TVLogic Security Monitor

Operation Manual_v1.3

TSM-182W
TSM-232W

MULTI

TVLogic Always ON-AIR

Contents

FCC (Federal Communications Commission)

This equipment has been tested and found to comply with the limits for class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interface when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential to correct the interference at his own expense

CAUTION: Change or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Disposal of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packing indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.

1. Caution

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

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

• These safety and operating instructions must be kept in safe place for future reference.

• All warnings on the product and in the instructions must be observed closely.

• All operating instructions must be followed.

• Do not use attachments not recommended by the manufacturer. Use of inadequate attachments can result in accidents.

• This product must be operated on a power source specified on the specification label. If you are not sure of the type of power supply used in your home, consult your dealer or local power company. For units designed to operate on batteries or another power source, refer to the operating instructions.

• The power cords must be routed properly to prevent people from stepping on them or objects from resting on them. Check the cords at the plugs and product.

• Do not overload AC outlets or extension cords. Overloading can cause fire or electric shock.

• Never insert an object into the product through vents or openings. High voltage flows in the product, and inserting an object can cause electric shock and/or short internal parts.
For the same reason, do not spill water or liquid on the product.

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

• If any of the following conditions occurs, unplug the power cord from the AC outlet, and request a qualified service person to perform repairs.
a. When the power cord or plug in damaged.
b. When a liquid was spilled on the product or when objects have fallen into the product.
c. When the product has been exposed to rain or water.
d. When the product does not operate properly as described in the operating instructions.
Do not touch the controls other than those described in the operating instructions. Improper adjustment of controls not described in the instructions can cause damage, which often requires extensive adjustment work by a qualified technician.
e. When the product has been dropped or damaged.
f. When the product displays an abnormal condition. Any noticeable abnormality in the product indicates that the product needs servicing.

• 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).
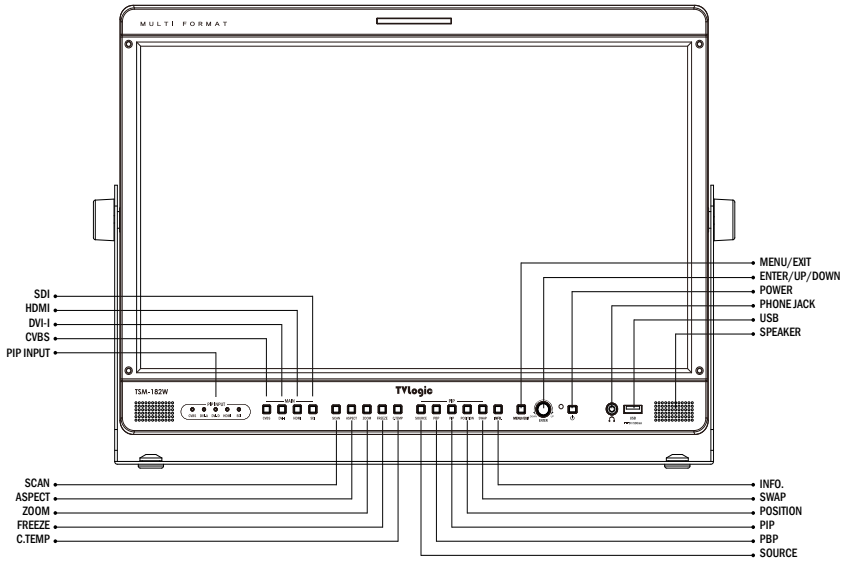
2. Main Features

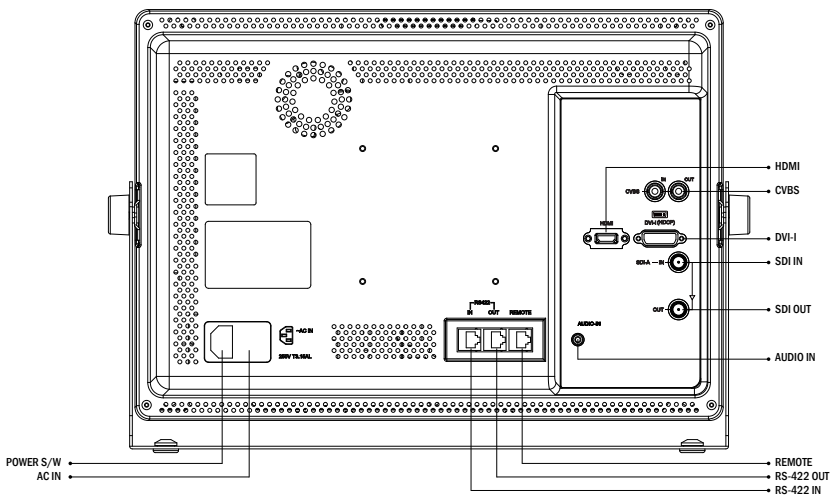## TSM-182W/232W Monitor contains the following features:

● **Compatible with varied SDI signals**
  - The product is compatible with varied SD/HD/3G(A/B)-SDI 480i,576i,720p,1080i/p, 1080psf.

