OWNER'S MANUAL
MultiVision & e-MultiBoard

Please read this manual carefully before operating the set and retain it for future reference.

C60PW130

WARNING / CAUTION

- Please read these safety precautions carefully before using the product.
- In this manual, the illustration may be somewhat different from your product because it is just example to help the instruction.

WARNING / CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
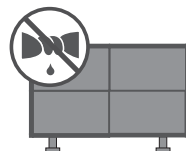
WARNING/CAUTION
TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK. DO NOT EXPOSE THIS

Read these instructions.
Keep these instructions.
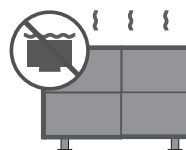Heed all warnings.
Follow all instructions.

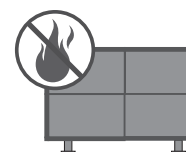- Do not use this apparatus near water.
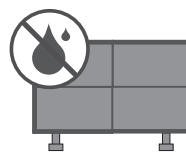
- Clean only with dry cloth.

- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (in cluding amplifiers) that produce heat.

• Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong, The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
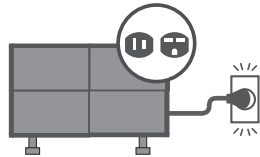
• Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
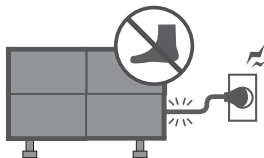
• Only use attachments/accessories specified by the manufacturer.
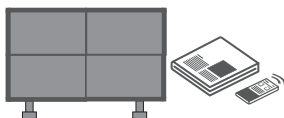
• Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

S3125A

• Unplug this apparatus during lighting storms or when unused for long periods of time.
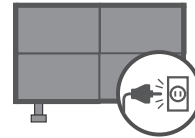
• Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
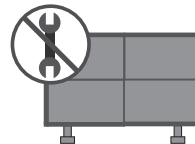
• Never touch this apparatus or antenna during a thunder or lighting storm.

• When mounting a monitor on the wall, make sure not to install the monitor by the hanging power and signal cables on the back of the monitor.

• Do not allow an impact shock or any objects to fall into the product, and do not drop onto the screen with something.

• Keep the packing anti-moisture material or vinyl packing out of the reach of children. Anti-moisture material is harmful if swallowed. If swallowed by mistake, force the patient to vomit and visit the nearest hospital. Additionally, vinyl packing can cause suffocation. Keep it out of the reach of children.

• CAUTION concerning the Power Cord: It is recommend that appliances be placed upon a dedicated circuit; that is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the specification page of this owner's manual to be certain. Do not connect too many appliances to the same AC power outlet as this could result in fire or electric shock.

ENGLISH

- Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous . Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized servicer. Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.
Do not make the monitor with the power cord plugged in. Do not use a damaged or loose power cord. Be sure do grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the monitor.
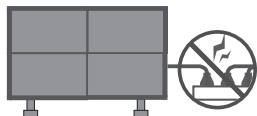
- Do not stick metal objects or any other conductive material into the power cord. Do not touch the end of the power cord while it is plugged in.

- WARNING - To reduce the risk of fire or electrical shock, do not expose this product to rain, moisture or other liquids. Do not touch the monitor with wet hands. Do not install this product near flammable objects such as gasoline or candles or expose the monitor to direct air conditioning.
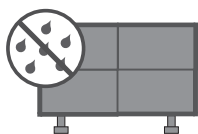
- Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).

- **GROUNDING**
Ensure that you connect the earth ground wire to prevent possible electric shock (i.e. a monitor with a three-prong grounded AC plug must be connected to a three-prong grounded AC outlet). If grounding methods are not possible, have a qualified electrician install a separate circuit breaker.
Do not try to ground the unit by connecting it to telephone wires, lightening rods, or gas pipes.

Power Supply

Short-circuit
Breaker
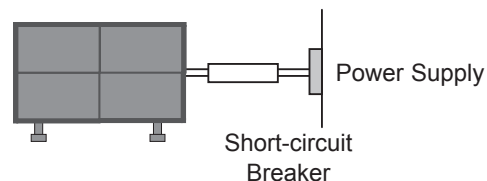
- **DISCONNECTING DEVICE FROM MAIN Power**
Mains plug is the disconnecting device. The plug must remain readily operable.

- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.

- Do not attempt to modify this product in any way without written authorization from the manufacturer. Unauthorized modification could void the user's authority to operate this product.

- **ANTENNAS Outdoor antenna grounding (Can differ by country):**
If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicin- ity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits as death or serious injury can occur. Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in the U.S.A. provides information with respect to proper grounding of the mast and support- ing structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.

Antenna grounding according to the National Electrical Code, ANSI/NFPA 70

- **Cleaning**
When cleaning, unplug the power cord and scrub gently with a soft cloth to prevent scratching. Do not spray water or other liquids directly on the monitor as electric shock may occur. Do not clean with chemicals such as alcohol, thinners or benzene.

- **Moving**
Make sure the product is turned off, unplugged and all cables have been removed. It may take 2 or more people to carry larger monitors. Do not press against or put stress on the front panel of the monitor.

- **Ventilation**
Install your monitor where there is proper ventilation. Do not install in a confined space such as a bookcase. Do not cover the product with cloth or other materials (e.g.) plastic while plugged in. Do not install in excessively dusty places.

- Take care not to touch the ventilation openings. When watching the TV for a long period, the ventilation openings may become hot. This does not affect the performance of the product or cause defects in the product.

- If the TV feels cold to the touch, there may be a small "flicker" when it is turned on. This is normal, there is nothing wrong with TV. Some minute dot defects may be visible onthe screen, appearing as tiny red, green, or blue spots. However, they have no adver seeffect on the TV's performance. Avoid touching the LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

- When touching the monitor, use the pen provided. Do not use other sharp or pointed objects, such as your fingernail, a pen or a pencil etc.
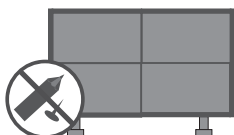
- Keep the product away from direct sunlight.

- Do not allow a impact shock or any objects to fall into the product, and do not drop onto the screen with something.
You may be injured or the product can be damaged.
A protection device is required for the set where shocks from the outside may occur.
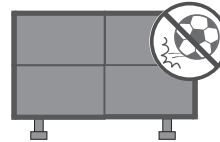
The product should be installed where its weight can be supported.
If the surface of the area where the product is installed is weak, the product may fall causing personal injury.

- Do not hang on the product or apply shock to the product.
The product may fall causing personal injury.

- Install the product on a flat floor.
If not (e.g., stairway and slope), the product may lose its balance and fall causing personal injury or damage to product.
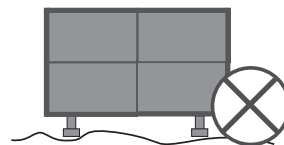
- Disconnect the plug from the outlet before installation.
Otherwise, it may cause an electric shock or fire.

- Wear working gloves when installing the product.
Otherwise, it may cause personal injury.
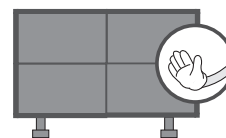
The edges of the product are sharp. Be careful not to be injured by the edges during or after installation.

⚠ **WARNING**

- Do not place the TV and remote control in the following environments:
  - A location exposed to direct sunlight
  - An area with high humidity such as a bathroom
  - Near any heat source such as stoves and other devices that produce heat
  - Near kitchen counters or humidifiers where they can easily be exposed to steam or oil
  - An area exposed to rain or wind
  - Near containers of water such as vases

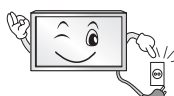 Otherwise, this may result in fire, electric shock, malfunction or product deformation.

- Do not place the product where it might be exposed to dust.
  This may cause a fire hazard.

- Mains plug is the disconnecting device. The plug must remain readily operable.

- Do not touch the power plug with wet hands. Additionally, if the cord pin is wet or covered with dust, dry the power plug completely or wipe dust off.
  You may be electrocuted due to excess moisture.

- Make sure to connect the power cable to the grounded current. (Except for devices which are not grounded.)
  You may be electrocuted or injured.

- Fix the power cable completely.
  If the power cable is not fixed completely, a fire can break out.

- Ensure the power cord does not come into contact with hot objects such as a heater.
  This may cause a fire or an electric shock hazard.

- Do not place a heavy object, or the product itself, on power cables.
 Otherwise, this may result in fire or electric shock.

- Bend antenna cable between inside and outside building to prevent rain from flowing in.
  This may cause water damaged inside the Product and could give an electric shock.

- When mounting a TV it on the wall, make sure not to install TV by hanging power and signal cables on the back of the TV.
  It may cause fire, electric shock.
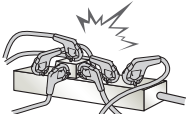
- Do not plug too many electrical devices into a single multiple electrical outlet.
  Otherwise, this may result in fire due to over-heating.
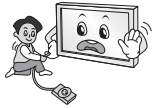
- Do not drop the product or let it fall over when connecting external devices.
  Otherwise, this may result in injury or damage to the product.

- Keep the packing anti-moisture material or vinyl packing out of the reach of children.
  Anti-moisture material is harmful if swallowed. If swallowed by mistake, force the patient to vomit and visit the nearest hospital. Additionally, vinyl packing can cause suffocation. Keep it out of the reach of children.

- Do not let your children climb or cling onto the TV.
  Otherwise, the TV may fall over, which may cause serious injury.

- Dispose of used batteries carefully to protect a child from eating them.
  Please seek Doctor- Medical Attention immediately if child consumes batteries.

- Do not insert any metal objects/conductors (like a metal chopstick/cutlery/screwdriver) between power cable plug and input Wall Socket while it is connected to the input terminal on the wall. Additionally, do not touch the power cable right after plugging into the wall input terminal. You may be electrocuted.
  (Depending on model)

- Do not put or store inflammable substances near the product.
  There is a danger of combustion/explosion or fire due to careless handling of the inflammable substances.

- Do not drop metallic objects such as coins, hair pins, chopsticks or wire into the product, or inflammable objects such as paper and matches. Children must pay particular attention.
  Electrical shock, fire or injury can occur. If a foreign object is dropped into the product, unplug the power cord and contact the service centre.

- Do not spray water on the product or scrub with an inflammable substance (thinner or benzene). Fire or electric shock accident can occur.

- Do not allow a impact shock or any objects to fall into the product, and do not drop onto the screen with something.
  You may be injured or the product can be damaged.

- Never touch this product or antenna during a thunder or lighting storm.
  You may be electrocuted.

- Never touch the wall outlet when there is leakage of gas, open the windows and ventilate.
  It may cause a fire or a burn by a spark.

- Do not disassemble, repair or modify the product at your own discretion.
  Fire or electric shock accident can occur.
  Contact the service center for check, calibration or repair.

- If any of the following occur, unplug the product immediately and contact your local service centre.
  - The product has been impacted by shock
  - The product has been damaged
  - Foreign objects have entered the product
  - The product produced smoke or a strange smell

  This may result in fire or electric shock.

- If you don't intend to use the product for a long time, unplug the power cable from the product.
  Covering dust can cause a fire, or insulation deterioration can cause electric leakage, electric shock or fire.

- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

⚠ CAUTION

- Install the product where no radio wave occurs.

- There should be enough distance between an outside antenna and power lines to keep the former from touching the latter even when the antenna falls.
  This may cause an electric shock.

- Do not install the product on places such as unstable shelves or inclined surfaces. Also avoid places where there is vibration or where the product cannot be fully supported.
  Otherwise, the product may fall or flip over, which may cause injury or damage to the product.
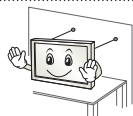
- If you install the TV on a stand, you need to take actions to prevent the product from overturning. Otherwise, the product may fall over, which may cause injury.

- If you intend to mount the product to a wall, attach VESA standard mounting interface (optional parts) to the back of the product. When you install the set to use the wall mounting bracket (optional parts), fix it carefully so as not to drop.

- Only use the attachments / accessories specified by the manufacturer.

- When installing the antenna, consult a qualified service man.
  This may create a fire hazard or an electric shock hazard.
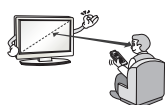
- We recommend that you maintain a distance of at least 2 to 7 times the diagonal screen size when watching TV.
  If you watch TV for a long period of time, this may cause blurred vision.
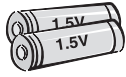
• Only use the specified type of battery.
This could cause damage to the remote control.
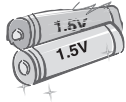
• Do not mix new batteries with old batteries.
This may cause the batteries to overheat and leak.

• Batteries should not be exposed to excessive heat. For example, keep away from direct sunlight, open fireplace and electric heaters.
• Do not place non-rechargeable batteries in charging device.

• Make sure there are no objects between the remote control and its sensor.

• Signal from the remote control may be disturbed by sun light or other strong light. In this case, darken the room.

• When connecting external devices such as video game consoles, make sure the connecting cables are long enough.
Otherwise, the product may fall over, which may cause injury or damage the product.

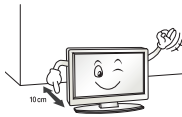• Do not turn the product On/Off by plugging-in or unplugging the power plug to the wall outlet. (Do not use the power plug for switch.)
It may cause mechanical failure or could give an electric shock.

• Please follow the installation instructions below to prevent the product from overheating.
  - The distance between the product and the wall should be more than 10 cm.
  - Do not install the product in a place with no ventilation (e.g., on a bookshelf or in a cupboard).
  - Do not install the product on a carpet or cushion.
  - Make sure the air vent is not blocked by a tablecloth or curtain.
Otherwise, this may result in fire.

• Take care not to touch the ventilation openings when watching the TV for long periods as the ventilation openings may become hot. This does not affect the operation or performance of the product.

• Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized servicer.

• Prevent dust collecting on the power plug pins or outlet.
This may cause a fire hazard.

• Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

- Do not press strongly upon the panel with a hand or sharp object such as nail, pencil or pen, or make a scratch on it.

- Avoid touching the screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

- When cleaning the product and its components, unplug the power first and wipe it with a soft cloth. Applying excessive force may cause scratches or discolouration. Do not spray with water or wipe with a wet cloth. Never use glass cleaner, car or industrial shiner, abrasives or wax, benzene, alcohol etc., which can damage the product and its panel.
  Otherwise, this may result in fire, electric shock or product damage (deformation, corrosion or breakage).

- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if you turn off this unit by SWITCH.

- When unplugging the cable, grab the plug and unplug it.
  If the wires inside the power cable are disconnected, this may cause fire.

- When moving the product, make sure you turn the power off first. Then, unplug the power cables, antenna cables and all connecting cables.
  The TV set or power cord may be damaged, which may create a fire hazard or cause electric shock.

- When moving or unpacking the product, work in pairs because the product is heavy.
  Otherwise, this may result in injury.

- Contact the service center once a year to clean the internal parts of the product. Accumulated dust can cause mechanical failure.

- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

- If the product feels cold to the touch, there may be a small "flicker" when it is turned on. This is normal, there is nothing wrong with product.

- The panel is a high technology display product with resolution of two million to six million pixels. You may see tiny black dots and/or brightly coloured dots (red, blue or green) at a size of 1 ppm on the panel. This does not indicate a malfunction and does not affect the performance and reliability of the product.
  This phenomenon also occurs in third-party products and is not subject to exchange or refund.

- You may find different brightness and color of the panel depending on your viewing position(left/right/top/down).
  This phenomenon occurs due to the characteristic of the panel. It is not related with the product performance, and it is not malfunction.

- Displaying a still image (e.g., broadcasting channel logo, on-screen menu, scene from a video game) for a prolonged time may cause damage to the screen, resulting in retention of the image, which is known as image sticking. The warranty does not cover the product for image sticking.
Also, if you watch the TV at a ratio of 4:3 for a long time, image sticking may occur on the borders of the panel.
This phenomenon also occurs in third-party products and is not subject to exchange or refund.
- If a fixed image displays on the TV screen for a long period of time, it will be imprinted and become a permanent disfigurement on the screen. This is "image burn" or "burn-in" and not covered by the warranty.
- If the aspect ratio of the TV is set to 4:3 for a long period of time, image burn may occur on the let-terboxed area of the screen.
- Avoid displaying a fixed image on the TV screen for a long period of time (2 or more hours for LCD, 1 or more hours for the Plasma TV) to prevent image burn.
- **Dot Defect**
The Plasma or LCD panel is a high technology product with resolution of two million to six million pixels. In a very few cases, you could see fine dots on the screen while you're viewing the TV. Those dots are deactivated pixels and do not affect the performance and reliability of the TV.
- **Generated Sound**
"Cracking" noise: A cracking noise that occurs when watching or turning off the TV is generated by plastic thermal contraction due to tempera-ture and humidity. This noise is common for products where thermal deformation is required. Electrical circuit humming/panel buzzing: A low level noise is generated from a high-speed switching circuit, which supplies a large amount of current to operate a product. It varies depending on the product.
This generated sound does not affect the performance and reliability of the product.
- Take care not to touch the ventilation openings. When watching the TV for a long period, the ventila-tion openings may become hot. This does not affect the performance of the product or cause defects in the product.

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ASSEMBLING AND PREPARING

Unpacking

Check your product box for the following items. If there are any missing accessories, contact the local dealer where you purchased your product.
The illustrations in this manual may differ from the actual product and item.
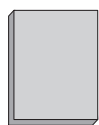
Regulatory
Safety Instruction
Book

Power Cord

RS-232C Cable
See p.29

LAN Cable
See p.30

DVI-D Cable
See p.29

Cushion
6 EA
See p.24
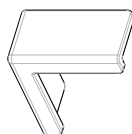
Protection Cushion
2 EA
See p.26

Guide Pin
4 EA
See p.25
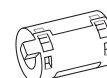
Ferrite Core
3 EA
See p.36

This is a class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

⚠ **CAUTION**

• Do not use any unapproved parts or accessories to ensure the safety and product life span.
• Any damages or injuries by using unapproved parts or accessories items are not covered by the manufacturer's warranty.

⚠**WARNING**

• You need to enable easy access for connecting and disconnecting electric cables fed from the mains.

Optional Accessories

The items below are available at additional cost. Contact your dealer for buying these items. These items may be slightly different than those pictured.
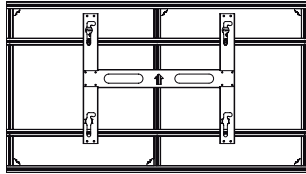
Mounting Bracket- landscape
(AB-ML300X)
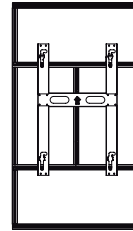
Mounting Bracket – Portrait
(AB-MP300X)
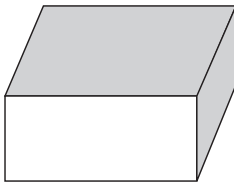
Accessory Box
(AA-BX350X)
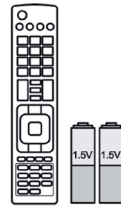
Remote Control and
Batteries (AAA)

IR Receiver

e-MultiBoard Pen Accessory

Touch Pen
AN-TP300

Dongle
AN-TD200

Cradle
AN-TP300C

e-MultiBoard Floor Stand AD-BX300X, AD-BX300Y, AD-BL300H, AD-BP300H

Floor Stand (Mx1)
AD-BX300X

Floor Stand (Mx2)
AD-BX300Y

Stand Frame
AD-BP300H
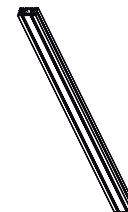
Stand Frame
AD-BL300H

MultiVision Frame

Front frame portrait center
AF-VX350B

Frame

Screws
4 EA
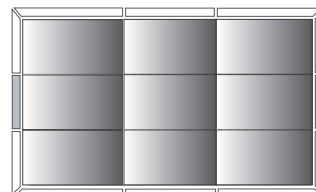
Front frame Landscape center
AF-VX350C

Frame

Screws
6 EA
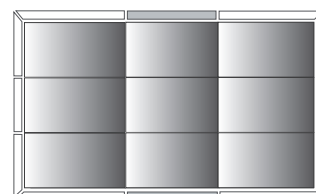
Front frame landscape side
AF-VX350D
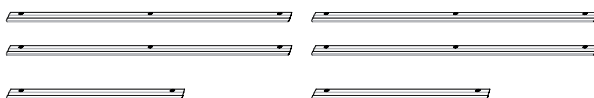
Frame

Screws
16 EA

Front frame portrait side
AF-VX350E
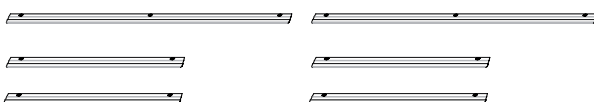
Frame

Screws
14 EA

ENGLISH

ENGLISH
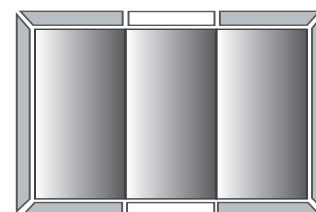
e-MultiBoard Frame

Glass frame corner
AF-BX350A
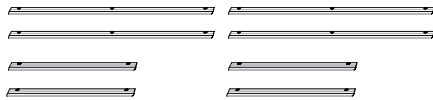
| Frame | Guide rail 16 EA | Screws 20 EA | |
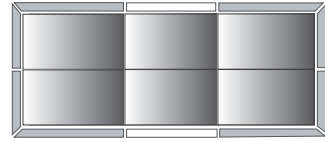
Glass frame portrait center
AF-BX350B

| Frame | Guide rail 4 EA | Screws 4 EA | |
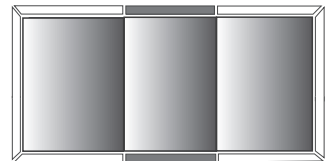
Glass frame Landscape center
AF-BX350C

| Frame | Guide rail 4 EA | Screws 6 EA | |

Glass frame landscape side
AF-BX350D

| Frame | Guide rail 10 EA | Screws 16 EA | |

Glass frame portrait side
AF-BX350E

| Frame | Guide rail 12 EA | Screws 14 EA | |
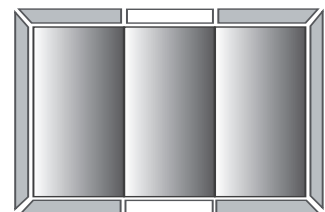
- Optional accessories differ depending on the monitor's use or installation method.
- To learn about optional accessories available for the monitor you purchased, please contact the local retailer.

