V2

4. Menu Organization & Adjustment

[4] Menu Tree

WAVE & FOCUS	
	Waveform Type
	Waveform Intensity
	Waveform Trans
	Waveform Color
	Line Waveform
	Line Select Position
	Luma Zone Check
	Luma Zone Adjust
	Focus Assist
	Focus Assist Color
	Focus Assist Level
	Range Error
	Y Max
	Y Min

AUDIO	
	Lv Meter Select
	Lv Meter Display
	Lv Meter Reference
	Lv Meter Decay Time
	Lv Meter Size
	Volume
	Em. Audio Left
	Em. Audio Right

SYSTEM	
	User Config Set
	Internal Pattern
	System Default
	S/W Upgrade
	S/W Upgrade Start
	Time Code
	Key Lock
	Key LED
	F1 Key Mapping
	F2 Key Mapping
	F3 Key Mapping

5. Menu Operations

[1] PICTURE & VIDEO

● **Brightness**
  - The item controls the degree of brightness
    between -100~100.

● **Contrast**
  - The item controls contrast ratio between
    -100~100.

● **Chroma**
  - The item controls saturation between -50~50.

● **Aperture**
  - The item controls the picture sharpness
    between 0~24.

● **Aspect**
  - Used to change the various display ratio.
  - Only available in Single 3G Mode.

● **3G Format**
  - Automatically detects when Payload signal
    appears in Normal Mode.
  - Selects input format for SDI 3G A/B support
    (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).

● **Video Range Select**
  - Used to select the range of brightness.
  * LIMITED(EX) : Output 0 ~ 255 (HDMI/SDI)
  * FULL : Output : 16 ~ 255 (SDI)

5. Menu Operations

[2] COLOR

● **Color Temp**
  - Controls color temperature and allows instant access to preset color temperature settings.
  - Color temperature settings include 9300K, 6500K, 5600K, 5000K, 3200K, User1/2/3.
  - RGB Gain, Bias(=Offset) and Color Copy are activated in User1/2/3 modes only.
  - Different back light level can be set for each color temperature setting.

● **Gain Red**
  - Used to set Red Gain level from -256 to 255.
  - Adjusts the red color of bright section.
  - Only available in Custom 1/2/3 mode.

● **Gain Green**
  - Used to set Green Gain level from -256 to 255.
  - Adjusts the red color of bright section.
  - Only available in Custom 1/2/3 mode.

● **Gain Blue**
  - Used to set Blue Gain level from -256 to 255.
  - Adjusts the red color of bright section.
  - Only available in Custom 1/2/3 mode.

● **Bias Red**
  - Used to set Red Bias from -100 to 100.
  - Adjusts the red color of dark section.
  - Only available in CUSTOM 1/2/3 mode.

● **Bias Green**
  - Used to set Green Bias from -100 to 100.
  - Adjusts the red color of dark section.
  - Only available in CUSTOM 1/2/3 mode.

● **Bias Blue**
  - Used to set Blue Bias from -100 to 100.
  - Adjusts the red color of dark section.
  - Only available in CUSTOM 1/2/3 mode.

● **Color Copy**
  - Used to copy the R/G/B Gain value of pre-stored color temperature settings.
  - In Custom mode, find and select the color temperature to be used by turning the Knob button and press the KNOB button to copy and apply the Gain value to Gain Red, Gain Green, Gain Blue.
  - Only available in CUSTOM 1/2/3 mode.

5. Menu Operations

[2] COLOR

● **Back Light**
- Used to control the backlight level of the LCD panel.
- Available values are between MIN(0) and MAX(100). Higher value means brighter screen.

● **Color Space**
- Used to select color space and the mode will be changed as the sequence below.
- Native Color -> Rec-709(sRGB) -> Lut SMPTE-C -> Lut EBU -> Lut D-Cinema -> Rec-2020

● **Gamma Curve**
- Used to change the Gamma curve between 1.00 and 3.00.
- Use the Knob(UP/DOWN) button to set the value with 0.05 increment and decrement.

● **Camera LUT**
- Used to apply a selected Camera LUT on the screen.

