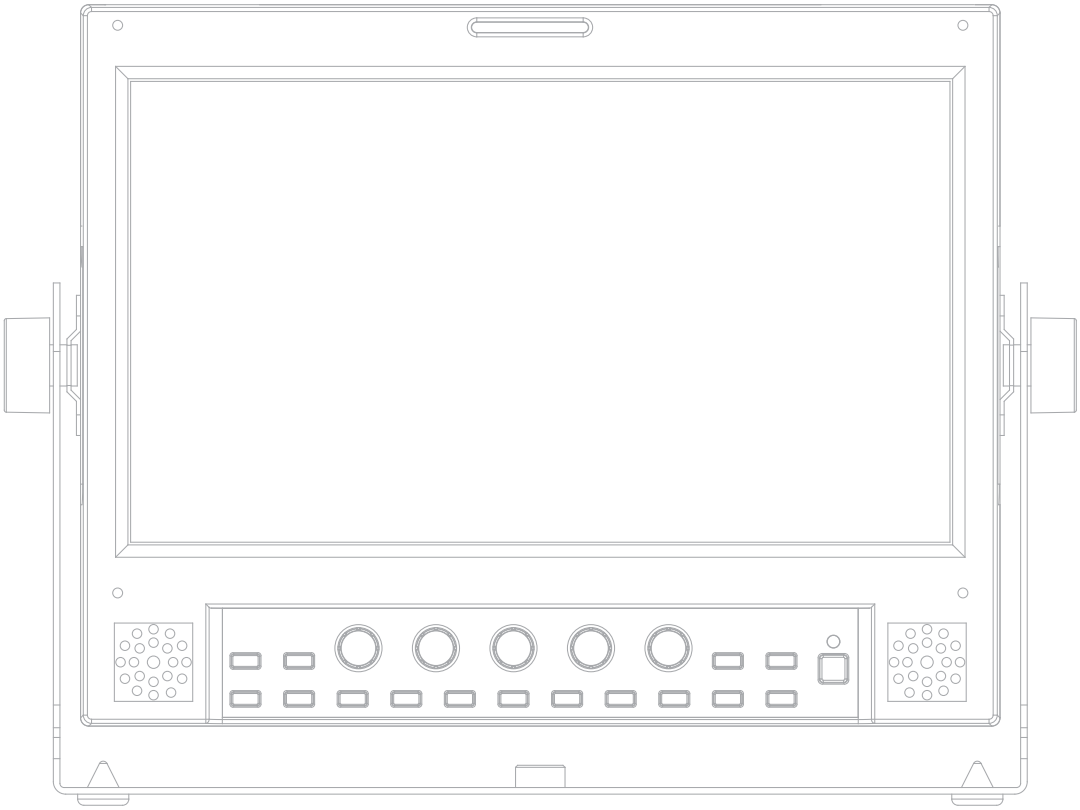


Multi Format Broadcast LCD Monitors

Operation Manual

LVM-091W-M

MULTI

TVLogic

Contents

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.

Caution

ALWAYS USE SET VOLTAGE. DC 12/24V

- 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.
- 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.

Caution

- 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.

- 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.

- 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.

- In case of installation the product on the rack, the inside of the product would be overheated due to heat from other devices near by and the decrease of air circulation, which could damage to the monitor. To prevent the damage, please have enough space for the monitors and use fan to avoid heat and maintain the operating temperature. (Refer to the specification 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).

Features

LVM-091W-M MONITOR CONTAIN THE FOLLOWING FEATURES:

- **Compatible with varied SDI signals**
  - The product is compatible with varied SDI signals - 408i, 576i, 1080i, 1080p, 1080psf

- **Compatible with varied analog signals**
  - The product is compatible with varied analog signals – Composite, S-Video, Component, RGB, etc.

- **Compatible with varied DVI Digital(HDCP)/Analog Signals**
  - DVI input is standard equipment.

- **All-in-one type system**
  - Slim and all-in-one type monitor that requires no other accessories and optimized for space utilization.

- **Wide Screen / 24Bit RGB Interface Panel**

- **Waveform/Vector Scope/Audio Level Meter function**
  - Waveform & Vector Scope available for SDI Signals
  - Embedded Audio Level Meter available for SDI Signals

- **Audio in & out**
  - Built in Audio Disembedder and Internal Speakers
  - Stereo Audio out using phone jack
  - External Audio in for Stereo Speaker out

- **Knob Control**
  - Easy to adjust user configuration using the control knobs.

- **BLUE ONLY/MONO/Focus-In-Red**

- **H/V delay**

- **Wide Variety of Markers & Safety Areas**
  - Center Marker, Safety Area Marker, Aspect Marker, Display Size(Scan)

- **Pixel To Pixel**
  - Provides both full screen and unscaled native image.

- **Remote control function**
  - Remote is controlled simply with a cable connection without any additional peripheral equipment attached to the unit.

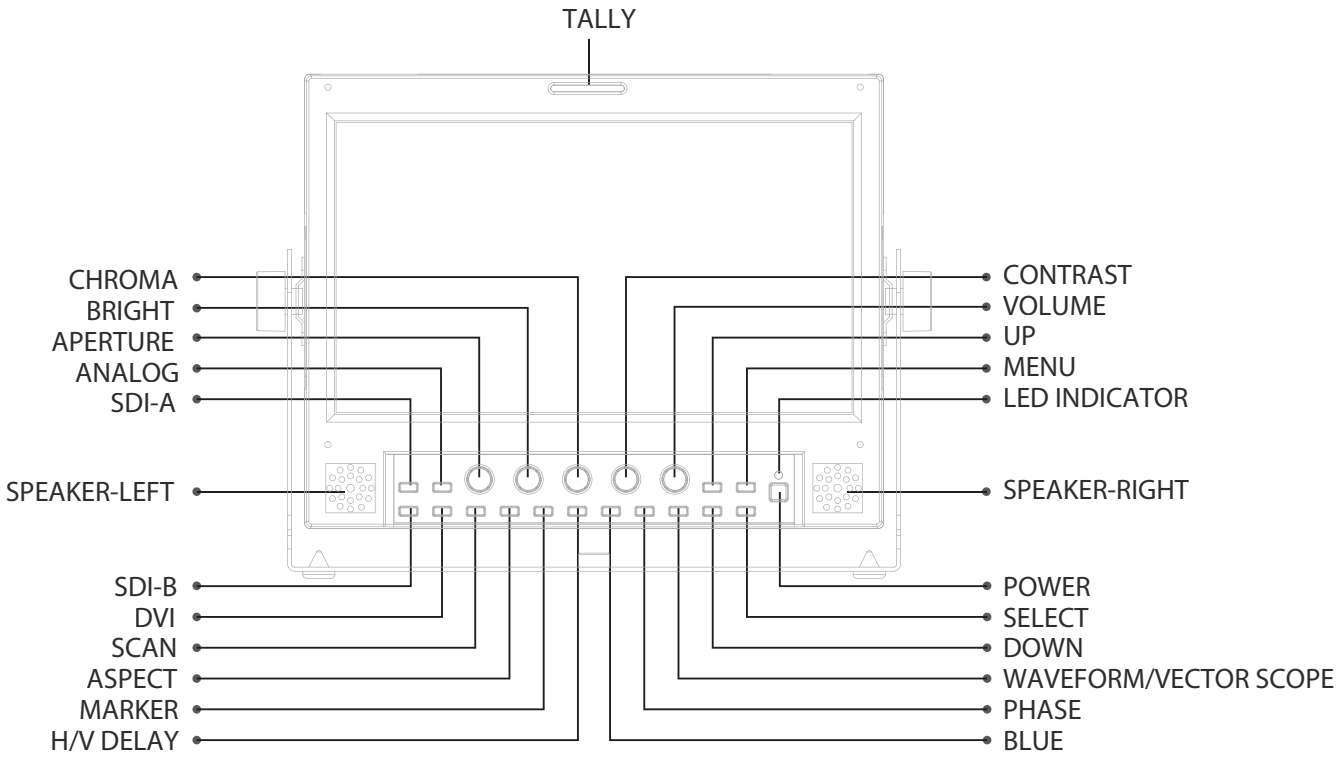
- **RS422/UMD feature support**
  - This product supports protocols provided by TVLogic or a TSL protocol.

- **DC Compatible**
  - The product is powered by normal DC source.
    * DC12V/24V

- **Additional features**
  - Active Loop Through/SDI , VESA Mounting Standard, 400 cd/m^2 brightness 1000:1 contrast ratio, OSD user interface, Rack Mountable

Name & Function of Each Part

LVM-091W-M : FRONT



Name & Function of Each Part

- **[ANALOG] Button/Lamp**
  - Used to select desired Analog input. (CVB1/2/3, S-Video, Component, RGB)
  - Press the button to activate the analog input menu-selection, then use UP and DOWN button to select desired input.
    * See section "Other Functions [1]ANALOG Button" for more information.

- **[DVI] Button/Lamp**
  - Used to select desired DVI input.
  - Press the button to activate the DVI input menu selection, then use UP and DOWN button to select desired input.
    * See section "Other Functions [2]DVI Button" for more information.

- **[SDI-A]/[SDI-B] Button/Lamp**
  - Used to select SDI-A/SDI-B input.

