IDIS

Video Wall

User Manual

VW-F551

NOTICES

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General

Every effort has been made to ensure accuracy, however in some cases changes in the products or availability could occur which may not be reflected in this document. We reserves the right to make changes to specifications at any time without notice. Performance specifications are typical, but may vary depending on conditions beyond our control such as maintenance of the product in proper working conditions. Performance specifications are based on information available at the time of printing. We makes no warranty of any kind with regard to this material, including, but not limited to, implied warranties of fitness for a particular purpose. We will not be liable for errors contained herein or for incidental or consequential damages in connection with the performance or use of this material. Our manufacturing facility is ISO 9001 and 14001 certified.

REGULATORY

The product has been tested and found to comply with the limits for a 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 product is operated in a commercial environment. The product 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 the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.

CAN ICES-3 (A) / NMB-3 (A)

Environmental

The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products. Please help us to conserve the environment we live in!

Table of Contents

1   Before using the product

● Before installing or using the product, to avoid damaging the product, read and follow as the guidelines of the user manual for your safety.

● The color, design and specification may change without notice to enhance the function.

1.1   Safety Precautions

Precautions are divided into two "Warning" and "Caution", and meaning of the each is as follows.

⚠ Warning: If you do not follow, it could result in serious injury or death.

⚠ Caution: If you do not follow, it could result in minor injury or product damage.

Please keep users to access USER MANUAL easily.

🖉 This illustration below is for reference only.

⚠ Warning

Do not use a damaged power cable or plug which does not meet the standard.
- This may cause a fire or an electric shock.

If you are using a power strip, do not use several devices at the same time.
- Due to the heat generated by the multi-outlet, it may cause fire.

Do not touch the power plug with wet hands.
- This may cause an electric shock.

Plug in the outlet end exactly.
- If the connection is not stable, it may cause fire.
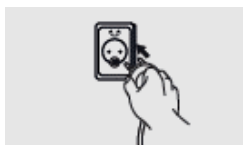
Connect the power cable to a grounded outlet.
- This can cause electric shock when the ground is broken or shorted.
- When installing on a place that cannot be grounded, connect to the outlet by using a circuit breaker to protect the product from electric shock.

Do not pull or bend the power cable forcibly.

Avoid placing heavy objects on the cables.

- If the cable is damaged, it may result in electric shock or a fire.

Do not use the power cable near heating appliances and products.

- This may cause a fire or electric shock.

In case of contamination around the power plug or outlet, wipe clean with a dry cloth.

- This may cause a fire.

Do not place flammable objects near the product.

- This may cause a fire.

If you want to install by using the wall mount, make the product be installed by a trained technician. Refer to the User Guide Wall Mounting.

- This may cause injury.

Do not install the product in poorly ventilated places such as a bookshelf or closet.

- Otherwise it may affect internal temperature to be increased and cause a fire.

Install the product at least 10 cm far from the wall.

- Otherwise it may affect internal temperature to be increased and cause a fire.

After unpacking the product, packaging vinyl should be kept away from the hands of young children.

- If a child use it incorrectly, it may cause a choking accident.

Do not install in locations where has vibration or in an unstable position.

- Product fall may occur and it might cause a damage.

- This may cause a fire.

Do not install in places which dirt, moisture, smoke, much water or rain water can reach.

Do not install under the air conditioner that could fall water drops.

- This may result in electric shock or fire.
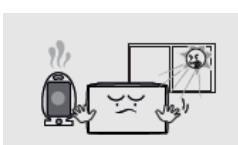
Avoid exposure to direct sunlight and do not place near hot objects such as a fire or heater heat.

- This may cause a fire or shortening the product life.

Do not install in the low place where a child can touch.
- A child may be injured while playing and touching the product.

Do not install near any kitchen or kitchen counter because it may cause damage or deformation of the product by the vapor or oil.
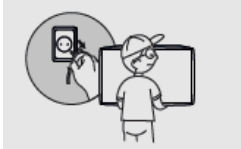- This may cause a fire.

Do not try to repair or transform the product because the high voltage can flow inside the product.
- This may cause a fire or electric shock.
- When problem is found in the product, contact a service center.

Do not use electrical equipment which uses high-voltage around the product.
- This may result in poor quality of display or cause amblyopia.
- This may cause a fire or electric shock.

When moving the product, turn off the power and remove all of the cables including power cables connected to the product.
- If the cable is damaged, it may cause a fire or electric shock.

When smelling something burning or hearing strange sound from the product, disconnect the power cable immediately and contact a service center.
- This may cause a fire or electric shock.

Do not allow a child to get on or hang on the product.
- If the product falls off, a child may result in injury or death.

Do not place heavy object, toy or sweets that a child can play with on the product.
- If a child hang the product and fall, it may cause personal injury or death.
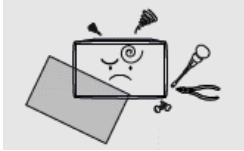
When the product is damaged or falls off, disconnect the power cable immediately and contact a service center.
- This may cause a fire or electric shock.

When lightning occurs, turn off the power switch and disconnect the power cable.
- This may cause a fire or electric shock.

Do not drop the product or throw something to the product.
- This may cause a fire or electric shock.

Do not give a shock or scratch to the screen with sharp objects.
- This may cause damage to the product.

Do not pull the power cable or signal cables connected to the product when moving the product.
- Cable damage may cause a malfunction or an electric shock or fire.

Do not shake or uplift a product by holding only the power cable and signal cable.
- Cable damage may cause a malfunction or an electric shock or fire.

If you smell a gas around the place of the product or there is a risk of a gas leakage,
Do not plug in or turn on the product. Make sure to ventilate.
- A spark in the appliance power can cause an explosion or fire.

Do not store or use flammable material and flammable sprays near the product.
- This may cause an explosion or fire.

Please do not block a vent with the curtain or cloth, etc.
- The rise of internal temperature may cause a fire.

Do not put a steel rod, coin, hair pin etc. in the vent and input/output terminals of the product.
Also, do not put a flammable object such as papers.
- When a strange substance enters into the product, turn off the power of the product.
  Please contact the Service Center after unplugging the power cable.
- This may cause a malfunction or an electric shock or fire.

Do not place anything containing liquid or metals on the product.
- When a strange substance enters into the product, turn off the power of the product.
  Please contact the Service Center after unplugging the power cable.
- This may cause a malfunction or an electric shock or fire.

⚠ Caution

Do not unplug the power cable while using the product.
- This may cause a fire or electric shock.

Use only the power cable qualified for the standard.
- This may cause a fire or electric shock.

Connect the power cable to the nearest outlet.
- If having a problem with the product, unplug the power cable completely.

When disconnecting the power cable from the outlet, do not pull the cable wire.
Please be sure to hold the plug and separate it.
- This may cause a fire or electric shock.

Please move the product carefully not to occur the twist and drop.
- This may cause a malfunction or injury.
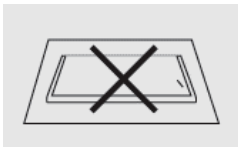
Put the product's screen faces upwards.
- The screen may be damaged.

Work together more than one person if the product is heavy.
- This may cause a malfunction or injury.

When installing the product on a cabinet or shelf, use the larger size of the tray than the product to use and maintain the horizon.
- The product may fall and cause damage or injury.

Please do not shock when installing the product.
- This may cause a malfunction.

When installing the product in a special place, contact a dealer or a service center because the peculiar environment can occur the event of a problem with the product.
- This may cause a malfunction or fire.

Turing on the product in the condition of the fixed screen or 4:3 screen for a long time may also cause an afterimage or stain on the screen.
- When using the product for a long time, set a screen saver of the connected computer or signaling equipment products or set it in sleep mode.
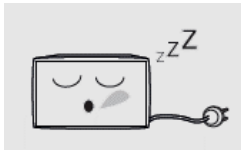
When you are not using the product for a long time, after unplugging the power cable and take action to prevent the product from a dust.
- Dust accumulation, heat generation or sparks can occur and cause fire.
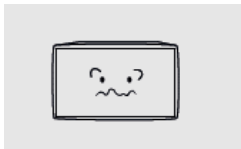
Set a resolution and frequency appropriately to the product.
- The state of the screen can result in poor or blurred vision.

For products with a stand, do not move the product by holding only the stand or lift the product upside down.
- The stand might be split from the product and it may cause damage or injury.
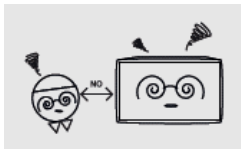
Look at the screen from a distance of about longer 2.5 times than the screen diagonal length.
- Looking at the screen for a long time can lead to vision loss.

Do not use anything that causes the water vapor near the product. (moisturizers, etc.).
- This may cause a malfunction or an electric shock or fire.
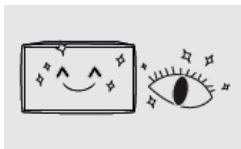
After 1 hours use, rest your eyes for more than 5 minutes.
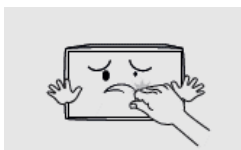
If the product is turned on for a long time, do not touch the screen surface or vent because it may be hot.

Keep the accessories of the products out of reach of children.
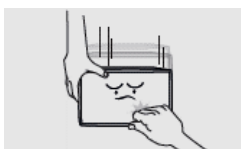
For products with a stand, be careful when adjusting the angle and height of the stand of the product.
- Tilting severely the product may cause the product to fall off and injury.
- Stuck a finger or hand may cause an injury.

Do not place heavy objects on the product.
- This may result in a malfunction or an injury.
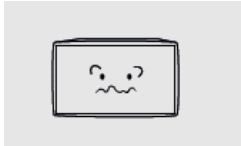
Please put obstacles away from the space between the remote controller and the product.
- The product may not be operated by remote controller.
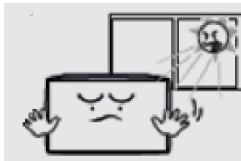
The remote control may not be good in this operation under the sun or strong light.
Please change the location of the product in this case.
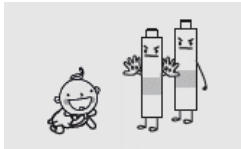
Make sure that a child does not eat the battery and keep it out of a child's reach.
- If a child eats the battery, please consult a doctor immediately.
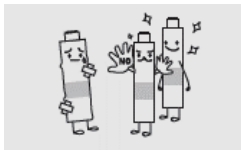
When replacing the battery, insert it to the correct polarities (+, -).
- If it is different from the polarity of the battery, it may cause a fire or injury to break or leak.
- This may also contaminate the surrounding.
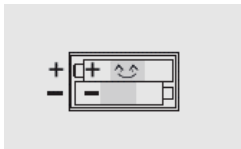
Use a standard battery, do not mix old batteries with new one.
- If it is different from the polarity of the battery, it may cause a fire or injury to break or leak.
- This may also contaminate the surrounding.

The depleted Battery and rechargeable batteries must be handled separately from the general waste and it needs to be collected for recycling.
- If the end-of-life battery, please bring your nearest recycling center or battery dealer
- This may cause an explosion or fire.

Cleaning

After disconnecting the power cable, wipe contaminated parts and each part of the product screen lightly with a dry and soft cloth.

Do not clean the product directly with a wet cloth or wet spray water.
- There is a risk of fire or an electric shock.

When washing by various cleaning agents, brighteners, abrasives, waxes, benzene, alcohol, solvent, surface active agent, the surface of the product may be damaged.

If cleaning inside the product is required, please contact your dealer or service center.
- This may result in fire or electric shock.

2   Preparations

2.1   Parts List

🖉 If these items are missing, contact your dealer or service center.

🖉 The items may differ from the image shown.

⚠ Other parts not packed in contents may cause performance degradation or problem during use.

| DP Cable (ver1.1a) | RS232 Cable | IR Receiver | Remote Control |

Power Cable
(Option)

2.2   Control product

• You can control the product by using the control buttons on the rear left side of the product.
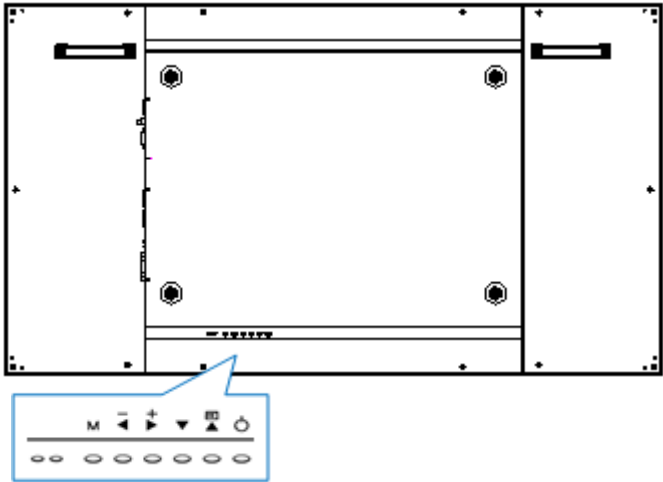
Control buttons

⏻	Power on/off button
➥ / ▲	To move to the upper menu or select
▼	To move to the lower menu
+	To move to the right menu
-	To move to the left menu
M	To display or hide the on-screen menu

2.3　　Input/Output connection

• You can receive a video signal by using the input / output terminal of the left-rear of the product.

.
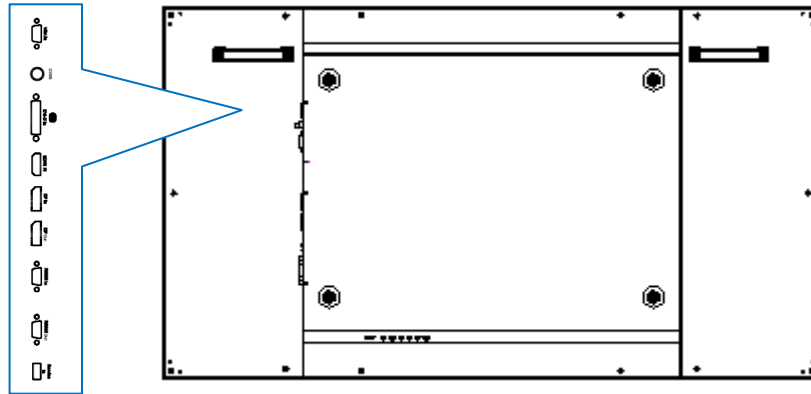
Connector name and description

Connector	Description
VGA IN	To connect D-SUB input cable with source device
CVBS IN	To connect BNC input cable with source device
DVI IN	To connect DVI input cable with source device
HDMI IN	To connect HDMI input cable with source device
DP IN	To connect DP input cable with source device
DP OUT	To connect DP output cable to other display product or device
RS232 IN	To connect RS232 input cable with control device(D-SUB 9pin)
RS232 OUT	To connect RS232 output cable with other display product
Service IN	To connect with USB device for software update

⚠ Caution

• When you connect the signal cables to the input / output terminals, check the above picture of the input / output terminal, and connect the right direction. If connected incorrectly, it may cause damage or breakdown of the input / output terminals.

• If the product does not operate even though the power is supplied, check if the power switch is set to power-on or not.

2.4   Remote Controller Button Description

Button Description

🖉 Images may differ from the actual items.
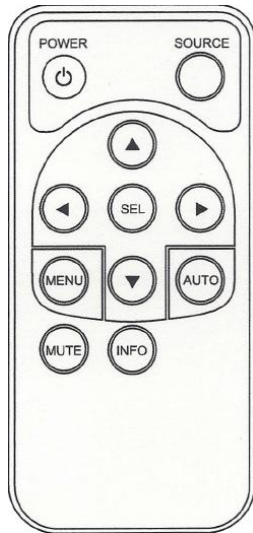
POWER	Power on/off button
SOURCE	Select input signal
▲	Move to the upper menu
▼	Move to the lower menu
SEL	Select to change menu
◄	Move to the left menu
►	Move to the right menu
MENU	Display or hide menu on the screen
INFO	Display information of input source and program version
MUTE	Not available
AUTO	Automatically adjust VGA position, clock and phase (RGB input only)

3 Installation Guide

3.1 Caution before installation

⚠ Caution: Installation must be performed by a qualified custom video installation specialist under the conditional installation environment as below.

Ambient Lighting

• When the sun or strong light shines on the front screen of the product, image contrast can be seen as it is decreased conspicuously or the image is fading.

• If direct sunlight or strong artificial light (halogen lamps, etc.) shines on the front screen of the product (if the product has touch function, it may cause of malfunction of touch.), install the product in the shady environments or in the opposite direction of the source of the sunshine or the artificial light.

Ambient temperature

• Install the product in the well-ventilated place with maintaining the ambient temperature of below 35°C (95°F).

3.2 Product Specifications

	mm
Height	684.2
Width	1213.4
Depth	96.5 (without handle : 88)

	kg
Weight	26.5

3.3   Unpacking Process

✎ Images may differ from the actual items.