● **Camera LUT Select**
- Select a desired Camera LUT among the various options below.
- [LOG-C]-[C-LOG]-[S-LOG1]-[S-LOG2]-[S-LOG3] -[RED Gamma3]-[RED Gamma4]

5. Menu Operations

[3] GPI / UMD

- **This item activates/ deactivates the REMOTE function.**
- **The user may designate a function for each pin and each pin's default setting is as follows.**

- **The default settings are as follows:**
  PIN 1 : SINGLE-SDI
  PIN 2 : 2SI-SDI
  PIN 3 : QUAD-SDI
  PIN 4 : HDMI
  PIN 5 : 1:1 SCAN
  PIN 6 : ASPECT
 PIN 7 is POWER ON/OFF use only, PIN 8 is GND

REMOTE (RJ-45)

1: Pin1
2: Pin2
3: Pin3
4: Pin4
5: Pin5
6: Pin6
7: Pin7
8: GND
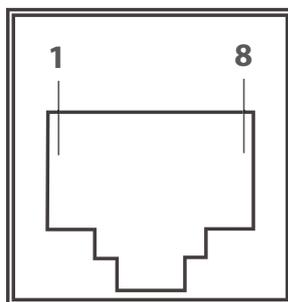
Menu Classification	Settable Values
PIN 1~6	NONE SINGLE-SDI 2SI-SDI QUAD-SDI HDMI UNDER SCAN 1:1 SCAN ASPECT H/V DELAY BLUE ONLY MONO 16:9 MARKER 4:3 MARKER 4:3 ON AIR MARKER 15:9 MARKER 14:9 MARKER 13:9 MARKER 1.85:1 MARKER 2.35:1 MARKER 1.85:1&4:3 MARKER CENTER MARKER SAFETY AREA 80% SAFETY AREA 85% SAFETY AREA 88% SAFETY AREA 90%

[3] GPI / UMD
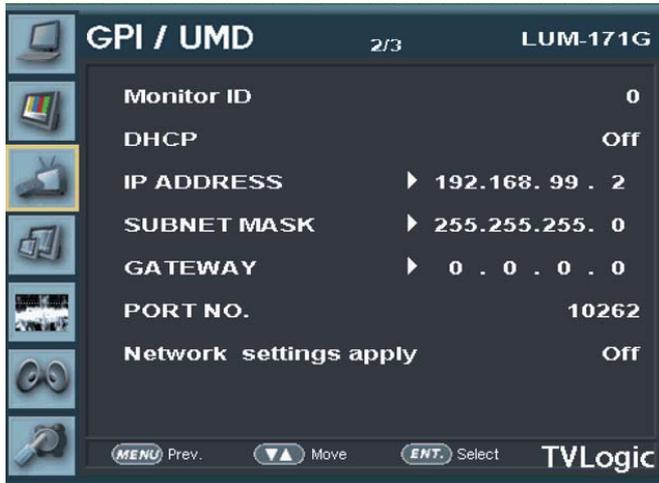
● **Monitor ID**
 - This item sets the ID of each monitor for the TVLogic control protocol using RS-422/485 communication.
 - Available values are 0~127.

● **DHCP**
 - Used to activate/deactivate the DHCP function.

● **IP Address**
 - Used to set the IP Address connected to a Monitor.

● **Subnet Mask**
 - Used to set the Subnet Mask connected to a Monitor.

● **Gateway**
 - Used to set the Gateway number connected to a Monitor.

● **Port NO**
 - Used to set the port number of the monitor.

● **Network Setting Apply**
 - Applies the IP Address, Subnet mask, Gateway, and Port number set above.

● **UMD Display**
 - The item sets UMD, ANC and DYNAMIC UMD.
 - UMD : Displays user customized characters on screen.
 - ANC: Displays characters embedded in SDI signal.
 * D-UMD(S-8C) : Displays tally signal and 8 letters that are input by TSL protocol (V3.1) on the screen.
 * D-UMD(S-16C) : Displays tally signal and 16 letters that are input by TSL protocol (V3.1) on the screen.
 * D-UMD(D-8C) : Displays a pair of tally signal and a pair of 8 letters that are input by TSL protocol (V3.1) on the screen.

5. Menu Operations

[3] GPI / UMD

● **UMD Character**
  - The item is used to customize the characters
    for UMD.
  - Alphabets, numbers and special symbols are
    available.
  - Maximum of 8 characters.

● **UMD character color**
  - The item sets the color of the UMD letter.
    (White,Red,Green,Yellow,Cyan,Magenta)
  - The function only functions only when
    [D-UMD tally type] setting is [Default],[User
    color], [BG. Color],[User tally] or [User BG.].

