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Printed in Korea

LG OLED TV

OWNER'S MANUAL

Safety and Reference

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

OLED77M3PUA	OLED77M3YUA
OLED83M3PUA	OLED83M3YUA

The model and serial number of the product are located on the back and on one side of the product. Record them below in case you ever need service.

Model _____

Serial No. _____

MFL71946336 2408 REV04

Supplier`s Declaration of Conformity

Trade Name	LG
Responsible Party	LG Electronics USA, Inc.
Address	111 Sylvan Avenue, North Building, Englewood Cliffs, NJ 07632
E-mail	lg.environmental@lge.com

LG Customer Information Center

For inquires or comments, visit www.lg.com or call;

1-800-243-0000	USA, Consumer User
1-888-865-3026	USA, Commercial User
1-888-542-2623	CANADA

Register your product Online!

www.lg.com

Important Safety Instruction

- 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 (including 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 the 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 lightning 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.

By using this product, you agree that all disputes between you and LG arising out of or relating in any way to this product (including but not limited to warranty disputes) shall be resolved exclusively through binding arbitration on an individual basis. The terms of the arbitration agreement (including details on the procedure for resolving disputes) is available at www.lg.com/us/arbitration (USA) or www.lg.com/ca_en/arbitration (Canada).

Before reading this manual

- Read this manual thoroughly before operating your product, and keep it for future reference.
- On the website you can download the manual including installation, using, troubleshooting, specifications, license etc and view its contents on your PC or mobile device.
- **User Guide:** For more information about this TV, read the USER GUIDE embedded in the product.
  - To open the USER GUIDE ⚙ → [⚙] → [Support] → [User Guide]

Optional Extras

- Optional extras can be changed or modified for quality improvement without any notification. Contact your dealer for buying these items. These devices work only with certain models.
- The model name or design may be changed depending upon the upgrade of product functions, manufacturer's circumstances or policies.
- A cable to connect antennas and external devices must be purchased separately.

✅ Note
- Product specifications or contents of this manual may be changed without prior notice due to upgrade of product functions.
- The items supplied with your product may vary depending upon the model.
- Image shown may differ from your TV.

Warning! Safety instructions

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

This symbol 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.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this apparatus.

WARNING : TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

- TO PREVENT THE SPREAD OF FIRE, KEEP CANDLES OR OTHER ITEMS WITH OPEN FLAMES AWAY FROM THIS PRODUCT AT ALL TIMES.
- **Do not place the product and/or remote control in the following environments:**
  - Keep the product away from 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.
  - 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).
  - Near flammable objects such as gasoline or candles, or expose the product to direct air conditioning.
  - Do not install in excessively dusty places.
  - On unsecured or high furniture, such as shelves or bookshelves.

  Otherwise, this may result in fire, electric shock, combustion/explosion, malfunction or product deformation.
- **Ventilation**
  - Install your product where there is proper ventilation. Do not install in a confined space such as a bookcase.
  - Do not install the product on a carpet or cushion.
  - Do not block or cover the product with cloth or other materials while unit is plugged in.
- Take care not to touch the ventilation openings. When watching the product for a long period, the ventilation openings may become hot.
- Keep a distance of at least 10 cm (3.9 inches) away from other objects so that the vents of the Zero Connect Box are not blocked.
  - An increase in the internal temperature of the product may result in fire and product failure.
- 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 device.

- Do not move the product whilst the Power cord is plugged in.
- Do not use a damaged or loosely fitting power cord.
- Be sure to grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the product.
- Do not connect too many devices to the same AC power outlet as this could result in fire or electric shock.
- **Disconnecting the Device from the Main Power**
  - The power plug is the disconnecting device. In case of an emergency, the power plug must remain readily accessible.
- Do not let your children climb or cling onto the product. Otherwise, the product may fall over, which may cause serious injury.
- **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 vicinity 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 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 supporting 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
- Never touch this apparatus or antenna during a lightning storm. You may be electrocuted.
- Make sure the power cord is connected securely to the product and wall socket if not secured damage to the Plug and socket may occur and in extreme cases a fire may break out.

- Do not insert metallic or inflammable objects into the product. If a foreign object is dropped into the product, unplug the power cord and contact the customer service.
- Do not touch the end of the power cord while it is plugged in. You may be electrocuted.
- **If any of the following occur, unplug the product immediately and contact your local customer service.**
  - The product has been damaged.
  - If water or another substance enters the product (like an AC adapter, power cord, or product).
  - If you smell smoke or other odors coming from the product.
  - When lightning storms or when unused for long periods of time.

  Even the product is turned off by remote control or button, AC power source is connected to the unit if not unplugged in.
- Do not use high voltage electrical equipment near the product (e.g., a bug zapper). This may result in product malfunction.
- Do not attempt to modify this product in any way without written authorization from LG Electronics. Accidental fire or electric shock can occur. Contact your local customer service for service or repair. Unauthorized modification could void the user's authority to operate this product.
- Use only an authorized attachments / accessories approved by LG Electronics. Otherwise, this may result in fire, electric shock, malfunction, or product damage.
- Never disassemble the AC adapter or power cord. This may result in fire or electric shock.
- Handle the adapter carefully to avoid dropping or striking it. Do not subject the adaptor to external shock. An impact could damage the adapter.
- To reduce the risk of fire or electrical shock, do not touch the product with wet hands. If the power cord prongs are wet or covered with dust, dry the power plug completely or wipe dust off.
- **Batteries**
  - Store the accessories (battery, etc.) in a safe location out of the reach of children.
  - Do not short circuit, disassemble, or allow the batteries to overheat. Do not dispose of batteries in a fire. Batteries should not be exposed to excessive heat.
  - Caution: Use the correct batteries for the product. Risk of fire or explosion if the battery is replaced by an incorrect type.

- **Moving**
  - When 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 products. Do not press or put stress on the front panel of the product. Otherwise, this may result in product damage, fire hazard or injury.
- Keep the packing anti-moisture material or vinyl packing out of the reach of children.
- Do not allow an impact shock, any objects to fall into the product, and do not drop anything onto the screen.
- Do not press strongly upon the panel with a hand or a sharp object such as a nail, pencil, or pen, or make a scratch on it. It may cause damage to screen.
- Do not hold the product screen, scratch the surface with a metal object, or apply impact to it.
  - The screen may break, resulting in personal injury or malfunction of the product.
- Do not push or kick the product.
- Do not place heavy objects on top of the product.
- Be careful if you have pets
- **Cleaning**
  - When cleaning, unplug the power cord and wipe gently with a soft/ dry cloth. Do not spray water or other liquids directly on the product. Do not clean your product with chemicals including glass cleaner, any type of air freshener, insecticide, lubricants, wax (car, industrial), abrasive, thinner, benzene, alcohol etc., which can damage the product and/or its panel. Otherwise, this may result in electric shock or product damage.

Installation

Lifting and moving the TV Screen

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

- It is recommended to move the TV screen in the box or packing material that the TV screen originally came in.
- Before moving or lifting the TV screen, disconnect the power cord and all cables.
- When holding the TV screen, the screen should face away from you to avoid damage.
- Hold the side and bottom of the TV screen frame firmly. Make sure not to hold the transparent part, speaker, or speaker grille area.
- Use at least two people to move a large TV screen.
- When transporting the TV screen, do not expose the TV screen to jolts or excessive vibration.
- When transporting the TV screen, keep the TV screen upright; never turn the TV screen on its side or tilt towards the left or right.
- When handling the TV screen, be careful not to damage the protruding buttons.

⚠

- Avoid touching the screen at all times, as this may result in damage to the screen.
- Do not place the product on the floor with its front facing down without padding. Failure to do so may result in damage to the screen.
- When attaching the stand to the TV set, place the screen facing down on a cushioned table or flat surface to protect the screen from scratches.

Mounting on the Table

(Depending upon model)

1 Lift and tilt the TV screen into its upright position on a table.
   - Leave a minimum of 10 cm (4 inches) space from the wall for proper ventilation, (Depending upon model).
2 Connect the power cord to a wall outlet.

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- Do not apply foreign substances (oils, lubricants, etc.) to the screw parts when assembling the product. (Doing so may damage the product.)
- Do not use any unapproved items to ensure the safety and lifespan of the product.
- Any damages or injuries by using unapproved items are not covered by the warranty.
- 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.
- When assembling the stand, ensure that all of the provided screws are attached. If the screws are not fully tightened, the product may tilt or tip over, resulting in damage. Tightening the screws with excessive force may cause them to come off due to abrasion of the screw joint.
- If the TV is placed on the stand, its screen may be tilted back slightly. If the stand is not level because an object is placed under the stand or it is not on a flat surface, the product may fall and cause injury or product damage, (Depending upon model).

Securing TV screen to the Wall

(Depending upon model)

1 Insert and tighten the eye-bolts, or TV brackets and bolts on the back of the TV.
   - If there are bolts inserted at the eye-bolts position, remove the bolts first.
2 Mount the wall brackets with the bolts to the wall. Match the location of the wall bracket and the eye-bolts on the rear of the TV.
3 Connect the eye-bolts and wall brackets tightly with a sturdy rope. Make sure to keep the rope horizontal with the flat surface.

- Use a platform or cabinet that is strong and large enough to support the TV securely.
- Brackets, bolts and ropes are not provided. You can obtain additional accessories from your local dealer.

Mounting to the Wall

(Depending upon model)

An optional wall mount can be used with your LG Television. Consult with your local dealer for a wall mount that supports the VESA standard used by your TV model. Carefully attach the wall mount bracket at the rear of the TV. Install the wall mount bracket on a solid wall perpendicular to the floor. If you are attaching the TV to other building materials, please contact qualified personnel to install the wall mount. Detailed instructions will be included with the wall mount. We recommend that you use an LG brand wall mount. The LG wall mount is easy to adjust or to connect the cables. When you do not use LG's wall mount bracket, use a wall mount bracket where the device is adequately secured to the wall with enough space to allow connectivity to external devices. If you are using a non-adjustable mount, attach the mount to the wall. Attach the cables to the TV first, then attach the TV to the mount.

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- Remove the stand before installing the TV on a wall mount by performing the stand attachment in reverse.
- For more information of screws and wall mount bracket, refer to the Separate purchase.
- 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.
- When mounting a TV on the wall, make sure not to install the TV by hanging the power and signal cables on the back of the TV.
- Do not install this product on a wall if it could be exposed to oil or oil mist. This may damage the product and cause it to fall.
- When installing the Full Contact Wall Mount, the TV may not be contacted firmly against the wall due to some wall conditions.

