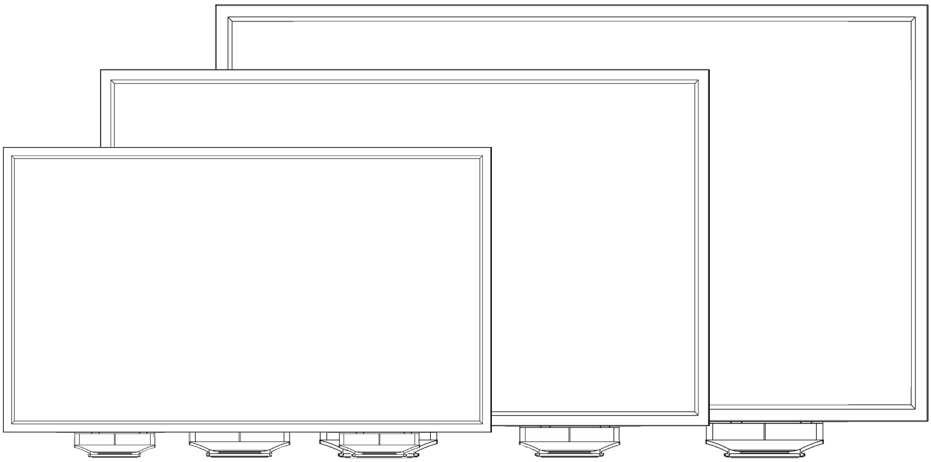

Multi Format Broadcast LCD Monitors

Operation Manual_ver 1.2

LVM-420A
LVM-460A
LVM-550A

TVLogic

MULTI

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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

- Power Requirements
  - AC 100 ~ 240V
- 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.
- 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 location, consult your dealer or local power company.
- The power cords must be routed properly to prevent 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. Utilize a qualified electronics service specialist for all repairs.
- 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 service, consult an authorized TVLogic Reseller.
- 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.
- Keep the product away from direct 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.
- 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 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 exposed to impact.
- Keep the product away from heat sources such as radiators, heaters, stoves and other heat generating products (including amplifiers).
- Do not use this apparatus near water. Don’t place cups that hold vases or other liquids on top of the product.
- Leave a minimum 10cm gap all around the product. The disconnect device shall remain readily operable.

Features

LVM-420A/460A/550A MONITORS CONTAIN THE FOLLOWING FEATURES AND ADVANTAGES :

- **SDI Compatible**
  - The product is compatible with varied SDI signals - 480i, 576i, 1080i, 1080p, 1080psf.

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

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

- **Wide Screen Support**
  - This product supports native 16:9 aspect ratio.

- **Remote control function**
  - This product can be remote 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.

- **RS232 support**
  - Supports firmware updates & color-calibration through serial communication.

- **Ethernet & USB support**
  - Supports ethernet and USB connection for program download and monitor control.

- **DVI/HDMI(HDCP) input support**
  - DVI(Analog), DVI(Digital) and HDMI(HDCP) input is available without any other accessory.

- **Dual link support**
  - Supports Dual link YCbCr/RGB 4:4:4 and YCbCr 4:2:2 formats.

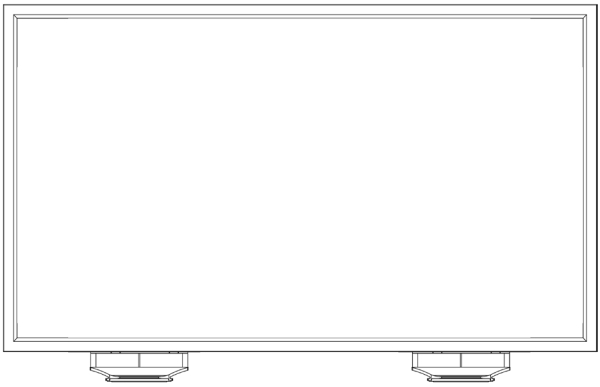
- **3G support**
  - Supports 3G A/B formats.

- **Additional features**
  - Wide Viewing Angle, Loop-through out(SDI), VESA Mounting, user interface and rack-mountable.

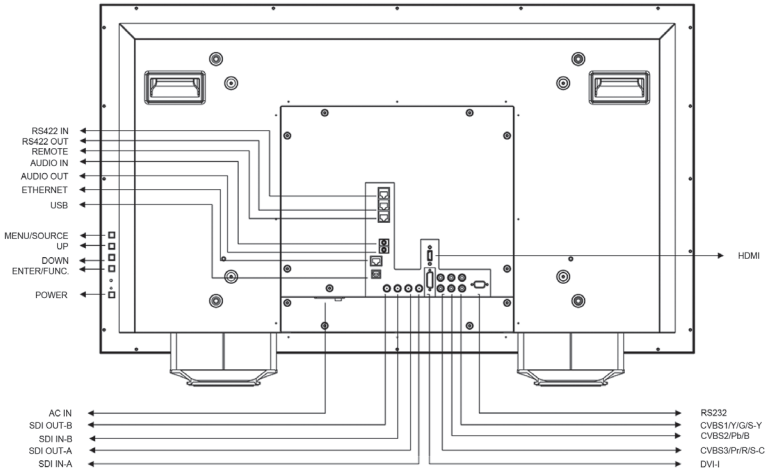
*** 4000:1 contrast ratio/450cd/m^2(LVM-420A)**
*** 4000:1 contrast ratio/450cd/m^2(LVM-460A)**
*** 4000:1 contrast ratio/450cd/m^2(LVM-550A)**

Controls, Indicators and Connections

LVM-420A/460A/550A : FRONT



LVM-420A/460A/550A : REAR



REAR-KEY

◦ **[MENU/SOURCE] Button**
- Press the button briefly to activate the main menu.
- Press the button for a long time to activate the Input Select menu. Use the Up and Down menu to change the Input Select menu.

* See section "6. Other Functions [1] Input Signal" for more information.

◦ **[DOWN] Button**
- Used to move down within the menus during OSD menu activation and also to decrease the value of the selected feature.
- If the main/sub menu is not activated, the feature selected in "SYSTEM-DOWN/F1" setting will be activated.
- Use UP/DOWN keys to select and proceed through various functions.

◦ **[UP] Button**
- Used to move up within the menus during OSD menu activation and to increase the value of the selected feature.
- If the main/sub menu is not activated, the feature selected in "SYSTEM- >UP/F2" setting will be activated.
- Use UP/DOWN keys to select and proceed through various functions.

◦ **[ENTER] Button**
- Used to confirm a chosen value (or mode).
- If the main/sub menu is not activated, the feature BRIGHT->CONTRAST->CHROMA->APERTURE->VOLUME functions are gradually will be activated.
- Use UP/DOWN keys to select and proceed through various functions.

◦ **[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.

REAR

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

- **[REMOTE] (RJ-45)**
  - Provides connection to control equipment for external monitor control.
  - Features can be changed in the REMOTE(1/2) section of OSD menu.

- **[RS232]**
  - Factory program port used for automatic alignment.

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

- **[CVSBS2/Pb/B] (BNC)**
  - Signal input terminal used to feed the monitor COMPOSITE 2, RGB B and COMPONENT Pb signals.

- **[CVSBS3/Pr/R/S-C] (BNC)**
  - Signal input terminal used to feed the monitor COMPOSITE 3, S-VIDEO C, COMPONENT Pr and RGB R signals.