● **UMD B.G. trans.**
  - The item sets the transparency of UMD letter
    box.
  - The selectable items are
    [Opaque],[50%],[85%] and [100%].

● **UMD size**
  - The item sets the font size of UMD and the
    size of UMD letter box.
  - The selectable items are [Small] and [Large].

5. Menu Operations

[4] MARKER

● **Marker**
- Used to select the marker type when the MARKER is displayed on the screen.
- MARKER may only be activated by pressing the MARKER button on the bottom front of the monitor.
- Available marker types are Off, 16:9, 4:3, 4:3 ON AIR, 15:9, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1 & 4:3, 4:3 ALT 14:9, 16:9 ALT 14:9, 16:9 ALT 4:3 and USER.

● **Center Marker**
- Used to select the availability of the CENTER MARKER on the screen.
- This function operates only after activating the MARKER function by pressing the MARKER button on the bottom front of the monitor.

● **Safety Area**
- Used to select and control the size and availability of the SAFETY AREA.
- Available types are 80%, 85%, 88%, 90%, 93%, 100%, EBU ACTION 16:9, EBU GRAPHIC 16:9, EBU Action 14:9, EBU Graphic 14:9, EBU Action 4:3 and EBU GRAPHIC 4:3.
- This function operates only after activating the MARKER function and by pressing the MARKER button on the bottom front of the monitor.

● **Fit Marker**
- The item activates the FIT MARKER function.
- With FIT MARKER On the safety area is displayed relative to the marker in use. With FIT MARKER Off the safety area is displayed relative to the incoming source.
- FIT MARKER acts as below:
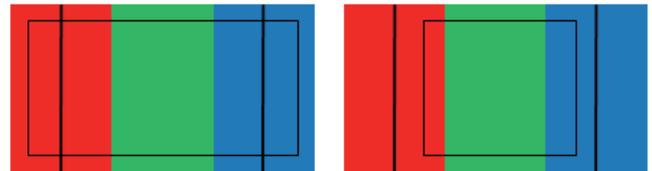
● MARKER : 4:3
● SAFETY AREA : 90%
● FIT MARKER : OFF

● MARKER : 4:3
● SAFETY AREA : 90%
● FIT MARKER : ON

● **Marker Mat**
- The item darkens the area of the outside of MARKER.
- The degrees of darkness are between Off ~ 7.
- Larger value means darker the marker mat is.

● **Marer Color**
- The item controls the color of the MARKER lines.
- Available colors are white, gray, black, red, green and blue.

● **Thickness**
- The item controls the thickness of the MARKER lines.
- The degrees of thickness are between 1 ~ 7.

5. Menu Operations

[4] MARKER

● **USER Marker H1**
 - The item controls the position of the first user defined horizontal marker line.
 - Marker option USER needs to be selected.

● **USER Marker H2**
 - The item controls the position of the second user defined horizontal marker line.
 - Marker option USER needs to be selected.

● **USER Marker V1**
 - The item controls the position of the first user defined vertical marker line.
 - Marker option USER needs to be selected.

● **USER Marker V2**
 - The item controls the position of the second user defined vertical marker line.
 - Marker option USER needs to be selected.

5. Menu Operations

[5] WAVEFORM & FOCUS
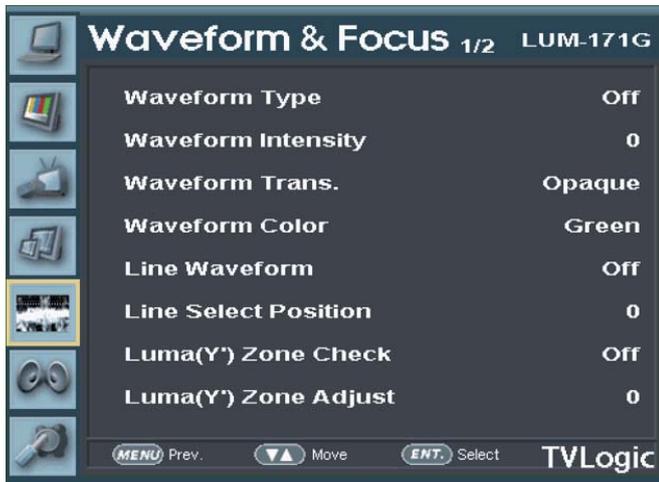
● **Waveform Type**
  - Used to activate/deactivate the Waveform and Vectorscope.
  - Selectable types include Waveform, Vectorscope, Waveform & Vectorscope, and Waveform Wide.
  * Waveform : Displays luminance level of input signal in a waveform.
  * Vectorscope : Displays color components of input signal on the X & Y axis with B-Y and R-Y. It can be displayed differently depending on input signals. (HD signals: 100% scale, SD signals: 75%)
  * Wave+Vector : Displays Waveform and Vectorscope simultaneously.
  * Waveform Wide : Stretches the Waveform to fit width of the screen and displays it on the bottomof the screen.