● **Compatible with analog signal**
  - The product is compatible with analog signals - CVBS

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

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

● **Audio in & out**
  - built-in internal speaker (Embedded audio & External audio in)
  - Stereo audio out using phone jack & external audio in

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

● **Internal pattern generator(0~100% Gray/ Colorbar+Pluge)**

● **Wide screen compatible**
  - Wide screen for 16:9 aspect monitoring.

● **Remote control function**
  - The product can be remotely controlled using external switch or RS-422 communication.

● **Additional Features**
  - Wide Viewing Angle, Loop Through (SDI), 1000:1 Contrast ratio, 300 cd/m^2, Brightness, Easy to operate OSD user interface, Rack Mountable Design.

3. Controls & Functions

TSM-182W/232W : FRONT

Front panel labels (left side, top to bottom):
- SDI
- HDMI
- DVI-I
- CVBS
- PIP INPUT

Front panel labels (right side, top to bottom):
- MENU/EXIT
- ENTER/UP/DOWN
- POWER
- PHONE JACK
- USB
- SPEAKER

Front panel labels (bottom left):
- SCAN
- ASPECT
- ZOOM
- FREEZE
- C.TEMP

Front panel labels (bottom right):
- INFO.
- SWAP
- POSITION
- PIP
- PBP
- SOURCE

TSM-182W

MULTI FORMAT

TVLogic

TSM-182W/232W : REAR

Rear panel labels (right side, top to bottom):
- HDMI
- CVBS
- DVI-I
- SDI IN
- SDI OUT
- AUDIO IN

Rear panel labels (bottom left):
- POWER S/W
- AC IN

Rear panel labels (bottom right):
- REMOTE
- RS-422 OUT
- RS-422 IN

3. Controls & Functions

TSM-182W / 232W : FRONT

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

● **[PIP INPUT] Lamp**
 - Shows Input source of PIP & PBP MODE.

● **[OPERATE] Lamp**
 - Indicates the status of power connection and
   monitor operation.
 - The LED is off with power off.
 - The LED is red when the monitor is in waiting
   mode with power on.
 - The LED is green when the monitor is
   operating.
 - The LED is orange blinking when the
   monitor operating without input signal.

● **[CVBS] Button/Lamp**
 - Used to select MAIN signal.

● **[DIV-I] Button/Lamp**
 - Used to select MAIN signal.

● **[HDMI] Button/Lamp**
 - Used to select MAIN signal.

● **[SDI] Button/Lamp**
 - Used to select MAIN signal.

● **[SCAN] Button/Lamp**
 - Used to change the scan mode. Press the
   button to activate through the scan modes:
   OVER SCAN > USER ASPECT > ZERO SCAN >
   UNDER SCAN > 1:1 SCAN > FIT WIDTH
 * Please refer to "8. Other Functions [3]SCAN"
   for more information.
 #[USER ASPECT] : The user can adjust picture
   size by adjusting Width and Height.

● **[ASPECT] Button/Lamp**
 - Used to change the display ratio in order
   of [16:9]-[4:3]-[2.35:1]-[1.85:1]-[15:9]- [16:10]-
   [AUTO]-[16:9].

● **[ZOOM] Button/Lamp**
 - Used to zoom-in in various ratio.
 - After pressing [ZOOM], you can zoon-in the
   ratio you want by turning the knob, also
   scroll the position you want.

● **[FREEZE] Button/Lamp**
 - Shows pause image for MAIN INPUT SOURCE.

● **[C.TEMP] Button/Lamp**
 - Used to change color temperature in order of
   3200K -> 5600K -> 6500K -> 9300K -> User 1
   -> User 2 -> User 3

3. Controls & Functions

TSM-182W / 232W : FRONT

● **[SOURCE] Button/Lamp**
   - Selects PIP input. (SDI, HDMI, DVI Digital, DVI Analog, CVBS)
   - When you press [SOURCE], OSD menu comes up, and you can select by knob or UP/DOWN/ENTER.

● **[PBP] Button/Lamp**
   - Activates PBP(PICTURE BY PICTURE) function.
   - It supports PBP ASPECT and PBP FULL, two aspect ratios.

● **[PIP] Button/Lamp**
   - Activates PIP(PICTURE IN PICTURE) function. It supports PIP SMALL and PIP LARGE, two size PIP images.

● **[POSITION] Button/Lamp**
   - Used to change PIP image position.
   - It supports BOTTOM-LEFT, BOTTOM-RIGHT, TOP-LEFT, TOP-RIGHT, four positions.

● **[SWAP] Button/Lamp**
   - Used to change main picture and PIP/PBP picture when PIP or PBP mode is activated.