Before unpack the box, refer to the diagram below.
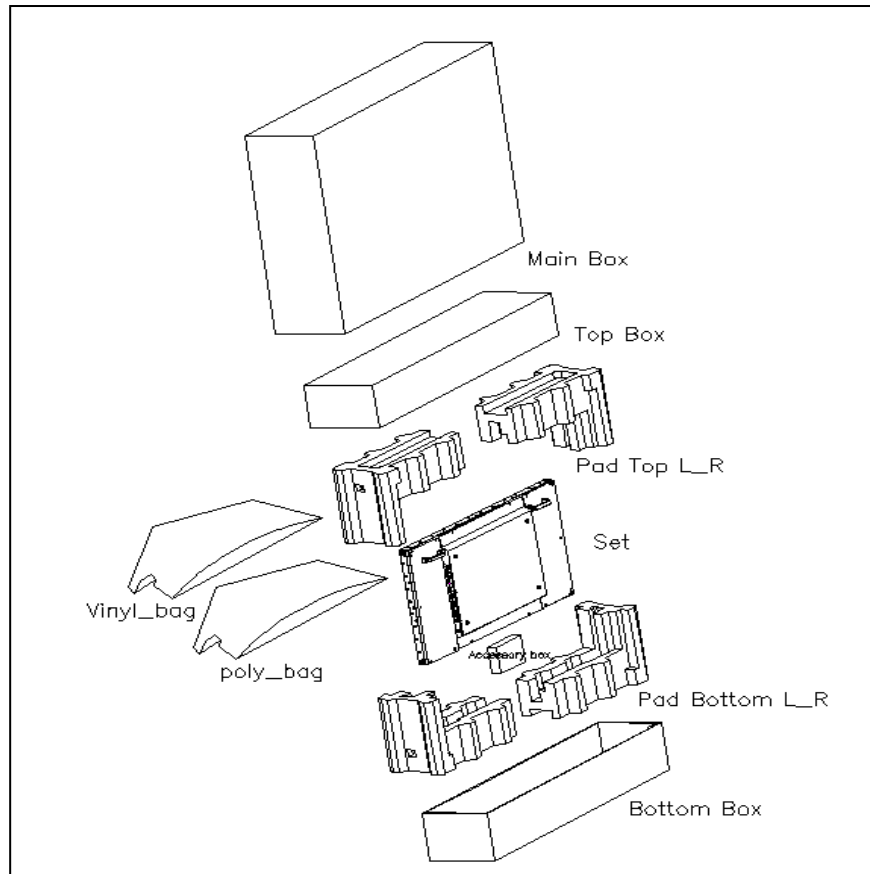
After unpacking, take off the removal tape of up-down-left-right side of the front panel of the product as shown below.
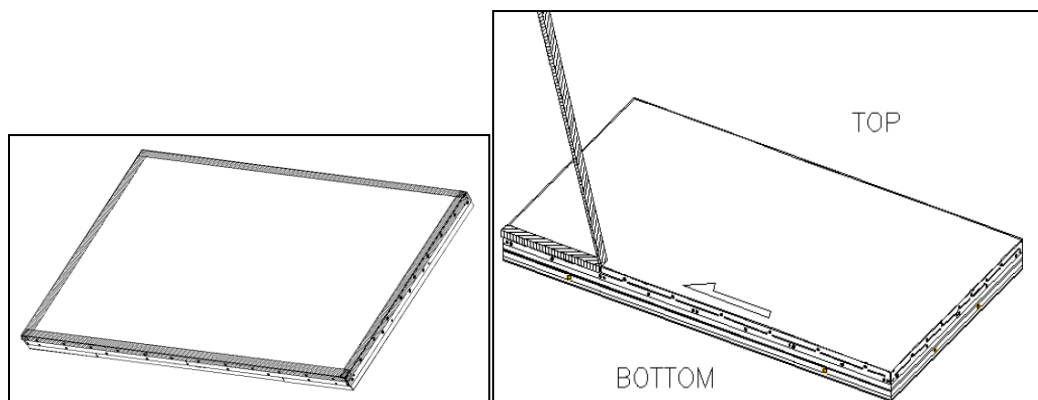
3.4　　Handling Guide

✎ Images may differ from the actual items.

Holding a product

1. Right way

At least two persons are required to handle the product during transportation.
Two persons should hold the each left and right handle of the backside of the
product with one hand of the each person and with the other hand, grip the bottom
portion of the rear side of the product to move.
(The illustration below may differ from the actual items.)
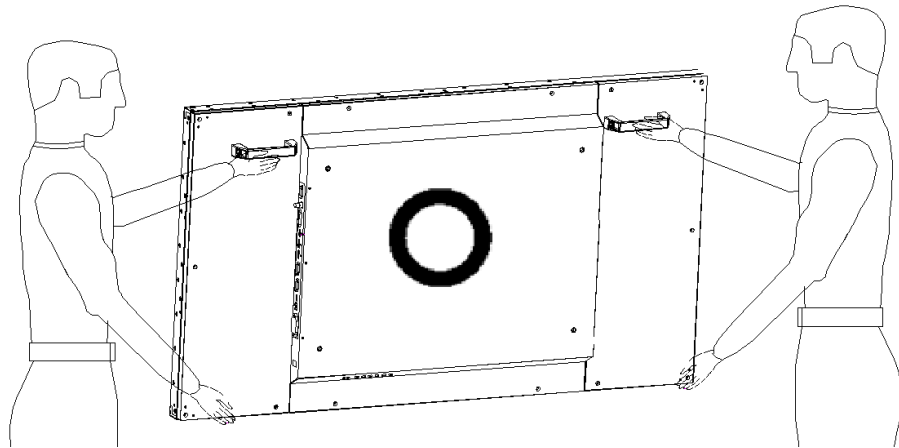
2. Wrong way

Do not use or touch any part of the front screen of the product during transportation.
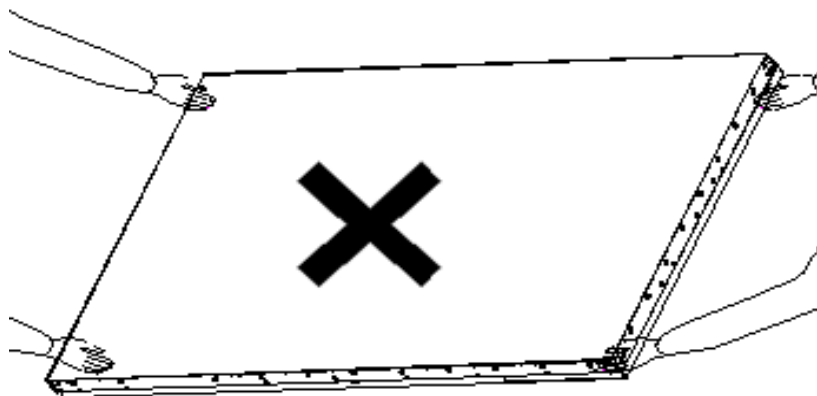
Putting a product

1. Right Way

Before putting the product on the floor, prepare flat and soft cushions. Place the product horizontally and slowly on the floor. If firstly laying the edge of the bezel of the product, the screen panel of the product may be fragile or damaged.

Cushions
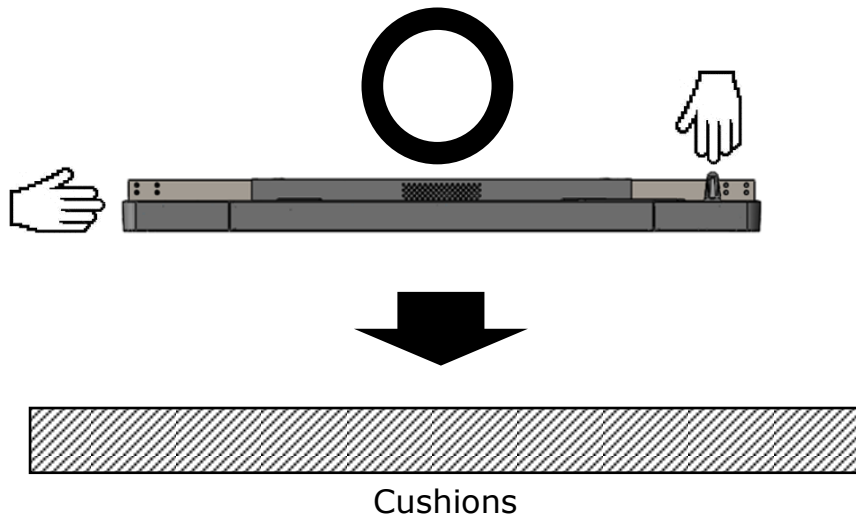
2. Wrong way

Put down carefully not to damage the outside of the product. If the corner part of the product is placed first, the bezel may be damaged easily.
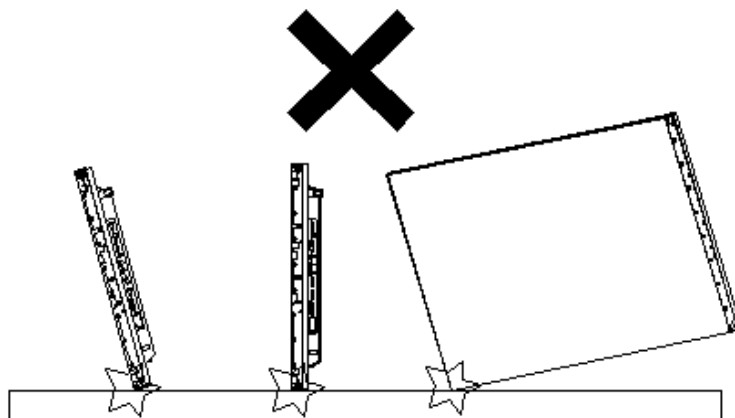
3.5　Product Installation

When installing the product with wall mount, make the product installed by a well-trained technician. Please refer to the User Guide of Wall Mounting.

🖉 The product has VESA standard of 600 X 400 MM for wall mounting, and of M8 (maximum length of 35mm) of the screws by size.

⚠ Warning: We are not responsible for the product damage or personal injury caused by user's own installation.
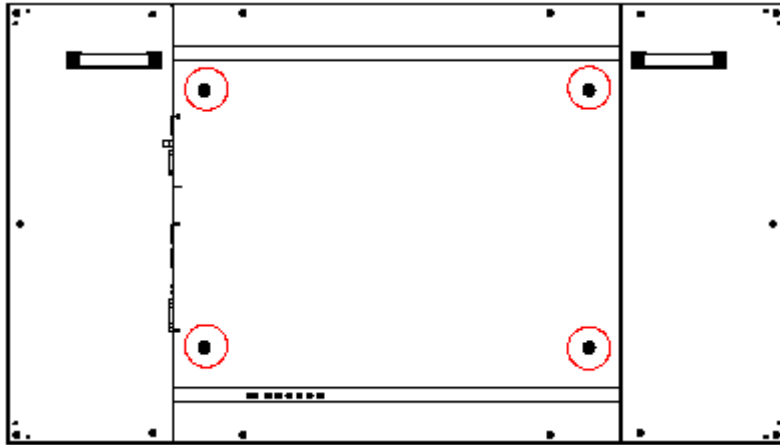
3.6　Wall mounting Installation

Install the product only on the robust and vertical wall. When installing inside the wall or cabinet, install the product with the space behind between the product and the wall as the illustration below.
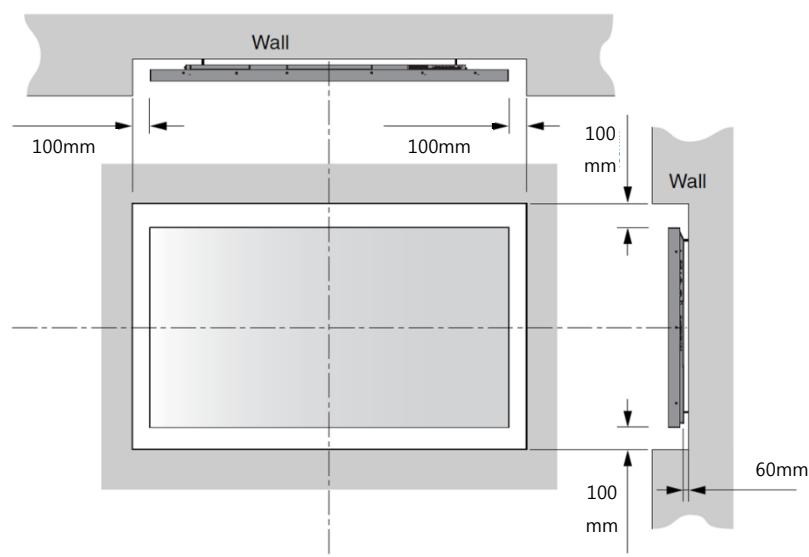
3.7   Wall Stand Guide

VESA standards: 600X400 (mm) and M8 screws (4 places).

(Refer to CHIEF product guide.)
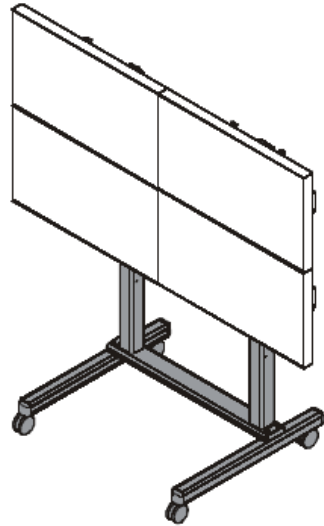
LVM2X2U
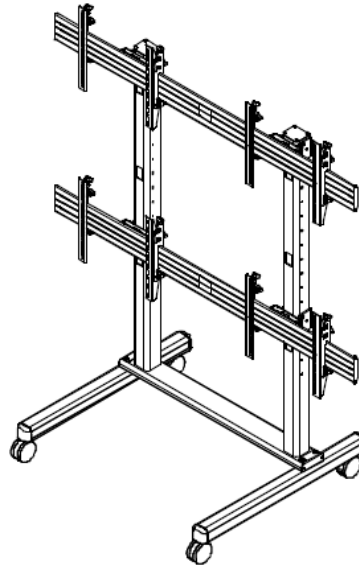
In case of LVM series of wall stand, it is required to assemble the extender bracket as the illustration below.

A (2)
[extender bracket]

B (6)
#10-24 x 1 1/2"