Back panel information

y Image shown may differ from your monitor.
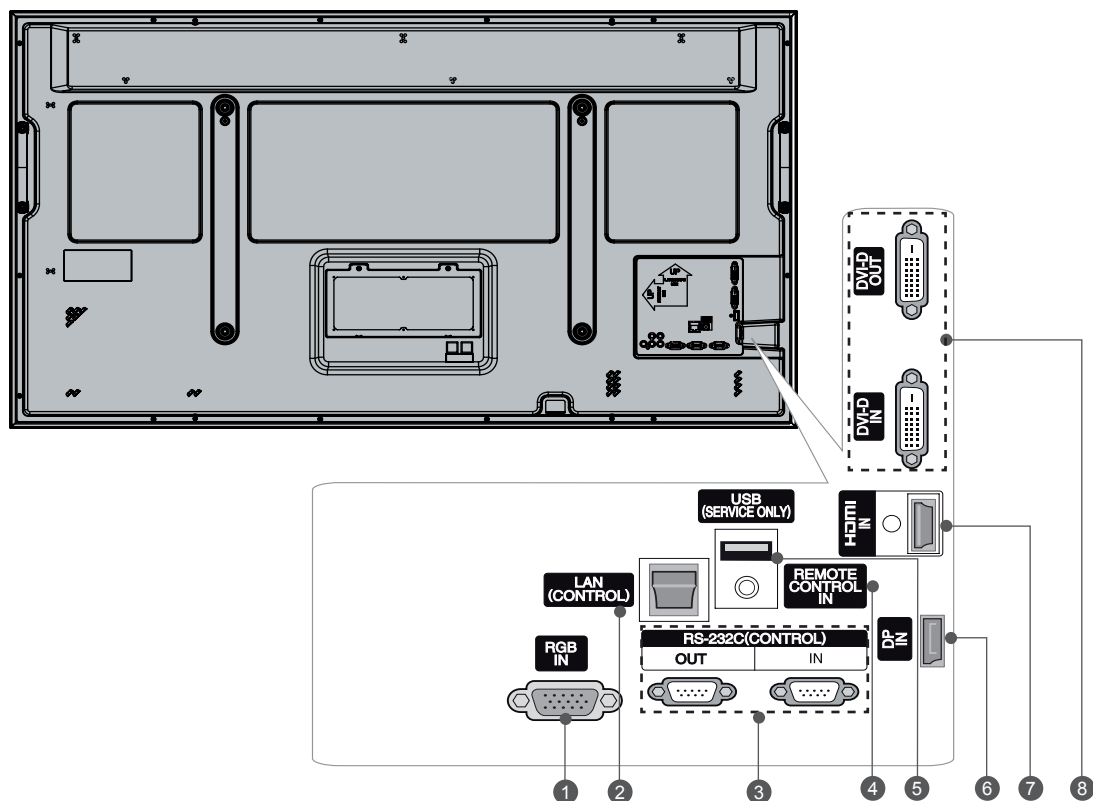
1 **RGB INPUT**

Connect the set output connector from a PC to the appropriate input port.

2 **LAN (CONTROL)**

To control the monitor via LAN cable.
To download the firmware.

3 **RS-232C INPUT(CONTROL&SERVICE) PORT OUT**

To control the another set, connect a RS-232C Cable from RS-232C out port to another set's RS-232C input port.

4 **REMOTE CONTROL IN**

For a wired IR Receiver.

5 **USB Input (For service)**

Used for software updates.

6 **DP IN**

Connect an DP signal to DP.

7 **HDMI IN**

Connect an HDMI signal to HDMI.

8 **DVI OUT, IN**

DVI (VIDEO) signal to DVI port with DVI cable.

Transportation method for panel protection

When moving or lifting the monitor, read the following to prevent the monitor from being scratched or damaged and for safe transportation regardless of its type and size.

⚠ CAUTION

• Avoid touching the screen at all times, as this may result in damage on the screen.
• Use the handles on the monitor to lift it.
• When the installation and repair, the operator must be worn the neutralization gloves by working.

• It is recommended to move the monitor in the box or packing material that the monitor originally came in.
• Before moving or lifting the monitor, disconnect the power cord and all cables.
• Hold firmly the handles and the bottom frame.

• When transporting the monitor, do not subject the monitor to jolts or excessive vibration.
• When transporting the monitor, keep the monitor upright, never turn the monitor on its side or tilt towards the left or right.
• When transporting the monitor by hand, hold the monitor as shown in the following illustration.
• When the product is carried upright, two persons should hold each handle on the top and the bottom corner. Put it down carefully and do not touch the panel.
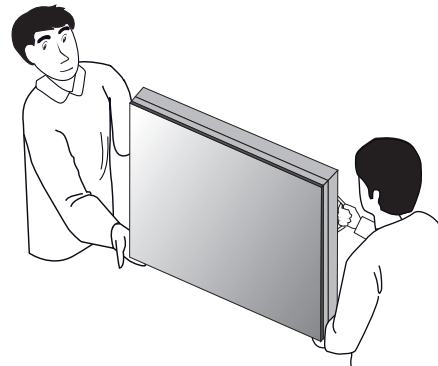
• When carrying horizontally, carry it face up with your hands on the back of the monitor. Put it down carefully and do not touch the panel.
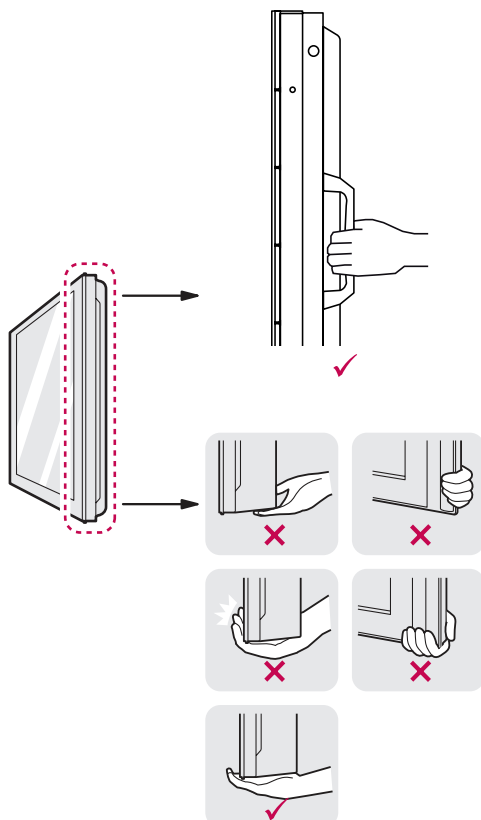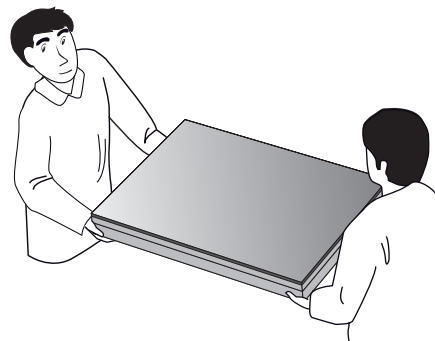
Protect the Panel when Storing

Correct method
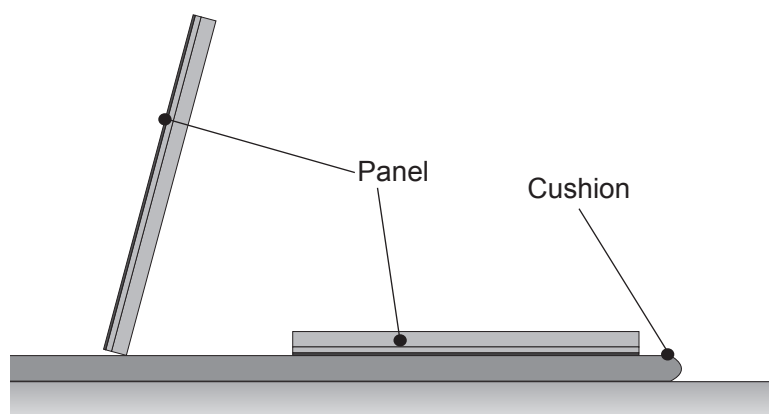
Panel

Cushion

If the product needs to be set upright, hold both sides of the product, and tilt backward carefully. Do not let the panel touch the floor.

When laying down the product, lay a cushion on a flat floor, and put the product on it with the panel of the product facing down.

Incorrect method
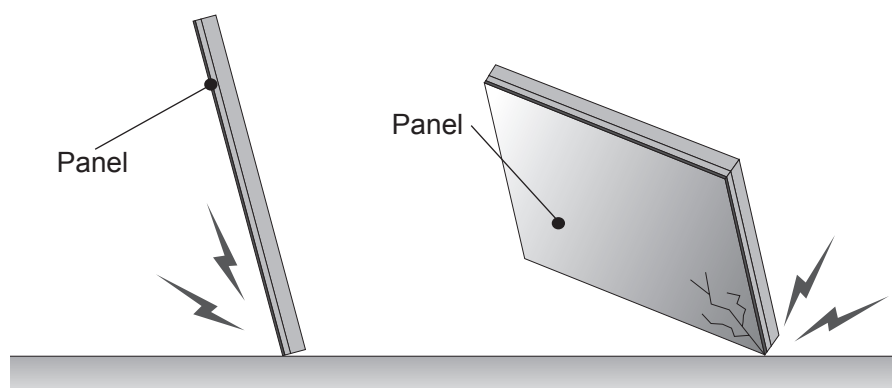
Panel

Panel

If the product is tilted on the side of the panel, the bottom of the panel may be damaged.

If the product is tilted on the edge of the panel, the edge of the panel may be damaged.

NOTE

• Handle the product with care. The product may be damaged by shocks.

Monitor

Depending on usage and installation methods, the monitors can be arranged in any format between 1 and 254.
Place each set as show in the fiqure below

Front
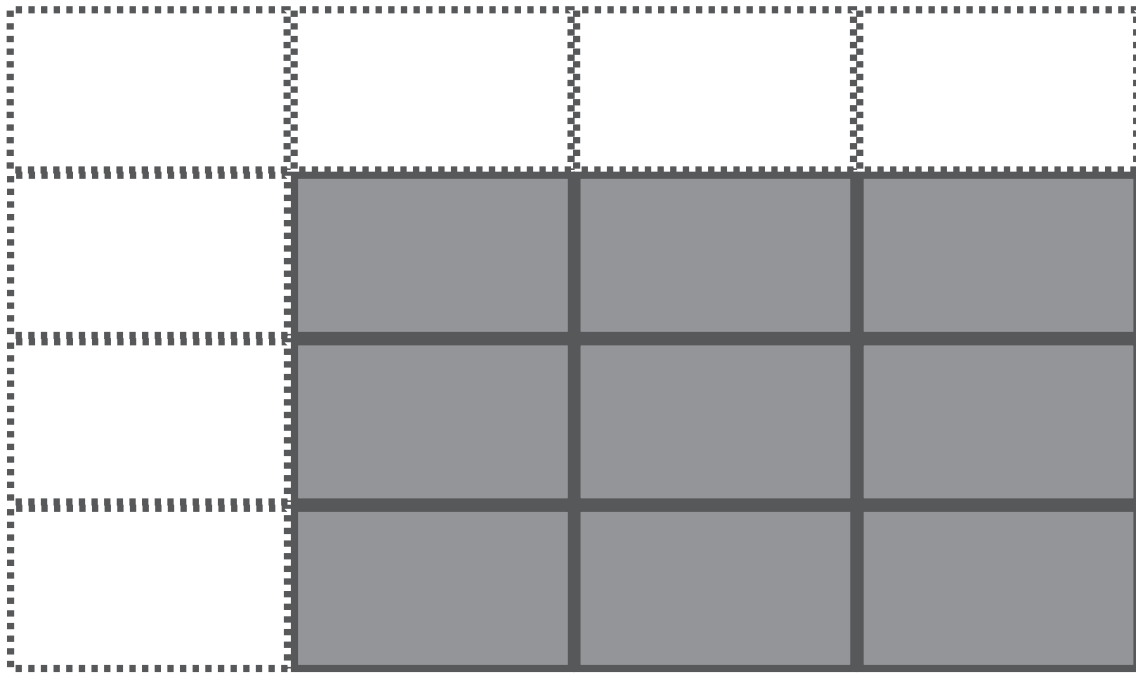
MINIMUM : 1   MAXIMUM : 254

MultiVision

Place each set as show in the fiqure below

Landscape type back
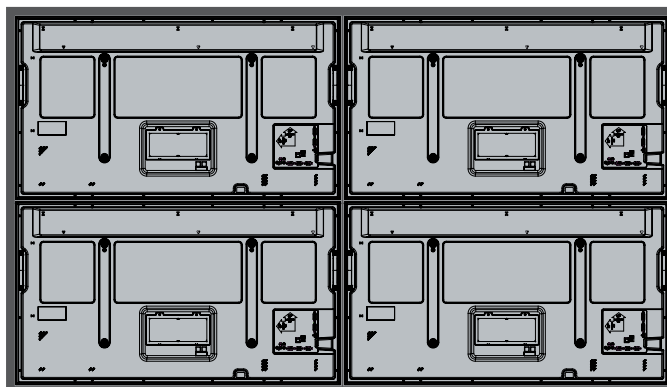
MINIMUM : 1   MAXIMUM : 254

Portrait type back
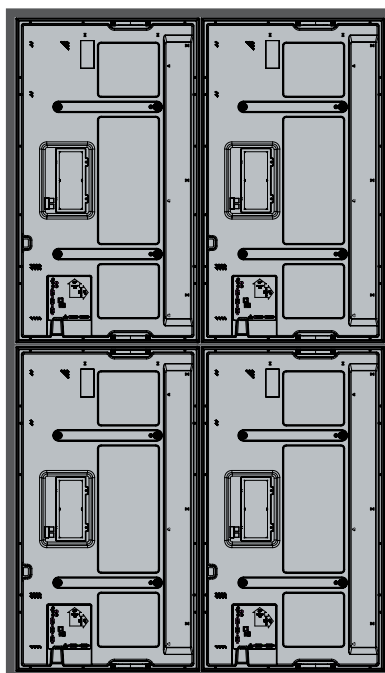
MINIMUM : 1   MAXIMUM : 254

e-MultiBoard

Place each set as show in the fiqure below

Landscape type back

Depending on usage and installation methods, the monitors can be arranged in any format between 1x1 and 4x2.
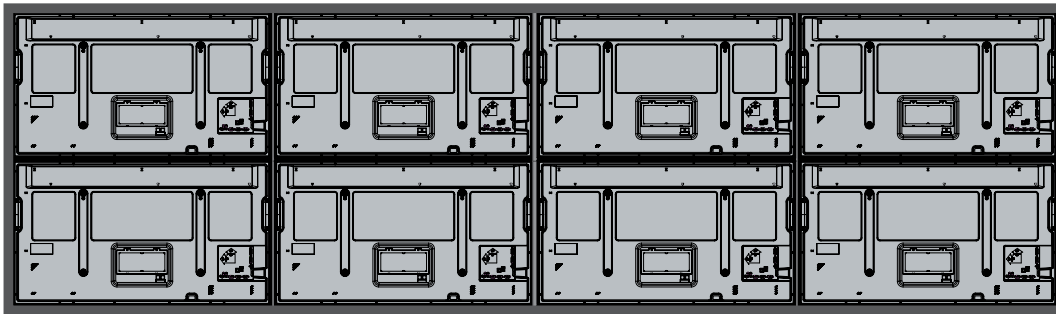
MINIMUM : 1X1   MAXIMUM : 4X2

Portrait type back

Depending on usage and installation methods, the monitors can be arranged in any format between 1x1 and 5x1.
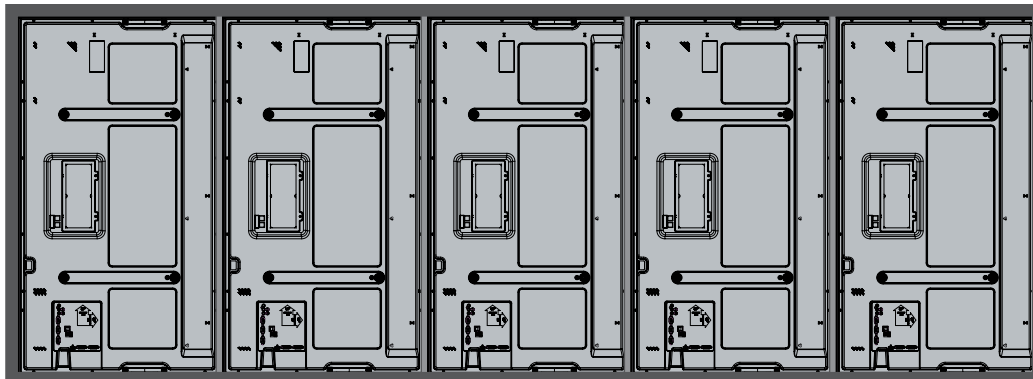
MINIMUM : 1X1   MAXIMUM : 5X1

⚠ **NOTE**

• In portrait type, the monitors must be installed so that the input ports are on the bottom.

Installation method for panel protection

When you open the box, you will see that protective covers are attached to the weak parts of the product.
Place the set on the bracket, and remove the protective covers just before finishing installation by securely attaching it to the bracket.

⚠ **CAUTION**

- After removing the panel protective covers, install the sets by tightly attaching them.
- When removing the panel protective covers, foreign substances may be stuck to it, however, this does not affect the performance. If necessary, please remove them with the cotton flannel provided.
- Excessive pressure may cause damage to the product.
- Please wipe off residues, if any, after removing the protective cover.
- When the installation and repair, the operator must be worn the neutralization gloves by working.

🛈 **NOTE**

- To make the area behind the seam between the sets invisible after securely placing the set on the bracket, attach the felt provided to the area.
- Attach the felt provided between the back of the sets in the same way for both landscape and portrait types.
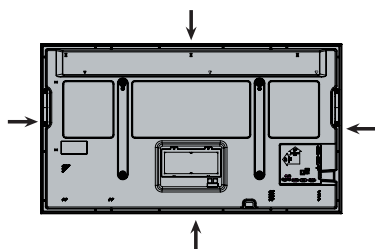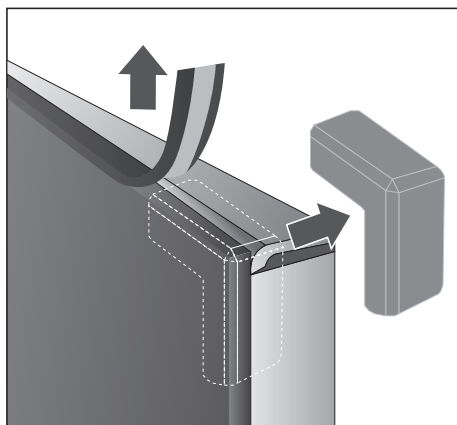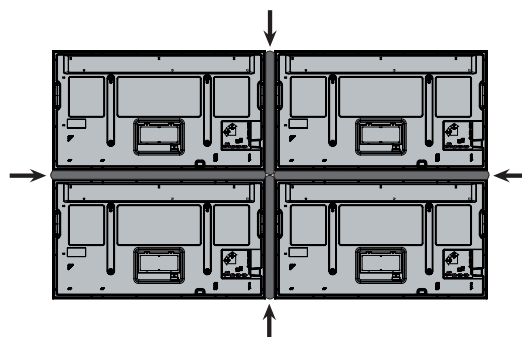
Rubber tape

Protection cushion attachment

y We recommended that you attach the protection cushions, as shown in the picture below, to prevent damage.
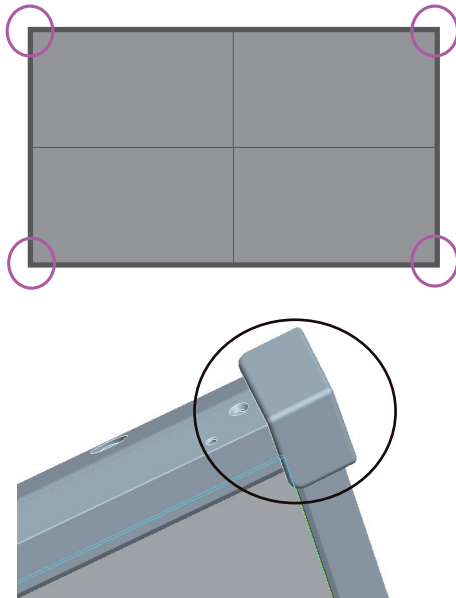
NOTE

y It is recommended that you attach a separate frame to the edge of the set to prevent damage.

Allow Adequate Ventilation

y Image shown may differ from your monitor.

For adequate ventilation and maintenance service, secure a minimum distance of 20 cm as shown below before installation.

15 cm

20 cm

20 cm

20 cm
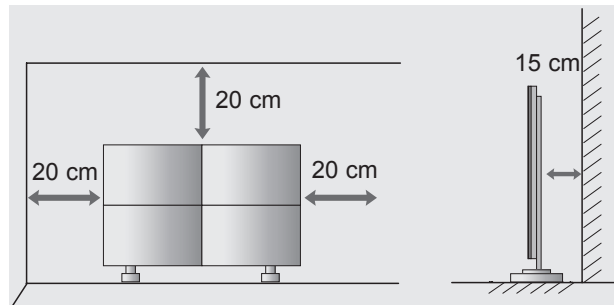
CAUTION
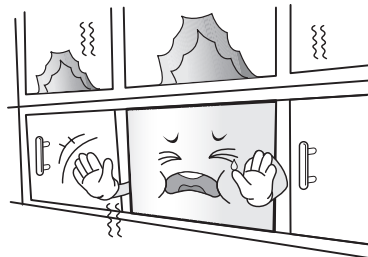
y When sets are built in to a wall, the internal temperature may rise to such an extent that it causes overheating, which may lead to a fire. To prevent the set from overheating, please follow the instructions below.
y Avoid a completely sealed installation.
y To ensure adequate ventilation, keep the top, the bottom and the sides of the set a minimum of 20 cm from the wall. (The back of the set should be a minimum of 15 cm from the wall.)
y If there is not enough space, a separate ventilation device is required.
y If you install four or more sets on top of one another, you will need to ensure a ventilator is used. (for example, a forced draft fan.)

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Protective film

The protective film is attached in order to protect the display from scratches and nicks during shipping, as well it protect against fingerprints and dust during installation.