● **[INFO.] Button/Lamp**
   - Shows current monitor status.

● **[MENU/EXIT] Button/Lamp**
   - Activates OSD menu.

● **[ENTER/UP/DOWN] Knob**
   - Used to move the cursor when OSD menu is activated and increase and decrease the selected value.
   - Used to select items in OSD menu by pressing.
   - When OSD menu is not activated, if you press it, following functions are activated in order of [Volume]-[Bright]-[Contrast]-[Chroma]-[Aperture].

● **[POWER] Button/Lamp**
   - Turns on or off the monitor power.

● **[OPERATE] Lamp**
   - Indicates the status of power connection and monitor operation.
   - The LED is off with power off.
   - The LED is red when the monitor is in waiting mode with power on.
   - The LED is green when the monitor is operating.

● **[AUDIO OUT] (PHONE JACK)**
   - Outputs dis-embedded audio signal, HDMI audio signal or stereo signal from outside through internal speaker or phone jack.

● **[USB]**
   - Used to firmware-update with USB memory stick(Thumb drive) or color-calibrate the monitor connecting PC.

● **[SPEAKER]**
   - Used to output Embedded Audio or external audio.

3. Controls & Functions

TSM-182/232W : REAR

● **[CVBS] IN (BNC)**
  - Signal input terminal for COMPOSITE signal.

● **[CVBS] OUT (BNC)**
  - Signal output terminal for COMPOSITE input signal through CVBS IN.

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

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

● **[SDI-IN A] (BNC)**
  - Signal input terminal for 3G/HD/SD SDI signal.

● **[SDI-OUT] (BNC)**
  - Signal output terminal for 3G/HD/SD SDI input signal through SDI-IN.

● **[Audio in] (PHONE JACK)**
  - Inputs external audio.

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

● **[RS422 IN/OUT] (RJ-45)**
  - Controls the monitor by a protocol provided by TVLogic or supports TSL protocol.

● **~ AC IN**
  - 100 ~ 240V AC 50/60Hz
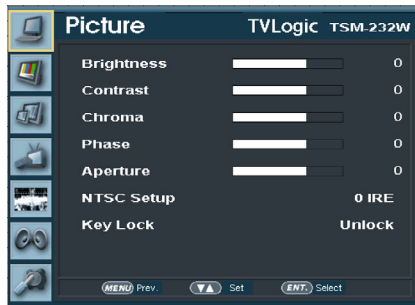
● **POWER SWITCH**

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

4. Menu Organization & Adjustment

[1] Menu Organization

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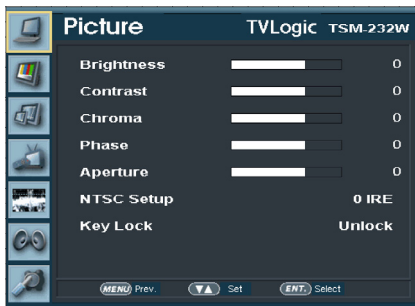

[2] Menu Adjustment

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

[3] Menu Adjustment Procedure

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

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

5. Menu Operations

[1] PICTURE

● **NTSC Setup**
  - The item sets NTSC IRE value for 0(Zero setup) or 7.5 IRE.
  - This control is activated for analog NTSC video only.

● **Key Lock**
  - The item locks all buttons except for power, source change and menu button in front of the monitor.

● **Brightness**
  - Controls the 'Black Level' or 'Offset' of the screen. Control range is from -108 to 107. # Brightness can be adjusted by using a control knob on the front of the monitor.

● **Contrast**
  - Controls 'Picture' or 'Gain' of the screen. Control range is from -128 to 128. # Contrast can be adjusted by using a control knob on the front of the monitor.

● **Chroma**
  - Controls the 'Color Saturation' of the screen. Control range is from -128 to 128. # Chroma can be adjusted by using a control knob on the front of the monitor.

● **Phase**
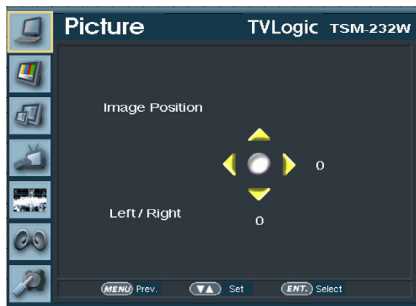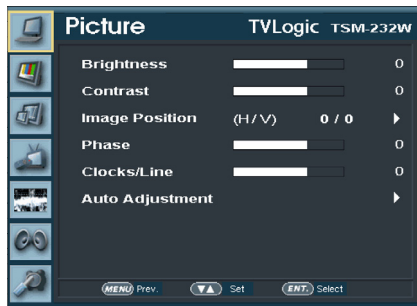 - Controls 'Hue' or 'Color Tint' of the screen. Control range is from -180 to 180. # This control is available for analog video input signal only.

