Quad-Split Monitors

OBM-R210Q





Operational Instructions OBM-Q240 OBM-R210Q



Outstanding Picture Quality

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1. Precaution

Always use set voltage.

OBM-Q240 : AC 100 ~ 230V, 50/60Hz. DC 12V

OBM-R210Q : DC 24V

All these instructions should be read and understood before operating the unit.

If liquid is spilled on or impacts this product, please disconnect the product immediately and seek professional help before continued use.

Unplug the product from the wall outlet if it is not to be used for several days or more. Unplug when happening something any problems.

Keep the product in a well-ventilated place to prevent overheating.

Do not install the product near any heat-generating equipment. Also, keep the product out of direct sunlight or dusty areas.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. The power cord plug shall be connected to a MAINS socket outlet with a protective earthing connection.

When using other DC 12V(OBM-Q240) or DC 24V(OBM-R210Q) adapters instead of the standard adapter provided by the manufacturer, please check the proper load capacity or current capacity and use an adapter with stable voltage.

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

When mounting the product be sure to install the product according to the mecommended by the manufacturer

A very small proportion of pixels may be stuck, either always off (black), always on (red, green, or blue), or flashing. In addition, over a long period of use, because of the physical characteristics of the liquid crystal display, such stuck pixels may appear spontaneously. These problems are not a malfunction.

If a fixed picture such as a frame of a divided picture or time code, or a still picture is displayed for a long time, an image may remain on the screen and be superimposed as a ghosting image.

The permanent burn-in may occur for LCD panel if still images are displayed in the same position on the screen continuously, or repeatedly over extended periods.

To reduce the risk of burn-in,

- a. Turn off the character displays.
- b. Turn off the power when not in use.
- c. Turn off the power if the monitor is not to be used for a prolonged period of time.

When mounting the product be sure to install the product according to the mecommended by the manufacturer.

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.

When 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 may result in fire, electric shock and/or other danger.

Only clean the product with a noncommercial, mild and neutral detergent.

Do not throw away the carton and packing materials. When transporting the product, make use of its original packaging for safer carriage.



This mark indicates the possibility of injury or damage to property.



To identify any terminal which is intended for connection to an external conductor for protection against electric shock in case of a fault or the terminal of a protective earth (ground) electrode.



-means Power on when pressing

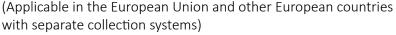
means Power off when pressing

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 area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

⚠ Warning!! : Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Disposal of Old Electrical & Electronic Equipment





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.

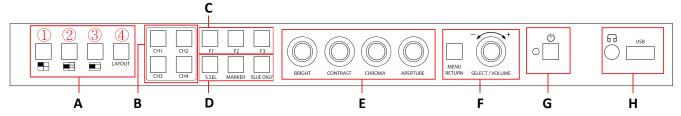
2. Main Features

The OBM-Q240 and OBM-R210Q split and display the input videos up to 4 x 3G/HD/SD-SDI signals. The OBM-Q240 and OBM-R210Q have the various quad-split modes, and can display Waveform, Vector Scope, Time Code display, UMD, OSD Tally, Audio Level Meter for the four different input channels independently.

- Video Input: 4 x 3G-SDI, 1 x HDMI 2.0
- Video Output: 4 x 3G-SDI
- Audio In: Embedded Audio, Analog Stereo (Phone Jack)
- Audio Out: Analog Stereo (Phone Jack), Internal Speaker(Mono/Stereo)
- 3G-SDI Level A/B Support
- HD HDR(High Dynamic Range) Display supporting ST 2084, HLG, S-Log3
- Various Quad-display Modes
- Waveform, VectorScope (Wave + Vector : Single Mode, 3 Side Mode, 3 Bottom Mode)
- Time Code Display in Quad mode
- 16ch Audio Level Meter Display in Quad mode
- Gamma Selection $(1.0 \sim 3.0)$
- Color Temperature(3200K, 5500K, 6500K, 9300K, USER 1/2/3)
- 1:1 Pixel Mapping
- Blue Only
- H/V Delay
- Various Markers
- Blue/Mono Only
- Various Scan modes
- Freeze Frame
- 3 Color Tally Lamp
- IMD(TSL V3.1/V5.0)
- White Internal Patterns Display for Color Test (Black ~ 100%, Color Bar)
- System Data Copy
- Key Lock & Password Lock
- Aspect
- Freeze
- Remote Control via GPI(RJ-45) Port
- Firmware Update via USB Flash Memory
- Rack & VESA Mount(Option)

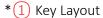
3. Location and Function of Parts and Controls

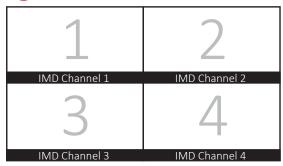
Front Panel (OBM-Q240)



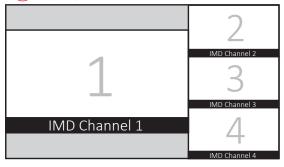
A: Layout Select Buttons/Lamp

Press the LAYOUT button to display each screen layout.

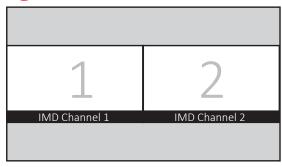




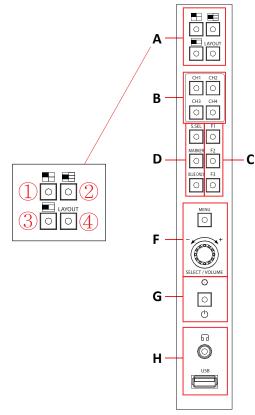
* (2) Key Layout



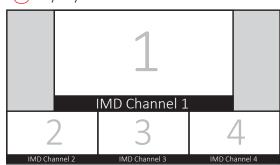
*(3) Key Layout











B: CH1 ~ CH4 Button/Lamp

*When (1), (3) Layout mode is selected,

[CH1] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 1] is displayed as full screen.

[CH2] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 2] is displayed as full screen.