1 Remove the protection cushion attached to the edge of the display.
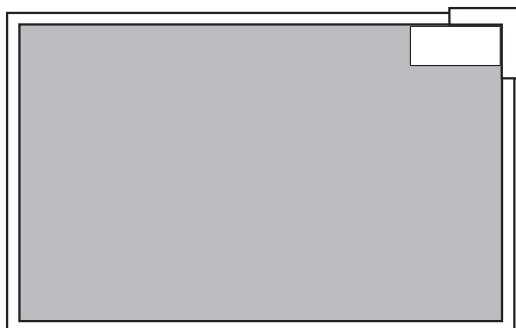
2 Extended tab will be appeared on the right edge of the display.
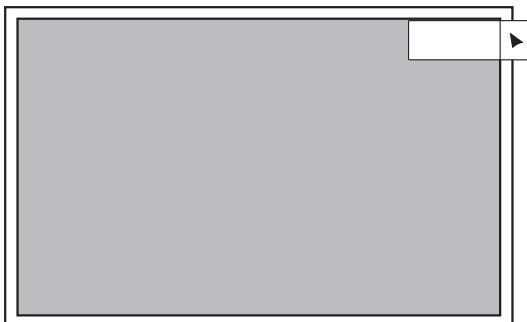
3 Grasp the extended tab in the corner and please carefully pulling it to remove the protective film from the screen.
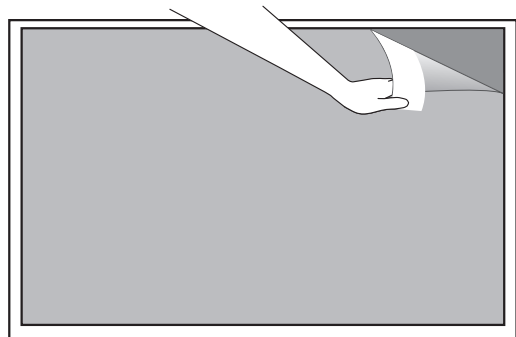
⚠ **CAUTION**

• If you pull the tab too quickly it may snap and you will need to take additional steps to remove the film.
• If the cutter is used to remove the protective film, it may damage the module (filter).

Guide pin

Guide pins are useful to align the sets.
Insert Guide pins as shown in the figure below.

Insertion & Assembly
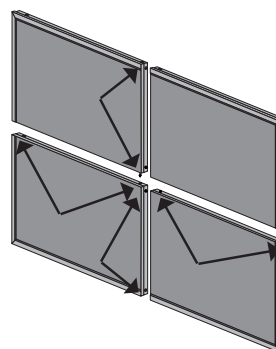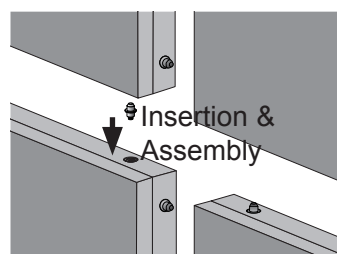
Attaching the Guide Spacers

If the screws are not fully tightened when you attach the guide spacers, check the length of the screws and refer to the technical service manual.

Guide Spacer

<How to attach Guide Spacers>

4 Guide Spacer attachment Screws (M6X35mm)
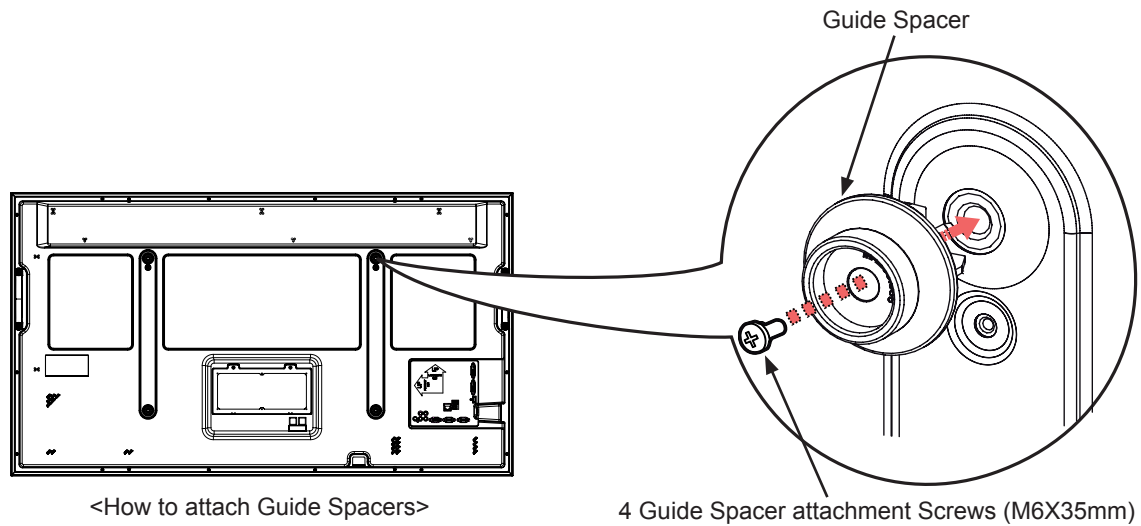
Attach the guide spacers and the guide spacer attach screws in the order shown in the picture.
Lay the set down and attach the guide spacers to the set using the screws.
- Place the product on a table with its screen facing downward. Make sure that you place it on soft clothing
 or a cushion on the flat surface to protect the screen.
- Tighten the screw until the monitor, the guide spacer and the screw are joined together securely.
- Use a Philips driver (manual or electric) to tighten the screws.

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Cautions on installation

Stand type

- Do not install the product in a location where vibration or shock is likely to occur. Objects may be dropped on the product causing damage to it.
- Do not install the product next to a sprinkler sensor. The sprinkler may operate accidentally because of the heat from the product.
- Do not install the product near high-tension wires. The image on the screen may not be properly displayed.
- Do not install the product near a heater. This may cause product malfunction.

Wall-mount type

- Check whether the wall is stable enough to install the product. If the wall is weak, it may cause an accident. Reinforce the wall before installation.
- Secure enough space for cabling before finishing the wall mounting process.

> **NOTE**
>
> • Lower the monitors slowly during installation to avoid panel damage by bumping into each other.
>
>
>
> • When adjusting the interval between the monitors, make sure that the monitors are balanced vertically and horizontally. If the set is tilted as shown in the figure, this may cause damage to the product due to interference between the edges.
>
>
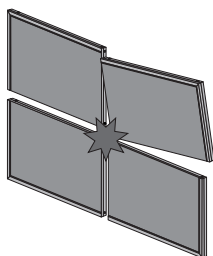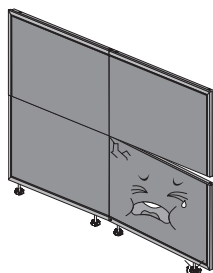
Video and Control Connector

Use this feature to input the same video or control signals into all products.

- • To use panels together, link one end of the cable to the OUT connector of one panel, and the other end to the IN connector of another panel.

BACK PANEL

RS-232C Cable (Maximum 15 m)

RS-232C

DVI

DVI connection (Maximum 5 m)

HDMI

HDMI connection (Maximum 5 m)

DP
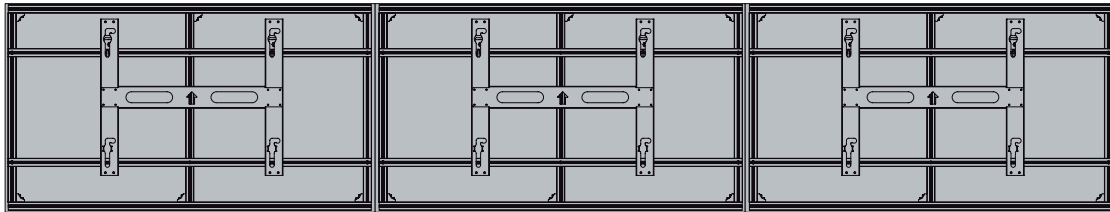
DP connection (Maximum 5 m)
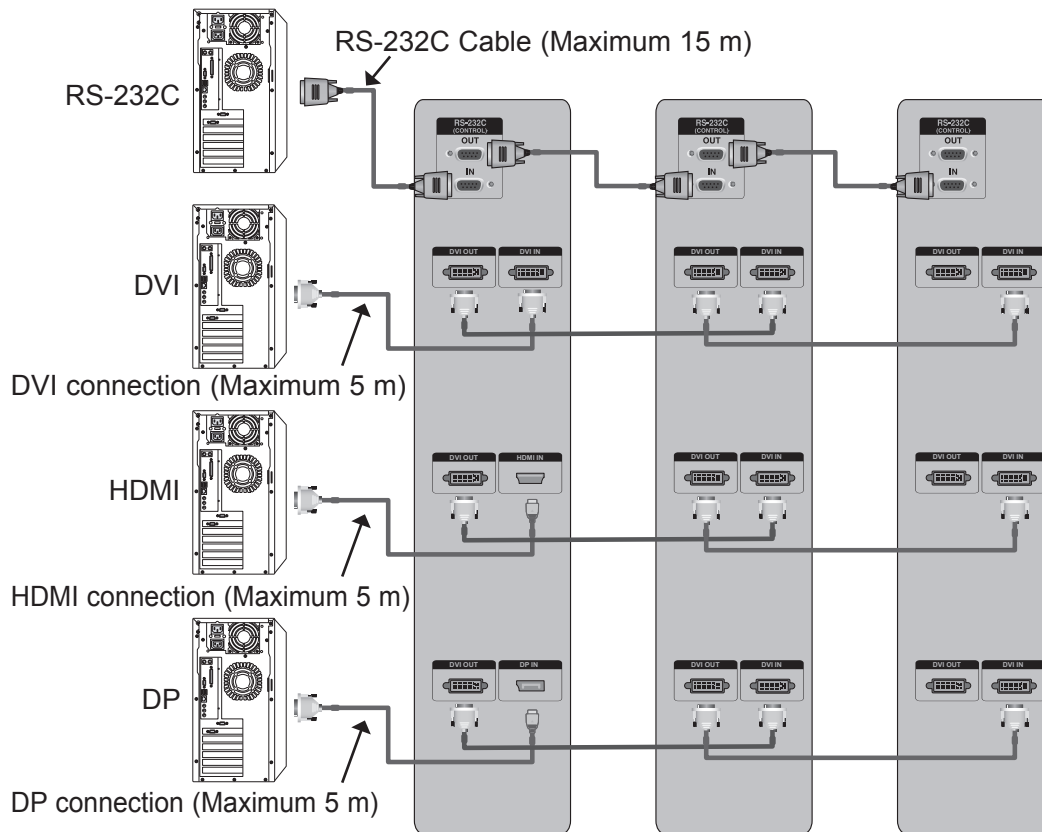
⚠ **NOTE**

- • If you need longer connections, please use DVI boosters or DVI fiber-optic cables.
- • The maximum length of the cable from the video equipment to the panel is 5m (DVI, HDMI, DP).
- • Up to sixteen DVI connections are supported. (For more than 16 monitors, we recommended that you use a distributor.)
- • For RS232C, up to 16 connections are supported.

Brightness Adjustment Connector

It is a connector to compensate the luminance difference, and connect it using the LAN Cable inside the Accessory box. (These connectors use standard Ethernet LAN cables.)
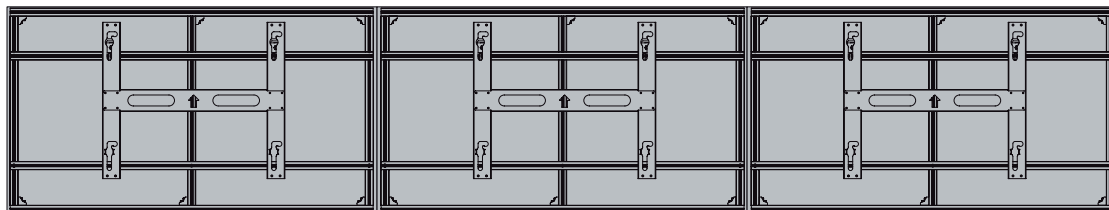
BACK PANEL

RX refers to receiver. TX refers to transmitter. The TX port of one monitor should be connect to the RX on the next monitor until a loop is formed.
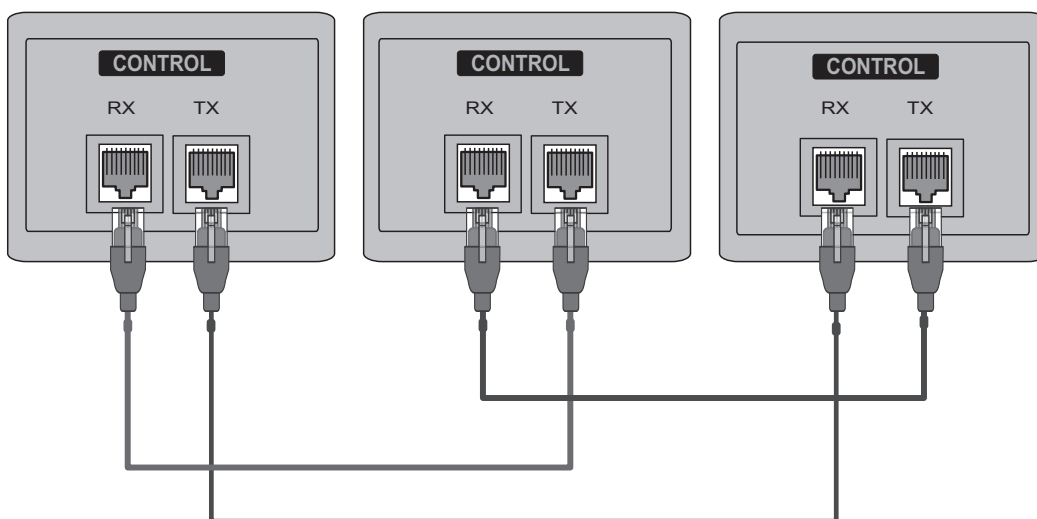
> ⚠ **NOTE**
>
> • RX and TX ports are not for network communication. They only support luminance control.

Pentouch ID Setting Order

y Pentouch ID should be numbered in the below order.v (in reference to looking at the front of the e-MultiBoard).

> **NOTE**
>
> y You must follow the order below for Pentouch ID setting. Otherwise, the Pentouch function may not work properly.

For N x 1 landscape type

0

0	2

0	2	4
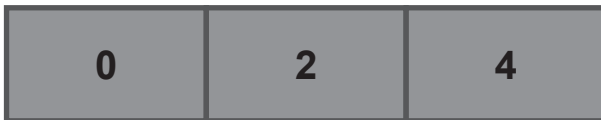
0	2	4	6

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For N x 2 landscape type

0
1

0	2
1	3

0	2	4
1	3	5

0	2	4	6
1	3	5	7

For N x 1 portrait type

8

8	9

8	9	10

8	9	10	11

8	9	10	11	12
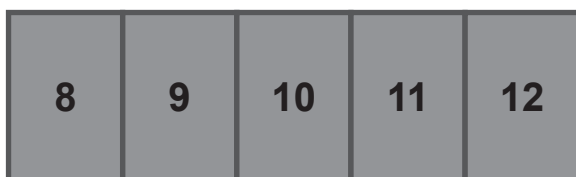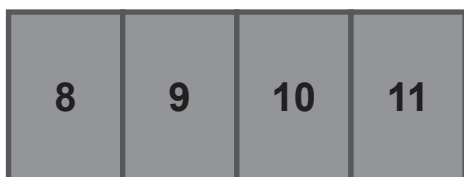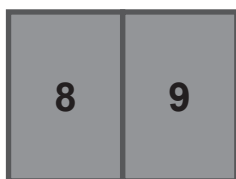
IR Receiver

This will convert a IR signal to a RS-232C signal. The IR signal is sent to the first monitor as IR. It is then converted and sent to all of the monitors via RS-232C.

RS-232C Cable

Front
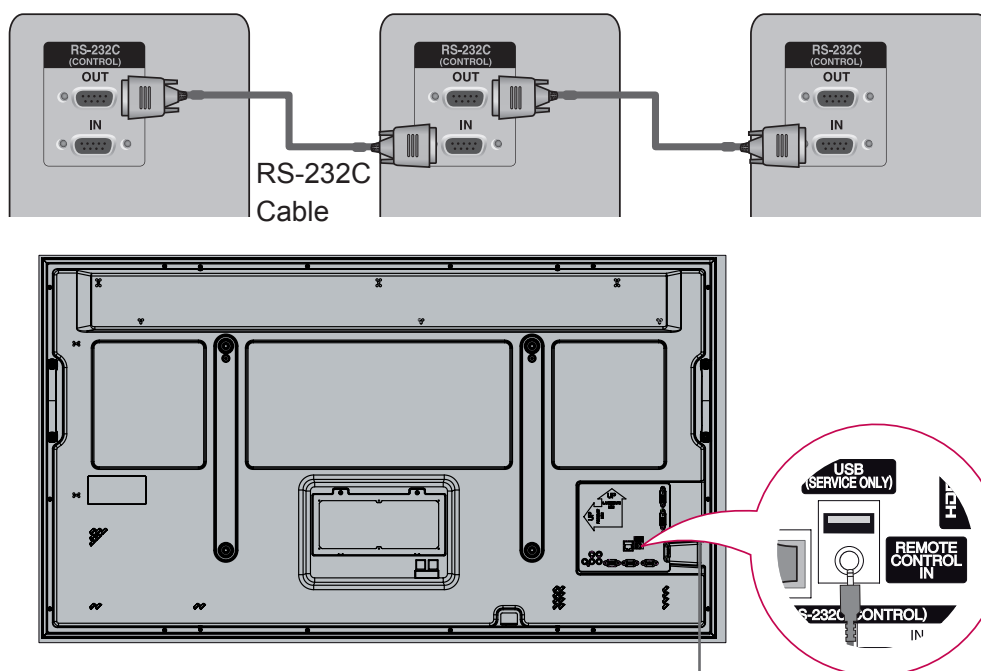
Remote Control Sensor

Side

FRONT ▸
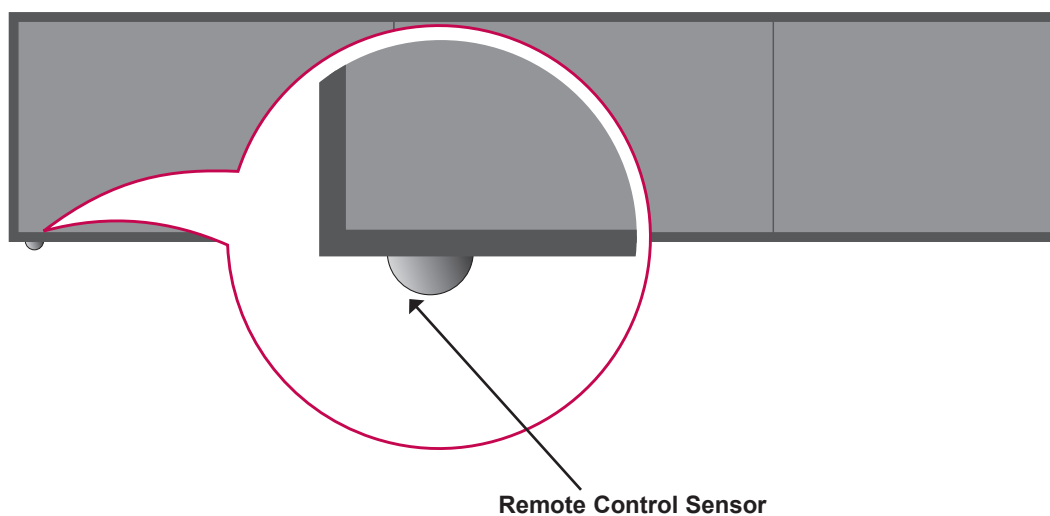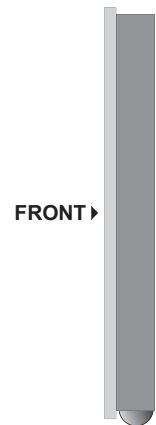
Remote Control Sensor
- Attach the remote control sensor to the middle cabinet (BK frame).

ENGLISH

Using a Ferrite Core

⚠ **CAUTION**

- Do not use any unapproved items to ensure the safety and product life span.
- Any damages or injuries by using unapproved items are not covered by the manufacturer's warranty.

❗ **NOTE**

- Product specifications or contents of this manual may be changed without prior notice due to upgrade of product functions.
- Image shown may differ from your monitor.
- How to use the ferrite core

1 Use the ferrite core to reduce the electromagnetic interference in the LAN cable.
   Wind the LAN cable on the ferrite core three times. Place the ferrite core close to the monitor.

[to an external   10 mm(+ / - 5 mm)   [to the monitor]
LAN equipment]

[Figure 1]

2 Use the ferrite core to reduce the electromagnetic interference in the power cable.
   Wind the power cable on the ferrite core once. Place the ferrite core close to the monitor and a wall plug.
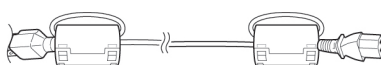
[to a wall plug]   [to the monitor]

[Figure 2]

Number of ferrite core
*LAN cable : 1 EA
*Power code : 2 EA

MAKING CONNECTIONS

- Image shown may differ from your monitor.