C (1)
1/8"
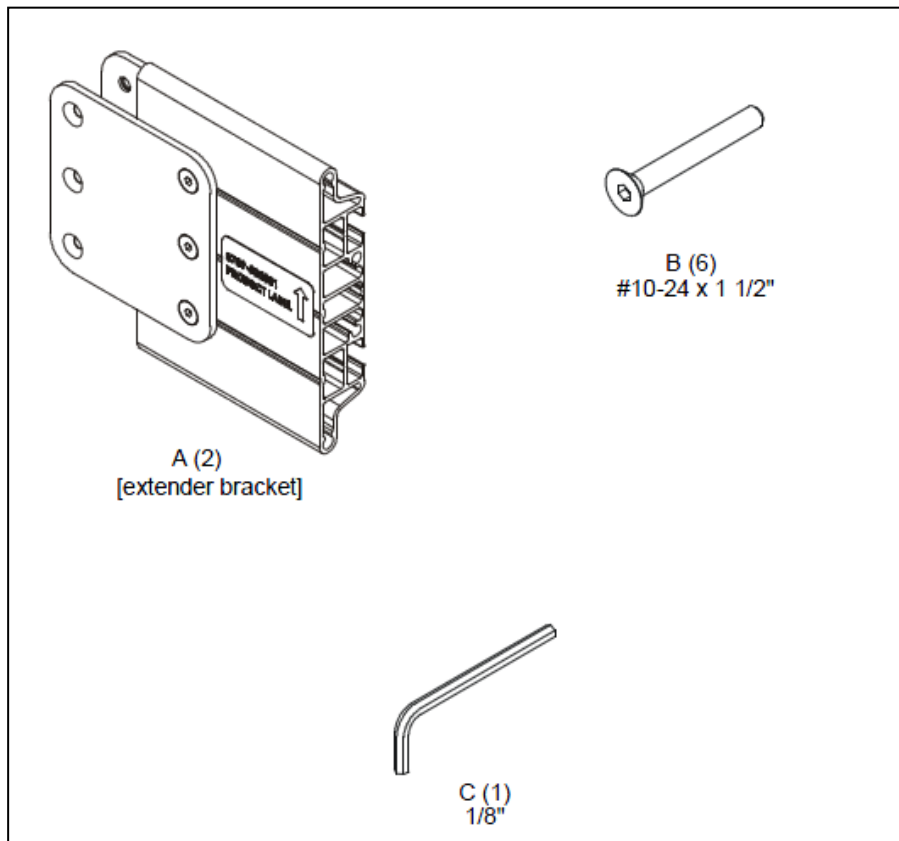
Assemble the extender bracket with the bar of wall stand mounting as the illustration below.
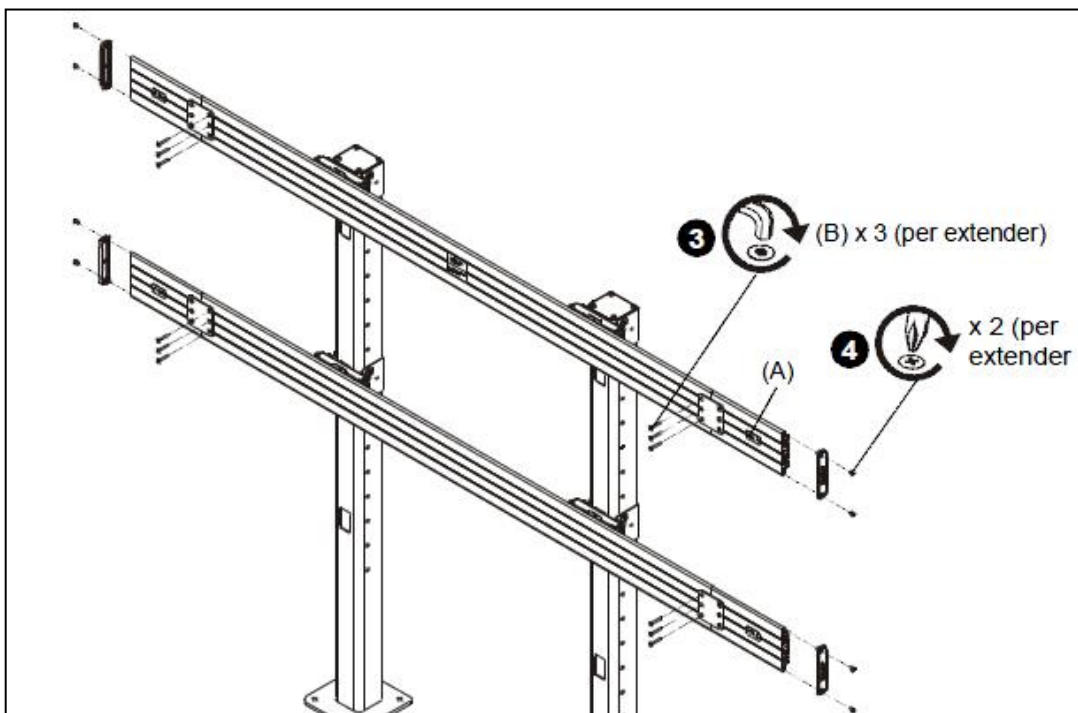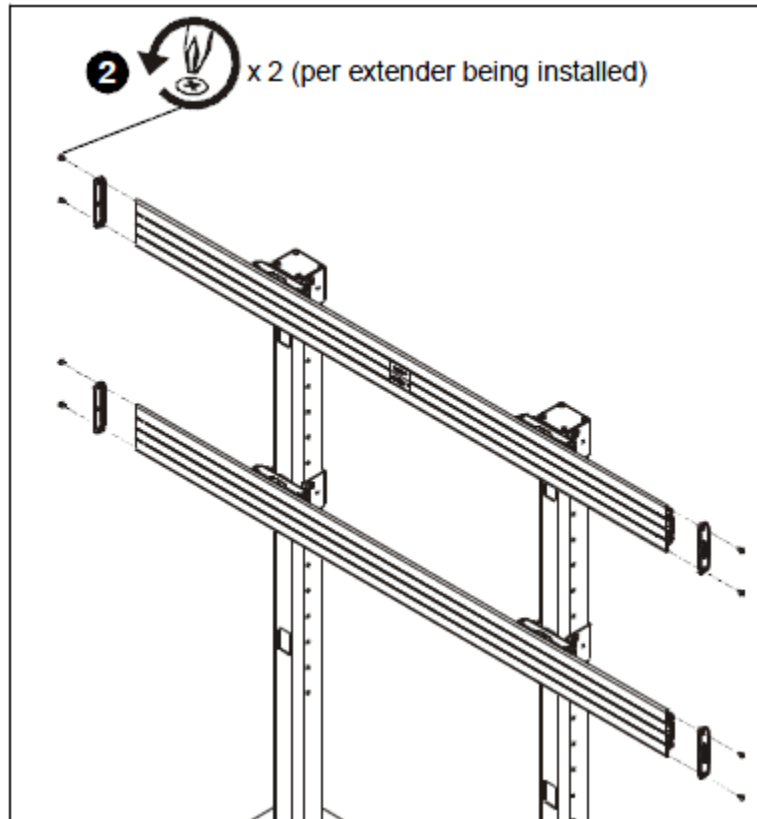
Assemble the interface to the VESA point as shown below.

AA (4/6/9)
[left interface]

BB (4/6/9)
[right interface]

A (16/24/36)
M6x12mm

B (16/24/36)
M6x16mm

C (16/24/36)
M6x30mm

D (16/24/36)
1/4"

E (16/24/36)
.750x.344x.5

F (16/24/36)
M8x12mm

G (16/24/36)
M8x16mm

H (16/24/36)
M8x25mm

I (8/12/18)
1/4-20 x 1 1/4"

5   (A-C or F-H) x 4

(D) x 4

(AA)

(BB)

(E) x 4, if necessary
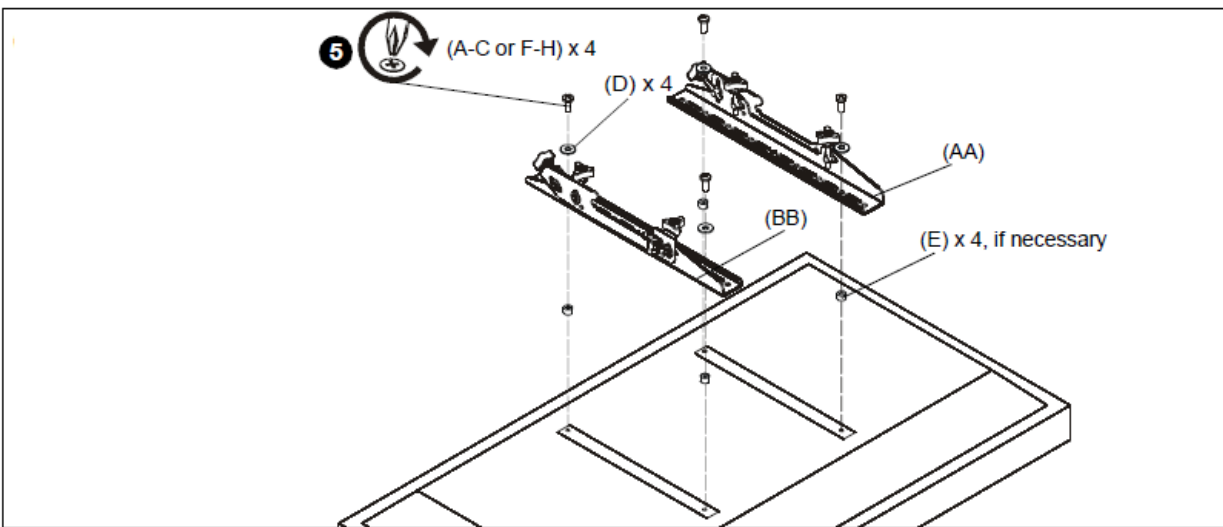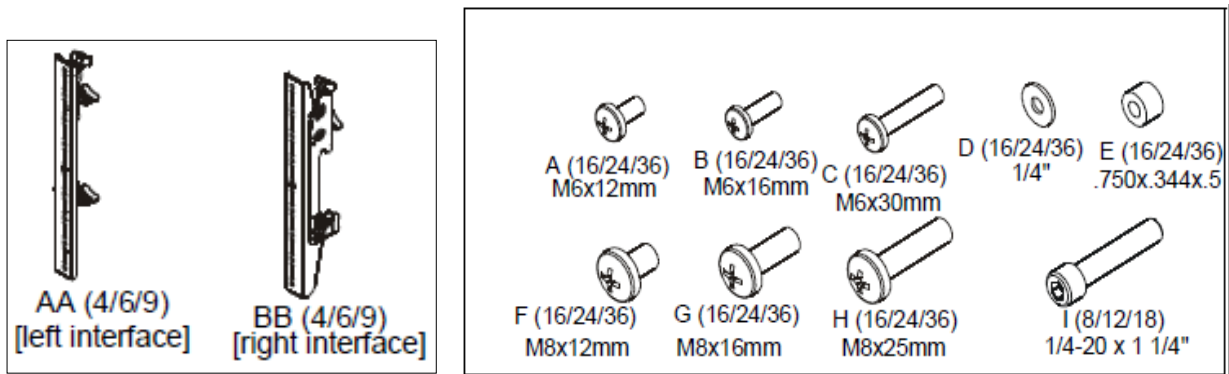
Hang and fix the product on the bar of wall stand mounting as shown below.
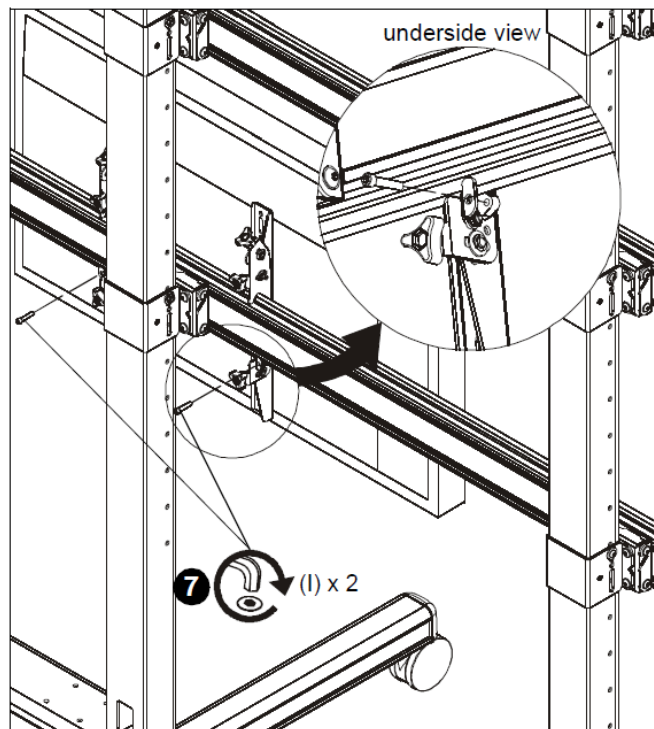
Rotate the lever halfway to adjust the position of the product as shown below.
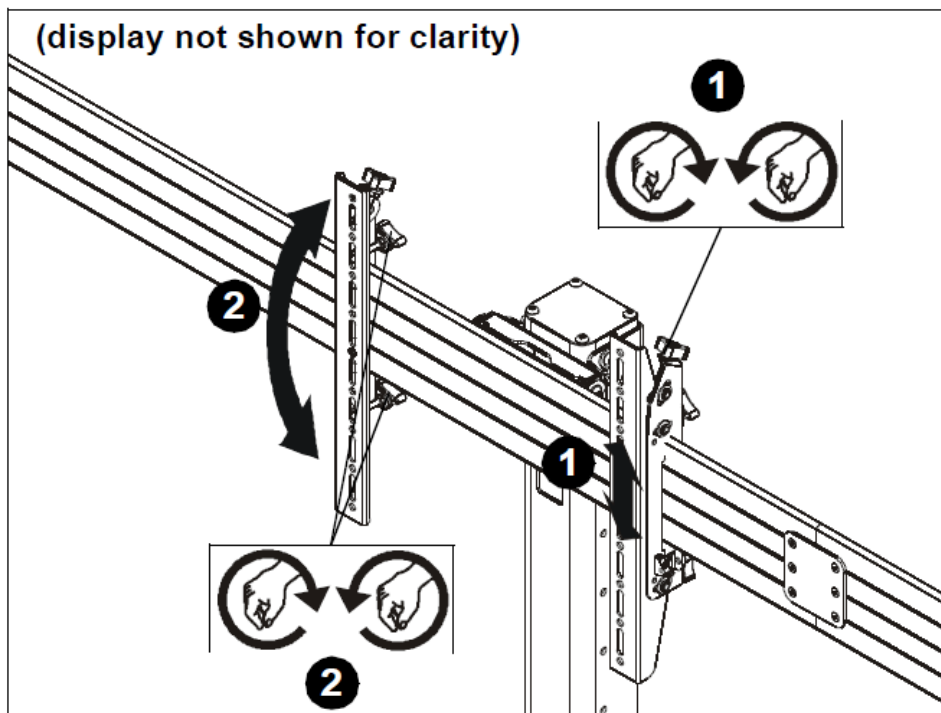
Cleanup the cables by using the holes in the wall stand as shown below.
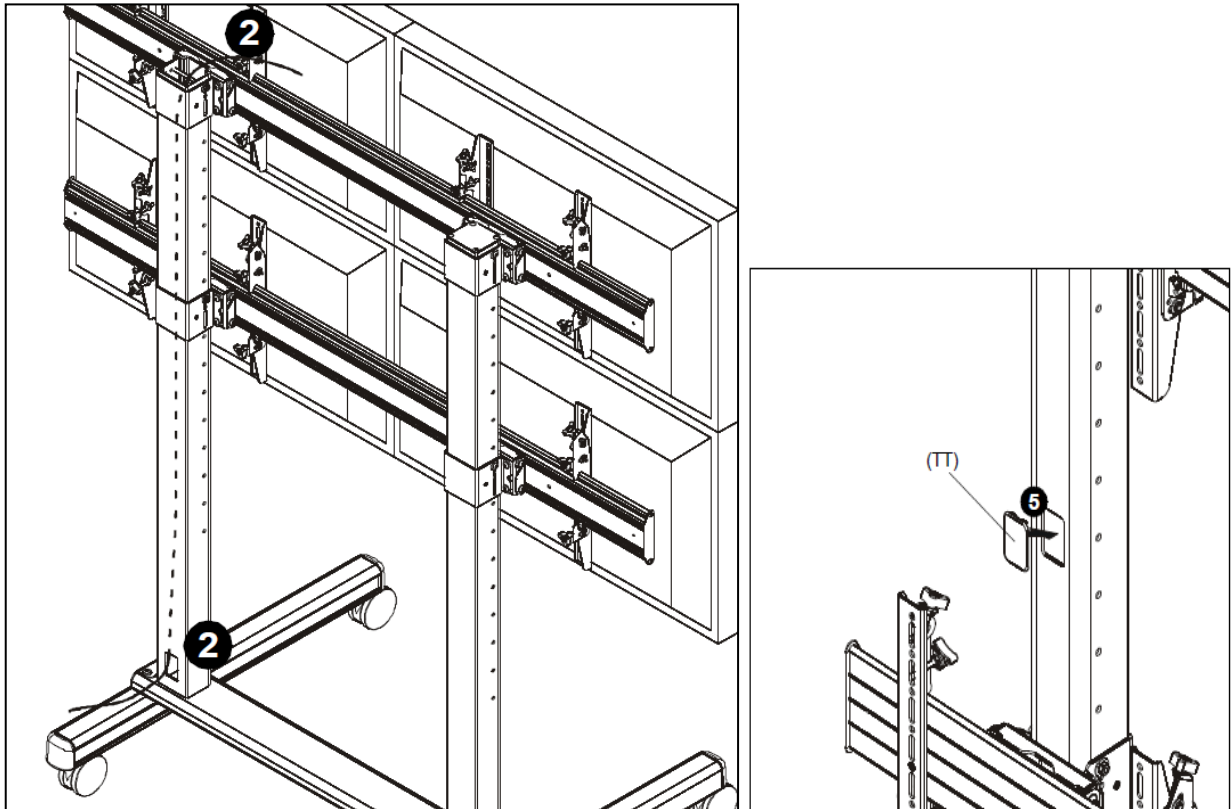
Refer to CHIEF product guide.

3.8   Wall Bracket Guide

VESA standards: 600X400 (mm) and M8 screws (4 places).

(Refer to CHIEF product guide.)