● **Aperture**
  - Controls the picture sharpness of the screen. Control range is from 0 to 24. # Sharpness can be adjusted by using a control knob on the front of the monitor.

5. Menu Operations

[1] PICTURE (DVI ANALOG)

● **Brightness**
  - The item controls the degree of brightness between -100~100.
  #Brightness can be adjusted by using a control knob on the front of the monitor.

● **Contrast**
  - The item controls contrast ratio between -100~100.
  #Contrast ratio can be adjusted by using a control knob on the front of the monitor.

● **Phase**
  - The item controls phase value.
  #If phase is not set correctly, the image may display artifacts and out of focus.

● **Clocks/Line**
  - The item adjusts timing for signal sync.
  #If the signal sync is not set correctly, the image may display flickering and dropping.

● **Auto Adjustment**
  - The item adjusts the input signal automatically. Phase, Clocks/Line, and Image Position are also adjusted.
  #If the image does not display correctly after the Auto Adjustment, select it again for correct adjustment. Auto Adjustment activates automatically when input signal resolution changes.

● **Image Position**
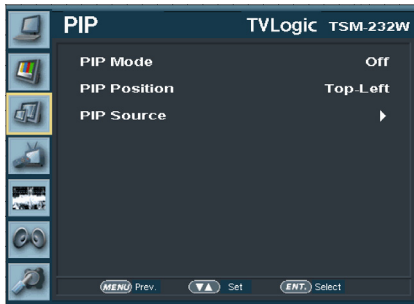 - The items moves the picture position for up/down/left/right.

5. Menu Operations

[2] COLOR

[3] PIP

● **Color Temp**
- The item controls color temperature and allows instant access to preset color temperature settings of 3200K, 5600K, 6500K, 9300K and USER 1/2/3.
- Only in User1/2/3, RGB Gain, Bias(=Offset) and Color copy are activated.

● **Gain Red/Green/Blue**
- The item controls red/green/blue gain value between -192~128.
#Only in User1/2/3, it is activated.

● **Bias Red/Green/Blue**
- The item controls red/green/blue bias(Offset, Black Level) value between -50~50.
#Only in User1/2/3, it is activated.

● **Color Copy**
- The item is used to copy pre-stored color temperature settings into a USER1/2/3 mode.
- In USER mode, find and select the color temperature to be used as a starting point of custom color temperature.
#Only in USER1/2/3, it is activated.

● **PIP Mode**
- Selects PIP and PBP mode.
- PIP modes are Off, Small PIP, Large PIP, PBP Aspect and PBP Full.

● **PIP Position**
- Changes PIP screen position when PIP Mode is activated.
- The positions are Bottom-Left, Bottom-Right, Top-Left and Top-Right.

● **PIP Source**
- Selects PIP picture source.
- The sources can be all signal TSM model supports such as SDI, HDMI, DVI-Digital, DVI-Analog, CVBS.

5. Menu Operations

[4] CONTROL

[5] AUDIO

● **MONITOR ID**
 - Sets each monitor's own number(ID) when you want to control the monitors with RS-422/485 communication or network through a protocol TVLogic provides.
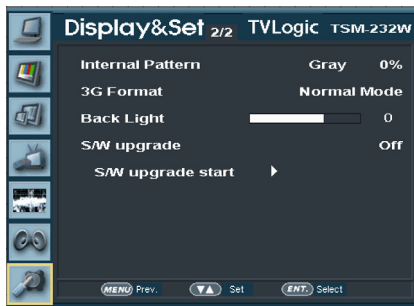 - Each PIN functions are fixed.

● **Volume**
 - Adjusts volume of internal speaker or audio output through [AUDIO OUT] in front of the monitor.
 - The available range is 0~30.

● **Em. Audio left/right**
 - Sets Embedded audio channel that outputs through internal speaker or [AUDIO OUT] in front of the monitor.
 - The available range is Off, CH 1 ~ CH 16 with SDI input and Left : CH1, Right : CH2 with HDMI(HDCP 1.1 Version) input.

5. Menu Operations

[6] DISPLAY & SET

● **System Default**
  - Returns the monitor setting to initialized status like factory shipment.

● **User config set**
  - The item saves 3 user configurations.
  - The available modes are USER1, USER2, USER3.
  - The set value such as BRIGHT, CONTRAST CHROMA, PHASE APERTURE is saved and applied to USER 1, USER2, USER3.

● **OSD position**
  - Sets OSD menu position.
  - The available setting is CENTER, R-T, R-B, L-B, L-T.

● **Key LED**
  - Turns on / off LED in front of the monitor.
  - Even though you turn off KEY LED, when you press LED button in front of the monitor, the LED is on and after 5 sec. the LED is off.

● **Firmware Version**
  - Shows current firmware version.

● **Serial Number**
  - Shows serial number.