- **[SCAN] Button/Lamp**
  - Used to change the scan mode.
  - Press the button to activate through the scan modes: [UNDERSCAN] -> [OVERSCAN] -> [PIXEL TO PIXEL] -> [USER ASPECT] -> [UNDERSCAN]
    #PIXEL TO PIXEL mode is not available in graphic mode.
    #[USER ASPECT]: User can adjust width and height of the display.
    * See section "Other Functions [4] Pixel to Pixel and [5] User Aspect" for more information.

- **[ASPECT] Button/Lamp**
  - Used to change the display ratio between 4:3 and 16:9.
    * Display ratio locks to 16:9 if the display ratio of input signal is 16:9.

- **[MARKER], [HVDELAY] Button/Lamp(LVM-091W-M)**
  - Used to activate/deactivate the Marker. The type of marker at work may be selected on the main menu.
  - Used to check horizontal sync and vertical sync simultaneously.

- **[BLUE ONLY]/[MONO] Button/Lamp**
  - Activates in the order of [Off]-[Blue Only]-[Mono]-[Focus Assist]-[Off]
  - 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.
    They are not available in RGB, DVI ANALOG, DVI DIGITAL and HDMI modes.
    # [Focus Assist] : Focus assist support feature.
    Use [Up]/[Down] button to control the sensitivity level(0~80) of Focus Assist. Maximum value is 80.

Name & Function of Each Part

- **[PHASE] Button/Lamp**
  - Used to change the Phase value. Press [PHASE] button and use [UP]/[DOWN] button to control.
    #Phase is not available in DVI Analog & PAL mode.

- **[WAVEFORM]/[VECTOR SCOPE] Button/Lamp (Refer to page 19-20)**
  - Pressing the button activate features in the order of: [Off]-[Wave form]-[Vector Scope]-[Wave Form Wide]-[Wave Form YCbCr]-[Wave & Vector]- [Vector_YCbCr]-[Off]
  - [Wave Form YCbCr] : Displays each waveform for elements of the luminance and Cb/Cr of the input signal.
  - [Wave & Vector] : Displays waveform and vector scope simultaneously.
  - [Vector YCbCr] : Displays Vector scope and Y/Cb/Cr waveform simultaneously.
    * See section "Other Functions [6]Wave Form function and [7]Line Select" for more information.

- **[MENU] Button**
  - Used to activate the main OSD Menu.

- **[UP] Button**
  - Used to move within the menus during OSD menu activation and is also used to increase the value of selected feature.
  - In Pixel to Pixel mode, press the button to rotate the display clockwise.

- **[DOWN] Button**
  - Used to move within the menus during OSD menu activation and is also used to decrease the value of the selected feature.
  - in Pixel to Pixel mode, press the button to rotate the displays counterclockwise.

- **[ENTER] Button**
  - Used to confirm a chosen value.

- **[POWER] Switch**
  - Power On/Off button. If the signal is normal, LED lights in Green. If the signal is unsupported or disconnected, LED flashes in Yellow.

- **[TALLY] Lamp**
  - Tally lamp that can be toggled in green or red using the REMOTE(RJ-45) port or RS-422 serial communication.

- **[APERTURE] Knob**
  - Used to adjust the picture sharpness. The value is selectable between -12 ~ 12.
    #Aperture is not available in DVI Analog or Graphic mode.

- **[BRIGHT] Knob**
  - Used to adjust the degree of brightness.
  - The value is selectable between -128 ~ 127.

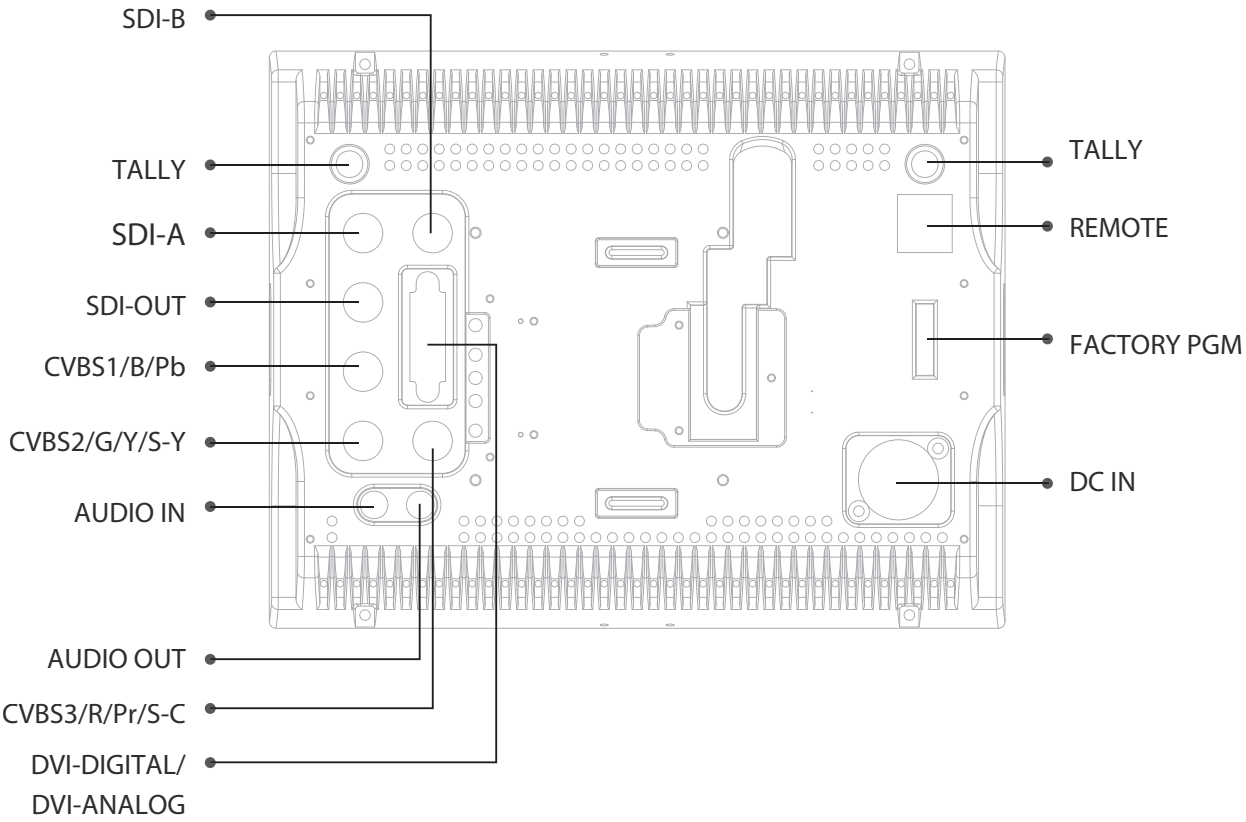
- **[CHROMA] Knob**
  - Used to adjust the saturation of the image.
  - The value is selectable between -128 ~ 127.
    # This feature is not available in DVI Graphic mode and DVI Analog.

Name & Function of Each Part

- **[CONTRAST] Knob**
  - Used to adjust the contrast.
  - The value is selectable between -128 ~ 127.

- **[VOLUME] Knob**
  - Used to adjust the volume for internal speaker and external output.
  - The value is selectable between 0 ~ 20.

LVM-091W-M : REAR



Name & Function of Each Part

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

- **DVI DIGITAL/DVI ANALOG (DVI-I)**
  - Input connection for DVI digital/analog.

- **SDI-A/SDI-B (BNC)**
  - HD/SD-SDI signal input terminal.

- **TALLY(LAMP)**
  - Interlocks with front tally lamp.

- **SDI-OUT (BNC)**
  - HD/SD-SDI signal output terminal.

<Video Input>

Connector	Composite	Component		S-Video
1	CVBS 1	Pb	B	No Con.
2	CVBS 2	Y	G	Y
3	CVBS 3	Pr	R	C

- **CVBS1/G/Y/S-Y (BNC)**
  - Signal input terminal used to feed the monitor COMPOSITE 1, S-VIDEO Y, COMPONENT Y and RGB G signals.

- **CVBS2/B/Pb (BNC)**
  - Signal input terminal used to feed the monitor COMPOSITE 2, RGB B and COMPONENT Pb signals.

- **CVBS3/R/Pr/S-C (BNC)**
  - Signal input terminal used to feed the monitor COMPOSITE 3, S-VIDEO C, COMPONENT Pr and RGB R signals.

- **AUDIO IN (phone jack)**
  - Internal speakers stereo audio input terminal.

- **AUDIO OUT (phone jack)**
  - Built in audio disembedder and internal speakers stereo audio output using mini jacks.

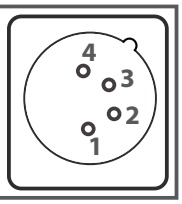
- **FACTORY PGM (40 pins)**
  - Input connector for FACTORY PGM allowing for firmware update and auto calibration.

- **DC IN (XLR, 4 pins)**
  - DC 12V/24V.

<Warning!!>

When using the product, make sure to connect the GND first before connecting the input signal line. The unit may not operate properly if the input line is connected before the GND is connected.

