

7" FHD Multi Format Broadcast LCD Monitor

Operation Manual_v1.5

LVM-070C

TVlogic Always ON-AIR



Contents

1. Caution.....	04
2. Main Features	06
3. Controls & Functions	07
4. Menu Organization & Adjustment	10
5. Menu Operations	11
[1] PICTURE	11
[2] COLOR.....	12
[3] MARKER.....	13
[4] DISPLAY / VIDEO	14
[5] WAVEFORM	16
[6] AUDIO	19
[7] SYSTEM	20
6. Button Functions	21
7. Other Functions	23
8. Firmware Upgrade	31
9. Product Specifications	32
10. Optional Accessories	33

1. Caution

- **Always use set voltage. (DC 12V)**
- **When using a DC Adapter other than the one supplied by the manufacturer, please be advised that the adapter with DC 12V/3A ~ 6A can be compatible with the monitor.**
- 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 is 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.
- 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.

1. Caution

- 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).

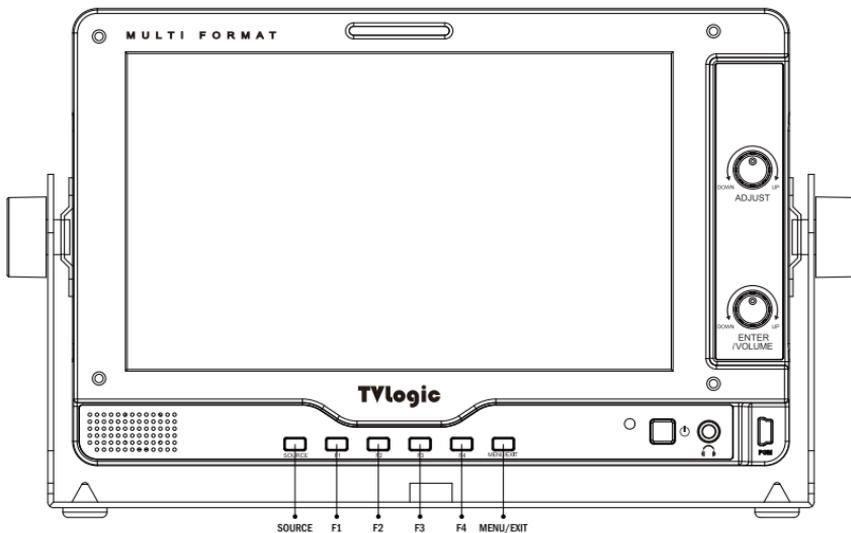
2. Main Features

LVM-070C Monitor contains the following features:

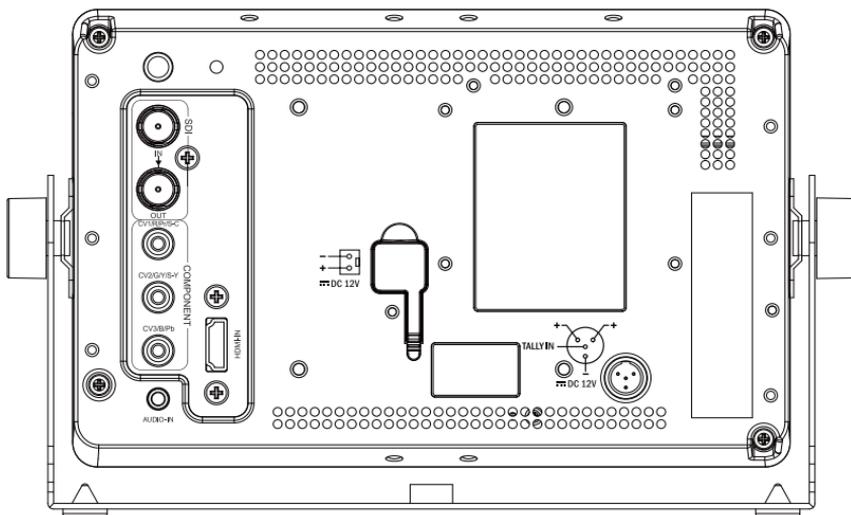
- **Compatible with various SDI signals formats (SD/HD/3G)**
 - This product is compatible with various SDI signals - SD/HD/3G(A/B)-SDI 480i, 576i, 1080i, 1080p, 1080psf
- **Compatible with various analog signals**
 - This product is compatible with various analog signals such as CVBS(Composite), S-Video and YPbPr(Component).
- **HDMI(with HDCP) Signal**
 - HDMI(w/ HDCP) input is available without any other accessory.
- **Temperature Adaptive Color**
 - This product provides a self-adjustment function for white balance(or color temperature) utilizing internal sensor that measures the temperature of the LCD panel
- **All-in-one type system**
 - Slim and all-in-one type monitor that supports various video formats.
- **Wide Screen / Wide Viewing Angle/ 24bit RGB interface Full HD panel**
- **WaveForm/Vectorscope/Audio Level Meter Function**
 - WaveForm & Vectorscope
 - Embedded Audio Level Meter
- **Audio Out**
 - Internal Speaker(activates only with input signals with Embedded Audio)
 - Stereo Audio Out through phone Jack.
- **Knob Control**
 - Easy to adjust user configuration using the control knob on the front of the monitor.
- **BLUE ONLY/MONO/Focus Assist/H/V Delay Function**
- **Range Error/Luma(Y') Zone Check (Color/ Zebra Type) Function**
- **Internal Pattern Generator (0~100% Gray/ ColorBar+Pluge)**
- **Markers & Safety Areas**
 - Center Marker, Safety Area Marker, Aspect Marker, Display Size(Scan)
- **Power**
 - Basically, the product is powered by normal DC source.
 - The product can be battery-powered.
 - * DC 12V (Typical)
 - * When using a DC Adapter other than the one supplied by the manufacturer, please be advised that the adapter with DC 12V/3A ~ 6A can be compatible with the monitor.
- **Additional features**
 - Camera Mounting Hole x 4, VESA Mounting Standard, 600cd/m² Brightness, 800 : 1 Contrast, OSD user interface

