LG
Life's Good

AAA

AAA

X 4
(M4 X L14)

⊕ : Depending on model / Selon le modèle / Dependendo do modelo / حسب الطراز

www.lg.com

English
- Read **Safety and Reference.**
- For the power supply and power consumption, refer to the label attached to the product.

Français
- Lire le document **Sécurité et référence.**
- Reportez-vous à l'étiquette apposée sur le téléviseur pour connaître l'alimentation et la consommation électriques.
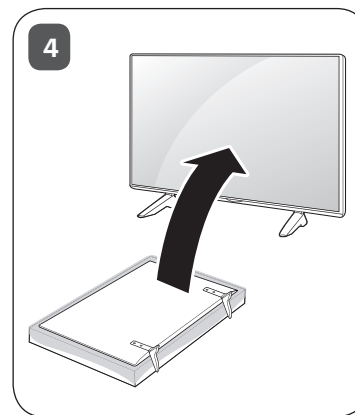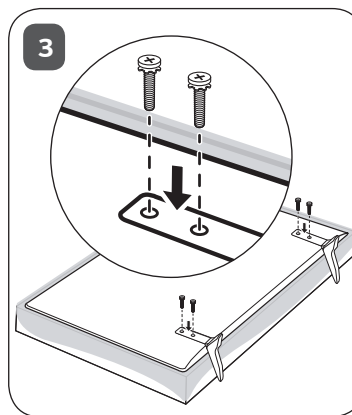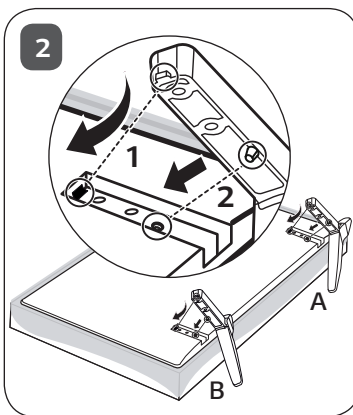
Português
- Consulte o manual **Segurança e referência.**
- No que respeita à fonte de alimentação e ao consumo de energia, consulte a etiqueta mostrada no produto.

العربية
- قراءة **الأمان والمرجع.**
- لمعرفة المزيد حول مصدر الإمداد بالطاقة المطلوب ومعايير استهلاك الطاقة، راجع الملصق الموجود على المنتج.
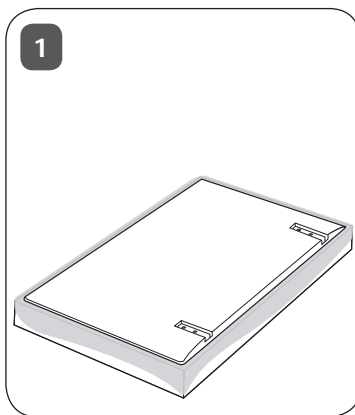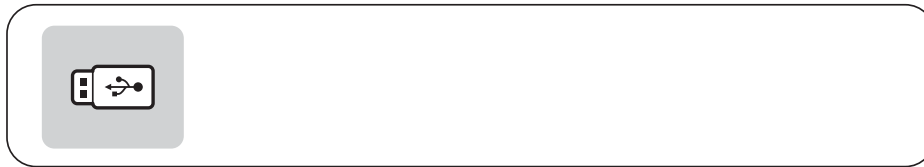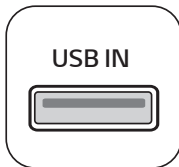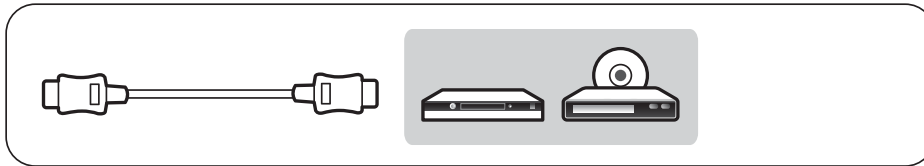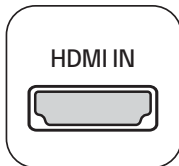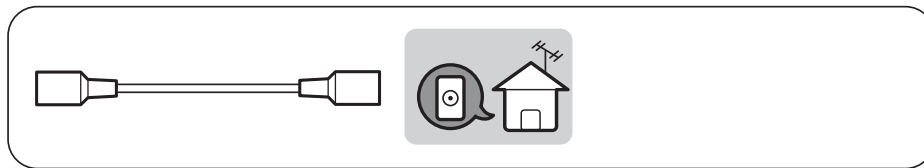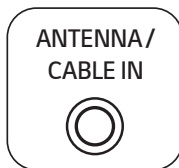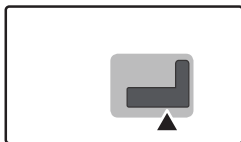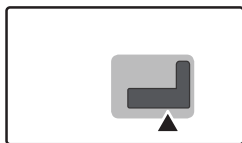
ANTENNA /
CABLE IN

HDMI IN

USB IN

COMPONENT IN

VIDEO/Y   P$_B$ P$_R$ L/MONO   AUDIO R

Y   P$_B$ P$_R$ L   R

VIDEO   AUDIO

AUDIO OUT

L   AUDIO OUT   R

L   AUDIO   R

AV IN

VIDEO L/MONO AUDIO R

VIDEO/Y P$_B$ P$_R$ L/MONO AUDIO R

VIDEO L/MONO AUDIO R

VIDEO L/MONO AUDIO R

DC-IN
(19 V ⎓)