● **INTERNAL PATTERN**
  - Displays internal Gray/ColorBar+Pluge pattern.
  - Gray pattern range is 0%~100% and is set by every 5%.

● **3G Format**
  - You can select 3G FORMAT such as (NORMAL MODE(AUTO - A 422 10BIT_YCbCr 50/60P), A 444 10/12BIT_YCbCr, A 444 10/12BIT_RGB, A 422 12BIT_YCbCr, B 444 10/12BIT_ YCbCr, B 444 10/12BIT_RGB, B 422 12BIT_YCbCr, B 422 10BIT_YCbCr 50/60P) in order to support 3G SDI A/B.
  - It detects the signal automatically in NORMAL MODE, when there is Payload signal.

● **Back Light**
  - Shows current backlight value.
  - When you Set Default, it returns to original value.(Factory shipment.)
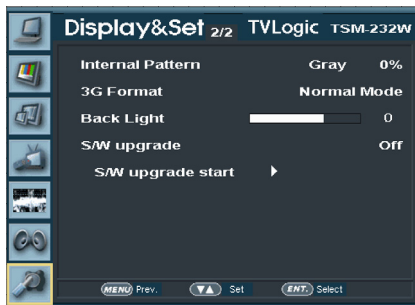   The available value is 0~100.

● **S/W upgrade**
  - firmware-updates with USB memory stick(Thumb drive).

● **S/W upgrade start**
  - When S/W upgrade is [On], the monitor detects USB memory stick, and update is available, it is activated.
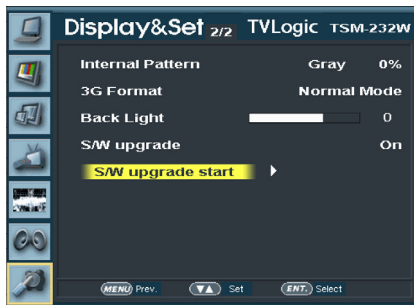
6. Firmware Upgrade

[1] SOFTWARE UPGRADE

● **USB memory stick(Thumb drive) that has F/W is necessary.**
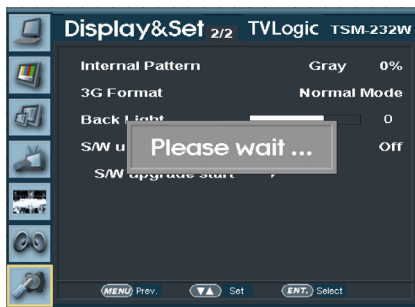
● **Select Display&Set menu**

- Connect USB memory stick to USB slot in front of the monitor.
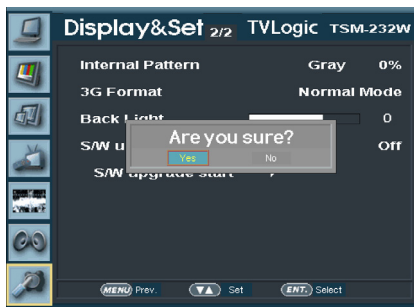
- Set [S/W upgrade] as [On].

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

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

- The monitor searchs USB memory stick.

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

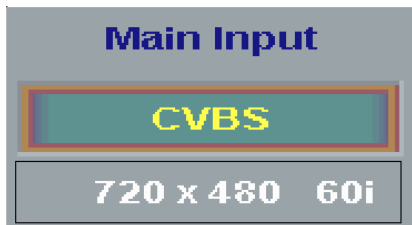* During the update, the monitor screen is off, and nothing functions.
* After the update, TVLogic logo shows up on the screen, and the monitor initializes.
* Update can take 10~20min. depending on firmware kind.

7. Button Functions

[1] ANALOG

- **TSM-182W/232W support CVBS analog input signal.**
  1. Press [CVBS] in front of the monitor and activate OSD menu as the left photo. Select input you would like to use by Knob or UP/DOWN KEY and press the knob.
  2. There is current input signal on bottom of OSD.
  3. Press [CVBS] again, then OSD menu disappears.
  #If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.

[2] HDMI INPUT

- **TSM-182W/232W support HDMI input signal.**
  1. Press [HDMI] in front of the monitor and activate OSD menu as the left photo. Select input you would like to use by Knob or UP/DOWN KEY and press the knob.
  2. There is current input signal on bottom of OSD.
  3. Press [HDMI] again, then OSD menu disappears.
  # If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.
  #None of HDMI and DVI-Digital can be co-selected as each main input and PIP/PBP at the same time.

7. Button Functions

[3] SDI INPUT

● **TSM-182W/232W support SDI input signal.**
  1. Press [SDI] in front of the monitor and activate OSD menu as the left photo. Select input you would like to use by Knob or UP/DOWN KEY and press the knob.
  2. There is current input signal on bottom of OSD.
  3. Press [SDI] again, then OSD menu disappears.
  #If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.