- **[DVI-I] (DVI-I)**
  - Signal input terminal for DVI ANALOG or DVI DIGITAL signal.

- **[HDMI(HDCP)] (HDMI)**
  - Signal input terminal for HDMI signal.

- **[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.

- **[SDI-IN B] (BNC)**
  - HD/SD SDI signal input terminal for SDI B.

- **[SDI-OUT B] (BNC)**
  - HD/SD SDI signal output terminal for SDI B signal.

- **[Audio in & out] (PHONE JACK)**
  - Select the left/right Audio disembedded signal output or HDMI input signal or external stereo signal is output through the phone jack.

Controls, Indicators and Connections

◦ **[Ethernet & USB]**
- Ethernet and USB port for easy firmware updates.

◦ **~ AC IN**
- 100 ~ 240V AC 50/60Hz

<Video input>
Video input connection method.

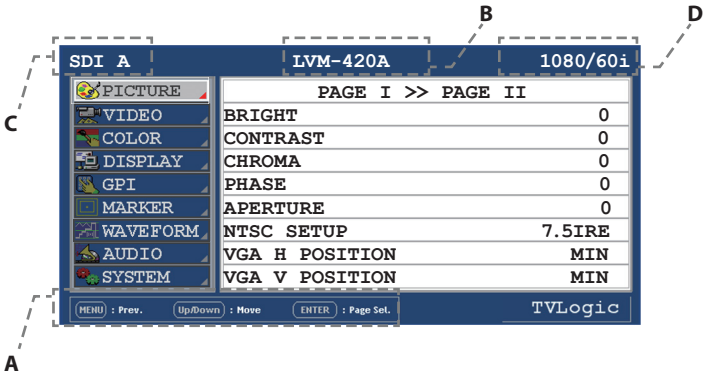
Connector	Composite	RGB	Component	S - Video
1	CVBS 1	Y	R	Y
2	CVBS 2	Pb	G	No Con.
3	CVBS 3	Pr	B	C

<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.

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 :

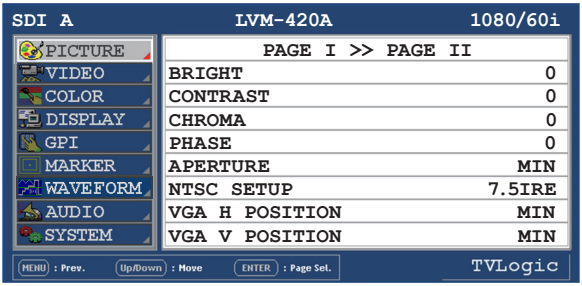
1. Press MENU button to bring the OSD menu on the screen.
2. Display the desired sub menu with the UP/DOWN button.
3. After selecting a sub menu, press ENTER to select an item with the UP/DOWN button.
4. Press ENTER to select the desired item (verified by highlighted field text turning red).
5. Press 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.
7. To view next page in the sub menu, press ENTER button at PAGE I >> PAGE II.

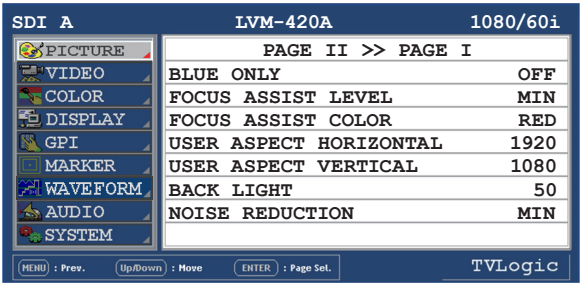
4) Main Menu Window Information
A. Menu item and page info
B. Model name
C. Current input signal
D. Current input signal resolution

Menu Contents

[1] PICTURE

Below is the description for each function of the PICTURE menu.





- **BRIGHT**
  - Controls the degree of brightness between MIN (-100) and MAX (100).

- **CONTRAST**
  - Controls the contrast ratio between MIN (-100) and MAX (100).

- **CHROMA**
  - Controls saturation between MIN (-50) and MAX (50).

- **PHASE**
  - Controls PHASE value (hue) between MIN (-50) and MAX (50).
  - Only available in COMPOSITE 1/2/3 and S-VIDEO modes.
  - Phase control in DVI ANALOG mode is between MIN (0) and MAX (63).

- **APERTURE**
  - Controls the picture sharpness between MIN (0) and MAX (25).

Menu Contents

- **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.

- **VGA H POSITION**
  - Controls horizontal position of DVI analog image between MIN (-15) and MAX (15).

- **VGA V POSITION**
  - Controls vertical position of DVI analog image between MIN (-10) and MAX (10).

- **BLUE ONLY**
  - Used to activate MONO mode or remove red and green from the input signal and display the screen only under a blue signal.
  - Press the button again to activate the Focus Assist mode which will indicate the border lines of display in the color that can be selected in the Waveform menu.

- **FOCUS ASSIST LEVEL**
  - Controls focus assist level.
  - Available values are between 0 ~ 100. Larger value means greater detail detection.
  - Focus assist color is presented when the difference between the border selections exceeds the selected value.
  - This features is only available when FOCUS ASSIST mode is selected. FOCUS ASSIST mode can be selected by choosing BLUE ONLY menu in the PICTURE of main menu.

- **FOCUS ASSIST COLOR**
  - Initialize the displayed color when the value of FOCUS ASSIST is exceeded.
  - Available values are red, green and blue.

- **USER ASPECT HORIZONTAL**
  - Used to set the horizontal aspect ratio of the screen arbitrarily.
    * Value range : 1280 ~ 1920

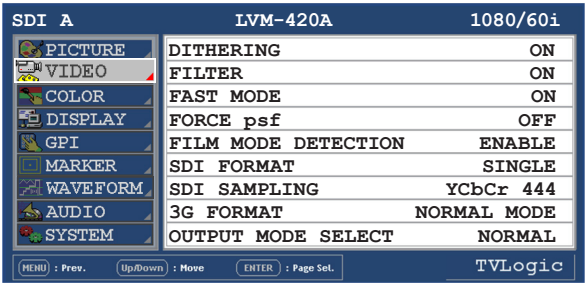
- **USER ASPECT VERTICAL**
  - Used to set the vertical aspect ratio of the screen arbitrarily.
    * Value range : 720 ~ 1080

- **BACK LIGHT**
  - Controls the backlight level of the LCD panel.
  - The values are between MIN (0) and MAX (100). Higher value means brighter screen.

- **NOISE REDUCTION**
  - Configure 3D-Noise Reduction filter.
  - Adjustment range is from 0 to 10
  - Turn off 3D-Noise Reduction Filter, when the value is “0”.

[2] VIDEO

Below is the description for each function of the VIDEO menu.



- **DITHERING**
  - Toggles Dithering On/Off.

- **FILTER**
  - This item toggles the 4:4:4 video processing filter On/Off.
  - To eliminate ringing artifacts under 4:2:2 or 4:4:4 sources, please set this Filter to ON or OFF.

- **FAST MODE**
  - This item minimizes interlaced video processing time delay.
  - Since the function of this feature is to minimize the de-interlacing delay, it will not be effective under progressive formats.
  - This feature is also useful when displaying fast-motion interlaced video content and to reduce the delay between video and audio.

- **FORCE psf**
  - This item forces psf mode for psf signals, overriding the automatic psf detection.
  - If this feature is turned off, the unit checks for the psf signal first, then searches for the remaining modes.

- **FILM MODE DETECTION**
  - This item toggles Film Mode On/Off.