DC-IN
(19 V ⎓)
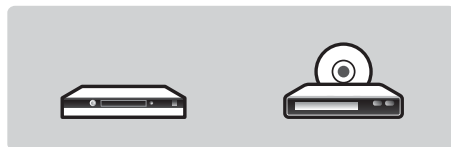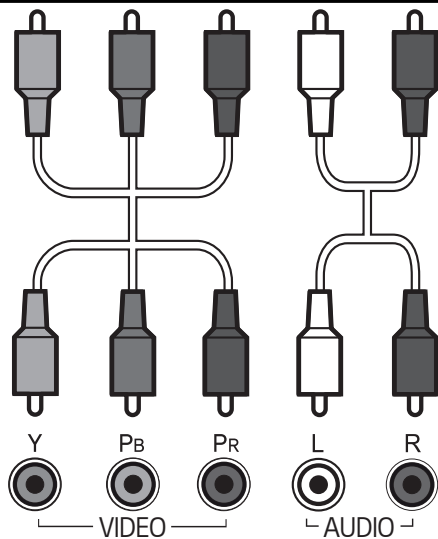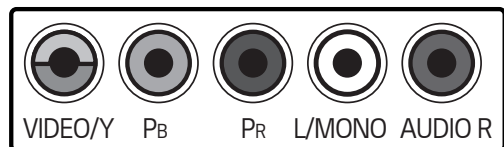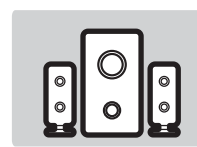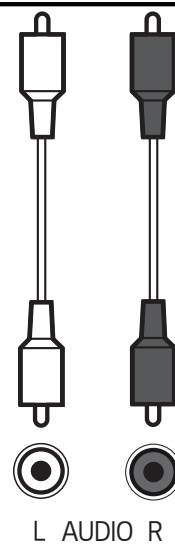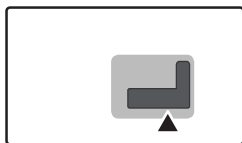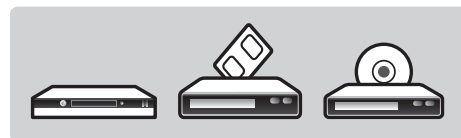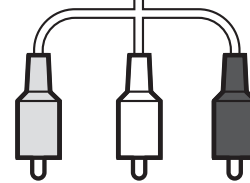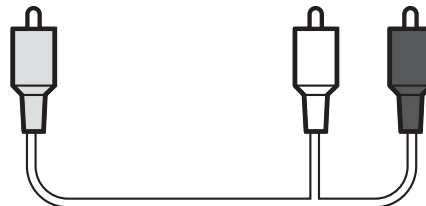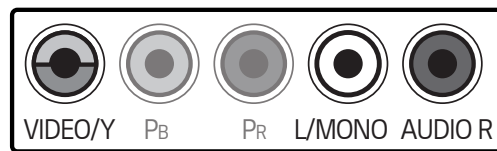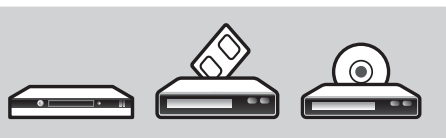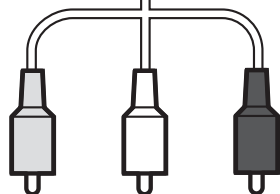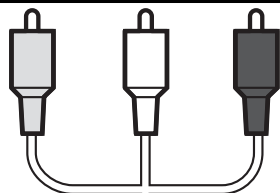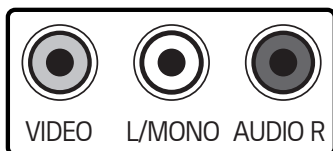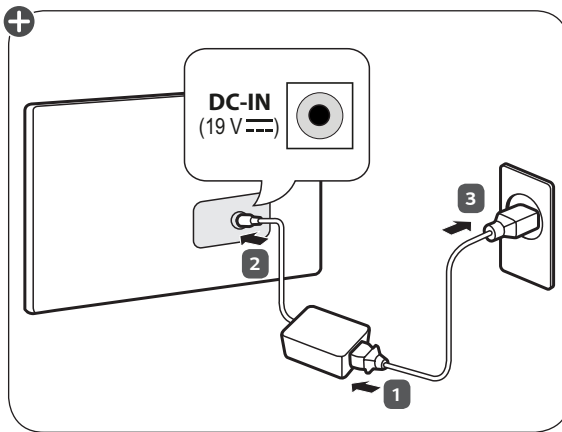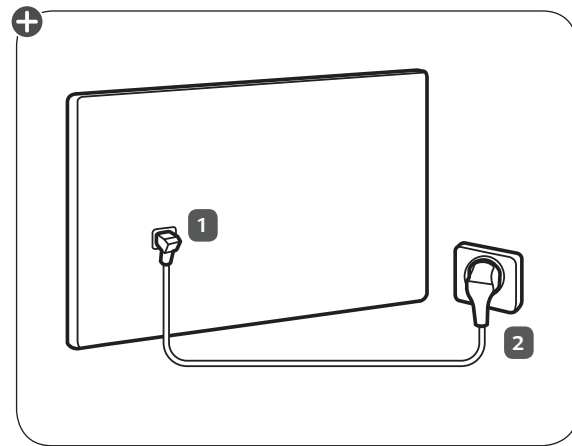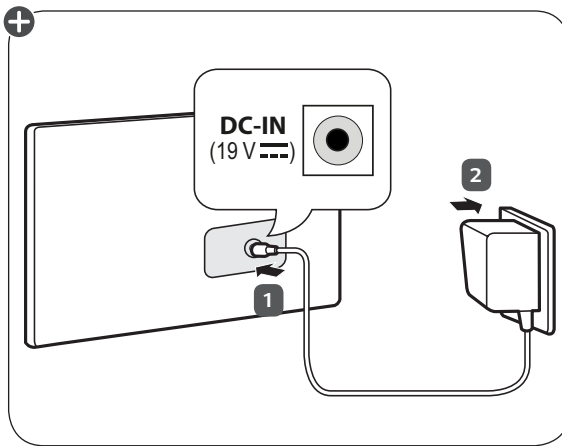
: Depending on model / Selon le modèle / Dependendo do modelo / حسب الطراز
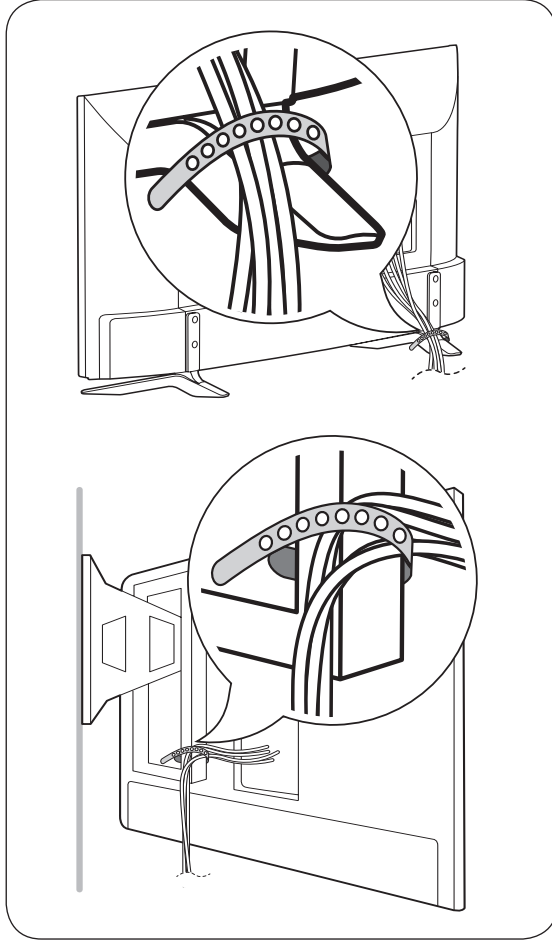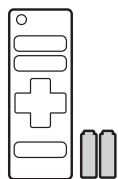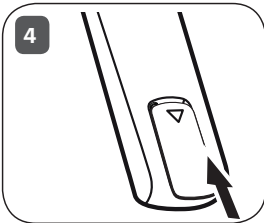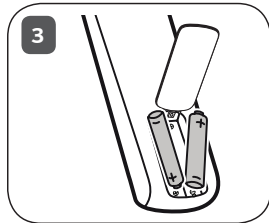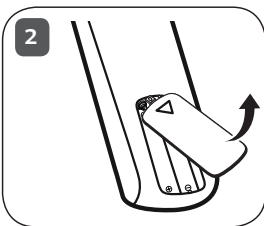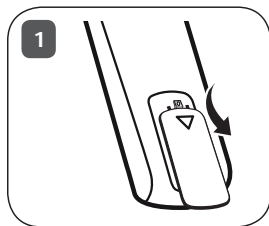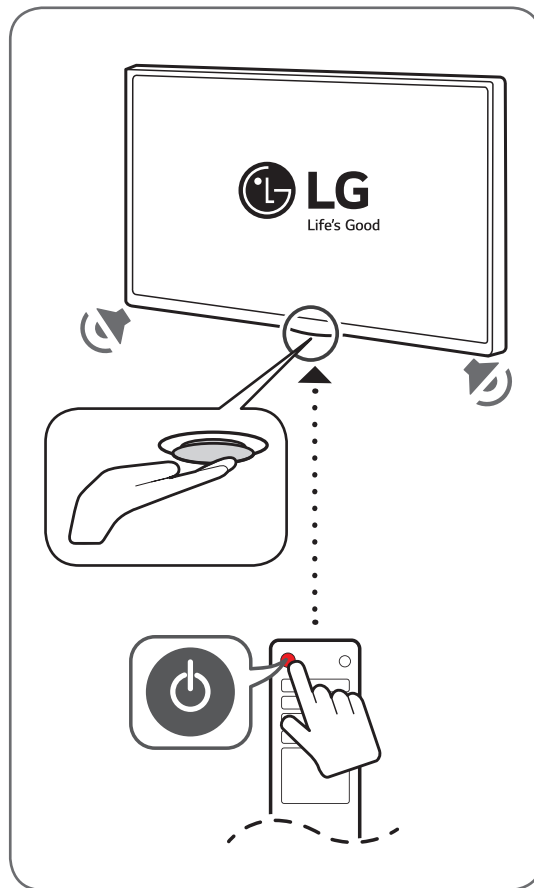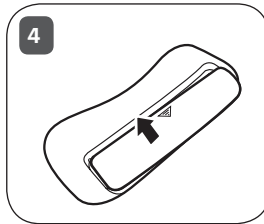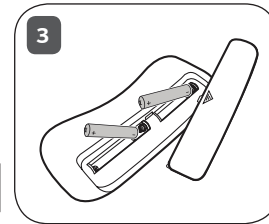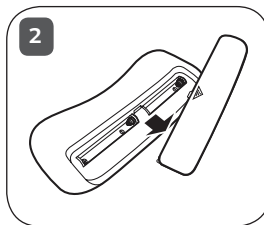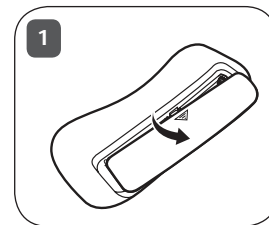
: Depending on model / Selon le modèle / Dependendo do modelo / حسب الطراز
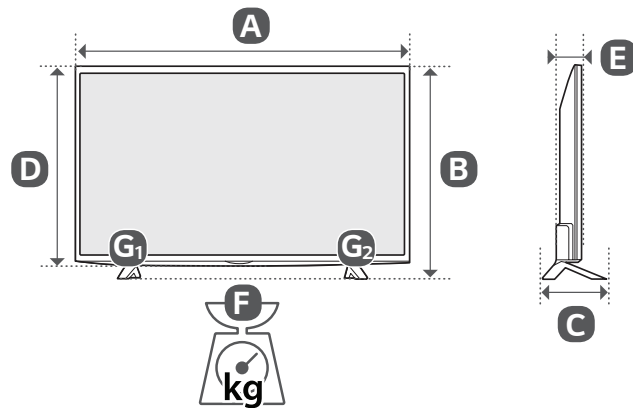
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (kg)	F - (G1 + G2) (kg)
32LH510A-TA 32LH512A-TC	734	474	172	438	71	4.7	4.5
32LH516A-TA 32LH517A-TC	734	474	172	438	71	5.0	4.8
43LH511A-TE	976	621	208.7	583	81.5	8.1	7.8
43LH516A-TE	976	621	208.7	583	81.5	8.4	8.1
49LH511A-TE 49LH516A-TE	1108	696	208.7	657	81.5	10.9	10.6

