



Multi Format Broadcast LCD Monitor

Operation Manual_v2.5

SWM-171A
SWM-240A
SWM-320A
SWM-420A
SWM-460A
SWM-550A

TVlogic Always ON-AIR



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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 interference 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.

1. Caution

- **Always use set voltage.**
- **AC 100 ~ 240V (1.6A/50~60Hz)**
- **DC 12V**
- All operating instructions must be read and understood before the product is operated.
- These safety and operating instructions must be kept in safe place for future reference.
- All warnings on the product and in the instructions must be observed closely.
- All operating instructions must be followed.
- Do not use attachments not recommended by the manufacturer. Use of inadequate attachments can result in accidents.
- This product must be operated on a power source specified on the specification label. If you are not sure of the type of power supply used in your home, consult your dealer or local power company. For units designed to operate on batteries or another power source, refer to the operating instructions.
- The power cords must be routed properly to prevent people from stepping on them or objects from resting on them. Check the cords at the plugs and product.
- Do not overload AC outlets or extension cords. Overloading can cause fire or electric shock.
- Never insert an object into the product through vents or openings. High voltage flows in the product, and inserting an object can cause electric shock and/or short internal parts. For the same reason, do not spill water or liquid on the product.
- Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified service person to perform servicing.
- If any of the following conditions occurs, unplug the power cord from the AC outlet, and request a qualified service person to perform repairs.
 - a. When the power cord or plug is damaged.
 - b. When a liquid was spilled on the product or when objects have fallen into the product.
 - c. When the product has been exposed to rain or water.
 - d. When the product does not operate properly as described in the operating instructions. Do not touch the controls other than those described in the operating instructions. Improper adjustment of controls not described in the instructions can cause damage, which often requires extensive adjustment work by a qualified technician.
 - e. When the product has been dropped or damaged.
 - f. When the product displays an abnormal condition. Any noticeable abnormality in the product indicates that the product needs servicing.
- In case the product needs replacement parts, make sure that the service person uses replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. Use of unauthorized parts can result in fire, electric shock and/or other danger.
- Upon completion of service or repair work, request the service technician to perform safety checks to ensure that the product is in proper operating condition.

1. Caution

- When mounting the product on a wall or ceiling, be sure to install the product according to the method recommended by the manufacturer.
- Unplug the power cord from the AC outlet before cleaning the product. Use a damp cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.
- Unplug the power cord from the AC outlet if you do not use the product for considerably long time.
- Do not use the product near water, such as bathtub, washbasin, kitchen sink and laundry tub, swimming pool and in a wet basement.
- Keep the product away from direct rays of the Sun-light.
- Do not place the product on an unstable cart, stand, tripod or table. Placing the product on an unstable base can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the product. When mounting the product on a wall, be sure to follow the manufacturer's instruction. Use only the mounting hardware recommended by the manufacturer.
- When relocating the product placed on a cart, it must be moved with the utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.
- The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings. This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.
- The LCD panel used in this product is made of glass. Therefore, it can break when the product is dropped or applied with impact. Be careful not to be injured by broken glass pieces in case the LCD panel breaks.
- Keep the product away from heat sources such as radiators, heaters, stoves and other heat generating products (including amplifiers).

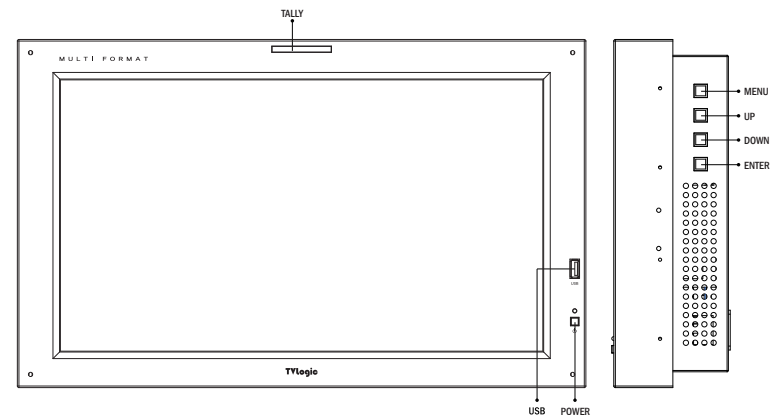
2. Main Features

SWM-Series Monitors contain the following features:

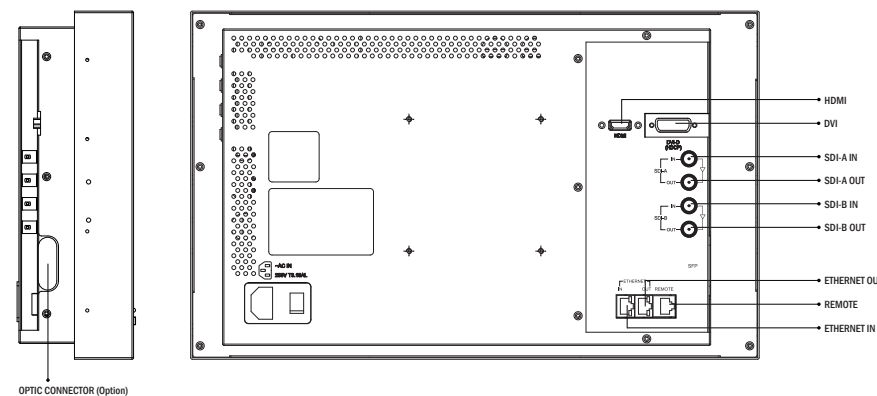
- Compatible with various SDI signal formats**
 - This product is compatible with various SDI signals - 480i, 576i, 1080i, 1080p, 1080psf
- All-in-one type system**
 - Slim and all-in-one type monitor that requires no additional accessories, for optimized space utilization.
 - This product is specially designed for studio wall.
- Wide Screen support**
 - This product supports native 16:9 aspect ratio.
- Remote control function**
 - This product can simply be Remote-controlled by cable connection without additional peripheral equipment attached to unit.
- UMD feature support**
 - This product supports protocols provided by TVLogic or TSL protocol.
- Ethernet & USB support**
 - Supports Ethernet and USB connection for program download and monitor control.
- DVI/HDMI(HDCP) Input support**
 - DVI(Digital) and HDMI(w/ HDCP) inputs are available without the need of extra accessories.
- Dual Link support**
 - Supports Dual link YCbCr/RGB 4:4:4 and YCbCr 4:2:2 formats.
- 3G support**
 - Supports 3G A/B formats.
- Auto Color Calibration support**
 - Supports Auto Color Calibration by directly connecting the color probes to the product.
- Optical support (Option)**
 - Optical fiber interface is supported so that SDI input is available without the need of extra accessories.
- Additional features**
 - Wide Viewing Angle, Loop Through (SDI and Ethernet) and OSD user interface.