3. Controls & Functions

LVM-070C : FRONT



LVM-070C : REAR



3. Controls & Functions

FRONT

• [SOURCE] Button/Lamp

- Used to select desired Source input.
- Press the button to activate the source input menu-selection, then use UP and DOWN button to select desired input.
- * See section "Other Functions [1]SOURCE Button" for more information.

• [F1][F2][F3][F4] Button/Lamp

- Used to activate the function.
- * See section "6.Button Functions -> [4] Function key set button" for more information.

• [MENU/EXIT] Button

- Used to activate the OSD menu.
- When the OSD menu is activated, press this button to exit from the menu.

• [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 state when monitor power turns off and comes back on.

• [POWER] Button

- Used to turn power on and off.

• AUDIO OUT (Phone Jack)

- Used for Stereo Audio Output through Phone Jack. (video signals with embedded audio only)

• PGM (USB)

- This terminal is used to upgrade the firmware or color calibration made by TVLogic.

• [TALLY] Lamp

- Tally lamp that can be toggled in green or red using the Tally in of the DC IN.

• [ADJUST] Knob

- Available functions are [VOLUME]-[CHROMA]-[APERTURE]-[PHASE]-[FOCUS LEVEL].

• [UP/DOWN/ENTER] Knob

- Used to move within the menu when OSD menu is activated, and is also used to decrease or increase the value of the selected feature.
- Press the knob to select the main menu and sub menus.
- When the osd is deactivated, the knob used to decrease or increase the value of volume

3. Controls & Functions

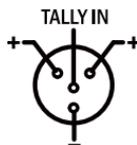
REAR

- **[SDI-IN A] (BNC)**
- HD/SD SDI signal input terminal for SDI A.
- **[SDI-OUT A] (BNC)**
- HD/SD-SDI signal output terminal for SDI A signal.
- **[CVBS1/Pr/R/S-C] (BNC)**
- Signal input terminal used to feed the monitor COMPOSITE 3, S-VIDEO C, COMPONENT Pr and RGB R signals.
- **[CVBS2/Y/G/S-Y] (BNC)**
- Signal input terminal used to feed the monitor COMPOSITE 1, S-VIDEO Y, COMPONENT Y and RGB G signals.
- **[CVBS3/Pb/B] (BNC)**
- Signal input terminal used to feed the monitor COMPOSITE 2, RGB B and COMPONENT Pb signals.

Connector	Composite	Component	S-Video
1	CVBS1	Pr	C
2	CVBS2	Y	Y
3	CVBS3	Pb	No Con.

- **AUDIO IN (phone jack)**
- Internal speakers stereo audio input terminal.
- **[HDMI] IN**
- Signal input terminal for HDMI signal.

- **BATTERY IN**
- Battery Power Input : DC 12V
* Rated Power Input : DC 12V
- **DC POWER IN / TALLY (XLR 4P)**
- DC power input terminal for DC 12V.



* When using a DC Adapter other than the one supplied by the manufacturer, please be advised that the adapter with DC 12V/3A ~ 6A can be compatible with the monitor.

<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 Tree & Adjustment

[1] Menu Tree

- OSD(On-Screen Display) Menu helps you use various functions.
- This Picture is the menu structure for LVM-070C



[2] Menu Control

- User may control various functions using MENU button on the back and the Knob on the side of the monitor.

[3] Menu Control Sequence

- Menu control sequence follows the order below:
 1. Press MENU button to activate the OSD menu.
 2. Move to a desired menu by rotating the Knob.
 3. Press the Knob to select a menu and move to select 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 ENTER button or MENU button to save the new value after adjusting the value by rotating the Knob.
 6. Press MENU button to return to previous menu and if there is no previous menu, the OSD menu will be removed from the screen.

5. Menu Operations

[1] Picture



• Brightness

- Used to set the brightness(=offset) level from -100 to 100.

Press the Knob to adjust Brightness quickly.

• Contrast

- Used to set the contrast(gain) level from -100 to 100.

Press the Knob to adjust Contrast quickly.

• Chroma

- Used to set the saturation level from -50 to 50.

• Phase

- Used to set the hue(phase) level from -40 to 40. (Activates only in analog signal input.)

• Aperture

- Used to set the sharpness level from -5 to 19.
Press the Knob to adjust Aperture quickly.

• NTSC Setup

- Used to set Black Level of NTSC video as 0(zero setup) or 7.5 IRE.