DC IN socket
1: GND
4: +12V/ +24V

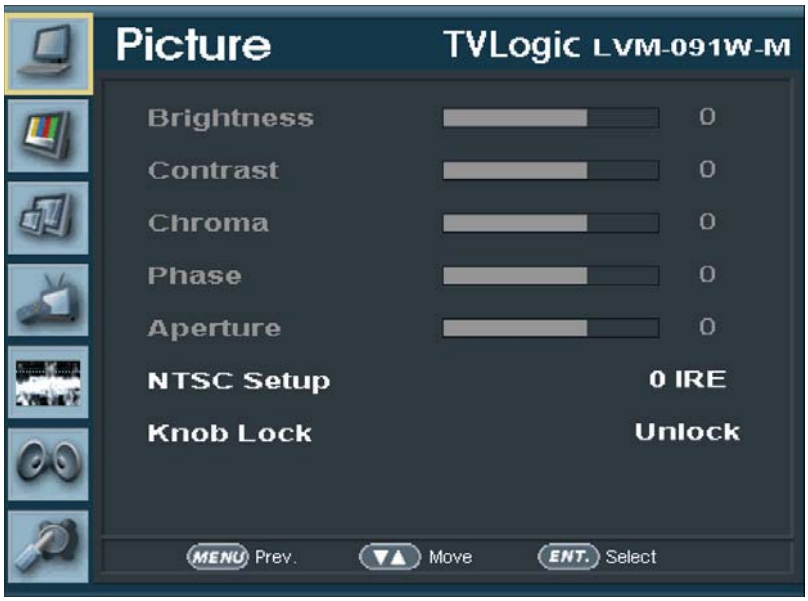


Menu Organization & Adjustment

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

[1] Menu Organization

Below is the organization of the product's menu.



[2] Menu Control

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

[3] Menu Control Sequence

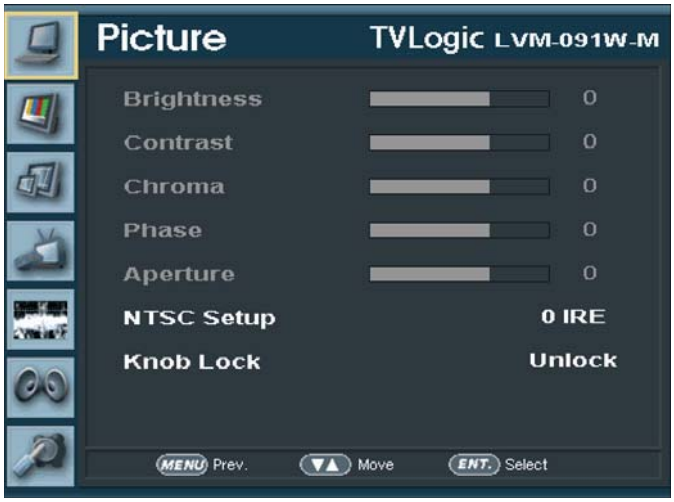
Menu control sequence follows the order below:

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.

Menu Contents

[1] PICTURE

Below are descriptions for each function of the menu.



- **BRIGHTNESS**
  - This item indicates brightness value between -128 ~ 127.
    # Brightness can be adjusted by using the [BRIGHT] control knob on the front of the monitor.

- **CONTRAST**
  - This item indicates contrast ratio value between -128 ~ 127.
    #Contrast can be adjusted by using the [CONTRAST] control knob on the front of the monitor.

- **CHROMA**
  - This item indicates saturation value between -128 ~ 127.
    # Chroma can be adjusted by using the [CHROMA] control knob on the front of the monitor.

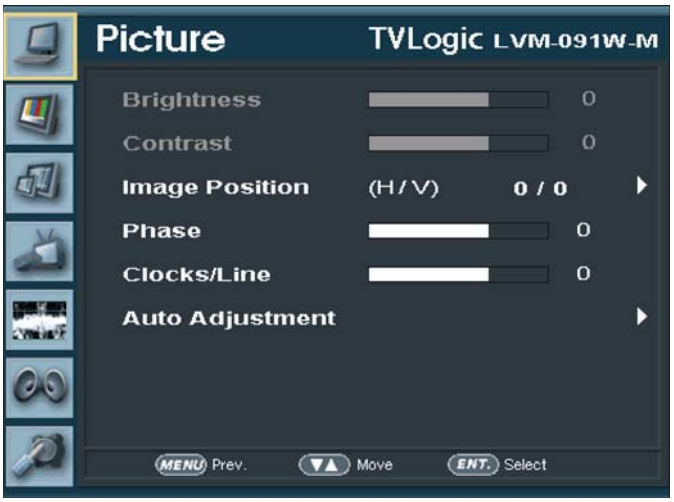
- **PHASE**
  - This item indicates phase value between -128 ~ 127.
    #Phase can be adjusted by using the [PHASE] and [UP]/[DOWN] button.

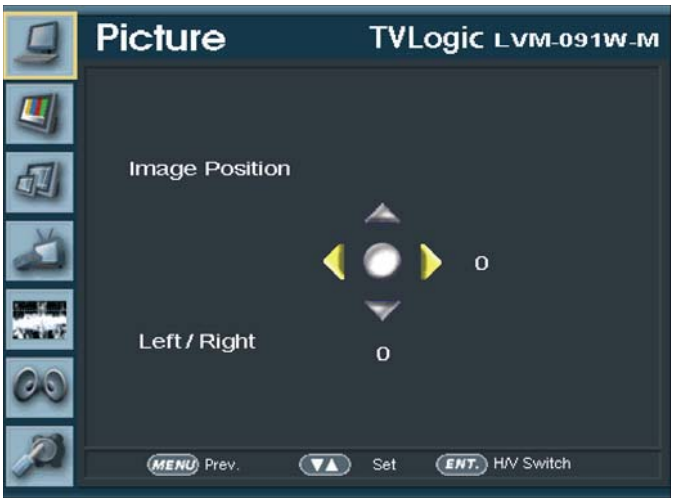
- **APERTURE**
  - This item indicates sharpness value between -12 ~ 12.
    #Aperture can be adjusted by using the [APERTURE] control knob on the front of the monitor.

- **NTSC Setup**
  - This item sets the IRE value under NTSC mode between 0 IRE and 7.5 IRE.
  - Only available in COMPOSITE 1/2/3 and S-VIDEO modes containing a NTSC signal.

- **KNOB Lock**
  - This item locks the control knobs(APERTURE, BRIGHT, CHROMA, CONTRAST, VOLUME) on the front of the monitor.

[2] PICTURE - DVI ANALOG ONLY





- **BRIGHTNESS**
  - This item controls the degree of brightness between -25 ~ 25.
    # Brightness can be adjusted by using the [BRIGHT] control knob.

- **CONTRAST**
  - This item controls the contrast ration between -25 ~ 25.
    # Contrast can be adjusted by using the [CONTRAST] control knob.

- **IMAGE POSITION**
  - This item controls the position(H/V) of the image.

- **PHASE**
  - This item controls phase value.
    # If phase is not set to correct value, image may display artifacts and out of focus.

- **CLOCKS/LINE**
  - This item is adjust timing for signal sync.
    # If signal sync is not set to correct value, image may display flickering and drop.

- **AUTO ADJUSTMENT**
  - This item adjusts the input signal automatically. Phase, Clocks/Line, and Image Position are also adjusted.
    # if image doesn't display correctly after the Auto Adjustment, select it again for correct adjustment. Auto Adjustment activates automatically when input signal resolution changes.

[3] COLOR

- **COLOR TEMP**
  - This item controls color temperature and allows instant access to preset color temperature settings of 3200K, 5600K, 6500K, 9300K and USER 1/2/3.
  - In USER1/2/3 mode, user can define custom RGB GAIN and BIAS values.

- **GAIN RED**
  - This item controls red gain value between -192 ~ 63.
  # Only available in USER1/2/3 mode.

- **GAIN GREEN**
  - This item controls green gain value between -192 ~ 63.
  # Only available in USER1/2/3 mode.

- **GAIN BLUE**
  - This item controls blue gain value between -192 ~ 63.
  # Only available in USER1/2/3 mode.

- **BIAS RED**
  - This item adjusts black level to control red color between -100 ~ 100.
  # Only available in USER1/2/3 mode.

- **BIAS GREEN**
  - This item adjusts black level to control green color between -100 ~ 100.
  # Only available in USER1/2/3 mode.

- **BIAS BLUE**
  - This item adjusts black level to control blue color between -100 ~ 100 .
  # Only available in USER1/2/3 mode.

- **COLOR COPY**
  - This item is used to copy pre-stored color temperature settings into a USER1/2/3 mode.
  - In USER mode, find and select the color temperature to be used as a starting point of custom color temperature.
  # Only available in USER1/2/3 mode.

[4] MARKER

- **MARKER**
  - This item selects the marker type when the MARKER is displayed on the screen.
  - Marker may only be activated by pressing the MARKER button on the 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 .

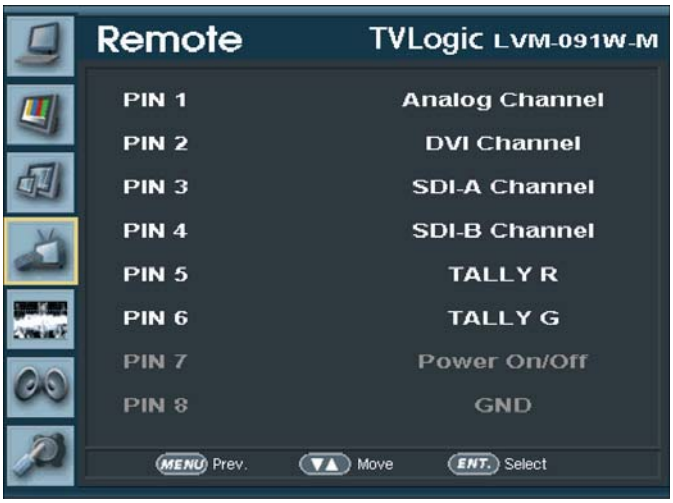
- **CENTER MARKER**
  - This item displays the CENTER MARKER on the screen.
  - This function operates only after activating the MARKER function by pressing the MARKER button on the front of the monitor.