[4] DVI INPUT

● **TSM-182W/232W support DVI input signal.**
  1. Press [DVI] in front of the monitor and activate OSD menu as the left photo. Select input you would like to use by Knob or UP/DOWN KEY and press the knob.
  2. There is current input signal on bottom of OSD.
  3. Press [DVI] again, then OSD menu disappears.
  #If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.
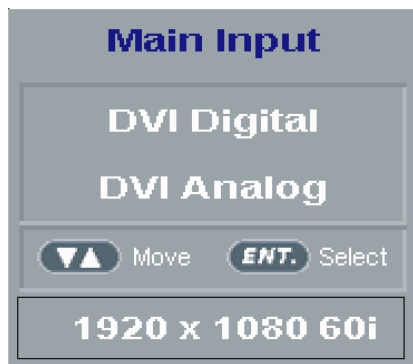 #None of HDMI and DVI-Digital can be co-selected as each main input and PIP/PBP at the same time.

8. Other Functions

[1] SOURCE INPUT

● **TSM-182W/232W support PIP/PBP MODE.**
 1. Press [SOURCE] in front of the monitor and activate OSD menu as the left photo. Select input you would like to use by Knob or UP/DOWN KEY and press the knob.
 2. There is current input signal on bottom of OSD.
 3. Press [SOURCE] again, then OSD menu disappears.
 #If no image displays after selecting the desired input mode, check and make sure that your connection is not lose or disconnected.
  None of HDMI and DVI-Digital can be co-selected as each main input and PIP/PBP at the same time.

[2] ASPECT

● **Selects various aspect ratio.**
 - It changes in order of 16:9 > 4:3 > 2.35:1 > 1.85:1 > 15:9 > 16:10 > Auto.

  * It sets output aspect ratio no matter what kind of input signal.

PIP Input

SDI

HDMI

DVI Digital

DVI Analog

CVBS

▼▲ Move   ENT. Select

1920 x 1080 60i

8. Other Functions

[3] SCAN

- **The function can select various scan mode.**
- **Press [SCAN] in front of the monitor and change scan mode.**

1. When you press [SCAN], the scan mode changes in order of ZeroScan > Over Scan > 2:1 Scan > 1:1 Scan > Fit Width >User Aspect.

2. the change order is different depending on input signal.

3. Below is what kind of scan mode is, when you change to scan mode with a certain condition, and the condition is not matched to the signal, then the monitor skips it and goes to next scan mode.

- Over Scan : Magnifies or reduces 96% of the original image and displays it without loss of the ratio of the image.
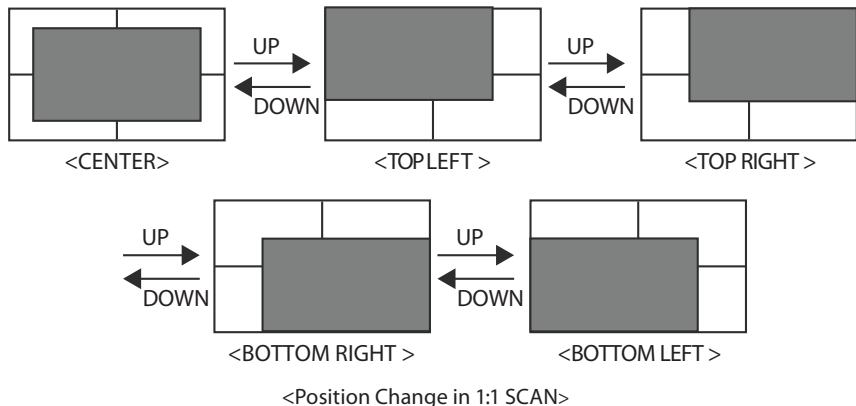
- Zero Scan : Magnifies or reduces the original image and displays it without loss of the ratio of the image.

- 2:1 Scan : Magnifies the original image double and displays it only when the original image size is smaller than a half of the screen size.

- 1:1 Scan : Displays the original image in 1:1 ratio on the screen. When the original image is bigger than the screen, only center part of the original image can show on the screen, and the image changes by pressing [ENTER] in order of CENTER > TOP LEFT > TOP RIGHT > BOT RIGHT > BOT LEFT as following photos.

- Fit Width : Displays the original image with magnifying, when the input signal is SD.

- User Aspect : Selects [Width]/[Height] in [User Aspect] OSD and sets aspect ratio by knob or UP/DOWN KEY.

<CENTER>   <TOP LEFT >   <TOP RIGHT >

<BOTTOM RIGHT >   <BOTTOM LEFT >

<Position Change in 1:1 SCAN>

8. Other Functions

[4] USER ASPECT

User Aspect Width : 800
(ENT.) Sel. (▼▲) Adj. Height : 600

- **Select [Aspect] mode in the OSD menu to activate the[User Aspect] mode.**

- **After activation, press the Knob to get ready for controlling.**

User Aspect Width : 798
(ENT.) Sel. (▼▲) Adj. Height : 600

User Aspect Width : 800
(ENT.) Sel. (▼▲) Adj. Height : 598

- Adjust the ratio using the Knob.