3. Controls & Functions

SWM-171A : FRONT / RIGHT

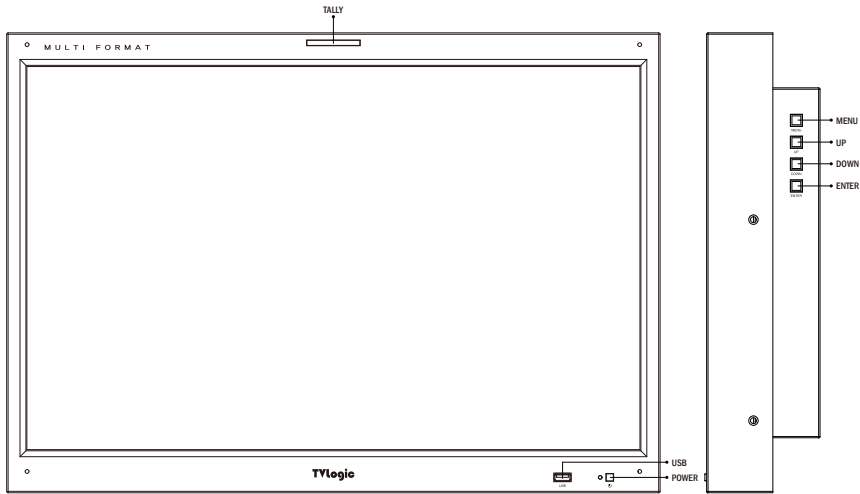


SWM-171A : REAR / LEFT



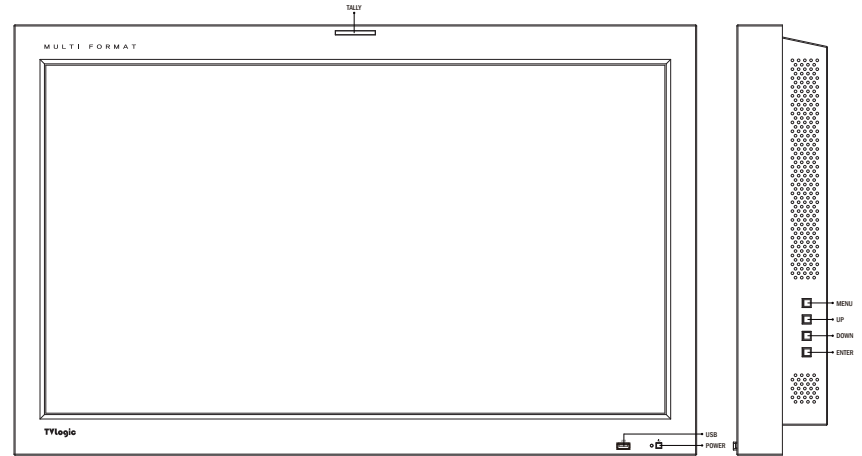
3. Controls & Functions

SWM-240A : FRONT / RIGHT

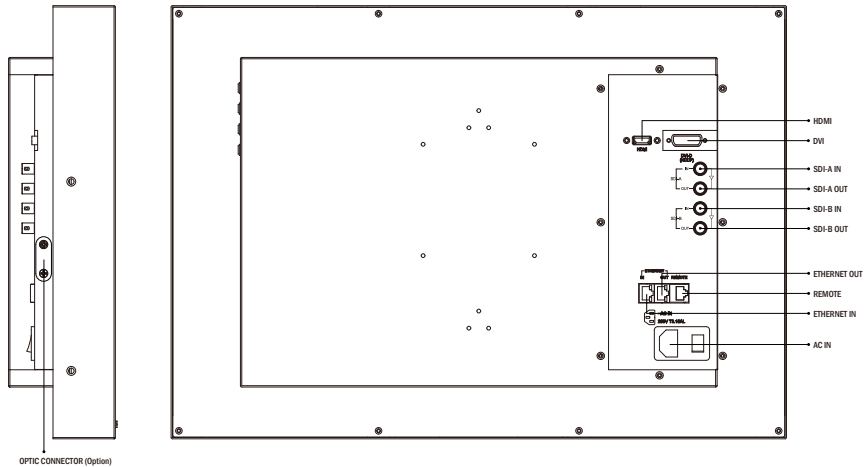


3. Controls & Functions

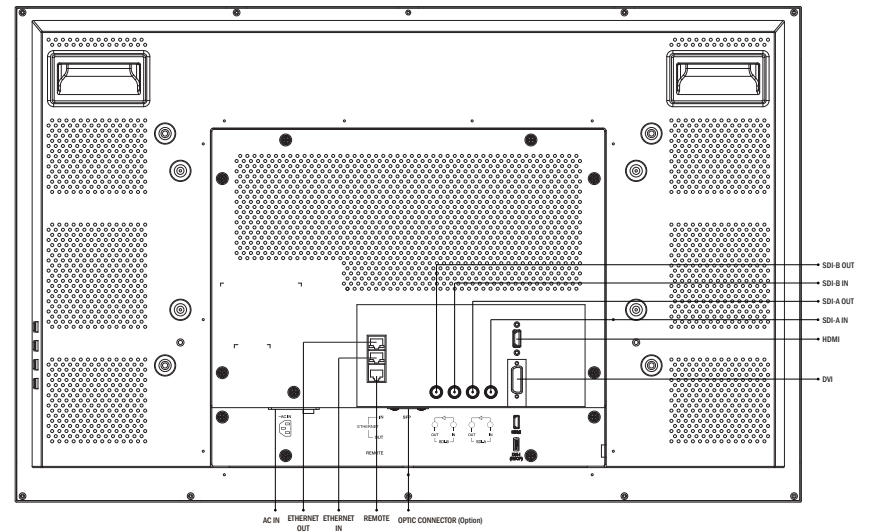
SWM-320A : FRONT / RIGHT



SWM-240A : REAR / LEFT



SWM-320A : REAR



3. Controls & Functions

FRONT

- **[STANDBY] lamp**
 - It affords power supply, which may be indicated by indication lamp. The lamp is RED during power supply and GREEN during system is in operation. In case of power cut and sudden shut off of the power, our monitor keep previous setup stage.
- **[POWER] button**
 - Used to turn power on and off.
- **[USB]**
 - This terminal is used to upgrade the firmware or color calibration made by TVLogic.
- **[TALLY] lamp**
 - LED indicating monitors current status.

RIGHT

- **[MENU] button**
 - Used to activate the OSD menu.
 - When the OSD menu is activated, press this button to exit from the menu.
- **[DOWN] Button**
 - Used to move down through the menus during the OSD menu activation and also to decrease the value of the selected feature.
 - When the OSD menu is inactivated, this button is used to activate function that is selected in Key Function 1.
- **[UP] Button**
 - Used to move up through the menus during the OSD menu activation and also to increase the value of the selected feature.
 - When the OSD menu is inactivated, this button is used to activate function that is selected in Key Function 2.
- **[ENTER] button**
 - Used to confirm a chosen value (or mode).
 - May also be used to control the Bright/Contrast/Chroma/Aperture value during the OSD menu inactivation. Use the UP/DOWN buttons to adjust the value.

3. Controls & Functions

REAR /LEFT

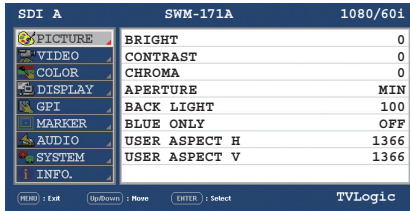
- **[HDMI(HDCP)] (HDMI)**
 - Signal input terminal for HDMI signal.
- **[DVI-I]**
 - Signal input terminal for DVI DIGITAL signal.
- **[SDI-A IN] (BNC)**
 - HD/SD SDI signal input terminal for SDI A.
- **[SDI-A OUT] (BNC)**
 - HD/SD SDI signal output terminal for SDI A.
- **[SDI-B IN] (BNC)**
 - HD/SD SDI signal input terminal for SDI B.
- **[SDI-B OUT] (BNC)**
 - HD/SD SDI signal output terminal for SDI B.
- **[Ethernet IN]**
 - Ethernet port for easy updates on new functions and error correction.
- **[Ethernet OUT]**
 - Supports Ethernet through out function.
- **[REMOTE] (RJ-45)**
 - Provides connection to control equipment for external monitor control.
- **[AC IN]**
 - Used to supply AC power; 100V~240V input range.
- **[OPTIC] (SFP optical connector, Option)**
 - Optical Fiber terminal for SDI signal input.

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

4. Menu Tree & Adjustment

[1] Menu Construction

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



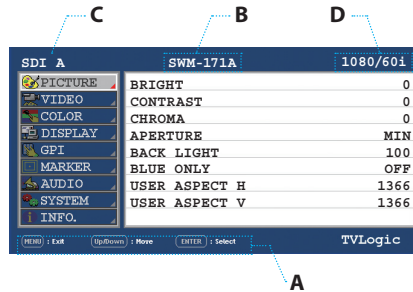
[2] Menu Control

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

[3] Menu Control Sequence

- Press MENU button to activate the OSD menu on the screen.
- Move to a desired sub-menu with the UP/DOWN button.
- After selecting a sub-menu, press ENTER button to select an item with UP/DOWN button.
- Press ENTER button to select the desired item. (The selected sub-menu will be highlighted.)
- Press ENTER button to save the new value after adjusting the value with UP/DOWN button.
- Press MENU button once to return to previous menu and if there is no previous menu, the OSD menu will be removed from the screen.
- To view next page in the sub menu, press ENTER button at PAGE I >> PAGE II.