- **SAFETY AREA**
  - This item controls the size of the SAFETY AREA.
  - Available types are 80%, 88%, 90%, 93%, and 100% .
  - This function operates only after activating the MARKER function by pressing the MARKER button on the front of the monitor.

- **MARKER MAT**
  - This 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.

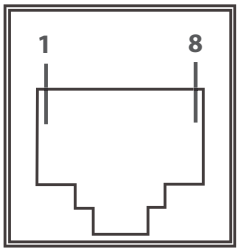
- **MARKER COLOR**
  - This item controls the color of the MARKER lines.
  - Available colors are white, gray, black, red, green and blue.

[5] REMOTE



REMOTE (RJ-45)

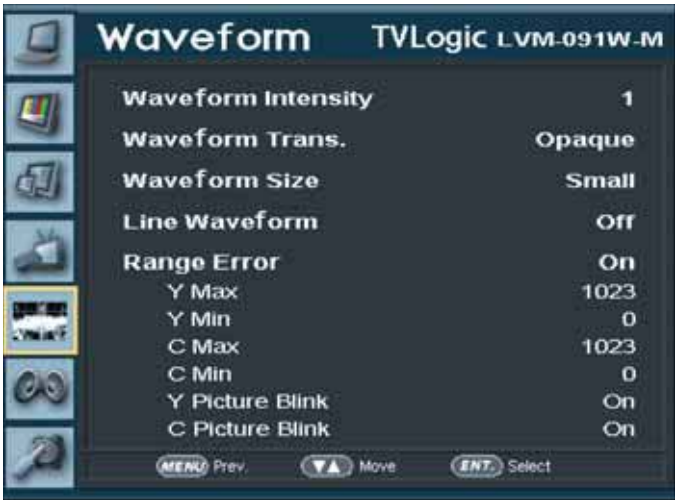
1: Pin1
2: Pin2
3: Pin3
4: Pin4
5: Pin5
6: Pin6
7: Pin7
8: GND



- This product provides a REMOTE CONTROL mode.
- The user may connect an RJ-45 jack to the REMOTE terminal on the rear of the unit and designate a function for each pin.
- The default settings are as follow:
  PIN 1 : ANALOG CHANNEL
  PIN 2 : DVI CHANNEL
  PIN 3 : DIGITAL CHANNEL
  PIN 4 : TALLY R
  PIN 5 : TALLY G
  PIN 6 : BLUE ONLY
- PIN 7 is POWER ON/OFF use only, PIN 8 is GND.
- The selectable functions are as follows

Menu Classification	Settable Values
PIN 1~6	ANALOG CHANNEL, DVI CHANNEL, SDI-A CHANNEL, SDI-B CHANNEL TALLY RED, TALLY GREEN, BLUE ONLY, UNDERSCAN, ASPECT, HVDELAY, 16:9 MARKER, 15:9 MARKER, 14:9 MARKER, 13:9 MARKER, 4:3 MARKER, 4:3 ON AIR MARKER, 1.85:1 MARKER, 2.35:1 MARKER, 1.85:1 & 4:3 MARKER, CENTER MARKER, SAFETY AREA 80%, SAFETY AREA 88%, SAFETY AREA 90%, SAFETY AREA 93%, SAFETY AREA 100%

[6] WAVEFORM



***Press [W-FORM/VECTOR] Button to activate Waveform.**

- **WAVEFORM INTENSITY**
  - This item controls the brightness of the WAVEFORM/VECTOR display.
  - Available values are between 1 ~ 63. The higher the number the brighter the waveform will be.

- **WAVE FORM TRANS.**
  - This item 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.

- **WAVE FORM SIZE**
  - This item controls the size of WAVEFORM/VECTOR.
  - Available modes are SMALL and LARGE.

- **LINE SELECT ENABLE**
  - Used to select specific vertical line of WAVEFORM/VECTOR.
  - This item activates when LINE WAVEFORM feature is selected.
  - Activate Waveform by pressing [W-FORM/VECTOR] button, then use [UP]/[DOWN] button to select a desired vertical line.
  - Available values are as follows (SDI signal standards):
    * 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

- **RANGE ERROR**
  - This item controls Y MAX, Y MIN, C MAX, C MIN, Y PICTURE BLINK, and C PICTURE BLINK.
  - Selected values in Y MAX, Y MIN, C MAX and C MIN indicates in WAVEFORM/VECTOR.
  - If Y Picture blink or C Picture blink is activated, the outside area of selected Y MAX, Y MIN, C MAX and C MIN blinks.

Menu Contents

- **Y MAX**
  - This item sets the maximum luminance level.
  - Available values are between 0 ~ 1023. Exceeded selection displays in red on the waveform and blinks on the screen.

- **Y MIN**
  - This item sets the minimum luminance level.
  - Available values are between 0 ~ 1023. Exceeded selection displays in red on the waveform and blinks on the screen.

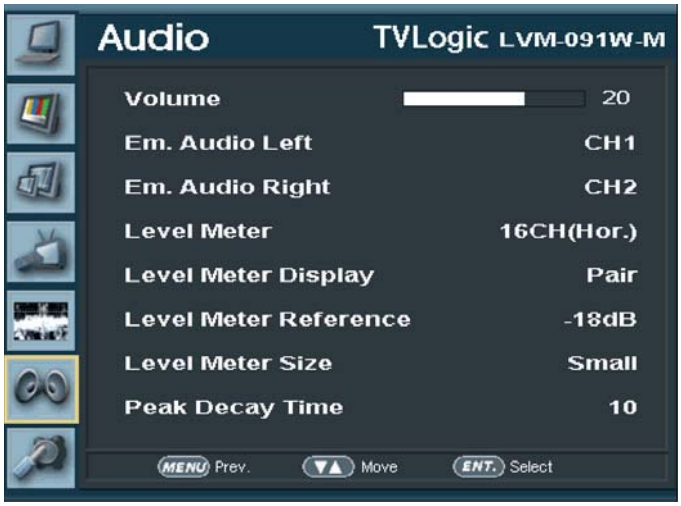
- **C MAX**
  - This item sets the maximum chroma level.
  - Available values are between 0 ~ 1023. Exceeded selection displays in red on the waveform and blinks on the screen.

- **C MIN**
  - This item sets the minimum chroma level.
  - Available values are between 0 ~ 1023. Exceeded selection displays in red on the waveform and blinks on the screen.

- **Y PICTURE BLINK**
  - This item sets selections of image that exceeds Y MAX and Y MIN to blink.

- **C PICTURE BLINK**
  - This item sets selections of image that exceeds C MAX and C MIN to blink.

[7] AUDIO



- **AUDIO VOLUME**
  - This item controls the embedded audio output volume for the internal speakers and [AUDIO OUT] on the back of the monitor.
  - Available values are between 0 ~ 20

- **EM. AUDIO LEFT**
  - This item controls embedded audio channel for left audio out of internal speaker and [AUDIO OUT] in the back of the monitor.
  - Available values are between CH 1 ~ CH 16.

- **EM. AUDIO RIGHT**
  - This item controls embedded audio channel for right audio out internal speaker and [AUDIO OUT] in the back of the monitor.
  - Available values are between CH 1 ~ CH 16.

- **AUDIO LEVEL METER**
  - This item controls the audio level meters.
  - Available modes are OFF, 16 CH(HOR.) and 16 CH(VER.)

  * 16 CH(HOR.) : Displays 8 channels on top left and 8 channels on top right of the screen horizontally.
  * 16 CH(VER.) : Displays 8 channels on center left and 8 channels on center right of the screen vertically.

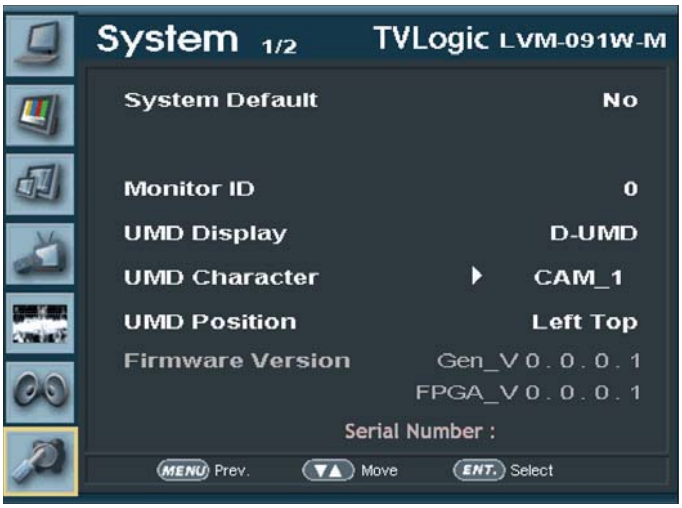
- **LEVEL METER DISPLAY**
  - This item controls display method of audio level meter.
  - Available modes are PAIR and GROUP.

- **LEVEL METER REFERENCE**
  - This item sets audio level default.
  - Available values are -18dB and -20dB.
  - Audio within selected value is displayed in green and exceeded audio level is displayed in yellow. Audio exceeding -4dB is displayed in red.

- **LEVEL METER SIZE**
  - This item controls the size of the audio level meters.
  - Available modes are NORMAL and LARGE.