- **SDI FORMAT**
  - Selects SDI input format between Single Link and Dual Link.

- **SDI SAMPLING**
  - Selects SDI sampling mode in Dual Link.
  - Available modes are YCbCr 444, RGB 444 and YCbCr 422P.

◦ **3G FORMAT**
- 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).
- Automatically detects when Payload signal appears in normal mode.

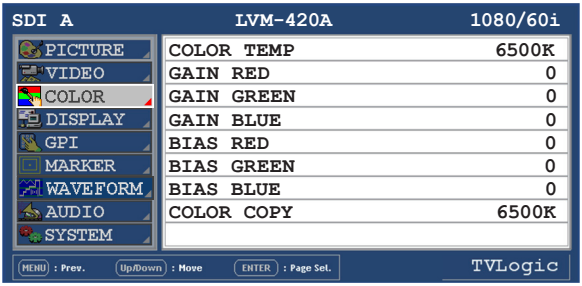
◦ **OUTPUT MODE SELECT**
- Selects luminance range in SDI MODE between FULL (255) and NORMAL (235).

◦ **RGB INPUT MODE**
- DVI-DIGITAL/HDMI MODE Selects input luminance range.
- Available values are RGB255, RGB235Ex and RGB235.
  * RGB 255 : Input : 0 ~ 255, Output : 0 ~ 255
  * RGB 235Ex : Input : 16 ~ 235, Output : 0 ~ 255
  * RGB 235 : Input : 16 ~ 235, Output : 16 ~ 235
- Only available in DVI DIGITAL and HDMI Modes.

◦ **DVI INPUT FORMAT SELECT**
- Selects input color formats are RGB, YCbCr, and Auto.
- Only available in DVI DIGITAL Mode.

[3] COLOR

Below is the description for each function of the COLOR menu.



- **COLOR TEMP**
  - This item ontrols color temperature and allows instant access to preset color temperature settings.
  - Available color temperatures are 3200K, 5000K, 5600K, 6500K, 9300K and Custom 1/2/3.
  - RGB GAIN, BIAS and COLOR COPY values activate only in CUSTOM 1/2/3 modes.
  - Backlight value is adjustable for each color temperature.

- **GAIN RED**
  - Controls red color.
  - The value is selectable between MIN (-256) and MAX (255).
  - Adjusts red color of bright section.
  - Only available in CUSTOM 1/2/3 mode.

- **GAIN GREEN**
  - Controls green color.
  - The value is selectable between MIN (-256) and MAX (255).
  - Adjusts green color of bright section.
  - Only available in CUSTOM 1/2/3 mode.

- **GAIN BLUE**
  - Controls blue color.
  - The value is selectable between MIN (-256) and MAX (255).
  - Adjusts blue color of bright section.
  - Only available in CUSTOM 1/2/3 mode.

- **BIAS RED**
  - This item adjusts black level to control red color.
  - The value is selectable between MIN (-100) and MAX (+100).
  - Adjusts red color of dark section.
  - Only available in CUSTOM 1/2/3 mode.

- **BIAS GREEN**
  - This item adjusts black level to control green color.
  - The value is selectable between MIN (-100) and MAX (+100).
  - Adjusts green color of dark section.
  - Only available in CUSTOM 1/2/3 mode.

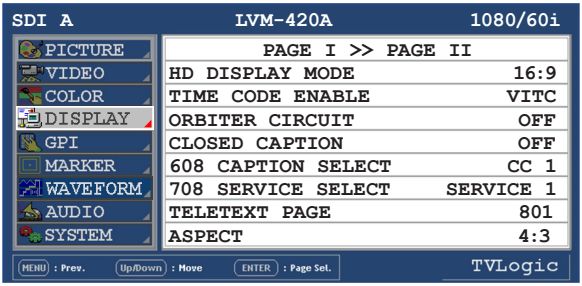
- **BIAS BLUE**
  - This item adjusts black level to control blue color.
  - The value is selectable between MIN (-100) and MAX (+ 100).
  - Adjusts blue color of dark section.
  - Only available in CUSTOM 1/2/3 mode.

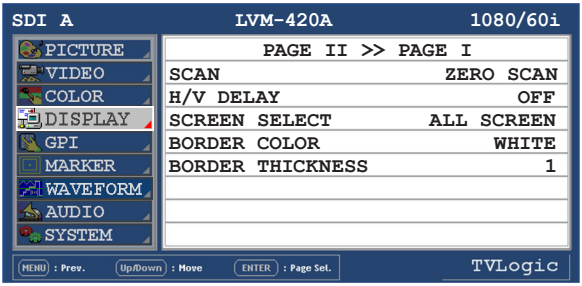
- **COLOR COPY**
  - Used to copy pre-stored color temperature settings into a CUSTOM 1/2/3 mode.
  - In CUSTOM mode, find and select the color temperature to be used as a starting point of custom color temperature.
  - Only available in CUSTOM 1/2/3 mode.

- **GAMMA CURVE**
  - Used to change the Gamma Curve from 1.0 to 3.0.
  - Available values are from 1.0 to 3.0.

[4] DISPLAY

Below is the description for each function of the DISPLAY menu.





- **HD DISPLAY MODE**
  - Controls the display ratio in HD mode.
  - Available values are 16:9, 1.85:1 and 2.35:1.

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

- **ORBITER CIRCUIT**
  - This item is available to prevent TIR on static images displayed on screen for extended periods of time. Most scenarios do not require an orbiter circuit as TIR does not occur easily/rapidly. However, for some Multi-Viewer type applications, this mode may be desirable. The orbiter value can be set between 1 and 100 (number of pixels image is scaled down). The image will move onscreen every 10 minutes.

- **CLOSED CAPTION**
  - This item selects Closed Caption.
  - Available modes are OFF, 708, 608(LINE21), 608(ANC), OP47,OP42, OP47/42(AUTO) and 708-Kor.
    * 608 : CEA-608-B, 708 : CEA-708-C standard display only.

Menu Contents

- **608 CAPTION SELECT**
  - Controls Closed Caption 608.
  - CC 1 ~ CC 4 supported.

- **708 SERVICE SELECT**
  - Controls Closed Caption 708 service.
  - SERVICE 1 ~ SERVICE 6 supported.

- **TELETEXT PAGE**
  - Controls OP47/42 pages.
  - 801 ~ 8FF supported.

- **ASEPCT**
  - Controls the display ratio in SD mode.
  - Available modes are 4:3, 16:9, 4:3 Ex, 16:9 Ex .

- **SCAN**
  - Controls th SCAN mode.
  - Available modes are OVER SCAN, ZERO SCAN, UNDER SCAN, 2:1 SCAN, 1:1 SCAN, FIT WIDTH, ZOOM(PBP 16:9 mode).

- **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 verication of synchronized signals.