[4] Main Menu Window information



- MENU, UP/DOWN, ENTER Button Status.
- Model name(SWM-171A).
- Current input signal.
- Current input signal resolution.

4. Menu Tree & Adjustment

[5] Menu Tree

PICTURE	BRIGHT
	CONTRAST
	CHROMA
	PHASE
	APERTURE
	BACK LIGHT
	BLUE ONLY
VIDEO	USER ASPECT HORIZONTAL
	USER ASPECT VERTICAL
	DITHERING
	FILTER
	FAST MODE
	FORCE psf
	FILM MODE DETECTION
	SDI FORMAT
	SDI SAMPLING
	3G FORMAT
VIDEO RANGE SELECT	
COLOR	COLOR TEMP
	GAIN RED
	GAIN GREEN
	GAIN BLUE
	BIAS RED
	BIAS GREEN
	BIAS BLUE
	COLOR COPY
GAMMA CURVE	

DISPLAY	HD DISPLAY MODE
	TIME CODE ENABLE
	ORBITER CIRCUIT
	CLOSED CAPTION
	608 CAPTION SELECT
	708 SERVICE SELECT
	TELETEXT PAGE
	H/V DELAY
GPI	SCAN
	ASPECT
	GPI 1~GPI 8
	UMD DISPLAY
	D-UMD TALLY TYPE
	TALLY 1 COLOR / B0:0 B1:0
	TALLY 2 COLOR / B0:0 B1:0
	TALLY 3 COLOR / B0:0 B1:0
	TALLY 4 COLOR / B0:0 B1:0
	DHCP
	IP ADDRESS
	SUBNET MASK
	GATEWAY
	PORT NO
	NETWORK SETTING APPLY
	UMD CHARACTER
UMD CHARACTER COLOR	
UMD BG.TRANS	

4. Menu Tree & Adjustment

[5] Menu Tree

MARKER	MARKER	SYSTEM	USER CONFIG SET
	MARKER DISPLAY		SERIAL NUMBER
	CENTER MARKER		OSD DISPLAY
	SAFETY AREA		OSD POSITION
	FIT MARKER		INTERNAL PATTERN
	MARKER MAT		SET DEFAULT
	MARKER COLOR		SIGNAL LOCK
	MARKER THICKNESS		KEY LED
	USER MARKER H1		F1/DOWN MAPPING
	USER MARKER H2		F2/UP MAPPING
	USER MARKER V1		DEVICE
	USER MARKER V2		COLOR CALIBRATION
AUDIO	LEVEL METER SELECT	TARGET LUMINANCE	
	LEVEL METER DISPLAY	K-10 CHANNEL	
	LEVEL METER REFERENCE	COLORSPACE	
	LEVEL METER DECAY TIME	CALIBRATION START	
	LEVEL METER SIZE	MEASUREMENT	
	LEVEL METER POSITION	KEY LOCK	
		COPY DATA	
	S/W UPGRADE		
	BOARD VERSION	INFO.	
	SUB VERSION		
	BRIG		
	CONT.		
	COLOR		
	SCAN		
	ALM		
	C.C		
	T.C		

5. Menu Operations

[1] PICTURE

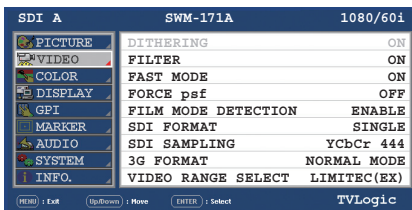
Menu Item	Value
BRIGHT	0
CONTRAST	0
CHROMA	0
APERTURE	MIN
BACK LIGHT	100
BLUE ONLY	OFF
USER ASPECT H	1366
USER ASPECT V	1366

- **BRIGHT**
- Used to set the brightness(=offset) level from -100 to 100.
- **CONTRAST**
- Used to set the contrast(gain) level from -100 to 100.
- **CHROMA**
- Used to set the saturation level from -50 to 50.
- **APERTURE**
- Used to set the sharpness level from 0 to 25.
- **BACK LIGHT**
- Used to control the backlight level of the LCD panel from 0 to 200.
- **BLUE ONLY**
- Activates in the order of [Off]-[Blue Only]-[Mono]-[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.

- **USER ASPECT HORIZONTAL**
- Used to set the aspect ratio of HORIZONTAL value.
- Control Range : 1280 ~ 1920
- **USER ASPECT VERTICAL**
- Used to set the aspect ratio of VERTICAL value.
- Control Range : 720 ~ 1080

5. Menu Operations

[2] VIDEO

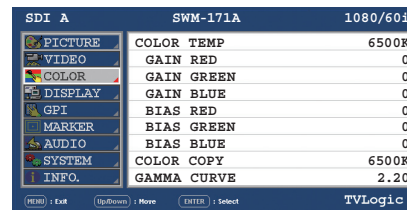


- **DITHERING**
 - This item enables dithering to 10 bits. (Not supported in this model)
- **FILTER**
 - This item toggles the 4:2:2 video processing filter On/Off.
 - To eliminate ringing artifacts under 4:2:2 or 4:4:4 sources, please set this Filter to ON or OFF.
- **FAST MODE**
 - Used to minimize the de-interlacing processing time delay and improves the quality of fast moving and fine details under interlaced format.
 - Since the function of this feature is to minimize the de-interlacing delay, it will not be effective under progressive format.
 - Feature bypasses deinterlacer, playing back 2 full fields per frame. Also reduces signal processing delay for reduced audio/video delay.
- **FORCE psf**
 - Used to force 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**
 - Used to select the SDI input format between Single link and Dual link.

- **SDI SAMPLING**
 - Used to select input SDI sampling mode in Dual link.
 - Available modes are YCbCr 4:4:4, RGB 4:4:4 and YCbCr 4:2:2.
- **3G FORMAT**
 - Used to select input format of SDI 3G A/B support(NORMAL MODE, A 444 10BIT_YCbCr, A 444 10BIT_RGB, A 444 12BIT_YCbCr, A 444 12BIT_RGB, A 422 12BIT_YCbCr, B 444 10/12BIT_YCbCr, B 444 10/12BIT_RGB, B 422 12BIT_YCbCr, B 422 10BIT_YCbCr, 60P).
 - Automatically detects when Payload signal appears in normal mode.
- **VIDEO RANGE SELECT (HDMI YCbCr Mode is not supported.)**
 - Used to select the range of brightness.
 - * LIMITED(EX) : Output : 16 ~ 255 (HDMI/SDI)
 - * FULL : Output : 0 ~ 255 (HDMI/SDI)
 - * LIMITED : Output : 16 ~ 235(SDI)
 - * EXTENTION : Input : 16 ~ 235 Output : 0 ~ 255 (HDMI)
 - In the HDMI mode, activates only when the color format is RGB.
 - (When the color format is YCbCr, operates only within the limited range.)