Antenna/Cable

Connect an antenna, cable, or cable box to watch TV while referring to the following. The illustrations may differ from the actual items and an RF cable is optional.
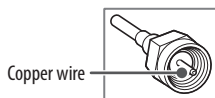
Copper wire

- Make sure not to bend the copper wire of the RF cable.
- Complete all connections between devices, and then connect the power cord to the power outlet to prevent damage to your TV.
- Use a signal splitter to use 2 TVs or more.
- DTV Audio Supported Codec: MPEG, Dolby Digital
- This TV cannot receive Ultra HD (3840 x 2160 pixels) broadcasts directly because the related standards have not been confirmed (Depending upon country).

Starting TV

Turning on the TV

You can simply operate the TV functions, using the button.
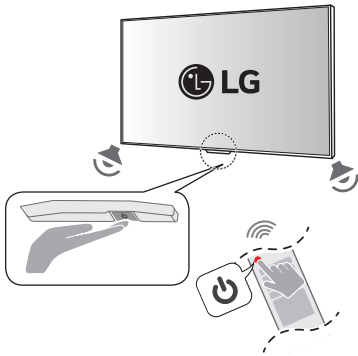
Power On (Press)
Power Off[1] (Press and Hold)
Menu Control (Press[2])
Menu Selection (Press and Hold[3])

1) All running apps will close.

2) You can access and adjust the menu by pressing the button when TV is on.

3) You can use the function when you access menu control.

✅ Note

- When the TV is turned on for the first time after being shipped from the factory, initialization of the TV may take approximately one minute.
- Your TV's OSD (On Screen Display) may differ slightly from that shown in this manual.
- The device must be easily accessed to a location outlet near the access. Some devices are not made by turning on / off button, turning off the device and unplugging the power cord.
- Only use the power button when the TV screen and the Zero Connect Box are connected.

Using hands-free voice control

To use hands-free voice control, follow these steps.

- The voice recognition microphone is on the front bottom of the Zero Connect Box.

1 If you direct the front LED of the Zero Connect Box towards the user, you can use the voice recognition function smoothly.

2 Adjust the direction of the sliding button toward the TV Screen receiver by turning the dial left or right.

3 From the ⚙ → [⚙] → [General] → [AI Service] → [Voice Recognition Settings] screen, turn on the [Use Hands-free Voice Control] menu. (Depending upon model)

Precautions before using wireless TV

Wireless TVs use high-frequency radio waves of 60 GHz to transmit a large amount of data in a very short time, enabling wireless transmission of high-quality video and audio. The 60 GHz frequency band used in wireless TVs is advantageous for large-capacity data transmission, has good linearity, and is well-suited for transmission and reception in a specific direction. However, if there is a metallic object in the transmission/reception path, the radio waves cannot pass through it. Non-conductive objects (e.g., glass, wood, plastic) may attenuate the signal, resulting in communication failure. Due to such characteristics of radio waves, viewing is not affected when the wireless TV transmitting and receiving antennas are facing each other; however, if there are obstacles in the transmission/reception path, the wireless signal may be attenuated or disconnected, resulting in inconvenience during viewing. This is not a product malfunction. Follow the installation method provided when using the product.

Understanding 60 GHz wireless

| Characteristics of radio waves	Frequencies in the 60 GHz band applied to wireless TVs (high frequency)	Frequencies applied to general wireless communication (cell phone, WiFi/BT) (low frequency)
Linearity	Strong	Weak
Transmission volume	High	Low
Directionality	Ideal for transmission in specific direction	Ideal for broad coverage
Attenuation	High loss (linearity)	Low loss and good avoidance (diffraction)
	Radio waves absorbed by water droplets and water vapour in the air	Good obstacle avoidance

- This product satisfies the standards for protecting the human body against electromagnetic waves*. (* Meets IEC 62311 standards)

- **Wireless TVs use frequencies in the 60 GHz band.**
- The 60 GHz band is also known as millimetre wave (mmWave), and enables the transmission of large data volumes without delays.
- The 60 GHz band is a **high-frequency** band used in satellite communication.
- High-frequency bands have excellent **linearity**.
- High linearity is ideal for transmission in a specific direction; however, **obstacles cause greater attenuation loss**.
- Path loss occurs due to the presence of multiple paths created by diffraction, refraction, reflection, etc. The multiple path loss resulting from diffraction, refraction, and reflection causes antenna transmission and reception failure.
- Generally, **wireless radio waves experience interference from obstacles**.
- Conductive obstacles (metal) shield the frequency (antenna transmission/reception), whereas non-conductive obstacles (glass, wood, and plastic) cause attenuation.
- Radio waves using high frequencies in the 60 GHz band (short wavelengths) provide optimal image through the use of beamforming technology. Beamforming technology arranges multiple antennas at regular intervals, adjusts the amplitude and phase of the signal supplied to each antenna, and creates an antenna beam in a specific direction to strongly transmit and receive signals to that direction.
- For optimal image viewing, the transmission/reception must be **facing each other, that is, have an unobstructed Line Of Sight (LOS).**
- LOS is the visible path, which must be clear of obstacles in the way. If there are obstacles, the receiver must be high enough that it is visible. That is, the receiver must be higher than the transmitter. **(For wireless TVs, the Zero Connect Box must be placed lower than the TV Screen.)**
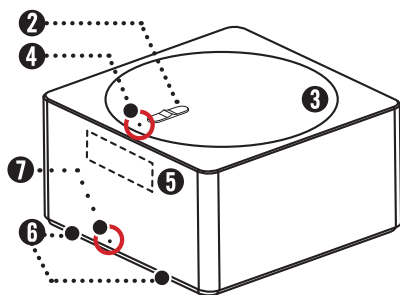
Details for wireless TV (TV Screen + Zero Connect Box)

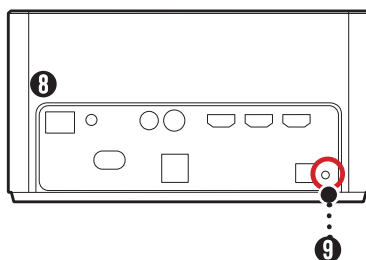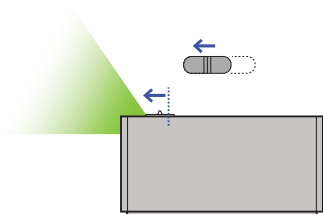## Viewing appearance

TV Screen
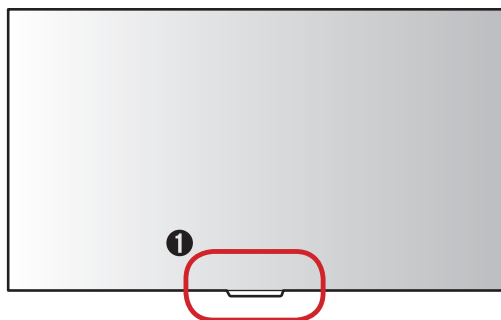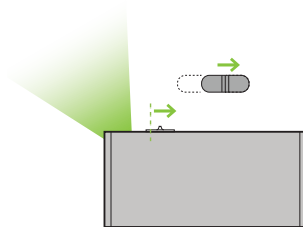

Zero Connect Box (WM23EA)

Front

Back

Side

❶ Wireless signal receiver & Power button

This area has an antenna that receives the video transmitted from the antenna of the Zero Connect Box.

If there are any obstacles around this area, the screen may be disconnected or not displayed due to interference.

The power button is used to turn the TV Screen on or switch to the standby state, or pair it with the Zero Connect Box.

❷ Sliding button

This button **adjusts the antenna transmission direction of the Zero Connect Box up and down**. If adjusted towards the top LED (❹), the antenna transmission direction is downward (0˚). If adjusted in the opposite direction of the top LED, the antenna transmission direction is upward (50˚). If adjusted to the center, the antenna transmission direction is at 25˚.

❸ Dial

This disc **adjusts the antenna transmission direction of the Zero Connect Box left and right**. The dial can be rotated 90˚ left or right from the front of the Zero Connect Box.

❹ Top LED

This LED is located in front of the sliding button and **indicates the wireless signal strength with different colors**. The colors include blue (good), green (moderate), yellow (weak), and red (disconnected).

❺ Wireless signal transmitter

This area has an antenna that transmits video and audio from the Zero Connect Box to the TV Screen. The antenna transmission direction is adjusted using the dial and sliding button. If there is an obstacle in front of the antenna, the screen may disconnect or display incorrectly due to interference.

❻ Voice recognition unit

This area recognizes your voice and is located on the lower left and right sides of the front of the Zero Connect Box.

When giving a voice command, **speak from the front of the Zero Connect Box**. If the area with the voice recognition parts is blocked or if you speak from the side or back, voice recognition may function poorly or not work at all.

❼ Front LED

This LED is located at the bottom center of the front of the Zero Connect Box and **indicates the power or operation status**.

❽ External connection terminal

You can connect the Zero Connect Box's power cord and external video/audio devices such as external antennas and set-top boxes.

❾ Pairing button

This button is used to re-pair the TV Screen and Zero Connect Box if they have been unpaired. For pairing instructions, please refer to "Re-pairing" on the right.

✅ Note

- **The wireless TV consists of the TV Screen and Zero Connect Box.**
- The Zero Connect Box transmits video and audio wirelessly to the TV Screen.
- The Zero Connect Box has external connection terminals.
- You can connect video and audio signals (external antenna, set-top box) to the external connection terminals on the back of the Zero Connect Box.
- **The wireless signal receiver is on the bottom center of the TV Screen.** It is next to the TV Screen power button.
- The voice recognition unit is on the lower left and right sides of the front of the Zero Connect Box. Ensure there is no dust or foreign matter in the small hole.
- The front LED is on the bottom of the front of the Zero Connect Box.
- The Zero Connect Box has wireless connection control terminals.
- **The wireless connection control terminals consist of a dial and a sliding button.**
- **The dial and wireless signal transmitter of the Zero Connect Box move together.**
- You can adjust the Zero Connect Box's wireless signal transmitter up and down using the sliding button.
- The signal strength LED for checking the wireless connection status is in front of the sliding button on the top.
- **The colors indicating signal strength are blue (good), green (moderate), yellow (weak), and red (disconnected).**
- The Zero Connect Box has a pairing button.
- There is a button for pairing on the TV Screen as well, which can also be used as the power button.
- The TV Screen and the Zero Connect Box are paired one to one and are already paired when provided.