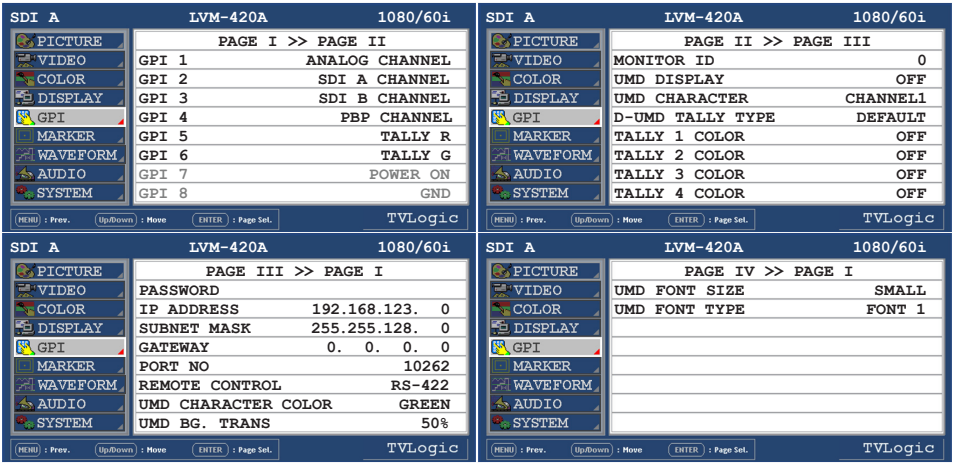
- **SCREEN SELECT**
  - Enables control for individual screens (1 or 2) or full screen (both) in PBP mode.
  - Screen selection order : ALL SCREEN -> SCREEN 1 -> SCREEN 2.
  - For easy screen selection, use [CHROMA/PHASE/SCREEN SEL] button in the front panel.

- **BORDER COLOR**
  - Selects the border line color between the displays in PBP Mode.
  - Available values are WHITE, GRAY, BLACK, RED, GREEN and BLUE.

- **BORDER THICKNESS**
  - Adjusts border line thickness between displays in PBP Mode.
  - Set value range in pixel 0 ~ 7.

[5] GPI

Below is the description for each function of the GPI menu.

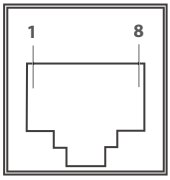


- This product provides a REMOTE CONTROL mode.
- The user may connect an RJ-45 jack to the REMOTE terminal on the rear of the unit and designate a function for each pin.
- The default settings are as follows :
  PIN 1 : ANALOG CHANNEL
  PIN 2 : SDI A CHANNEL
  PIN 3 : SDI B CHANNEL
  PIN 4 : PBP CHANNEL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

◦ **The pin positions are as follows :**

REMOTE (RJ-45)

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



◦ **Selectable functions are as follows :**

Menu Classification	Settable Values
PIN 1~6	NONE, ANALOG CHANNEL, SDI A CHANNEL, SDI B CHANNEL, PBP CHANNEL, TALLY R, TALLY G, TALLY Y, 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%, SAFETY AREA 93%, SAFETY AREA 100%, 708, 608(LINE 21), 608(ANC), DYNAMIC-UMD, COMPOSITE 1, COMPOSITE 2, COMPOSITE 3, S-VIDEO, COMPONENT, RGB, DVI-ANALOG, DVI-DIGITAL, HDMI, OP47, OP42, OP47/42(AUTO), 708-KOR, TELETEXT PAGE 801, TELETEXT PAGE 888, TELETEXT PAGE 889

◦ **MONITOR ID**
- Sets the ID of each monitor for the TV Logic control protocol or DYNAMIC UMD using RS-422/485 communication.
- Available values are between 0 ~ 125.
- Right screen in PBP mode is automatically set to +1 of the monitor ID.

◦ **UMD DISPLAY**
- Sets input source ID mode.
- Available modes are OFF, UMD, ANC, D-UMD(S-8C), D-UMD(S-16C) and D-UMD(D-8C).
- If UMD menu is selected, characters or tally data in the black bar displays on the bottom of the screen. The vertical aspect ratio of the image changes on the screen as the bar on the bottom of screen appears.
- In the USER ASPECT mode, the UMD bar displays semi-transparently and the screen keeps its USER ASPECT ratio.
  * UMD : Displays user customized 8 characters on screen.
  * ANC : Displays characters embedded in SDI signal.
  * D-UMD(S-8C) : Displays incoming data of 8 characters and tally signal from TSL protocol (V3.1).
  * D-UMD(S-16C) : Displays incoming data of 16 characters and tally signal from TSL protocol (V3.1).
  * D-UMD(D-8C) : Displays incoming data of two pairs of 8 character strings and tally signals from TSL protocol (V3.1).
- In PBP mode, even if D-UMD(S16C), D-UMD(D-8C) and D-UMD(S-8C) are selected, only D-UMD (S-8C) activates.
- In PBP mode, each D-UMD(S-8C) for left screen and right screen are activated and adjustment for each setting is available.

◦ **UMD CHARACTER**
- Customizes the characters for Under Monitor Display.
- Alphabets, numbers and special symbols are available.
- Maximum of 8 characters are available.

◦ **D-UMD TALLY TYPE**
- Tally type configuration setting in D-UMD(D-8C), UMD DISPLAY.
- Configuration values are DEFAULT, USER COLOR, CHARACTER, BG. COLOR, USER TALLY, USER CHAR, USER BG.
  * DEFAULT : Existing TV Logic operating system (VRT)
  * USER COLOR : User configuration settings on each TALLY color type.
  * CHARACTER : Tally displays with the character color. Activates the same as Default model.
  * BG. COLOR : Tally is displayed as the background of character. Activate the same as Default mode.
  * USER TALLY : The bit0 & bit 1 of TSL Protocol Control Byte receives the input signal and displays Tally by user's set (OFF, WHITE, RED, GREEN, BLUE, YELLOW CYAN, MAGENTA)
  * USER CHAR : This function activates in the same way as USER TALLY and TALLY is displays by the character color.
  * USER BG. : This function activates in the same way as USER TALLY and Tally is displays in the background of the character.
- TALLY1 COLOR ~ TALLY4 COLOR are activated when USER COLOR is selected.

- **TALLY1 COLOR ~ TALLY4 COLOR**
  - This item sets the color of each TALLY1, TALLY2, TALLY3 and TALLY4 .
  - Available color settings are Red, Green and Yellow.

<Dynamic UMD Protocol (TSL V3.1)>

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

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

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

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

* **Tally Type – Default**

- S-8C(Single 8 Character) & S-16C(Single 16 Character)

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

- D-8C(Dual 8 Character)

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

*** D-UMD TALLY TPYE – USER COLOR**
- Color selections between TALLY1 ~ TALLY4.

The following appearance of UMD DISPLAY is set as D-UMD(D-8C), D-UMD TALLY TYPE and TALLY1 ~ TALLY4 COLOR.

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

◦ **PASSWORD**
- Used to download the program via Ethernet. The password set for the monitor must match with the password for the download program.

◦ **IP ADDRESS**
- Sets the IP address.

◦ **SUBNET MASK**
- Sets the subnet mask.

◦ **GATEWAY**
- Sets the gateway.

◦ **PORT NO**
- Sets the port number. Default port number is 10262.

◦ **REMOTE CONTROL**
- Choose how to adjust the monitor. (RS-422 or ETHERNET)

◦ **UMD CHARACTER COLOR**
- Sets the character color of UMD. (WHITE, RED, GREEN, BLUE, YELLOW, CYAN, MAGENTA)
- This function only activates when D-UMD TALLY TYPE is set DEFAULT, USER COLOR, BG. COLOR, USER TALLY, USER BG modes.