5. Menu Operations

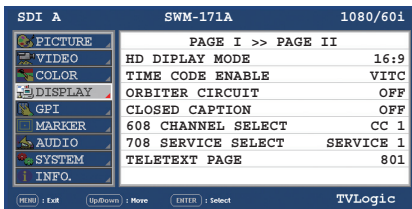
[3] COLOR



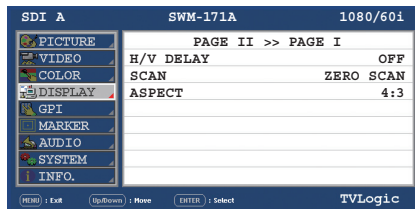
- **BIAS RED**
 - Used to set Red Bias(or Offset, mainly affects on Black level) from -100 to 100.
 - Adjusts the red color of dark section.
 - Only available in CUSTOM 1/2/3 mode.
- **BIAS GREEN**
 - Used to set Green Bias(or Offset, mainly affects on Black level) from -100 to 100.
 - Adjusts the green color of dark section.
 - Only available in CUSTOM 1/2/3 mode.
- **BIAS BLUE**
 - Used to set Blue Bias(or Offset, mainly affects on Black level) from -100 to 100.
 - Adjusts the blue color of dark section.
 - Only available in CUSTOM 1/2/3 mode.
- **COLOR COPY**
 - Used to copy the R/G/B Gain value of pre-stored color temperature settings.
 - In CUSTOM mode, find and select the color temperature to be used by using UP/DOWN button and press ENTER button to copy and apply the Gain Value to GAIN RED, GAIN GREEN, GAIN BLUE.
 - Only available in CUSTOM 1/2/3 mode.
- **GAMMA CURVE**
 - This item is used when user want to change the Gamma curve as he/she wishes between 1.00 and 3.00.
- **COLOR TEMP**
 - Used to control color temperature and allow instant access to preset color temperature settings.
 - Available values are 3200K, 5000K, 5600K, 6500K, 9300K and CUSTOM 1/2/3.
 - In CUSTOM1/2/3 mode, user can define custom RGB GAIN and BIAS values.
- **GAIN RED**
 - Used to set Red Gain(or Picture, Contrast) level from -256 to 255.
 - Adjusts the red color of bright section.
 - Only available in CUSTOM 1/2/3 mode.
- **GAIN GREEN**
 - Used to set Green Gain(or Picture, Contrast) level from -256 to 255.
 - Adjusts the green color of bright section.
 - Only available in CUSTOM 1/2/3 mode.
- **GAIN BLUE**
 - Used to set Blue Gain(or Picture, Contrast) level from -256 to 255.
 - Adjusts the blue color of bright section.
 - Only available in CUSTOM 1/2/3 mode.

5. Menu Operations

[4] DISPLAY



- **HD DISPLAY MODE**
 - Used to control the display ratio of HD mode.
 - Available values are 16:9, 1.85:1 and 2.35:1.
- **TIME CODE ENABLE**
 - Used to display the Time Code.
 - Available modes are VITC, LTC and OFF.
- **ORBITER CIRCUIT**
 - Used to prevent image sticking effect on LCD Panels when signal input is used. The user may decide number of pixels to move.
 - The number of pixels should be within range between MIN(0) and MAX(100). Moving speed is 10 minutes per one pixel line.
- **CLOSED CAPTION**
 - Used to select 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
- **608 CHANNEL SELECT**
 - Used to select Closed Caption 608 channel.
 - Supports CC1~CC4.
- **708 CHANNEL SELECT**
 - Used to select Closed Caption 708 channel.
 - Supports SERVICE 1~SERVICE 6.
- **TELETEXT PAGE**
 - Used to set the TELETEXT PAGE of OP47 and OP42.



- **H/V DELAY**
 - Used to check horizontal sync and vertical sync simultaneously by moving the display to the left, right, up and down.
 - In this mode, the brightness of image automatically increase for easy verification of synchronized signals
- **SCAN**
 - Used to change the scan mode.
 - Press the F1/UP and F2/DOWN buttons to activate through the scan modes:
 - * See the "8. Other Functions -> [2] SCAN" page for more information.
- **ASPECT**
 - 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.
 - See section "8. Other Functions [1] ASPECT" page for more information.

5. Menu Operations

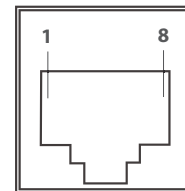
[5] GPI



- **This product provides a REMOTE CONTROL mode. The user may connect 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 : SDI-A CHANNEL
 - PIN 2 : SDI-B CHANNEL
 - PIN 3 : DVI-DIGITAL CHANNEL
 - PIN 4 : HDMI CHANNEL
 - PIN 5 : TALLY R
 - PIN 6 : TALLY G
 - PIN 7 is POWER ON/OFF use only, PIN 8 is GND
- Use the ENTER button and UP/DOWN button to set the desired function.

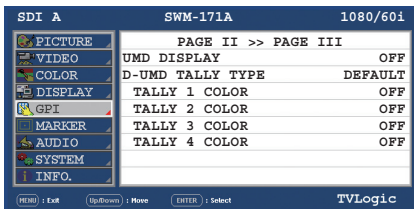
REMOTE (RJ-45)

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



Menu Classification	Settable Values
PIN 1~6	NONE, SDI-A, SDI-B, DVI-DIGITAL, HDMI, OPTICAL(Optional), 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, OP47, OP42, OP47/42(AUTO), 708-KOR, TELETEXT PAGE 801, TELETEXT PAGE 888, TELETEXT PAGE 889
PIN 7	POWER ON/OFF CONTROL
PIN 8	GND

[5] GPI



● UMD DISPLAY (Under Monitor Display)

- Used to set input source ID mode.
- Available modes are UMD, ANC, D-UMD(S-8C), D-UMD(S-16C), D-UMD(D-8C) and OFF.
- 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 (V5.0).
- * D-UMD(S-16C) : Displays incoming data of 16 characters and tally signal from TSL protocol (V5.0).
- * D-UMD(D-8C) : Displays incoming data of two pairs of 8 character strings and tally signals from TSL protocol (V5.0).

● D-UMD TALLY TYPE

- Used to set Tally type configuration in D-UMD(D-8C) and UMD DISPLAY.
- Configuration values are DEFAULT and USER COLOR.
- * DEFAULT : Existing TVLogic operating system (VRT)
- * USER COLOR : User configuration settings on each TALLY color type.
- TALLY1 COLOR ~ TALLY4 COLOR are activated when USER COLOR is selected
- 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 / TALLY2 COLOR / TALLY3 COLOR / TALLY4 COLOR

- Used to set the color of each TALLY 1, TALLY 2, TALLY 3 and TALLY 4.
- Available colors are RED, GREEN and YELLOW.
- B0:0 B1:0 / B0:1 B1:0 / B0:0 B1:1 / B0:1 B1:1 (OFF, WHITE, RED, GREEN, BLUE, YELLOW, CYAN, MAGENTA)
- Activates only when the D-UMD TALLY TYPE is set to USER TALLY, USER CHAR or USER BG.
- Available values are OFF, WHITE, RED, GREEN, BLUE, YELLOW, CYAN and MAGENTA.

[5] GPI

<Dynamic UMD Protocol (TSL V5.0)>

- * 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.



5. Menu Operations

[5] GPI

● 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
TALLY1 COLOR
TALLY2 COLOR
TALLY3 COLOR
TALLY4 COLOR

USER COLOR
RED
GREEN
RED
YELLOW



5. Menu Operations

[5] GPI

<Dynamic UMD Protocol (TSL V5.0)>

* Transmission (Ethernet) (Maximum packet length 2048 Byte) (PC or Device or Monitor)

DLE (1 BYTE)	STX (1 BYTE)	PBC (2 BYTE)	VER (1 BYTE)	FLAGS (1 BYTE)	SCREEN (2 BYTE)	INDEX (2 BYTE)	CONTROL (2 BYTE)	LENGTH (2 BYTE)	TEXT (String)
--------------	--------------	--------------	--------------	----------------	-----------------	----------------	------------------	-----------------	---------------

* [DLE] : 0xFE

* [STX] : 0x02

* [PBC] : Total byte count of following packet.

* [VER] : Minor version number (e.g. V5.00, VER = 0).

* [FLAGS]

bit 0 : Clear for ASCII based strings in packet, set for Unicode UTF-16LE.

bit 1 : If set, data after SCREEN is screen control data (SCONTROL) – otherwise it's display message data (DMSG).

bit 2-7 : Reserved (clear to 0). (Not used)

* [SCREEN] : Primary index for use where each screen.

Index 0xFFFF is reserved as a "Broadcast" to all screens.

If not used, set to 0.

* [INDEX] : The 0 based address of the display, up to 65534 (0xFFFF).

Address 0xFFFF is reserved as a "Broadcast" address to all displays.