Re-pairing

1　If the screen is not displayed due to the TV Screen and Zero Connect Box being disconnected, they need to re-paired. If you press and hold the pairing button on the back of the Zero Connect Box for 5 seconds, the top LED flashes white.

2　If you press and hold the power button on the TV Screen for 5 seconds, the standby indicator of the screen's power unit flashes white. The TV Screen and Zero Connect Box are now paired, and the LED on the top of the Zero Connect Box changes to the color corresponding to the signal strength.

*　If video is not displayed and the pairing screen remains, contact customer service.

*　If pairing is not resumed within one minute, it will be cancelled and must be initiated again.

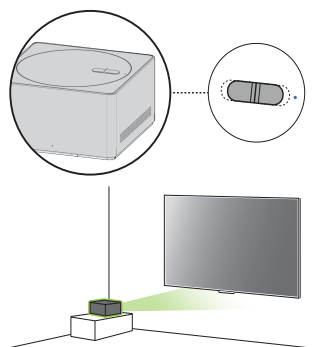# Wireless default placing and setting

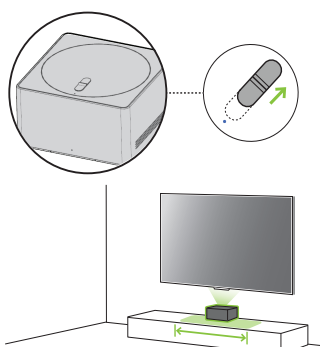## Recommended installation methods (installing Zero Connect Box)
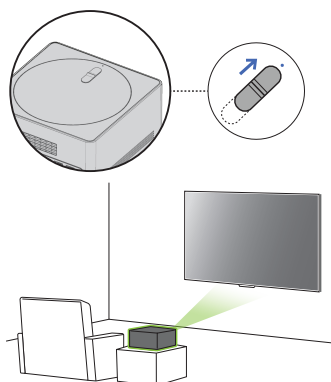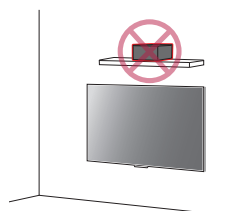

Frontal installation
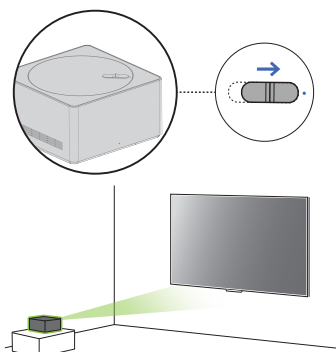
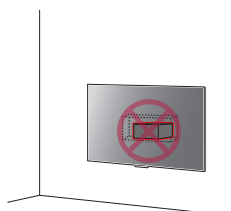Diagonal installation

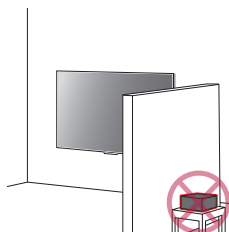Side installation

Bottom installation

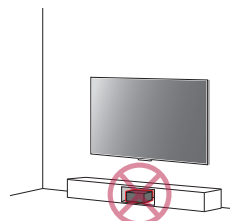## Installation don'ts (installing Zero Connect Box)

Installing on shelf above TV Screen
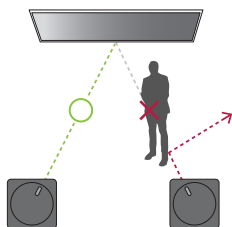
Installing on wall behind TV Screen

Installing behind wall
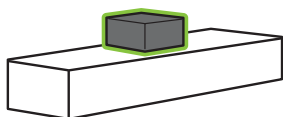
Installing inside the cabinet

Checking before turning on wireless TV

Clearing obstacles

- Remove any obstacles between the TV Screen and Zero Connect Box. If there are obstacles, the wireless signal is attenuated and causes screen disconnection.

Placing Zero Connect Box on top of cabinet

- When using a cabinet, install the Zero Connect Box on top of the cabinet. If installed inside a cabinet, the screen may disconnect due to interference.
- Voice recognition may also become degraded or not work at all.

Adjusting Zero Connect Box antenna left or right (dial)
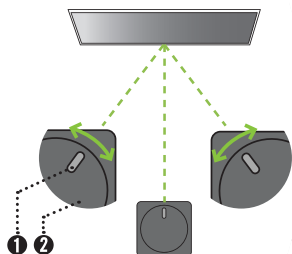
❶ Sliding button ❷ Dial

- Adjust the dial on the Zero Connect Box left or right until the sliding button faces the wireless receiver on the TV Screen.
- By adjusting the dial, you can move the direction of the wireless signal transmission of the Zero Connect Box left or right. You can adjust the dial up to 90˚ left or right from the front LED.

Adjusting Zero Connect Box antenna up or down (sliding button)
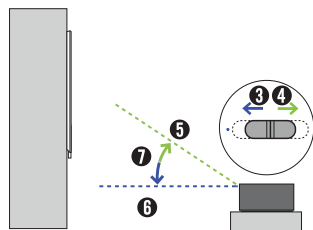
❸ Down ❹ Up ❺ Highest angle ❻ Lowest angle ❼ 50˚

- Place the Zero Connect Box lower than the TV Screen wireless receiver.
- Adjust the sliding button up or down so that the wireless signal transmission direction of the Zero Connect Box faces the TV Screen wireless signal receiver.
- If you adjust the sliding button towards the LED (blue line), the antenna transmits in a forward straight direction. If you adjust it away from the LED (green line), the antenna transmits in an upward direction. The Zero Connect Box antenna transmits in the 0-50˚ direction.

Checking after turning on wireless TV

Checking wireless signal strength on Zero Connect Box (top LED color)

- Once default placing and settings are completed, check the color of the top LED in front of the sliding button of the Zero Connect Box.
- The color of the top LED indicates the wireless signal strength.
- The colors are blue (good), green (moderate), yellow (weak), and red (disconnected). Blue (good) indicates the best viewing screen condition. Blue is recommended. Adjust the settings so that the color displays blue.
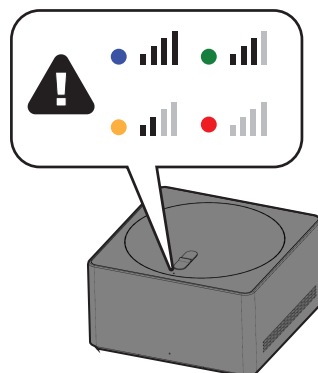
Setting wireless signal strength to blue (good) on Zero Connect Box

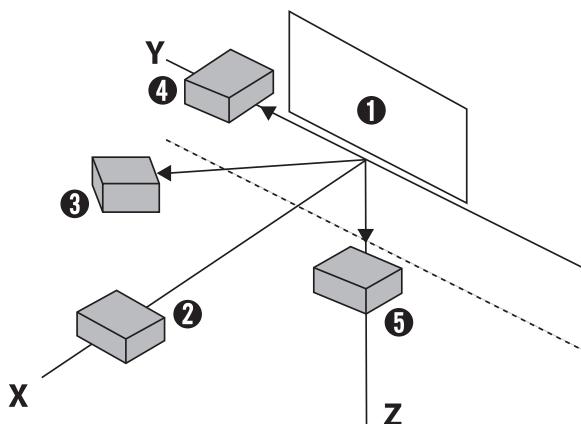- If the color is red, ensure there are no obstacles or check its position on the cabinet.
- If the color is yellow or green, adjust the Zero Connect Box antenna left and right (dial) or up and down (sliding button).

Identifying wireless reception range

- ❶ TV Screen

- ❷ The distance between the TV Screen antenna receiver and the Zero Connect Box antenna transmitter should be within **10 m (32.80 feet)** of the **front** for stable operation.

- ❸ The distance between the TV Screen antenna receiver and the Zero Connect Box antenna transmitter should be within **5 m (16.40 feet) diagonally** for stable operation.

- ❹ The distance between the TV Screen antenna receiver and the Zero Connect Box antenna transmitter should be within **3 m (9.84 feet)** of the **side** for stable operation.

- ❺ The distance between the TV Screen antenna receiver and the Zero Connect Box antenna transmitter should be within **3 m (9.84 feet)** of the **bottom** for stable operation.

* The distances above are based on the condition that there are no obstacles. When installing a sound bar in front of the TV Screen, ensure that it does not cover the wireless receiver on the TV Screen. It is recommended to install the sound bar at a sufficient distance from the wireless receiver on the TV Screen.

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Precaution Notes

Wireless Precaution Notes

- **The quality of the image and audio may deteriorate depending upon the installation environment (installed location, surrounding devices, obstacles, and distance).**
- **Do not place obstacles between** the TV Screen and Zero Connect Box. The screen may fail to display due to interference from obstacles.
- Ensure that there are no obstacles between the Zero Connect Box and TV Screen.
- If the Zero Connect Box is installed inside the cabinet, the screen may fail to display, **depending upon the cabinet material (marble, wood, etc.) and thickness**, and the voice recognition function may also deteriorate.
- Do not install **two wireless TVs or Zero Connect Boxes** in the same room. The screen may fail to display due to interference.
- When used **with an external device** using a **60 GHz** frequency, the screen may fail to display due to mutual interference.
- If you place **electronic devices and objects** on top of the Zero Connect Box, the screen may fail to display properly due to interference.
- **If a person or animal passes between the Zero Connect Box and the TV Screen while you are watching TV, the screen may disconnect.**
- Failure to follow the recommended installation method may result in abnormal operation.

Voice Recognition Precaution Notes

- Speaking from directions other than the **front** of the Zero Connect Box where **the voice recognition unit** is located may cause the voice recognition function to deteriorate.
- Do not place any obstacles in front of the Zero Connect Box where the voice recognition unit is located.
- Please keep the small hole of the voice recognition unit free from dust or any foreign matter.
- Failure to follow the recommended installation method may result in poor or non-functional voice recognition.