● **Waveform Intensity**
  - Controls brightness of the Waveform/ Vectorscope display.
  - The degrees of brightness are between 0 ~ 30. The higher number means brighter the Waveform is.

● **Waveform Trans.**
  - Controls transparency level of the Waveform/ Vectorscope.
  - Selectable options are Opaque and Trans.
  * If the option is set to Opaque, the main OSD will overlap with the Waveform/Vectorscope. If the main OSD disappears, however, it will be automatically displayed as transparent and go back to opaque.

● **Waveform Color**
  - Used to change the color of the Waveform
  - Available colors are White and Green.

● **Line Waveform**
  - Used to select whether utilizing a full screen data or a line data for displaying the Waveform/Vectorscope.

● **Line Select Position**
  - Used to select a specific vertical line for the Waveform/Vectorscope.

● **Luma(Y') Zone Check**
  - Displays Luma(Y') level of input image.
  - Selectable modes include Color Pattern, Zebra Pattern and Off.

● **Luma(Y') Zone Adjust**
  - Used to set Y' level to be colored Yellow, Pink and Cyan in [Color Pattern] mode, or to set Y' level zone to be displayed with diagonal lines in [Zebra Pattern] mode simply by scrolling the Knob.
  - Adjustable range is from 0 to 100%.

5. Menu Operations

[5] WAVEFORM & FOCUS

● **Focus Assist**
- Used to activate/deactivate the Focus Assist function which shows where the focus is on images.
- Selectable modes include Mono, Color and Off.

● **Focus Assist Color**
- Used to select a color of the Focus Assist among red, green, blue and white.
- This option is available only when the Focus Assist function is activated.

● **Focus Assist Level**
- Used to set a level of edge differences in images.
- Available values are from 0 to 100. Larger value means more sophisticated detail detection.
- Designated color is displayed when the difference of the edges exceeds the previously set value.

● **Range Error**
- Used to set whether to activate or deactivate the Y MAX and Y MIN functions.
- The values of Y MAX and Y MIN are applied to and displayed by Waveform/Vectorscope.

● **Y Max**
- Sets the maximum value of Luma(Y') level.
- Available values are from 0 ~ 127.
- Pixels with values exceeding the max Y' level will be displayed as red on the Waveform.

● **Y Min**
- Sets the minimum value of Luma(Y') level.
- Available values are from 0 ~ 127.
- Pixels with values exceeding the max Y' level will be displayed as red on the Waveform.

5. Menu Operations

[6] AUDIO

● **Level Meter Select**
  - Used to set the Embedded Audio Mode.
  - Available modes are Off, G1+G2, G2+G3, G3+G4, G1+G3, G1+G4, G2+G4 and 16CH.

● **Level Meter Display**
  - Used to set the display method for Audio Level Meter.
  - Available modes are Group and Pair.

● **Level Meter Reference**
  - Display the default Audio Level Meter value.
  - Available options are -18dB and -20dB.
  - Audio Level Meter within selected value turns to green and exceeded audio level is displayed in yellow. Audio level exceeding -4dB is displayed in red.

● **Peak Decay Time**
  - Sets the reduction time for the max value indication of audio signals.
  - Control range is from 0(MIN) to 30(MAX). The higher the value is, the longer the max value is displayed.

● **Level Meter Size**
  - Sets a size of the Audio Level Meter.
  - Selectable sizes include Small, Small Translucent, Normal, Normal Translucent, Large, and Large Translucent.
  - In Small Translucent, Normal Translucent and Large Translucent modes, the Audio Level Meter is displayed semitransparent.