[CH3] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 3] is displayed as full screen.

[CH4] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 4] is displayed as full screen.

*When (2), (4) Layout mode is selected,

[CH1] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 1] is displayed in IMD Channel 1 screen.

[CH2] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 2] is displayed in IMD Channel 2 screen.

[CH3] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 3] is displayed in IMD Channel 3 screen.

[CH4] Button/Lamp

- When you push this button, the input signal which is adjusted in the menu [Channel Source Setting > Channel 4] is displayed in IMD Channel 4 screen.

C: F1 ~ F3 Button/Lamp

Press to adjust or turn on/off the assigned function.

The following functions are assigned at the factory.

[F1]: HDMI to Screen4

[F2]: H/V Delay

[F3]: Color Temp

D: Function Button/Lamp

Press to adjust or turn/off each function.

[S-SEL] Button

- Press this button to select the channel which you want to adjust the settings of.
- The channel is selected in the order of Channel 1 > Channel 2 > Channel 3 > Channel 4 > All Channel.
- The settings which can be adjusted to each Channel are Color Temp., R/G/B Gain, R/G/B Bias, Scan, Aspect, 3G Signal Format, RGB Range, Blue only, Marker, Bright, Contrast, Chroma.

[MARKER] Button

- Press the button to activate and deactivate the Marker.

[BLUE ONLY] Button

- Press the button to activate and deactivate the Blue Only function.
- You may remove R(red) and G(green) from the input signal and play the screen only with B(blue) signal. This function is convenient to adjust Chroma and Phase and to observe the signal noise.
- The button may be pressed twice to change the screen to MONO mode. (This mode uses only Luminance value)

E: Rotary encoder (OBM-Q240 Only)

[BRIGHT] knob

Press this knob to display the adjustment screen and adjust the picture brightness. Press again to hide the adjustment screen. Turn the knob right to increase the brightness and turn left to decrease it.

You can adjust the different value to each Channel by selecting the Channel using [S-SEL] button.

[CONTRAST] knob

Press this knob to display the adjustment screen and adjust the picture contrast. Press again to hide the adjustment screen. Turn the knob right to increase the contrast and turn left to decrease it.

You can adjust the different value to each Channel by selecting the Channel using [S-SEL] button.

[CHROMA] knob

Press this knob to display the adjustment screen and adjust the color intensity. Press again to hide the adjustment

screen. Turn the knob right to increase the color intensity and turn left to decrease it.

You can adjust the different value to each Channel by selecting the Channel using [S-SEL] button.

If the color format is RGB, this function doesn't work.

[APERTURE] knob

Press this knob to display the adjustment screen and adjust the picture sharpness. Press again to hide the adjustment screen. Turn the knob right to make the picture sharper and turn it left to make the picture softer.

If the color format is RGB, this function doesn't work.

F: Menu Operation Buttons

Displays or sets the on-screen menu.

[MENU/RETURN]

- Activates and deactivates the display of the Main Menu.
- When the on-screen menu is not displayed, if this button is pressed the main menu is display. When the menu is displayed, press the button to return to the previous menu.

[SELECT/VOLUME] knob (Menu selection control)

- When the menu is displayed, turn the knob to select a menu item or setting value, and then press the knob to confirm the setting.
- **(OBM-Q240)
- If the menu is not displayed and this knob is pressed, the adjustment screen of [VOLUME] is displayed to adjust the audio volume.
- **(OBM-R210Q)
 - Press this knob to change the modes in the order of [VOLUME] [BRIGHT] [CONTRAST] [CHROMA] [APERTURE] and adjust each mode's value.
- Press this knob to change the modes in the order of [Variable Marker] and adjust value. [Variable Marker]: When Marker function is activated and Aspect Marker is set Variable, this mode is displayed.

G: (Standby) switch and indicator

- Press to turn the power on when this monitor is in standby mode. After being turned on, the monitor performs Initialization and the indicator flashes in green.
- Press the switch again for a second to set the monitor in standby mode. Then, the indicator flashes in orange and then turns red. The indicator in orange means that the monitor goes into the standby mode. When the indicator flashes in orange, this button doesn't work.

H: 1 (headphone) jack & Speaker and USB connector

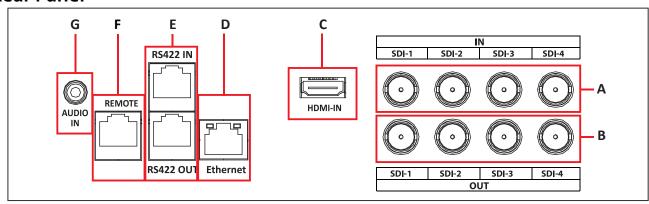
Headphone jack & Speaker

- The audio signal which is selected using the input select button is output in stereo sound.
- When SDI signals are input, the audio signals of the channels selected with SDI Audio Setting in the User Configuration menu are output.
- When the headphones are connected to the jack, audio signals will not be output.

[USB] Connector

- To update CPU, GPU, FPGA program.
- To connect the monitor with the Color Calibration program provided by the manufacturer and perform the color calibration.
- To connect the monitor with the control program provided by the manufacturer and control functions

Rear Panel



A: SDI IN (SDI Input) connectors (BNC)

Input connectors for SDI signals. For details, see "Connecting the SDI Signals" (page 21).

B: SDI OUT (SDI Output) connectors (BNC)

Output connectors for SDI signals.

Each connector outputs the signal which is input to the corresponding SDI IN connector. **Note-Output is activated only when the power is on. Output is not activated in standby mode.

C: HDMI input connectors

Input connectors for HDMI signals.

D: LAN(10/100) IN/OUT connector

Used for the future function expansion.

Connects to the LAN (10/100) connector of the network by using 10BASE-T/100BASE-TX LAN cable.

A daisy chain connection using the LAN input/output connectors enables the control of multiple monitors in sequence.

E: SERIAL REMOTE IN/OUT connector (RJ-45)

Used for the future function expansion.