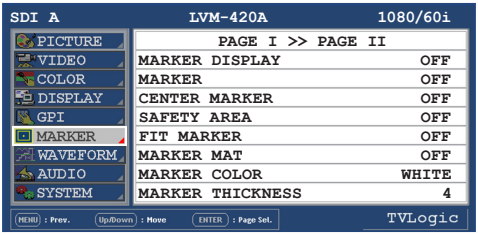
- **UMD BG. TRANS**
  - This function sets the transparency of the UMD character's background box.
  - Available modes are SCALE DOWN, OPAQUE, 50%, 90% and 100%.
  - SCALE DOWN function reduces images and places on UMD not to overlap with UMD and images. (Only activates when the UMD is overapped with images.)

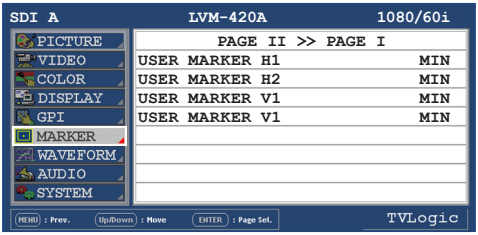
- **UMD FONT SIZE**
  - This function adjusts the size of UMD FONT.
  - Available modes are SMALL, NORMAL and LARGE.

- **UMD FONT TYPE**
  - This function sets the Type of UMD FONT.
  - Available font types are FONT 1, FONT 2 and FONT 3.

[6] MARKER

Below is the description for each function of the MARKER menu.





◦**MARKER DISPLAY**
- This item activates the FIT MARKER function.

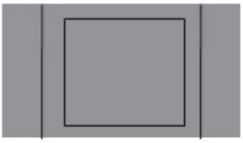
◦**MARKER**
- Selects the marker type when the MARKER is displayed on the screen.
- Marker may only be activated by pressing the MARKER button on the front of the monitor.
- Available marker types are 16:9, 4:3, 4:3 ON AIR, 15:9, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1 & 4:3, 4:3 ALT 14:9, 6:9 ALT 14:9, 16:9 ALT 4:3, AFD and USER.
  * AFD (Active Format Description) : If this mode is selected, the embedded Aspect ratio signal in the video signal will be extracted and displayed as a marker.

◦ **CENTER MARKER**
- This item 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 front of the monitor.

◦ **SAFETY AREA**
- This item used to select and control the size and avilability 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 front of the monitor.

◦ **FIT MARKER**
- This 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 ON/OFF displays as shown below.

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



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

◦ **MARKER MAT**
- This item darkens the area of the outside of MARKER.
- The degree of darkness is between OFF(0) and 7.

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

◦ **MARKER THICKNESS**
- Controls the thickness of the MARKER lines.
- The degrees of thickness are between (1) and (7).

◦ **USER MARKER H1**
- Controls the position of the first user defined horizontal marker line.
- Marker option USER needs to be selected.

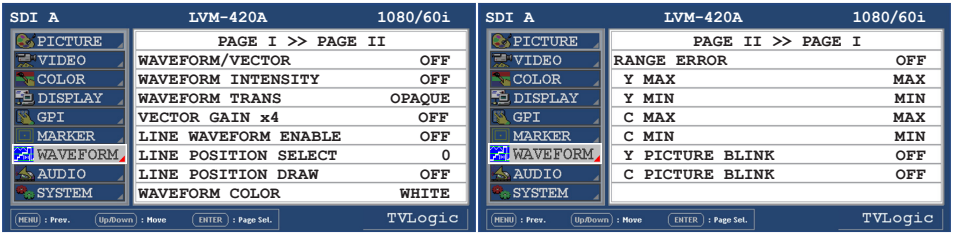
◦ **USER MARKER H2**
- Controls the position of the second user defined horizontal marker line.
- Marker option USER needs to be selected.

◦ **USER MARKER V1**
- Controls the position of the first user defined vertical marker line.
- Marker option USER needs to be selected.

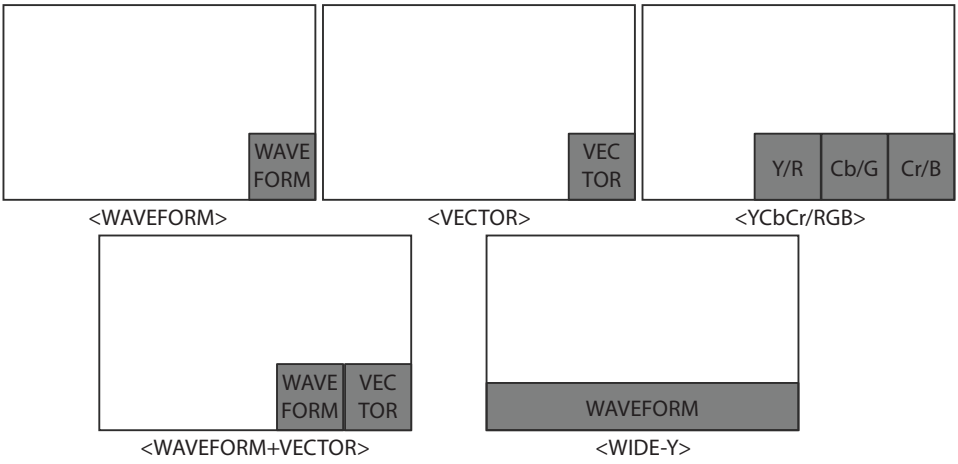
◦ **USER MARKER V2**
- Controls the position of the second user defined vertical marker line.
- Marker option USER needs to be selected.

[7] WAVEFORM

Below is the description for each function of the WAVEFORM menu.



- **WAVEFORM/VECTOR**
  - Used to set the Waveform and Vectorscope.
  - This feature is available in SDI, COMPOSITE 1/2/3, S-VIDEO and COMPONENT modes.
  - Activates in order :
    * Normal mode : OFF, WAVEFORM, VECTOR, YCbCr, RGB, W + V(WAVEFORM + VECTOR), WIDE-Y
    * PBP mode : OFF, WAVEFORM, VECTOR, MODE 1(WAVEFORM + VECTORY), WIDE
  - Displays on the bottom right of the screen and moves above the UMD, if UMD feature is selected.
    * WAVEFORM : Displays the shape and form of luminance level of a signal.
    * VECTOR : Displays color components B-Y and R-Y 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.
    * Y/Cb/Cr : Displays each Waveform for elements of the luminance and Cb/Cr of the input signal.
    * W+V : Displays Waveform and Vectorscope simultaneously.
    * WIDE-Y : Displays stretched luminance components of the input signal to fit width of the screen on the bottom of the monitor.



◦ **WAVEFORM INTENSITY**
- Controls the brightness of the WAVEFORM/VECTOR display.
- Available values are between 0 ~ 30. The higher the number the brighter the waveform will be.

◦ **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.

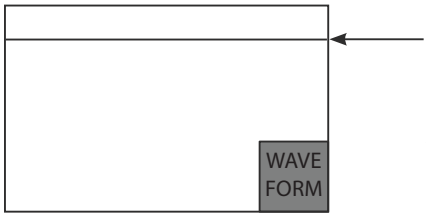
◦ **VECTOR GAIN x4**
- Used to increase the value of the Vectorscope.

◦ **LINE WAVEFORM ENABLE**
- This item is utilized to display the entire data or one line data on the waveform.

◦ **LINE POSITION SELECT**
- In WAVEFORM / VECTOR SCOPE, use the Up/Down buttons to select User's desired line.

◦ **LINE POSITION DRAW**
- ON/OFF the line indication for line select feature.
- Activates only when the LINE WAVEFORM ENABLE feature is enabled.
- When this item is set to OFF, the Line Waveform still displays if LINE WAVEFORM is enabled.