● **Volume**
  - Used to control the output volume of the [AUDIO OUT] terminal on the back of the monitor.
  - Control range is from 0 to 30.

● **Em. Audio Left**
  - Used to set embedded audio channel for left audio out of the [AUDIO OUT] terminal on the back of the monitor.
  - Available values are between CH1~CH16 and OFF.

● **Em. Audio Right**
  - Used to set embedded audio channel for right audio out of the [AUDIO OUT] terminal on the back of the monitor.
  - Available values are between CH1~CH16 and OFF.

5. Menu Operations

[7] DISPLAY & SET

● **User config set**
  - This function saves and loads 3 different user settings, including USER1, USER2, and USER3.
  - Each user-customized setting is saved individually.

● **Internal Pattern**
  - Generates white patterns ranged from 0% ~ 100%.

● **System Default**
  - Used to initialize OSD values to factory default.

● **S/W Upgrade**
  - Used to update firmware using a USB drive.
  - Select On and press Enter to allow the monitor to start searching update files in the USB drive.
  - If the USB is detected successfully, the S/W Upgrade Start meu will be activated.

● **S/W Upgrade Start**
  - Activates firmware update.
  - Do not turn off the monitor during the firmware update.

● **Time Code**
  - Displays Time Code.
  - Selectable options are VITC, LTC and Off.

● **Key Lock**
  - This feature locks all the buttons, except for the power, input select and menu buttons.

● **Key LED**
  - Activates/deactivates LED lamps of the buttons on the front of the monitor.
  - If the button with LED is pressed while this function is deactivated, the LED lamp will be turned on for 5 seconds and turned off automatically.
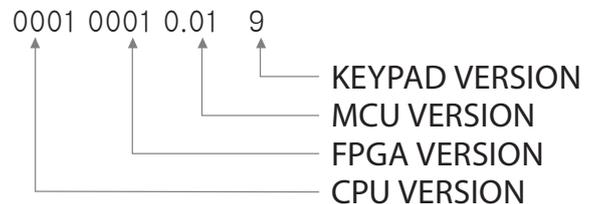
5. Menu Operations

[7] DISPLAY & SET

● **Board Version**
  - Displays the current Program Version of the monitor.

        0001 0001 0.01   9

                        KEYPAD VERSION
                        MCU VERSION
                        FPGA VERSION
                        CPU VERSION

● **F1 Key Mapping**
  - Designates a favorite function for the F1 button.

● **F2 Key Mapping**
  - Designates a favorite function for the F1 button.

● **F3 Key Mapping**
  - Designates a favorite function for the F3 button.
  - Selectable functions include Blue Only, H/V Delay, Color Temp, Audio Level Meter, Time Code, Luma Zone, Focus Assist, Waveform, Range Error, Camera LUT, and Signal Information.

● **Serial Number**
  - Displays serial number of the monitor.

5. Menu Operations

[8] INFORM.

● **Input Channel**
  - Indicates the channel of the input signal.
  - In the 2SI, QUAD MODE, use the KNOB button
    to change the input signal and the
    information of the signal will be displayed.
  - In the SINGLE MODE, the signal information of
    the channel will be displayed.

● **Input Config**
  - Displays the current input signal.

● **SDI Payload ID**
  - Displays the values of the Byte 1,2,3,4.

● **Video Standard**
  - Displays the standard of the Payload ID
    Byte 1.

● **Sampling**
  - Displays the Sampling Structure information
    of the Payload ID Byte 3.

● **Picture Rate**
  - Displays the Picture Rate of the Payload ID
    Byte 2.

● **Scanning Method**
  - Indicates Interlace/Progressive information of
    Payload ID Byte 2.

● **Bit Depth**
  - Displays the Bit Depth information of the
    Payload ID Byte 4.

● **Link Assignment**
  - Indicates channel assignment information of
    Payload ID Byte 4.

6. Other Functions

[1] SCAN

- **This product supports various scan modes.**
- **Press [SCAN] button on the front of the monitor to activate different scan modes.**

1. Press [SCAN] button continuously to activate various scan modes, including Zero Scan, 2:1 Scan, 1:1 Scan, Fit Width and Over Scan.

2. Scan modes are changed in different orders depending on input signals.

3. The following represents the different types of scan modes. When a scan mode is selected, display skips the next mode if its required condition is not met.