	Power requirement / Alimentation / Requisito de alimentação / متطلبات الطاقة
32LH510A-TA 32LH512A-TC	19 V ⎓ 1.6 A 19 فولت ⎓ 1.6 أمبير
32LH516A-TA 32LH517A-TC	19 V ⎓ 1.8 A 19 فولت ⎓ 1.8 أمبير
43LH511A-TE 43LH516A-TE	19 V ⎓ 2.5 A 19 فولت ⎓ 2.5 أمبير
49LH511A-TE	19 V ⎓ 3.2 A 19 فولت ⎓ 3.2 أمبير
49LH516A-TE	AC 100-240 V ~ 50 / 60 Hz تيار متردد 100-240 فولت ~ 50 / 60 هرتز

LG
Life's Good

OWNER'S MANUAL

Safety and Reference

LED TV*
* LG LED TV applies LCD screen with LED backlights.

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

Safety instructions

Please read these safety precautions carefully before using the product.

⚠ WARNING

Do not place the TV and/or remote control in the following environments:

- A location exposed to direct sunlight
- An area with high humidity such as a bathroom
- Near any heat source such as stoves and other devices that produce heat
- Near kitchen counters or humidifiers where they can easily be exposed to steam or oil
- An area exposed to rain or wind
- Near containers of water such as vases

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

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

Mains Plug is the TV connecting/disconnecting device to AC mains electric supply. This plug must remain readily attached and operable when TV is in use.

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

Make sure to connect Mains cable to compliant AC mains socket with Grounded earth pin. (Except for devices which are not grounded on earth.) Otherwise possibility you may be electrocuted or injured.

Insert power cable plug completely into wall socket otherwise if not secured completely into socket, fire ignition may break out.

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

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

Bend antenna cable between inside and outside building to prevent rain from flowing in. This may cause water damaged inside the Product and could give an electric shock.
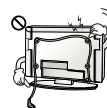
When mounting TV onto wall make sure to neatly install and isolate cabling from rear of TV as to not create possibility of electric shock / fire hazard.
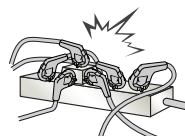
Do not plug too many electrical devices into a single multiple electrical outlet. Otherwise, this may result in fire due to over-heating.
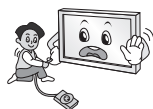
Do not drop the product or let it fall over when connecting external devices. Otherwise, this may result in injury or damage to the product.