LSMVU
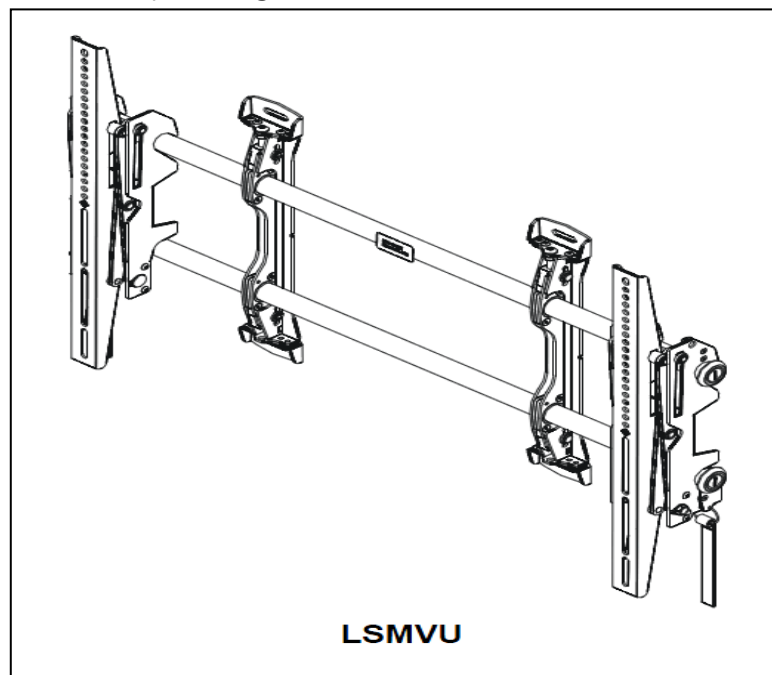
Align the horizontal at the position of 190.5mm distance from the center line of the screen by using the furrow of vertical center, as shown below.
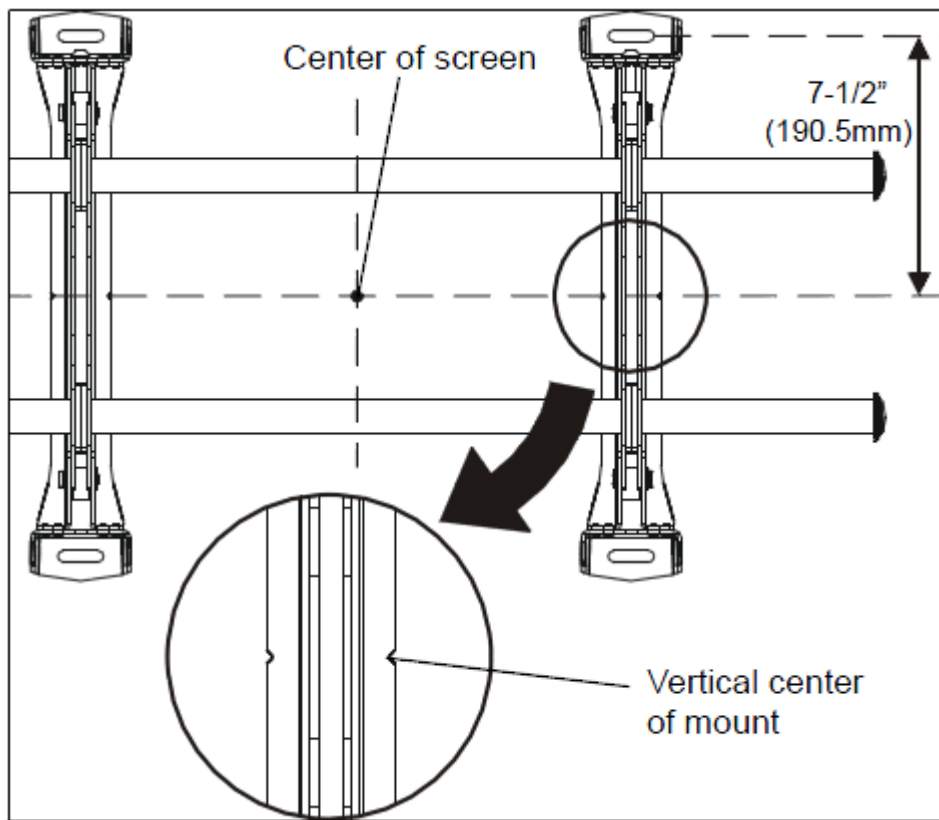
When fixing a number of wall bracket, install them after setting the height and width as shown below.

Parts of wall bracket

A (8)
M4x16mm

B (6)
M4x20mm

C (6)
M4x25mm

D (6)
M5x16mm

E (6)
M5x20mm

F (6)
M5x25mm

G (6)
M6x16mm

H (6)
M6x25mm

I (6)
M8x20mm

J (6)
M8x30mm

K (4)
M8x50mm

R (1)
[wall mount]
(LSMVU shown)

L (8)
.750x.323x.250

M (8)
.750x.344x.500

N (8)
[universal washer]

P (1)
M5
[packed with 'N']

S (2)
[security bracket]

T (2)
[hold-back bracket]

QA (4)
UX10

QB (4)
5/16"

QC (4)
5/16" x 2-1/2"

U (1)
[left pull-out upright]

V (1)
[right pull-out upright]

(LSMVU uprights shown)

W (1)
3/16 -6"

X (1)
1/2"

Y (4)
[wall bracket cap]
(LSMVU only)

Fix the wall bracket on the wall, as shown below.
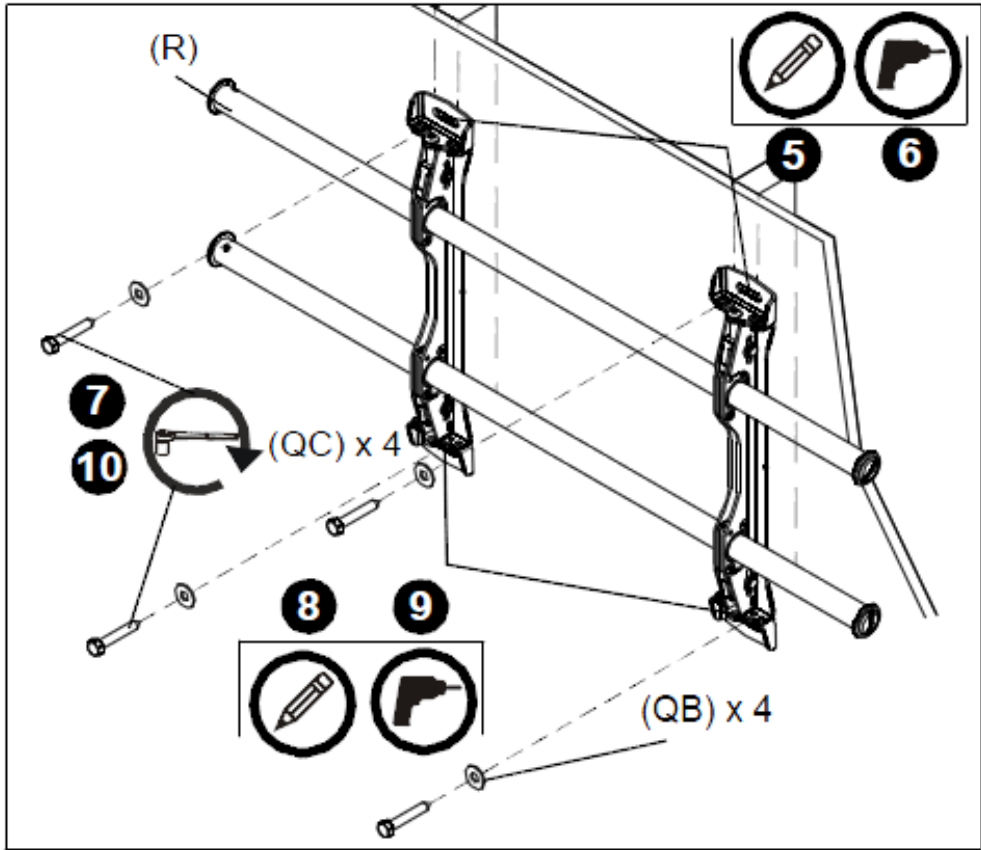
Assemble the interface to the product as shown below.

Pull strap

Center of bracket
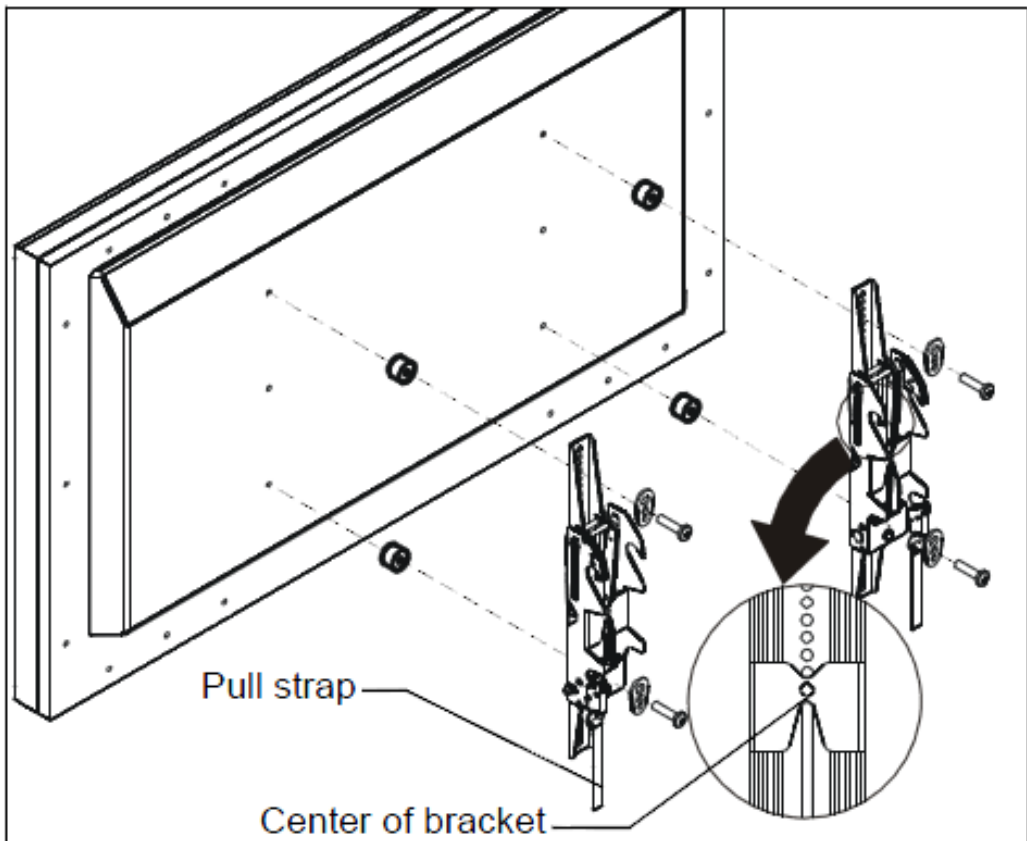
As shown below, hang the product with assembled interface on the bar and adjust the wall bracket to install.

(Y) x 4

Top Hook

Pullstraps

(Screen not shown for clarity)

❶ Raises screen

❷ Lowers screen

(W)

(Screen not shown for clarity)

❸ (T)

❶ (S)

❷
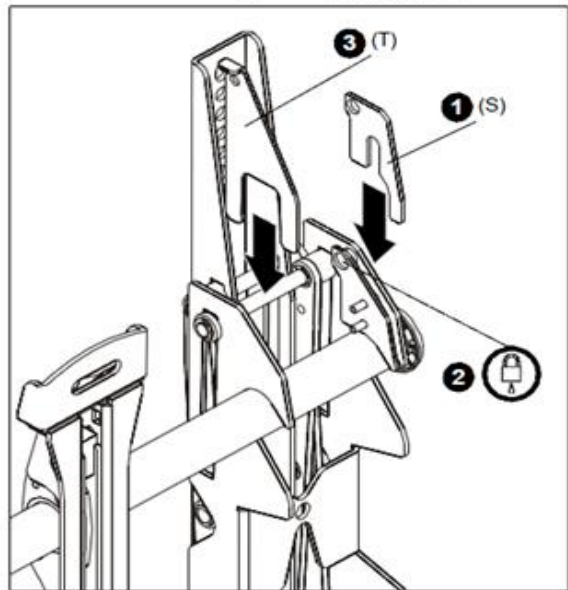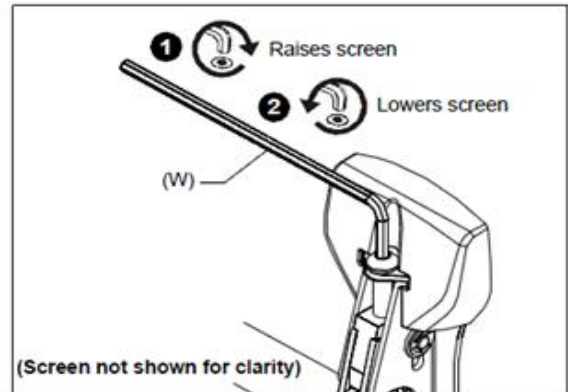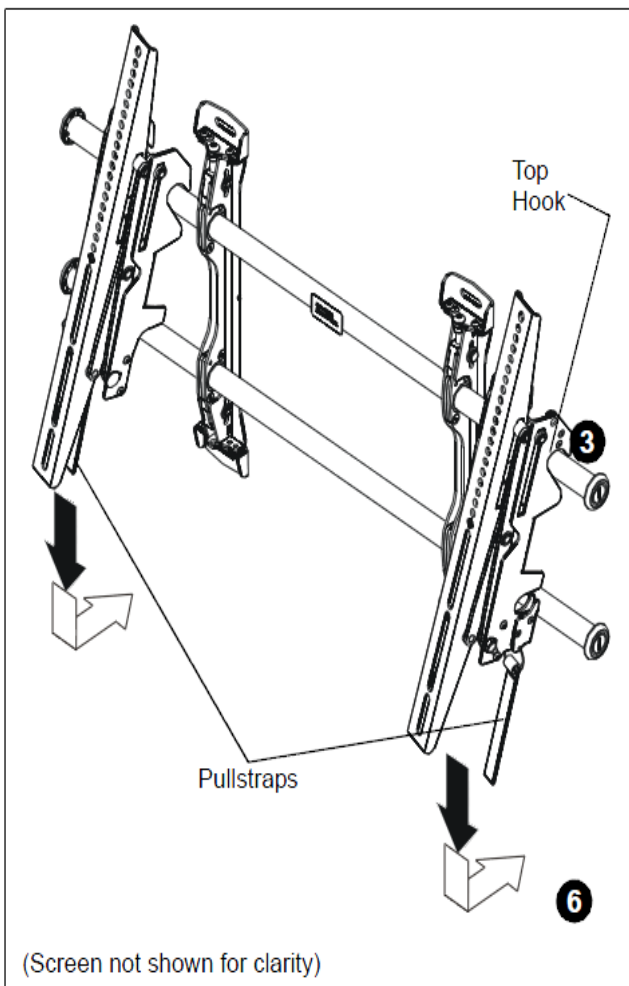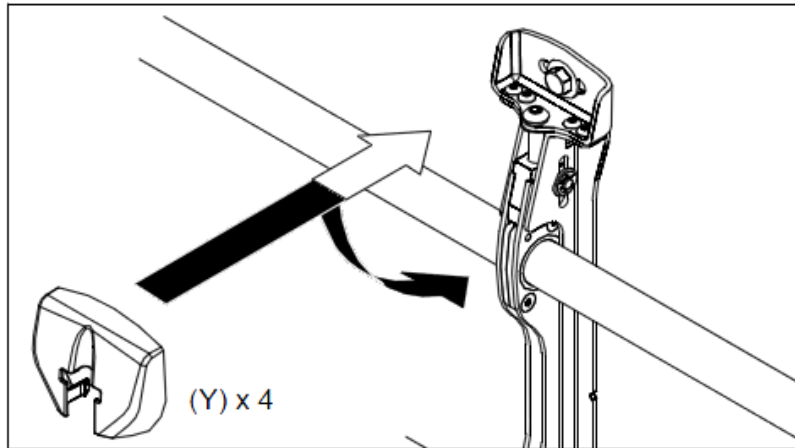
Refer to assembling method in the guide of CHIEF.

3.9 Remote Controller

Inserting batteries in the remote controller

• Press the tab on the battery case and open it.

• Insert the battery (CR2025 3V) into the battery case.

• Insert the battery case until clack sounds.
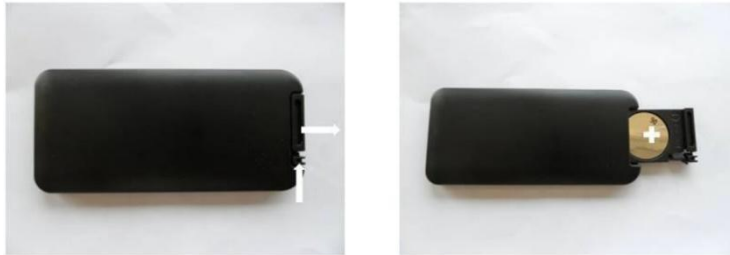
⚠ ***Notice on battery***

• When loading the battery, check if the polarity of the batteries is correct.

• If not using the remote controller for long time, remove the batteries to prevent damage caused by battery fluid leak.

• Don't expose the battery to direct sunlight or excessive heat such as a fire.

⚠ ***Notes on the remote controller***

• If anything interrupts in front of IR receiver or between IR receiver and remote controller, the remote controller may not work.

• If the receiving distance of the remote control becomes narrow or does not work, replace the battery with new one.

• In case of the product is exposed to direct sunlight or fluorescent light, it may not operate.

3.10   Setup

Turning on the power

1. Connect the power cable of the product into outlet with AC 100-220V 50 / 60Hz.

2. Turn on the main AC power switch.

3. If the power indicator is green, the screen turns on automatically.

Changing language of the menu

• The language of the menu is basically English as the default set.

• Users can select a language among English, French, German, Italian, Russian, Spanish, Danish, Dutch, Norwegian, Finnish and Swedish.

• To change the menu language.

1. Press the Menu button to go to the menu.

2. Select the OSD from the main menu.

3. Select the language of the OSD setup menu.

4. Select the language you want to select, and then exit the menu.

4   Remote Control

4.1   RS-232C connection

Communication conditions

Interface	RS-232C
Pin	Txd, Rxd, Gnd
Bit rate	19200 bps
Data bits	8 bit
Parity	None
Stop bits	1 bit
Communication codes	ASCII
The maximum length	15m

RS-232C Cable Pin Description

P1				P2		
D-SUB 9P (male)	Tx	1	←	2	Rx	D-SUB 9P (female)
	Rx	2	→	3	Tx	
	Gnd	5	——	5	Gnd	

Cable connection

Connect the RS-232C in port of the product to the PC or the control system.
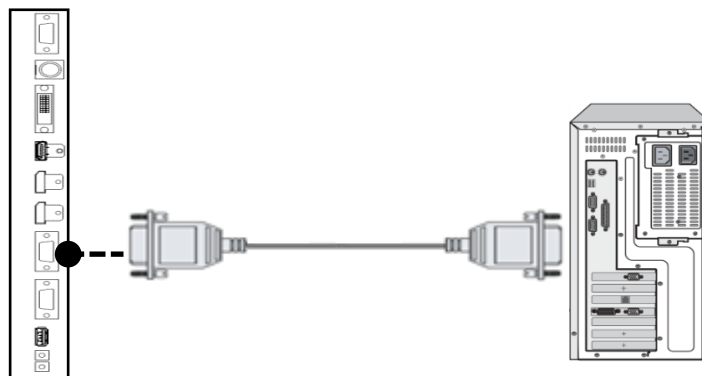
4.2   Communication Command

Direct command

It is to send a command to the product to perform the action corresponding to the command.