Connects the monitor to the control program provided by the manufacturer by using RS-422/485 communication or the external UMD(IMD) equipment and controls the monitor.

F: PARALLEL REMOTE connector(RJ-45, 8-pin)

Forms a parallel switch and controls the monitor externally.

**Note - For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to this port. Follow the instructions about this port.

[Pin Assignment]



| 1 3G SDI-1 2 3G SDI-2 3 Analog 4 HDMI 5 Zero Scan 6 1:1 Scan 7 Power | Pin Number | Function |
|--|------------|-----------|
| 3 Analog 4 HDMI 5 Zero Scan 6 1:1 Scan 7 Power | 1 | 3G SDI-1 |
| 4 HDMI 5 Zero Scan 6 1:1 Scan 7 Power | 2 | 3G SDI-2 |
| 5 Zero Scan 6 1:1 Scan 7 Power | 3 | Analog |
| 6 1:1 Scan 7 Power | 4 | HDMI |
| 7 Power | 5 | Zero Scan |
| | 6 | 1:1 Scan |
| O CND | 7 | Power |
| 8 GND | 8 | GND |

Functions can be changed in [Remote] section of the menu.

G: AUDIO IN connector (Stereo mini jack)

Connector for analog audio input. Analog input can be selected with SDI Audio Setting in User Configuration menu.

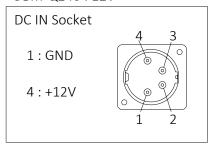
H: DC IN terminal

Connects the DC power supply to the monitor.

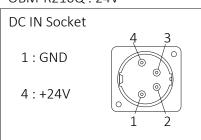
- OBM-Q240 : 12V - OBM-R210Q : 24V

Make sure to use DC 12V power supply for OBM-Q240 and DC 24V power supply for OBM-R210Q.

- OBM-Q240: 12V

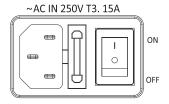


- OBM-R210Q: 24V



I: AC IN terminal (OBM-Q240 only)

AC power input connector.
Connects the provided AC power cord.



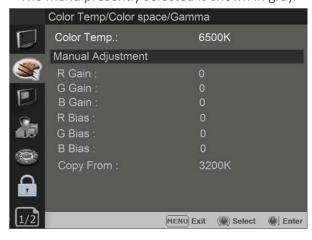
4. Using the Menu

This monitor is equipped with an OSD menu to make various adjustments and settings such as picture control, input setting, set setting change, etc.

1. Press the MENU button.

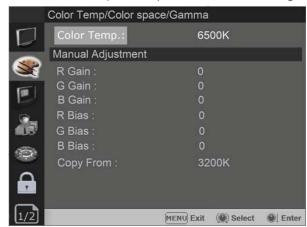
The menu appears.

The menu presently selected is shown in gray.



2. Turn SELECT/VOLUME knob to select a menu, then press the knob.

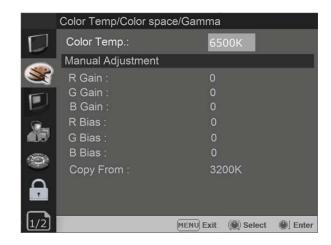
The menu icon presently selected is shown highlighted.



3. Select an item.

Turn SELECT/VOLUME knob to select the item, then press the knob.

The item to be changed is shown highlighted, and the sub menu is displayed on the right.



4. Make the setting or adjustment on an item.

How to change the adjustment level:

To increase the level, turn the SELECT/VOLUME knob right. To decrease the level, turn the SELECT/VOLUME knob left.

How to change the setting:

Turn the SELECT/VOLUME knob to change the setting, then press the knob to confirm the setting.

**Note- An item displayed in gray cannot be accessed. The item is accessible if it is displayed in white.

To return the display to the previous screen

Press the MENU button.

To clear the menu

Press the MENU button

5. Adjustment Using the Menus

The OSD menu of this monitor consists of the following items.



Status menu (To indicate the current settings)

Format

Color Temp

Brightness

Contrast

Chroma

Aperture

Color Space

Gamma

User Preset

RGB Range

Back Light

WFM/Vector

Audio Level Meter

Focus Assist

Time Code

Volume

SDI Input

SDI Payload ID

Identifier

Sampling

Picture Rate

Scanning Method

Bit Depth

Link Assignment

Model Name

Serial Number

Board Version

Operation Time

Back Light

Last Calibration Time



Color Temp./Color Space/Gamma menu

Color Temp. — R/G/B Gain

Manual Adjustment — R Gain

G Gain

B Gain

R Bias

G Bias

B Bias

Color Space — Copy From

HDR-EOTF — Type

Gamma



Channel Source menu

Channel Source Setting

Channel 1

Channel 2

Channel 3

Channel 4

Lock Preference Setting

FrameLock



Marker Setting

Marker

Aspect Marker – Variable Aspect

Size/Transparency

Peak Hold Time

Display Type

Center Marker Area Marker Color Aspect Mat

Fit

Thickness
WFM/Vector Setting
WFM/Vector Type

Intensity
Transparency
Color
Line Select
| Line Position
Position

Closed Caption Setting - Closed Caption

Fast Mode Setting 708 Fast Mode 608

System Setting— Internal Pattern

Size

Key LED
OSD Time
OSD position
System Data

Time Code

Time Code Position/Size



Remote menu

Parallel Remote

1 Pin

2 Pin

3 Pin

4 Pin

5 Pin

6 Pin

7 Pin

8 Pin

Monitr ID

In-Monitor Display Setting

IMD Type
Transparency
Text Color
Left Tally Color
Right Tally Color

Network Setting

DHCP IP Address Subnet Mask

Gateway Port No.



Security Setting

Key Lock Password

> User Parameter Lock Change Password

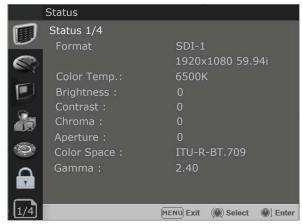
6. OSD Menu Operations



Status Menu

The Status menu displays the current status of the monitor. The following items are displayed.