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

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

Dispose of used batteries carefully to ensure that a small child does not consume them. Please seek Doctor- Medical Attention immediately if child consumes batteries.

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

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

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

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

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

Never touch this product or antenna during a thunder or lighting storm. You may be electrocuted.
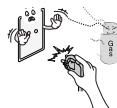
Never touch the wall outlet when there is leakage of gas, open the windows and ventilate. It may cause a fire or a burn by a spark.

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

3

If any of the following occur, unplug the product immediately and contact your local service centre.

- The product has been impacted by shock
- The product has been damaged
- Foreign objects have entered the product
- The product produced smoke or a strange smell

This may result in fire or electric shock.

Unplug the TV from AC mains wall socket if you do not intend to use the TV for a long period of time. Accumulated dust can cause fire hazard and insulation deterioration can cause electric leakage/shock/fire.

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

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.

If water enters or comes into contact with TV, AC adapter or power cord please disconnect the power cord and contact service centre immediately. Otherwise, this may result in electric shock or fire.
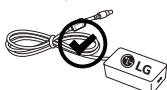
Only use an authorized AC adapter and power cord approved by LG Electronics. Otherwise, this may result in fire, electric shock, malfunction or product deformation.

Never Disassemble the AC adapter or power cord. This may result in fire or electric shock.

Be careful in handling the adapter to prevent any external shocks to it. An external shock may cause damage to the adapter.
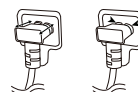
Make sure the power cord is connected securely to the power plug on the TV. (Depending on model)

⚠ CAUTION

Install the product where no radio wave occurs.

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

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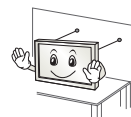
If you install the TV on a stand, you need to take actions to prevent the product from overturning. Otherwise, the product may fall over, which may cause injury.

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

Only use the attachments / accessories specified by the manufacturer.

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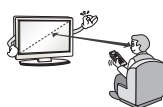
We recommend that you maintain a distance of at least 2 to 7 times the diagonal screen size when watching TV. If you watch TV for a long period of time, this may cause blurred vision.
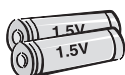
Only use the specified type of battery. This could cause damage to the remote control.
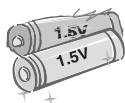
Do not mix new batteries with old batteries. This may cause the batteries to overheat and leak.

Batteries should not be exposed to excessive heat. For example, keep away from direct Sunlight , open fireplace and electric heaters.

Do not place non-rechargeable batteries in charging device.

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

Signal from Remote Control can be interrupted due to external/internal lighting eg Sunlight, fluorescent lighting. If this occurs turn off lighting or darken viewing area.

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

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

Please follow the installation instructions below to prevent the product from overheating.

 • The distance between the product and the wall should be more than 10 cm.
 • Do not install the product in a place with no ventilation (e.g., on a bookshelf or in a cupboard).
 • Do not install the product on a carpet or cushion.
 • Make sure the air vent is not blocked by a tablecloth or curtain.
Otherwise, this may result in fire.
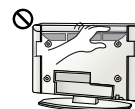
Take care not to touch the ventilation openings when watching the TV for long periods as the ventilation openings may become hot. This does not affect the operation or performance of the product.

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

5

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

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

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

Avoid touching the screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary or permanent distortion/damage to screen.

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

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

When unplugging the cable, grab the plug and unplug it, by pulling at the plug.

Don't pull at the cord to unplug the power cord from the power board, as this could be hazardous.

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

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

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

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

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

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

Displaying a still image for a prolonged period of time may cause image sticking. Avoid displaying a fixed image on the TV screen for a long period of time.

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 on the product.
This generated sound does not affect the performance and reliability of the product.

Do not use high voltage electrical goods near the TV (e.g. electric mosquito-swatter). This may result in product malfunction.

Preparing

🔔 NOTE

- Image shown may differ from your TV.
- Your TV's OSD (On Screen Display) may differ slightly from that shown in this manual.
- The available menus and options may differ from the input source or product model that you are using.
- New features may be added to this TV in the future.
- The items supplied with your product may vary depending on the model.
- Product specifications or contents of this manual may be changed without prior notice due to upgrade of product functions.
- For an optimal connection, HDMI cables and USB devices should have bezels less than 10 mm thick and 18 mm width. Use an extension cable that supports USB 2.0 if the USB cable or USB memory stick does not fit into your TV's USB port.

$$*A \leqq 10 \text{ mm}$$
$$*B \leqq 18 \text{ mm}$$
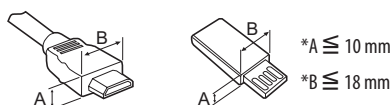
- Use a certified cable with the HDMI logo attached.
- If you do not use a certified HDMI cable, the screen may not display or a connection error may occur. (Recommended HDMI cable types)
  – High-Speed HDMI®/™ cable (3 m or less)
  – High-Speed HDMI®/™ cable with Ethernet (3 m or less)
- How to use the ferrite core (Depending on model)
  – Use the ferrite core to reduce the electromagnetic interference in the power cord. Wind the power cord on the ferrite core once.

[Cross Section of Ferrite Core]

[Wall side]   [TV side]

10 cm (+ / -2 cm)
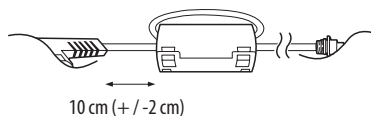
- Antenna Isolator Installation Guide (Depending on model)
  - Use this to install TV in a place where there is a voltage difference between TV Set and GND of antenna signal.
    » If there is a voltage difference between TV Set and GND of antenna signal, the antenna contact might be heated and excessive heat might cause an accident.
  - You can improve the safety when watching TV by efficiently removing power voltage from TV antenna. It is recommended to mount the isolator to the wall. If it cannot be mounted to the wall, mount it on the TV. Avoid disconnecting the antenna Isolator after installation.
  - Before starting, be sure that the TV antenna is connected.

Wall

Cable / Antenna

or

Isolator

1. Connect to TV.

2. Connect to Set-Top box.
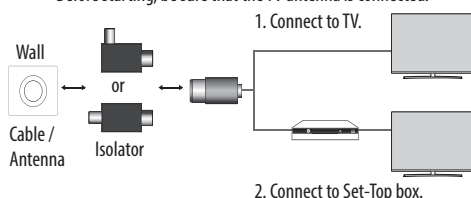
  - Connect one end of the isolator to cable/antenna jack and the other to TV set or set-top box.

    "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing - and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)"

  - When applying the RF Isolator, a slight loss of signal sensitivity can occur.

⚠ CAUTION

- Do not use any unapproved items to ensure the safety and product life span.
- Any damage or injuries caused by using unapproved items are not covered by the manufacturer's warranty.
- Some models have a thin film attached on to the screen and this must not be removed.
- 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.
- Make sure that the screws are inserted correctly and fastened securely. (If they are not fastened securely enough, the TV may tilt forward after being installed.) Do not use too much force and over tighten the screws; otherwise screw may be damaged and not tighten correctly.