* [CONTROL]

bit 0-1 : RH Tally Lamp state

bit 2-3 : Text Tally state

bit 4-5 : LH Tally Lamp state

bit 6-7 : Brightness value (range 0-3) (Not used)

bit 8-14 : Reserved (clear to 0) (Not used)

bit 15 : Control Data (clear to 0)

2 Bit Tally values are:

0 = OFF, 1 = RED, 2 = GREEN, 3 = AMBER.

* [LENGTH] : Byte count of following text.

* [TEXT] : UMD text, format defined by FLAGS byte.

Tally1

CHANNEL1






Tally2

5. Menu Operations

[5] GPI

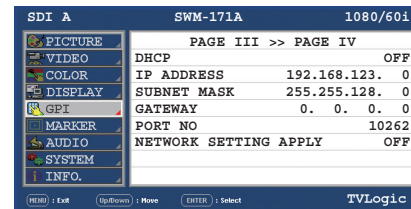
● TSL V5.0 D-UMD TALLY TPYE – USER COLOR

- Color selections between TALLY1 ~ TALLY2.
- UMD DISPLAY should be set in D-UMD(D-8C).
- D-UMD TALLY TYPE should be set in the USER COLOR.
- The following appearance of UMD DISPLAY is set as D-UMD(D-8C), D-UMD TALLY TYPE and TALLY COLOR.

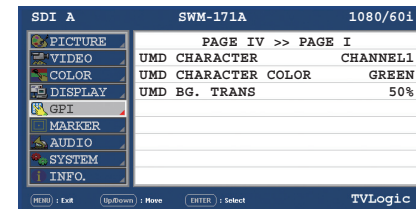
Bit 1 (Tally2)	Bit 1 (Tally1)	Operation
0	0	
0	3	
2	2	
3	1	
0	1	

5. Menu Operations

[5] GPI

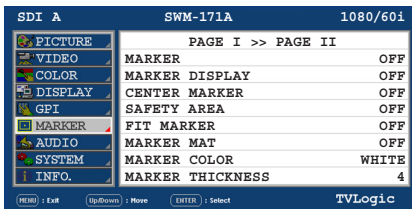


- **DHCP**
 - Used to control DHCP function.
- **IP ADDRESS**
 - Used to set the IP address connected to a Monitor.
- **SUBNET MASK**
 - Used to set the SUBNET MASK connected to a Monitor.
- **GATEWAY**
 - Used to set the GATEWAY connected to a Monitor.
- **PORT NO**
 - Used to set the port number. Default port number is 10262.
- **NETWORK SETTING APPLY**
 - When the value of IP address, Subnet mask, Gateway or Port no. is changed, set the Network settings apply as [on] to apply the setting normally.



- **UMD CHARACTER**
 - Customizes the characters for Under Monitor Display.
 - Alphabets, numbers and special symbols are available.
 - Maximum of 8 characters can be used.
- **UMD CHARACTER COLOR**
 - Used to set the color of UMD character.
 - Available colors are WHITE, RED, GREEN, BLUE, YELLOW, CYAN and MAGENTA.
- **UMD BG. TRANS**
 - Used to set the transparency of the UMD background.
 - Available values are SCALE DOWN, OPAQUE, 50%, 90% and 100%.

[6] MARKER



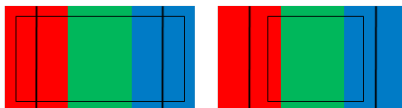
- **MARKER**
 - Used to select the marker type when the MARKER is displayed on the screen.
 - Compatible MARKER types are as follows:

MODE	MARKER CLASS
HD	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,
SD 16:9	4:3 ALT 16:9, 16:9 ALT 14:9, 16:9 ALT 4:3, AFD, USER
SD 4:3	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 16:9, 16:9 ALT 14:9, 16:9 ALT 4:3, AFD, USER

*If AFD(Active Format Description) is selected, the embedded Aspect ratio signal in the video signal will be extracted and displayed as a marker.

- **MARKER DISPLAY**
 - Used to activate/inactivate the MARKER.
- **CENTER MARKER**
 - Used to display the CENTER MARKER on the screen. This function operates only after activating the MARKER function.
- **SAFETY AREA**
 - Used to select to display and control the size of the SAFETY AREA.
 - Available types are 80%, 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.

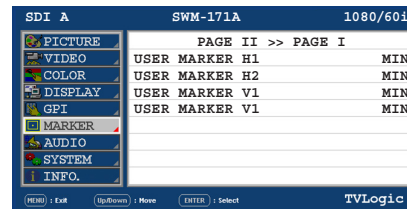
- **FIT MARKER**
 - Used to activate the FIT MARKER function.
 - With FIT MARKER "ON", the safety area is displayed relative to the marker in use.
 - With FIT MARKER "OFF", the safety area is displayed relative to the incoming source.
 - FIT MARKER ON/OFF displays as shown below.



- 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 setting area. The degree of darkness is between OFF(Transparency) and 7(Black). The higher the number, the darker MARKER border becomes.
- **MARKER COLOR**
 - Used to control the color of MARKER lines.
 - Available colors are white, gray, black, red, green and blue.
- **MARKER THICKNESS**
 - This item controls the thickness of the MARKER lines. The degrees of thickness are between 1 and 7.

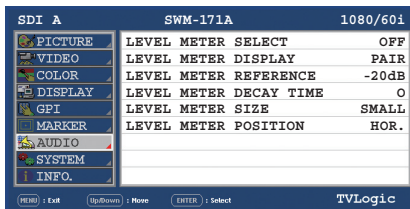
[6] MARKER



- **USER MARKER H1**
 - Used to control the position of the first user defined horizontal marker line.
 - Marker option USER needs to be selected.
- **USER MARKER H2**
 - Used to control the position of the second user defined horizontal marker line.
 - Marker option USER needs to be selected.
- **USER MARKER V1**
 - Used to control the position of the first user defined vertical marker line.
 - Marker option USER needs to be selected.
- **USER MARKER V2**
 - Used to control the position of the second user defined vertical marker line.
 - Marker option USER needs to be selected.

5. Menu Operations

[8] AUDIO



● LEVEL METER SELECT

- Used to control the Embedded 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 Normal. It returns to normal when the Main Menu window is deactivated.

● LEVEL METER DISPLAY

- Used to control display method of Audio Level Meters.
- Available modes are Pair and Group.

● LEVEL METER REFERENCE

- Used to set 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

- Used to set the reduction time of the maximum indication of audio signals.
- Available values are form 0 to 31. Larger values indicate a longer time to display.

● LEVEL METER SIZE

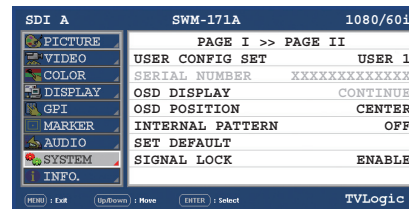
- Used to control the size of the Audio Level Meters.
- Available modes are SMALL, SMALL TRANS, NORMAL, NORMAL TRANS, LARGE and LARGE TRANS.
- In SMALL, NORMAL and LARGE modes, the Audio Level Meter appears opaque.
- In SMALL TRANS., NORMAL TRANS and LARGE TRANS modes, the Audio Level Meter appears semitransparent.

● LEVEL METER POSITION

- Used to control the position of the Audio Level Meters.
- Available values are HOR, VER and BOT.

5. Menu Operations

[9] SYSTEM



● USER CONFIG SET

- Used to save and apply three kinds of user configuration.
- Available modes are USER1, USER2 and USER3.
- Effective items for each USER1, USER2 and USER3 settings are [MARKER] menu of MARKER, CENTER MARKER, SAFETY AREA, MARKER MAT and MARKER COLOR and [PICTURE] menu of, BRIGHT, CONTRAST, CHROMA, PHASE and APERTURE.

● SERIAL NUMBER

- Displays the serial number of the monitor.

● LOCK ENABLE

- Factory use only.