- Control range for width :
  TSM-182W : Min[100] ~ Max[1366]
  TSM-232W : Min[100] ~ Max[1920]

- Control range for height :
  TSM-182W : Min[100] ~ Max[768]
  TSM-232W : Min[100] ~ Max[1080]

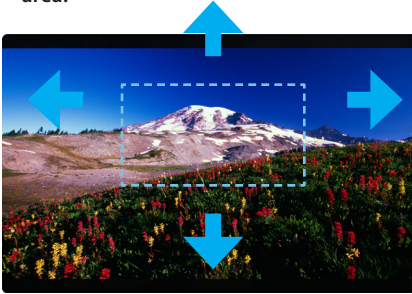- The size-adjusted picture always stay in the center of the screen.

To adjust the 16:9 aspect ratio of 1920X1080 resolution into 2.35:1 aspect ratio, adjust the width and height as TSM-182W : 1366X582 TSM-232W : 1920X817.
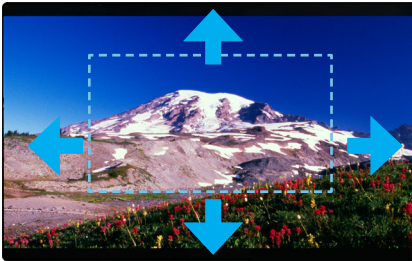
8. Other Functions

[5] ZOOM

● **Used to magnify the input signal from 0% to 90%.**

● **Supports Zoom Width Scroll / Zoom Height Scroll function.**

● **Zooms IN/OUT focused on the scrolled area.**

<ZOOM OFF>

<ZOOM 50%>

<ZOOM 75%>

[6] FREEZE

● **The function makes a user hold an image from displaying picture.**

1. It provides a stopped image from displaying picture on the screen.

8. Other Functions

[7] C.TEMP

● **The function adjusts color temperature.**

   1. It changes the color temperature in order of
      3200K, 5600K, 6500K, 9300K, USER1, USER2
      and USER3.

[8] PBP

● **The function activates PBP function and
decides picture ratio.**

   1. PBP picture ratios are PBP ASPECT and PBP
      FULL.
   2. You can use PBP function for all input signal
      TSM model supports.
   * You cannot use HDMI and DVI-Digital
     together in PBP function at the same time.

<PBP-Aspect>   <PBP-Full>

<PBP Picure Size>

8. Other Functions

[9] PIP

● **The function activates PIP function and adjusts PIP picture size.**

  1. PIP picture sizes are PIP SMALL and PIP LARGE.
  * You cannot use HDMI and DVI-Digital together in PIP function at the same time.

<PIP MODE>

[10] POSITION

● **The function changes PIP picture position.**

  1. PIP picture positions are BOTTOM-LEFT, BOTTOM-RIGHT, TOP-LEFT and TOP-RIGHT.
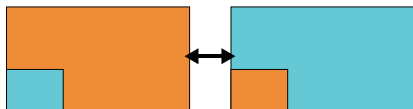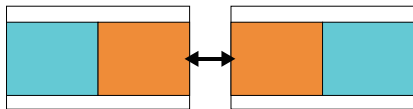

<Bottom-Left>   <Bottom-Right>

<Top-Left>   <Top-Right>

<PIP picture position>

8. Other Functions

[11] SWAP

- **The function exchange main picture and PIP/PBP picture in PIP/PBP mode.**

<SWAP in PIP mode>

<SWAP in PBP mode>

[12] INFO.

- **Displays current status and function setting of the monitor.**
- **It displays when you press [Info.] in front of the monitor.**

  1. [Format] : Current input signal for main picture and PIP picture
  2. [PIP Mode] : Current status of PIP activating
  3. [Color Temp.] : Current color temperature
  4. [Scan] : Current scan setting status
  5. [Aspect] : Current aspect ratio setting status
  6. [User config.]
  7. [Key LED]


```
           System information

Format      Main :          SDI
              1920 x 1080      60 i

              Pip :           SDI
              1920 x 1080      60 i


PIP Mode   :      PIP Off      Color Temp  :     User 1
Scan       :     Zero Scan     Aspect      :      16:9
User config :     User 1       Key LED     :      Off
```

9. DVI / HDMI Support Resolution

DVI ANALOG / DIGITAL /HDMI SUPPORT RESOLUTION (TSM-182W)

● **DVI-ANALOG mode supports the following modes :**

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

● **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

● **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 ANALOG/DIGITAL 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 / HDMI Support Resolution

DVI ANALOG / DIGITAL /HDMI SUPPORT RESOLUTION (TSM-232W)