- Activated when NTSC video signal is input through Composite 1/2/3 or S-VIDEO terminal.

• Knob Lock

- Locks the Knob control(BRIGHT, CONTRAST, F5/VOLUME) and buttons.

5. Menu Operations

[2] Color



• Color Temp.

- Controls color temperature and allows instant access to preset color temperature settings.
- Available color temperatures are 3200K, 5600K, 6500K, 9300K and User 1/2/3.
- In User 1/2/3 modes, user can define custom RGB GAIN and BIAS (=Offset) values.

• Gain Red/Green/Blue

- Used to set R/G/B Gain(or Picture, Contrast) level from -256 to 255.
- # Only available in User 1/2/3 mode.

• Bias Red/Green/Blue

- Used to set R/G/B Bias(or Offset, mainly affects on Black level) from -100 to 100.
- # Only available in User 1/2/3 mode.

• Color Copy

- Used to copy the R/G/B Gain value of pre-stored color temperature settings.
- In User mode, find and select the color temperature and press Enter button to copy and apply the Gain value to GAIN RED, GAIN GREEN, GAIN BLUE.
- # Only available in User 1/2/3 mode.

• Temp. Adaptive Color

- [On] : Used to measure and compensate the color temperature shift caused by panel temperature variation.
- [Off] : Used to apply preset color temperature setting regardless of the panel temperature.

• Gamma

- Used to change the Gamma Curve.
- Settable values are [2.2], [2.4]

• Camera LUT enable

- Used to On/Off the Camera LUT function.

• Camera LUT select

- Used to camera Log image to change Rec 709 standard.
- Activates in order to [LOG-C]-[C-LOG]-[SLOG1]-[S-LOG2]-[S-LOG3]-[RED Gamma3]-[RED Gamma4]
- Press Function Button to On/Off Gamma LUT function.

5. Menu Operations

[3] Marker



• Marker

- Used to activate the Marker function.
- 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 and USER.

• Center Marker

- Displays the Center Marker on the screen.

• Safety Area

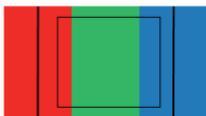
- Used to select to display and controls the size and availability of the Safety Area.
- Available sizes are 80%, 85%, 88%, 90%, 93%, 100%, EBU ACTION 16:9, EBU GRAPHIC 16:9, EBU ACTION 14:9, EBU GRAPHIC 14:9, EBU ACTION 4:3 and EBU GRAPHIC 4:3.

• Fit Marker

- Used to activate or inactivate the Fit Marker function.
- When the Marker type is selected in the Marker menu, a border line of the Safety Area will be displayed inside the Marker. Images below show the difference between Fit Marker ON and OFF.



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



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

• Marker Mat

- Used to set the darkness level outside of the MARKER area from OFF(transparent) to 7(Black).
- The bigger the value, the darker the color.

• Marker Color

- Used to set the color of the MARKER lines.
- Available colors are white, gray, black, red, green and blue.

• Thickness

- Used to set the thickness of the MARKER lines.
- Thickness level is from 1 to 7 by the pixel unit.

• USER Marker H1

- Used to set the position of the first horizontal marker line.
- Displayed when MARKER menu is set to USER.

• USER Marker H2

- Used to set the position of the second horizontal marker line.
- Displayed when MARKER menu is set to USER.

• USER Marker V1

- Used to set the position of the first vertical marker line.
- Displayed when MARKER menu is set to USER.

• USER Marker V2

- Used to set the position of the second vertical marker line.
- Displayed when MARKER menu is set to USER.

5. Menu Operations

[4] Display / Video



• [SCAN] Button/Lamp

- Used to change the scan mode. Press the button to activate through the scan modes:
- [Zero Scan]->[Over Scan]->[Pixel To Pixel]
->[User Aspect]

* Please refer to "8. Other Functions [1] SCAN" for more information.

• Aspect

- Used to change the display ratio between 4:3 and 16:9.
- Activates in the order of [16:9]-[4:3]-[2.35:1]-[1.85:1]-[15:9]-[16:10]-[AUTO].

• [H/V DELAY]

- Used to check horizontal sync. and vertical sync. simultaneously.

• [BLUE ONLY]

- Press the button to remove red and green from the input signal and display the screen only under a blue signal. Press the button again to activate mono mode.
- Activates in order : [Off]-[Blue Only]-[Mono]-[Off]

• USER ASPECT HORIZONTAL/VERTICAL

- Activates only when the Scan mode is set to USER ASPECT.
- Used to set the horizontal/Vertical aspect ratio of the screen arbitrarily.

• 3G FORMAT

- Used to select input format of 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).

• TIME CODE ENABLE

- Used to display the Time Code.
- Available modes are VITC, LTC and OFF.

5. Menu Operations

[4] Display / Video



• Zoom

- Used to magnify the image up to 90% on a pixel basis and is displayed on full screen.
- * (e.g., 10% Zoom : If the input signal's resolution is 1920 x 1080, only 90% (1728(H) x 976(V)) of the image would be shown on full screen without 10% (192(H) x 108(V)) of the image.)
- * See section "7. Other Functions -> [5] Zoom" for more information.

• Zoom H/V Scroll

- Activated when [Zoom] mode is selected.
- Used to move the enlarged image to the left/right or Up/Down by controlling the Knob.