- **LEVEL METER DECAY TIME**
  - This item sets the reduction time of the maximum indication of audio signals.
  - Available values are between 0 ~ 100. Larger values indicates a longer time for it to display.

[8] SYSTEM (1/2)



- **SYSTEM DEFAULT**
  - User can use the System Default menu to initialize the values of the monitor

- **MONITOR ID**
  - This item sets the ID of each monitor for the TVLogic control protocol or DYNAMIC UMD using RS-422/485 communication.
  - Available values are between 0 ~ 99.

- **UMD DISPLAY**
  - This item sets UMD, ANC and DYNAMIC UMD.
    * UMD : Displays user customized characters on screen.
    * ANC: Displays characters embedded in SDI signal.
    * DYNAMIC UMD: Displays incoming character or tally signal from TSL Protocol.

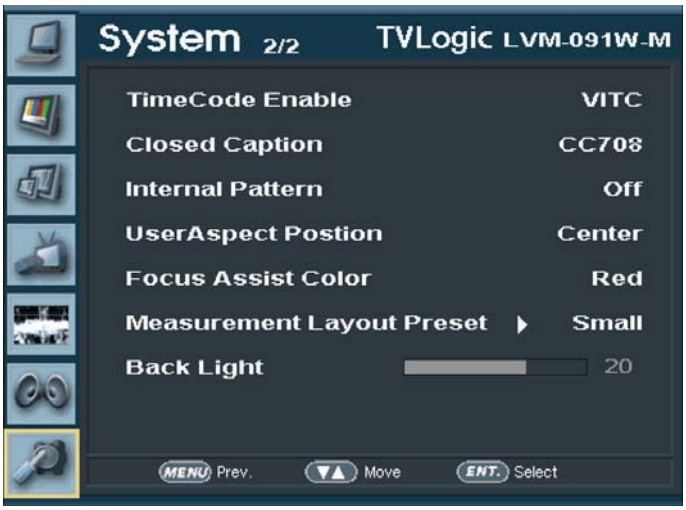
- **UMD CHARACTER**
  - This item is used to customize the characters for UMD.
  - Alphabets, numbers and special symbols are available.
  - Maximum of 5 characters.

- **UMD SIZE**
  - This item controls the size of UMD DISPLAY.

- **FIRMWARE VERSION**
  - This item is the firmware version of the system.

- **SERIAL NUMBER**
  - This item is the serial number of system.

[9] SYSTEM (2/2)



- **TIME CODE ENABLE**
  - This item displays the time code.
  - Available modes are OFF, VITC and LTC.

- **CLOSED CAPTION**
  - This item controls closed caption.
  - Available modes are OFF, 708, 608(LINE21) and 608(ANC).
    * 608 : CEA-608-B, 708 : CEA-708-C standards display only.

- **INTERNAL PATTERN**
  - This item generates internal white pattern. The white level can be set between 0% and 100% in 5% increments.

- **USER ASPECT POSITION**
  - This function gives control for the position of the image.
  - Available modes are Center and Top.

- **FOCUS ASSIST COLOR**
  - This supports the color of FOCUS ASSIST.
  - Available values are red, green and blue.

- **MEASUREMENT LAYOUT PRESET**
  - This function supports to adjust the size and arrange a position of displaying screen without overlapping with the screen of Audio Level Meter, Wave Form & VectorScope.
  - Available values are small and Large.
    * See section "Other Functions [8] Measurement Layout Preset" for more information.

- **BACK LIGHT**
  - This item indicates the backlight level.

Other Functions

1) ANALOG BUTTON

- **This product is capable of processing all input signals usable in ANALOG mode.**

1. Press [ANALOG] button on the front of the monitor and activate the OSD menu as shown on the left. Select the input you desire by using the [UP]/[DOWN]button and press the [ENTER] button to confirm.

2. Input resolution displays on the bottom of the OSD screen.

3. Press [ANALOG] button again to remove the OSD menu from display.

If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or discon nected.

2) DVI INPUT MENU

- **This product is capable of processing all input signals usable in DVI mode.**

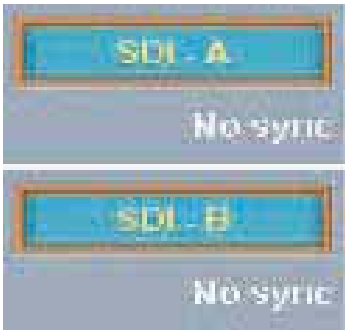
1. Press [DVI] button on the front of the monitor and activate the OSD menu as shown on the left. Select the input you desire by using the [UP]/[DOWN]button and press the [ENTER] button to confirm.

2. Input resolution displays on the bottom of the OSD screen.

3. Press [DVI] button again to remove the OSD menu from display.

If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.

3) SDI INPUT MENU



- **LVM-091W-M Series unit is capable of processing dual SDI Input signal.**

1. Press [SDI] button on the front of the monitor and activate the OSD menu as shown on the left.

2. Input resolution displays on the bottom of the OSD screen.

3. Press [SDI] button again to remove the OSD menu from display.

If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.

[4] PIXEL TO PIXEL

- **LVM-091W-M monitor's Pixel to Pixel mode displays input signal without scaling.**
- **Press [UNDERSCAN] button on the front of the monitor to activate the[Pixel To Pixel] mode.**
- **In the [Pixel To Pixel] mode, use the [UP]/[DOWN] buttons to toggle between 1:1 scan sections.**

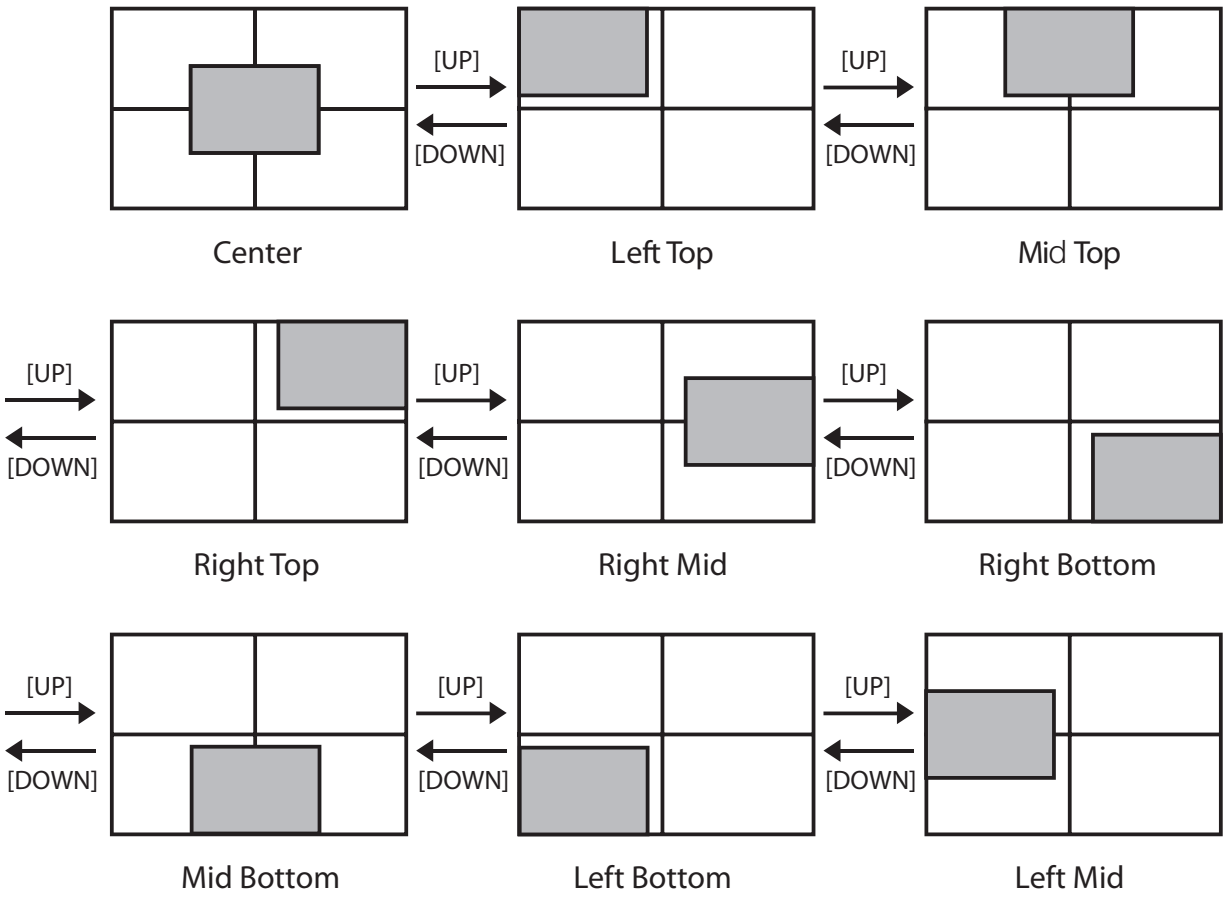
Input	Action Button	Available Modes
HD 1080i/1080p	[UP] (Clockwise)	Center -> Left Top ->Mid Top -> Right Top -> Right Mid -> Right Bottom -> Mid Bottom -> Left Bottom -> Left Mid -> Center -> ….
	[DOWN] (Opposite)	Center -> Left Mid -> Left Bottom -> Mid Bottom -> Right Bottom -> Right Mid -> Right Top -> Mid Top -> Left Top -> Center -> …
HD 720p	[UP] (Clockwise)	Center -> Left Top -> Right Top -> Right Bottom -> left Bottom -> Center -> …
	[DOWN] (Opposite)	Center -> Left Bottom -> Right Bottom -> Right Top -> Left Top -> Center -> ….