Installation Precaution Notes

- Do not install the Zero Connect Box on **a shelf above the TV Screen**. The antenna path does not align with the Zero Connect Box antenna transmitter and the screen does not display properly due to shelf interference.
- Do not install the Zero Connect Box on **the wall behind the TV Screen**. The screen does not display because the wireless signal is shielded.
- Do not install the **Zero Connect Box behind a wall**. The screen does not display because the wireless signal is shielded by the wall.
- Do not install the Zero Connect Box **inside a metal cabinet**. The screen does not display because the signal is shielded. Thick materials such as marble, glass, or wood may also cause wireless failure and prevent the screen from displaying properly.
- Failure to follow the recommended installation method may result in the screen not displaying.
- Ensure that the wireless receiver on the TV Screen does not **come into contact** with the wireless transmitter on the Zero Connect Box.
- After **cleaning or moving** the Zero Connect Box, **check and adjust** the color of the LED on the top. The screen may not display because of the change in installation environment.
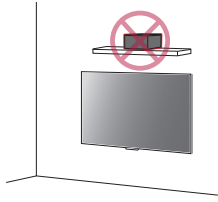
Installing on shelf above TV Screen
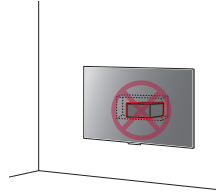
Installing on wall behind TV Screen
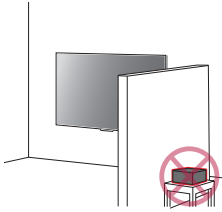
Installing behind wall
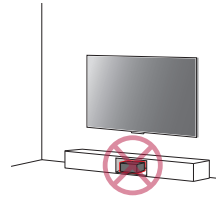
Installing inside the cabinet

Placing electronic devices on top of Zero Connect Box

Installing Zero Connect Box in front of TV Screen
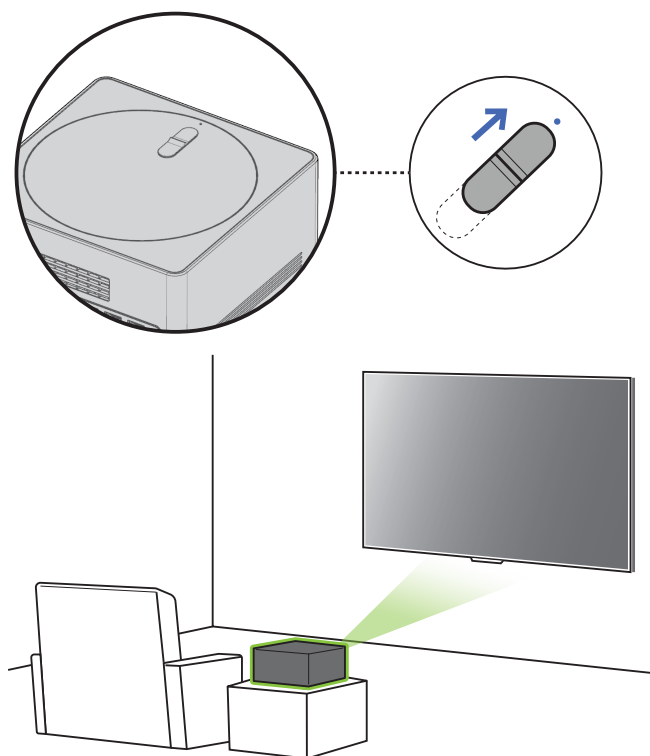
Checking before turning on wireless TV

If you have installed the Zero Connect Box in front of the TV Screen, follow these steps.

1 Direct the front LED of the Zero Connect Box towards the **wireless receiver on the TV Screen**.

2 If the front LED is not directed towards the TV Screen wireless receiver, turn the dial on top of the Zero Connect Box left or right until the sliding button faces the TV Screen wireless receiver.

3 Adjust the sliding button on the Zero Connect Box towards the **top LED**.

   • Once the dial and sliding button adjustments are completed, the signal transmission and reception path should be in the green direction shown in the figure.

   • Ensure there are no obstacles in the antenna transmission and reception path.

Checking after turning on wireless TV

1 Once you have completed all settings, check that the color of the top LED of the Zero Connect Box is blue.

2 If the LED is not blue, adjust the dial and sliding button further to optimize the signal condition.

   • It is recommended that the installation distance between the Zero Connect Box and the TV Screen be within 10 m (32.80 feet). (provided that there are no obstacles in the way)

   • It is recommended that the frontal installation angle between the Zero Connect Box and the TV Screen be within 45˚ left and right. (Refer to the diagonal/side installation image if the angle is over 45˚.)

Installing Zero Connect Box diagonally from TV Screen

Checking before turning on wireless TV

If you have installed the Zero Connect Box diagonally from the TV Screen, follow these steps.

1   Direct the front LED of the Zero Connect Box towards the **wireless receiver on the TV Screen**.
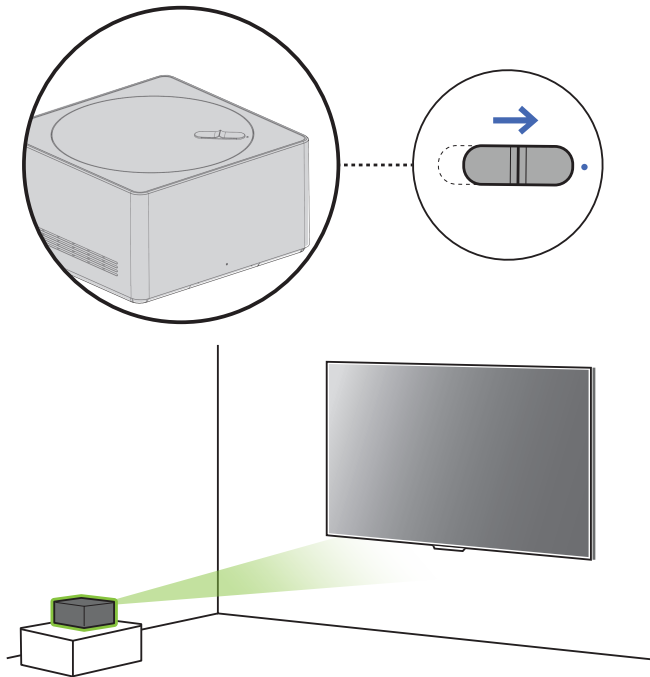
2   If the front LED is not directed towards the TV Screen wireless receiver, turn the dial on top of the Zero Connect Box left or right until the sliding button faces the TV Screen wireless receiver.

3   Adjust the sliding button on the Zero Connect Box **towards the top LED**.

- Once the dial and sliding button adjustments are completed, the signal transmission and reception path should be in the green direction shown in the figure.
- Ensure there are no obstacles in the antenna transmission and reception path.

Checking after turning on wireless TV

1   Once you have completed all settings, check that the color of the top LED of the Zero Connect Box is blue.

2   If the LED is not blue, adjust the dial and sliding button further to optimize the signal condition.

- It is recommended that the installation distance between the Zero Connect Box and the TV Screen be within 5 m (16.40 feet). (provided that there are no obstacles in the way)

Installing Zero Connect Box to the side of TV Screen
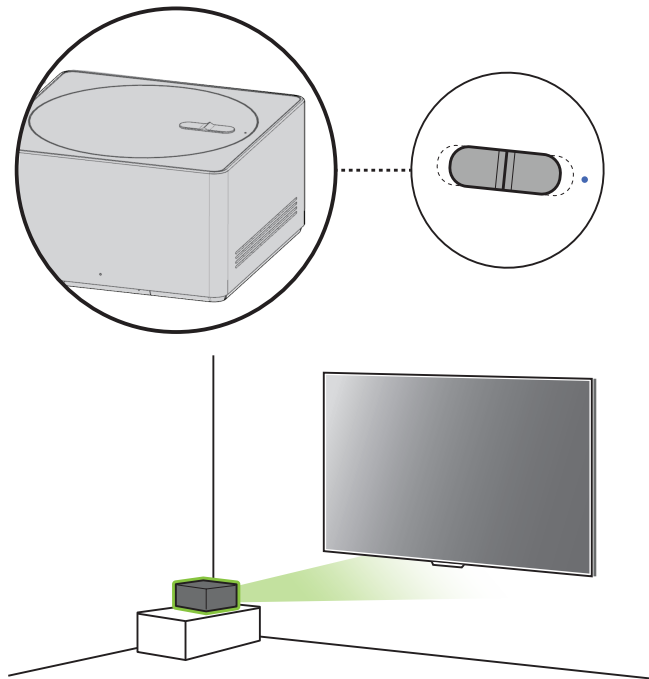

Checking before turning on wireless TV

If you have installed the Zero Connect Box to the side of the TV Screen, follow these steps.

1 Direct the front LED of the Zero Connect Box towards the **wireless receiver on the TV Screen**.
2 If the front LED is not directed towards the TV Screen wireless receiver, turn the dial on top of the Zero Connect Box left or right until the sliding button faces the TV Screen wireless receiver. (If the front LED of the Zero Connect Box faces the viewing direction, turn the dial left or right until it is at a 90° angle.)
3 Adjust the sliding button on the Zero Connect Box to the **center**.
  • Once the dial and sliding button adjustments are completed, the signal transmission and reception path should be in the green direction shown in the figure.
  • Ensure there are no obstacles in the antenna transmission and reception path.

Checking after turning on wireless TV

1 Once you have completed all settings, check that the color of the top LED of the Zero Connect Box is blue.
2 If the LED is not blue, adjust the dial and sliding button further to optimize the signal condition.
  • It is recommended that the installation distance between the Zero Connect Box and the TV Screen be within 3 m (9.84 feet). (provided that there are no obstacles in the way)in the way)

Installing Zero Connect Box to the bottom of TV Screen
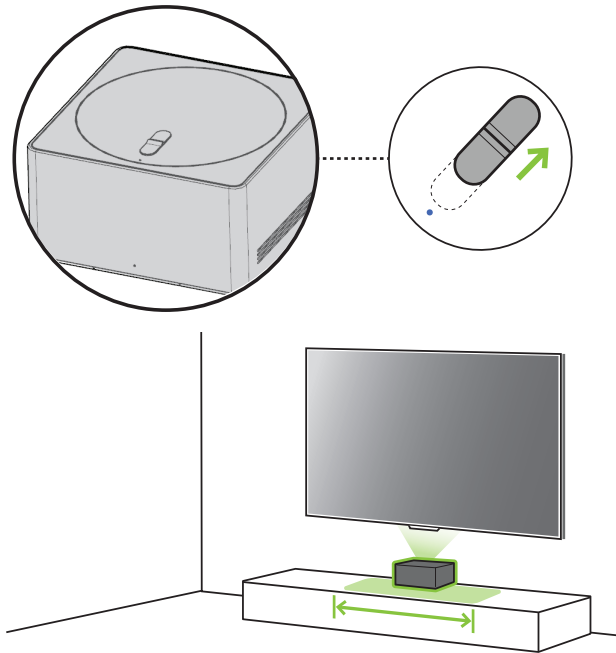

Checking before turning on wireless TV

If you have installed the Zero Connect Box to the bottom of the TV Screen, follow these steps.