• DSLR Camera Sel.

- Select the DSLR camera to be used with LVM-070C. Available models are [CANON 5D/7D], [SONY A77] and [NIKON D7000].
- * DSLR cameras' screen size and aspect ratio of Live / Record / Playback modes vary according to their manufacturer.

• DSLR SCALE (HDMI Format Only)

- This is a special function for CANON/NIKON/SONY DSLR cameras.
- Used to scale the image with different resolution as to the operation mode(Live View/Record/ PlayBack) of the camera to fulfill the screen.
- *See section "7. Other Functions [9] DSLR SCALE" for more information.

• Focus Assist

- Focus Assist 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.
- Activates in order of [(Mono) On][(Color) On] [Off]
- * (Color) On : Only the boundary of the area with good focus is displayed with the designated color.
- * (Mono) On : The boundary of the area with good focus is colored with the designated color, while the rest of the areas(pixels) have only Y'(Luma) signals to be black & white image.
- * See section "7. Other Functions [7] Focus Assist" for more information.

• Focus Assist Color

- Used to select a color for FOCUS ASSIST among red, green and blue.

• Focus Assist Level

- Used to set the edge difference value between the edges in an image.
- 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.
- This feature is available only when the FOCUS ASSIST mode is activated.

5. Menu Operations

[4] Display / Video



• XLR TALLY On/Off

- Used to set Tally operation according to the input level of TALLY IN terminal which is among the terminals of XLR 4P connector in the rear.

• XLR TALLY Operating Level

- Used to set the input level of Tally operation. (Open&Low : less than 0.6V, High : more than 2.5V)

- High: Set the level as "High" to activate the Tally and set the level as "Low" to inactivate the Tally.

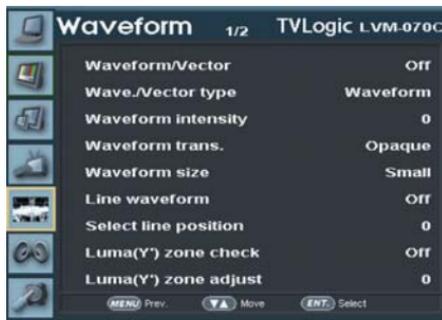
- Low: Set the level as "Low" to activate the Tally and set the level as "High" to inactivate the Tally.

• XLR TALLY Color

- Used to set Tally color.

- Available colors are Red and Green.

[5] Waveform



• Waveform / Vector

- The item sets Waveform and Vectorscope.

- The operation order is OFF -> WAVEFORM -> VECTOR SCOPE -> WAVEFORM YCbCr -> WAVEFORM RGB -> WAVE+VECTOR -> WAVEFORM WIDE

* Waveform : Displays the shape and form of luminance level of a signal.

* Vectorscope : Displays color components of the input signals. It is divided into 2 kinds depending on HD input and SD input. 100% and 75% graphics show in a picture.

* Waveform YCbCr : Displays the components of luminance level and Cb/Cr components of a signal.

* Waveform RGB : Displays the components of RGB signal.

* When input signal is YCbCr the monitor converting to RGB signal

* Wave+Vector : Displays Waveform(Y) and VectorScope at the same time.

* Waveform Wide : Stretches the waveform to fit width of the screen.

• Waveform Intensity

- Controls the brightness of the WAVEFORM/ VECTOR display.

- Available values are between 0 ~ 63. The higher the number the brighter the waveform will be.

5. Menu Operations

[5] Waveform

● Waveform Trans

- Controls the transparency level of the WAVEFORM/VECTOR.
- Available values are OPAQUE and TRANS.
- * If the option is set to OPAQUE, the main OSD will overlap with the waveform/vector. However, it will automatically display it as transparent and goes back to opaque if the main OSD disappears.

● Waveform Color

- Changes the Waveform Color
- Available Values are White Green

● Line Waveform

- This item is utilized to display the entire data or one line data on the waveform.

● Select Line Position

- Used to select specific Vertical Line for Waveform/Vectorscope.
- It is available when LINE Waveform is activated.
- To activate this feature, go to [WFM/LevelCHK]-[Waveform/Vector]-[Select Line Position] and use the Knob to select a vertical line.
- Control range varies according to the resolution of the input SDI signal.
 - * PAL : Min 17, Max 522
 - * NTSC : Min 23, Max 623
 - * 720p : Min 26, Max 750
 - * 1080i : Min 21, Max 1123
 - * 1080p : Min 42, Max 1121
- Control range for Analog signal varies according to the output resolution of the signal.
 - * Min 0, Max 600

● Luma(Y') Zone Check

- Displays the Luma(Y') level of the input image in colors.
- May select between [Color Pattern] or [Zebra Pattern].
- Each pixel's Y' analyzed and changed to 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 color / diagonal line will be colored Green.
- When the pixel's Y' level is over 100%(235), the color / diagonal line will be colored Red.
- When the Y' level of a pixel is between 0~100%, the pixel is displayed with Gray, except for selected Luma Zone.
- In the [Color Pattern] mode, a 5% zone of the selected Y' level will be colored Pink(5%) and $\pm 10\%$ will be colored Yellow(-10% from Pink) and Cyan(+10% from Pink).
- In the [Zebra Pattern] mode, $\pm 5\%$ of the selected Y' Level will be displayed with diagonal lines.