Statement form: [HEAD][SET ID][COMMAND][END]

Ex) Power On: [K:][ALL][PON][.] → K: ALLPON.

• [HEAD]: Represents the beginning of a statement. Put 'K:' always.

• [SET ID]: Specifies the product that perform as the command. Put 'ALL' or
            ID number of the product. (ID range: 000 to 100)

• [COMMAND]: It always consists of 3Bytes.
                As for command, refer to the appendix.

• [END]: Represents the end of a statement. Put a '.' always.

Adjustment command

It is to deliver the command which enables to adjust value in the product.

Statement form: [HEAD][SET ID][COMMAND][VALUE][END]

Ex) To adjust the volume to 50: [K:][ALL][CON][050[.]→ K: ALLCON050.

• [HEAD]: Represents the beginning of a statement. Put 'K:' always.

• [SET ID]: Specifies the product that perform as the command. Put 'ALL' or
            ID number of the product. (ID range: 000 to 100)

• [COMMAND]: It is always composed with 3Bytes.
                As for command, refer to the appendix.

• [VALUE]: Adjusted value. It consists of 3Bytes ranging from 000 to 100.

• [END]: Represents the end of a statement. Put a '.' always.

Status confirmation command

It is to send commands to the product to request reply about the command state of the product.

Statement form: [HEAD][SET ID][COMMAND][END]

Ex) Make sure if the power switch is on: [K:][ALL][PWR][?] → K: ALLPWR?

• [HEAD]: Represents the beginning of a statement. Put 'K:' always.

• [SET ID]: Specifies the product that perform as the command. Put 'ALL' or
            ID number of the product. (ID range: 000 to 100)

• [COMMAND]: It always consists of 3Bytes.

As for command, refer to the appendix.

• [END]: Represents the end of a statement. Put a '?' always.

Reply about the status confirmation command

It is to receive a reply from the product about the status command.

Statement form: [SET ID][:][COMMAND][=][REPLY]

Ex) Power on: [ALL][:][PWR][=][001] → ALL: PWR=001

• [SET ID]: Specifies the product that perform as the command. Put 'ALL' or

         ID number of the product. (ID range: 000 to 100)

• [:]: Put the ':' always.

• [COMMAND]: It always consists of 3Bytes.

As for command, refer to the appendix.

• [=]: Put the '=' always.

• [Reply]: Represents the end of a statement. Put a '?' always.

Command receiving status message

It is a message that the product replies about commend receiving status upon direct or adjustment command message.

Normal: [SET ID][:][Command][=][A]

Error: [SET ID][:][Command][=][N]

※ **About information upon each command, refer to the appendix.**

   (Instruction List).

5 Connect the external device

5.1 DP(Display Port) Connection

• If connecting the product to the PC, it supports the VESA Display Data Channel (DDC) standard. This standard supports "plug and play" function which helps the PC recognize the product automatically to output the optimal resolution.

In order to operate the 'plug and play' after connecting the product, connect the video cable of the PC to the product before turning on your PC, and turn on the power of this product first and then turn on the power of the PC.

• When the incompatible resolution of the input signal is input to the product no image is shown on the screen or normal display is not shown. As for the supported resolutions, refer to page 50.

• Use the DP CABLE (2M-DPver1.1a) provided with the product.
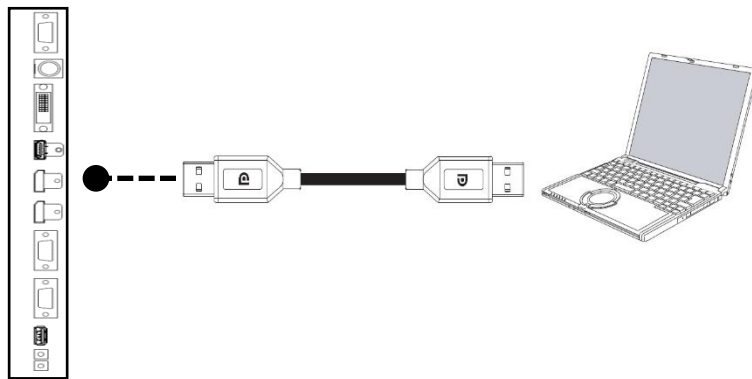
5.2   HDMI Connection

• HDMI input is recommended because it receives a digital signal input from an external device with HDMI output to ensure high quality of digital signal.

• If connecting the product to the PC, it supports the VESA Display Data Channel (DDC) standard. This standard supports "plug and play" function which helps the PC recognize the product automatically to output the optimal resolution.

In order to operate the 'plug and play' after connecting the product, connect the video cable of the PC to the product before turning on your PC, and turn on the power of this product first and then turn on the power of the PC.

• When the incompatible resolution of the input signal is input to the product no image is shown on the screen or normal display is not shown. As for the supported resolutions, refer to page 50.
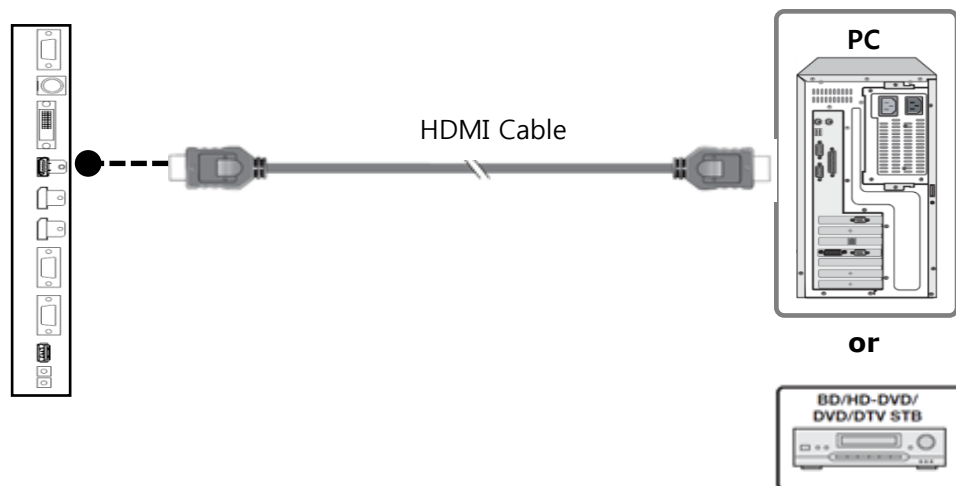
5.3　DVI-D Connection

• To see video, connect the product to a PC or an external equipment which outputs DVI video.

• If connecting the product to the PC, it supports the VESA Display Data Channel (DDC) standard. This standard supports "plug and play" function which helps the PC recognize the product automatically to output the optimal resolution.

In order to operate the 'plug and play' after connecting the product, connect the video cable of the PC to the product before turning on your PC, and turn on the power of this product first and then turn on the power of the PC.

• When the incompatible resolution of the input signal is input to the product no image is shown on the screen or normal display is not shown. As for the supported resolutions, refer to page 50.

PC

DVI-D Cable

Or

BD/HD-DVD/
DVD/DTV STB
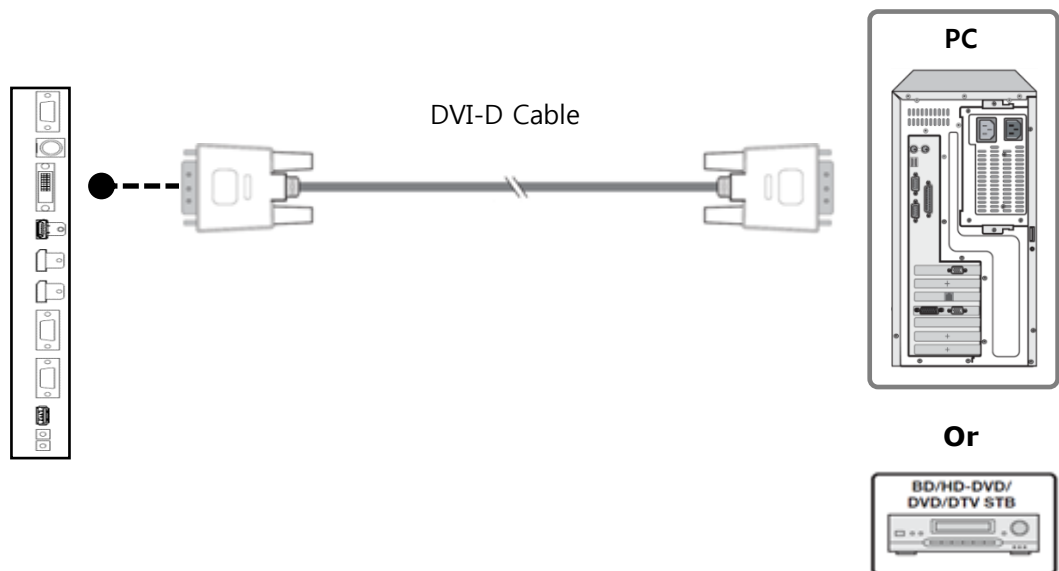
5.4   VGA (D-SUB) Connection

• To see the video, connect D-Sub 15P cable of the PC to the VGA In port of the product.

• If connecting the product to the PC, it supports the VESA Display Data Channel (DDC) standard. This standard supports "plug and play" function which helps the PC recognize the product automatically to output the optimal resolution.

In order to operate the 'plug and play' after connecting the product, connect the video cable of the PC to the product before turning on your PC, and turn on the power of this product first and then turn on the power of the PC.

• When the incompatible resolution of the input signal is input to the product no image is shown on the screen or normal display is not shown. As for the supported resolutions, refer to page 50.
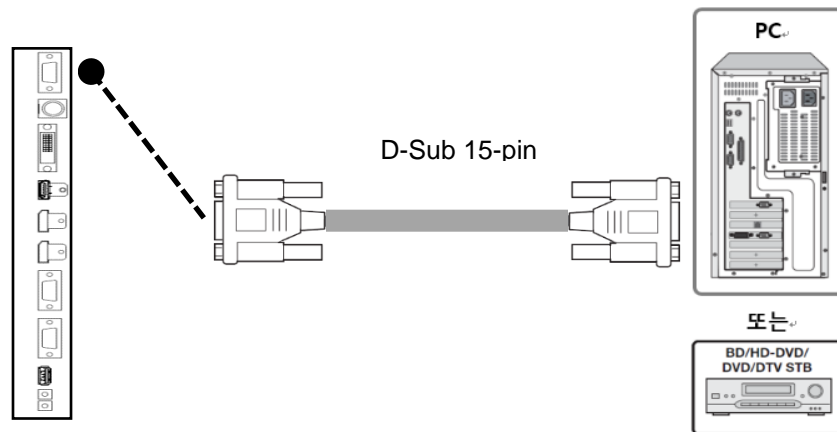
5.5   CVBS Connection

• To see the video, Connect CVBS output terminal of the video equipment and CVBS terminal of the product by using the BNC cable.
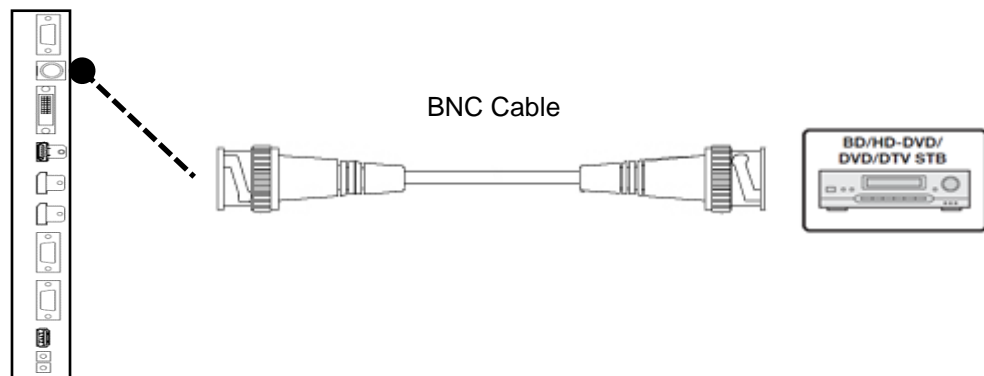
6   Multi-Vision Connection

- Connect DP output terminal of previous monitor and DP input terminal of next monitor by using the DP cable.
- Connect RS-232 output terminal of the previous monitor and RS-232 input terminal of next monitor by using the RS-232 cable.

.
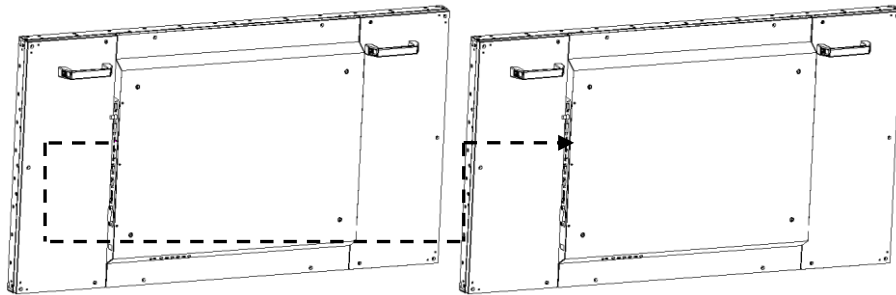
Multi-Vision Connection

- When connecting DVI, HDMI and DP of the first monitor, you can connect to DP output terminal of the next monitor.
- The maximum units to be connected : up to 10x10 (100 set)

- - - - - : Digital Signal Input
(DVI, HDMI, DP)

——— : Display Port Cable Connection
(Daisy chain)
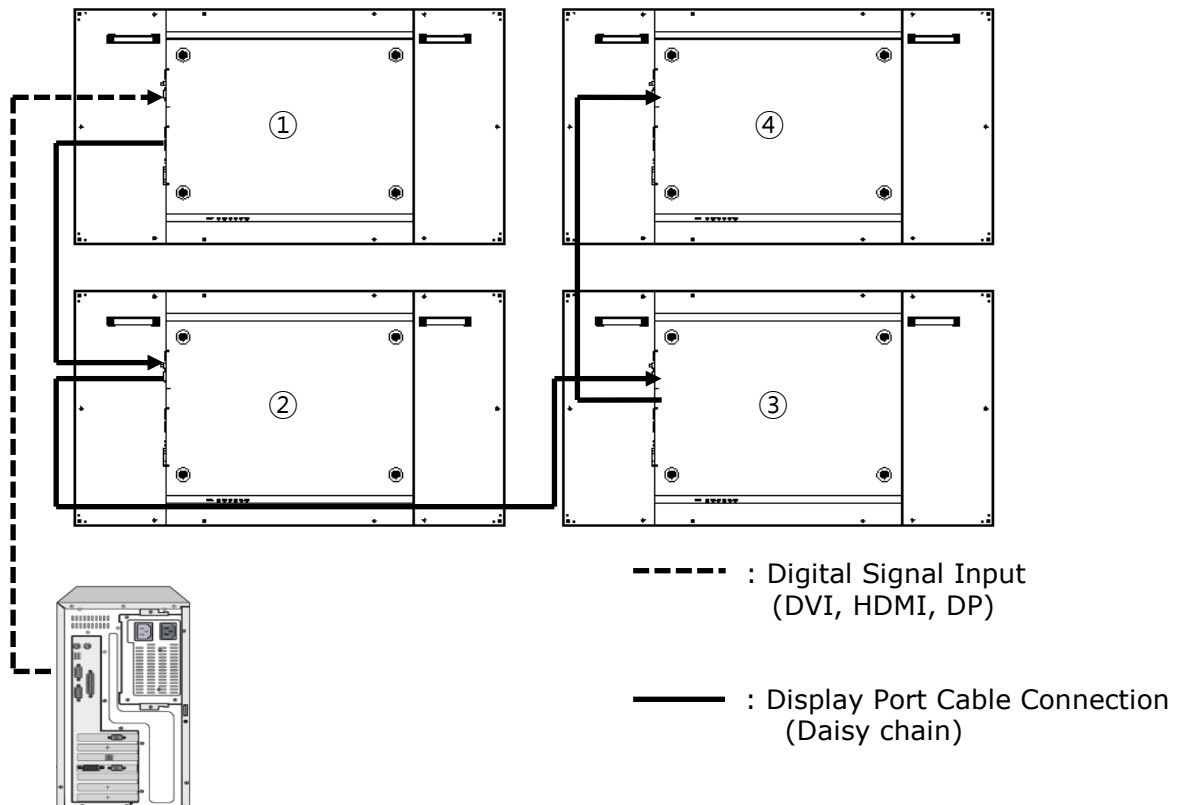
7   Product ID Setting Guide

- Use the rotary switch next to the input terminals of the product to set the product's ID.
- The upper switch (from rear side) specifies 10 units, and the lower switch specifies 1units, and set <0,0> as the ID of the first monitor receiving the first input signal.
- And from the next monitor, each ID is set to be incremented by each digit and maximum <9,9> (100th monitor's ID) can be set up.