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Format

Color Temp

Brigntness

Contrast

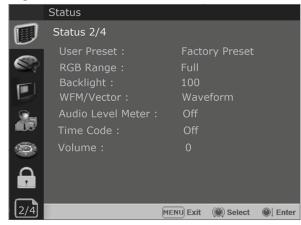
Chroma

Aperture

Color Space

Gamma

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User Preset

RGB Range

Back Light

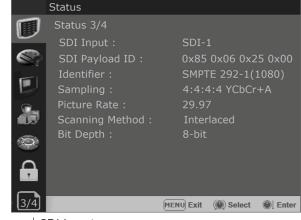
WFM/Vector

Audio Level Meter

Time Code

Volume

Page 3/4



SDI Input

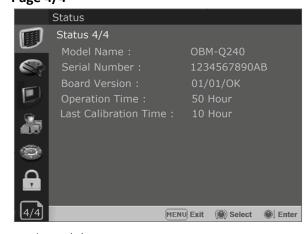
SDI Payload ID — Id

Identifier
Sampling
Picture Rate
Scanning Method

Bit Depth

*** When the SDI signal is connected, these items are displayed.

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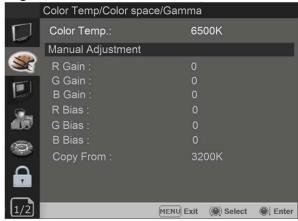
Model Name Serial Number Board Version Operation Time Last Calibration Time



Color Temp/Color Space/Gamma Menu

These menus are used for adjusting or setting the color temperature, color space or gamma of the picture.

Page 1/2



Color Temp

- Selects the color temperature from among [3200K] [5500K] [6500K] [9300K] [User1] [User2] [User3].

The different setting value can be adjusted to each Channel.

Manual Adjustment

- If you set the Color Temp. to User 1/2/3, the item is changed from black to white, which means you can adjust the color temperature.

R/G/B Gain/Bias

- Adjusts the color balance(Gain, Bias). The different setting value can be adjusted to each Channel.

Copy From

- The Gain and Bias data of each Color Temp. are restored to User adjustment.

Page 2/2



Color Space

- Selects the color space between [ITU-R BT.709], [Native].

HDR-EOTF

Selects whether to enable or disable the HDR-EOTF setting.

Type

Selects the mode of HDR gamma.

- ST 2084-300 : This mode displays the absolute brightness up to 300 cd/m². So, the highlights over 300 cd/m² are clipped.
- ST 2084-1000 : This mode displays the relative brightness up to 1000 cd/m². The part exceeding 1000 cd/m² is clipped.
- ST 2084-10000: The characteristics of LCD panel doesn't allow to produce the ideal brightness required by this standard, so the gamma is displayed in the relative brightness
- HLG- 0.98(300) (Hybrid Log Gamma) : This mode can be selected when the White is 300 cd/m² in HLG.
- HLG-1.0 / 1.1 / 1.2 / 1.3 / 1.4 / 1.5 : These modes allow the user to apply HLG from 1.0 up to 1.5.
- HLG-SG(1.2): HLG gamma is applied to 1.2 and then displayed in the absolute value up to 300 cd/m²..
- S-Log3: Select the S-Log3(HDR) gamma.

HDR maximum luminance OBM-Q240 : 200 cd/m² OBM-R210Q : 1000 cd/m²



Color Temp/Color Space/Gamma Menu

PQ and HLG gamma is different, depending on each model's luminance.

OBM-Q240 : - ST 2084-200- HLG-0.90(200) OBM-R210Q : - ST 2084-1000- HLG-1.2(1000)

Gamma

Selects the appropriate gamma mode from 1.00 to 3.00.

**Note

- When the HDR-EOTF is set Off, this menu becomes activated.
- When the color space is set to Native, this menu becomes deactivated.

Back Light

- Adjusts the level of the back light level.
 If the back light value is increased, the screen becomes brighter.
- ** If the setting in Color Temp. menu and Color Space menu is changed, the value of Back Light returns to the default value of the color calibration in the factory.



Channel Source Menu

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* Channel Source Setting

This menu is used to adjust the input signal to the four display channel and output it on the screen.

* Channel 1~4

- Adjusts the input signal to Channel 1 to 4 respectively.
- The input signal is selected in the order of SDI-1 > SDI-2 > SDI-3 > SDI-4 > HDMI.
- When the [HDMI to Channel 4] function is assigned to one of the Function buttons and then it is activated, [Channel 4] is fixed to [HDMI] and cannot be adjustable.

* Lock Preference Setting

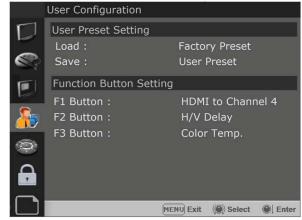
- Adjusts the sync of the output signal.
- The mode switches in the order of Channel 1
 Channel 2 > Channel 3 > Channel 4 >
 Free Run.



User Configuration Menu

User Configuration consists of the adjustment menus such as [User Preset], [Function Button Setting], [Input Setting], [Speaker Out / Audio Level Meter Setting], [Marker Setting], [WFM/Vector Setting], [Closed Caption Setting], [System Setting].

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User Preset Setting

[Load]: Load the saved settings in [User Preset1], [User Preset2], [User Preset3], [User Preset4], and [Factory Preset].

[Save]: Save the current setting status to [User Preset1], [User Preset2], [User Preset3], [User Preset4].

- *Setting values which need Color Calibration are not saved. (ex: R/G/B gain, Backlight, gamma, etc.)
- ** When [User Preset Lock] of [Password] is set [On], [User Preset 1] setting values are protected by password. If you want to save the changed setting values to [User Preset 1], you can enter the password first to set [User Preset Lock] to [Off] and then save the values.

Function Button Setting

- Assigns the function for F1 to F5 buttons on the front panel.