◦ **WAVEFORM COLOR**
- This item selects the color of Waveform/Vectorscope.
- Available options are White and Green.



Position changes if the value changes in LINE SELECT option and the waveform of the selected position displays.

WAVEFORM/VECTOR : WAVEFORM
LINE POSITION SELECT : ON
LINE POSITION DRAW : ON

◦ **RANGE ERROR**
- Used to display the values of Y MAX, Y MIN, C MAX, C MIN, Y PICTURE BLINK, and C PICTURE BLINK on the screen.
- Selected values in Y MAX, Y MIN, C MAX, C MIN are indicated in WAVEFORM/VECTOR or Y/Cb/Cr.
- 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 blinks.
  * In the case of RGB input, Range Error is not supported.

◦ **Y MAX**
- This item sets the maximum luminance level.
- Available values are between 0 ~ 127. Exceeded selection displays on the top portion of the waveform or display.
-In the case of RGB input, Range Error is not supported.

◦ **Y MIN**
- This item sets the minimum luminance level.
- Available values are between 0 ~ 127. Exceeded selection displays on the top portion of the waveform or display.

◦ **C MAX**
- This item sets the maximum chroma level.
- Available values are between 0 ~ 127. Exceeded selection displays on the top portion of the waveform or display.

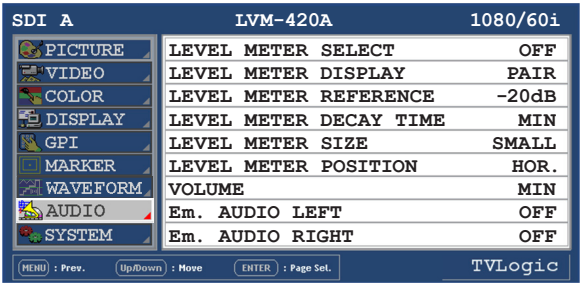
◦ **C MIN**
- This item sets the minimum chroma level.
- Available values are between 0 ~ 127. Exceeded selection displays on the top portion of the waveform or display.

◦ **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.

[8] AUDIO

Below is the description for each function of the AUDIO menu.



◦ **LEVEL METER SELECT**
- Controls the audio level meters.
- Available modes are OFF, G1+G2, G2+G3, G3+G4, G1+G3, G1+G4,G2+G4 and 16CH.
- If Main Menu window activates, the level meter displays semi-transparent even if [LEVEL METER SIZE] menu is set to opaque. It returns to normal when the Main Menu window is deactivated.

◦ **LEVEL METER DISPLAY**
- 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 DECAY TIME**
- This item sets the reduction time of the maximum indication of audio signals.
- Available values are between MIN (0) ~ MAX (30). Larger values indicate a longer time for it to display.

◦ **LEVEL METER SIZE**
- Controls the size of the audio level meters.
- Available modes are SMALL, SMALL TRANS., NORMAL, NORMAL TRANS, LARGE and LARGE TRANS.
- In SMALL, NORMAL and LARGE modes, the Level Meter appears opaque.
- In SMALL TRANS. NORMAL TRANS and LARGE TRANS Modes, the Level Meter appears semi-transparent.

◦ **LEVEL METER POSITION**
- Used to set the location and a direction of AUDIO LEVEL METER.
- Available mades are HOR, VER, BOT.
  * 16 CH(HOR.) : Displays 8 channel on top left and 8 channels on top right of the screen horizontally.
  * 16 CH(HOR.) : Displays 8 channel on center left and 8 channels on center right of the screen vertically.
  * 16 CH(BOT.) : Displays 8 channel on bottom left and 8 channels on bottom right of the screen vertically.

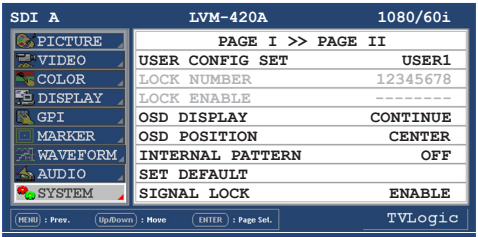
◦ **VOLUME**
- Controls the embedded audio output volume for the internal speaker of the monitor.
- Available values are between 0 ~ 30.

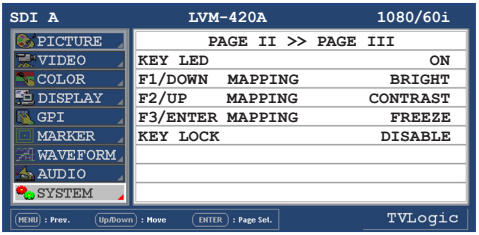
◦ **Em. AUDIO RIGHT**
- Controls embedded audio channel for right audio out internal speaker of the monitor.
- In HDMI mode, HDMI audio output.
- In COMPOSITE, S-VIDEO, COMPONENT, RGB, DVI ANALOG and DVI DIGITAL modes, the audio signal that is connected with [AUDIO IN] terminal input on the back of the monitor output.
- Available values are between OFF, CH 1 ~ CH 16, and Ext..

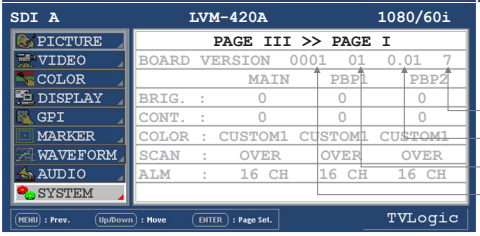
◦ **Em. AUDIO LEFT**
- Controls embedded audio channel for left audio out of internal speaker or [AUDIO OUT] in the back of the monitor.
- In HDMI mode, HDMI audio output.
- In COMPOSITE, S-VIDEO, COMPONENT, RGB, DVI ANALOG and DVI DIGITAL modes, the audio signal that is connected with [AUDIO IN] terminal input on the back of the monitor output.
- Available values are between OFF, CH 1 ~ CH 16, and Ext..

[9] SYSTEM

Below is the description for each function of the SYSTEM menu.







- **USER CONFIG SET**
  - Save and apply in three kinds of user configurations.
  - Available modes are USER1, USER2 and USER3.
  - Assignable items for each USER1, USER2 and USER3 settings are [MARKER] menu of MARKER, CENTER MARKER, SAFETY AREA, MARKER MAT and MARKER COLOR, [PICTURE] menu of BRIGHT, CONTRAST, CHROMA, PHASE, APERTURE and NOISE REDUCTION.

- **LOCK NUMBER**
  - Factory serial number of the product.

- **LOCK ENABLE**
  - Factory uses only.

- **OSD DISPLAY**
  - Controls the OSD display time.
  - Available values are 3 SEC, 20 SEC, 4 SEC ~ 19 SEC, CONTINUE, MAIN MENU 3 SEC, MAIN MENU 20 SEC and MAIN MENU CONTINUE.
    * MAIN MENU 3 SEC : The main OSD menu will be disappeared after 3 seconds and the other information windows are disappeared after 2 seconds.
    * MAIN MENU 20 SEC : The main OSD menu will be disappeared after 20 seconds and the other information windows are disappeared after 2 seconds.
    * MAIN MENU CONTINUE : The main OSD menu will not be disappeared and the other information windows are disappeared after 2 seconds.

Menu Contents

- **OSD POSITION**
  - Controls the OSD position.
  - Available positions are Center, Top-Left(L-T), Bottom-Left(L-B), Top-Right(T-R) and Bottom-Right(R-B).