Pixel To Pixel mode is not available in Graphic mode.

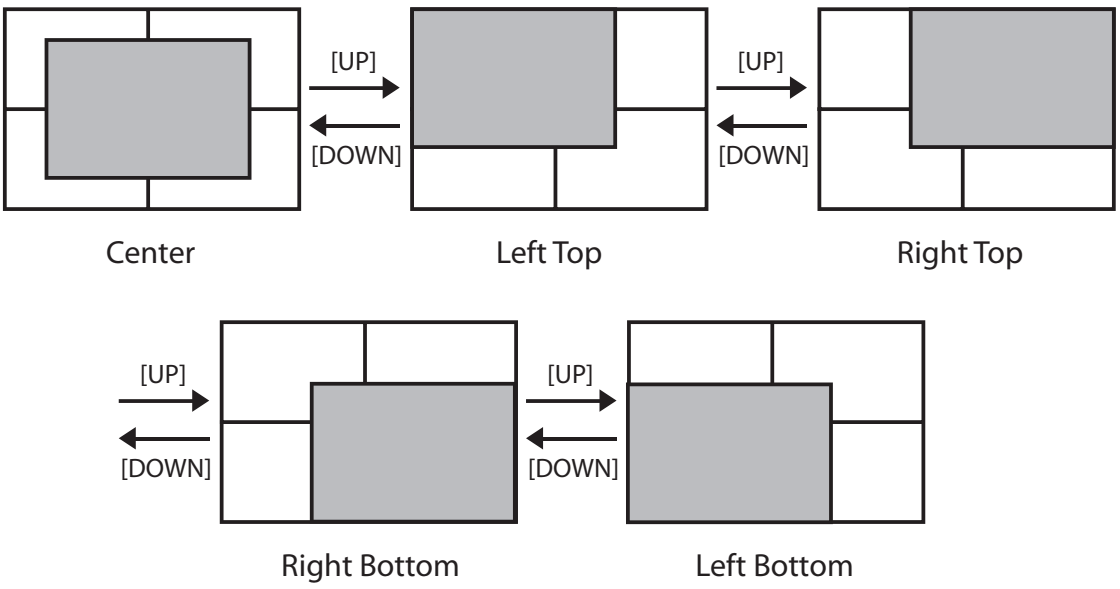
Pixel To Pixel mode is available in SD mode, but 1:1 sections cannot be rotated through as with HD sources.

Other Functions

Positions in HD Signal 1080i/1080p mode



Position in HD Signal 720p mode



[5] USER ASPECT

- **User Aspect create his own Aspect Ratio by User Scan Mode**
- **Activate User Aspect mode by pressing the [Under Scan] button in front of the monitor**
- **After activation, press [ENTER]button to get ready for controlling**

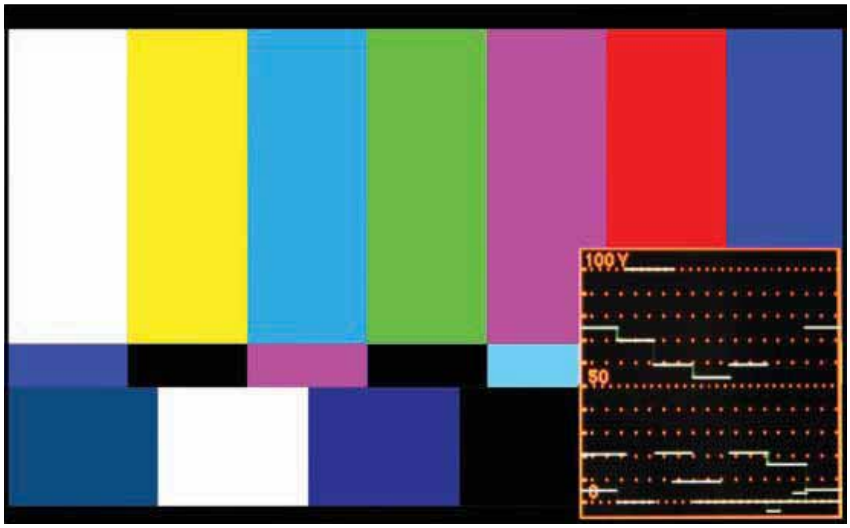
- **Adjust the ratio using [UP]/[DOWN] button.**
- **Controlling range of width**
  - Min[100] ~ Max[960]
- **Controlling range of height**
  - Min[100] ~ Max[540]
- **The picture always stay in the middle of the display**

To adjust the 1920X1080 input whose resolution is 16:9 into 2.35:1 picture ratio, adjust the Width and height 800X408 to make the picture ratio to 2.35:1.

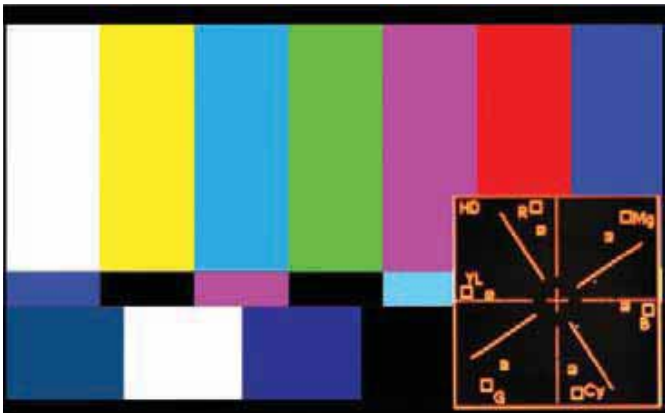
Other Functions

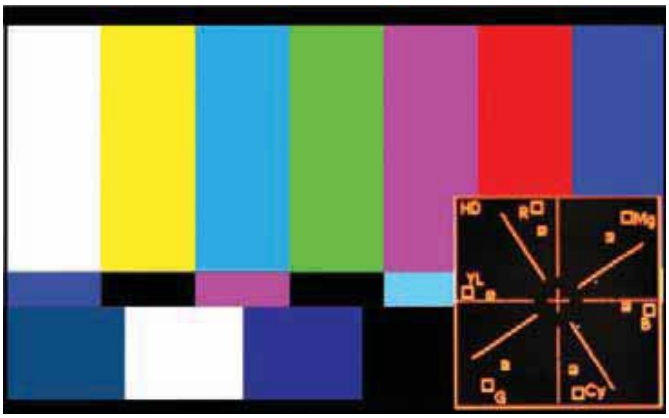
[6] WAVEFORM FUNCTION (This function is only available with SDI Input.)

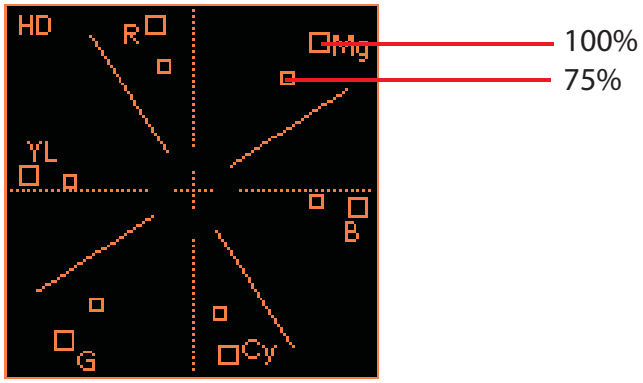
- **WAVEFORM :** Displays the shape and form of luminance level of a signal.



- **VECTOR SCOPE :** Displays color components of the input signals on the XY axis HD and SD inputs are classified into two kinds, depending on the input. 100% and 75% scales indicated on a display.