<10 unit>   <1 unit>
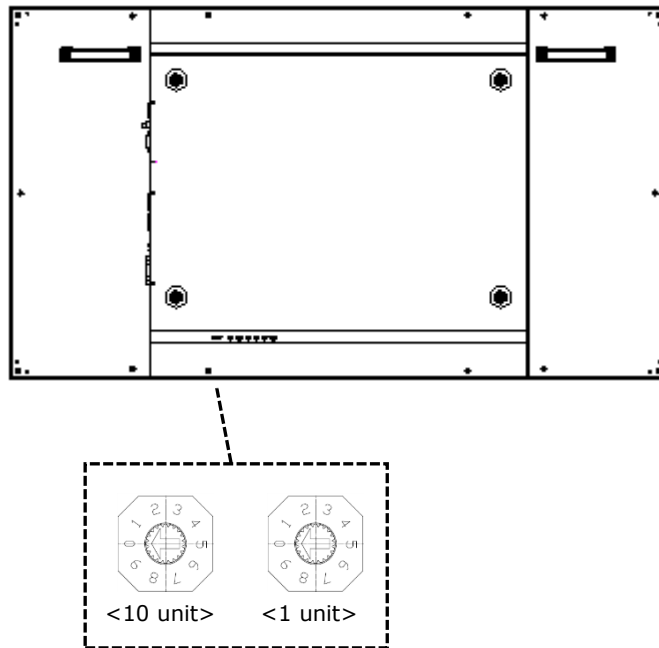
Example of setting > 2 x 2 monitors setting

From the front side of monitors, set monitor ID as below.	From the front side of monitors, set monitor ID as below.
<10 unit: 0> <1 unit: 0>	<10 unit: 0> <1 unit: 1>
From the front side of monitors, set monitor ID as below.	From the front side of monitors, set monitor ID as below.
<10 unit: 0> <1 unit: 2>	<10 unit: 0> <1unit: 3>
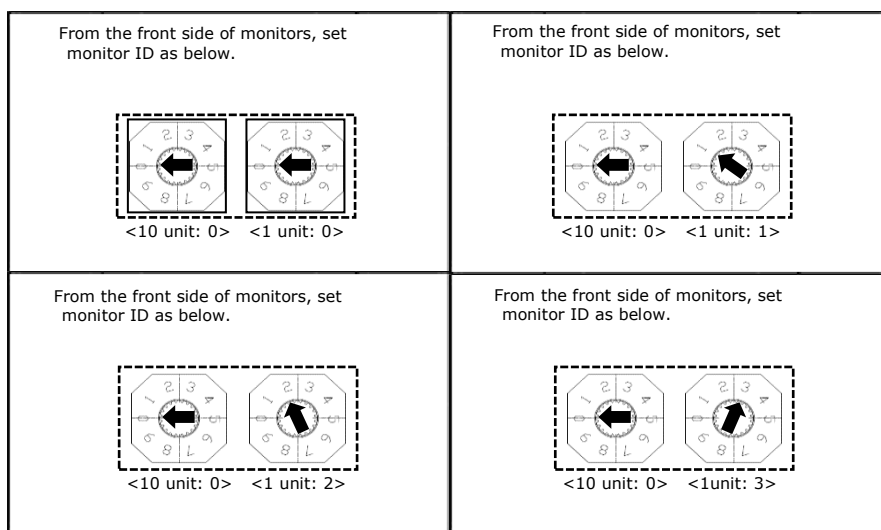
8   Menu Control

8.1   Input selection

Press the Input button and then select ▲ or ▼, or the input you want to select, and then press the ▶ (+) button.
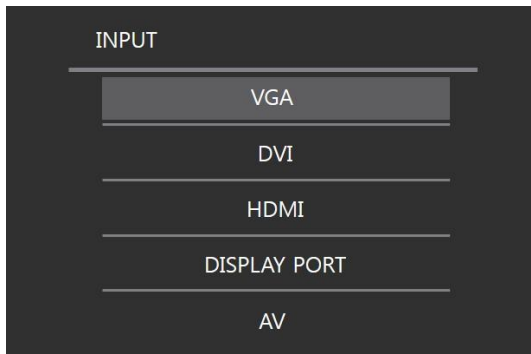
Input	Description
VGA	To select VGA input
DVI	To select DVI input
HDMI	To select HDMI input
DISPLAY PORT	To select DISPLAY PORT input
AV	To select AV input

INPUT
- VGA
- DVI
- HDMI
- DISPLAY PORT
- AV

8.2   Screen Adjustment

Press the MENU button, and then press the ▲ or the ▼ button to go to the on-screen menu. Press ▶ button to go to the on-screen setting menu, and after moving to the menu, press the ▲ or ▼ button to the menu which you want to move and setup menu screen by pressing ▶(+) or ◀(-) button, then press the MENU button to exit.

- Picture
- Multi
- OSD
- Setup
- About

Picture Mode	◀ Standard ▶
Brightness	90
Contrast	50
Black Level	50
Color	50
Sharpness	50
Screen	
Color Temperature	Normal

▲▼ MOVE   ● SELECT   ◀ ▶ ADJUST   **MENU** BACK
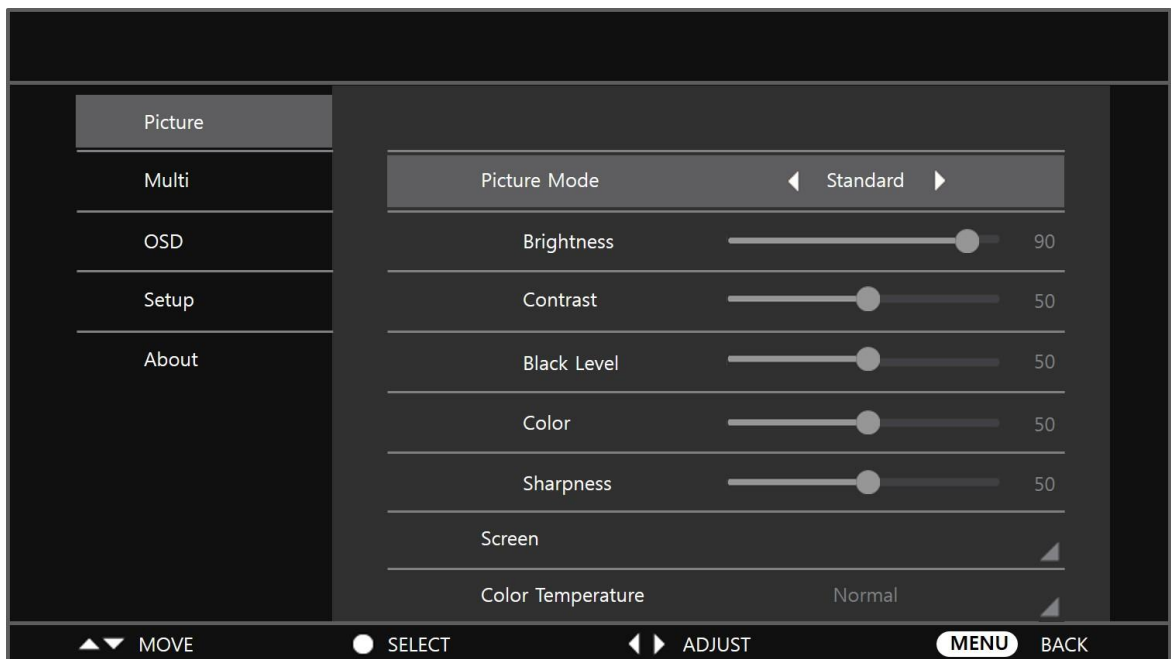
🖉 OSD menu can be adjusted only in VGA input mode.

Menu	Sub-menu	Description
Screen mode	Standard / user / Dynamic	To select a screen mode.
	Luminosity	To adjust the brightness of the backlight.
	Contrast	To adjust the contrast of white and black.
	Black level	To adjust the brightness of the screen.
	Colors	To adjust colors. If setting the value lower the greenish color gets stronger, if setting the value higher, the red color tone gets stronger.
	Definition	To adjust the sharpness of the screen.
Adjusting the Screen	Auto Adjust	To adjust location / frequency / phase of the VGA input screen automatically.
	The horizontal position	To adjust the horizontal position of the VGA input screen.
	The vertical position	To adjust the vertical position of the VGA input screen.
	Frequency	To adjust the frequency of the VGA input screen.
	Phase	To adjust the phase of the VGA input screen.
Color Temperature	Normal / Cool / Warm	To select the color temperature mode.
	Red	To adjust finely the intensity of red color.
	Green	To adjust finely the intensity of green color.
	Blue	To adjust finely the intensity of blue color.
Screen Initialization		To initialize the on-screen menu.

8.3　Multi-vision Setting

Press the MENU button, then press the ▲ or ▼ button to go to the multi-menu. And press the ▶ button to go to the Multi menu and press the ▲ or ▼ button to move to a menu which you want to go to and set value by pressing the ▶ (+) or ◀ (-) button and then press the MENU button to exit.
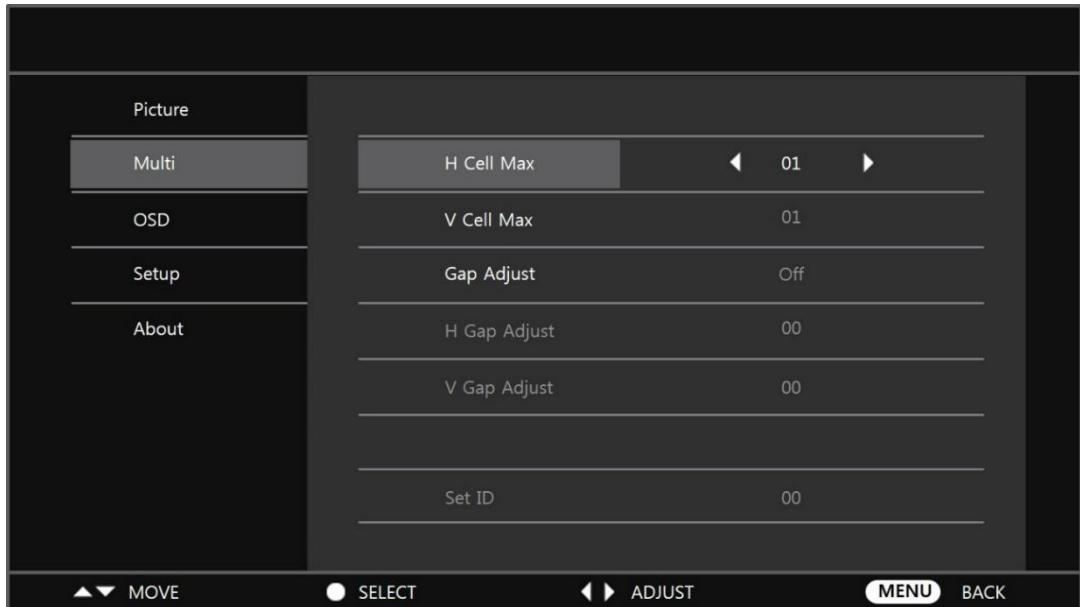
Menu	Description
H Cell Max	To input the number of horizontal monitors of the currently configured multi-vision display.
V Cell Max	To input the number of vertical monitors of the currently configured multi-vision display.
Gap Adjust	To adjust gap between the monitors (On/Off).
H Gap Adjust	To adjust horizontal gap between the monitors.
V Gap Adjust	To adjust vertical gap between the monitors.
Set ID	To see the ID of the current monitor

8.4　OSD Adjusting

Press the MENU button, then press the ▲ or ▼ button to go to the OSD menu. And press the ▶ button to go to the OSD menu and press the ▲ or ▼ button to move

to a menu which you want to go to and set value by pressing the ▶ (+) or ◀ (-) button and then press the MENU button to exit.
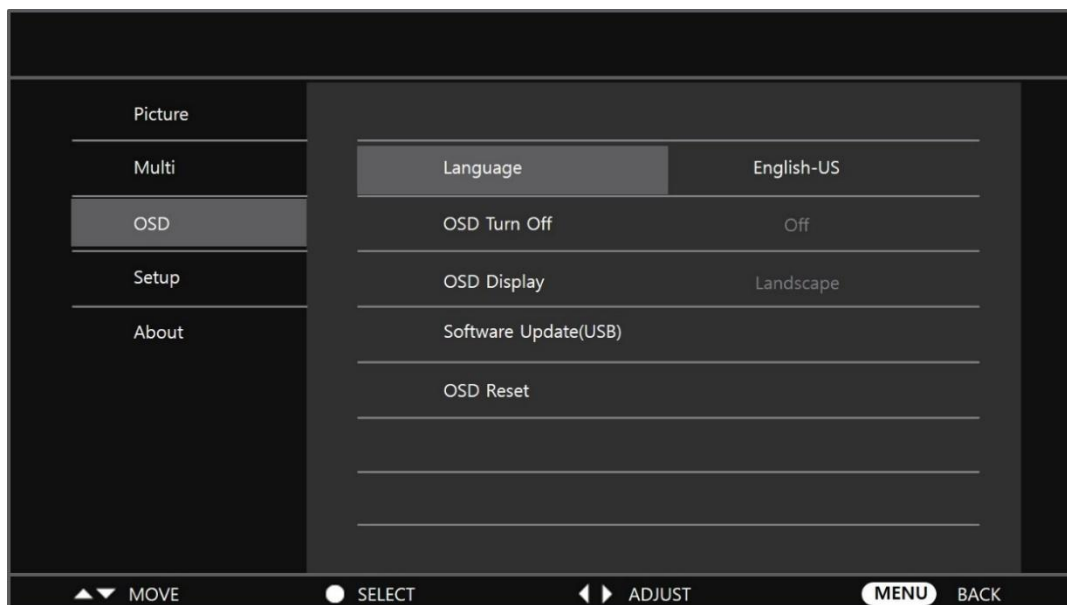
8.5   Adjusting Setting

Press the MENU button, then press the ▲ or ▼ button to go to the Setting menu. And press the ▶ button to go to the Setting menu and press the ▲ or ▼ button to move to a menu which you want to go to and set value by pressing the ▶ (+) or ◀ (-) button and then press the MENU button to exit.
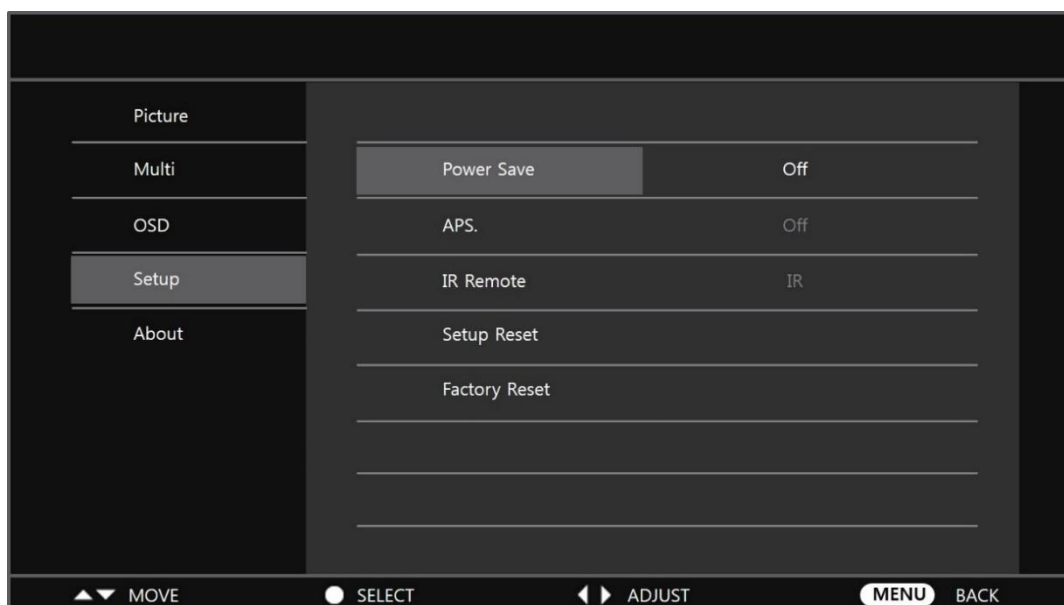
Menu	Description
Power Save	To save power consumption by setting On. In case of no input of video signal input, after 120 seconds later, the power mode changes to power consumption mode (standby mode).
APS.	To prevent residual images by using the APS (Auto Pixel Shift) function.
IR Remote	To control by selecting IR or RS-232.
Setup Reset	To initialize the set menu.
Factory Reset	To reset the value of all of the set menu to the factory defaults.

8.6   Information

Press the MENU button, and then press the ▲ or the ▼ button to move to the Information menu. Or press the INFO button on the remote controller.