● Luma(Y') Zone Adjust

- Used to set the 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.
- Available values are 0 ~ 100%.
- * See section "7. Other Functions -> [6] Luma(Y') Zone Check" for more information.

5. Menu Operations

[5] Waveform



• Range Error

- Used to set whether or not to activate Y MAX, Y MIN, C MAX, C MIN, Y PICTURE BLINK and C PICTURE BLINK functions.
- The values of Y MAX, Y MIN, C MAX, C MIN are indicated in Waveform/Vectorscope.
- If [Y PICTURE BLINK] or [C PICTURE BLINK] is enabled, the section of image that exceeds the selected values of Y MAX, Y MIN, C MAX and C MIN shall blink.
- * See section "Other Function -> [8] Range Error" for more information.

• Y Max

- Used to set the maximum luma(Y') level from 0 to 255.
- Pixels with values exceeding the max Y' level will blink in the screen, and displayed as red on the Waveform.

• Y Min

- Used to set the minimum luma(Y') level from 0 to 255.
- Pixels with values exceeding the min Y' level will blink in the screen, and displayed as red on the WaveForm.

• C Max

- Used to set the maximum chroma(C') level from 0 to 255.
- Pixels with values exceeding the min C' level will blink in the screen, and displayed as red on the Waveform.

• C Min

- Used to set the minimum chroma(C') level from 0 to 255.
- Pixels with values exceeding the min C' level will blink in the screen, and displayed as red on the Waveform.

• Y Picture Blink

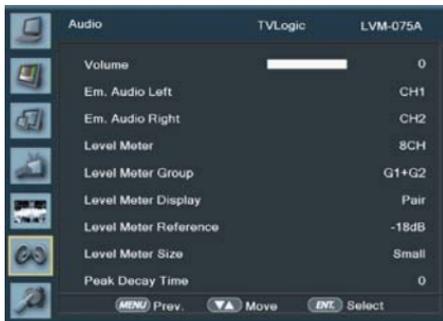
- Used to set whether or not to blink pixels with values exceeding Y MAX and Y MIN.

• C Picture Blink

- Used to set whether or not to blink pixels with values exceeding C MAX and C MIN.

5. Menu Operations

[6] Audio



• Volume

- Used to control the output volume for the internal speakers or [AUDIO OUT] on the back of the monitor.
- Control range is from 0 to 30.

• Em. Audio Left/Right

- Used to set embedded audio channel for internal speaker or [AUDIO OUT] terminal on the back of the monitor.
- In SDI mode one of the Off or CH1~CH16 can be selected. In HDMI mode, Left and Right are set to CH1 and CH2 respectively.
- HDMI Input: Channel 1 is displayed on the top left and Channel 2 is displayed on the top right.

• Level Meter

- Used to set the Level Meter for the embedded audio.
- Available options are OFF, 4 CH(HOR.) and 4 CH(VER.)
- SDI Input : [Off]-[4CH(Hor.)]-[4CH(Ver.)]
- HDMI Input: [Off]-[2CH(Hor.)]-[2CH(Ver.)]
- * 4 CH(HOR.) : Displays 2 channels on top left and 2 channels on top right of the screen horizontally.
- * 4 CH(VER.) : Displays 2 channels on center left and 2 channels on top right of the screen vertically.

• Level Meter Group

- Used to set the level meter group.
- Available modes are as below.

• Level Meter Display (SDI Only)

- Used to set the display method for audio level meter.
- Activates only in SDI mode.
- 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.

• Level Meter Size

- Used to control the size of the audio level meters.
- Available options are NORMAL and LAGRE.

• Peak Decay Time

- Sets the reduction time for max value indication of audio signals.
- Control range is from MIN 0 to MAX 100. Bigger number means a longer display time for max value.

5. Menu Operations

[7] System



• System Default

- Used to initialize OSD values to factory default.

• Key Led Indication

- Used to control the Key Lamp on the front of the monitor.
- If the button with LED is pressed with the KEY LED Off, LED comes on but turns off after 5 seconds later.

• Back Light

- Used to indicate the backlight level.
- In case of System Default, the value returns to factory default(after color calibration).
- Available values are from 0 to 50.

• Internal Pattern

- Generates ColorBar, Pluge and Grayscale Pattern internally.
- Selectable range for Gray Pattern is from 0% to 100% with 5% increment.
- * See section "6. Other Function -> [12] Internal Pattern" on page 32 for more information.

• S/W upgrade

- firmware-updates with USB memory stick(Thumb drive).

• S/W upgrade start

- When S/W upgrade is [On], the monitor detects USB memory stick, and update is available, it is activated.

• Firmware Version

- Displays current firmware version.

6. Button Functions

[1] Source Button

- This product is capable of processing all input signals usable in SOURCE mode.
- The input settings are as follows:
 1. Press the SOURCE button on the front of the product and activate the menu below :



2. Use [UP]/[DOWN] Knob to select desired input source, then enter to confirm.
3. Input signal resolution displays on the bottom of OSD menu.
4. Press SOURCE button again to remove the OSD menu from display.
5. Menu will be disappeared when time set is over from the screen.