1 Position the Zero Connect Box so that the front LED is facing **the viewer in front of the TV Screen**.
2 Turn the dial on the top of the Zero Connect Box left or right to adjust the direction of the sliding button towards the viewer.
3 Adjust the sliding button on the Zero Connect Box **in the opposite direction of the top LED**.
  • Once the dial and sliding button adjustments are completed, the signal transmission and reception path should be in the green direction shown in the figure.
  • Ensure there are no obstacles in the antenna transmission and reception path.

Checking after turning on wireless TV

1 Once you have completed all settings, check that the color of the top LED of the Zero Connect Box is blue.
2 If the LED is not blue, adjust the dial and sliding button further to optimize the signal condition.
  • It is recommended that the installation distance between the Zero Connect Box and the TV Screen be within 3 m (9.84 feet). (provided that there are no obstacles in the way)

* When installing the Zero Connect Box at the bottom of the TV screen, please do so within the area indicated in the figure. For installation outside the highlighted area on the cabinet, refer to "Installing Zero Connect Box to the side of TV Screen."

Connections

You can connect various external devices to the TV. For more information on external device's connection, refer to the manual provided with each device.

HDMI

- When connecting the HDMI cable, the product and external devices should be turned off and unplugged.
- Supported HDMI Audio format (Depending upon model):
  True HD (48 kHz),
  Dolby Digital / Dolby Digital Plus (32 kHz, 44.1 kHz, 48 kHz),
  PCM (32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192 kHz),
  DTS (44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz),
  DTS-HD (44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz)

✅ Note

- If the device connected to Input Port also supports HDMI Deep Color, your picture may be clearer. However, if the device doesn't support it, it may not work properly. In that case, change the TV's [HDMI Deep Color] setting to off.
- (⚙) → [(⚙)] → [General] → [External Devices] → [HDMI Settings] → [HDMI Deep Color]
- Use a certified cable with the HDMI logo attached. If you do not use a certified HDMI cable, the screen may not display or a connection error may occur.
- Recommended HDMI cable types
  - Ultra High Speed HDMI®/™ cable (3 m (9.84 feet) or less)

USB

You can connect a USB hub that enables you to use multiple USBs simultaneously to the Zero Connect Box.

Some USB Hubs may not work. If a USB device connected using a USB Hub is not detected, connect it to the USB port on the zero connect box directly.

✅ Note

- For an optimal connection, HDMI cables and USB devices should have bezels less than 10 mm (0.39 inches) thick and 18 mm (0.7 inches) width. (Depending upon model)
- Use an extension cable that supports USB 2.0 if the USB cable or USB memory stick does not fit into your zero connect box's USB port.

IR Blaster

Control the set-top box (cable/satellite/IP/OTT), Blu-ray/DVD player, soundbar, game consoles, etc., using the IR Blaster. (Depending upon country)

✅ Note

- Connect the IR Blaster cable to the TV's IR Blaster port.
- Use universal control settings to control the device.
- Secure the IR Blaster with the 3M tape provided.
- In order to control external devices through "Room to Room Share" and "Hands-free Voice Control", an IR blaster connection is required.
- When installing the Zero Connect Box in a location other than the bottom of the TV, we recommend connecting an IR blaster to ensure smooth control of external devices (e.g., set-top box) using your TV remote control.

External Devices

Available external devices are: Blu-ray player, HD receivers, DVD players, VCRs, audio systems, USB storage devices, PC, gaming devices, and other external devices.

✅ Note

- The external device connections shown may differ slightly from illustrations in a manual.
- In PC mode, there may be noise associated with the resolution, vertical pattern, contrast or brightness. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the [Picture] menu until the picture is clear. Depending upon the graphics card, some resolution settings may not allow the image to be positioned on the screen properly.
- When connecting to a wired LAN, use a CAT 7 cable with high-speed Internet transmission. (Only when **LAN** port is provided.)
- The TV may be capable of operating without a set-top-box from a multichannel video programming distributor (MVPD).
- TV audio can be transmitted to the sound bar (external audio device). (Depending upon country)
  - If you want to transmit audio in a wired way (optical digital, HDMI ARC), you can connect it to the external terminal on the rear of the Zero Connect Box.
  - You can wirelessly transmit audio through the WOWCAST function to our sound bars that support WOWCAST.

Remote RS-232C setup

To obtain the RS-232C external control setup information, please visit *www. lg.com*. Download and read the manual, (Depending upon model).

⚠

- 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.
- 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.

Specifications

Power requirement	AC 120 V~ 50/60 Hz

Product specifications may be changed without prior notice due to upgrade of product functions.

Estimated yearly energy consumption indicated on the FTC label is measured in accordance with the Test Procedures for Television Sets (USA only).

The actual energy consumption depends on the usage environment (The content watched, TV settings, etc.).

- For information of the power supply and power consumption, refer to the label attached to the product.
  - The typical power consumption is measured in accordance with IEC 62087 or each country's energy regulations.
  - See the label on the bottom of the product for power source, power ratings and product information.
    * On some models, the label is inside the external device connection terminal cover.
    * Depending upon the model or country, the typical power consumption may not be on label.

(Depending upon country)

Broadcasting Specifications	
Television system	Terrestrial / Cable / Satellites Digital TV
External antenna impedance	75 Ω

Environment Condition			
Operating Temperature	0 ℃ to 40 ℃ (32 ℉ to 104 ℉)	Storage Temperature	-20 ℃ to 60 ℃ (-4 ℉ to 140 ℉)
Operating Humidity	Less than 80 %	Storage Humidity	Less than 85 %

Conditions for Wall Mount Installation	
Tilt Angle	0° - 15°

* This specification range applies to TV wall mounts when adjusting for proper viewing angle.

Open Source Software Notice Information

To obtain the source code that is contained in this product, under GPL, LGPL, MPL, and other open source licenses that have the obligation to disclose source code, and to access all referred license terms, copyright notices and other relevant documents please visit *https://opensource.lge.com*.

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to opensource@lge.com.

This offer is valid to anyone in receipt of this information for a period of three years after our last shipment of this product.

Licenses

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

QUICKSET®
(Magic Remote supported models only)

HEVC Advance™
Covered by patents at patentlist.accessadvance.com

Troubleshooting

In TV / HDMI input, press the ⊗ button on the remote control three times to display the model name and serial number on the screen.

Cannot control the TV with the remote control.	• Check if anything such as tape has been placed over the receiver. • Check if there is any obstacle between the product and the remote control. • Replace the batteries with new fresh ones.
No image display and no sound is produced.	• Check if the product is turned on. • Check if the power cord is connected to a wall outlet. • Check if there is a problem in the wall outlet by connecting other products.
The TV turns off suddenly.	• Check the power control settings. The power supply may be interrupted. • Check if the auto-off function is activated in the settings menu. • The auto-off function may have worked. This product is equipped with an auto-off function that automatically turns off the power if the remote control is not used for 15 minutes without an input signal.
Abnormal Display	• 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. • This panel is an advanced product that contains millions of pixels. You may see tiny black dots and/or brightly colored dots (white, 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 upon 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. • 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.
Generated Sound	• **Cracking noise** A cracking noise that occurs when watching or turning off the TV is generated by plastic thermal contraction due to temperature 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 upon the product. This generated sound does not affect the performance and reliability of the product. • **Fan noise**: It is a sound made to dissipate the heat generated by the Zero Connect Box, and does not make the product defective.
A Zero Connect Box connection image appears on the screen.	• Clear any objects between the TV screen and the Zero Connect Box. • Turn the dial on the top of the Zero Connect Box left or right. • Move the sliding button on the top of the Zero Connect Box up or down.
A power connection image appears on the screen.	• Connect the power cord of the Zero Connect Box.

The product does not turn on continuously due to Always Ready mode operation or does not automatically turn on by sensor.	• The motion sensor is located on the bottom center of the product.
	• The motion sensor is only supported by some models.
	• If there is a foreign substance on the motion sensor, it may not work properly.
	• If the environment around the product is too bright or too dark, the motion sensor may not work properly.
	• Obstacles in front of the product may affect the detection function of the motion sensor.
	• It can operate by recognising changes in lighting around the product or movement of objects (pets/robot vacuum cleaners, etc.).
	• To stop using the Always Ready mode in ⚙ → [⚙] → [General] → [Always Ready] → [Enable the function], or to use only the General Always Ready mode function, you can select Enable Always Ready mode, turn off the screen, and then stop using the motion sensor in [Always Ready Settings]. The screen-on function with the motion sensor can be set by adjusting the performance of the sensor through the [Always Ready Settings] → [Motion Sensor Sensitivity] setting.
Hands-free Voice Control does not work properly.	• Direct the front of the Zero Connect Box towards the user.
	• Turn the dial on the top of the Zero Connect Box left or right to adjust the direction of the sliding button towards the TV Screen receiver.
	• From the ⚙ → [⚙] → [General] → [AI Service] → [Voice Recognition Settings] screen, turn on the [Use Hands-free Voice Control] menu. (Depending upon model)

⚠

- Make sure to wring any excess water or cleaner from the cloth.
- Do not spray water or cleaner directly onto the TV screen.
- Make sure to spray just enough of water or cleaner onto a dry cloth to wipe the screen.

Precautions for Protecting the OLED TV Screen

Unlike regular LED/LCDs, OLED TVs produce images that emit light for each pixel, achieving a perfect black color and delivering clear images without blurring.

Due to the nature of the organic materials used to achieve high-resolution image quality, OLED displays generally experience image retention on the screen, which can be a persistent phenomenon. This phenomenon is observed in all OLED panels, and although recommended picture modes can minimize image retention, current technology cannot completely prevent this from occurring.

Displaying the same image for a long time or repeatedly displaying the same image can cause image retention on the screen, which is a common phenomenon in OLED panel products due to the nature of the product. This product has a built-in screen protection feature. Avoid displaying images that are likely to cause image retention, and follow the recommendations.

Images that are likely to cause image retention

- Images with black areas on the top and bottom and/or the left and right sides of the screen.
- Images whose aspect ratio is 4:3 or 21:9.
- Images that are fixed for a long time, such as channel number, station logo, game console icon, set-top box menu, etc.
- Other fixed screen images or repeatedly displayed images.