Lifting and moving the TV

Please note the following advice to prevent the TV from being scratched or damaged and for safe transportation regardless of its type and size.

- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should face away from you to avoid damage.

- Hold the top and bottom of the TV frame firmly. Make sure not to hold the transparent part, speaker, or speaker grill area.
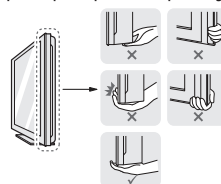
- When transporting a large TV, there should be at least 2 people.
- When transporting the TV by hand, hold the TV as shown in the following illustration.
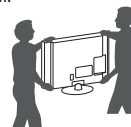
- When transporting the TV, do not expose the TV to jolts or excessive vibration.
- When transporting the TV, keep the TV upright, never turn the TV on its side or tilt towards the left or right.
- Do not apply excessive pressure to cause flexing /bending of frame chassis as it may damage screen.
- When handling the TV, be careful not to damage the protruding buttons.

⚠ CAUTION

- Avoid touching the screen at all times, as this may result in damage to the screen.
- Do not move the TV by holding the cable holders, as the cable holders may break, and injuries and damage to the TV may occur.

Using the button

(Depending on model)

You can simply operate the TV functions, pressing or moving the buttons.

ⓘ NOTE

- LH51, LH50 series does not have Joystick functions but has only a power On/Off button.

Dome Button   Joystick Button

or
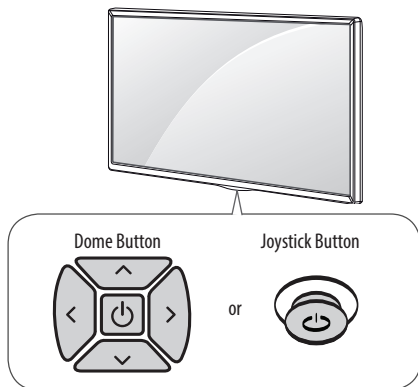
Basic functions

		Power On (Press) Power Off (Press and hold)[1]
‹ ›		Volume Control
⌄⌃		Programmes Control

1 If the Menu button is on the screen, pressing and holding the button will let you exit the Menu.

Adjusting the menu

When the TV is turned on, press the ⏻ button one time. You can adjust the Menu items pressing or moving the buttons.

⏻	Turns the power off.
✕	Clears on-screen displays and returns to TV viewing.
⬤	Changes the input source.
⚙	Accesses the settings menu.

Mounting on a table

1 Lift and tilt the TV into its upright position on a table.

- Leave a 10 cm (minimum) space from the wall for proper ventilation.

10 cm
10 cm   10 cm
10 cm
10 cm
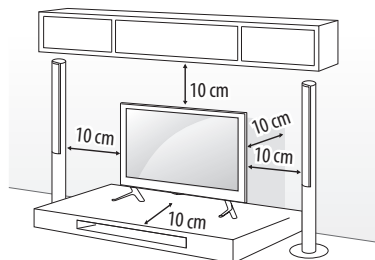
2 Connect the power cord to a wall outlet.

⚠ CAUTION

- Do not place the TV near or on sources of heat, as this may result in fire or other damage.

⚠ WARNING

- If a television is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as:
  - » Using cabinets or stands recommended by the manufacturer of the television.
  - » Only using furniture that can safely support the television.
  - » Ensuring the television is not overhanging the edge of the supporting furniture.
  - » Not placing the television on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television to a suitable support.
  - » Not standing the televisions on cloth or other materials placed between the television and supporting furniture.
  - » Educating children about the dangers of climbing on furniture to reach the television or its controls.

Securing the TV to a wall

(This feature is not available for all models.)
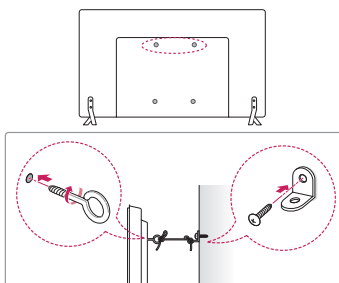
1 Insert and tighten the eye-bolts, or TV brackets and bolts on the back of the TV.
   • If there are bolts inserted at the eye-bolts position, remove the bolts first.
2 Mount the wall brackets with the bolts to the wall.
   Match the location of the wall bracket and the eye-bolts on the rear of the 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.

⚠ CAUTION

• Make sure that children do not climb on or hang on the TV.

ⓘ NOTE

• 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 on a wall

Attach an optional wall mount bracket at the rear of the TV carefully and install the wall mount bracket on a solid wall perpendicular to the floor. When you attach the TV to other building materials, please contact qualified personnel. LG recommends that wall mounting be performed by a qualified professional installer. We recommend the use of LG's wall mount bracket. LG's wall mount bracket is easy to move with cables connected. When you do not use LG's wall mount bracket, please use a wall mount bracket where the device is adequately secured to the wall with enough space to allow connectivity to external devices. It is advised to connect all the cables before installing fixed wall mounts.
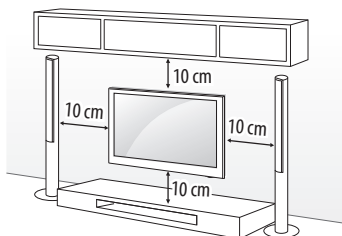
Make sure to use screws and wall mount bracket that meet the VESA standard. Standard dimensions for the wall mount kits are described in the following table.

Separate purchase (Wall mounting bracket)

Model	32LH50** 32/43LH51** 43LH54** 32LH56**	49LH51** 49LH54**
VESA (mm) (A x B)	200 x 200	300 x 300
Standard screw	M6	M6
Number of screws	4	4
Wall mount bracket	LSW240B MSW240	LSW350B MSW240
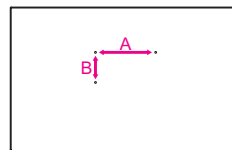
⚠ CAUTION

• Remove the stand before installing the TV on a wall mount by performing the stand attachment in reverse.