[2] Function Key Set Button

- Used to make a quick setting of the Function Key.
 1. Press the function button(F1~F4) on the front of the monitor for more than 2 seconds and activate the OSD menu as follows.



2. Move to desired function and press [ENTER] button to select.
3. Once the function is set, press the Function button(F1~F4) to activate the function.

6. Button Functions

[3] SCAN Button

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

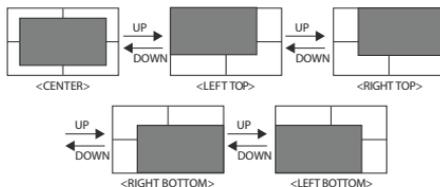
1. [Press [SCAN] button continuously to activate various scan modes: ZERO SCAN -> OVER SCAN -> Pixel To Pixel -> USER.

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

- OVER SCAN : Zooms in/out of the image to 96% of its original size without changing the aspect ratio of.

- ZERO SCAN : Zooms in/out of the image without changing the aspect ratio.

- 1:1 SCAN : 1:1 pixel mapping of original image. This feature is available only when the size of the original image is bigger than the screen size. Press [ENTER] button to rotate the position : CENTER -> LEFT TOP -> RIGHT TOP -> RIGHT BOTTOM -> LEFT BOTTOM -> CENTER ->



<Position change in Pixel To Pixel>

7. Other Functions

[1] Pixel to Pixel

Pixel To Pixel

CENTER

- LVM-070C monitor provide pixel count info using Pixel to Pixel mode.

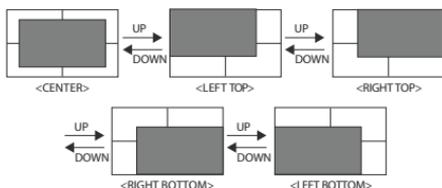
1. Select [Scan] mode in the OSD menu to activate the [Pixel To Pixel] mode.
2. After activation of [Pixel To Pixel] mode, use the Knob to move the position.

Input	Action	Available Modes
HD 720p /1080i /1080p	[Scroll UP] (Clockwise)	Center -> Left Top -> Right Top -> Right Bottom -> left Bottom -> Center -> ...
	[Scroll DOWN] (Counter clockwise)	Center -> Left Bottom -> Right Bottom -> Right Top -> Left Top -> Center ->

Pixel to Pixel mode is not available for Graphic Signal input.

Pixel to Pixel mode works for SD signal, when the input resolution is lower than the monitors native resolution.

- Positions in HD Signal 1080i/1080p mode

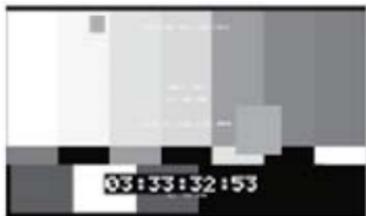


7. Other Functions

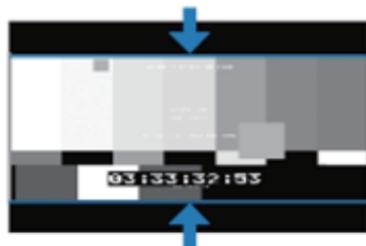
[2] User Aspect



- Select [Aspect] mode in the OSD menu to activate the [User Aspect] mode.
- After activation, press the Knob to get ready for controlling.



- Adjust the ratio using the Knob.
- Control range for width : Min[100] ~ Max[1280]
- Control range for height : Min[100] ~ Max[800]
- The size-adjusted picture always stay in the center of the screen.



- # To adjust the 16:9 aspect ratio of 1920X1080 resolution into 2.35:1 aspect ratio, adjust the width and height as 1280 x 544.

7. Other Functions

[3] Waveform / Vectorscope

- **Waveform Y**

- Displays the Luma(Y) component of the input signal into waveform.



- **Vector WIDE**

- **YCbCr**

- **Wave Vector**

- **Vector YCbCr**

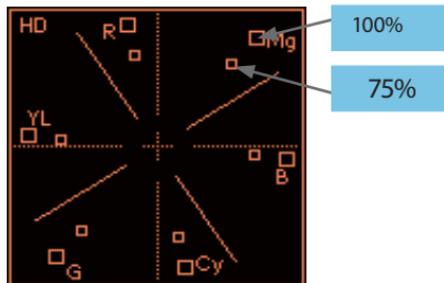
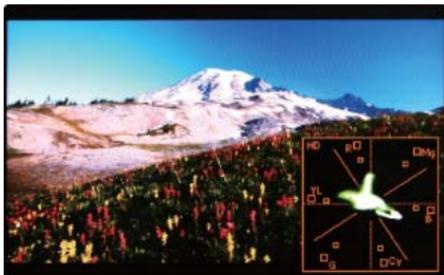
- **Full Wide(Y)**

- **Full Wave(Y)**

- **Full Vector**

- **VectorScope**

- Displays the color components 'B-Y' and 'R-Y' of the input signals onto the X-Y axis.
- Two different types of Vectorscopes are displayed according to SD or HD input signals.
- 100% and 75% scales are indicated on the Vectorscope.



7. Other Functions

[4] Line Select (Waveform/VectorScope)

- Used to select specific Vertical Line for WaveForm/VectorScope.