RGB input

1 Connect the RGB output of the PC to the **RGB IN** jack on the monitor.

2 Turn on the PC and the monitor.

3 Select an input signal. Press the **INPUT** button on the remote control to select the input signal.

Input List		Move	OK
RGB	DP	HDMI	DVI-D
			Exit

RGB IN

①

PC
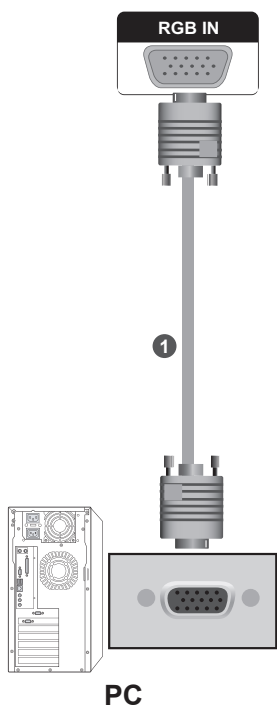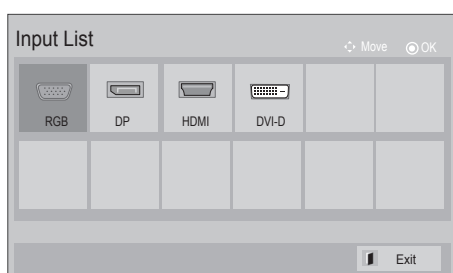
DP input

1 Connect the DP output of the PC to the **DP IN** jack on the monitor.

2 Turn on the PC and the monitor.

3 Select an input signal. Press the **INPUT** button on the remote control to select the input signal.

Input List		Move	OK
RGB	DP	HDMI	DVI-D
			Exit

DP IN

①

PC

ENGLISH
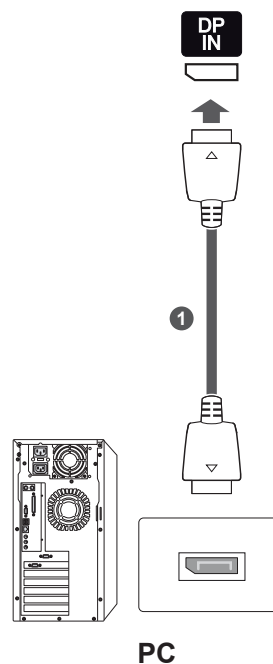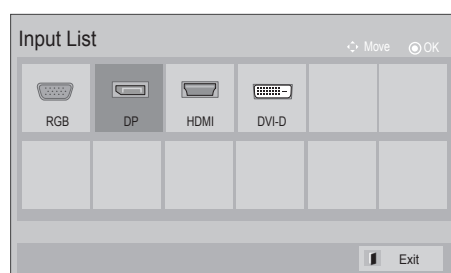
HDMI input

1 Connect the HDMI output of the external equipment (digital set-top box, DVD, etc.) to **HDMI** jack on the monitor.

2 Turn on the external equipment. (Refer to the external equipment's manual for operating instructions.)

3 Select an input signal. Press the **INPUT** button on the remote control to select the input signal. (**HDMI**)

Input List
◇ Move ◉ OK

RGB | DP | HDMI | DVI-D

❙ Exit
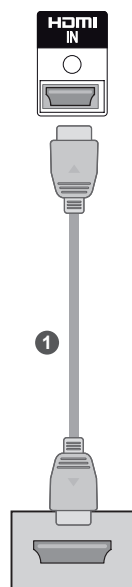
external equipment

DVI input

1 Connect the DVI output of the PC to the **DVI IN** jack on the monitor.

2 Turn on the PC and the monitor.

3 Select an input signal. Press the **INPUT** button on the remote control to select the input signal.

Input List
◇ Move ◉ OK

RGB | DP | HDMI | DVI-D

❙ Exit
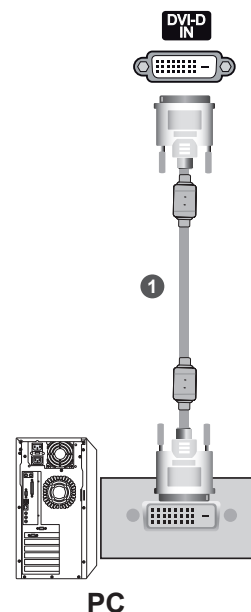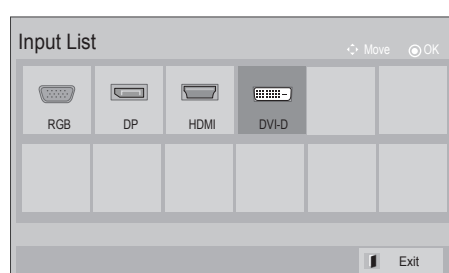
PC

> ⊘ **NOTE**
>
> - It does not support HDCP(High-bandwidth Digital Content Protection) function when it is Cascade connected.
> - HDCP function may not be supported for some models of third-party video distributor.

REMOTE CONTROL

The descriptions in this manual are based on the buttons on the remote control.
Please read this manual carefully and use the monitor correctly.

To replace batteries, open the battery cover, replace batteries (1.5 V AAA) matching ⊕
and ⊖ ends to the label inside the compartment, and close the battery cover. Be sure to
point the remote control toward the remote control sensor on the monitor.

To remove the batteries, perform the installation actions in reverse.
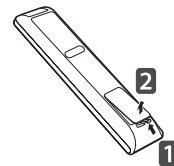
⚠ **CAUTION**

• Do not mix old and new batteries, as this may damage the remote control.
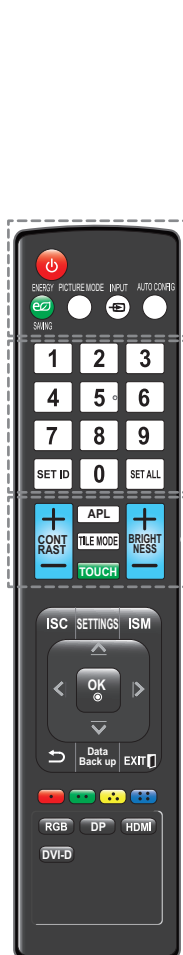
 (POWER)
Switches the monitor on from standby or off to standby.

ENERGY SAVING
Adjusts the brightness of the screen to reduce energy consumption.

PICTURE MODE
Selects one of the preset image or customizes options in each mode for
the best monitor screen performance.

INPUT
External input mode rotate in regular sequence.

AUTO CONFIG
Automatic adjustment function. (Operational for the RGB input only)

Numeric buttons
Enters numbers.

SET ID
You can run SET only that you wanted.
(Press the SET ID button and the number of the monitor you want to
control.)

SET ALL

You can operate together all sets.
When SET ALL is selected, each set may have different settings.

CONTRAST + / -
Adjust the contrast level.

APL
Adjust the luminance automatically via the APL communication.

TILE MODE
Must be displayed with various other products.

TOUCH
Selects touch mode for e-MultiBoard.

BRIGHTNESS + / -
Adjust the brightness.

ISC
This function can reduce image sticking.
(Contact your installation company for details about this function and more information on how to use it.)

SETTINGS
Displays on screen menus one by one.
Exits the current menu.
Memorizes menu changes.

ISM
Removes a ghost image on the screen.
The color block with the screen moved a little and the white pattern are alternately displayed.

Navigation buttons (up/down/left/right)
Allows you to navigate the on-screen menus and adjust the system settings to your preference.

OK
Accepts your selection or displays the current mode.

↩ (BACK)
Allows the user to move return one step in an interactive application

EXIT ▯
Clears all on-screen displays and return to monitor viewing from any menu.

Data Backup
Saves and loads the current status data of the set.

Colored buttons
Loads the saved data through the data back up function.

RGB
Select it when using PC depends on connector.

DP
Select it when using DVD, PC or Digital set-top box depend on connector.

HDMI
Select it when using DVD, PC or Digital set-top box depend on connector.

DVI-D
Select it when using PC depend on connector.

INITIALIZING SETUP

When you turn the monitor on for the first time, the Initial setting screen appears. Select a language and customize the basic settings.

1 Connect the power cord to a power outlet.

2 In Standby mode, press (POWER) to turn the monitor on.

The Initial setting screen appears if you turn the monitor on for the first time.

> **NOTE**
> • You can also access **Factory Reset** by accessing **OPTION** in the **MENU** - **OPTION - Factory Reset**.

3 Select the language desired when the screen below appears.

WELCOME!		
Language		
한국어	汉語	日本語
English	Français	Deutsch
Español (SCA)	Português	Español (EU)
العربية	فارسی	Türkçe
Русский		

◉ Confirm

4 Press the number key for current set ID setting. And check the master unit if it is the first set connected.

> **NOTE**
> • All units should be connected by RS232C cables. Please check this point firstly.

Step 2. Set ID

Set ID ◄ **2** ►

☑ Master Unit

◉ Confirm

5 Set the SET ID for next set as same order

> **NOTE**
> • SET ID setting will be operated as connected order with RS232C cables.

[EXAMPLE]

Step 2. Set ID — Set ID ◄ **1** ► ☐ Master Unit ◉ Confirm

Step 2. Set ID — Set ID ◄ **2** ► ☐ Master Unit ◉ Confirm

Step 2. Set ID — Set ID ◄ **3** ► ☑ Master Unit ◉ Confirm

Step 2. Set ID — Set ID ◄ **4** ► ☐ Master Unit ◉ Confirm
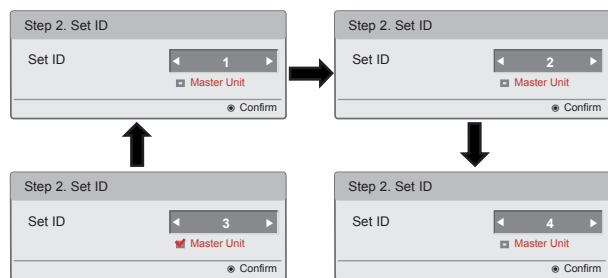
6 After finishing the setting, press the **EXIT** key. And then all sets will turn on automatically.

> **NOTE**
> • If you do not complete the Initial setting, it will appear whenever the monitor turns on.
> • If you time out on the OSD (On Screen Display) the installation menu will continuously appear until the set up is completed whenever the monitor is switched on.

ENGLISH

WATCHING MULTIVISION

Using the input list

Selecting an input source

1 Press **INPUT** to access the input sources.

2 Press the Navigation buttons to scroll to one of the input sources and press **ENTER**.

y Image shown may differ from your monitor.

Input List				Move	OK
RGB	DP	HDMI	DVI-D		
					Exit
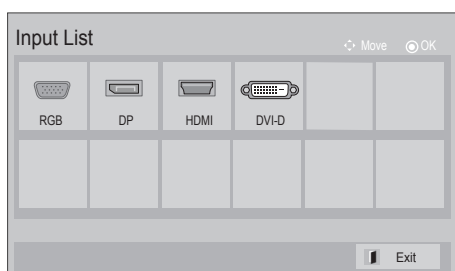
Input source	Description
RGB	Use the monitor as a computer monitor.
DP	
DVI-D	
HDMI	Watch video from a HTS or other high definition devices.

The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

PENTOUCH

Using Pentouch

⚠ **WARNING**

- Do not drop or throw the touch pen and Cradle. Do not swing the touch pen and Cradle with the charging cable connected to it. This can damage the product or cause personal injury.
- For people using pacemakers, the distance between the touch pen and the pacemaker should be at least 30 cm. Never use it where wireless communication is prohibited. Protect it from extreme vibrations or magnetic objects.Wireless communications can cause malfunctions or failures.
- Do not use or store the touch pen in direct sunlight, near a hot object (e.g., a heater or fireplace), or in dusty or high-humidity environments.This can result in product deformation, malfunction, failure, or fire.
- If abnormal sound, smoke, or odor is detected, immediately remove the charging cable and stop using the product. Contact a service center. This can cause failures or fire.
- If fluid leaks from the touch pen, do not touch the fluid with bare hands. If fluid comes into contact with eyes, immediately rinse eyes with abundant tap water, then consult a doctor. The fluid can cause blindness. If the fluid comes into contact with skin or clothing, immediately wash it off with tap water. If the fluid causes skin inflammation or injury, consult a doctor.
- Do not allow the fluid to come into contact with fire. Do not heat the product in a microwave or convection oven.
- Use the specified USB cable when charging the battery.
- Keep the touch pen out of reach of children and away from unstable locations. Do not let children or pets put the touch pen in their mouths or lick the touch pen. Playing with or swallowing it may cause serious injury.
- Do not use the touch pen and Cradle with wet hands. Do not let foreign substances (e.g., soft drinks or water) enter the touch pen and Cradle; if this happens, do not use the touch pen and Cradle. Do not touch the optic receiver of the touch pen with a sharp object. This can result in electrical shock or damage the product.
- Do not use the product under extreme temperature conditions. Do not use the product immediately after going from the cold outdoors to the warm indoors. This can cause condensation in the pen. * This can result in damaging the product. Turn off the power and wait several hours until the moisture evaporates before using the product.
- Never disassemble or modify the touch pen and Cradle. * The product warranty does not cover damage or injury caused by unauthorized disassembly. This can result in electrical shock or damage the product.
- If fluid leaks from the touch pen, the use of fire in the vicinity is strictly prohibited. The leaked fluid or gas can ignite a fire or cause damage.
- Avoid extreme shocks or impacts to the product, for example, placing a heavy object on it or pressing it.
- Do not display fixed characters or images on the screen for extended periods of time. This can cause image sticking.
- Do not connect the charging cable to peripheral devices or disks that are not specified. This can cause malfunctions or failures.
- Do not leave the touch pen on the floor. Stepping on it can damage the product or cause personal injury. Use the Cradle provided with the touch pen.
- Be careful when disposing of the product. The touch pen consists of a lithium-Polymer battery and plastic material. Burning can be dangerous, so dispose of it according to local regulations.
- Do not remove the charging cable using excessive force. This could damage the charging port and PC.
- Do not handle the touch pen with excessive force. If you use the touch pen with excessive force, you may leave foreign substances on the screen. Clean the product with the product cleaning cloth provided.
- When multiple people use the touch pen, make sure that sufficient space is available. Collisions can cause injury or failures.
- Do not let your body(i.e. hand or shoulder) touch the product except the pen, when using the pentouch function. It may cause a malfunction.

ENGLISH

System Requirements

Make sure that the drivers are installed properly to allow proper operation of the touch pen.

Supported Operating System	
Windows 7	32 bit
	64 bit

⚠ **CAUTION**

y The Pentouch function is not supported in Windows 7 Starter Edition and Windows 7 Home Basic Edition.

Recommended System for Pentouch

If 4 or less monitors

y CPU: Quad core 3GHz or better
y Mother board: Motherboard supporting one PCI Express 2.0 x 16 slot or more
y Memory: 4GB or more
y HDD: 500MB or more
y Graphic card:
  If 3 or less monitors: Matrox M9138
  4 monitors: Matrox M9148
y OS: Windows7 32bit or 64bit
y Graphic card output connection cable (mini DP to HDMI or mini DP to DVI-D)
  - Mini DP to DP gender
  - DP to DVI gender
  - DVI-D to DVI-D cable
y 4-port USB hub for dongle installation

If 5 or more monitors

y CPU: Hexa core 3GHz or better
y Mother board: Motherboard supporting more than one PCI Express 2.0 x 16 slot and running X8 or faster when two slots are used
y Memory: 8GB or more
y HDD: 500MB or more
y Graphic card:
  5 or 6 monitors: Matrox M9138 2EA
  7 or 8 monitors: Matrox M9148 2EA
y OS: Windows7 64bit
y Graphic card output connection cable (mini DP to HDMI or mini DP to DVI-D)
  - Mini DP to DP gender
  - DP to DVI gender
  - DVI-D to DVI-D cable
y 4-port USB hub for dongle installation

Wiring Diagram

Install monitors using a wiring diagram suitable for the number and usage of the monitors.
Refer to the manual included with the graphic card regarding how to connect the graphic card output cable by using a gender.

> **NOTE**
> • Consider the monitor described in this manual as its front side.

> **CAUTION**
> • When you make the monitor stand up, make sure that the input port is facing down.

Landscape type 2x1

M9138

Landscape type 3x1

M9138

ENGLISH

Landscape type 2 x 2

M9148
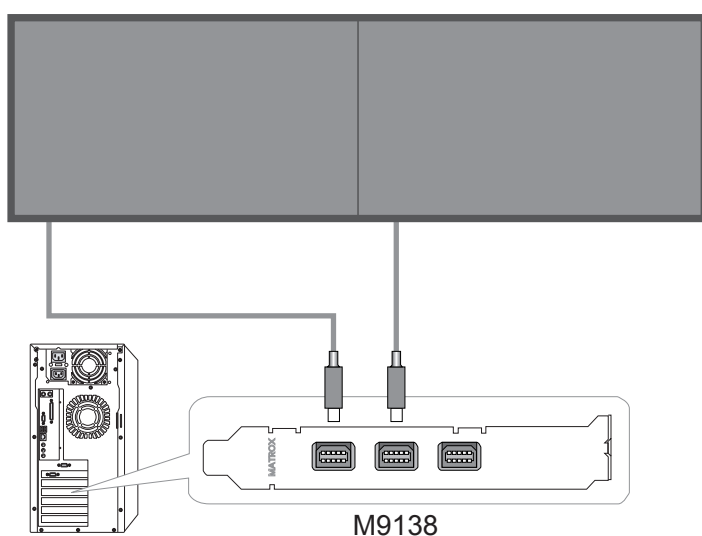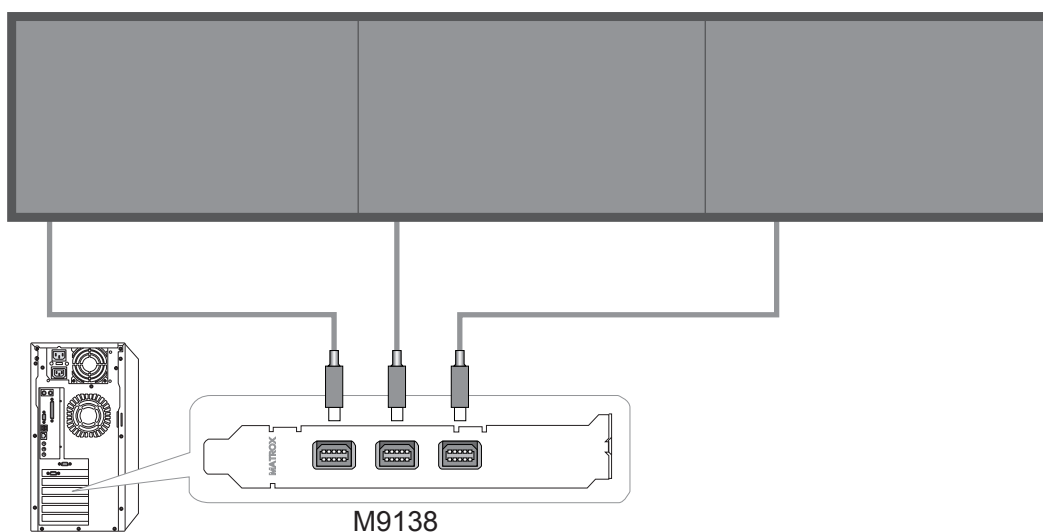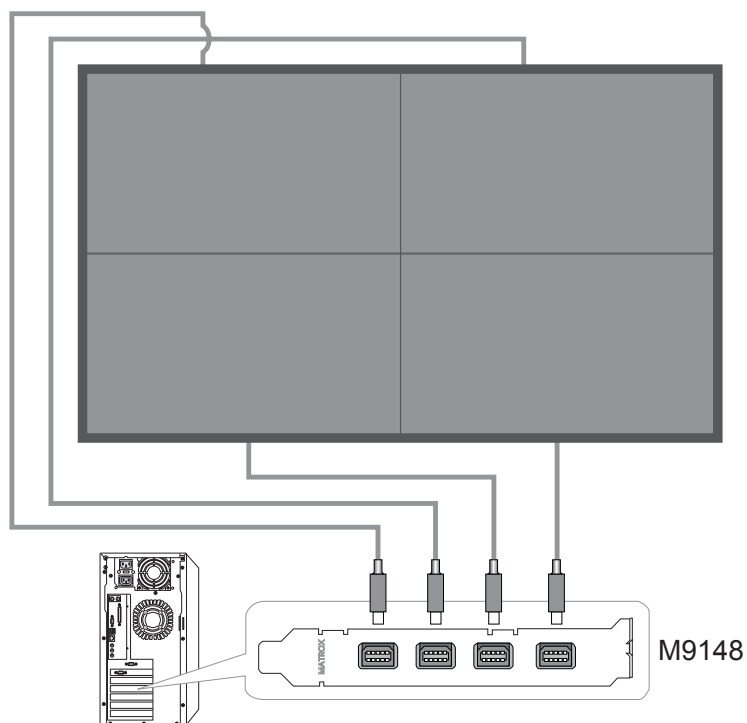
Landscape type 3 x 2