ⓘ NOTE

• When installing the wall mounting bracket, use the adhesive label provided. The adhesive label will protect the opening from accumulating dust and dirt. (Only when the label is provided)

Provided item	
Adhesive label	
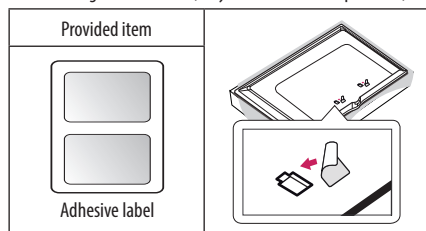
• When installing the wall mounting bracket, it is recommended to cover the stand hole using tape, in order to prevent the influx of dust and insects. (Depending on model)

Stand hole
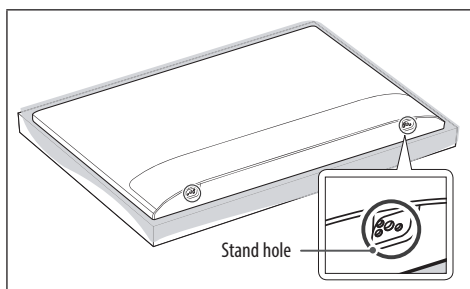
• When attaching a wall mounting bracket to the TV, insert the wall mount spacers into the TV wall mount holes to adjust the vertical angle of the TV. (Only when the item of the following form is provided)

Provided item	
Wall mount spacer	
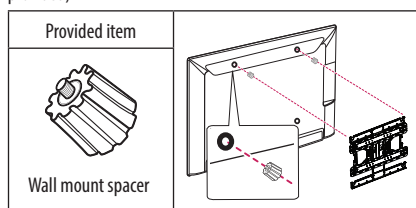
Connections (notifications)

Connect various external devices to the TV and switch input modes to select an external device. For more information of external device's connection, refer to the manual provided with each device.

Available external devices are: HD receivers, DVD players, VCRs, audio systems, USB storage devices, gaming devices, and other external devices.

🛈 NOTE

• The external device connection may differ from the model.
• Connect external devices to the TV regardless of the order of the TV port.
• If you record a TV program on a DVD recorder or VCR, make sure to connect the TV signal input cable to the TV through a DVD recorder or VCR. For more information of recording, refer to the manual provided with the connected device.
• Refer to the external equipment's manual for operating instructions.
• If you connect a gaming device to the TV, use the cable supplied with the gaming device.

Antenna connection

Connect the TV to a wall antenna socket with an RF cable (75 Ω).

• Use a signal splitter to use more than 2 TVs.
• If the image quality is poor, install a signal amplifier properly to improve the image quality.
• If the image quality is poor with an antenna connected, try to realign the antenna in the correct direction.
• An antenna cable and converter are not supplied.

Adapter connection

(Depending on model)

⚠ CAUTION

• Please be sure to connect the TV to the AC-DC power adapter before connecting the TV's power plug to a wall power outlet.

Other connections

Connect your TV to external devices. For the best picture and audio quality, connect the external device and the TV with the HDMI cable. Some separate cable is not provided.

Remote control

(Depending on model)

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

To replace batteries, open the battery cover, replace batteries (1.5 V AAA) matching the ⊕ and ⊖ ends to the label inside the compartment, and close the battery cover. To remove the batteries, perform the installation actions in reverse.

⚠ CAUTION

• In Analogue TV and some countries, some remote control buttons may not work.

Make sure to point the remote control toward the remote control sensor on the TV.

A
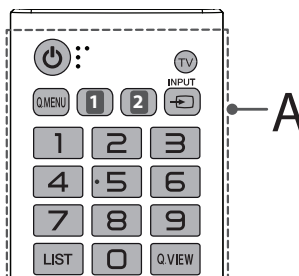
A

 (**POWER**) Turns the TV on or off.

TV Returns to the TV viewing from any mode.

Q.MENU Accesses the Quick menus.

1 **PICTURE** Changes the image mode. (Depending on model)

1, **2** **AV MODE** Selects an AV mode. (Depending on model)

2 **BOLLYWOOD** Switches the BOLLYWOOD sound mode. (Depending on model)

 INPUT Changes the input source.

Number buttons Enters numbers.

LIST Accesses the saved programme list.

Q.VIEW Returns to the previously viewed programme.
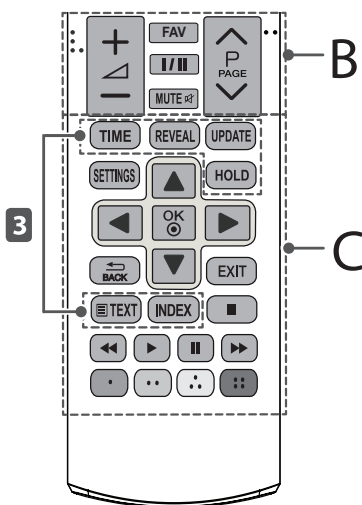
B

+∠− Adjusts the volume level.

FAV Accesses your favourite programme list.

I/II Selects the sound output.

MUTE Mutes all sounds.

 P   Scrolls through the saved programmes.

 PAGE   Moves to the previous or next screen.

C

3 **Teletext buttons** These buttons are used for teletext.

SETTINGS Accesses the main menus.

Navigation buttons (up/down/left/right) Scrolls through menus or options.

OK   Selects menus or options and confirms your input.

 BACK Returns to the previous level.

EXIT Clears on-screen displays and returns to TV viewing.

Control buttons (■, ▶, ❚❚, ◀◀, ▶▶) Controls the ENTERTAINMENT menus.

Coloured buttons These access special functions in some menus. (: Red, : Green, : Yellow, : Blue)

Licenses

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This DivX Certified® device has passed rigorous testing to ensure it plays DivX® video.

To play purchased DivX movies, first register your device at vod.divx. com. Find your registration code in the DivX VOD section of your device setup menu.

DivX Certified® to play DivX® video up to HD 1080p, including premium content.

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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 for three (3) years from the date on which you purchased the product.

Watching TV

Turning the TV on for the first time

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

1 Connect the power cord to a power outlet. The Power indicator turns red and the TV switches to Standby mode.

2 In Standby mode, press the power button on the remote control or local key to turn the TV on. The Initial setting screen appears if you turn the TV on for the first time.

NOTE

- You can also access **Factory Reset** by accessing **OPTION** in the main menu.

3 Follow the on-screen instructions to customize your TV settings according to your preferences.

Menu Language	Selects a language to display.
⇩	
Mode Setting	Selects **Home Use** for the home environment.
⇩	
Time Setting	Sets the time.
⇩	
Auto Tuning	Scans and saves available programmes automatically.
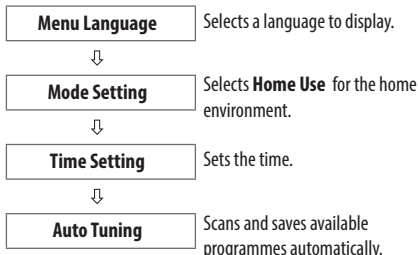
NOTE

- To display images in the best quality for your home environment, select **Home Use**.
- **Store Demo** is suitable for the retail environment.
- If you select **Store Demo**, any customized settings will switch back to the default settings of **Store Demo** in 5 minutes.

4 When the basic settings are complete, press the **OK** ⊙.

NOTE

- If you do not complete the Initial setting, it will appear whenever the TV turns on.
- Disconnect the power cord from the power outlet when you do not use the TV for a long period of time.

5 To turn the TV off, press the power button on the remote control.

Watching TV

1 In Standby mode, press ⏻ **(POWER)** to turn the TV on.

2 Press ↪ **INPUT** and select **TV**.

3 To turn the TV off, press ⏻ **(POWER)**. The TV switches to Standby mode.

Managing programmes

Automatically setting up programme

Use this to automatically find and store all available programmes.