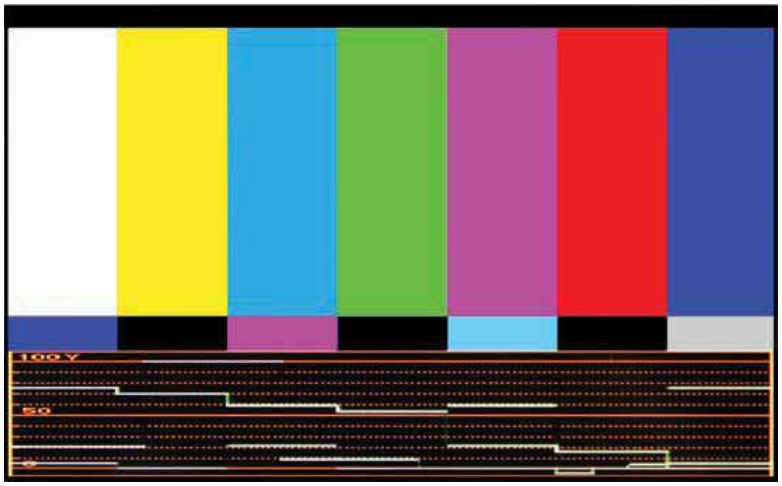




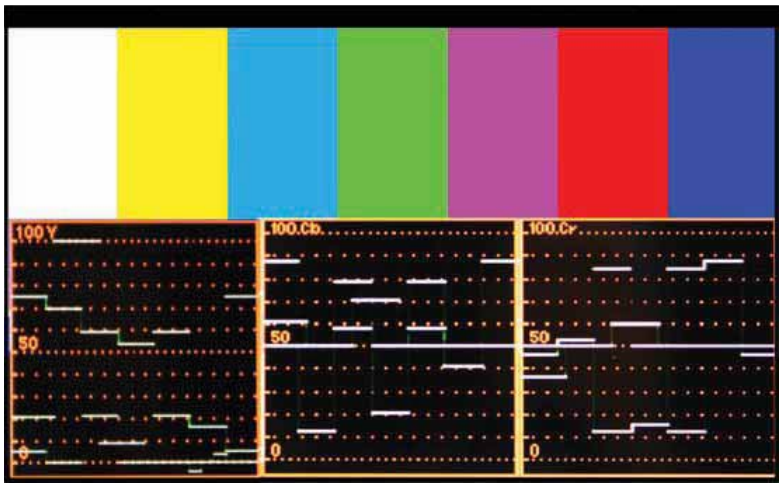


Other Functions

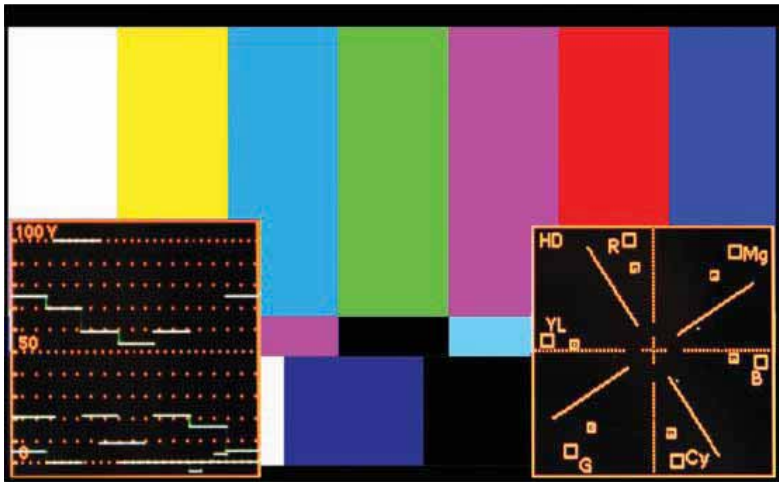
- **WAVEFORM WIDE :** Displays waveform in wide mode.
  Enlarge the elements of luminance of input signal to match with the screen width and output it at the bottom of the monitor.



- **WAVEFORM Y CB CR :** Displays each waveform for elements of the luminance and Cb/Cr of the input signal.

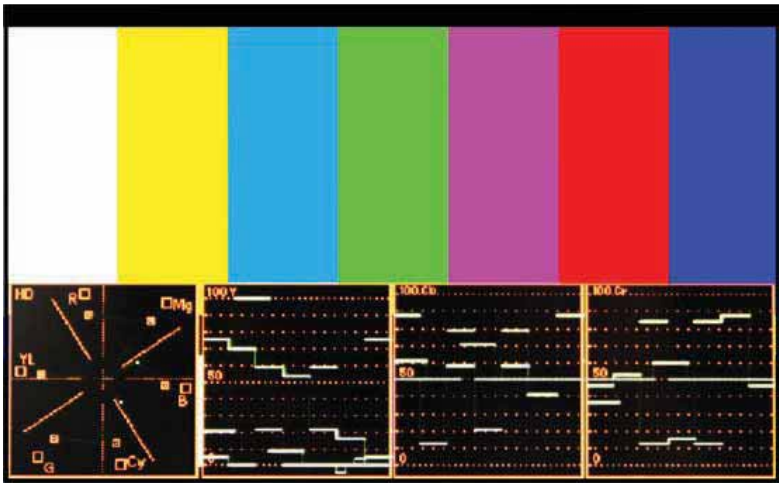


- **WAVE & VECTOR :** Displays waveform and vector scope simultaneously.



Other Functions

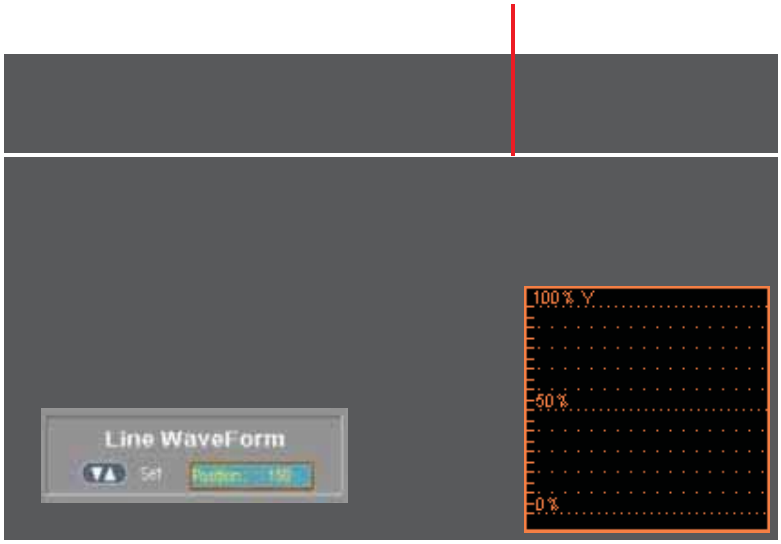
- **VECTOR_Y CB CR :** Displays Vector scope and Y/Cb/Cr waveform simultaneously.



[7] LINE SELECT FUNCTIONS(WAVEFORM/VECTOR) (This function is only available with SDI Input.)

- This item selects the output line of WAVEFORM/VECTOR.
- This item activates when LINE WAVEFORM feature is selected.
- Activate Waveform by pressing [W-FORM/VECTOR] button, then use [UP]/[DOWN] button to select a desired vertical line.
- Available values are as follows (SDI signal standards):
  * 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

POSITION CHANGES IF THE VALUE CHANGES IN LINE SELECT OPTION.



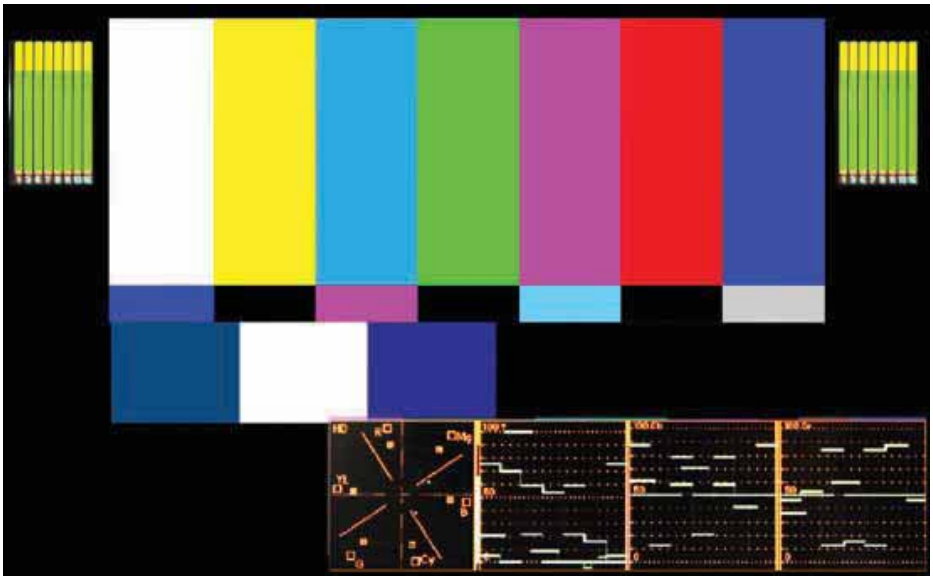
Other Functions

[8] MEASUREMENT LAYOUT PRESET (This function is only available with SDI Input.)

- This function supports to adjust the size and arrange a position of displaying screen without overlapping with the screen of Audio Level Meter, Waveform & Vectorscope.

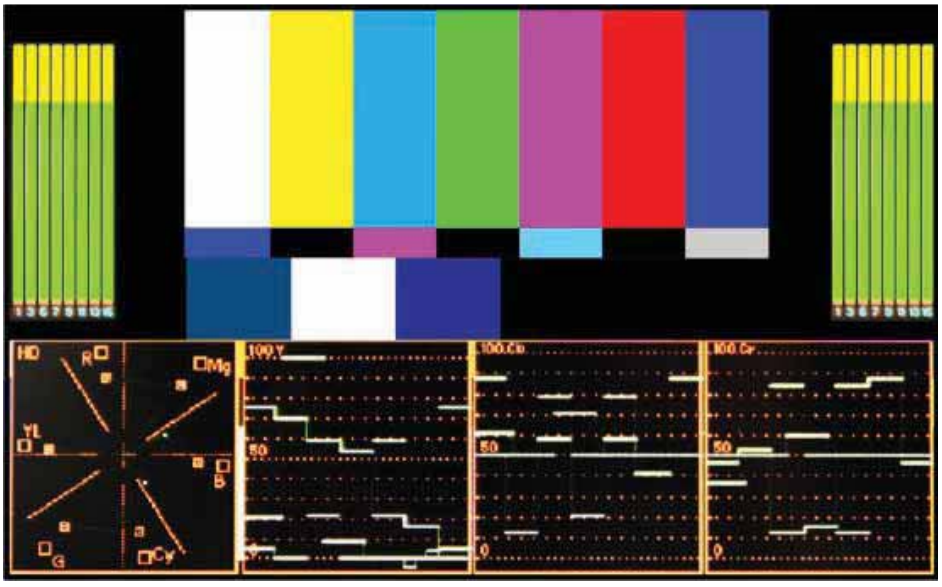
Small

- Waveform : Vector_YCbCr , Small Size
- Audio Level Meter : 16CH(Ver.), Small Size
- Screen : User Aspect, 626 x352 Size