● OSD DISPLAY

- Used to control the OSD display time.
- Available values are 3 SEC, 20 SEC and CONTINUE.

● OSD POSITION

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

● INTERNAL PATTERN

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

● SET DEFAULT

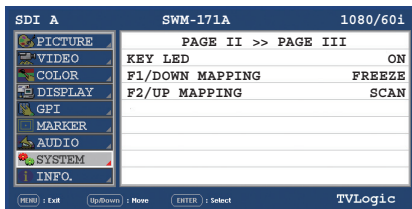
- User can use SET DEFAULT menu to initialize to factory setting.

● SIGNAL LOCK

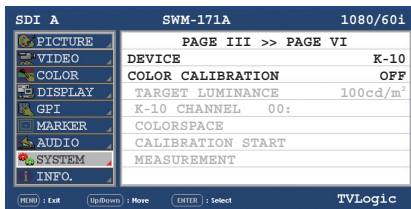
- Used to enable/ disable the synchronization of input signal.
- ENABLE : Displays the video by using the synchronization of input signal.
- DISABLE : Displays the video by locally generated synchronization. The monitor responses rapidly when the input signal or format is changed. (The video may loss or cut.)

5. Menu Operations

[9] SYSTEM



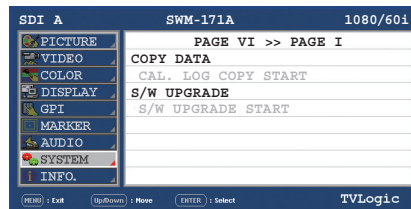
- **KEY LED**
 - This item controls KEY LED ON/OFF.
 - If the button with LED is pressed with the KEY LED Off, LED comes on but goes off after 5 seconds later.
- **F1/DOWN MAPPING**
 - User can select the function for the F1 button.
 - Selectable functions: SCAN, ASPECT, TIMECODE, CC SEL., ALM SEL., VIDEO RANGE, FAST MODE, DITHERING, FILTER, FORCE Psf, UMD, COLOR TEMP, PAGE 801, PAGE 888, PAGE 889, MARKER DISPLAY and FREEZE.
- **F2/UP MAPPING**
 - User can select the function for the F2 button.
 - Selectable functions: SCAN, ASPECT, TIMECODE, CC SEL., ALM SEL., VIDEO RANGE, FAST MODE, DITHERING, FILTER, FORCE Psf, UMD, COLOR TEMP, PAGE 801, PAGE 888, PAGE 889, MARKER DISPLAY and FREEZE.



- **DEVICE**
 - Used to select the device for color calibration.
 - Available Device : K-10, Eyeone Display Pro, Speckbos 1211.
- **COLOR CALIBRATION**
 - Connect the COLOR PROBE(e.g. K-10) to the USB port to calibrate the monitor without a PC.
 - * Refer to the section "Firmware Upgrade & Color Calibration" for more information.
- **TARGET LUMINANCE**
 - Used to set the luminance.
- **K-10 CHANNEL**
 - Used to select the channel of COLOR PROBE(K-10)
 - Available only when the Color Probe is K-10.
- **COLORSPACE**
 - This function is not supported.
- **CALIBRATION START**
 - Used to start the calibration.
 - Set the Calibration as [On]. The Color calibration start menu will activate after the Color Probe connection is completed.
- **MEASUREMENT**
 - Used to start the calibration.
 - Set the Color Calibration as [On]. The Color calibration start menu will activate after the USB connection is completed.

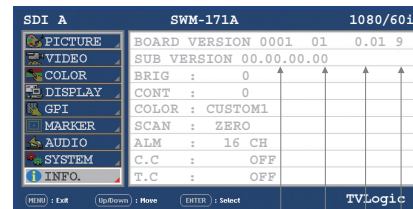
5. Menu Operations

[9] SYSTEM



- **COPY DATA**
 - Used to copy the files related to the calibration.
- **CAL. LOG COPY START**
 - Used to save the CALIBRATION LOG file on a USB drive.
 - * Set the COPY DATA as [On]. Activates only when the USB drive(Thumb drive) is connected.
- **S/W UPGRADE**
 - Used to upgrade the firmware using the USB (Thumb drive).
 - * See section "6. Firmware Upgrade & Color Calibration" for more information.
- **S/W UPGRADE START**
 - Used to start S/W upgrade. If the USB drive is detected, the firmware upgrade becomes activated.

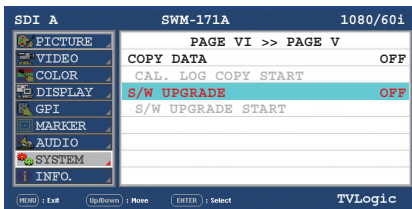
[10] INFO.



- **INFO.**
 - Displays the Board version and current status information.
 - BOARD VERSION : 0001(GPU) 01(FPGA) 0.01(MCU) 7(KEYPAD)
 - SUB VERSION : 00.00.00.00(NETWORK)
 - BRIG. : Brightness
 - CONT. : Contrast
 - COLOR : Color Temp
 - SCAN : Scan Mode
 - ALM : Audio level meter
 - C.C : Closed caption
 - T.C : Timecode

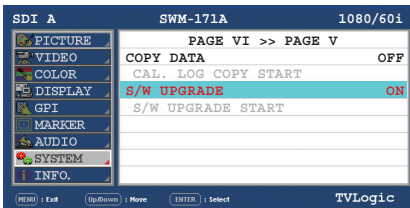
6. Firmware Upgrade & Color Calibration

[1] Firmware Upgrade



- The USB portable storage device (Thumb drive) is needed for Firmware Upgrade.
- Select the PAGE III of [SYSTEM] menu to activate.

1. Connect the USB to the USB Slot on the front of the monitor.
2. Set the [S/W UPGRADE] as [ON].
3. Search the USB.
4. The [S/W UPGRADE START] activates when the USB connection is completed.



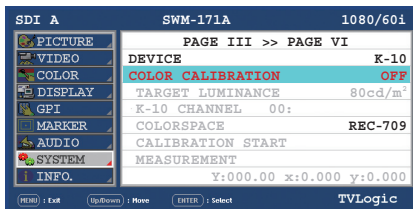
5. Select the [S/W UPGRADE START] to start the firmware update.

- * While the Upgrade is conducting, the monitor screen turns off and the monitor stops functioning.
- * When the Upgrade is completed, the monitor reboots.
- * The Upgrade process takes about 30 minutes according to the Firmware type.

- During the Upgrade, do not turn off or control the product.
- Before the Upgrade, a message is indicated as below for 5 seconds.

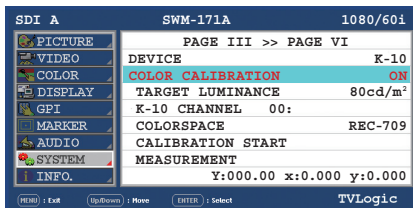
- * The firmware update may take 30 minutes. Please do not turn off the monitor while updating.

[2] Color Calibration



- The Color Probe is need for Color Calibration.
- Available Color Probe : K-10, Eyecone Display Pro and Spechbos 1211.
- Select the PAGE III of [SYSTEM] menu to activate.

1. Connect the Color Probe to the USB Slot on the front of the monitor.
2. Set the [DEVICE] as the Color Probe which will be connected.
3. Set the [Color Calibration] as [On].
4. Then the USB Color Probe is searched automatically.
5. The [Color Calibration] activates when the USB connection is completed.



6. Set the value of [TARGET LUMINANCE], [K-10 CHANNEL] and [COLORSPACE].
7. Select the [CALIBRATION START] to start the calibration.

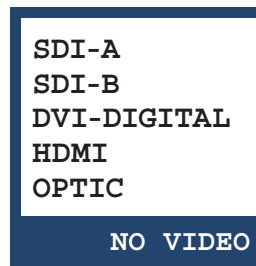
- * After the calibration starts, various patterns come on the screen and conduct the color calibration.
- * The Color Calibration takes about 10~20 minutes.

7. Button Functions

[1] MENU Button

- This product is capable of processing various input signals.
- The signal input settings are as follows.