- It is available when LINE WaveForm is activated.

- To activate this feature, go to [Waveform]-[Select Line Position] and use the Knob to select a vertical line.

- Control range varies according to the resolution of the input SDI signal.

* PAL : Min 17, Max 522

* NTSC : Min 23, Max 623

* 720p : Min 26, Max 750

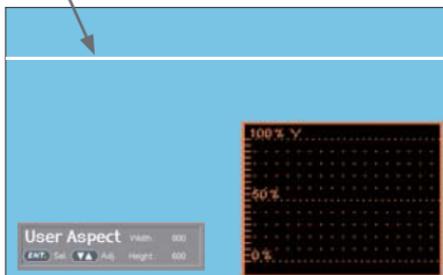
* 1080i : Min 21, Max 1123

* 1080p : Min 42, Max 1121

- Control range for HDMI/Analog signal varies according to the output resolution of the signal.

* Min 0, Max 600

* Selected line is indicated on the screen.

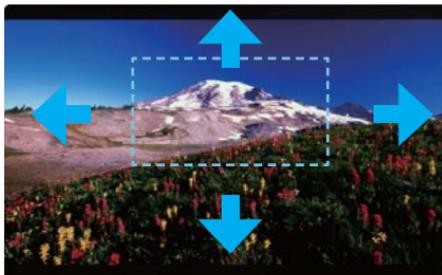


[5] Zoom

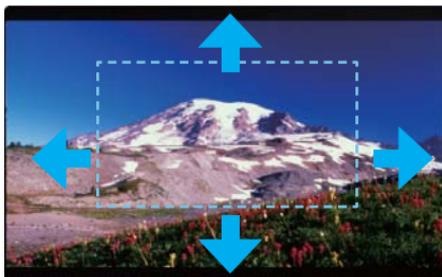
- Used to magnify the input signal from 0% to 90%.

• Supports Zoom Width Scroll / Zoom Height Scroll function.

• Zooms IN/OUT focused on the scrolled area.



<ZOOM OFF>



<ZOOM 50%>



<ZOOM 75%>

7. Other Functions

[6] Luma(Y') Zone Check

• Color Pattern Type

- Displays the Luma(Y') level of the input image in colors. $Y' \geq 100\%$: Pixels with higher Y' level than 100 turn to red. $Y' \leq 0\%$: Pixels with lower Y' level than 0 turn to green.
- Pixels with Y' levels designated by the user are displayed as following colors - yellow, pink, cyan.
- Factory Default Y' (Border line between pink and yellow) level is 75% and pink color is assigned to pixels with Y' level from 70% to 75%. Yellow color is assigned to pixels with Y' level from 75% to 85%, and Cyan from 60% to 70%.
- This function is designed for better performance in setting the exposure of lighting when shooting with vDSLR cameras.

• Zebra Pattern Type

- Displays the pixels with designated Luma(Y') levels with zebra pattern. $Y' \geq 100\%$: Pixels with Y' level over 100% turn to red diagonal line.
- $Y' \leq 0\%$: Pixels with Y' level under 0% turn to green diagonal line.
- User defined Y' levels are displayed as black diagonal line.
- Factory Default Y' level is 70% and the pixels with Y' level from 65% to 75% is displayed with zebra pattern. Pixels with 10% of Y' level is displayed as black diagonal line.
- This function is designed for better performance in setting the exposure of lighting when shooting with vDSLR cameras.



<Luma Zone Check OFF>



<Luma Zone Check ON_Zebra Pattern Type>



<Luma Zone Check ON_Color Pattern Type>

7. Other Functions

[7] Focus Assist

- Focus Assist function assigns a color to the pixels in the shape or boundary area of the image to inform the user to make the best focus.

- With this function, user can easily differentiate the focused area from out-focused area especially shooting with shallow depth of field.

- Available types are [Mono] and [Color] types.

* [Mono] : Background image is mono type.

[Color] : Background image is original color type.



<Focus Assist ON>



<Focus Assist ON>

[8] Range Error

- Pixels with Y' or C' levels exceeding the designated levels of Y MAX, Y MIN, C MAX and C MIN shall blink.

- Analyzes the input signal's Luma(Y') and chroma information(C') and if the input signal exceeds the designated minimum value and maximum value, the pixel shall blink. This function is to help the user to easily find out any unwanted level of signals and for better exposure setting.



<Range Error OFF>



<Range Error ON>

7. Other Functions

[9] DSLR Scale

- This function is designed for some DSLR cameras (Canon 5D, 550D and Nikon D7000) that output different resolution from the operation mode (preview, recording, playback).

- Select the Camera model in the [Display/Video]-[DSLR Camera Sel.] menu.

- **CANON**

- In StandBy mode of Canon 5D Mark II, 1080i of HD resolution is indicated. However, real output resolution is 1620x1080 so blank area is displayed on the screen because the 16:9 aspect ratio is not realized.

- In this case, use DSLR SCALE function to enlarge the 1620x1080 image and display full screen.

- In Recording mode of CANON 5D Mark II, the output resolution is SD(480p).

- Although it is SD, the real output resolution is 640x390 not 720x480.

- DSLR SCALE function scales the 640x390 image to 1280x800 (panel resolution) and display full screen.