- Over Scan : Zooms in/out on image at 96% of its original size without changing the aspect ratio.
- Zero Scan : Zooms in/out on image without changing the aspect ratio.
- 2:1 Scan : Zooms in on image at 200% of its original size. This feature works only when the original size of image is smaller than the half of the screen size.
- Fit Width : Zooms in to fit the width of original image to the width of the screen without changing the aspect ratio.
- 1:1 Scan : 1:1 pixel mapping of original image. This feature works only when the original size of image is bigger than the screen size. The image is displayed as below and the location of image can be adjusted by rotating the [KNOB]. CENTER -> LEFT MID -> LEFT TOP -> MID TOP -> RIGHT TOP -> RIGHT MID -> RIGHT BOTTOM -> MID BOTTOM -> LEFT BOTTOM
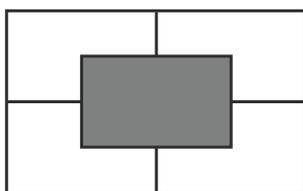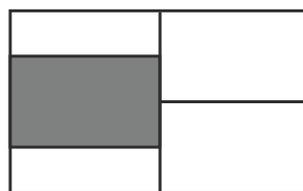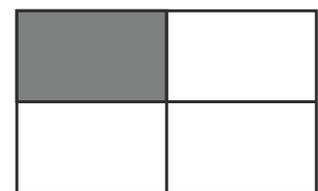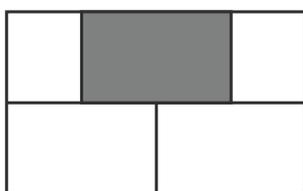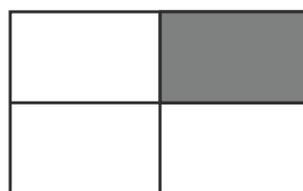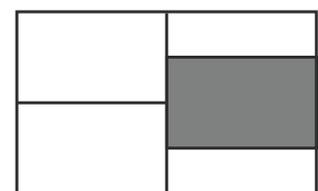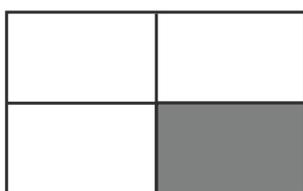
<MID CENTER>   <MID LEFT>   <TOP LEFT>

<TOP MID>   <TOP RIGHT>   <MID RIGHT>
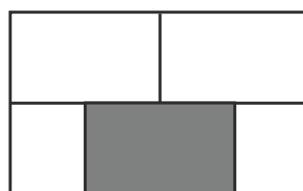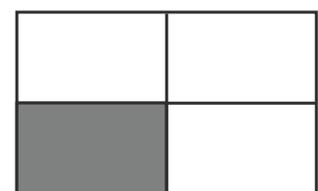
<BOT RIGHT>   <BOT MID>   <BOT LEFT>

<Position change in 1:1 SCAN>

7. Video Support Resolution

VIDEO SUPPORT RESOLUTION

Input Signal Interfaces	Signal Format (HD-SDI / 3G SDI)	
HD-SDI Quad link (4K)	3840x2160 (23.98/24/25/29.97/30p/Psf)	YCbCr 4:2:2 10bit
	4096x2160(23.98/24/25/29.97/30p/Psf)	

Input Signal Interfaces	Signal Format (HD-SDI / 3G SDI)	
3G-SDI Quad link(4K)	3840x2160(50/59.94/60p)	YCbCr 4:2:2 10bit
	3840x2160(23.98/24/25/29.97/30/p/Psf)	YCbCr 4:4:4 10/12bit RGB 4:4:4 10/12bit
	4096x2160 (47.95/48/50/59.94/60p)	YCbCr 4:2:2 10bit
	4096x2160 (23.98/24/25/29.97/30p/Psf)	YCbCr 4:4:4 10/12bit RGB 4:4:4 10/12bit
3G-SDI 2-Sample Interleave Dual link(4K)	3840x2160 (23.98/24/25/29.97/30/p)	YCbCr 4:2:2 10bit
	4096x2160 (23.98/24/25/29.97/30p)	YCbCr 4:2:2 10bit
3G-SDI 2-Sample Interleave Quad link(4K)	3840x2160(50/59.94/60p)	YCbCr 4:2:2 10bit
	3840x2160 (23.98/24/25/29.97/30/p)	YCbCr 4:4:4 10/12bit RGB 4:4:4 10/12bit
	4096x2160 (23.98/24/25/29.97/30p)	YCbCr 4:4:4 10/12bit RGB 4:4:4 10/12bit
	4096x2160 (47.95/48/50/59.94/60p)	YCbCr 4:2:2 10bit
6G-SDI Single link (4K)	3840x2160(23.98/24/25/29.97/30/p)	YCbCr 4:2:2 10bit
	4096x2160(23.98/24/25/29.97/30p)	YCbCr 4:2:2 10bit
12G-SDI Single link(4K)	3840x2160(50/59.94/60p)	YCbCr 4:2:2 10bit
	4096x2160(47.95/48/50/59.94/60p)	YCbCr 4:2:2 10bit