Then you can check model name, ID, current input resolution and software version etc. of the product.

Picture	
Multi	Model Number : VW-F551
OSD	Input Resolution : 1080p@60Hz
Setup	Set ID : 00
About	Matrix : 01 X 01
	Version : 0.0.1.1

▲▼ MOVE   ● SELECT   ◀ ▶ ADJUST   MENU BACK
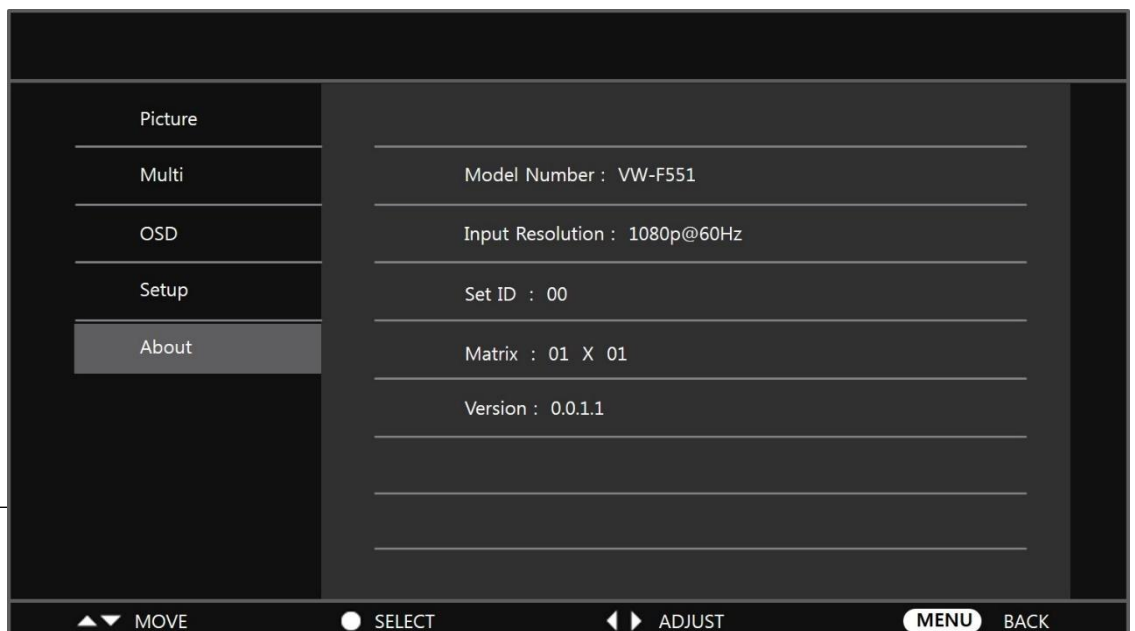
9   Trouble Shooting

The table below provides some general guidelines for trouble shooting problems you may encounter with your product. If the suggested solutions fail to resolve the problem or if you encounter an issue not described here, please contact your dealer or service center.

Symptom	Checklist & Solution
The power is not turned on. (When the LED light indication is red or orange.)	• Turn on power switch of the product or by using remote controller, check if the product is in power saving mode for no input of video signal.
The power is not turned on. (LED indication that the light is off)	• Ensure that the product is plugged in and that the AC outlet is active. • Set the main power switch to the on position. • Try to connect other electric equipment to AC outlet to check if there is no problem in power source.
The remote controller does not work.	• Replace the battery. • If the remote controller receiver of the product is prevented by any object, delete the object and try to operate again. • If the remote controller receiver of the product is exposed to direct sunlight or strong light, try to block the light and operate again.
The power is on only but the screen does not appear.	When the LED indicator of the product is green, video displays on the screen. Turn on the power of the product by using the power switch or remote controller. • Turn off the AC power, and then turn it on again.
A message of 'Input out of range' is displayed.	• Check if a signal with other resolution which the product does not support is input to the product and refer to the details in the page 50.
Images is not displayed correctly	• Ensure the cables are connected in and video

or noise is shown on the screen.	signal is active. • Change the cable. • Check if a signal with other resolution which the product does not support is input to the product and refer to the details in the page 50. • Connect another product to check if there is no problem, considering the possibility of problem in outer video signal equipment.

Symptoms	Checklist
'No Signal' message is displayed.	• Check to see if the external signal device is turned on. • Check if computer is on power saving mode by handling the mouse or pressing keyboard to wake. • Check to see if the external signal devices and cables are connected. • Check to see if the cable connections are loose or missing out. • Try changing the cable. • Check if the input selection of products is correctly set to an external device by using the SOURCE button on the remote controller.
HDMI screen is not displayed. Or screen appears strange.	• Check to see if the cable connections are loose or missing out. • Try changing the cable. • If you use an HDMI cable not certified, it may result in a problem.
HDMI display is small or large visible.	• Try adjusting video output size of the graphic card in case of computer.
The color of VGA screen is strange.	• Check to see if the cable connections are loose or missing out. • Try changing the cable. • Connect another product to check if there is no

	problem, considering the possibility of problem in outer video signal equipment.
The position of VGA screen is strange.	• Try adjusting the automatic position by using the AUTO button on the remote controller.
The screen is too bright and the image is not separated.	• From the menu, try making the value of the black level lower on the screen menu setting. • Or try to initialize the screen menu settings.

Symptoms	Checklist
The dark area of the screen is too bright	• From the menu, try make the value of the contrast lower on the screen menu settings. • Or try to initialize the screen menu settings.
Screen looks too dark.	• Try to initialize the screen menu settings.

10   Product Specification

✎ Product specifications are subject to change without notice.

Panel	
Brightness	Typ. 500 cd/m^2
Contrast	Typ. 1,400:1
Viewing Angle	H : 178° / V : 178°
Responsiveness Speed	12 ms (GTG)
Supported Color	1.06 billion colors
Panel Resolution	1920 x 1080 (16:9)
Panel Frame	60 Hz

Signal Input/Output	
Horizontal / vertical frequency	Analog: 31.5 ~ 67.5 KHz / 50 ~ 71 Hz
	Digital: 31.5 ~ 91.1 KHz / 50 ~ 71 Hz
Input Resolution	1920 x 1080 @ 60 Hz (Analog / DVI / HDMI / DP)
Input / output terminals	DP(DisplayPort) IN, OUT / HDMI / DVI / VGA / CVBS
Communication Terminals	RS-232C IN, OUT / IR IN, OUT

Cosmetic	
Dimensions	1213.4 x 684.2 x 96.5 mm (without handle: 88)
Weight	Product: 26 ± 2kg, Packing: 38 ± 3kg
Wall mount	600mm x 400mm VESA (bolt M8)

OSD function	
Adjustment	Control buttons, IR remote control, RS-232C
Language	Korean, English, French, German, Italian, Russian, Spanish, Danish, Dutch, Norwegian, Finnish, Swedish

Power	
Power supply	AC 100V ~ 240V (50/60 Hz)
Power consumption (active state)	max 240 W
Power consumption (standby)	< 0.5 W

Environment	
Operating conditions	5°C ~ 35°C, 85% RH
Storage Conditions	-20°C ~ 60°C, 90% RH

11　Supported Resolutions

Resolution	H Freq.(kHz)	V Freq. (Hz)	Pixel Clock (MHz)
640 x 480	31.469	59.940	25.175
720 x 480	31.469	59.941	27.000
720 x 576	31.25	50.000	27.000
800 x 600	37.231	59.858	38.125
1024 x 768	48.364	60.004	65.000
1280 x 720	36.994	49.925	60.375
1280 x 720	44.697	59.915	74.375
1280 x 768	47.693	59.992	80.125
1280 x 1024	63.981	60.020	108.000
1920 x 1080	55.572	49.975	141.375
1920 x 1080	67.061	59.983	172.749

※ Supplement (Command list)

- Direct Command List

Head (2Byte) : Start code					K				
Set ID (3Byte) : Product ID ASCII code (000~099)					ALL / 001				
Command (3Byte) : Product Control code					PON				
End (1Byte) : End Code									

No	Head (2Byte)		Set ID (3Byte)			Command (3Byte)			End (1Byte)	Description
1	0x4B (K)	0x3A (:)	0x41 (A)	0x4C (L)	0x4C (L)	0x50 (P)	0x4F (O)	0x4E (N)	0x2E (.)	Product Power ON
2	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x30 (0)	0x50 (P)	0x4F (O)	0x46 (F)	0x2E (.)	Product Power OFF
3	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x31 (1)	0x53 (S)	0x50 (P)	0x43 (C)	0x2E (.)	Source change to VGA
4	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x32 (2)	0x53 (S)	0x44 (D)	0x56 (V)	0x2E (.)	Source change to DVI
5	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x34 (4)	0x53 (S)	0x41 (A)	0x56 (V)	0x2E (.)	Source change to AV
6	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x35 (5)	0x53 (S)	0x48 (H)	0x32 (1)	0x2E (.)	Source change to DVI
7	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x36 (6)	0x53 (S)	0x48 (H)	0x32 (2)	0x2E (.)	Source change to HDMI
8	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x37 (7)	0x53 (S)	0x48 (H)	0x33 (3)	0x2E (.)	Source change to DP
9	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x38 (8)	0x4D (M)	0x48 (H)	0x55 (U)	0x2E (.)	Multi window H Cell max 1step Up
10	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x39 (9)	0x4D (M)	0x48 (H)	0x44 (D)	0x2E (.)	Multi window H Cell max 1step Down
11	0x4B (K)	0x3A (:)	0x30 (0)	0x31 (1)	0x30 (0)	0x4D (M)	0x56 (V)	0x55 (U)	0x2E (.)	Multi window V Cell max 1step Up
12	0x4B (K)	0x3A (:)		•		0x4D (M)	0x56 (V)	0x44 (D)	0x2E (.)	Multi window V Cell max 1step Down
13	0x4B (K)	0x3A (:)		•		0x48 (H)	0x45 (E)	0x55 (U)	0x2E (.)	Multi window H Gap 1step Up
14	0x4B (K)	0x3A (:)		•		0x48 (H)	0x45 (E)	0x44 (D)	0x2E (.)	Multi window H Gap 1step Down
15	0x4B (K)	0x3A (:)		•		0x56 (V)	0x45 (E)	0x55 (U)	0x2E (.)	Multi window V Gap 1step Up
16	0x4B (K)	0x3A (:)		•		0x56 (V)	0x45 (E)	0x44 (D)	0x2E (.)	Multi window V Gap 1step Down
17	0x4B (K)	0x3A (:)		•		0x43 (C)	0x54 (T)	0x30 (0)	0x2E (.)	Color temperature set to Normal
18	0x4B (K)	0x3A (:)		•		0x43 (C)	0x54 (T)	0x31 (1)	0x2E (.)	Color Temperature set to Cool
19	0x4B (K)	0x3A (:)		•		0x43 (C)	0x54 (T)	0x32 (2)	0x2E (.)	Color Temperature set to Warm
20	0x4B (K)	0x3A (:)		•		0x43 (C)	0x54 (T)	0x32 (3)	0x2E (.)	Color Temperature set to User
21	0x4B (K)	0x3A (:)		•		0x43 (C)	0x54 (T)	0x55 (U)	0x2E (.)	Contrast 1step Up
22	0x4B (K)	0x3A (:)		•		0x43 (C)	0x54 (T)	0x44 (D)	0x2E (.)	Contrast 1step Down

No										Description
23	0x4B (K)	0x3A (:)		•		0x42 (B)	0x52 (R)	0x55 (U)	0x2E (.)	Black Level 1step Up
24	0x4B (K)	0x3A (:)		•		0x42 (B)	0x52 (R)	0x44 (D)	0x2E (.)	Black Level 1step Down
25	0x4B (K)	0x3A (:)		•		0x53 (S)	0x54 (T)	0x55 (U)	0x2E (.)	Color 1step Up
26	0x4B (K)	0x3A (:)		•		0x53 (S)	0x54 (T)	0x44 (D)	0x2E (.)	Color 1step Down
27	0x4B (K)	0x3A (:)		•		0x53 (S)	0x50 (P)	0x55 (U)	0x2E (.)	Sharpness 1step Up
28	0x4B (K)	0x3A (:)		•		0x53 (S)	0x50 (P)	0x44 (D)	0x2E (.)	Sharpness 1step Down
29	0x4B (K)	0x3A (:)		•		0x42 (B)	0x4C (L)	0x55 (U)	0x2E (.)	Brightness(Backlight) 1step Up
30	0x4B (K)	0x3A (:)		•		0x42 (B)	0x4C (L)	0x44 (D)	0x2E (.)	Brightness(Backlight) 1step Down
31	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x37 (7)	0x52 (R)	0x4F (O)	0x55 (U)	0x2E (.)	Red Offset 1step Up
32	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x38 (8)	0x52 (R)	0x4F (O)	0x44 (D)	0x2E (.)	Red Offset 1setp Down
33	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x39 (9)	0x47 (G)	0x4F (O)	0x55 (U)	0x2E (.)	Green Offset 1step Up
34	0x4B (K)	0x3A (:)				0x47 (G)	0x4F (O)	0x44 (D)	0x2E (.)	Green Offset 1step Down
35	0x4B (K)	0x3A (:)				0x42 (B)	0x4F (O)	0x55 (U)	0x2E (.)	Blue Offset 1step Up
36	0x4B (K)	0x3A (:)				0x42 (B)	0x4F (O)	0x44 (D)	0x2E (.)	Blue Offset 1step Down
37	0x4B (K)	0x3A (:)				0x52 (R)	0x47 (G)	0x55 (U)	0x2E (.)	Red Gain 1step Up
38	0x4B (K)	0x3A (:)				0x52 (R)	0x47 (G)	0x44 (D)	0x2E (.)	Red Gain 1step Down
39	0x4B (K)	0x3A (:)				0x47 (G)	0x47 (G)	0x55 (U)	0x2E (.)	Green Gain 1step Up
40	0x4B (K)	0x3A (:)				0x47 (G)	0x47 (G)	0x44 (D)	0x2E (.)	Green Gain 1step Down
41	0x4B (K)	0x3A (:)				0x42 (B)	0x47 (G)	0x55 (U)	0x2E (.)	Blue Gain 1step Up
42	0x4B (K)	0x3A (:)				0x42 (B)	0x47 (G)	0x44 (D)	0x2E (.)	Blue Gain 1step Down
43	0x4B (K)	0x3A (:)				0x50 (P)	0x4D (M)	0x30 (0)	0x2E (.)	Picture Mode STANDARD
44	0x4B (K)	0x3A (:)				0x50 (P)	0x4D (M)	0x31 (1)	0x2E (.)	Picture Mode DYNAMIC
45	0x4B (K)	0x3A (:)				0x50 (P)	0x4D (M)	0x32 (2)	0x2E (.)	Picture Mode USER
46	0x4B (K)	0x3A (:)				0x48 (H)	0x50 (P)	0x55 (U)	0x2E (.)	H-Position 1step Up
47	0x4B (K)	0x3A (:)				0x48 (H)	0x50 (P)	0x44 (D)	0x2E (.)	H-Position 1step Down
48	0x4B (K)	0x3A (:)				0x56 (V)	0x50 (P)	0x55 (U)	0x2E (.)	V-Position 1step Up
49	0x4B (K)	0x3A (:)				0x56 (V)	0x50 (P)	0x44 (D)	0x2E (.)	V-Position 1step Down
50	0x4B (K)	0x3A (:)				0x43 (C)	0x4B (K)	0x55 (U)	0x2E (.)	Clock 1step Up

51	0x4B (K)	0x3A (:)				0x43 (C)	0x4B (K)	0x44 (D)	0x2E (.)	Clock 1step Down
52	0x4B (K)	0x3A (:)				0x50 (P)	0x48 (H)	0x55 (U)	0x2E (.)	Phase 1step Up
53	0x4B (K)	0x3A (:)				0x50 (P)	0x48 (H)	0x44 (D)	0x2E (.)	Phase 1step Down
54	0x4B (K)	0x3A (:)				0x41 (A)	0x54 (T)	0x55 (U)	0x2E (.)	Auto Adjust (only VGA input)
55	0x4B (K)	0x3A (:)				0x52 (R)	0x50 (P)	0x57 (W)	0x2E (.)	Remote control Power key
56	0x4B (K)	0x3A (:)				0x52 (R)	0x53 (S)	0x4F (O)	0x2E (.)	Remote control Source key
57	0x4B (K)	0x3A (:)				0x52 (R)	0x55 (U)	0x50 (P)	0x2E (.)	Remote control Up key
58	0x4B (K)	0x3A (:)				0x52 (R)	0x44 (D)	0x4E (N)	0x2E (.)	Remote control Down key
59	0x4B (K)	0x3A (:)				0x52 (R)	0x52 (R)	0x54 (T)	0x2E (.)	Remote control Right key
60	0x4B (K)	0x3A (:)				0x52 (R)	0x4C (L)	0x54 (T)	0x2E (.)	Remote control Left key
61	0x4B (K)	0x3A (:)				0x52 (R)	0x45 (E)	0x4E (N)	0x2E (.)	Remote control Select key
62	0x4B (K)	0x3A (:)				0x52 (R)	0x4D (M)	0x4E (N)	0x2E (.)	Remote control Menu key
63	0x4B (K)	0x3A (:)				0x52 (R)	0x41 (A)	0x54 (T)	0x2E (.)	Remote control Auto key
64	0x4B (K)	0x3A (:)				0x52 (R)	0x49 (I)	0x46 (F)	0x2E (.)	Remote control Info key
65	0x4B (K)	0x3A (:)				0x47 (G)	0x41 (A)	0x4E (N)	0x2E (.)	Gap adjust On
66	0x4B (K)	0x3A (:)				0x47 (G)	0x41 (A)	0x46 (F)	0x2E (.)	Gap adjust Off
67	0x4B (K)	0x3A (:)				0x55 (U)	0x52 (R)	0x55 (U)	0x2E (.)	Color Tone Red Up
68	0x4B (K)	0x3A (:)				0x55 (U)	0x52 (R)	0x44 (D)	0x2E (.)	Color Tone Red Down
69	0x4B (K)	0x3A (:)				0x55 (U)	0x47 (G)	0x55 (U)	0x2E (.)	Color Tone Green Up
70	0x4B (K)	0x3A (:)				0x55 (U)	0x47 (G)	0x44 (D)	0x2E (.)	Color Tone Green Down
71	0x4B (K)	0x3A (:)				0x55 (U)	0x42 (B)	0x55 (U)	0x2E (.)	Color Tone Blue Up
72	0x4B (K)	0x3A (:)				0x55 (U)	0x42 (B)	0x44 (D)	0x2E (.)	Color Tone Blue Down

- Control Command List

Head (2Byte) : Start code											K:	
Set ID (3Byte) : Product ID ASCII code (000~099)											ALL / 001	
Command (3Byte) : Product Control code											MHC	
Value (3Byte) : Product Setting Value code (000~100)											001	
End (1Byte) : End code											.	