- **INTERNAL PATTERN**
  - This item generates internal white pattern. The white level select between 0% and 100% (Per 5% increase or decrease).

- **SET DEFAULT**
  - User can use the SET DEFAULTS.
  - Feature to initialize the values to 0 of BRIGHT, CONTRAST, PHASE, CHROMA, APERTURE and NOISE REDUCTION of the monitor.

- **SIGNAL LOCK**
  - Signal Lock selects the video output by using input signal synchronization.
  - ENABLE : This function outputs the video using input singal synchronization.
  - DISABLE : This function outputs the video using self-created synchronization.
    When the input singal or input format are changed, the monitor will response quickly.

- **KEY LED**
  - Controls key LED On/Off.
  - If the button with LED is pressed with the KEY LED Off, LED comes on but goes off after 5 seconds later.

- **F1/DOWN MAPPING**
  - User can select the function for F1/DOWN button.
  - Selectable functions : BRIGHT, CONTRAST, VOLUME FREEZE, WAVEFORM, TIMECODE, CC SEL, ALM SEL, OUTPUT MODE, FAST MODE, DITHERING, FILTER, FORCE psf, UMD.

- **F2/UP MAPPING**
  - User can select the function for F2/UP button.
  - Selectable functions : BRIGHT, CONTRAST, VOLUME FREEZE, WAVEFORM, TIMECODE, CC SEL, ALM SEL, OUTPUT MODE, FAST MODE, DITHERING, FILTER, FORCE psf, UMD.

- **KEY LOCK**
  - This item locks all buttons except power, input select, and menu buttons.

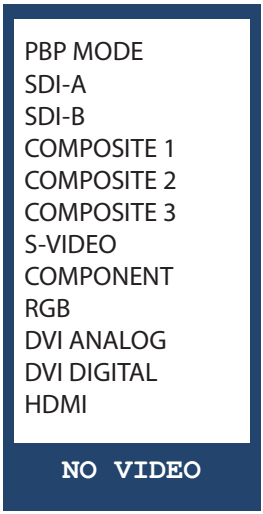
- **INFOMATION**
  - Board version and current status information.

Other Functions

[1] INPUT SIGNAL

- This product is capable of processing all input signals usable.
- TheInput settings are as follows:

1. Press the MENU button and activate the menu below :



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

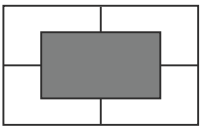
[2] SCAN BUTTON

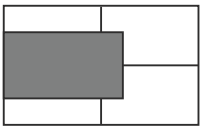
- **This product supports various scan modes.**
- **Press [DISPLAY] - [SCAN] menu on the monitor OSD to activate different scan modes.**

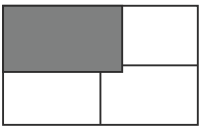
1. Press [SCAN] button continuously to activate various scan modes:
OVER SCAN -> ZERO SCAN -> UNDER SCAN -> 2:1 SCAN -> 1:1 SCAN -> FIT WIDTH -> ZOOM(PBP 16:9mode)

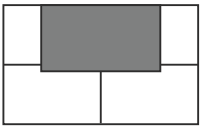
2. Scan mode types are differed by connected signal.
   - SDI, COMPONENT, RGB, DVI ANALOG, COMPOSITE 1/2/3 and S-VIDEO :
     OVER SCAN -> ZERO SCAN -> UNDER SCAN -> 2:1 SCAN -> 1:1 SCAN -> FIT WIDTH -> USER SCAN -> ZOOM(PBP 16:9mode)
   - DVI DIGITAL, HDMI :
     OVER SCAN -> ZERO SCAN -> UNDER SCAN -> 2:1 SCAN -> 1:1 SCAN -> USER ASPECT -> ZOOM (PBP 16:9mode)

3. 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.
   - UNDER SCAN : Zooms in/out of the image without changing the aspect ratio. Also, displays the data at the top of the horizontal blanking block.
   - 2:1 SCAN : Magnifies the original image two times. This feature is available only when the size of the original image is ½ size or smaller than the screen size.
   - 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 -> MID LEFT -> TOP LEFT -> TOP MID -> TOP RIGHT -> MID RIGHT -> BOT RIGHT -> BOT MID -> BOT LEFT
   - FIT WIDTH : In SD mode, zooms in to fit width of the original image to the width of the screen without changing the aspect ratio.
   - USER ASPECT : Displays in user aspect ratio of HORIZONTAL and VERTICAL value that is selected under USER ASPECT item in [PICTURE] MENU.
   - 3 X ZOOM : This feature is only available under PBP 16:9 mode and displays the image with 3 x zoom in. When "3 X ZOOM" message window appears, press [ENTER] button to activate vertical position control of image. Use [UP]/[DOWN] button to adjust the vertical position of image. Press [ENTER] button again to activate horizontal position control of image. Use [UP]/[DOWN] button to adjust the horizontal position of image.


<MID CENTER>


<MID LEFT>


<TOP LEFT>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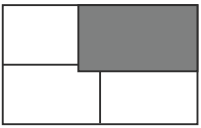
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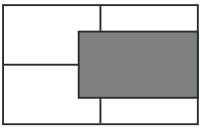
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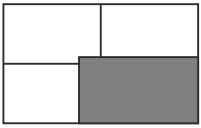
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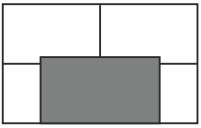
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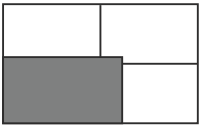
<BOT LEFT>

<Position change in 1:1 SCAN>

[3] ASPECT BUTTON

1. Four different aspect modes are available.
   When input signal is SDI -A/B, Composite 1/2/3 and Input Signal Format is SD :

   1) 4:3 mode : Cuts left and right of the original image to fit to 4:3 aspect ratio.
   2) 16:9 mode : Stretches the image in "1) 4:3 mode" to fit to 16:9 aspect ratio.
   3) 4:3Ex : Extends the image vertically without altering the source image.
   4) 16:9Ex : Stretches the image in "3) 4:3 mode(extend)" to fit to 16:9 aspect ratio.
      * NTSC and PAL signals are known to be 4:3 aspect ratio signals, but their aspect ratio is not exactly 4:3. Therefore, select "1) 4:3 mode) to display the exact 4:3 aspect ratio, select "3) 4:3 mode (extend)" to display the image without altering the source image.

2. When input signal is COMPOSITE 1/2/3, S-VIDEO, RGB, DVI ANALOG, DVI DIGITAL or HDMI mode, all "1 – 1),2),3),4)" display the image in 4:3 and 16:9 without altering the source image.

3. For the above aspect modes, ZERO SCAN is the standard scan mode. And, in the other scan modes, aspect ratio changes using the image in its selected scan mode.