1 Press **SETTINGS** and the Navigation buttons to scroll to **SETUP** and press **OK** ⊙.

2 Press the Navigation buttons to scroll to **Auto Tuning** and press **OK** ⊙.

3 Press the Navigation buttons to scroll to **Start** and select **Start** to begin auto tuning. The TV scans and saves available programmes automatically.

4 When you return to the previous menu, press ↩**BACK**.

Manually setting up programme

Manual Tuning lets you manually tune and arrange the stations in whatever order you desire.

1 Press **SETTINGS** and the Navigation buttons to scroll to **SETUP**.

2 Press the Navigation buttons to scroll to **Manual Tuning**.

3 Press the Navigation buttons to scroll to **Storage**.

4 Press the Navigation buttons or Number buttons to select the desired programme number.

5 Press the Navigation buttons to scroll to **System**.

6 Press the Navigation buttons to scroll to TV System.

7 Press the Navigation buttons to scroll to **Band**.

8 Press the Navigation buttons to scroll to **V/UHF** or **Cable**.

9 Press the Navigation buttons to scroll to **Channel**.

10 Press the Navigation buttons and then select the desired Channel number with the Navigation buttons or Number buttons.

11 Press the Navigation buttons to scroll to **Search**.

12 Press the Navigation buttons to scroll and start Searching.

13 Press the **OK ⦿** to store it.

14 When you return to the previous menu, press ↩**BACK**.

ⓘ NOTE

• To store another programme, repeat steps 3 to 13.

Assigning a station name

You can assign a station name with five characters to each programme number.

1 Press **SETTINGS** and the Navigation buttons to scroll to **SETUP**.

2 Press the Navigation buttons to scroll to **Manual Tuning**.

3 Press the Navigation buttons to scroll to **Name**.

4 Press the Navigation buttons to scroll to select the position and make your choice of the second character, and so on. You can use the alphabet A to Z, the number 0 to 9, +/ -, and blank and press **OK ⦿**.

5 Press the **OK ⦿** to store it.

6 When you return to the previous menu, press ↩**BACK**.

Fine Tuning

Normally fine tuning is only necessary if reception is poor.

1 Press **SETTINGS** and the Navigation buttons to scroll to **SETUP**.

2 Press the Navigation buttons to scroll to **Manual Tuning**.

3 Press the Navigation buttons to scroll to **Fine**.

4 Press the Navigation buttons to fine tune for the best picture and sound.

5 Press the **OK ⦿** to store it.

6 When you return to the previous menu, press ↩**BACK**.

Editing your programme list

When a programme number is skipped, it means that you will be unable to select it using ⋀ **P** ⋁ button during TV viewing.

If you wish to select the skipped programme, directly enter the programme number with the NUMBER buttons or select it in the Programme edit menu.

This function enables you to skip the stored programmes.

1 Press **SETTINGS** and the Navigation buttons to scroll to **SETUP**.

2 Press the Navigation buttons to scroll to **Programme Edit**.

3 Edit programmes using the following buttons.

Button	Description
Red button	Deletes a programme. Press the Red button twice. The selected programme is deleted, all the following programmes are shifted up one position.
Yellow button	Moves a programme. Press the Yellow button again to release this function.
Blue button	Selects a programme number to be skipped. Press the Blue button again to release the skipped programme.

4 When you return to the previous menu, press ↩**BACK**.

Selecting a programme on the programme list

1 Press **LIST** to access the programme list.

2 Press the Navigation buttons to select to desired programme and press **OK ⦿**.

3 When you return to the previous menu, press **LIST**.

ⓘ NOTE

• You may find some blue programmes. They have been set up to be skipped by auto programming or in the programme edit mode.

• Some programmes with the programme number shown in the programme list indicate there is no station name assigned.

Using additional options

Adjusting aspect ratio

Resize an image to view at its optimal size by pressing **Q.MENU** or accessing **Aspect Ratio** in the **PICTURE** menu.

🛈 **NOTE**

- The available ratio varies depending on the input source.

- **16:9** : Resizes images to fit the screen width.

- **Just Scan** : Displays video images in the original size without removing parts of the edge of the image. (This function works in Component/HDMI (720p / 1080i / 1080p) Mode.)

🛈 **NOTE**

- If you select **Just Scan**, you may see image noises at the edge of the original signal.

- **Original** : When your TV receives a wide screen signal it will automatically change to the picture format broadcasted.

(4:3 → 4:3)   (16:9 → 16:9)

- **4:3** : Resizes images to the previous standard 4:3.

- **14:9** : You can view a picture format of 14:9 or a general TV programme in the 14:9 mode. The 14:9 screen is viewed in the same way as in 4:3, but is moved to the up and down.

- **Zoom** : Formats an image to fit the screen width. The top and bottom of the image may not appear.
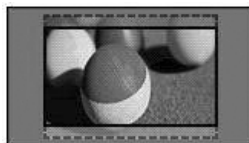
- **Cinema Zoom 1** : Formats an image to the cinemascope ratio, 2.35:1.
  To change the ratio of the cinema zoom, press 〈 or 〉 and its range is from 1 to 16.

🛈 **NOTE**

- If you enlarge or reduce an image, the image may be distorted. Using the input list.

Changing AV modes

Each **AV MODE** has optimized image and sound settings.
Press **AV MODE** repeatedly to select an appropriate mode.

Mode	Description
Off	Changes to the previously customized settings.
Cinema	Uses the optimized image and sound settings for a cinematic look.
Game	Uses the optimized image and sound settings for fast gaming.
	When playing a video game using PlayStation or Xbox. it is recommended to use the Game mode.
	When in Game mode, functions related to picture quality will be optimized for playing games.

ENGLISH

Using the input list

Selecting an input source

1 Press ⬛ **INPUT** to access the input sources.
  • The connected device displays on each input source.
2 Press the Navigation buttons or input button to scroll to one of the input sources and press **OK** ◉.

   * Image shown may differ from your TV.

A Type)

| Input List |
| AV 1   AV 2   Component   HDMI 1   HDMI 2   Antenna |
| Exit |

B Type)

| Input List |
| Antenna   AV 1   AV 2   Component   HDMI |
| Exit |
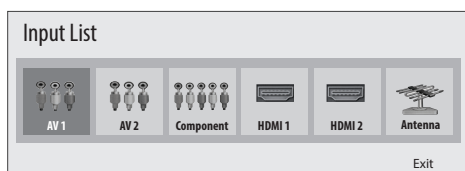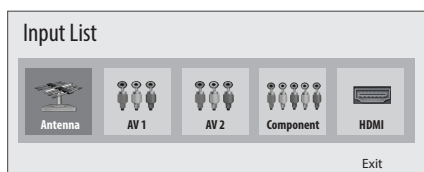
Input source	Description
TV	Watch TV over the air and cable broadcast.
AV 1/2	Watch video from a VCR or other external devices.
Component	Select it when using the DVD or the Digital set-top box depends on connector.
HDMI 1/2 HDMI	Watch video from a HTS or other high definition devices.