No	Head (2Byte)		Set ID (3Byte)			Command (3Byte)			Value (3byte)			End (1Byte)	Description
1	0x4B (K)	0x3A (:)	0x41 (A)	0x4C (L)	0x4C (L)	0x4D (M)	0x48 (H)	0x43 (C)	0x30 (0)	0x30 (0)	0x30 (0)	0x2E (.)	Multi Window H Cell max (1~10)
2	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x30 (0)	0x4D (M)	0x56 (V)	0x43 (C)	0x30 (0)	0x30 (0)	0x31 (1)	0x2E (.)	Multi Window V Cell max (1~10)
3	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x31 (1)	0x44 (D)	0x4E (N)	0x4F (O)	0x30 (0)	0x30 (0)	0x32 (2)	0x2E (.)	Multi Window Cell No (0~99)
4	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x32 (2)	0x4D (M)	0x48 (H)	0x47 (G)	0x30 (0)	0x30 (0)	0x33 (3)	0x2E (.)	Multi Window H Gap(Edge) (0~40)
5	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x33 (3)	0x4D (M)	0x56 (V)	0x47 (G)	0x30 (0)	0x30 (0)	0x34 (4)	0x2E (.)	Multi Window V Gap(Edge) (0~40)
6	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x34 (4)	0x43 (C)	0x4F (O)	0x4E (N)	0x30 (0)	0x30 (0)	0x35 (5)	0x2E (.)	Contrast Value Setting (0~100)
7	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x35 (5)	0x42 (B)	0x52 (R)	0x54 (T)	0x30 (0)	0x30 (0)	0x36 (6)	0x2E (.)	Brightness Value Setting (0~100)
8	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x37 (7)	0x53 (S)	0x41 (A)	0x54 (T)	0x30 (0)	0x30 (0)	0x38 (8)	0x2E (.)	Saturation Setting (0~100)
9	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x38 (8)	0x53 (S)	0x48 (H)	0x41 (A)	0x30 (0)	0x30 (0)	0x39 (9)	0x2E (.)	Sharpness Value Setting (0~100)
10	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x39 (9)	0x42 (B)	0x4C (L)	0x54 (T)	0x30 (0)	0x31 (1)	0x30 (0)	0x2E (.)	Back Light Setting (0~100)
11	0x4B (K)	0x3A (:)		•		0x52 (R)	0x4F (O)	0x46 (F)		•		0x2E (.)	Red Offset Setting (0~100)
12	0x4B (K)	0x3A (:)		•		0x47 (G)	0x4F (O)	0x46 (F)		•		0x2E (.)	Green Offset Setting (0~100)
13	0x4B (K)	0x3A (:)		•		0x42 (B)	0x4F (O)	0x46 (F)		•		0x2E (.)	Blue Offset Setting (0~100)
14	0x4B (K)	0x3A (:)		•		0x52 (R)	0x47 (G)	0x4E (N)		•		0x2E (.)	Red Gain Setting (0~255)
15	0x4B (K)	0x3A (:)		•		0x47 (G)	0x47 (G)	0x4E (N)		•		0x2E (.)	Green Gain Setting (0~255)
16	0x4B (K)	0x3A (:)		•		0x42 (B)	0x47 (G)	0x4E (N)		•		0x2E (.)	Blue Gain Setting (0~255)
17	0x4B (K)	0x3A (:)		•		0x48 (H)	0x50 (P)	0x53 (S)		•		0x2E (.)	H-Position Setting (0~100)
18	0x4B (K)	0x3A (:)		•		0x56 (V)	0x50 (P)	0x53 (S)		•		0x2E (.)	V-Position Setting (0~100)
19	0x4B (K)	0x3A (:)		•		0x43 (C)	0x4C (L)	0x4B (K)		•		0x2E (.)	Clock Setting (0~100)
20	0x4B (K)	0x3A (:)		•		0x50 (P)	0x48 (H)	0x53 (S)		•		0x2E (.)	Phase Setting (0~100)
21	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x37 (7)	0x55 (U)	0x42 (B)	0x4C (L)	0x30 (0)	0x39 (9)	0x38 (8)	0x2E (.)	Color Tone Blue Setting (0~100)
22	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x38 (8)	0x55 (U)	0x47 (G)	0x52 (R)	0x30 (0)	0x39 (9)	0x39 (9)	0x2E (.)	Color Tone Green Setting (0~100)
23	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x39 (9)	0x55 (U)	0x52 (R)	0x45 (E)	0x31 (1)	0x30 (0)	0x30 (0)	0x2E (.)	Color Tone Red Setting (0~100)

- State Check Command List

- Head (2Byte) : Start code	K:
- Set ID (3Byte) : Product ID ASCII code (000~099)	001
- Command (3Byte) : Product Control code	MHC
- Value (3Byte) : Product Setting Value code (000~100)	001
- End (1Byte) : End code	?

No	Head (2Byte)		Set ID (3Byte)			Command (3Byte)			End (1Byte)	Description
1	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x30 (0)	0x4D (M)	0x48 (H)	0x43 (C)	0x3F (?)	Multi Window H Cell max (1~10)
2	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x31 (1)	0x4D (M)	0x56 (V)	0x43 (C)	0x3F (?)	Multi Window V Cell max (1~10)
3	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x32 (2)	0x44 (D)	0x4E (N)	0x4F (O)	0x3F (?)	Multi Window Cell No (0~99)
4	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x33 (3)	0x4D (M)	0x48 (H)	0x47 (G)	0x3F (?)	Multi Window H Gap(Edge) (0~99)
5	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x34 (4)	0x4D (M)	0x56 (V)	0x47 (G)	0x3F (?)	Multi Window V Gap(Edge) (0~99)
6	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x35 (5)	0x43 (C)	0x4F (O)	0x4E (N)	0x3F (?)	Contrast Value Setting (0~100)
7	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x37 (7)	0x42 (B)	0x52 (R)	0x54 (T)	0x3F (?)	Brightness Value Setting (0~100)
8	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x38 (8)	0x53 (S)	0x41 (A)	0x54 (T)	0x3F (?)	Saturation Setting (0~100)
9	0x4B (K)	0x3A (:)	0x30 (0)	0x30 (0)	0x39 (9)	0x53 (S)	0x48 (H)	0x41 (A)	0x3F (?)	Sharpness Value Setting (0~100)
10	0x4B (K)	0x3A (:)		•		0x42 (B)	0x4C (L)	0x54 (T)	0x3F (?)	Back Light Setting (0~100)
11	0x4B (K)	0x3A (:)		•		0x52 (R)	0x4F (O)	0x46 (F)	0x3F (?)	Red Offset Setting (0~100)
12	0x4B (K)	0x3A (:)		•		0x47 (G)	0x4F (O)	0x46 (F)	0x3F (?)	Green Offset Setting (0~100)
13	0x4B (K)	0x3A (:)		•		0x42 (B)	0x4F (O)	0x46 (F)	0x3F (?)	Blue Offset Setting (0~100)
14	0x4B (K)	0x3A (:)		•		0x52 (R)	0x47 (G)	0x4E (N)	0x3F (?)	Red Gain Setting (0~100)
15	0x4B (K)	0x3A (:)		•		0x47 (G)	0x47 (G)	0x4E (N)	0x3F (?)	Green Gain Setting (0~100)
16	0x4B (K)	0x3A (:)		•		0x42 (B)	0x47 (G)	0x4E (N)	0x3F (?)	Blue Gain Setting (0~100)
17	0x4B (K)	0x3A (:)		•		0x48 (H)	0x50 (P)	0x53 (S)	0x3F (?)	H-Position Setting (0~100)
18	0x4B (K)	0x3A (:)		•		0x56 (V)	0x50 (P)	0x53 (S)	0x3F (?)	V-Position Setting (0~100)
19	0x4B (K)	0x3A (:)		•		0x43 (C)	0x4C (L)	0x4B (K)	0x3F (?)	Clock Setting (0~100)
20	0x4B (K)	0x3A (:)		•		0x50 (P)	0x48 (H)	0x53 (S)	0x3F (?)	Phase Setting (0~100)
21	0x4B (K)	0x3A (:)		•		0x55 (U)	0x42 (B)	0x4C (L)	0x3F (?)	Color Tone Blue Setting (0~100)
22	0x4B (K)	0x3A (:)		•		0x55 (U)	0x47 (G)	0x52 (R)	0x3F (?)	Color Tone Green Setting (0~100)
23	0x4B	0x3A		•		0x55	0x52	0x45	0x3F	Color Tone Red Setting (0~100)

	(K)	(:)				(U)	(R)	(E)	(?)	
24	0x4B (K)	0x3A (:)		•		0x50 (P)	0x4F (W)	0x52 (R)	0x2E (.)	Product Power status
25	0x4B (K)	0x3A (:)		•		0x53 (S)	0x52 (R)	0x43 (C)	0x2E (.)	Current source
26	0x4B (K)	0x3A (:)		•		0x53 (F)	0x52 (W)	0x43 (V)	0x2E (.)	Firmware Version Read
27	0x4B (K)	0x3A (:)		•		0x53 (M)	0x52 (D)	0x43 (T)	0x2E (.)	Product Device Type Read.
28	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x37 (7)	0x53 (S)	0x52 (N)	0x43 (O)	0x2E (.)	Product Device Type Read.
29	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x38 (8)	0x53 (M)	0x52 (D)	0x43 (T)	0x2E (.)	Product Serial N.O. Read.
30	0x4B (K)	0x3A (:)	0x30 (0)	0x39 (9)	0x39 (9)	0x53 (R)	0x52 (T)	0x43 (I)	0x2E (.)	Product Run time status Read.

- Response Command List

Set ID (3Byte) : Product ID ASCII code (000~099)	001
Identifier ":" ASCII code	:
Command (3Byte) : Product Control code	MHC
Identifier "=" ASCII code	"="
Value (3Byte) : Product Setting Value code (0~100)	001

No	Set ID (3Byte)			: (1Byte)	Command (3Byte)			= (1Byte)	Value (3byte)			Description
1	0x30 (0)	0x30 (0)	0x30 (0)	0x3A (:)	0x4D (M)	0x48 (H)	0x43 (C)	0x3D (=)	0x30 (0)	0x30 (0)	0x30 (0)	Multi Window H Cell max (1~10)
2	0x30 (0)	0x30 (0)	0x31 (1)	0x3A (:)	0x4D (M)	0x56 (V)	0x43 (C)	0x3D (=)	0x30 (0)	0x30 (0)	0x31 (1)	Multi Window V Cell max (1~10)
3	0x30 (0)	0x30 (0)	0x32 (2)	0x3A (:)	0x44 (D)	0x4E (N)	0x4F (O)	0x3D (=)	0x30 (0)	0x30 (0)	0x32 (2)	Multi Window Cell No (0~99)
4	0x30 (0)	0x30 (0)	0x33 (3)	0x3A (:)	0x4D (M)	0x48 (H)	0x47 (G)	0x3D (=)	0x30 (0)	0x30 (0)	0x33 (3)	Multi Window H Gap (Edge) (0~40)
5	0x30 (0)	0x30 (0)	0x34 (4)	0x3A (:)	0x4D (M)	0x56 (V)	0x47 (G)	0x3D (=)	0x30 (0)	0x30 (0)	0x34 (4)	Multi Window V Gap (Edge) (0~40)
6	0x30 (0)	0x30 (0)	0x35 (5)	0x3A (:)	0x43 (C)	0x4F (O)	0x4E (N)	0x3D (=)	0x30 (0)	0x30 (0)	0x35 (5)	Contrast Value Setting (0~100)
7	0x30 (0)	0x30 (0)	0x37 (7)	0x3A (:)	0x42 (B)	0x52 (R)	0x54 (T)	0x3D (=)	0x30 (0)	0x30 (0)	0x36 (6)	Brightness Value Setting (0~100)
8	0x30 (0)	0x30 (0)	0x38 (8)	0x3A (:)	0x53 (S)	0x41 (A)	0x54 (T)	0x3D (=)	0x30 (0)	0x30 (0)	0x38 (8)	Saturation Setting (0~100)
9	0x30 (0)	0x30 (0)	0x39 (9)	0x3A (:)	0x53 (S)	0x48 (H)	0x41 (A)	0x3D (=)	0x30 (0)	0x30 (0)	0x39 (9)	Sharpness Value Setting (0~100)
10		•		0x3A (:)	0x42 (B)	0x4C (L)	0x54 (T)	0x3D (=)	0x30 (0)	0x31 (1)	0x30 (0)	Back Light Setting (0~100)
11		•		0x3A (:)	0x52 (R)	0x4F (O)	0x46 (F)	0x3D (=)		•		Red Offset Setting (0~100)
12		•		0x3A (:)	0x47 (G)	0x4F (O)	0x46 (F)	0x3D (=)		•		Green Offset Setting (0~100)
13		•		0x3A (:)	0x42 (B)	0x4F (O)	0x46 (F)	0x3D (=)		•		Blue Offset Setting (0~100)
14		•		0x3A (:)	0x52 (R)	0x47 (G)	0x4E (N)	0x3D (=)		•		Red Gain Setting (0~255)

No											Description
15		•		0x3A (:)	0x47 (G)	0x47 (G)	0x4E (N)	0x3D (=)		•		Green Gain Setting (0~255)
16		•		0x3A (:)	0x42 (B)	0x47 (G)	0x4E (N)	0x3D (=)		•		Blue Gain Setting (0~255)
17		•		0x3A (:)	0x48 (H)	0x50 (P)	0x53 (S)	0x3D (=)		•		H-Position Setting (0~100)
18		•		0x3A (:)	0x56 (V)	0x50 (P)	0x53 (S)	0x3D (=)		•		V-Position Setting (0~100)
19		•		0x3A (:)	0x43 (C)	0x4C (L)	0x4B (K)	0x3D (=)		•		Clock Setting (0~100)
20		•		0x3A (:)	0x50 (P)	0x48 (H)	0x53 (S)	0x3D (=)		•		Phase Setting (0~100)
		•		0x3A (:)	0x55 (U)	0x42 (B)	0x4C (L)	0x3D (=)		•		Color Tone Blue Setting (0~100)
22		•		0x3A (:)	0x55 (U)	0x47 (G)	0x52 (R)	0x3D (=)		•		Color Tone Green Setting (0~100)
23		•		0x3A (:)	0x55 (U)	0x52 (R)	0x45 (E)	0x3D (=)		•		Color Tone Red Setting (0~100)
24		•		0x3A (:)	0x50 (P)	0x4F (W)	0x4E (N)	0x3D (=)		•		Product Power ON
25		•		0x3A (:)	0x53 (S)	0x50 (P)	0x43 (C)	0x3D (=)		•		Source change to PC
26		•		0x3A (:)	0x53 (F)	0x52 (W)	0x43 (V)	0x2E (.)		•		Firmware Version Read
27		•		0x3A (:)	0x53 (M)	0x52 (D)	0x43 (T)	0x2E (.)		•		Product Device Type
28	0x30 (0)	0x39 (9)	0x37 (7)	0x3A (:)	0x53 (S)	0x52 (N)	0x43 (O)	0x2E (.)		•		Product Device Type
29	0x30 (0)	0x39 (9)	0x38 (8)	0x3A (:)	0x53 (M)	0x52 (D)	0x43 (T)	0x2E (.)		•		Product Serial N.O.
30	0x30 (0)	0x39 (9)	0x39 (9)	0x3A (:)	0x53 (R)	0x52 (T)	0x43 (I)	0x2E (.)		•		Product Run time

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