Running [Pixel Cleaning] to Protect the OLED TV Screen

The OLED TV is equipped with a pixel cleaning feature to check the status of the screen by itself and prevent image retention that leaves an image on a screen. This feature automatically calculates the optimal execution time based on the accumulated viewing time and is automatically executed when the TV is turned off. While this feature is running, horizontal lines may appear at the top and bottom of the screen. The pixel cleaning feature works when the product is connected to the power cord and main power.

- To run this function manually, press the ⚙ button on the remote control, go to [⚙] → [General] → [OLED Care] → [OLED Panel Care] and press [Pixel Cleaning].

Recommendations for Minimizing Image Retention

When watching the TV for a long time, press the ⚙ button on the remote control, go to [⚙] → [Picture] → [Select Mode] and set the mode to [Auto Power Save], go to [Advanced Settings] → [Brightness] and set [OLED Pixel Brightness] to a lower level. In addition, press the ⚙ button on the remote control, go to [⚙] → [General] → [OLED Care] → [OLED Panel Care] and set the [Adjust Logo Brightness] value to [High].

When showing images with black bars at the top/bottom/left/right side of the screen, press the ⚙ button on the remote control, go to [⚙], and go to [Picture] → [Aspect Ratio] → [User Selection] → [Vertical Zoom] or [4-Way Zoom] to remove the black bars.

Turn off the menus for setting up devices such as set-top boxes so that they are not displayed on the screen for a long time.

✅ Note

- When the screen is showing one fixed image for a long time, the screen brightness will be automatically reduced and then restored once the screen content changes. This is a normal function to minimize image retention.

Regulatory

FCC NOTICE

(For USA)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment and For indoor use only, use outdoors or in other modes not covered by this manual may violate the FCC regulation and violate the user authority to use the product.

FCC Radio Frequency Interference Requirements (for UNII devices)

(For USA)

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device. This device cannot be co-located with any other transmitter.

FCC RF Radiation Exposure Statement

(For USA)

(For having wireless function (WLAN, Bluetooth,...))

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20 cm (7.8 inches) between the antenna and your body. Users must follow the specific operating instructions for satisfying RF exposure compliance.

(Device for using 5925 - 7125 MHz)

1) FCC regulations restrict the operation of this device to indoor use only.

2) The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet in the 5.925-6.425 GHz band.

3) Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

Industry Canada Statement

(For Canada)

(For having wireless function (WLAN, Bluetooth,...))

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

IC Radiation Exposure Statement

(For Canada)

(For having wireless function (WLAN, Bluetooth,...))

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm (7.8 inches) between the antenna & your body.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

RSS-247 Requirement

(For Canada)

(For product having the wireless function using 5 GHz frequency bands)

(1) The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(2) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;

(3) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; and

(4) (For devices operating in the band 5250-5350 MHz having an e.i.r.p. greater than 200 mW) Antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 of RSS-247 shall be clearly indicated.

Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

NOTE TO CABLE/TV INSTALLER

(For USA and Canada)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electric Code (U.S.A.). The code provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.

WARNING! (STABILITY HAZARD)

A television set may fall, causing serious personal injury or death. Many injuries, particularly to children, can be avoided by taking simple precautions such as:

- ALWAYS use cabinets or stands or mounting methods recommended by the manufacturer of the television set.
- ALWAYS use furniture that can safely support the television set.
- ALWAYS ensure the television set is not overhanging the edge of the supporting furniture.
- ALWAYS educate children about the dangers of climbing on furniture to reach the television set or its controls.
- ALWAYS route cords and cables connected to your television so they cannot be tripped over, pulled or grabbed.
- NEVER place a television set in an unstable location.
- NEVER place the television set on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television set to a suitable support.
- NEVER place the television set on cloth or other materials that may be located between the television set and supporting furniture.
- NEVER place items that might tempt children to climb, such as toys and remote controls, on the top of the television or furniture on which the television is placed.

If the existing television set is going to be retained and relocated, the same considerations as above should be applied.

Symbols

∼	Refers to alternating current (AC).	⏻	Refers to stand-by.
===	Refers to direct current (DC).	I	Refers to "ON" (power).
▣	Refers to class II equipment.	⚡	Refers to dangerous voltage.

LG Take-back & Recycling Policy

(For USA)

LG Electronics offers a customized e-waste take-back & recycling service that meets local needs and requirements in the countries where e-waste regulations are in place, and also provides product take-back & recycling service voluntarily in some regions. LG Electronics evaluates products' recyclability at the design step selectively, with the goal of improving recyclability where practicable. Through these activities, LG Electronics seeks to contribute to conserving natural resources and protecting the environment. For more information, please visit our global site at *https://www.lg.com/recycling*

OWNER'S MANUAL

EXTERNAL CONTROL DEVICE SETUP

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

ENGLISH

KEY CODES

• This feature is not available for all models.

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
00	CH +, PR +	R/C Button	53	List	R/C Button
01	CH -, PR -	R/C Button	5B	Exit	R/C Button
02	Volume +	R/C Button	60	PIP(AD)	R/C Button
03	Volume -	R/C Button	61	Blue	R/C Button
06	> (Arrow Key / Right Key)	R/C Button	63	Yellow	R/C Button
07	< (Arrow Key / Left Key)	R/C Button	71	Green	R/C Button
08	Power	R/C Button	72	Red	R/C Button
09	Mute	R/C Button	79	Ratio / Aspect Ratio	R/C Button
0B	Input	R/C Button	91	AD (Audio Description)	R/C Button
0E	SLEEP	R/C Button	9E	LIVE MENU	R/C Button
0F	TV, TV/RAD	R/C Button	7A	User Guide	R/C Button
10 - 19	* Number Key 0 - 9	R/C Button	7C	Smart / Home	R/C Button
1A	Q.View / Flashback	R/C Button	7E	SIMPLINK	R/C Button
1E	FAV (Favorite Channel)	R/C Button	8E	►► (Forward)	R/C Button
20	Text (Teletext)	R/C Button	8F	◄◄ (Rewind)	R/C Button
21	T. Opt (Teletext Option)	R/C Button	AA	Info	R/C Button
28	Return (BACK)	R/C Button	AB	Program Guide	R/C Button
30	AV (Audio / Video) Mode	R/C Button	B0	► (Play)	R/C Button
39	Caption/Subtitle	R/C Button	B1	■ (Stop / File List)	R/C Button
40	∧ (Arrow Key / Cursor Up)	R/C Button	B5	RECENT	R/C Button
41	V (Arrow Key / Cursor Down)	R/C Button	BA	‖ (Freeze / Slow Play / Pause)	R/C Button
42	My Apps	R/C Button	BB	Soccer	R/C Button
43	Menu / Settings	R/C Button	BD	● (REC)	R/C Button
44	OK / Enter	R/C Button	DC	3D	R/C Button
45	Q.Menu	R/C Button	99	AutoConfig	R/C Button
4C	List, -	R/C Button	9F	App / *	R/C Button
4D	PICTURE	R/C Button	9B	TV / PC	R/C Button
52	SOUND	R/C Button			

* Key code 4C (0x4C) is available on ATSC/ISDB models which use major/minor channel. (For South Korea, Japan, North America, Latin America except Colombia models)

EXTERNAL CONTROL DEVICE SETUP

• Image shown may differ from your TV.

Connect the USB to Serial(RS-232C) converter/RS-232C(Serial) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

Note: The type of control port on the TV can be different between model series.

* Please be advised that not all models support this type of connectivity.

* Cable is not provided.

USB to Serial(RS-232C) converter with USB Cable

USB Type
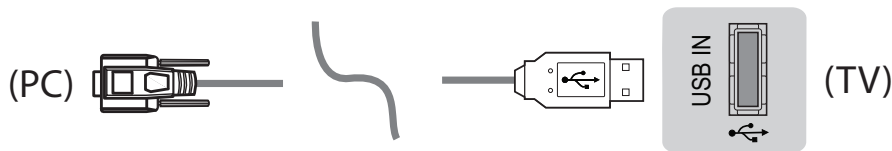
• LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial(RS-232C) converter which is not made nor provided by LG.
• It can be purchased from computer stores that carry accessories for IT support professionals.

RS-232C(Serial) With RS-232C(Serial) Cable

DE9 (D-Sub 9pin) Type
• You need to purchase the RS-232C (DE9, D-Sub 9pin female-to-female type) to RS-232C(Serial) cable required for the connection between the PC and the TV, which is specified in the manual.

The connection interface may differ from your TV.

Phone jack Type

• You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV, which is specified in the manual.

* For other models, connect to the USB port.

* The connection interface may differ from your TV.

(PC) — 3 1 — SERVICE ONLY — 2 — (TV)

- or

(PC) — 3 1 — RS-232C IN (CONTROL & SERVICE) — 2 — (TV)
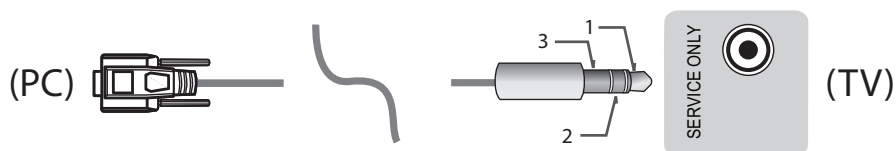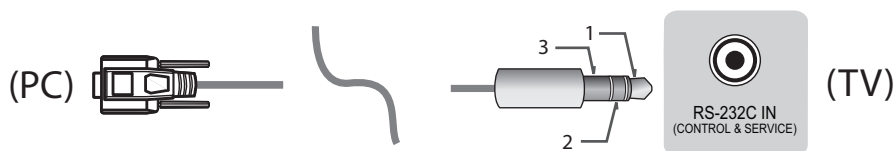
Customer Computer

1 — 5

6 — 9
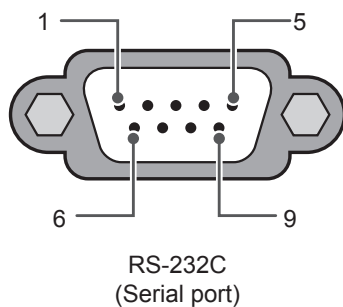
RS-232C
(Serial port)

RS-232C configurations

3-Wire Configurations(Not standard)