7. Video Support Resolution

VIDEO SUPPORT RESOLUTION

Input Signal Interfaces	Signal Format (HDMI)	
HDMI Single link(4K)	720x480(60i) 720x576(50i)	RGB 4:4:4 8/10/12bit YCbCr 4:4:4 8/10/12bit
	720x480(60p) 720x576(50p) 1280x720(60p) 1920x1080(50/59.94/60i) 1920x1080(50/59.94/60p)	RGB 4:4:4 8/10/12bit YCbCr 4:4:4 8/10/12bit YCbCr 4:2:2 12bit
	800x600@60Hz 1024x768@60Hz 1280x1024@60Hz 1600x1200@60Hz	VESA
	3840x2160 (23.98/24/25/29.97/30) 4096x2160 (23.98/24/25/29.97/30)	RGB 4:4:4 8bit YCbCr 4:4:4 8bit RGB 4:4:4 10/12bit* YCbCr 4:4:4 10/12bit*
	3840x2160 (50/60p) 4096x2160 (50/60p)	RGB 4:4:4 8bit YCbCr 4:4:4 8bit

* to be supported

8. Product Specifications

		LUM-171G
LCD	Size	16.5"
	Resolution	1920 X 1080
	Pixel Pitch	0.1905(H) X 0.1905(V) mm
	Color Depth	1.07B Colors
	Viewing Angle	H : 178 degrees / V : 178 degrees
	Luminance of white	450 cd/ m^2 (Center)
	Contrast Ratio	1400 : 1
	Display Area	365.8(H) X 205.7(V) mm
Input Connector	1 X HDMI	HDMI Input
	4 X BNC	12G-SDI A/B, 3G-SDI C/D Channel Input
Output	4 X BNC	12G-SDI A/B, 3G-SDI C/D Channel (Active Through Out)
Input Signal	12G-SDI	12Gb/s
	6G-SDI	6Gb/s
	3G-SDI	2.970Gb/s
	HD-SDI	1.485Gbps
	HDMI	480p/720p/1080p/2160P
SDI Input Signal Formats	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 2036-1:2009	3840×2160(23.98/24/25/29.97/30/50/59.94/60p)
	SMPTE ST 2048-2:2011	2048x1080(23,98/24/25/29.97/30p/psf, 47.95/48/50/59.94/60p)
	SMPTE ST 2081	3840x2160 (30/25/24p)
	SMPTE ST 2082	3840x2160 (60/50/30/25/24p)
Audio In		Embedded Audio / Analog Stereo (Phone Jack)
Audio Out		Internal Speaker (Stereo) / Analog Stereo (Phone Jack)
Power		DC 12V / AC100~240V(50~60Hz)
Power Consumption (Approx.)		48 Watts(Max)
Operating Temperature		0℃ to 35℃ (32°F to 95°F)
Storage Temperature		-20℃ to 60℃ (-4°F to 140°F)
Main Body Dimensions (mm/inch)		445 x 264 x 78.4 (17.52 x 10.39 x 3.09)
Main Body Dimensions with stand (mm/inch)		492.2 x 288.8 x 137.5 (19.38 x 11.37 x 5.41)
Box Dimensions (mm/inch)		535 X 430 X 250 (21.06 X 16.93 X 9.84)
Weight		7kg / 15.43lbs
Basic Accessories		AC Power Cord / DC Power Adaptor / Stand
Optional Accessories		Rack Mountable Kit, Acrylic Filter, Sun Hood, Carrying Case, V-mount, G-mount

* The specification above may be changed without notice.

MEMO

MEMO

TVlogic   Always ON-AIR