The following functions can be assigned.: [HDMI to Channel 4], [H/V Delay], [Color Temp.], [Audio Level Meter], [Time Code], [WFM/Vector], [HDR-EOTF], [Freeze], [Backlight], [ST2084-1000], [User Preset1], [User Preset2], [User Preset3], [User Preset4], [Mute].

- The following functions are assigned in the factory.

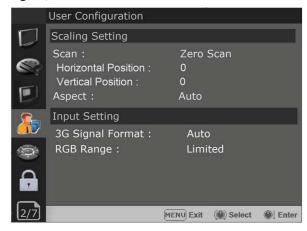
[F1 Button]: HDMI to Channel 4

[F2 Button] : H/V Delay [F3 Button] : Color Temp.

- HDMI to Channel 4 : When this function is activated,

the HDMI input is output to Channel 4.

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Scaling Setting

Scan

Adjusts the Scan mode. Adjusted in the order of Zero Scan > 1:1 Scan.

[Horizontal Position]: In the [1:1 Scan] mode, this function enables you to move the image horizontally and see the part of the image you want.

*Adjustment range is-5 to +5. In 0, the center of the image is displayed. From-5 to-1, the left part of the image is displayed. From +1 to +5, the right part of the image is displayed.

[Vertical Position]: In the [1:1 Scan] mode, this function enables you to move the image vertically and see the part of the image you want.

- *Adjustment range is-5 to +5. In 0, the center of the image is displayed. From-5 to-1, the upper part of the image is displayed. From +1 to +5, the lower part of the image is displayed.
- * Aspect

Adjusts the Aspect Ratio of the video. Adjustment order: Auto > 16:9 > 4:3 > 2.35:1> 1.85:1 > 15:9 > 16:10.



User Configuration Menu

Input Setting

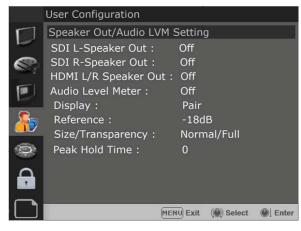
3G Signal Format

- Selects the format of 3G SDI input signal. [Auto],[A 4:4:4 YUV 10b], [A 4:4:4 GBR 10b], [A 4:4:4 YUV 12b], [A 4:4:4 GBR 12b], [A 4:2:2 YUV 12b], [B DL 4:4:4 YUV 10/12b], [B DL 4:4:4 GBR 10/12b], [B DL 4:2:2 YUV 12b], [B DL 4:2:2 YUV 10b 60p]
- The different setting value can be adjusted to each Channel.

RGB Range

- Selects Black Level and White Level of RGB format.
 - * Limited : 64(10bit)/256(12bit)~ 1023(10bit)/4095(12bit)
 - * Full: 0(Black Level) 1023(10bit)/4095(12bit)
- The different setting value can be adjusted to each Channel.

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Speaker Out / Audio LVM Setting

- -Selects the audio channel of the SDI & HDMI input signal
- * SDI : L-Speaker Out/R-Speaker Out
- Selects the embedded audio channel for the left and right audio out of the Headphone jack on the front panel of the monitor. Audio channel can be selected among Ch1 ~ Ch16, Analog.

*HDMI: L/R Speaker Out

- Selects the embedded audio channel of the HDMI 2 signal. The available models are [Off], [HDMI On], [Analog On].

Audio Level Meter Setting

Selects the embedded audio mode.

- : [Off], [8Ch [G1+G2]], [8Ch [G2+G3]], [8Ch [G3+G4]],[8Ch [G1+G3]], [8Ch [G1+G4]], [8Ch [G2+G4]],[16Ch [G1~G4]]
 - ** In HDMI input, either [Off] or [HDMI 2Ch] can be selected.

Display

Selects the display method for Audio Level Meter. Available modes are [Group] and [Pair].

** In HDMI input, the mode is fixed to [Pair].

Reference

Selects the default value of Audio Level Meter. Available options are [-18dB] and [-20dB].

Size/Transparency

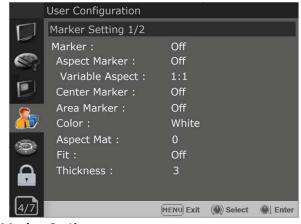
Selects the size and transparency of Audio Level Meter.

Available options are [Normal/Full], [Normal/Half], [Large/Full], [Large/Half].

Peak Hold Time

Controls the speed rate of Peak Hold Decay Time occurring when the audio volume decreases.

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Marker Setting

Marker

Selects On to display the marker, and Off to deactivate it.

Aspect Marker

Selects the aspect ratio of the marker. You can select from among [Off], [16:9], [4:3], [4:3 ON AIR], [15:9], [14:9], [13:9], [1.85:1], [2.35:1], [2.39:1], [1.85:1 & 4:3], [1.66:1], [1.896:1], [Variable], [Custom].

- The different setting value can be adjusted to each Channel.



User Configuration Menu

Variable Aspect

Allows the user to select the aspect ratio from the range between 1.00:1 and 3.00:1.

- The different setting value can be adjusted to each Channel.

Center Marker

Selects On to display the center marker and Off not to display it.

- The different setting value can be adjusted to each Channel.

Area Marker

Selects the size of the area marker.

You can select from among [Off], [80%], [85%], [88%], [90%], [93%], [100%], [EBU Action 16:9], [EBU Graphic 16:9], [EBU Action 14:9], [EBU Graphic 4:3].

- The different setting value can be adjusted to each Channel.

Color

Selects the color of the marker.

You can select from among [White], [Gray], [Red], [Green], [Blue], [Yellow], [Cyan], [Magenta].

Aspect Mat

Darkens the outside of the area of the Aspect Marker. You can select from 0 to 7.

- The different setting value can be adjusted to each Channel.

Fit

With Fit On, the Area Marker is displayed relative to the Aspect Marker in use.

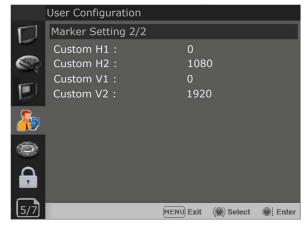
With Fit Off, the Area Marker is displayed relative to the incoming video source.