M9138

M9138
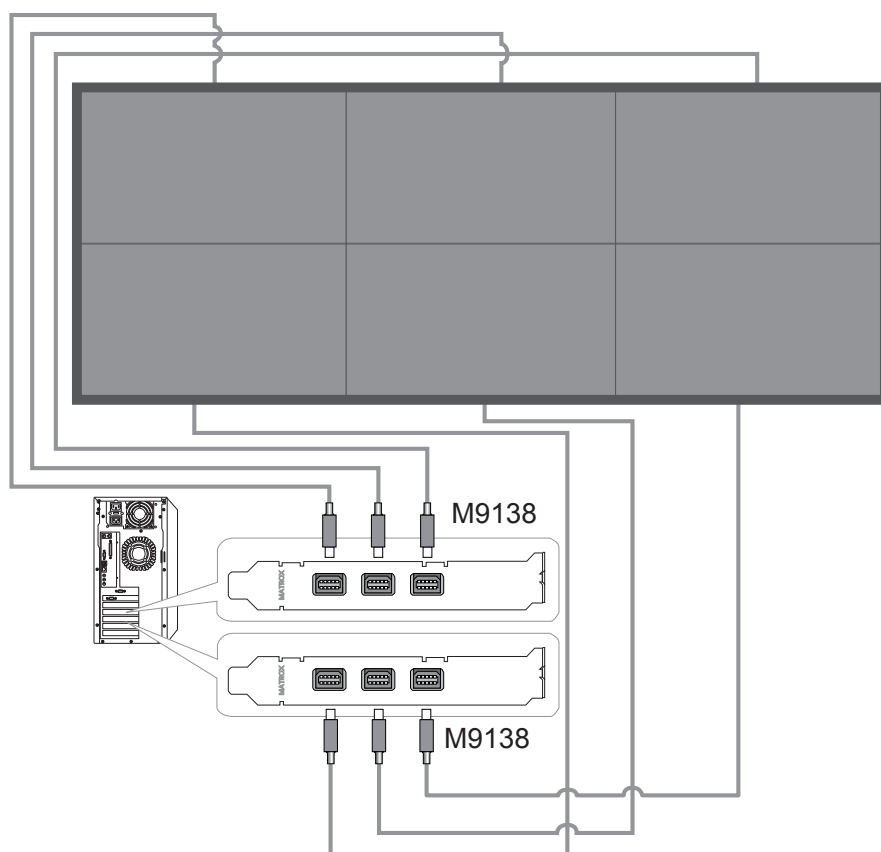
Landscape type 4 x 2

M9148

M9148
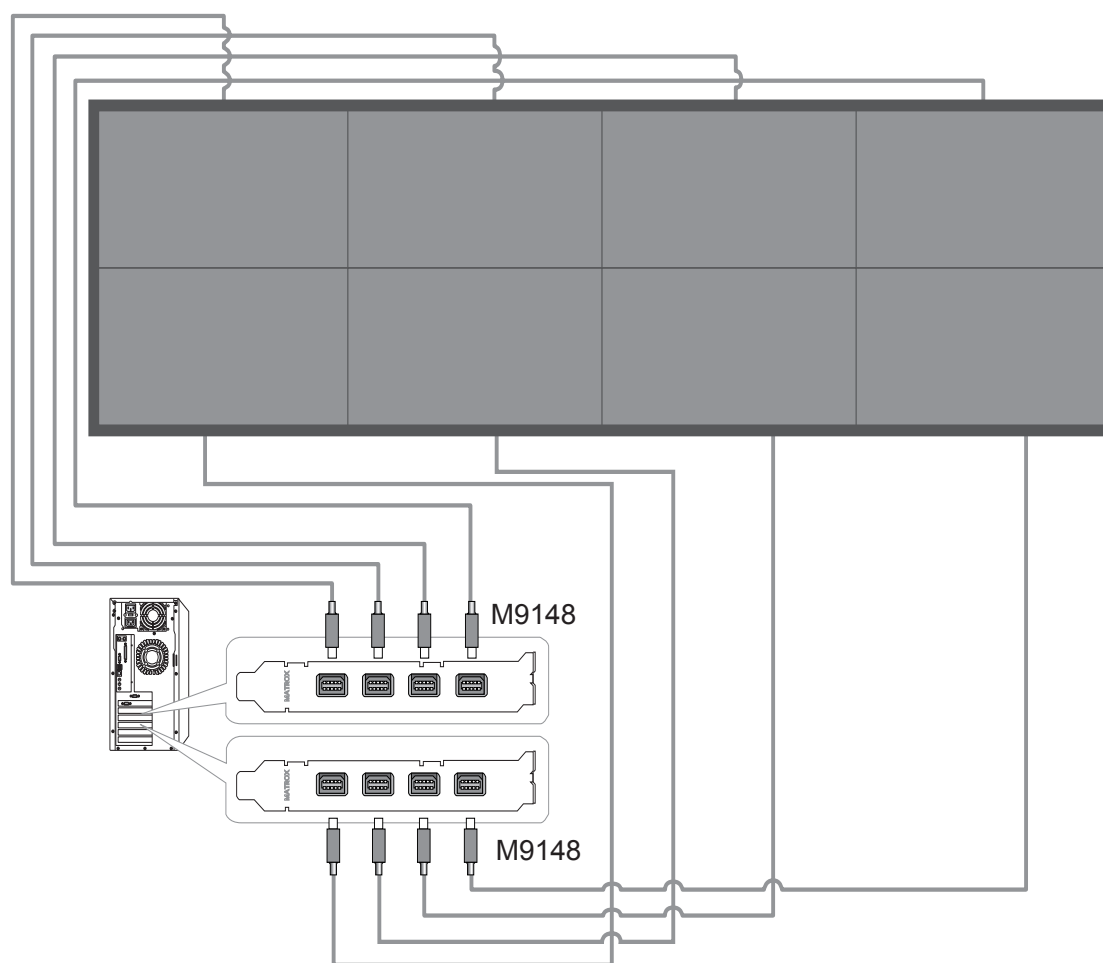
ENGLISH

Portrait type 1x4

M9148

Portrait type 1x5

M9138

M9138
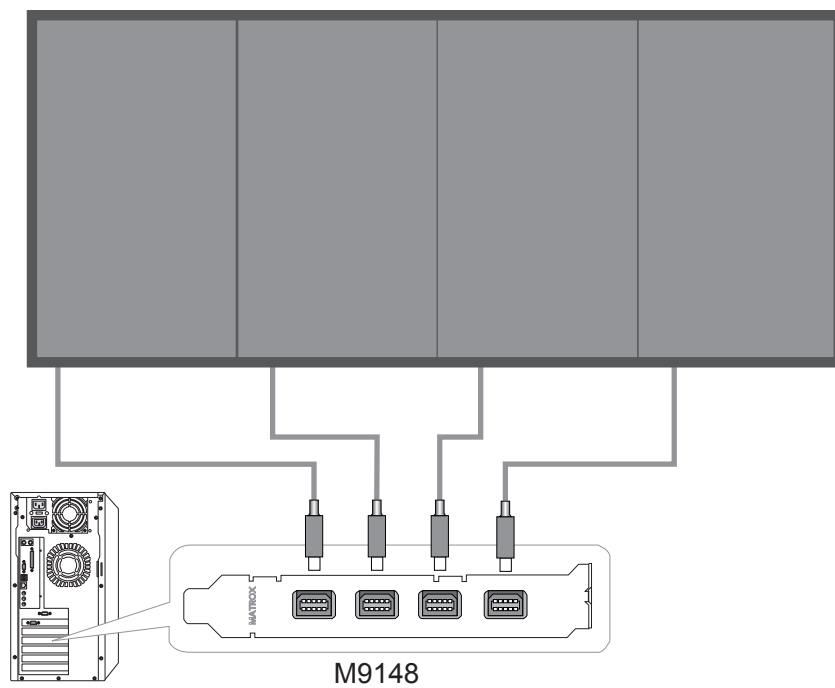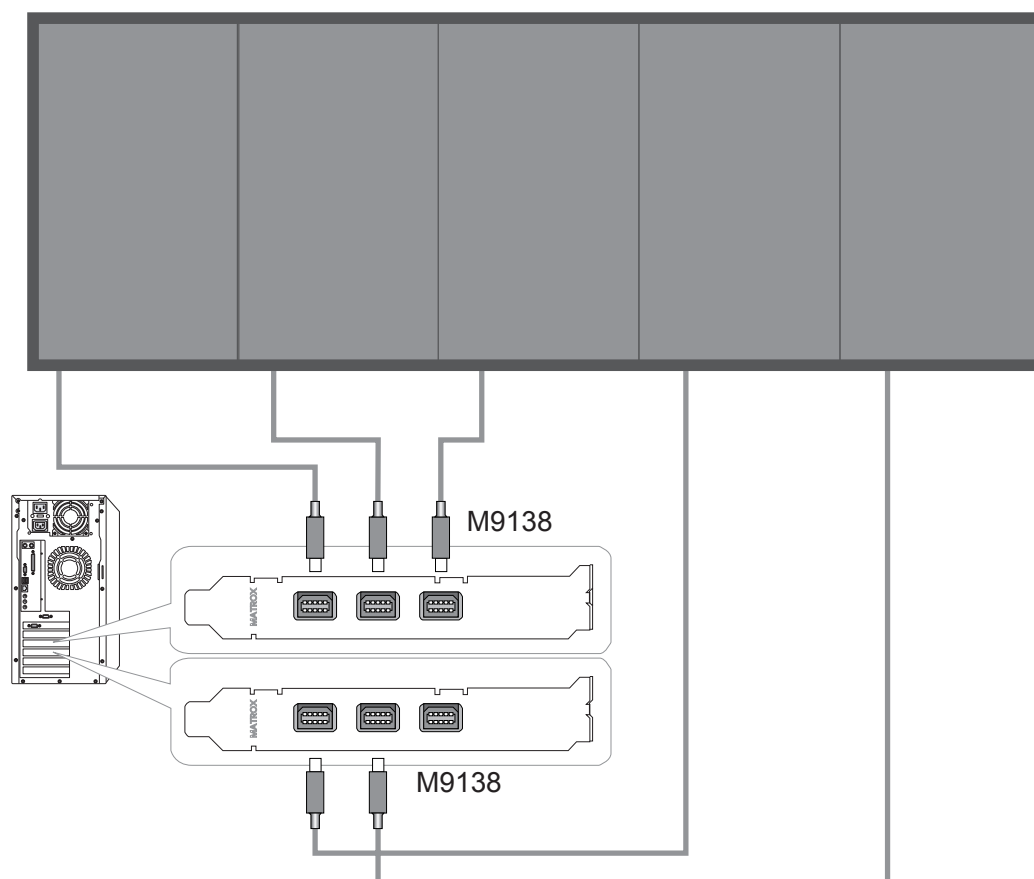
Graphics card setting

When switching on the PC after installing e-MultiBoard, you will see the PC screen on one or more monitors. To use all the monitors as one monitor, you need to configure the graphics cards separately. To install a graphics card driver, use the CD provided by the graphics card manufacturer.

> **NOTE**
>
> y The Matrox graphics card driver has two kinds of files: XDDM files and WDDM files.
> y Installing the XDDM file may cause the pen touch operation to malfunction. Please install the WDDM file.

1   Launch Matrox PowerDesk by right-clicking on the desktop with the mouse.
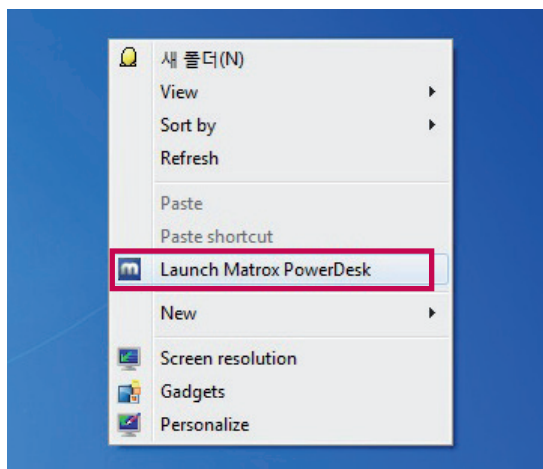
2   Select and run Multi-Display Setup.
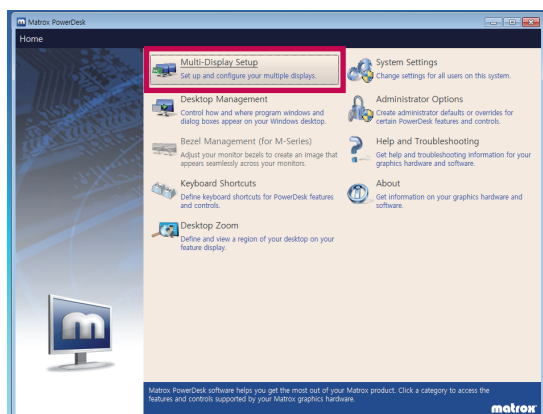
If 5 or more monitors are used.
Select the Join graphics cards checkbox. Select Apply. Reboot the PC and repeat all of the steps above.
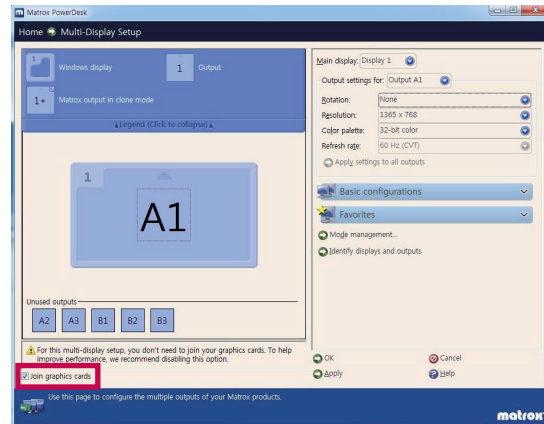
3   Place the mouse cursor at the top of the A1 monitor and right-click to select. Select the appropriate number of columns and rows depending on the monitor installation method. (You do not have to select any for 1 x 1.)

4 Select Apply.

when using portrait type
In the Rotation drop-down menu, select 90 degrees Counterclockwise.

5 Select Mode management.
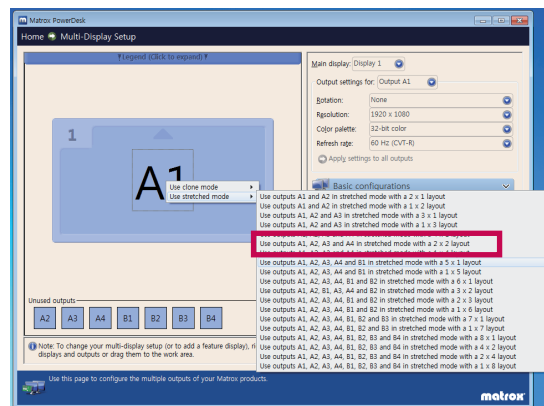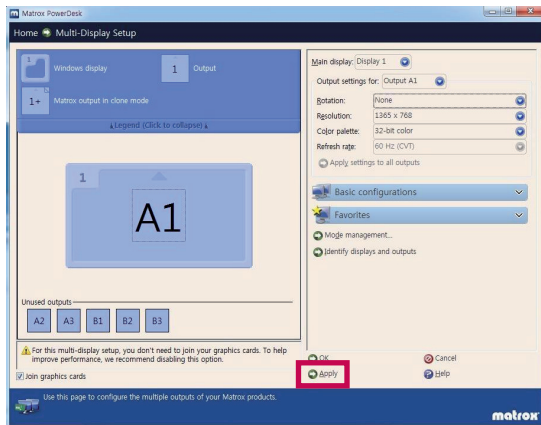
6 Select Select all. Then, select 1365 x 768 in the Resolution column. Select OK.
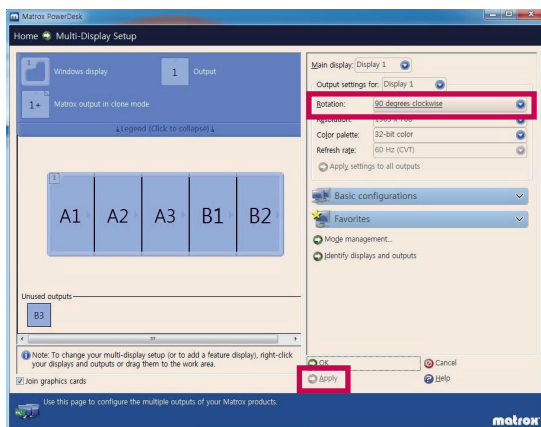
7 In the Resolution drop-down menu, select 1365 x 768.
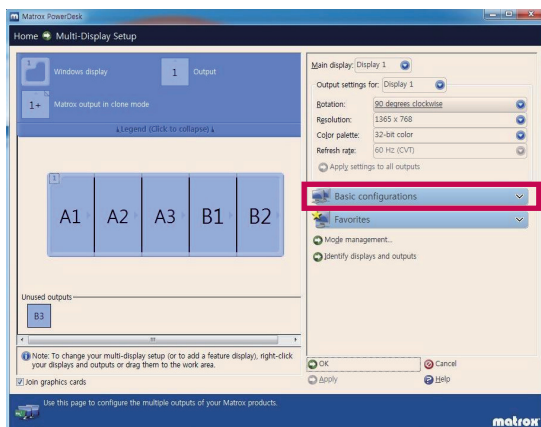
Installing the LG Pentouch Multi-touch Driver

Install LG Pentouch Multi touch Driver on your computer to use the Pentouch Dongle.
Follow the steps described in this manual to install the program.

> **⚠ NOTE**
> - Disconnect the USB dongle first to install the program.
> - You must log in as an administrator to install or remove the included software.
> - Make sure to install the program found on the CD provided.
> - Make sure to close all running applications before installing the program.

1   Prepare your computer and start it.

2   After the computer starts, Insert the supplied CD. The installation screen appears automatically.

   (If the installation screen is not displayed automatically, access My computer and then click insrrallation CD driver and index.htm to view the installation screen.)

3   Click [Install the LG Pentouch Multi-touch Driver] on the web page. Selects a language to display, and then Install the Pentouch program.

   The default folder is used for installation.

   A window appears to indicate that the installation was completed successfully.

4   Select the language for the installation.
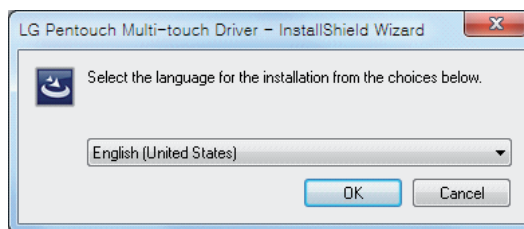
5   Select Next.
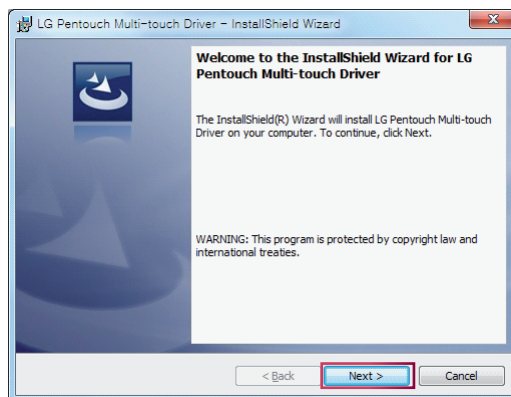
6   Select Install.
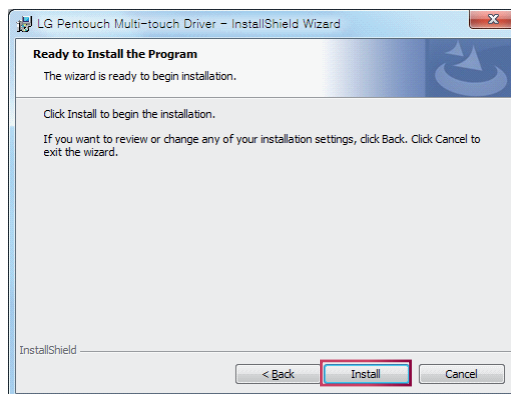
7 Check the appropriate items based on the type of monitors installed and the installation method, then click Apply.

Pen Setting v1.1

Monitor Mode
◉ Horizontal   ◯ Vertical

Monitor Count

Apply

> **NOTE**
> - Check the appropriate number under Monitor Installation forms based on the type of monitors.
> - Check Horizontal for installation in landscape mode and Vertical for installation in portrait mode.

8 Please reboot your PC after installing the program.

LG Pentouch Multi-touch Driver – InstallShield Wizard

InstallShield Wizard Completed

The InstallShield Wizard has successfully installed LG Pentouch Multi-touch Driver. Click Finish to exit the wizard.

< Back   Finish   Cancel

LG Pentouch Multi-touch Driver Installer Informati...

You must restart your system for the configuration changes made to LG Pentouch Multi-touch Driver to take effect. Click Yes to restart now or No if you plan to restart later.

Yes   No

Installing the LG e-Multiboard Program

Install LG e-Multiboard Program on your computer to use its various functions.
Follow the steps described in this manual to install the program.

> **NOTE**
> - You must log in as an administrator to install or remove the included software.
> - Make sure to install the program found on the CD provided.
> - Make sure to close all running applications before installing the program.

1 Prepare your computer and start it.

2 After the computer starts, Insert the supplied CD. The installation screen appears automatically.

   (If the installation screen is not displayed automatically, access My computer and then click instrallation CD driver and index.htm to view the installation screen.)

3 Click [Install the LG e-Multiboard Program] on the web page. Selects a language to display, and then Install the Pentouch program.

   The default folder is used for installation.

   A window appears to indicate that the installation was completed successfully.

4 Select the language for the installation.
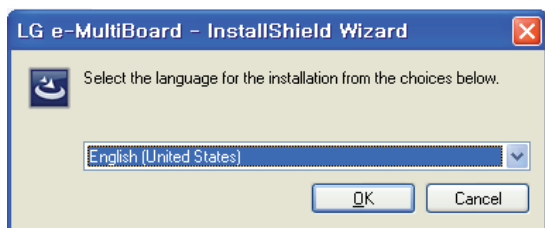
5 Select Next.
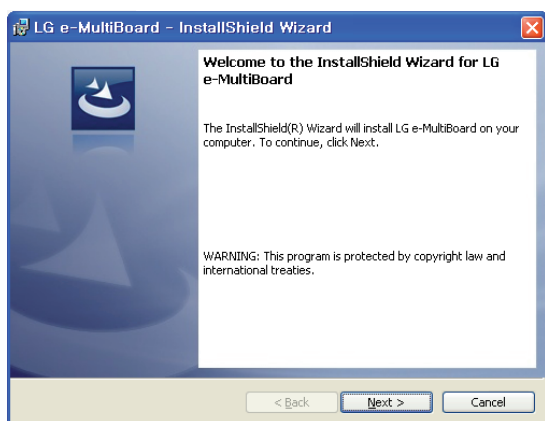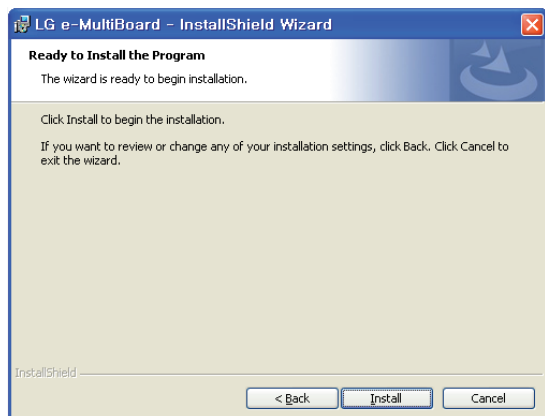
6 Select Install.

Removing the pentouch program

If there is a problem with the Pentouch program installation or if an error occurs while using the program, follow the steps below to remove the program or driver, and then reinstall them.

1 On your computer, select [Start] → [Control Panel] → [Add/Remove Programs] to remove the program.

- The installed Pentouch program: LG Pentouch Multi-touch Driver and LG e-Multiboard

2 Click [Yes]. A window appears telling you that the program/driver has been removed.

3 Please reboot your PC after removing the program.

Dongle Position

The basic drawing quality may be affected by the dongle position during e-MultiBoard installation. Make sure that there are not many obstacles between a pen and dongle. Install the dongle into a USB hub as close as possible to the pen.

FRONT

PC

FRONT   USB HUB   FRONT

FRONT ▶

USB HUB
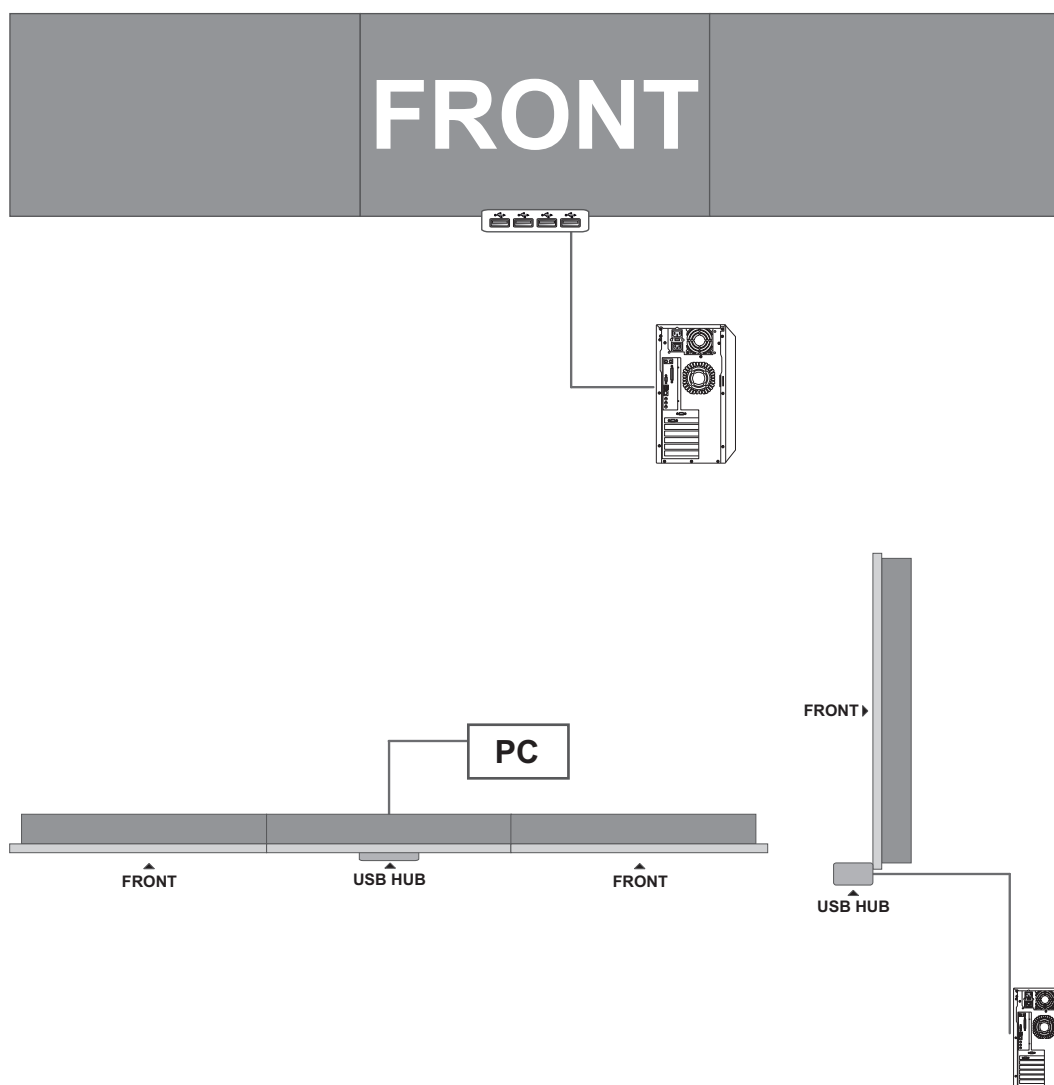
> **NOTE**
>
> • No metal objects should be present between the pen and the dongle.