DVI ANALOG/DVI DIGITAL/HDMI Support Resolution

DVI ANALOG/DVI DIGITAL/HDMI SUPPORT RESOLUTION

- **DVI-ANALOG mode support resolution:**

Resolution	Frequency
640 X 480	60Hz, 75Hz
720 X 400	70Hz
800 X 600	60Hz, 72Hz, 75Hz
1024 X 768	60Hz, 70Hz, 75Hz
1366 X 768	60Hz / 75Hz
1280 X 1024	60Hz / 75Hz
1600 X 1200	60Hz
1920 X 1080	60Hz

- **DVI DIGITAL/HDMI Graphic mode support resolution:**

Resolution	Frequency
640 X 480	60Hz, 75Hz
800 X 600	60Hz, 72Hz, 75Hz
1024 X 768	60Hz, 70Hz, 75Hz
1366 X 768	60Hz / 75Hz
1280 X 1024	60Hz / 75Hz
1600 X 1200	60Hz
1920 X 1080	60Hz

- **DVI DIGITAL/HDMI Video mode supports the following input signals:**

SMPTE-274M	1080i (60 / 59.94)
SMPTE-296M	720p (60 / 59.94)
SMPTE-125M	480i (59.94), 480p (59.94)

- **DVI DIGITAL/HDMI mode is separated into Graphic mode and Video mode.**
- **In DVI ANALOG/DIGITAL/HDMI mode, ZERO scan must be selected for normal function.**
- **If the input image is in non-wide mode, press ASPECT button to change to wide display.**

Product Specifications

		LVM-420A	
LCD	Size	42″	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.4845(H) x 0.4845(W) mm	
	Color Depth	1.06B(R/G/B 10bit, Dither)	
	Viewing Angle	H : 178 degrees / V : 178 degrees	
	Luminance of white	450 cd/ m^2(Center)	
	Contrast Ratio	4000 : 1	
	Display Area	930.24(H) x 523.26(V) mm	
Input	1 X DVI-I	DVI-I(RGB) IN	
	3 X BNC	Analog Input	
	2 X BNC	SDI A/B Channel Input	
	1 X HDMI	HDMI Input	
Output	3 X BNC	Analog Output	
	2 X BNC	SDI A/B Channel (Loop Through Out)	
Input Signal	Analog	Composite / S-Video / Component / RGB	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA / IBM Modes	
	HDMI	480i / 480p / 720p / 1080i & VESA / IBM Modes	
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-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-372M (Dual Link Option)	Dual HD-SDI YPbPr (4:2:2)	1080p (50 / 59.94 / 60)
		Dual HD-SDI YPbPr/RGB (4:4:4)	1080i (50 / 59.94 / 60)
			1080p/psf (30/29.97/25/24/23.98)
	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)	
	2K Format	2048 X 1080 (23.98p/psf, 24p/psf)	
Audio In		Embedded Audio / Analog Stereo (Phone Jack)	
Audio Out		Analog Stereo (Phone Jack)	
Power		AC100~240V(50~60Hz)	
Power Consumption (Approx.)		120 Watts(Max)	
Operating Temperature		0°C to 35°C (32°F to 95°F)	
Storage Temperature		-20℃ to 60℃ (-4°F to 140°F)	
Main Body Dimensions (mm/inch)		985x 577.9 x 96.4 (38.78 x 22.75 x 3.79)	
Main Body Dimensions (with stand)		985x 632 x 96.4 (38.78 x 24.9 x 10)	
Weight		30Kg / 66.13lb	
Accessory		AC Power cord, Manual, Remote controller	
Option		Carrying Case	

* Above specifications may be changed without notice.

Product Specifications

		LVM-460A	
LCD	Size	46"	
	Resolution	1920 x 1080 (16:9)	
	Pixel Pitch	0.53025(H) x 0.53025(W) mm	
	Color Depth	1.06B(R/G/B 10bit, Dither)	
	Viewing Angle	H : 178 degrees / V : 178 degrees	
	Luminance of white	450 cd/ m^2(Center)	
	Contrast Ratio	4000 : 1	
	Display Area	1018.08(H) x 572.67(V) mm	
Input	1 X DVI-I	DVI-I(RGB) IN	
	3 X BNC	Analog Input	
	2 X BNC	SDI A/B Channel Input	
	1 X HDMI	HDMI Input	
Output	3 X BNC	Analog Output	
	2 X BNC	SDI A/B Channel (Loop Through Out)	
Input Signal	Analog	Composite / S-Video / Component / RGB	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA / IBM Modes	
	HDMI	480i / 480p / 720p / 1080i & VESA / IBM Modes	
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-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-372M (Dual Link Option)	Dual HD-SDI YPbPr (4:2:2)	1080p (50 / 59.94 / 60)
		Dual HD-SDI YPbPr/RGB (4:4:4)	1080i (50 / 59.94 / 60)
			1080p/psf (30/29.97/25/24/23.98)
	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)	
	2K Format	2048 X 1080 (23.98p/psf, 24p/psf)	
Audio In		Embedded Audio / Analog Stereo (Phone Jack)	
Audio Out		Analog Stereo (Phone Jack)	
Power		AC100~240V(50~60Hz)	
Power Consumption (Approx.)		115 Watts(Max)	
Operating Temperature		0°C to 35°C (32°F to 95°F)	
Storage Temperature		-20℃ to 60℃ (-4°F to 140°F)	
Main Body Dimensions (mm/inch)		1070.6 x 625.5 x 100.6 (42.15 x 24.62 x 3.96)	
Main Body Dimensions (with stand)		1070.6 x 680 x 255 (42.15 x 26.77 x 10)	
Weight		33Kg / 72.75lb	
Accessory		AC Power cord, Manual, Remote controller	
Option		Carrying Case	

* Above specifications may be changed without notice.

Product Specifications

		LVM-550A	
LCD	Size	54.6"	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.4845(H) x 0.4845(W) mm	
	Color Depth	1.06B(R/G/B 10bit, Dither)	
	Viewing Angle	H : 178 degrees / V : 178 degrees	
	Luminance of white	450 cd/ m^2(Center)	
	Contrast Ratio	4000 : 1	
	Display Area	1209.6(H) x 680.4(V) mm	
Input	1 X DVI-I	DVI-I(RGB) IN	
	3 X BNC	Analog Input	
	2 X BNC	SDI A/B Channel Input	
	1 X HDMI	HDMI Input	
Output	3 X BNC	Analog Output	
	2 X BNC	SDI A/B Channel (Loop Through Out)	
Input Signal	Analog	Composite / S-Video / Component / RGB	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA / IBM Modes	
	HDMI	480i / 480p / 720p / 1080i & VESA / IBM Modes	
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-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-372M (Dual Link Option)	Dual HD-SDI YPbPr (4:2:2)	1080p (50 / 59.94 / 60)
		Dual HD-SDI YPbPr/RGB (4:4:4)	1080i (50 / 59.94 / 60)
			1080p/psf (30/29.97/25/24/23.98)
	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)	
	2K Format	2048 X 1080 (23.98p/psf, 24p/psf)	
Audio In		Embedded Audio / Analog Stereo (Phone Jack)	
Audio Out		Analog Stereo (Phone Jack)	
Power		AC100~240V(50~60Hz)	
Power Consumption (Approx.)		135 Watts(Max)	
Operating Temperature		0°C to 35°C (32°F to 95°F)	
Storage Temperature		-20℃ to 60℃ (-4°F to 140°F)	
Main Body Dimensions (mm/inch)		1262.4 x 733.2 x 95.5 (49.7 x 28.9 x 3.8)	
Main Body Dimensions (with stand)		1262.4 x 786.4 x 255 (49.7 x 30.9 x 10)	
Weight		42Kg / 92.59 Lb	
Accessory		AC Power cord, Manual, Remote controller	
Option		Carrying Case	

* Above specifications may be changed without notice.

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" 21"* 24" 32" 40" 46" 55"

RACK MOUNT ANY DISPLAY UP TO 24"

7 inch

8.4 inch

9 inc h

15 inch

17 inch

21 inch

24 inch

Memo

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