- The different setting value can be adjusted to each Channel.

Thickness

Adjusts the thickness of the marker lines. You can select it from 1 to 7.

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Marker Setting 2/2

- In order to adjust Custom H1/H2/V1/V2, [Aspect Marker] > [Custom] should be selected.
- The different setting value can be adjusted to each Channel.

Custom H1

- Adjusts the first(upper) line of the Custom Marker height.

Custom H2

- Adjusts the second(bottom) line of the Custom Marker height.

Custom V1

- Adjusts the first(left) line of the Custom Marker width.

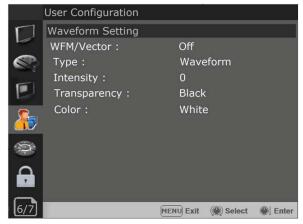
Custom V2

- Adjusts the second(right) line of the Custom Marker width



User Configuration Menu

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WFM/Vector Setting

WFM/Vector

- Select [On] to display the [WFM/Vector] and [Off] not to display.

Type

- Sets to activate and deactivate Waveform monitor and Vectorscope.

You can select from among [Waveform], [Vector], [Wave+Vector], [Waveform Wide].

- Single Mode : Waveform > Vector > Wave+Vector > Waveform Wide.
- Square Mode : Waveform > Vector
- 3 Side/3 Bottom : Channel 1 screen is only supported. Waveform > Vector > Wave+Vector > Waveform Wide.
- PBP : Waveform > Vector > Wave+Vector > Waveform Wide
 - *This function doesn't work when RGB format signal is input.

Intensity

Adjusts the brightness of Waveform and Vectorscope display. You can select from 1 to 64.

*Transparency

Adjusts the transparency level of Waveform and Vectorscope.

[Black]: The background is black. Displayed image is hidden behind the background.

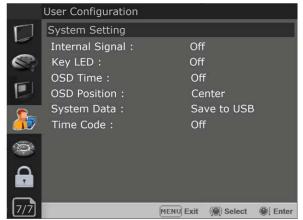
[Half]: The background is transparent. Displayed image can be seen indistinctly behind the Waveform and Vectorscope display.

Color

Selects the color of Waveform monitor.

Available colors are [Green] and [White].

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System Setting

Internal Signal

Generates the White Pattern internally. The selectable range is from 100%(White) to 0%(Black), ColorBar.

- Channel 1 output is only supported.

Key LED

Sets On to turn on the LED of the keys, and sets Off to turn off the LED of the keys.

OSD Time

Adjusts the display time of the OSD menu.

[10 Sec.]: The OSD menu will be disappeared after 10 seconds.

[20 Sec.]: The OSD menu will be disappeared about 20 seconds.

[30 Sec.]: The OSD menu will be disappeared about 30 seconds.

[On]: The OSD menu will not be disappeared.

OSD Position

Sets the position of OSD. Selects [Center] or [Left Top].

System Data

- [Save to USB]

This function saves the setting values adjusted in the monitor to the USB memory. User Preset settings are also saved.

- [Copy from USB]

Recalls the settings saved in the USB memory, and load them to the monitor. User Preset settings which are recalled from the USB memory are also saved.

- R/G/B gain which are generated by Color Calibration is not saved to the USB memory or recalled to the monitor.



User Configuration Menu

- When [User Parameter Lock] is set On in the [Security Setting] menu, User Preset 1 data recalled from the USB memory is not saved to the monitor and the current User Preset 1 setting values remain unchanged.

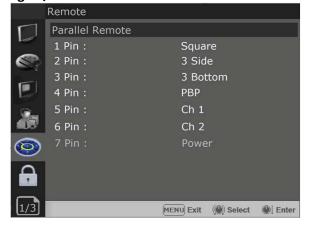
Time Code

- Selects the type of the time code to bedisplayed. [VITC]: To display the VITC time code [LTC]: To display the LTC time code



Remote Menu

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Parallel Remote

Selects the Parallel Remote connector pins for which you want to change the function.

Various functions can be assigned to pin 1 to 6. The following is the list of the functions which can be assigned to the pins.

[--]

[Square]

[3 Side]

[3 Bottom]

[PBP]

[Ch 1]

[Ch 2]

[Ch 3]

[Hdmi to Channel 4]

[Zero Scan]

[1:1 Scan]

[4:3 Aspect]

[16:9 Aspect]

[Auto Aspect]

[H/V Delay]

[Blue Only]

[Mono]

[Marker]

[Tally R]

[Tally G]

[User Preset1]

[User Preset2]

[User Preset3]

[User Preset4]

[ITU-R BT.709]

[Native]

[HDR-EOTF]

** [--]: No function is assigned.

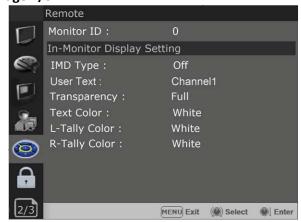
*7 Pin: For Power On and Off only

*8 Pin: For Ground only



Remote Menu

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Monitor ID

Sets the ID of the monitor to control the monitor through Serial Remote or Network.

- *If you set the Monitor ID in this menu, the Monitor ID of PBP, Square, 3 Side, 3 Bottom is automatically set as follows.
- * Square / 3 Side / 3 Bottom
 - Channel 2: Monitor Id+1
 - Channel 3 : Monitor Id+2
 - Channel 4 : Monitor Id+3
- * PBP
 - Channel 2: Monitor Id+1

In-Monitor Display Setting

The monitor supports "TSL UMD Protocol – V3.1 & V5.0"

provided by Television System Ltd.
[Transparency], [Text Color], [L-Tally Color],
[R-Tally Color] can be set in the setting menu.



- ** The monitor displays English alphabet, numbers, Symbolic codes.
- ** Up to 16 characters can be displayed in English.

IMD Type

- Selects the In-Monitor Display type. Available modes are [Off],[TSL V3.1], [TSL V5.0],[User].