Pairing between Touch Pen and Dongle

What is Pairing?

You need to pair the touch pen and the dongle before using the touch pen.
Once paired, you do not need to pair them again unless you:

y Bought a new pen
y Replaced the old pen with a new one

Things to Know Before Pairing

y You will need a dongle for each pen that you use.
y You can use up to 4 pens.
y Pairing of pen and dongle should be done in sequence for each set.
y If they are paired when two or more dongles are inserted at the same time, pairing may fail. Therefore, make sure to remove the dongle currently paired before you pair another pen and dongle set.
y When connecting four dongles to the PC after pairing four pens and four dongles, you can use all four pens.

<Computer Rear Panel>

USB hub

Dongle

Pairing
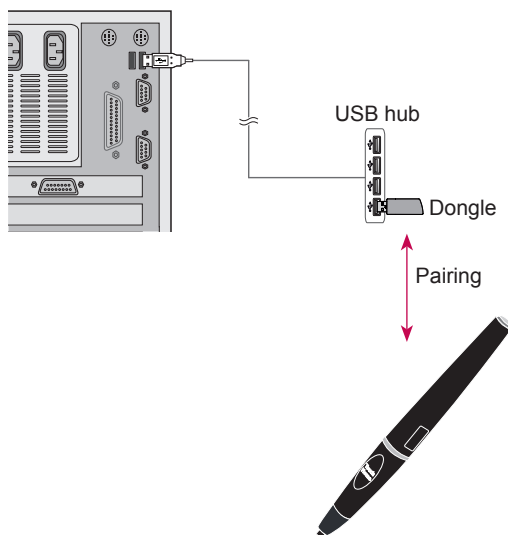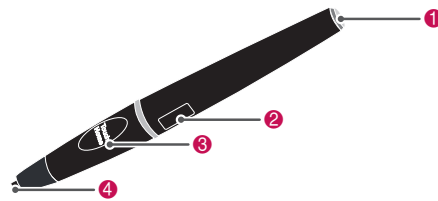
Touch Pen

No.	Description
❶	Power button / LED indicator
❷	USB charging port
❸	Touch Home button
❹	Touch pen tip switch

Dongle

Indicator LED

Cradle

USB charging port
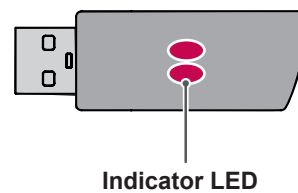
! NOTE

y When you leave your touch pen unused for a certain period of time (approx.10 minutes), the pen automatically powers off.

ENGLISH

Tip replacement

1 Detach the tip holder and the tip to be replaced from the pen.
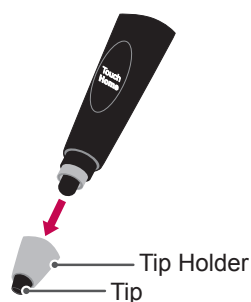
Tip Holder
Tip

2 Insert a new tip into the detached tip holder and assemble the tip holder with the pen.

Tip
Tip Holder
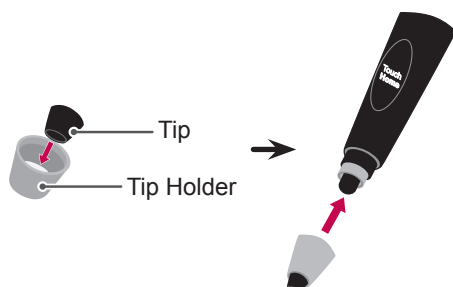
Charging the touch pen

1 Charging on the cradle

or
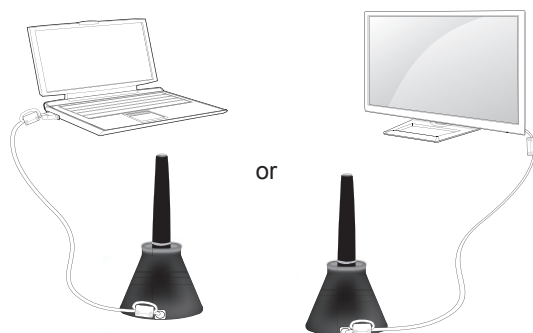
2 Charging directly

or
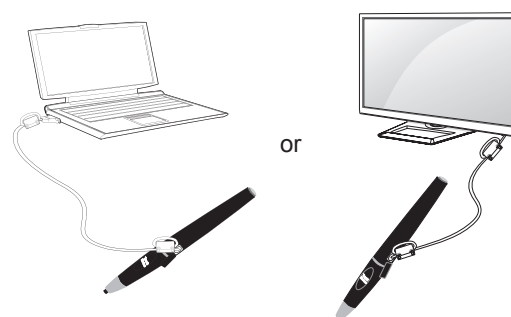
Pairing for the First Time

1 Insert the Pentouch dongle into the USB port. Windows will then display a message in the taskbar, indicating that drivers are being searched and installation is in progress. When the installation is complete, the two LED indicators on the USB dongle will turn red. When you can see a message indicating that the new device has been installed, prepare the touch pen provided as an accessory.

2 Keep the touch pen within 30 cm of the dongle. Press the Touch Home button on the touch pen once. The LED indicator on the touch pen will turn red for 2 seconds and blink green 3 times when pairing is complete.

3 After pairing, when you press the touch pen POWER button, the LED indicator of the pen turns green.

> **NOTE**
>
> • After pairing, when you press the touch pen ⏻ button, the LED indicator of the pen turns green. A touch pen only needs to be paired once. To use a touch pen, make sure that the pen is switched on by pressing the pen ⏻ button, alongside a properly working dongle.

When Pairing Fails

1 Pairing fails if the LG-Pentouch Multi-touch driver is not installed on the computer.

2 Pairing fails if the LED indicator on the dongle is not red.

3 Remove the dongle from the PC, reinsert it and try pairing.

Unpairing (Resetting touch pen)

1 Check if the LED indicator turns green by the touch pen ⏻ button.

2 Press the **Touch Home** button and the ⏻ button together, regardless of sequence, for more than 45 seconds.

3 After the green light blinks once, release the button. The red light blinks 3 times and the pen is then in its initial state (unpaired).

Caution When Unpairing

1 Be careful not to unpair the pen by mistake. If unpaired, try pairing it again.

2 To pair one or more pens, you need to initialize all pens by following the procedures described above, i.e. pairing each set of pens and dongles one by one.

3 Make sure to remove the dongle currently paired before pairing another pen and dongle set.

Touch pen Operation

Once paired, you can use the touch pen in the following ways.

1 Powering on
 - Press the ⏻ button once. The red and green LEDs will remain lit to indicate that the power is on.

2 Powering off
 - Press the ⏻ button for more than 5 seconds and release it.
   The red LED blinks 3 times and the pen is then powered off.
 - Touch pen power is automatically switched off if you do not use it for approx.10 minutes, so you do not have to switch it off manually.

3 Pressing the Touch Home button while using the touch pen
 - It makes menu appear or disappear when running the LG e-Multiboard program.
 - In Windows: Works in the same way as the right-click function.
   Touch an object on which you want the touch pen to right-click, then press the button.

4 The touch pen works in the same way as the mouse in Windows.

> **NOTE**
>
> • After 1 hour and 30 minutes of a continuous charge, you can use the touch pen for about 2 hours.
> • Pentouch operation may not be normal while charging.
> • Green LED will be turned on during using If a touch pen is not in use, the green LED switches off automatically after one minute and the power also switches off after approx. 9 minutes.
> • Touch pen LED indicator for battery status
>   - Charging: Red LED
>   - Charging complete: Green LED
>   - Battery level 20% or less: Red LED blinks every 3 seconds
>   - No battery power: Red LED blinks every second and powers off automatically.

Using the Pentouch Function

• Image shown may differ from your monitor.

You need the following items to use the Pentouch functions:

1 Use the TOUCH key to enable the Pentouch function in the current input mode.

Input List — Move — OK

RGB   DP   HDMI   DVI-D (TOUCH)

Exit
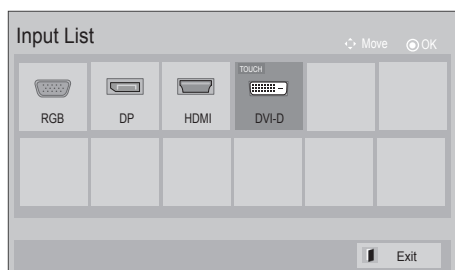
• Image shown may differ from your monitor.

If you press the **ENTER** button on the remote control, the screen shown below appears to indicate that the screen settings have been updated successfully.

TOUCH   DVI-D   1365x768@60Hz

Pentouch

❶   ❷
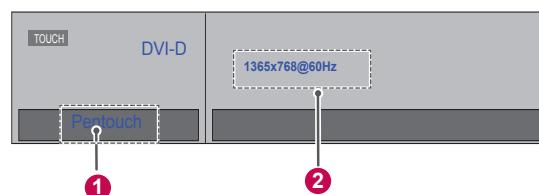
• ❶   The text "Pentouch" should be displayed to indicate that the Pentouch mode is activated.
• ❷   "1365x768 " should be displayed to indicate that the resolution has been set successfully. If not, set the monitor resolution again. (See p.49)

• The Pentouch operation may become slow depending on the computer's performance.
• Changing the desktop icon properties in Windows 7 may affect the Pentouch program.
• It is recommended not to run other applications while using the Pentouch program.
• The Play Video function may not work as intended, depending on the codecs installed on your computer.
• If the pen touch program is terminated abnormally, shut down the pen touch program forcibly by running "Task Manager" and restart the program.
• If a dongle is too far from a pen or there are a lot of obstacles between them, the touch function may not work properly. Please refer to the installation guide.
• If the e-MultiBoard is not in touch mode, the touch function is unavailable. Press the **ENTER** key on the remote control and check if "Pentouch" appears at the top left to see if touch mode is active.
• The use of wired Internet is recommended.
• Exposing the e-MultiBoard display to intense light may interfere with the pen operation.

Checking the Pentouch Functions

To run the Pentouch program, select the icon

 on the desktop using the mouse or pen.
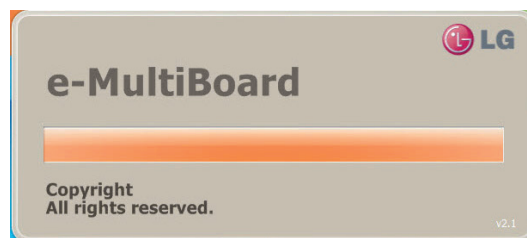
[Picture 1]

After launching the Pentouch program, press the ⏻ /**Home** button of the pen to make the drawing tools appear as shown below.

ℹ **NOTE**

• The drawing tools appear where the pen points. You can use the drawing tools easily when pressing the ⏻ /**Home** button with the pen pointing at the monitor.
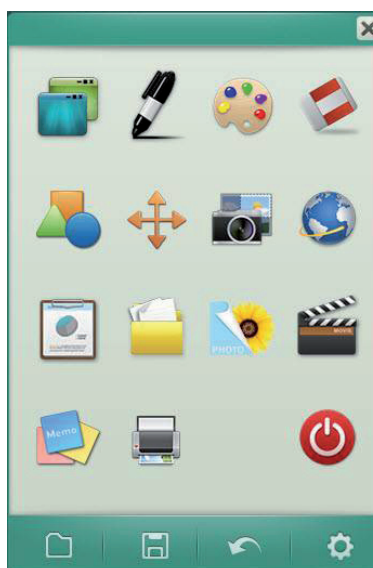
NOTE

- When using multiple touch pens, you can open a new menu window for each touch pen (for example, if you use four touch pens, you can open four separate menu windows).
- If you select an item, the submenu of the selected item appears next to the main menu. (Depending on the position of the main menu, the submenu appears either to the right or to the left.)

Close Menu
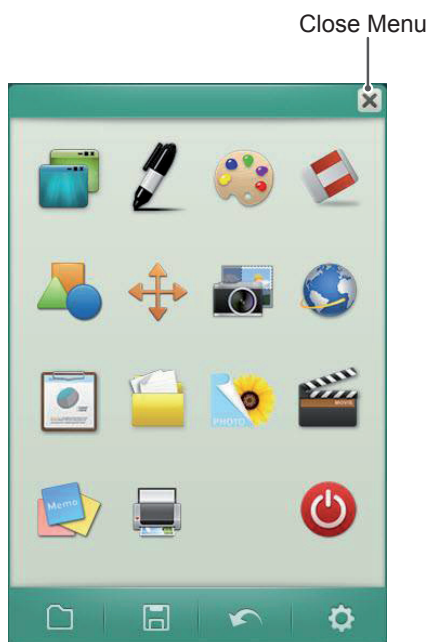
Select Background (See p.61)

Select Pen/Line (See p.61)

Select Color (including mixed colors) (See p.62)

Select Eraser (See p.62)

Select Shape (See p.62)

Select Object (See p.63)

Capture Partial Screen (See p.63)

Internet (See p.64)

Open Document (as an image) (See p.64)

My Office (See p.64)

Picture (Alignment) (See p.65)

Movie (Alignment) (See p.66)

Memo (Post-It) (See p.67)

Print (See p.67)

Exit Program (See p.67)

Open File (See p.68)

Save Screen (See p.69)

Undo (See p.69)

Settings (See p.69)

Select Background
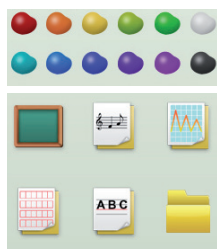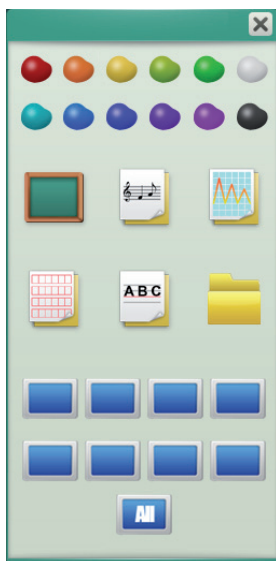
		Sets the background color.
	Chalkboard	Chalkboard (default background)
Sets the background format.	Manuscript	Manuscript Paper
	Graph	Graph Paper
	Squared	Squared Paper
	ABC	Alphabet Paper
	Folder	Opens an image file to set as the background.
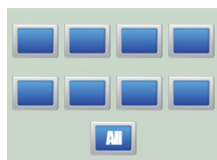
Sets the background for each individual monitor ID. Reads the number of monitors from the registry to match it to the number of screens.

	Only applies to the monitor of the selected number.
	Applies to all monitors if ALL is selected.

Select Pen/Line
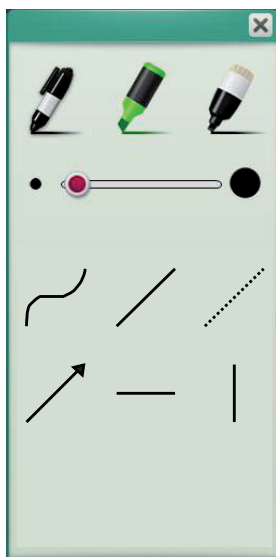
		Ball-point Pen
Pen Type		Highlighter
		Brush
Pen Thickness		Pen Thickness
		Freehand Line
Line Type		Straight Line
		Dotted Line
		Arrow
		Horizontal Line
		Vertical Line
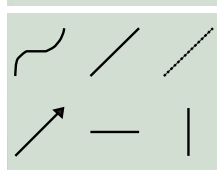
ENGLISH

🎨 Select Color

Allows you to select the color you want.

🧽 Select Eraser

	Erases the entire screen.
All	
	Erases the selected object.
	Erases freehand
	Erases all work on the monitor of the selected number.

⚠️ **NOTE**

• To erase the entire screen or the monitor of the selected number, press the icon for 3 seconds and release it.

🔷 Select Shape
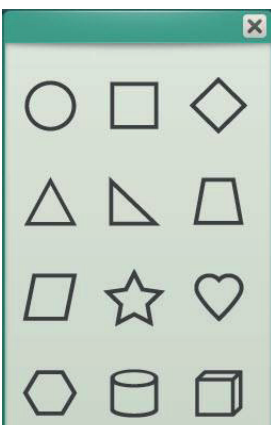
Inserts a basic shape.
Select the desired icon, then short tap to create a default-sized shape.

✛ Select Objects

When dragging a line, pen or shape, you can only move or resize one object at once.
If you short tap an object and drag, the area of the selected object will be displayed.

Move
You can move an object by dragging the area of the selected object.
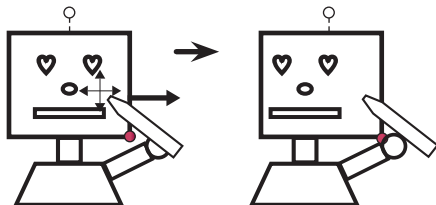
Expand/Reduce
You can expand or reduce an object by dragging one corner of the selected object. The object will be resized based on the corresponding corner.
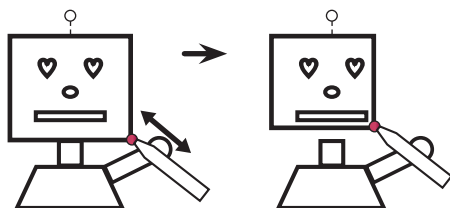
Rotate
Drag in rotation to rotate the selected object.
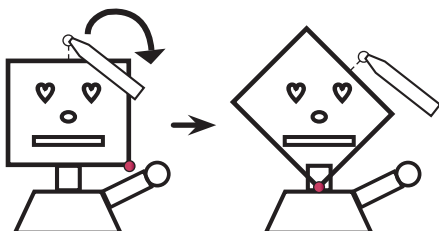
📷 Capture Partial Screen

You can capture and copy a selected area.
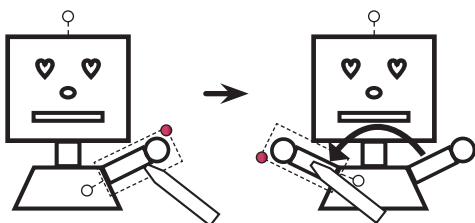
NOTE

• If multiple monitors are selected, but they are not consecutive, the screen is not expanded.

Internet

Opens the Internet browser.
Select a monitor to print from the monitor selection window, then select the

icon to open the Internet browser on the selected monitor.
If you select multiple consecutive monitors, the screen will be enlarged to fit the aspect ratio of the selected monitors.

Switches to pen mode.

Switches to window mode.

Open Document

Type	Supported file format
Office Files	2003 version ppt, doc, xls 2007 version pptx, docx, xlsx All Microsoft PowerPoint files (*.ppt, .pptx) All Microsoft Word files (*.doc, .docx) All Microsoft Excel files (*.xls, .xlsx)
PDF Files	Adobe PDF files (*.pdf)

- Open File
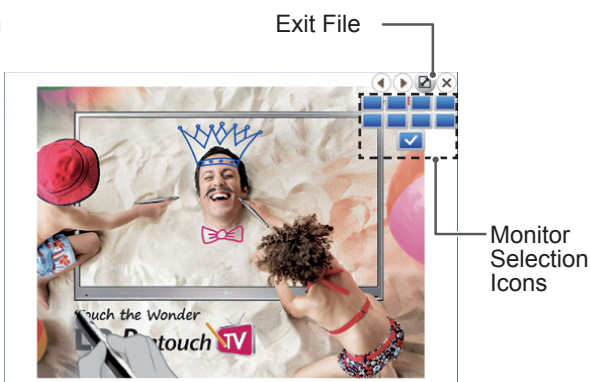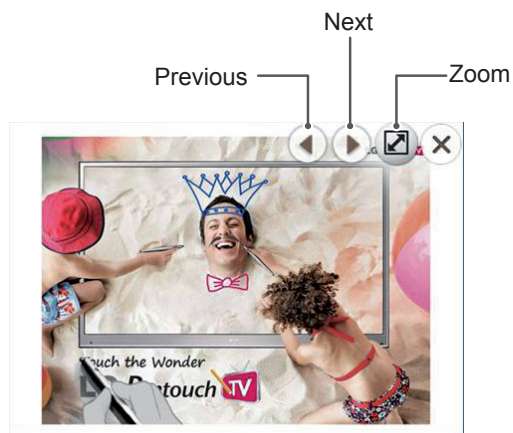
Next
Previous
Zoom
Exit File

Monitor Selection Icons

When the zoom icon is clicked, a pop-up appears, from where you can select a monitor.
- If you select multiple consecutive monitors from the monitor selection icons, the screen will be enlarged to fit the aspect ratio of the selected monitors.

My Office

Shows the Open Windows File window.
When selecting files, Windows mode is set as default.

Switches to pen mode.

Switches to window mode.

Type	Supported file format
Office Files	2003 version ppt, doc, xls 2007 version pptx, docx, xlsx All Microsoft PowerPoint files (*.ppt, .pptx) All Microsoft Word files (*.doc, .docx) All Microsoft Excel files (*.xls, .xlsx)

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🌻 Picture

Supported file type: BMP, JPG, GIF, TIF, and PNG
Opens a picture file in the photo directory specified in the settings.