	PC	TV	
RXD	2 •———————————————• 2		TXD
TXD	3 •———————————————• 1		RXD
GND	5 •———————————————• 3		GND

OR

	PC	TV	
RXD	3 •———————————————• 2		TXD
TXD	2 •———————————————• 1		RXD
GND	5 •———————————————• 3		GND
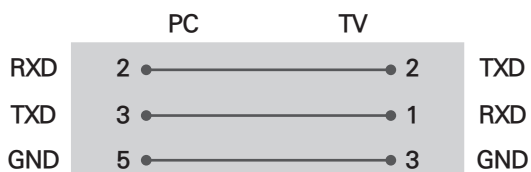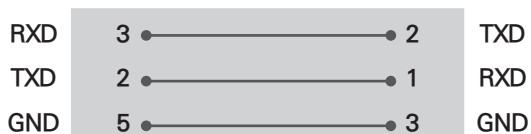
D-Sub 9   Phone

Set ID

For Set ID number, see "**Real Data Mapping**" on p.6

1. Press **SETTINGS** to access the main menus.
2. Press the Navigation buttons to scroll to **(*General → About this TV or OPTION)** and press **OK**.
3. Press the Navigation buttons to scroll to **SET ID** and press **OK**.
4. Scroll left or right to select a set ID number and select **CLOSE**. The adjustment range is 1-99.
5. When you are finished, press **EXIT**.
   * (Depending on model)

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

(Depending on model)

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power*	k	a	00 to 01	15. Balance	k	t	00 to 64
02. Aspect Ratio	k	c	(p.7)	16. Color (Colour) Temperature	x	u	00 to 64
03. Screen Mute	k	d	(p.7)	17. ISM Method (Only Plasma TV)	j	p	(p.8)
04. Volume Mute	k	e	00 to 01	18. Equalizer	j	v	(p.9)
05. Volume Control	k	f	00 to 64	19. Energy Saving	j	q	00 to 05
06. Contrast	k	g	00 to 64	20. Tune Command	m	a	(p.9)
07. Brightness	k	h	00 to 64	21. Channel (Programme) Add/Del(Skip)	m	b	00 to 01
08. Color/ Colour	k	i	00 to 64	22. Key	m	c	Key Codes
09. Tint	k	j	00 to 64	23. Control Backlight, Control Panel Light	m	g	00 to 64
10. Sharpness	k	k	00 to 32	24. Input select (Main)	x	b	(p.11)
11. OSD Select	k	l	00 to 01	25. 3D (Only 3D models)	x	t	(p.11)
12. Remote Control Lock Mode	k	m	00 to 01	26. Extended 3D (Only 3D models)	x	v	(p.12)
13. Treble	k	r	00 to 64	27. Auto Configure	j	u	(p.12)
14. Bass	k	s	00 to 64				

* Note: During playing or recording media, all commands except Power (ka) and Key (mc) are not executed and treated as NG.
With RS232C cable, TV can communicate "ka command" in power-on or power-off status. but with USB-to-Serial converter cable, the command works only if TV is on.

Transmission / Receiving Protocol

Transmission

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

[Command 1] : First command to control the TV. (j, k, m or x)
[Command 2] : Second command to control the TV.
[Set ID]   : You can adjust the [Set ID] to choose desired monitor ID number in option menu.
                   Adjustment range in TV is 1 to 99. If [Set ID] value is selected to '0', every connected set
                   can be controlled.
                   * [Set ID] is indicated as decimal (1 to 99) on menu and as Hexadecimal (0x00 to 0x63) on
                    transmission/receiving protocol.
[DATA]   : To transmit command data (hexadecimal). Transmit 'FF' data to read status of command.
[Cr]   : Carriage Return - ASCII code '0x0D'
[ ]   : Space – ASCII code '0x20'

OK Acknowledgement

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

* The set transmits ACK (acknowledgement) based on this format when receiving normal data. At this time,
  if the data is data read mode, it indicates present status data. If the data is data write mode, it returns the
  data of the PC computer.

Error Acknowledgement

[Command2][ ][Set ID][ ][NG][Data][x]

* The set transmits ACK (acknowledgement) based on this format when receiving abnormal data from
  non-viable functions or communication errors.

Data 00: Illegal Code

Real data mapping (Hexadecimal b Decimal)

* When you enter the [data] in hexadecimal, refer to following conversion table.
* Channel Tune (ma) Command uses two-byte hexadecimal value([data]) to select channel number.

00 : Step 0	32 : Step 50 (Set ID 50)	FE : Step 254
01 : Step 1 (Set ID 1)	33 : Step 51 (Set ID 51)	FF : Step 255
...	...	...
0A : Step 10 (Set ID 10)	63 : Step 99 (Set ID 99)	01 00 : Step 256
...	...	...
0F : Step 15 (Set ID 15)	C7 : Step 199	27 0E : Step 9998
10 : Step 16 (Set ID 16)	C8 : Step 200	27 0F : Step 9999
...	...	...

* Commands may work differently depending on model and signal.

01. Power (Command: k a)

► To control Power *On or Off of the set.

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

Data 00 : Power Off   01 : *Power On

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

► To Show TV is Power On or *Off

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

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

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

02. Aspect Ratio (Command: k c)
(Main Picture Size)

► To adjust the screen format. (Main picture format) You can also adjust the screen format using the Aspect Ratio in the Q.MENU. or PICTURE menu.

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

Data 01 : Normal screen   07 : 14:9
        (4:3)   (Europe, Colombia, Mid-East,
     02 : Wide screen   Asia except South Korea and
        (16:9)   Japan)
     04 : Zoom   09 : * Just Scan
     05 : Zoom 2   0B : Full Wide
     (Latin America   (Europe, Colombia, Mid-
     except Colombia   East, Asia except South
     Only)   Korea and Japan)
     06 : Set by Program/ 10 to 1F : Cinema Zoom 1 to 16
        Original   0c : 21:9 (Depending on model)

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

* Using the PC input, you select either 16:9 or 4:3 screen aspect ratio.

* In DTV/HDMI/Component mode (high-definition), Just Scan is available.

* Full wide mode may work differently based on model and is supported for DTV fully, and ATV, AV partially.

03. 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 mute off
     01 : Screen mute on (Picture off)
     10 : Video mute on

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

* In case of video mute on only, TV will display On Screen Display(OSD). But, in case of Screen mute on, TV will not display OSD.

04. Volume Mute (Command: k e)

► To control volume mute on/off. You can also adjust mute using the MUTE button on remote control.

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

Data 00 : Volume mute on (Volume off)
     01 : Volume mute off (Volume on)

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

05. Volume Control (Command: k f)

► To adjust volume. You can also adjust volume with the volume buttons on remote control.

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

Data Min : 00 to Max : 64

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

06. Contrast (Command: k g)

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

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

Data Min : 00 to Max : 64

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

07. Brightness (Command: k h)

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

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

Data Min : 00 to Max : 64

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

08. Color/Colour (Command: k i)

► To adjust the screen Color(Colour).
You can also adjust colour in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

09. Tint (Command: k j)

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

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

Data Red : 00 to Green : 64

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

10. Sharpness (Command: k k)

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

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

Data Min : 00 to Max : 32

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

11. OSD Select (Command: k l)

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

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

Data 00 : OSD off   01 : OSD on

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

12. Remote control lock mode (Command: k m)

► To lock the front panel controls on the monitor and 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 are not using the remote control, use this mode.
When main power is off & on (plug-off and plug-in, after 20 - 30 seconds), external control lock is released.

* In the standby mode (DC off by off timer or 'ka', 'mc' command), and if key lock is on, TV will not turn on by power on key of IR & Local Key.

13. Treble (Command: k r)

► To adjust treble.
You can also adjust in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

* (Depending on model)

14. Bass (Command: k s)

► To adjust Bass.
You can also adjust in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

* (Depending on model)

15. Balance (Command: k t)

► To adjust balance.
You can also adjust balance in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

16. Color(Colour) Temperature (Command: x u)

► To adjust colour temperature. You can also adjust Color(Colour) Temperature in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

17. ISM Method (Command: j p) (Only Plasma TV)

► To control the ISM method. You can also adjust ISM Method in OPTION menu.

Transmission [j][p][ ][Set ID][ ][Data][Cr]
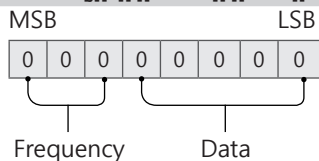
Data Min : 02: Orbiter
         08: Normal
         20: Color(Colour) Wash

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

18. Equalizer (Command : j v)

► Adjust EQ of the set.

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

MSB   LSB

| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Frequency   Data

7	6	5	Frequency	4	3	2	1	0	Step
0	0	0	1st Band	0	0	0	0	0	0(decimal)
0	0	1	2nd Band	0	0	0	0	1	1(decimal)
0	1	0	3rd Band	...	...	...	...	...	...
0	1	1	4th Band	1	0	0	1	1	19(decimal)
1	0	0	5th Band	1	0	1	0	1	20(decimal)

Acknowledgement [v][ ][Set ID][ ][OK/NG][Data][x]

* It depends on model, and can adjust when sound mode is EQ adjustable value.

19. Energy Saving (Command: j q)

► To reduce the power consumption of the TV. You can also adjust Energy Saving in PICTURE menu.

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

Data

    00 : Off

    01 : Minimum

    02 : Medium

    03 : Maximum

    04 : Auto (For LCD TV / LED TV) /
         Intelligent sensor (For PDP TV)

    05 : Screen off

* (Depending on model)

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

20. Tune Command (Command: m a)

* This command may work differently depending on model and signal.

• For Europe, Mid-East, Colombia, Asia except South Korea and Japan Model

► Select channel to following physical number.

Transmission [m][a][ ][Set ID][ ][Data 00][ ]
[Data 01][ ][Data 02][Cr]

* Analog Antenna/Cable

[Data 00][Data 01] Channel Data
Data 00 : High byte channel data
Data 01 : Low byte channel data
   - 00 00 ~ 00 C7 (Decimal : 0 ~ 199)

Data 02 : Input Source (Analog)
   - 00 : Antenna TV (ATV)
   - 80 : Cable TV (CATV)

* Digital Antenna/Cable/Satellite

[Data 00][Data 01]: Channel Data
Data 00 : High Channel data
Data 01 : Low Channel data
   - 00 00 ~ 27 0F (Decimal: 0 ~ 9999)
Data 02 : Input Source (Digital)
   - 10 : Antenna TV (DTV)
   - 20 : Antenna Radio (Radio)
   - 40 : Satellite TV (SDTV)
   - 50 : Satellite Radio (S-Radio)
   - 90 : Cable TV (CADTV)
   - a0 : Cable Radio (CA-Radio)

* Tune Command Examples:

1. Tune to the Analog antenna (PAL) Channel 10.
  Set ID = All = 00
  Data 00 & 01 = Channel Data is 10 = 00 0a
  Data 02 = Analog Antenna TV = 00
  Result = **ma 00 00 0a 00**

2. Tune to the digital antenna (DVB-T) Channel 01.
  Set ID = All = 00
  Data 00 & 01 = Channel Data is 1 = 00 01
  Data 02 = Digital Antenna TV = 10
  Result = **ma 00 00 01 10**

3. Tune to the satellite (DVB-S) Channel 1000.
  Set ID = All = 00
  Data 00 & 01 = Channel Data is 1000 = 03 E8
  Data 02 = Digital Satellite TV = 40
  Result = **ma 00 03 E8 40**

Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]
[Data 02][x][a][ ][Set ID][ ][NG][Data 00][x]

• For South Korea, North/Latin America except Colombia Model

► To tune channel to following physical/major/minor number.