1. Press the MENU button on the back of the product for more than 1.5 seconds and activate the menu below.



2. Press the MENU button to activate the OSD menu.

[2] Function key set(F1/DOWN) (F2/UP)

- Used to make a quick setting of the Function Key. Select the PAGE III of [SYSTEM] menu to activate.

- When the FUNCTION button is set to SCAN

1. Press the FUNCTION button continuously to activate various scan modes.
ZERO SCAN -> UNDER SCAN -> 1:1 SCAN -> USER ASPECT -> OVER SCAN
2. When the SCAN mode is 1:1 SCAN, Press the ENTER button to rotate the position.

- When the FUNCTION button is set to ASPECT

1. Four different aspect modes are available. When the input signal is SDI -A/B, Composite 1/2/3 or S-Video and the input signal format is SD :

- 1) 4:3 mode : Cuts the sides 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) 4:3 Ex mode(Extend) : Extends the image vertically without altering the source image.
- 4) 16:9 Ex mode(Extend) : 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.

- * ASPECT button lamp status: 1 - 1/3) Off, 2 - 2)/4) : On.

2. When the input signal is 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 1), 2) 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.

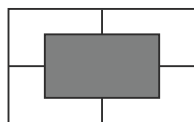
[3] ENTER Button

1. When the OSD menu is activated, this button is used to confirm a chosen value (or mode).
2. May also be used to control the Bright/Contrast/Chroma/Aperture value during the OSD menu inactivation.
3. Use the UP/DOWN buttons to adjust the value when the desired function is selected.

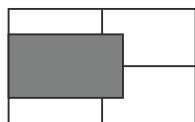
8. Other Functions

[1] ASPECT

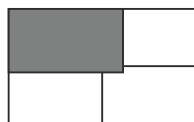
- Four different aspect modes are available. When input signal is SDI -A/B, Composite 1/2/3 and Input Signal Format is SD :
 - 4:3 mode : Cuts left and right of the original image to fit to 4:3 aspect ratio.
 - 16:9 mode : Stretches the image in "1) 4:3 mode" to fit to 16:9 aspect ratio.
 - 4:3Ex : Extends the image vertically without altering the source image.
 - 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.
- When input signal is 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.
- 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.



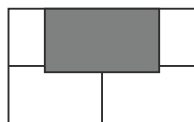
<MID CENTER>



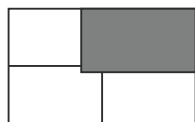
<MID LEFT>



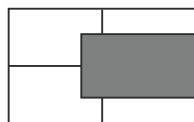
<TOP LEFT>



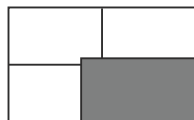
<TOP MID>



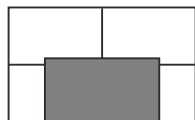
<TOP RIGHT>



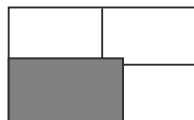
<MID RIGHT>



<BOT RIGHT>



<BOT MID>



<BOT LEFT>

<Position change in 1:1 SCAN>

[2] SCAN

- This product supports various scan modes.
- Press the F1/UP and F2/DOWN buttons to activate through the scan modes:
 - 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.
 - 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.
MID LEFT -> TOP MID -> TOP RIGHT -> MID RIGHT -> BOT RIGHT -> BOT MID -> BOT LEFT
 - USER ASPECT : Displays in user aspect ratio of HORIZONTAL and VERTICAL value that is selected under USER ASPECT item in [PICTURE] MENU.

9. DVI Support Resolution

DVI DIGITAL/HDMI Support Resolution (SWM-171A/320A/420/460/550/)

- DVI DIGITAL Graphic mode supports the following modes :

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 Video mode supports the following input signals :

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

- DVI DIGITAL mode is separated into Graphic mode and Video mode.
- In DVI 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.

9. DVI Support Resolution

DVI DIGITAL/HDMI Support Resolution (SWM-240A)

- DVI DIGITAL Graphic mode supports the following modes :

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
1920 X 1200	60Hz

- DVI DIGITAL Video mode supports the following input signals :

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

- DVI DIGITAL mode is separated into Graphic mode and Video mode.
- In DVI 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.

10. Product Specifications

		SWM-171A	
LCD	Size	17"	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.1905(H) X 0.1905(W) mm	
	Color Depth	1.07B(8bit+2bit FRC)	
	Viewing Angle	R/L, U/D 178degrees	
	Luminance of white	450 cd/ m ²	
	Contrast Ratio	1400 : 1	
Input Connector	Display Area	365(H) X 205(V) mm	
	1 X DVI-I	DVI IN	
	1 X HDMI	HDMI Input	
	2 X BNC	SDI A/B Channel Input	
Output	1 X OPTIC (Option)	Optic Input	
	2 X BNC	SDI A/B Channel (Active Through Out)	
Input Signal	3G-SDI	2.970Gbps	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VEESA/IBM Modes	
	HDMI	480i / 480p / 720p / 1080i / 1080p VESA/IBM Modes	
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(50/59.94/60)	
	SMPTE-372M	Dual HD-SDI YPbPr (4:2:2)	1080p(50/59.94/60)
		Dual HD-SDI YPbPr RGB (4:4:4)	1080p(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	2048x1080p (24/24sF/23.98/23.98sF)		
Power	AC100~240V (50~60Hz)		
Power Consumption (Approx.)	60 Watts(MAX)		
Operating Temperature	0°C to 40°C (32°F to 104°F)		
Storage Temperature	-20°C to 60°C (-4°F to 140°F)		
Main Body Dimensions (mm/inch)	445 X 264 X 86.9 (17.52 X 10.39 X 3.4)		
Main Body Dimensions with stand (mm/inch)	492.2 X 300.8 X 163 (19.37X11.84X6.42) (Option)		
Box Dimensions (mm/inch)	535 X 430 X 250 (21.06 X 16.93 X 9.84)		
Weight	5.6Kg / 12.34 lbs		
Basic Accessories	AC Power Cord, USB Cover		
Optional Accessories	Stnad, Rack Mountable Kit, ND Filter, Optic Module		

* The specification above may be changed without notice.

10. Product Specifications

		SWM-240A	
LCD	Size	24.1"	
	Resolution	1920 X 1200 (16:10)	
	Pixel Pitch	0.270(H) X 0.270(W) mm	
	Color Depth	16.7M (Dithered 8bit)	
	Viewing Angle	R/L, U/D 178degrees	
	Luminance of white	300 cd/ m ²	
	Contrast Ratio	1000 : 1	
	Display Area	518(H) X 324(V) mm	
Input Connector	1 X DVI-I	DVI IN	
	1 X HDMI	HDMI Input	
	2 X BNC	SDI A/B Channel Input	
	1 X OPTIC (Option)	Optic Input	
Output	2 X BNC	SDI A/B Channel (Active Through Out)	
Input Signal	3G-SDI	2.970Gbps	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA/IBM Modes	
	HDMI	480i / 480p / 720p / 1080i / 1080p VESA/IBM Modes	
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(50/59.94/60)	
	SMPTE-372M	Dual HD-SDI YPbPr (4:2:2)	1080p(50/59.94/60)
		Dual HD-SDI YPbPr RGB (4:4:4)	1080p(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	2048x1080p (24/24sF/23.98/23.98sF)		
Power	AC100~240V (50~60Hz)		
Power Consumption (Approx.)	73 Watts(MAX)		
Operating Temperature	0°C to 40°C (32°F to 104°F)		
Storage Temperature	-20°C to 60°C (-4°F to 140°F)		
Main Body Dimensions (mm/inch)	552.5 X 389 X 95.8 (21.75 X 15.3 X 3.8)		
Main Body Dimensions with stand (mm/inch)	584 x 417 x 150 (23.01 x 16.41 x 5.90) (Option)		
Box Dimensions (mm/inch)	673 X 535 X 280 (26.50 X 21.06 X 11.02)		
Weight	8.2Kg / 18.08 lbs		
Basic Accessories	AC Power Cord, USB Cover		
Optional Accessories	Stnad, Rack Mountable Kit, ND Filter, Optic Module		

* The specification above may be changed without notice.