● **DVI-ANALOG mode supports the following modes :**

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 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 ANALOG/DIGITAL 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

		TSM-182W
LCD	Size	18.5"
	Resolution	1366 X 768 (16:9)
	Pixel Pitch	0.300(H) X 0.300(V) mm
	Color Depth	16.7M (Dithered 8bit)
	Viewing Angle	H : 178 degrees / V : 178 degrees
	Luminance of white	300 cd/ m² (Center)
	Contrast Ratio	1000 : 1
	Display Area	409.8(H) X 254.6(V) mm
Input Connector	1 X DVI-I	DVI-IN
	1 X BNC	CVBS Input
	1 X BNC	SDI Channel Input
	1 X HDMI	HDMI Input
Output	1 X BNC	CVBS Output
	1 X BNC	SDI Channel (Active Through Out)
Input Signal	Analog	Composite
	3G-SDI	2.970Gbps
	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)
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(60/59.94/50/30/29.97/25/24/23.98/30sF/29.97sF/25sF/24sF/23.98sF) 1080i(60/59.94/50)
	SMPTE-274M	1080i (60/59.94/50)
		1080p (30/29.97/25/24/24sF/23.98/23.98sF)
	SMPTE-296M	720p (60/59.94/50)
	SMPTE-260M	1035i (60/59.94)
	SMPTE-125M	480i (59.94)
	ITU-R BT.656	576i (50)
Audio In		Embedded Audio / Analog Stereo (Phone Jack)
Audio Out		Analog Stereo (Phone Jack), Speaker (Mixed Mono)
Power		AC 100~240V (50~60Hz)
Power Consumption (Approx.)		60 Watts(Max. 5A)
Operating Temperature		0℃ to 40℃ (32˚F to 104˚F)
Storage Temperature		-20℃ to 60℃ (-4˚F to 140˚F)
Main Body Dimensions (mm/inch)		442.5 x 309.2 x 65.4 (17.42 x 12.17 x 2.57)
Main Body Dimensions with stand (mm/inch)		482.5 x 333.4 x 137.5 (18.99 x 13.13 x 5.41)
Box Dimensions (mm/inch)		550 X 450 X 280 (21.65 X 17.72 X 11.02)
Weight		5.1kg / 11.24lbs
Basic Accessories		AC Power Cord / Stand / Manual
Optional Accessories		Rack Mountable Kit, Acrylic Filter

* The specification above may be changed without notice.

10. Product Specifications

		TSM-232W
LCD	Size	23"
	Resolution	1920 X 1080 (16:9)
	Pixel Pitch	0.265(H) X 0.265(V) mm
	Color Depth	16.7M (Dithered 8bit)
	Viewing Angle	H : 178 degrees / V : 178 degrees
	Luminance of white	300 cd/ m² (Center)
	Contrast Ratio	1000 : 1
	Display Area	509.18(H) X 286.42.6(V) mm
Input Connector	1 X DVI-I	DVI-IN
	1 X BNC	CVBS Input
	1 X BNC	SDI Channel Input
	1 X HDMI	HDMI Input
Output	1 X BNC	CVBS Output
	1 X BNC	SDI Channel (Active Through Out)
Input Signal	Analog	Composite
	3G-SDI	2.970Gbps
	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)
SDI Input Signal Formats	SMPTE-425M-A/B	1080p(60/59.94/50/30/29.97/25/24/23.98/30sF/29.97sF/25sF/24sF/23.98sF) 1080i(60/59.94/50)
	SMPTE-274M	1080i (60/59.94/50)
		1080p (30/29.97/25/24/24sF/23.98/23.98sF)
	SMPTE-296M	720p (60/59.94/50)
	SMPTE-260M	1035i (60/59.94)
	SMPTE-125M	480i (59.94)
	ITU-R BT.656	576i (50)
Audio In		Embedded Audio / Analog Stereo (Phone Jack)
Audio Out		Analog Stereo (Phone Jack), Speaker (Mixed Mono)
Power		AC 100~240V (50~60Hz)
Power Consumption (Approx.)		60 Watts(Max. 5A)
Operating Temperature		0℃ to 40℃ (32°F to 104°F)
Storage Temperature		-20℃ to 60℃ (-4°F to 140°F)
Main Body Dimensions (mm/inch)		552.5 x 354 x 66.1 (21.75 x 13.94 x 2.60)
Main Body Dimensions with stand (mm/inch)		599.7 x 381.8 x 142 (23.61 x 15.03 x 5.59)
Box Dimensions (mm/inch)		675 X 535 X 280 (26.57 X 21.06 X 11.02)
Weight		6.9kg / 14.11lbs
Basic Accessories		AC Power Cord / Stand / Manual
Optional Accessories		Rack Mountable Kit, Acrylic Filter

* The specification above may be changed without notice.

11. 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

MEMO

MEMO

TVLogic Always ON-AIR