- **NIKON**

- In StandBy/Record mode of NIKON, actual resolution of the output signal from HDMI terminal is 1440x1080, failing to display 16:9 aspect ratio and making marginal blank area. Activating DSLR SCALE function will scale the 1440x1080 raster image to fill the full screen.

- **SONY**

- In StandBy/Record mode of SONY, actual resolution of the output signal from HDMI terminal is 952x634, failing to display 16:9 aspect ratio and making marginal blank area. Activating DSLR SCALE function will scale the 952x634 raster image to fill the full screen.



<DSLR Scale OFF>



<DSLR Scale ON>

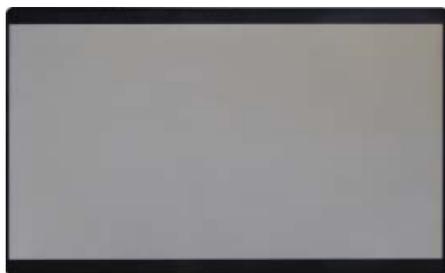
7. Other Functions

[10] Internal Pattern

- Displays internally generated test patterns.
 - The pattern consists of ColorBar and Pluge+ Grayscale Patterns. Full screen colors of various gray levels(0~100%) are also embedded.



<Color Bar + Pluge Pattern>



<Gray Pattern>

8. Firmware Upgrade

[1] SOFTWARE UPGRADE



- USB memory stick(Thumb drive) that has F/W is necessary.
- Select Display&Set menu
 - Connect USB memory stick to USB slot in front of the monitor.
 - Set [S/W upgrade] as [On].



- If USB memory stick is connected correctly, [S/W upgrade start] is activated.

* if the item is not activated, please disconnect and connect the USB memory stick again. After 5 sec. do the same procedure.



- The monitor searches USB memory stick.



- Select [Yes] in [S/W upgrade start] and proceed the firmware update.

* During the update, the monitor screen is off, and nothing functions.

* After the update, TVLogic logo shows up on the screen, and the monitor initializes.

* Update can take 10~20min. depending on firmware kind.

9. Product Specifications

		LVM-070C
LCD	Size	7"
	Resolution	1024 X 600 (16:9)
	Pixel Pitch	0.15(H) X 0.15(W) mm
	Color Depth	16.7M (True 8bit)
	Viewing Angle	H : 170 degrees / V : 170 degrees
	Luminance of white	400 cd / m ² (Center)
	Contrast Ratio	800 : 1
Input Connector	Display Area	153.6(H) X 90.0(V) mm
	3 X RCA	Analog Video Input
	1 X BNC	SDI 1 Channel Input
	1 X HDMI	HDMI Input
Output	1 X BNC	SDI Channel (Active Loop Through)
Input Signal	Analog	CVBS/ S-Video / Component Video / RGB
	3G-SDI	2.970Gbps
	HD-SDI	1.485Gbps
	SD-SDI	270 Mbps
Analog Input Spec	CVBS	1.0Vpp (with Sync)
	S-Video	1.0Vpp (Y with Sync), 0.286Vpp(C)
	Component	1.0Vpp (Y with Sync), 0.7Vpp (Pb,Pr)
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)
Audio In	Embedded Audio / Analog Stereo (Phone Jack)	
Audio Out	Analog Stereo (Phone Jack), Internal speaker (Mixed Mono)	
Power	DC 12V	
Power Consumption (Approx.)	10 Watts(Typ.)	
Operating Temperature	0°C to 35°C (32°F to 95°F)	
Storage Temperature	-20°C to 60°C (-4°F to 140°F)	
Main Body Dimensions (mm/inch)	203 X 131 X 34.6 (7.99 X 5.16 X 1.36)	
Main Body Dimensions with stand (mm/inch)	240 X 145.8 X 69 (9.45 X 5.74 X 2.72)	
Box Dimensions (mm/inch)	330 X 250 X 180 (12.99 X 13.78 X 7.09)	
Weight	660g / 1.46 lbs / 940g / 2.07 lbs (with stand)	
Basic Accessories	DC Power adapter, AC Power Cord, Camera Mount Support	
Optional Accessories	Carrying Case, Rack Mountable Kit, Sun-Hood, External Acrylic Protector, Tripod Ball Head, V-Mount, Gold Mount	

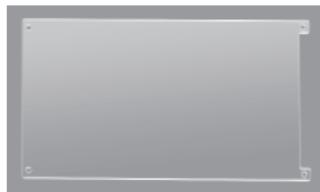
* The specification above may be changed without notice.

* When using a DC Adapter other than the one supplied by the manufacturer, please be advised that the adapter with DC 12V/3A ~ 6A can be compatible with the monitor.

10. Optional Accessories



Sun-Hood



External Acrylic Protector



V-Mount



Gold-Mount



Tripod Ball Head



Carrying Bag with Hood
(Rain Cover)



Rack Mountable Kit

TVlogic Always **ON-AIR**

FOR MORE INFORMATION PLEASE VISIT : <http://www.tvlogic.tv>
12F, ACE HIGH-END 8, 84, Gasan digital 1-ro, Geumcheon-gu, Seoul, 08590, KOREA
TEL : +82-70-8668-6611, FAX : 82-2-6123-3201, E-mail : sales@tvlogic.co.kr