10. Product Specifications

		SWM-320A	
LCD	Size	31.55"	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.364(H) X 0.364(W) mm	
	Color Depth	1.07B (10bit)	
	Viewing Angle	R/L, U/D 178degrees	
	Luminance of white	500 cd/ m ²	
	Contrast Ratio	1300 : 1	
	Display Area	698.4(H) X 392.9(V) mm	
Input Connector	1 X DVI-I	DVI IN	
	1 X HDMI	HDMI Input	
	2 X BNC	SDI A/B Channel Input	
	1 X OPTIC (Option)	Optic Input	
Output	2 X BNC	SDI A/B Channel (Active Through Out)	
Input Signal	3G-SDI	2.970Gbps	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA/IBM Modes	
	HDMI	480i / 480p / 720p / 1080i / 1080p VESA/IBM Modes	
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(50/59.94/60)	
	SMPTE-372M	Dual HD-SDI YPbPr (4:2:2)	1080p(50/59.94/60)
		Dual HD-SDI YPbPr RGB (4:4:4)	1080p(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	2048x1080p (24/24sF/23.98/23.98sF)		
Power	AC100~240V (50~60Hz)		
Power Consumption (Approx.)	192 Watts(MAX)		
Operating Temperature	0°C to 40°C (32°F to 104°F)		
Storage Temperature	-20°C to 60°C (-4°F to 140°F)		
Main Body Dimensions (mm/inch)	769.4 x 485.1 x 102.1 (30.29 x 19.09 x 4.01)		
Main Body Dimensions with stand (mm/inch)	769.4 x 544.3 x 255 (30.29 x 21.43 x 10.04) (Option)		
Box Dimensions (mm/inch)	920 X 675 X 350 (36.22 X 21.23 X 13.78)		
Weight	18Kg / 39.68 lbs		
Basic Accessories	AC Power Cord, USB Cover		
Optional Accessories	Stnad, Optic Module		

* The specification above may be changed without notice.

10. Product Specifications

		SWM-420A	
LCD	Size	42"	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.485(H) X 0.485(W) mm	
	Color Depth	1.06B (R,G,B 10bit, Dither)	
	Viewing Angle	R/L, U/D 178degrees	
	Luminance of white	450 cd/ m ²	
	Contrast Ratio	4000 : 1	
	Display Area	930.24(H) X 523.26(V) mm	
Input Connector	1 X DVI-I	DVI IN	
	1 X HDMI	HDMI Input	
	2 X BNC	SDI A/B Channel Input	
	1 X OPTIC (Option)	Optic Input	
Output	2 X BNC	SDI A/B Channel (Active Through Out)	
Input Signal	3G-SDI	2.970Gbps	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA/IBM Modes	
	HDMI	480i / 480p / 720p / 1080i / 1080p VESA/IBM Modes	
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(50/59.94/60)	
	SMPTE-372M	Dual HD-SDI YPbPr (4:2:2)	1080p(50/59.94/60)
		Dual HD-SDI YPbPr RGB (4:4:4)	1080p(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	2048x1080p (24/24sF/23.98/23.98sF)		
Power	AC100~240V (50~60Hz)		
Power Consumption (Approx.)	120 Watts(MAX)		
Operating Temperature	0°C to 40°C (32°F to 104°F)		
Storage Temperature	-20°C to 60°C (-4°F to 140°F)		
Main Body Dimensions (mm/inch)	985 x 581 x 96.4 (38.78 x 22.87 x 3.80)		
Main Body Dimensions with stand (mm/inch)	985 x 635.1 x 255 (38.78 x 25 x 10.04) (Option)		
Box Dimensions (mm/inch)	1125 X 760 X 685 (44.29 X 29.92 X 26.96)		
Weight	28.95Kg / 63.82 lbs		
Basic Accessories	AC Power Cord, USB Cover		
Optional Accessories	Stnad, Optic Module		

10. Product Specifications

		SWM-460A	
LCD	Size	46"	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.530(H) X 0.530(W) mm	
	Color Depth	1.06B (R,G,B 10bit, Dither)	
	Viewing Angle	R/L, U/D 178degrees	
	Luminance of white	450 cd/ m ²	
	Contrast Ratio	4000 : 1	
	Display Area	1018.08(H) X 572.67(V) mm	
Input Connector	1 X DVI-I	DVI IN	
	1 X HDMI	HDMI Input	
	2 X BNC	SDI A/B Channel Input	
	1 X OPTIC (Option)	Optic Input	
Output	2 X BNC	SDI A/B Channel (Active Through Out)	
Input Signal	3G-SDI	2.970Gbps	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA/IBM Modes	
	HDMI	480i / 480p / 720p / 1080i / 1080p VESA/IBM Modes	
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(50/59.94/60)	
	SMPTE-372M	Dual HD-SDI YPbPr (4:2:2)	1080p(50/59.94/60)
		Dual HD-SDI YPbPr RGB (4:4:4)	1080p(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	2048x1080p (24/24sF/23.98/23.98sF)		
Power	AC100~240V (50~60Hz)		
Power Consumption (Approx.)	96 Watts(MAX)		
Operating Temperature	0°C to 40°C (32°F to 104°F)		
Storage Temperature	-20°C to 60°C (-4°F to 140°F)		
Main Body Dimensions (mm/inch)	1070.6x630.5x100.6(42.15x24.80x3.96)		
Main Body Dimensions with stand (mm/inch)	1070.6x684.6x255(42.15x26.95x10.04) (Option)		
Box Dimensions (mm/inch)	1235 X 794 X 385 (48.62 X 31.26 X 15.16)		
Weight	32.25Kg / 71.10 lbs		
Basic Accessories	AC Power Cord, USB Cover		
Optional Accessories	Stnad, Optic Module		

* The specification above may be changed without notice.

10. Product Specifications

		SWM-550A	
LCD	Size	55"	
	Resolution	1920 X 1080 (16:9)	
	Pixel Pitch	0.21(H) X 0.63(W) mm	
	Color Depth	1.06B (R,G,B 10bit, Dither)	
	Viewing Angle	R/L, U/D 178degrees	
	Luminance of white	450 cd/ m ²	
	Contrast Ratio	4000 : 1	
	Display Area	1209.6(H) X 680.4(V) mm	
Input Connector	1 X DVI-I	DVI IN	
	1 X HDMI	HDMI Input	
	2 X BNC	SDI A/B Channel Input	
	1 X OPTIC (Option)	Optic Input	
Output	2 X BNC	SDI A/B Channel (Active Through Out)	
Input Signal	3G-SDI	2.970Gbps	
	HD-SDI	1.485Gbps	
	SD-SDI	270 Mbps	
	DVI	VESA/IBM Modes	
	HDMI	480i / 480p / 720p / 1080i / 1080p VESA/IBM Modes	
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(50/59.94/60)	
	SMPTE-372M	Dual HD-SDI YPbPr (4:2:2)	1080p(50/59.94/60)
		Dual HD-SDI YPbPr RGB (4:4:4)	1080p(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	2048x1080p (24/24sF/23.98/23.98sF)	
Power	AC100~240V (50~60Hz)		
Power Consumption (Approx.)	96 Watts(MAX)		
Operating Temperature	0°C to 40°C (32°F to 104°F)		
Storage Temperature	-20°C to 60°C (-4°F to 140°F)		
Main Body Dimensions (mm/inch)	1262.4 x 732 x 95.5 (64.66 x 28.82 x 3.76)		
Main Body Dimensions with stand (mm/inch)	1262.4x786.1x255(64.66x30.95x10.04) (Option)		
Box Dimensions (mm/inch)	1420 X 920 X 385 (55.91 X 36.22 X 15.16)		
Weight	40.90Kg / 90.17 lbs		
Basic Accessories	AC Power Cord, USB Cover		
Optional Accessories	Stnad, Optic Module		

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