User Text

- When [IMD Type] is selected as [User], the user can assign the IMD up to 8 characters of ASCII code.

Transparency

- Selects [Full] or [Half] for the background of IMD.

(OBM-Q240)

[Full]: The background is black. Displayed image is hidden behind the background.

- When the Layout is 3 Bottom mode, the image is scaled so the IMD area doesn't hide the image.

[Half]: The background is transparent. Displayed image can be seen indistinctly behind the IMD display.

(OBM-R210Q)

[Full]: The background is black. Displayed image is hidden behind the background.

[Half]: The background is transparent. Displayed image can be seen indistinctly behind the IMD display.

Text Color

Selects the color of text displayed in IMD.
-[White],[Red],[Green],[Blue],[Yellow],[Cyan],
[Magenta]

L-Tally Color

Selects the color of left tally lamp displayed in IMD.

-[White],[Red],[Green],[Blue],[Yellow],[Cyan],
[Magenta]

R-Tally Color

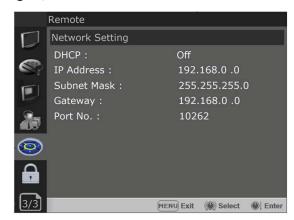
Selects the color of right tally lamp displayed in IMD.

-[White],[Red],[Green],[Blue],[Yellow],[Cyan],
[Magenta]



Remote Menu

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Network Setting

DHCP

- Toggle DHCP On or Off.

DHCP allows your monitor to receive an IP address from your network for remote control via various programs.

IP Address, Subnet Mask & Gateway

- You can manually configure network settings when DHCP is disabled.

Port No.

- Sets the port number.



Security Menu



Security Setting

Key Lock

When Key Lock function is set On, the change of the menu settings and functions doesn't work.

** The same function as [Key Lock] button on the front panel.

Password

- -This function allows the user to protect the setting values through password.
- -When the Password lock is applied, the functions and the setting values can be changed, but they are not saved.
- -When you protect the setting values with a password, set a four-digit number.
- -The initial password is 0000.
- -When you use [Password], change the initial password first.

User Parameter Lock

Selects [On] to protect the setting values. Selects [Off] to not protect by the password.

Change Password

Changes the password.

7. Available Signal Formats

This monitor is applicable to the following signal formats

HD-SDI

| Signal System | Signal Format |
|---|-------------------|
| 1920x1080 / 23.98, 24, 25, 29.97, 30p/Psf, 50, 59.94, 60i | 4:2:2 YCbCr 10bit |
| 2048 x 1080 / 23.98, 24, 25, 29.97, 30p/Psf | 4:2:2 YCbCr 10bit |
| 1280x 720 / 23.98, 24, 25, 29.97, 30, 50, 59.94, 60p | 4:2:2 YCbCr 10bit |

3G-SDI

| Signal System | Signal Format | |
|---|--|----------------------|
| 1920 x1080 / 50, 59.94, 60p | 4:2:2 YCbCr 10bit | Level A / Level B-DL |
| 1920 x1080 / 23.98, 24, 25, 29.97, 30p/Psf, 50, 59.94, 60i | 4:4:4 RGB 10bit 4:4:4 YCbCr 10bit 4:4:4 RGB 12bit 4:4:4 YCbCr 12bit | Level A / Level B-DL |
| 1280x 720 / 23.98, 24, 25, 29.97, 30, 50, 59.94, 60p | 4:4:4 RGB 10bit 4:4:4 YCbCr 10bit | Level A |
| 2048 x1080 / 48, 50, 60p | 4:2:2 YCbCr 10bit | Level A / Level B-DL |
| 2048 x 1080 / 23.98, 24, 25, 29.97, 30p/Psf | 4:4:4 RGB 10bit 4:4:4 YCbCr 10bit 4:4:4 RGB 12bit 4:4:4 YCbCr 12bit | Level A / Level B-DL |

HDMI

| Signal System | Signal Format | |
|--|---|--|
| 640 x 480p@59.94 / 60 | | |
| 720 x 480p@59.94 / 60 | 4:4:4 RGB 8 / 10 / 12bit 4:4:4 YCbCr 8 / 10 / 12bit 4:2:2 YCbCr 12bit | |
| 720 x 576p@50 | | |
| 1280 x 720p@50 / 59.94 / 60 | | |
| 1920 x 1080i@50 / 59.94 / 60 | | |
| 1920 x 1080p@23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60 | | |
| 2048 x 1080p@23.98 / 24 / 25 / 29.97 / 30 / 47.95 / 48 / 50 / 59.94 / 60 | | |
| 3840 x 2160p@23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60 | 4:4:4 RGB 8 / 10 / 12bit | |
| 4096 x 2160p@23.98 / 24 / 25 / 29.97 / 30 | 4:4:4 YCbCr 8 / 10 / 12bit 4:2:2 YCbCr 12bit | |
| 800 x 600p@60 | 4:4:4 RGB 8 / 10bit | |
| 1024 x 768@60 | 4:4:4 YCbCr 8 / 10bit | |
| 1920 x 1200@60 | 4:2:2 YCbCr 12bit | |