◁ Previous

▷ Next

Scatter Alignment

Auto Alignment

Two touch pens support the expand, reduce, rotate, and move functions.
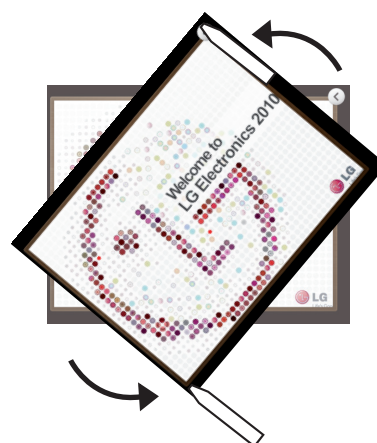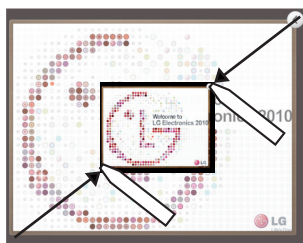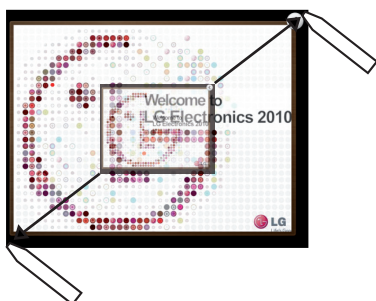
Select a thumbnail and flick it to the right. When the thumbnail reaches the edge of the screen, it opens to fit the aspect ratio. (See p.66)

⚠ **NOTE**

• The thumbnail image may have a lower picture quality than the actual picture due to anti-aliasing.
• Pen mode is not supported in the picture menu.

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📽 **Movie**

Supported file types: 3GP, ASF, AVI, DAT, FLV, MKV, MOV, MP4, MPEG, MPG, OGM, TP, TS, VOB, and WMV
Opens a movie file in the movie directory specified in the settings.
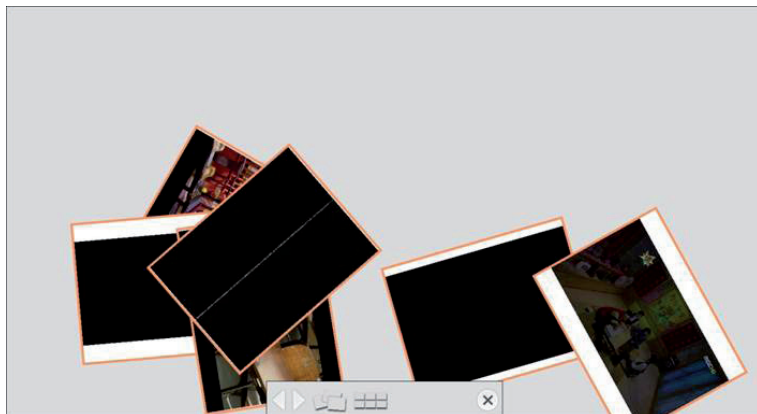
Previous

Next

Scatter Alignment
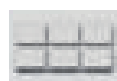
Auto Alignment

Two touch pens support the expand, reduce, rotate, and move functions. (See p.65)
Select a thumbnail and flick it to the right. When the thumbnail reaches the edge of the screen, it opens to fit the aspect ratio.

Drag & Slide
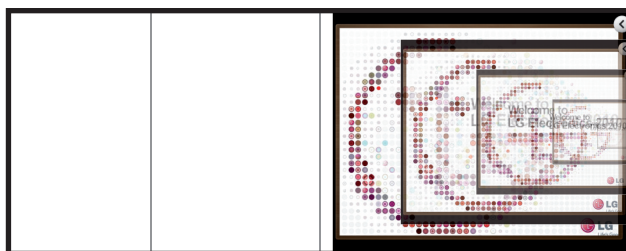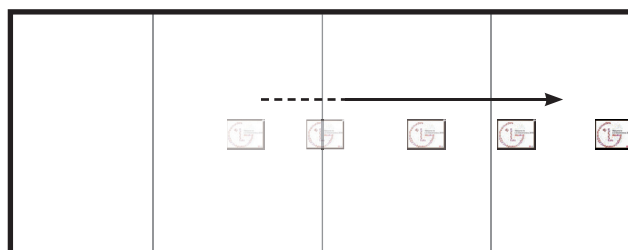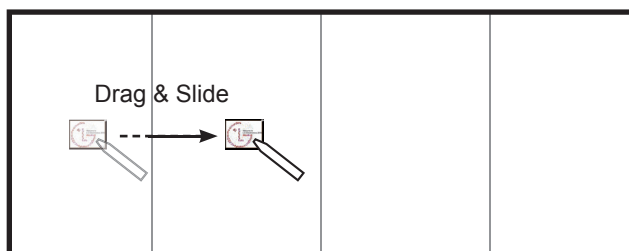
⚠ **NOTE**

• Pen mode is not supported in the movie menu.

Memo
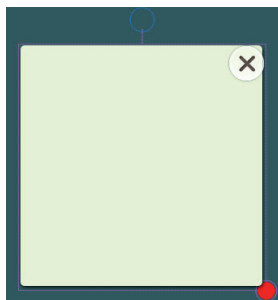
Create a memo in a particular position.
The color of the memo, which will be red, blue, green, or yellow, is randomly selected.

Print

From the monitor selection window, select a monitor to print, then select the

icon to print the screen. If you select multiple consecutive monitors, the screens of the selected monitors will be printed.

> **NOTE**
>
> • All content is printed on a single sheet of paper regardless of the number of monitors selected.
> • If multiple monitors are selected, but they are not consecutive, the screen of the selected monitor cannot be printed.

Exit Program

Select the exit icon from the menu or press the Esc key to exit the program.

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> ⓘ **NOTE**
>
> • If multiple monitors are selected, but they are not consecutive, the screen is not expanded.

🗁 Open File

Type	Supported file format
Office Files	2003 version ppt, doc, xls 2007 version pptx, docx, xlsx All Microsoft PowerPoint files (*.ppt, .pptx) All Microsoft Word files (*.doc, .docx) All Microsoft Excel files (*.xls, .xlsx)
PDF Files	Adobe PDF files (*.pdf)
Image	BMP, JPG, GIF, TIF, PNG
Movie	3GP, ASF, AVI, DAT, FLV, MKV, MOV, MP4, MPEG, MPG, OGM, TP, TS, VOB, WMV

- Open File
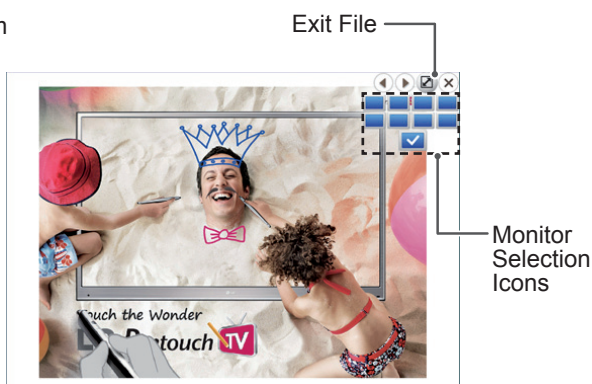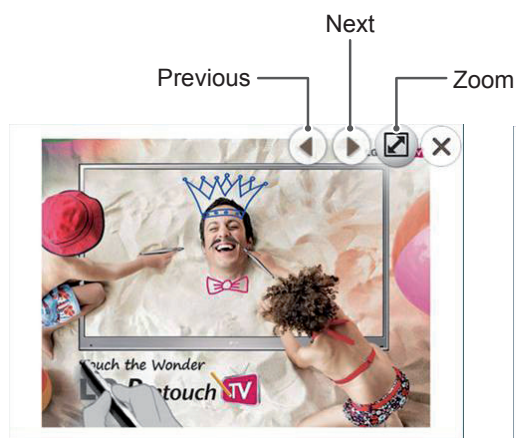
Next

Previous ——   Zoom   Exit File —

                                        Monitor
                                        Selection
                                        Icons

When the zoom icon is clicked, a pop-up appears, from where you can select a monitor.
- If you select multiple consecutive monitors from the monitor selection icons, the screen will be enlarged to fit the aspect ratio of the selected monitors.

> ⓘ **NOTE**
>
> • Only one movie file can be played at a time.
> • When playback is complete, the file is stopped and ready to be played over.
> • When opening a picture which has been edited using the pen, the screen ratio is maintained.

Save Screen

Captures the current screen to save as an image.

Undo

You can undo the previous five actions.

Settings
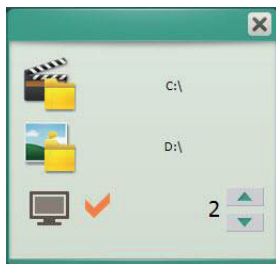
C:\	Sets the movie folder.
D:\	Sets the picture folder.
2	Sets the screen saver - Captures the current screen so it can be moved. - If there is no input for a set period of time, the screen saver will be enabled. - The time is set to 2 minutes by default. - You can set the time from 1 to 10 minutes.

CUSTOMIZING MONITOR SETTINGS

The SETUP Menu

1 Press **SETTINGS** to access the Home menu.

2 Press the Navigation buttons to scroll to one of the following menus and press **OK**.

3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.

4 When you are finished, press **EXIT**.

PICTURE Settings

1 Press **SETTINGS** to access the menu.

2 Press the Navigation buttons to scroll to **PICTURE** and press **OK**.

3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
 - To return to the previous level, press ⤺ (**BACK**).

4 When you are finished, press **EXIT**.

• Image shown may differ from your monitor.

PICTURE	✧ Move	◉ OK
• ⊟ Energy Saving : Off		
• Picture Mode : Standard		
● Contrast	100	
● Brightness	50	
● Sharpness	20	
● Color	60	
● Tint	0	R◁▥▷G
● Color Temp.	0	W◁▥▷C

Setting	Description	
Energy Saving	It reduces the Monitor's power consumption. The default factory setting is adjusted to a comfortable level for home viewing.	
	Option	
	Off	Energy Saving is off.
	On	Energy Saving is on.
Picture Mode	Selects one of the preset image or customizes options in each mode for the best monitor screen performance. You are also able to customize advanced options of each mode. The available preset picture modes vary depending on the monitor.	
	Mode	
	Standard	The most general screen display status.
	Studio	Optimizes video for being used in a studio environment.
Aspect Ratio (only landscape type)	Changes the image size to view images at its optimal size (See p.78).	
SCREEN (only RGB mode)	Customizes the PC display options.	
	Option	
	Resolution	To view a normal picture, match the resolution of RGB mode and selection of PC mode. (1024x768, 1280x768, 1360x768)
	Auto Configure	This function is for automatic adjustment of the screen position, size, and phase The displayed image will be unstable for a few seconds while the auto configuration is in progress. **❶ NOTE** • If the position of the image is still not correct, try Auto adjustment again. • If picture needs to be adjusted again after Auto adjustment in RGB, you can adjust the **Position**, **Size** or **Phase**.
	Position	This function is to adjust picture to left/right and up/down as you prefer.
	Size	This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.
	Phase	This function allows you to remove any horizontal noise and clear or sharpen the image of characters.
	Reset	Returns Position, Size and Phase to the factory default settings.

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Basic image options

Setting	Description
Contrast	Adjusts the signal level between black and white in the picture. You may use Contrast when the bright part of the picture is saturated.
Brightness	Adjusts the base level of the signal in the picture.
Sharpness	Adjusts the level of crispness in the edges between the light and dark areas of the picture. The lower the level, the softer the image.
Color	Adjusts intensity of all Colors.
Tint	Adjusts the balance between red and green levels.
Color Temp.	Adjust to left direction to make a picture reddish or adjust to right direction to make a picture bluish.
Advanced Control	You can calibrate the screen for each Picture Mode or set the video value according to the special video screen. You can set the video value differently for each input. To reset to the factory default screen after making adjustments to each video mode, execute the "Picture Reset" function for each Picture Mode.
Picture Reset	Settings of the selected picture modes return to the default factory settings.

Advanced image options

Setting	Description
Dynamic Contrast	Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker.
Noise Reduction	Reduces screen noise without compromising video quality.
Gamma	You can adjust brightness of dark area and middle gray level area of the picture. » Low: Make the dark and middle gray level areas brighter. » Medium: Express the original picture level. » High: Make the dark and middle gray level area darker.
Black Level	This function enables to select 'Low' or 'High' in the following mode: HDMI or DVI. » Low: The reflection of the screen gets darker. » High: The reflection of the screen gets brighter.

Adjusting aspect ratio

> 🛈 **NOTE**
>
> y You can also change the image size by accessing **Aspect Ratio** in the **PICTURE** menus.
> y You can adjust the enlarge proportion using the Navigation buttons.
> y When Tile Mode and OSD Pivot are set to On, only the aspect ratio of 16:9 and Just Scan are supported.

‑ **16:9**: Wides screen mode.

‑ **Just Scan**: Allows you to enjoy the transmitted data fully without any images cut off.
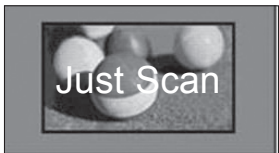
Just Scan

> 🛈 **NOTE**
>
> y If there is noise in original Picture, You can see the noise at the edge.

‑ **4:3**: This picture format is 4:3 aspect ratio.

Supported Aspect Ratio

	RGB	**HDMI/DVI-D/DP-DTV**	**HDMI/DVI-D/DP-PC**
16:9	**X**	**O**	**X**
Just Scan	**O**	**O**	**O**
4:3	**O**	**O**	**O**

OPTION Settings

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1 Press **SETTINGS** to access the menu.
2 Press the Navigation buttons to scroll to **OPTION** and press **OK**.
3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
   - To return to the previous level, press ↰ (**BACK**).
4 When you are finished, press **EXIT**.

• Image shown may differ from your monitor.

OPTION   ↔ Move   ◉ OK

• Language
• ISM Method   : Panel ISM On
• ISC Method
• Factory Reset
• Set ID   : 1
• Tile Mode
• DPM   : Off
• OSD Pivot
• Power On Delay : Off
• Align Pattern   : Off
• APL ID   : ON
• Pentouch ID   : 0
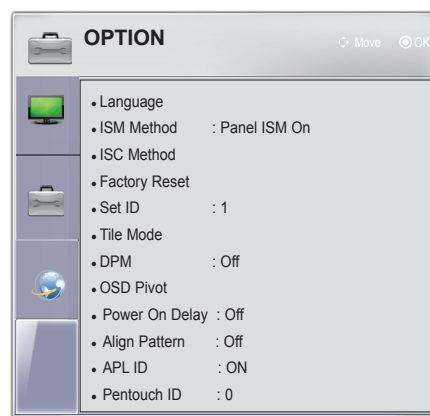
Setting	Description
Language	Selects a language for the display.
ISM Method	A frozen or still picture displayed on the screen for prolonged periods will result in a ghost image remaining even when you change the image. Avoid allowing a fixed image to remain on the screen for prolonged periods.
	Mode
	Panel ISM Off/On — If image sticking is never a problem, ISM is not necessary - set to Panel ISM Off.
	Orbiter — Orbiter may help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen. To avoid a permanent image on the screen, the screen will move every 2 minutes.
	Color Wash — Removes a ghost image on the screen. The color block with the screen moved a little and the white pattern are alternately displayed. It is difficult to sense the afterimage occurred while the temporary afterimage is removed and the color pattern is operating.
	White Wash — Removes a ghost image on the screen. White wash removes permanent images from the screen. Note: An excessive permanent image may be impossible to clear entirely with White Wash.
ISC Method	The ISC method reduces image sticking, which occurs when a fixed image is played for a long period of time. (Contact your installation company for details about this function and more information on how to use it.)
Factory Reset	This function initializes all settings. When the Factory Reset is completed, you must restart the Initializing setup.
Set ID	When controlling multiple monitors with the RS232C control or the remote control, each monitor can be identified with its monitor ID.

Setting	Description
Tile Mode	Tile mode choose Tile alignment and set the ID of the current product to set location.
	Option
	Tile mode: Row x Column = 254 available. Configuration of an integration screen is also available as well as configuration of One by one Display. It is used to enlarge the screen and also used with several products to view screen. **Tile ID**: The Tile ID determines the location of the Tile.
	Auto Config-ure: Automatically adjusts the picture position and minimizes image instability. After adjustment, if the image is still not correct, your Monitor is functioning properly but needs further adjustment. This function is for automatic adjustment of the screen position, size, and phase The displayed image will be unstable for a few seconds while the auto configuration is in progress.
	Position: If the picture is not clear after auto adjustment and especially if characters are still trembling, adjust the picture position manually.
	Size: This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.
	Natural: The image is omitted by the distance between the screens to be naturally shown. **Natural Size**: Adjusts the distance between screens.
	Reset: Returns Position, Size and Phase to the factory default settings.
DPM	A user can choose to turn the power saving mode on / off.
OSD Pivot	The OSD appears vertically. When the panels are installed vertically, set the OSD Pivot option to On.
Power On Delay	When connecting multiple monitors and turning the power on, the monitors are turned on at different intervals to prevent overload.
Align Pattern	Adjusts the balance vertically and horizontally during the initial installation of the set.
APL ID	Enables APL communication only with sets that have the same APL IDs. (If it is set to "ON", APL communication is available regardless of the APL IDs.)
Pentouch ID	When used as an e-MultiBoard, set the Pentouch ID as shown in the reference guide. (refer to page 31~33)

NETWORK Settings

1 Press **SETTINGS** to access the menu.
2 Press the Navigation buttons to scroll to **NETWORK** and press **OK**.
3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
   - To return to the previous level, press ↰ (**BACK**).
4 When you are finished, press **EXIT**.

• Image shown may differ from your monitor.
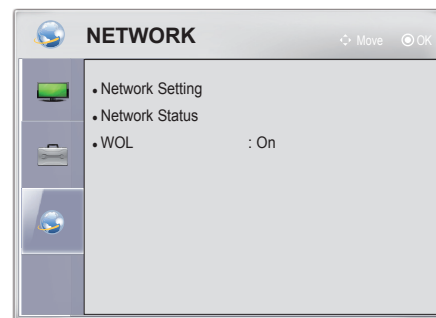
Setting	Description
Network Setting	Configure the network settings.
Network Status	Display the network status. - Internet is connected : Extermally connected - Network is connected : Only internally connected - Not connected : When there is no network connection
WOL (Wake-on-LAN)	To turn on the TV via the network. The initial settings is OFF. Set to ON to use this feature.

TROUBLESHOOTING

Abnormal operation

Problem	Resolution
The remote control doesn't work	• Check to see if there is any object between the Monitor and the remote control causing an obstruction. Ensure you are pointing the remote control directly at the Monitor. • Ensure that the batteries are installed with correct polarity (+ to +, - to -). • Install new batteries.
Monitor turns off suddenly	• Is the sleep timer set? • It can be turned off by DPM(Display power management). Check the DPM functions.

Video problems

Problem	Resolution
No picture	• Check whether the product is turned on. • Is the power cord inserted into wall power outlet? • Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.
Picture appears slowly after switching on	• This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.
No or poor color or poor picture	• Adjust Color in menu option. • Keep a sufficient distance between the product and the VCR. • Are the video cables installed properly? • Activate any function to restore the brightness of the picture.
Horizontal/vertical bars or picture shaking	• Check for local interference such as an electrical appliance or power tool.
No picture when connecting HDMI	• If the HDMI cables don't support High Speed HDMI, it can cause flickers or no screen display. In this case use the latest cables that support High Speed HDMI.
Brightness is significantly different from monitor to monitor.	• Check that the dip switch of the monitor is set correctly. • Check that the brightness adjustment connector is working correctly.

Audio problems

Problem	Resolution
Unusual sound from inside the product	• A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a fault with the product.

PC Mode problems

Problem	Resolution
The signal is out of range	• Adjust resolution, horizontal frequency, or vertical frequency on the PC. • Check the input source.
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	• Activate the Auto configure feature or adjust size, phase, or H/V position. (Option)
Screen color is unstable or single color	• Check the signal cable. • Reinstall the PC video card.

Pentouch problems

Problem	Resolution
The touch pen is not working.	• Press the OK button on the remote control to check whether "Pentouch" appears or not. • Check that the USB dongle is connected to the PC and the red LED is turned on. • Press the Power button on the pen and check that the power is turned on. • Remove all USB dongles from the PC to reconnect them and check the operation. • If the pen is still not working, initialize every pen and re-pair it to each dongle, then check the operation.
The pen touch appears in an incorrect position.	• Check that the graphic card settings are normal. • Press the SETTINGS button to check if the settings for OPTION > e-Multiboard Mode is correct. • See the below to check whether the Pen setting is correct when installing LG Pentouch Multi-touch Driver. • Check whether the Dip switch is set correctly following the order in the manual.
The pen touch does not appear smoothly.	• Check that the distance between the USB dongle and the pen is not too great, and check that there are no barriers in between. • Check whether too many applications are running on the PC.

* How to check the Pen settings during the LG Pentouch Multi-touch Driver installation

1. Click Start, enter "Regedit" and press the Enter key.
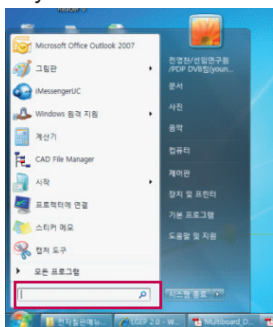
2. Follow the path below and check the registry value.

(HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > Lgptdriver > Parameters)

3. Each registry value means:

- MonitorCount : The number of monitors installed in length and width each.
  (for example, 3 x 2: 00030002, 5 x 1: 00050001)

- MonitorMode : 0 means that the monitors are installed in landscape mode and 1 means that the monitors are installed in portrait mode.

- Do not change values of a PenCount and TouchIdFixed.

SPECIFICATIONS

MODELS		C60PW130-WA
Dimensions (W x H x D)	TV	1322.1 mm x 745.5 mm x 55 mm
	TV + BOX PACKING	1458 mm x 869 mm x 314 mm
Weight	TV	33 kg
	TV + BOX PACKING	40.8 kg
Power requirement		AC 110 - 240 V~ 50 / 60 Hz

Environment condition	Operating Temperature Operating Humidity	0 °C to 40 °C Less than 80 %
	Storage Temperature Storage Humidity	-20 °C to 60 °C Less than 85 %

Product specifications shown above may be changed without prior notice due to upgrade of product functions.
For the power supply and power consumption, refer to the label attached to the product.

MULTI-OUTLET POWER STRIP SPECIFICATIONS

Specification

- Type : Outlets with surge protector and safety ground
- Electrical Spec : 250V, 3.2A or higher per hole / 125V, 7A or higher per hole.
  Multi-outlet total wattage should be determined by considering each hole specification and the number of plugged display pieces.
- Special function : Overload blocking.

Warnings & Recommendations

- Do not plug other electrical products or equipments into the multi-outlet that is used for this product.
- It is recommended to plug the multi-outlet power strip into the wall outlet that is considered total wattage or higher.
- It is recommended to use the multi-outlet certified by safety standards in your country.