Transmission [m][a][ ][0][ ][Data00][ ][Data01]
[ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]

Digital channels have a Physical, Major, and Minor channel number. The Physical number is the actual digital channel number, the Major is the number that the channel should be mapped to, and the Minor is the sub-channel. Since the ATSC tuner automatically maps the channel from the Major / Minor number, the Physical number is not required when sending a command in Digital.

* Analog Antenna/Cable

Data 00 : Physical Channel Number
   - Antenna (ATV) : 02~45 (Decimal: 2 ~ 69)
   - Cable (CATV) : 01, 0E~7D (Decimal : 1, 14~125)

[Data 01 ~ 04]: Major/Minor Channel Number
Data 01 & 02: xx (Don't care)
Data 03 & 04: xx (Don't care)
Data 05: Input Source (Analog)
   - 00 : Antenna TV (ATV)
   - 01 : Cable TV (CATV)

* Digital Antenna/Cable

Data 00 : xx (Don't care)

[Data 01][Data 02]: Major Channel Number
Data 01 : High byte Channel Data
Data 02 : Low byte Channel Data
   - 00 01 ~ 27 0F (Decimal: 1 ~ 9999)
[Data 03][Data 04]: Minor Channel Number
Data 03 : High byte Channel Data
Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)
   - 02 : Antenna TV (DTV) – Use Physical Channel Number
   - 06 : Cable TV (CADTV) – Use Physical Channel Number
   - 22 : Antenna TV (DTV) – Don't Use Physical Channel Number
   - 26 : Cable TV (CADTV) - Don't Use Physical Channel Number
   - 46 : Cable TV (CADTV) – Use Physical/Major Channel Number Only (One Part Channel)
   - 66 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)
   - 0b : Cable DTV Plus – Use Physical Channel Number
   - 2b : Cable DTV Plus – Don't Use Physical Channel Number
   - 4b : Cable DTV Plus – Use Physical/Major Channel Number Only (One Part Channel)
   - 6b : Cable DTV Plus – Use Major Channel Number Only (One Part Channel)
Two bytes are available for each major and minor channel data, but usually the low byte is used alone (high byte is 0).

* Tune Command Examples:
1. Tune to the Analog cable (NTSC) channel 35.
   Set ID = All = 00
   Data 00 = Channel Data is 35 = 23
   Data 01 & 02 = No Major = 00 00
   Data 03 & 04 = No Minor = 00 00
   Data 05 = Analog Cable TV = 01
   Total = **ma 00 23 00 00 00 00 01**

2. Tune to the digital antenna (ATSC) channel 30-3.
   Set ID = All = 00
   Data 00 = Don't know Physical = 00
   Data 01 & 02 = Major is 30 = 00 1E
   Data 03 & 04 = Minor is 3 = 00 03
   Data 05 = Digital Antenna TV = 22
   Total = **ma 00 00 00 1E 00 03 22**

   Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]
   [Data 02][Data 03][Data 04][Data 05]
   [x][a][ ][Set ID][ ][NG][Data 00][x]

• For Japan Model
► To tune channel to following physical/major/minor number.

   Transmission [m][a][ ][0][ ][Data00][ ][Data01]
   [ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]

* Digital Antenna/Satellite
Data 00: xx (Don't care)

[Data 01][Data 02]: Major Channel Number
Data 01: High byte Channel Data
Data 02: Low byte Channel Data
   - 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor/Branch Channel Number
                         (Don't care in Satellite)
Data 03: High byte Channel Data
Data 04: Low byte Channel Data

Data 05 : Input Source (Digital/Satellite for Japan)
   - 02 : Antenna TV (DTV)
   - 42 : Antenna TV (DTV) – Use Physical/Major Channel Number Only (One Part Channel)
   - 62 : Antenna TV (DTV) – Use Major Channel Number Only (One Part Channel)
   - 07 : BS (Broadcasting Satellite)
   - 08 : CS1 (Communication Satellite 1)
   - 09 : CS2 (Communication Satellite 2)

* Tune Command Examples:
1 Tune to the digital antenna (ISDB-T) channel 17-1.
   Set ID = All = 00
   Data 00 = Don't know Physical = 00
   Data 01 & 02 = Major is 17 = 00 11
   Data 03 & 04 = Minor/Branch is 1 = 00 01
   Data 05 = Digital Antenna TV = 02
   Total = **ma 00 00 00 11 00 01 02**

2. Tune to the BS (ISDB-BS) channel 30.
   Set ID = All = 00
   Data 00 = Don't know Physical = 00
   Data 01 & 02 = Major is 30 = 00 1E
   Data 03 & 04 = Don't Care = 00 00
   Data 05 = Digital BS TV = 07
   Total = **ma 00 00 00 1E 00 00 07**

* This feature is varied based on the model.

   Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]

   [Data 02][Data 03][Data 04][Data 05]

   [x][a][ ][Set ID][ ][NG][Data 00][x]

21. Channel(Programme) Add/Del(Skip)
    (Command: m b)
► To skip current channel(programme) for next time.
   Transmission [m][b][ ][Set ID][ ][Data][Cr]

Data 00 : Del(ATSC,ISDB)/Skip(DVB)   01 : Add

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

* Set the saved channel status to del(ATSC, ISDB)/
  skip(DVB) or add.

22. Key (Command: m c)
► To send IR remote key code.
   Transmission [m][c][ ][Set ID][ ][Data][Cr]

Data Key code - p.2.

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

23. Control Backlight (Command: m g)
• For LCD TV / LED TV
► To control the backlight.
   Transmission [m][g][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

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

   Control Panel Light (Command: m g)

• For Plasma TV
► To control the panel light.
   Transmission [m][g][ ][Set ID][ ][Data][Cr]

Data Min : 00 to Max : 64

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

24. Input select (Command: x b)
    (Main Picture Input)
► To select input source for main picture.
   Transmission [x][b][ ][Set ID][ ][Data][Cr]

Data
   00 : DTV   01 : CADTV
   02 : Satellite DTV 10 : ATV
      ISDB-BS (Japan)
   03 : ISDB-CS1 (Japan)
   04 : ISDB-CS2 (Japan)
   11 : CATV
   20 : AV or AV1   21 : AV2
   40 : Component1   41 : Component2
   60 : RGB
   90 : HDMI1   91 : HDMI2
   92 : HDMI3   93 : HDMI4

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

* This function depends on model and signal.

25. 3D(Command: x t) (only 3D models)
    (Depending on model)
► To change 3D mode for TV.
   Transmission [x][t][ ][Set ID][ ][Data 00][ ][Data 01]

   [ ][Data 02][ ][Data 03][Cr]
* (Depending on model)
Data Structure
[Data 00] 00 : 3D On
           01 : 3D Off
           02 : 3D to 2D
           03 : 2D to 3D
[Data 01] 00 : Top and Bottom
           01 : Side by Side
           02 : Check Board
           03 : Frame Sequential
           04 : Column interleaving
           05 : Row interleaving
[Data 02] 00 : Right to Left
           01 : Left to Right
[Data 03] 3D Effect(3D Depth): Min : 00 - Max : 14
           (*transmit by Hexadecimal code)

* [Data 02], [Data 03] functions depend on model and signal.

* If [Data 00] is 00 (3D On), [Data 03] has no meaning.

* If [Data 00] is 01 (3D off) or 02 (3D to 2D), [Data 01], [Data 02] and [Data 03] have no meaning.

* If [Data 00] is 03 (2D to 3D), [Data 01] and [Data 02] have no meaning.

* If [Data 00] is 00 (3D On) or 03 (2D to 3D), [Data 03] works when 3D Mode (Genre) is manual only.

* All 3D pattern options ([Data 01]) may not be available according to broadcasting/video signal.

[Data 00]	[Data 01]	[Data 02]	[Data 03]
00	O	O	O
01	X	X	X
02	X	X	X
03	X	O	O

X : don't care

Ack [t][ ][Set ID][ ][OK][Data00][Data01][Data02]
[Data03][x]
[t][ ][Set ID][ ][NG][Data00][x]

26. Extended 3D(Command: x v) (only 3D models)
(Depending on model)

► To change 3D option for TV.

Transmission [x][v][ ][Set ID][ ][Data 00][ ]
[Data 01][Cr]

[Data 00] 3D option
00 : 3D Picture Correction
01 : 3D Depth (3D Mode is Manual Only)
02 : 3D Viewpoint
06 : 3D Color Correction
07 : 3D Sound Zooming
08 : Normal Image View
09 : 3D Mode (Genre)

[Data 01] It has own range for each 3D option
determined by [Data 00].
1) When [Data 00] is 00
00 : Right to Left
01 : Left to Right

2) When [Data 00] is 01, 02
Data   Min: 0 - Max: 14 (*transmit by Hexadecimal
code)
Data value range(0 - 20) converts Viewpoint range
(-10 - +10) automatically (Depending on model)
* This option works when 3D Mode (Genre) is manual
only.

3) When [Data 00] is 06, 07
00 : Off
01 : On

4) When [Data 00] is 08
00 : Revert to 3D video from 3D-to-2D
converted 2D video
01 : Change 3D video to 2D video, except
2D-to-3D video
* If conversion condition doesn't meet, command is
treated as NG.

5) When [Data 00] is 09

00 : Standard	01 : Sport
02 : Cinema	03 : Extreme
04 : Manual	05 : Auto

Ack [v][ ][Set ID][ ][OK][Data00][Data01][x]
[v][ ][Set ID][ ][NG][Data00][x]

27. Auto Configure (Command: j u)
(Depending on model)

► To adjust picture position and minimize image
shaking automatically. It works only in RGB (PC)
mode.

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

Data 01 : To set Auto Configure

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