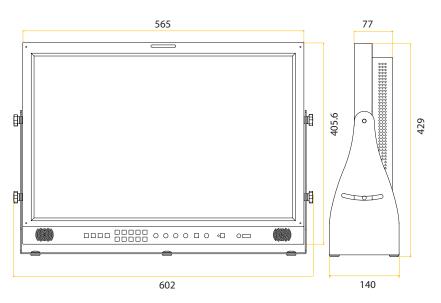
8. Product Specifications

OBM-Q240

| | ITEM | OBM-Q240 | |
|--------------|------------------------|--|--|
| Innut | BNC (SDI) | 4 x 3G/HD/SD-SDI | |
| Input | HDMI | 1 x HDMI 2.0 | |
| Output | BNC (SDI) | 4 x 3G/HD/SD-SDI | |
| | SMPTE ST 425-AB | 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 ST 274 | 1080p(30/29.97/25/24/23.98/24sF/23.98sF) | |
| | | 1080i (60/59.94/50) | |
| | SMPTE ST 296 | 720p(60/59.94/50) | |
| Input Signal | SMPTE ST 260 | 1920 x 1035i(60/59.94) | |
| Format | SMPTE ST 2048 | 2048 x 1080p(24/23.98/24sF/23.98sF) | |
| | SMPTE ST 125 | 480i(59.94) | |
| | ITU-R BT.656 | 576i(50) | |
| | HDMI | ~ 2160p(60) | |
| | DVI-D | VESA/IBM Modes | |
| | 1 x Phone Jack In | Line In(Stereo) | |
| Audio In/Out | 1 x Phone Jack Out | H/P Out(Front, Stereo) | |
| | 2 x Speaker Out | Stereo | |
| | Size | 24" LCD | |
| | Resolution | 1920 x 1200 (16:10) | |
| | Pixel Pitch | 0.270mm | |
| D: 1 | Color | 1.064B colors | |
| Display | Viewing Angle | 178(H), 178(V) | |
| | Luminance of White | 300cd/m ² | |
| | Contrast | 1000 : 1 | |
| | Display Area (H x V) | 518.4 x 324.0 (mm) | |
| | 1 x Ethernet | Control/Update, RJ-45 Input | |
| General | 1 x GPIO | GPI-7 Port, RJ-45P Jack | |
| | 2 x Serial | RS-422 Jack, RJ-45P Input / Output | |
| | 1 x USB | For Frmware Update, Color Calibration | |
| | Power Requirements | AC(100-230V,50/60Hz)/DC12V | |
| | Power Consumption | Max 40W | |
| | Operating Temperature | 0 ~ 40°C(32°F~104°F) | |
| | Operating Humidity | 20 ~ 80% RH | |
| | Weight | 10.5kg/23.14lbs | |
| | Dimensions(main body) | 565 x 405 x 77mm/22.24 x 15.94 x 3.03inch | |
| | Dimensions(With Stand) | 602 X 428 X 140 mm/23.70 x 16.85 x 5.51inch | |
| | Accessories | Power Cable | |
| | Option | Rack Mount Kit / Carrying Case / Sun Hood / Acrylic Protector / V-Mount | |

^{*} Specifications are subject to change without prior notice for the product quality improvement.

OBM-Q240---Dimensions (mm)

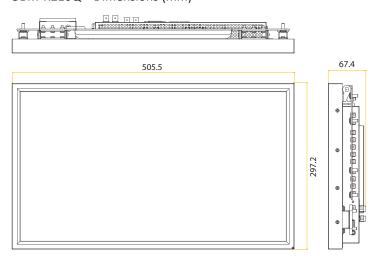


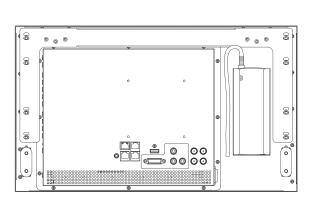
OBM-R210Q

| | ITEM | OBM-R210Q |
|---------------|-----------------------|---|
| BNC (SDI) | | 4 x 3G/HD/SD-SDI |
| Input | HDMI | 1 x HDMI 2.0 |
| Output | BNC (SDI) | 4 x 3G/HD/SD-SDI |
| | SMPTE ST 425-AB | 1080p(60/59.94/50/30/29.97/25/24/23.98/30sF29.97sF/25sF/24sF/23.98sF) / 1080i (60/59.94/50) |
| | SMPTE ST 274 | 1080p(30/29.97/25/24/23.98/24sF/23.98sF) |
| | | 1080i (60/59.94/50) |
| | SMPTE ST 296 | 720p(60/59.94/50) |
| Input Signal | SMPTE ST 260 | 1920 x 1035i(60/59.94) |
| Format | SMPTE ST 2048 | 2048 x 1080p(24/23.98/24sF/23.98sF) |
| | SMPTE ST 125 | 480i(59.94) |
| | ITU-R BT.656 | 576i(50) |
| | HDMI | 2160p(60) |
| | DVI-D | VESA/IBM Modes |
| Audio In/Out | 1 x Phone Jack In | Line In(Stereo) |
| Addio III/Odt | 1 x Phone Jack Out | H/P Out(Front, Stereo) |
| | Size | 21" LCD |
| | Resolution | 1920 x 1080 (16:9) |
| | Pixel Pitch | 0.270mm |
| Diamlau | Color | True 16.7M Colors |
| Display | Viewing Angle | 178(H), 178(V) |
| | Luminance of White | 1500cd/m² |
| | Contrast | 1000 : 1 |
| | Active Area (H x V) | 476.064 (H)mm x 267.786 (V) mm |
| | 1 x Ethernet | Control/Update, RJ-45 Input |
| General | 1 x GPIO | GPI-7 Port, RJ-45P Jack |
| | 2 x Serial | RS-422 Jack, RJ-45P Input / Output |
| | 1 x USB | For Frmware Update, Color Calibration |
| | Power Requirements | AC(100-230V,50/60Hz) / DC24V |
| | Power Consumption | Max 40W |
| | Operating Temperature | 0 ~ 40°C(32°F~104°F) |
| | Operating Humidity | 20 ~ 80% RH |
| | Weight | 5kg / 11.02 lb |
| | Dimensions | 505.5 x 297.2 x 67.4 mm / 19.88 x 11.69 x 2.65 inch |
| | Accessories | Power Cable / Rack Mount Kit |
| | Option | VESA Mount / Wall Brackt |

^{*} Specifications are subject to change without prior notice for the product quality improvement.

OBM-R210Q---Dimensions (mm)







POSTIUM KOREA Co., Ltd.

208, Building A, Samsong Techno Valley, 140, Tongil-ro, Deogyang-gu, Goyang-si, Gyeonggi-do, Korea, 10594
Tel: +82.2.354.6055 / Fax: +82.2.354.6056
E-mail: sales@postium.com
www.postium.com