Large

- Waveform : Vector_YCbCr , Large Size
- Audio Level Meter : 16CH(Ver.), Large Size
- Screen : User Aspect, 500 x 282 Size



DVI ANALOG/DIGITAL Support Resolution

DVI ANALOG

Resolution (Source)	Dot Clock [MHz]	fH (kHz)	fV (Hz)	Sync (H/V)
640 x 350 70Hz (IBM)	25.175	31.469	70.086	P/N
640 x 480 60Hz (IBM)	25.175	31.469	59.940	N/P
720 x 400 70Hz (IBM)	28.322	31.469	70.087	N/P
640 x 480 67Hz (MAC)	30.240	35.000	66.667	N/N
832 x 624 75Hz (MAC)	57.284	49.726	74.551	N/N
1152 x 870 75Hz (MAC)	100.00	68.681	75.062	N/N
640 x 480 75Hz (VESA)	31.500	37.500	75.000	N/N
640 x 480 72Hz (VESA)	31.500	37.861	72.809	N/N
800 x 600 56Hz (VESA)	36.000	35.156	56.250	N/N
800 x 600 60Hz (VESA)	40.000	37.879	60.317	P/P
800 x 600 75Hz (VESA)	49.500	46.875	75.000	P/P
800 x 600 72Hz (VESA)	50.000	48.077	72.188	P/P
1024 x 768 60Hz (VESA)	65.000	48.363	60.004	N/N
1024 x 768 70Hz (VESA)	75.000	56.476	70.069	N/N
1024 x 768 75Hz (VESA)	78.750	60.023	75.029	P/P
1152 x 864 75Hz (VESA)	108.00	67.500	75.000	P/P
1280 x 1024 60Hz (VESA)	108.00	60.000	60.000	P/P
1280 x 1024 75Hz (VESA)	135.00	79.976	75.025	P/P

Applicable Video Modes	480/60p, 576/50p , 720/50p, 720/60p, 1080/60p

DVI ANALOG/DIGITAL Support Resolution

DVI DIGITAL

Resolution (Source)	Dot Clock [MHz]	fH (kHz)	fV (Hz)	Sync (H/V)
640 x 350 70Hz (IBM)	25.175	31.469	70.086	P/N
640 x 480 60Hz (IBM)	25.175	31.469	59.940	N/P
720 x 400 70Hz (IBM)	28.322	31.469	70.087	N/P
640 x 480 67Hz (MAC)	30.240	35.000	66.667	N/N
832 x 624 75Hz (MAC)	57.284	49.726	74.551	N/N
1152 x 870 75Hz (MAC)	100.00	68.681	75.062	N/N
640 x 480 75Hz (VESA)	31.500	37.500	75.000	N/N
640 x 480 72Hz (VESA)	31.500	37.861	72.809	N/N
800 x 600 56Hz (VESA)	36.000	35.156	56.250	N/N
800 x 600 60Hz (VESA)	40.000	37.879	60.317	P/P
800 x 600 75Hz (VESA)	49.500	46.875	75.000	P/P
800 x 600 72Hz (VESA)	50.000	48.077	72.188	P/P
1024 x 768 60Hz (VESA)	65.000	48.363	60.004	N/N
1024 x 768 70Hz (VESA)	75.000	56.476	70.069	N/N
1024 x 768 75Hz (VESA)	78.750	60.023	75.029	P/P
1152 x 864 75Hz (VESA)	108.00	67.500	75.000	P/P
1280 x 1024 60Hz (VESA)	108.00	60.000	60.000	P/P
1280 x 1024 75Hz (VESA)	135.00	79.976	75.025	P/P

Applicable Video Modes	480/60i, 480/60p, 576/50i, 576/50p , 720/50p, 720/60p, 1080/50i, 1080/60i, 1080/24p, 1080/25p, 1080/30p, 1080/50p, 1080/60p

Product Specifications

LVM-091W-M

Input	1 x DVI-I	DVI IN / VGA IN
	3 x BNC	Analog Input
	2 x BNC	SDI 2 Channel Input
Output	1 x BNC	SDI Channel (Active Through Out)
Input Signal	Analog	Composite / S-Video / Component / RGB
	HD-SDI	1.485Gbps
	SD-SDI	270Mbps
	DVI/VGA	640×480 / 800×600 / 1024×768 / 1280×768 / 1280x1024
Analog Input Spec	Composite	1.0Vpp (With Sync)
	S-Video	1.0Vpp (Y With Sync), 0.286Vpp(C)
	Component	1.0Vpp (Y With Sync), 0.7Vpp (Pb,Pr)
	RGB	1.0Vpp (G With Sync), 0.7Vpp (B,R)
SDI Input Signal Formats	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(Stereo)
LCD	Size	9.0"
	Resolution	960 x 540 (16:9)
	Dot Pitch	0.207 x 0.207 mm
	Color	16.7M(true), 24bit
	Viewing Angle (Typical)	H : 170 degrees
		V : 170 degrees
	Luminance of white	400 cd/m²(Center)
	Contrast	1000:1
	Display Area	198.72 x 111.78mm
Power		12V DC/24V DC
Power Consumption (Approx.)		24 Watts(DC)/Max 2A
Operating Temperature		-20°C to 40 °C (-4 °F to 104 °F)
Storage Temperature		-30 °C to 50 °C (-22 °F to 122 °F)
Main Body Dimensions (mm/inch)		223 x 175 x 73 (8.78 x 6.89 x 2.87)
Main Body Dimensions (With Stand)		260 x 194 x 90 (10.23 x 7.63 x 3.54)
Weight		2.2Kg/4.85lbs
Accessory		DC Power Adapter, Camera Mount
Option		19" Rack Mountable Kit (3U) (Dual Monitor), Carrying Bag&Hood External Acrylic Filter, Sun-Hood, Tripod Ball Head

LVM Series Product Lineup

LVM-071W

1. LCD Resolution : 800 x 480 (15:9)
2. Color : 16.7M(true), 24bit
3. Contrast - 700 :1
4. Viewing Angle : H (130) / V (115)
5. Weight : 1Kg (2.2 lbs)

LVM-084

1. LCD Resolution : 1024 x 768 (4:3)
2. Color : 16.7M(true), 24bit
3. Contrast - 400 :1
4. Viewing Angle : H (170) / V (170)
5. Weight : 2.1Kg (4.63 lbs)

LVM-091W-M

1. LCD Resolution : 800 x 480 (15:9)
2. Color : 16.7M(true), 24bit
3. Contrast - 350 :1
4. Viewing Angle : H (170) / V (170)
5. Weight : 2.8Kg (6.17 lbs)

LVM-172W / LVM-173W-3G

1. LCD Resolution : 1366 x 768 (16:9)
2. Color : 16.7M(true), 24bit
3. Contrast - 900 :1
4. Viewing Angle : H (178) / V (178)
5. Weight : 7Kg (15.4 lbs)

LVM-241W / LVM-243W-3G

1. LCD Resolution : 1920 x 1200 (16:10)
2. Color : 16.7M(true 24bit)
3. Contrast - 1000:1
4. Viewing Angle : H (178) / V (178)
5. Weight : 11Kg (24.2 lbs)

LVM Series Product Lineup

LVM-323W-3G

1. LCD Resolution : 1920 x 1080 (16:9)
2. Color : 1.06 Billion (10bit, Dither)
3. Contrast - 1300 :1
4. Viewing Angle : H (178) / V (178)
5. Weight : 21.45Kg (47.3 lbs)

LVM-403W-3G

1. LCD Resolution : 1920 x 1080 (16:9)
2. Color : 16.7M(true 8bit)
3. Contrast - 3000 :1
4. Viewing Angle : H (178) / V (178)
5. Weight : 35Kg (77.2 lbs)

LVM-463W-3G

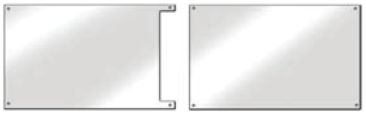
1. LCD Resolution : 1920 x 1080 (16:9)
2. Color : 16.7M(true 8bit)
3. Contrast - 3000 :1
4. Viewing Angle : H (178) / V (178)
5. Weight : 42Kg (92.6 lbs)

LVM-553W-3G

1. LCD Resolution : 1920 x 1080 (16:9)
2. Color : 16.7M(true 8bit)
3. Contrast - 4000 :1
4. Viewing Angle : H (178) / V (178)
5. Weight : 48Kg (105.8 lbs)

Optional Accessories

ND Glass Filter 17" 24"



External Acrylic Filter 5.6" 7" 9"

Rack Mountable Kit 7" 8.4" 9" 15" 17" 24"

Tripod Head 5.6" 7" 8.4" 9"

V-Mount 15" 17" 8.4"

Hood 5.6" 7" 9" 15" 17"

Carrying Case 5.6" 7" 8.4" 9" 15" 17" 24" 32" 40" 46" 55"

RACK MOUNT ANY DISPLAY UP TO 24”

7 inch

8.4 inch

9 inch

15 inch

17 inch

24 inch

Memo

Developed by

TVlogic

FOR MORE INFORMATION PLEASE VISIT : http://www.tvlogic.tv

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