Safety Standard

	Mark
Japan	
China	
Taiwan	
Singapore	
Mexico	
Argentina	

Use the multi-outlet certified by safety standards in your country except for the countries mentioned above.

RGB Input (PC)

	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	640x350	31.468	70.09
2	720x400	31.469	70.08
3	640x480	31.469	59.94
4	800x600	37.879	60.31
5	1024x768	48.363	60.00
6	1280x768	47.776	59.870
7	1360x768	47.712	60.015
8	1280x1024	63.981	60.020
9	1600x1200	75.00	60.00

DVI input (PC)

	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	640x350	31.468	70.09
2	720x400	31.469	70.08
3	640x480	31.469	59.94
4	800x600	37.879	60.31
5	1024x768	48.363	60.00
6	1280x768	47.776	59.87
7	1360x768	47.712	60.015
8	1365x768	47.71	59.79
9	1280x1024	63.981	60.02
10	1600x1200	75.00	60.00
11	1920x1080	67.5	60.00

DVI input (DTV)

	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	720x480	15.75	60.00
2	720x480	15.73	59.94
3	720x576	15.625	50.00
4	720x480	31.47	59.94
5	720x480	31.5	60.00
6	720x576	31.25	50.00
7	1280x720	44.96	59.94
8	1280x720	45.00	60.00
9	1280x720	37.5	50.00
10	1920x1080	33.72	59.94
11	1920x1080	33.75	60.00
12	1920x1080	28.125	50.00
13	1920x1080	67.432	59.94
14	1920x1080	67.5	60.00
15	1920x1080	56.25	50.00
16	1920x1080	27.00	24.00
17	1920x1080	33.75	30.00

HDMI/Display Port Input (PC)

	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	640x350	31.468	70.09
2	720x400	31.469	70.08
3	640x480	31.469	59.94
4	800x600	37.879	60.31
5	1024x768	48.363	60.00
6	1360x768	47.712	60.015
7	1365x768	47.71	59.79
8	1280x1024	63.981	60.02
9	1600x1200	75.00	60.00
10	1920x1080	67.5	60.00

HDMI/Display Port input (DTV)

	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	720x480	15.75	60.00
2	720x480	15.73	59.94
3	720x576	15.625	50.00
4	720x480	31.47	59.94
5	720x480	31.5	60.00
6	720x576	31.25	50.00
7	1280x720	44.96	59.94
8	1280x720	45.00	60.00
9	1280x720	37.5	50.00
10	1920x1080	33.72	59.94
11	1920x1080	33.75	60.00
12	1920x1080	28.125	50.00
13	1920x1080	67.432	59.94
14	1920x1080	67.5	60.00
15	1920x1080	56.25	50.00
16	1920x1080	27.00	24.00
17	1920x1080	33.75	30.00

IR CODES

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
95	ENERGY SAVING	Remote control Button	5B	EXIT	Remote control Button
0B	INPUT	Remote control Button	D5	RGB	Remote control Button
99	AUTO CONFIG	Remote control Button	C6	DVI-D	Remote control Button
10	0	Remote control Button	CE	HDMI	Remote control Button
11	1	Remote control Button	08	POWER	Remote control Button
12	2	Remote control Button	72	Red	Remote control Button
13	3	Remote control Button	71	Green	Remote control Button
14	4	Remote control Button	63	Yellow	Remote control Button
15	5	Remote control Button	61	Blue	Remote control Button
16	6	Remote control Button	4D	PICTURE MODE	Remote control Button
17	7	Remote control Button	F6	CONTRAST +	Remote control Button
18	8	Remote control Button	F7	CONTRAST -	Remote control Button
19	9	Remote control Button	04	APL	Remote control Button
56	SET ID	Remote control Button	E0	BRIGHTNESS +	Remote control Button
46	SET ALL	Remote control Button	E1	BRIGHTNESS -	Remote control Button
7B	TILE MODE	Remote control Button	7D	Data Back up	Remote control Button
6B	TOUCH	Remote control Button	5F	DP	Remote control Button
C9	ISC	Remote control Button			
43	SETTINGS	Remote control Button			
83	ISM	Remote control Button			
06	**>** (Arrow Key)	Remote control Button			
07	**<** (Arrow Key)	Remote control Button			
40	∧ (Arrow Key)	Remote control Button			
41	∨ (Arrow Key)	Remote control Button			
44	OK	Remote control Button			
28	BACK	Remote control Button			

EXTERNAL CONTROL DEVICE SETUP

RS-232C Setup

Connect the RS-232C (serial port) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.
Connect the serial port of the control device to the RS-232C jack on the product back panel.

> **NOTE**
>
> • RS-232C on this monitor is intended to be used with third party RS-232C control hardware and software. The instructions below are provided to help with programming software or to test functionality using telenet software.
> • RS-232C connection cables are not supplied with the product.

Type of connector; D-Sub 9-Pin Male
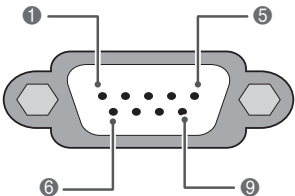
No.	Pin name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection

RS-232C Configurations

7-Wire Configurations (Standard RS-232C cable)		
	PC	Monitor
RXD	2 ●━━━● 3	TXD
TXD	3 ●━━━● 2	RXD
GND	5 ●━━━● 5	GND
DTR	4 ●━━━● 6	DSR
DSR	6 ●━━━● 4	DTR
RTS	7 ●━━━● 8	CTS
CTS	8 ●━━━● 7	RTS
	D-Sub 9	D-Sub 9

3-Wire Configurations (Not standard)		
	PC	Monitor
RXD	2 ●━━━● 3	TXD
TXD	3 ●━━━● 2	RXD
GND	5 ●━━━● 5	GND
DTR	4	6	DTR
DSR	6	4	DSR
RTS	7	7	RTS
CTS	8	8	CTS
	D-Sub 9	D-Sub 9

Set ID

Set ID number. "**Real Data Mapping**" (See p.89)
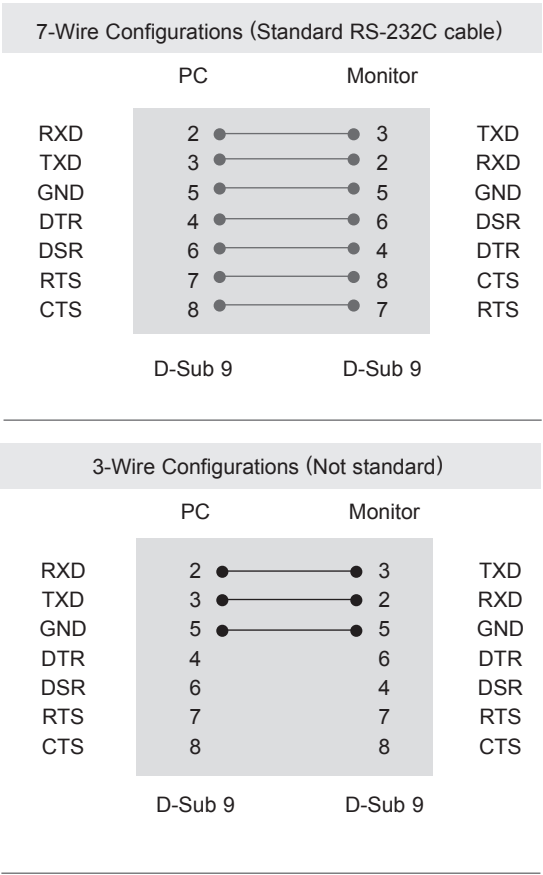
Communication Parameters

- Baud rate: 9600 bps (UART)
- Data length: 8 bits
- Parity: None

- Stop bit: 1 bit
- Communication code: ASCII code
- Use a crossed (reverse) cable.

Command reference list

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	00 to 01	19. Tile V Position	d	f	00 to 64
02. Input select	x	b	See p.85	20. Tile ID	d	i	See p.87
03. Aspect Ratio	k	c	See p.85	21. Tile H Size	d	g	00 to 64
04. Screen Mute	k	d	See p.85	22. Tile V Size	d	h	00 to 64
05. Contrast	k	g	00 to 64	23. Natural Mode	d	j	00 to 01
06. Brightness	k	h	00 to 64	24. Natural Size	o	n	00 to 14
07. Color	k	i	00 to 64	25. Picture Mode	d	x	01, 03
08. Tint	k	j	00 to 64	26. Fan Fault Check	d	w	FF
09. Sharpness	k	k	00 to 32	27. Elapsed Time Return	d	l	FF
10. OSD Select	k	l	00 to 01	28. Temperature Value	d	n	FF
11. Remote Control Lock	k	m	00 to 01	29. Power On Delay	f	h	See p.88
12. Color Temperature	x	u	00 to 64	30. Language	f	i	00 to 0c
13. ISM Method	j	p	See p.87	31. Reset	f	k	00 to 02
14. Energy Saving	j	q	00 to 01	32. H Position	f	q	00 to 64
15. Auto Configuration	j	u	01	33. V Position	f	r	00 to 64
16. Key	m	c	See p.87	34. H Size	f	s	00 to 64
17. Tile Mode	d	d	See p.87	35. Serial No.	f	y	FF
18. Tile H Position	d	e	00 to 64	36. S/W Version	f	z	FF

> **NOTE**
>
> - For Tile H Position, Tile V Position, Tile H Size, Tile V Size, H Position, V Position, H Size Command
>   - The default value is Data 32H.
>   - The allowed range differs depending on the input and resolution.
>   - When the entered data is out of the allowed range (within 0H to 64H of the data range), an error occurs in ACK.

Transmission / Receiving Protocol

Transmission

[Command1][Command2][ ][Set ID][ ][Data][Cr]

[Command 1]   First command to control the set. (Z)
[Command 2]   Second command to control the set.
[Set ID]   Set ID wants to communicate with the multi vision

                      Command for test is 00.
[Data]   The information passed to the multi vision
[Cr]   Carriage Return
                      ASCII code '0x0D'
[   ]   ASCII code 'space (0x20)'

OK Acknowledgement

[Command2][ ][Set ID][ ][OK][Data][x]

[Command 2]   Use as command
[Set ID]   Set ID of the multi vision which responded.
[Data]   Getting at multi vision.

01. Power (Command: k a)

► To control Power On/Off of the e-MultiBoard.

  Transmission [k][a][ ][Set ID][ ][Data][Cr]

Data 00 : Power Off   01 : Power On

  Ack [a][ ][Set ID][ ][OK/NG][Data][x]

* In a like manner, if other functions transmit 'FF' data based on this format, Acknowledgement data feedback presents status about each function.

* Note: In this model, e-MultiBoard will send the Acknowledge after power on processing completion.

  There might be a time delay between command and acknowledge.

02. Input Select (Command: x b)

► To select input source for e-MultiBoard.

  Transmission [x][b][ ][Set ID][ ][Data][Cr]

Data 60: RGB-PC
        C0: DP
        90: HDMI
        92: DVI-D

  Ack [b][ ][Set ID][ ][OK/NG][Data][x]

03. Aspect Ratio (Command: k c)

► To adjust the screen format.

  Transmission [k][c][ ][Set ID][ ][Data][Cr]

Data 01: 4:3
        02: 16:9
        09: Just scan

When Tile Mode and OSD Pivot are set to On, only the aspect ratio of 16:9 and JustScan are supported.

* This function is unavailable in pen touch mode.

04. Screen Mute (Command: k d)

► To select screen mute on/off.

  Transmission [k][d][ ][Set ID][ ][Data][Cr]

Data 00: Screen mute off (Picture on), Video-out Mute off
        01: Screen mute on (Picture off)
        10: Video-out Mute on

  Ack [d][ ][Set ID][ ][OK/NG][Data][x]

* In case of Video-out Mute on only, e-MultiBoard will display On Screen Display (OSD). But, in case of screen mute on, e-MultiBoard will not display On Screen Display (OSD).

05. Contrast (Command: k g)

► To adjust screen contrast.
You can also adjust contrast in the PICTURE menu.

  Transmission [k][g][ ][Set ID][ ][Data][Cr]

The data range is from 00 to 64 (in Hex)
* Refer to 'Real data mapping'. See p.89.

  Ack [g][ ][Set ID][ ][OK/NG][Data][x]

06. Brightness (Command: k h)

► To adjust screen brightness.
You can also adjust brightness in the PICTURE menu.

  Transmission [k][h][ ][Set ID][ ][Data][Cr]

The data range is from 00 to 64 (in Hex)
* Refer to 'Real data mapping'. See p.89.

  Ack [h][ ][Set ID][ ][OK/NG][Data][x]

07. Color (Command: k i)

► To adjust screen color.
You can also adjust color in the PICTURE menu.

  Transmission [k][i][ ][Set ID][ ][Data][Cr]

The data range is from 00 to 64 (in Hex)
* Refer to 'Real data mapping '. See p.89.

  Ack [i][ ][Set ID][ ][OK/NG][Data][x]

08. Tint (Command: k j)

► To adjust screen tint.
You can also adjust tint in the PICTURE menu.

  Transmission [k][j][ ][Set ID][ ][Data][Cr]

 Data Red 00: - Green: 64 (*transmit by Hexadecimal code)

* Refer to 'Real data mapping'. See p.89.

  Ack [j][ ][Set ID][ ][OK/NG][Data][x]

09. Sharpness (Command: k k)

► To adjust screen sharpness.
You can also adjust sharpness in the Picture menu.

  Transmission [k][k][ ][Set ID][ ][Data][Cr]

The data range is from 00 to 32 (in Hex)
* Refer to 'Real data mapping'. See p.89.

  Ack [k][ ][Set ID][ ][OK/NG][Data][x]

10. OSD Select (Command: k l)

► To select OSD (On Screen Display) on/off.

  Transmission [k][l][ ][Set ID][ ][Data][Cr]

 Data   00: OSD off
        01: OSD on

  Ack [l][ ][Set ID][ ][OK/NG][Data][x]

11. Remote Control Lock Mode (Command: k m)

► To lock the remote control.

  Transmission [k][m][ ][Set ID][ ][Data][Cr]

 Data   00: Lock off
        01: Lock on

  Ack [m][ ][Set ID][ ][OK/NG][Data][x]

If you're not using the remote control controls on the e-MultiBoard, use this mode. When main power is on/off, remote control lock is released.

12. Color Temperature (Command: x u)

► To adjust color temperature.
You can also adjust color temperature in the Picture menu.

  Transmission [x][u][ ][Set ID][ ][Data][Cr]

The data range is from 00 to 64 (in Hex)
* Refer to 'Real data mapping'. See p.89.

  Ack [u][ ][Set ID][ ][OK/NG][Data][x]

13. ISM Method (Command: j p)

► To avoid having a fixed image remain on screen.

Transmission [j][p][ ][Set ID][ ][Data][Cr]

Data 02: Orbiter
04: White Wash
08: Panel ISM On
20: Color Wash
88: Panel ISM Off

Ack [p][ ][Set ID][ ][OK/NG][Data][x]

14. Energy Saving (Command: j q)

► To control the energy saving function.

Transmission [j][q][ ][Set ID][ ][Data][Cr]

Data 00: Off
01: On

Ack [q][ ][Set ID][ ][OK/NG][Data][x]

15. Auto Configuration (Command: j u)

► To adjust picture position and minimize image shaking automatically.
Auto configuration only works in RGB-PC mode.

Transmission [j][u][ ][Set ID][ ][Data][Cr]

Data 01: To set

Ack [u][ ][Set ID][ ][OK/NG][Data][x]

16. Key (Command: m c)

► To send IR remote control code.

Transmission [m][c][ ][Set ID][ ][Data][Cr]

Ack [c][ ][Set ID][ ][OK/NG][Data][x]

17. Tile Mode(Command : d d)

► Change a Tile Mode.

Transmission [d][d][][Set ID][][Data][Cr]

Ack [d][ ][Set ID][ ][OK/NG][Data][x]

Data	Description
0000 :	Tile mode is off
0102 :	1 x 2 mode(row x column)
0103 :	1 x 3 mode
0104 :	1 x 4 mode
⋮	
FE01	row x column < 255

* The maximum value changes depending on the installation method.

18. Tile H Position(Command : d e)

► To set the Horizontal position.

Transmission [d][e][][Set ID][][Data][Cr]

Data Min : 00H ~ Max : 64H
* Refer to 'Real data mapping'. See p.89.

Ack [e][ ][Set ID][ ][OK/NG][Data][x]

19. Tile V Position(Command : d f)

► To set the Vertical position.

Transmission [d][e][][Set ID][][Data][Cr]

Data Min : 00H ~ Max : 64H
* Refer to 'Real data mapping'. See p.89.

Ack [f][ ][Set ID][ ][OK/NG][Data][x]

20. Tile ID (Command : d i)
► To assign the Tile ID for Tiling function.

  Transmission [d][i][][Set ID][][Data][x]

Data Min : 01H ~ FEH
     Auto : 00H
(Hexadecimal code)

  Ack [i][ ][Set ID][][OK/NG][Data][x]

* The maximum value changes depending on the instal-
lation method.

21. Tile H Size (Command : d g)
► To set the Horizontal size.

  Transmission [d][g][][Set ID][][Data][Cr]

Data Min : 00H ~ Max : 64H
* Refer to 'Real data mapping'. See p.89.

  Ack [g][ ][Set ID][ ][OK/NG][Data][x]

22. Tile V Size(Command : d h)
► To set the Vertical size.

  Transmission [d][h][][Set ID][][Data][Cr]

Data Min : 00H ~ Max : 64H
* Refer to 'Real data mapping'. See p.89.

  Ack [h][ ][Set ID][ ][OK/NG][Data][x]

23. Natural Mode (In Tile mode) (Command : d j)
► To assign the Tile Natural mode for Tiling function.

  Transmission [d][j][][Set ID][][Data][Cr]

Data 0: Natural Off
     1: Natural On

  Ack [j][ ][Set ID][ ][OK/NG][Data][x]

24. Natural Size (In Tile Mode) (Command : on)
► To adjust the distance between screens for Tiling function.

  Transmission [o][n][][Set ID][][Data][Cr]

Data Min : 00H ~ Max : 14H

  Ack [n][ ][Set ID][ ][OK/NG][Data][x]

25. Picture Mode (Command : d x)
► To adjust the picture mode.

  Transmission [d][x][][Set ID][][Data][Cr]

 Data   01: Standard
        03: Studio

  Ack [x][ ][Set ID][ ][OK/NG][Data][x]

26. Fan Fault Check (Command : d w)
► To check the Fan fault.

  Transmission [d][w][][Set ID][][Data][Cr]

The data is always FF (in Hex).
Data ff: Read Status

  Ack [w][ ][Set ID][ ][OK/NG][Data][x]

* Data is the status value of the Fan fault.
 Data   00: Fan fault
        01: Fan OK

27. Elapsed time return (Command : d l)
► To read the panel used time.

  Transmission [d][l][][Set ID][][Data][Cr]

The data is always FF (in Hex).

  Ack [l][ ][Set ID][ ][OK/NG][Data][x]

The data means used hours
(Hexadecimal code)

28. Temperature value (Command : d n)

▶ To read the inside temperature value.

    Transmission [d][n][][Set ID][][Data][Cr]

The data is always FF (in Hex).

    Ack [n][ ][Set ID][ ][OK/NG][Data][x]

The data means temperature value
(Hexadecimal code)

29. Power On Delay (Command: f h)

▶ Set the schedule delay when the power is turned on (Unit: second)

    Transmission [f][h][][Set ID][][Data1][][Data2][Cr]

Data1		Data2	
Manual	0	Delay	00H~64H
Auto	1:	Interval	00H~03H

        (* 00H: Off)
* Refer to 'Real data mapping'. See p.89.

    Ack [h][][Set ID][][OK/NG][Data][x]

---

* Real data mapping

00 :	Step 0
⋮	
A :	Step 10 (Set ID 10)
⋮	
F :	Step 15 (Set ID 15)
10 :	Step 16 (Set ID 16)
32 :	Step 50
64 :	Step 100
⋮	
6E :	Step 110
⋮	
73 :	Step 115
74 :	Step 116
⋮	
CF :	Step 199
⋮	
FE :	Step 254
FF :	Step 255

---

30. Language (Command : f i)

▶ Set the OSD language.

    Transmission [f][i][][Set ID][][Data][Cr]

Data	0:	Korean	7:	Portuguese
	1:	Chinese	8:	Spanish(EU)
	2:	Japanese	9:	Arabic
	3:	English	a:	Persian
	4:	French	b:	Turkish
	5:	German	c:	Russian
	6:	Spanish (SCA)		

    Ack [i][ ][Set ID][ ][OK/NG][Data][x]

31. Reset (Command : f k)

▶ Execute the Picture, Screen and Factory Reset functions.

    Transmission [f][k][][Set ID][][Data][Cr]

Data	0:	Picture Reset
	1:	Screen Reset
	2:	Factory Reset

    Ack [k][ ][Set ID][ ][OK/NG][Data][x]

32. H Position (Command : f q)

▶ To set the Horizontal position.

    Transmission [f][q][][Set ID][][Data][Cr]

The data range is from 00 to 64 (in Hex)
* Refer to 'Real data mapping'. See p.89.

    Ack [q][ ][Set ID][ ][OK/NG][Data][x]

* This function is only working in Tile Off Mode.

33. V Position (Command : f r)

▶ To set the Vertical Position.

    Transmission [f][r][][Set ID][][Data][Cr]

The data range is from 00 to 64(in Hex)
* Refer to 'Real data mapping'. See p.89.

    Ack [r][ ][Set ID][ ][OK/NG][Data][x]

* This function is only working in Tile Off Mode.

34. H Size (Command : f s)

▶ To set the Horizontal size.

  Transmission [f][s][][Set ID][][Data][Cr]

The data range is from 00 to 64 (in Hex)
* Refer to 'Real data mapping'. See p.89.

  Ack [s][ ][Set ID][ ][OK/NG][Data][x]

* This function is only working in Tile Off Mode.

35. Serial No.Check (Command : f y)

▶ To read the serial numbers.

  Transmission [f][y][][Set ID][][Data][Cr]

Data FF (to read the serial numbers)

  Ack [y][ ][Set ID][ ][OK/NG][Data][x]

36. S/W Version (Command : f z)

▶ Check the software version.

  Transmission [f][z][][Set ID][][Data][Cr]

Data FF (to read the S/W version)

  Ack [z][ ][Set ID][ ][OK/NG][Data][x]

ENGLISH

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Model Number/Range	C60PW130

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Discusses general use and applications of FreeType, as well as future and wanted additions to the library and distribution. If you are looking for support, start in this list if you haven't found anything to help you in the documentation.

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