NOTE

• Supported HDMI Audio format :
  Dolby Digital (32 kHz, 44.1 kHz, 48 kHz),
  PCM (32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192 kHz)
  (Depending on model)

Entertainment

(Depending on model)
   * Image shown may differ from your TV.

Connecting USB storage devices

Connect USB storage devices (USB memory) to the TV and use multimedia features (See "Browsing files" on page 17).

Connect a USB flash memory or USB memory card reader to the TV as shown on the following illustration.
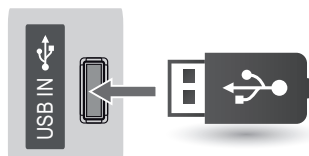
To disconnect a USB storage device, make sure to end the connection properly to prevent damages to the TV or files.

1 Press **Q.MENU** to access the quick menus.
2 Press the Navigation buttons to scroll to **Eject** and press **OK** ◉.
3 Disconnect the USB storage device only when the message says that it is safe to remove.

⚠ CAUTION

• Do not turn the TV off or remove a USB storage device while the USB storage device is connected to the TV, as this could result in loss of files or damage to the USB storage device.
• Back up your files saved on a USB storage device frequently, as you may lose or damage the files and this may be not covered by the manufacturer's warranty.

Tips for using USB storage devices

• Only a USB storage device is recognizable.
• If the USB storage device is connected through a USB hub, the device is not recognizable.
• A USB storage device using an automatic recognition programme may not be recognized.
• A USB storage device which uses its own driver may not be recognized.
• The recognition speed of a USB storage device may depend on each device.
• Please do not turn off the TV or unplug the USB device when the connected USB storage device is working. When such device is suddenly separated or unplugged, the stored files or the USB storage device may be damaged.

- Please do not connect the USB storage device which was artificially manoeuvred on the PC. The device may cause the product to malfunction or fail to be played. Never forget to use only a USB storage device which has normal music files, image files or movie files.
- Please use only a USB storage device which was formatted as a FAT16, FAT32, NTFS file system.
- Please connect a USB storage device with the cable offered by the device maker.
- Some USB storage devices may not be supported or operated smoothly.
- Be sure to back up important files since data stored in a USB memory device may be damaged. We will not be responsible for any data loss.
- If a USB memory device is connected to a USB multi-card reader, its volume data may not be detected.
- If the USB memory device does not work properly, disconnect and reconnect it.
- How fast a USB memory device is detected differs from device to device.
- The recommended capacity is 1 TB or less for a USB external hard disk and 32 GB or less for USB memory.
- Any device with more than the recommended capacity may not work properly.
- USB storage devices below USB 2.0 are supported as well. But they may not work properly in the movie list.
- Maximum of 999 folders or files can be recognized under one folder.
- If there are a lot of folders or files all within one folder, the device may not be able to access these properly.
- For external USB HDDs, it is recommended that you use devices with a rated voltage of less than 5 V and a rated current of less than 0.5A.

Browsing files

Access the photo, music, or movie lists and browse files.

1 Connect a USB storage device.

2 Press **SETTINGS** to access the main menus.

3 Press the Navigation buttons to scroll to **ENTERTAINMENT** and press **OK** ⊙.

4 Press Navigation buttons to scroll to **PHOTO LIST**, **MUSIC LIST** or **MOVIE LIST** and press **OK** ⊙.

| PHOTO LIST | MUSIC LIST | MOVIE LIST |
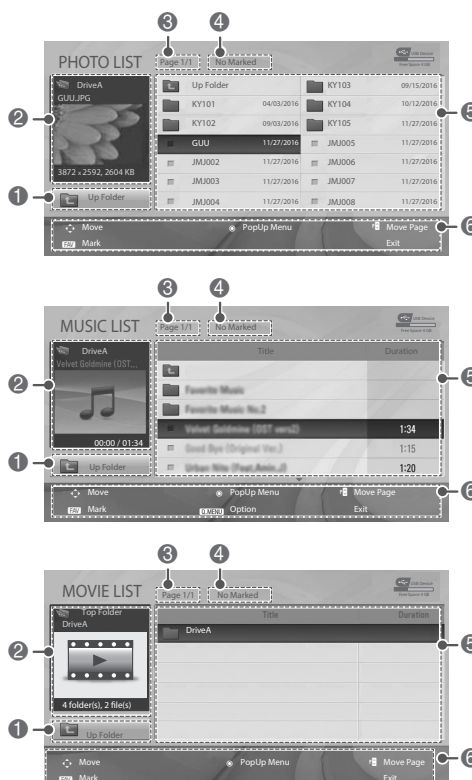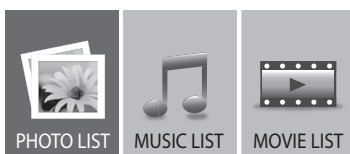
No.	Description
❶	Moves to the upper level folder.
❷	Preview: Displays the thumbnail/folder name of the file in the selected folder.
❸	Current page/Total pages.
❹	Total number of marked files.
❺	Contents under the folder focused on ❶.
❻	Available buttons on the remote control.

Supported file format

Type	Supported file format
Photo	JPEG
	Available size
	Baseline : 64 pixel (W) x 64 pixel (H) - 15360 pixel (W) x 8640 pixel (H)
	Progressive : 64 x 64 to 1024 x 768
	• You can play JPEG files only. • Non-supported files are displayed in the form of predefined icon.

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Music	MP3
	Bit rate 32 kbps to 320 kbps
	• Sampling rate MPEG1 Layer3 : 32 kHz, 44.1 kHz, 48 kHz • Sampling rate MPEG2 Layer3 : 16 kHz, 22.05 kHz, 24 kHz • Sampling rate MPEG2.5 Layer3 : 8 kHz, 11.025 kHz, 12 kHz
Movie	DAT, MPG, MPEG, VOB, AVI, DIVX, MP4, MKV, TS, TRP, TP, ASF, WMV, FLV, RM, RMVB
	Movie (*.mpg/*.mpeg/*dat/*.ts/*.trp/*.tp/*.vob/*.mp4/*.mov/*.mkv/*.divx/*.avi/*.asf/*.wmv/*.flv/*.avi(motion-jpeg)/*.mp4(motion-jpeg)/*.mkv(motion-jpeg)/*.rm/*.rmvb) supporting file
	Video format : DivX 3.11, DivX 4, DivX 5, DivX 6, Xvid1.00, Xvid1.01, Xvid1.02, Xvid1.03, Xvid1.10 beta-1/beta-2, Mpeg-1, Mpeg-2, Mpeg-4, H.264/AVS, VC1, JPEG, Sorenson H.263, H.264, RV30, RV40
	Audio format : Dolby Digital, AAC, Mpeg, MP3, MP2, LPCM, ADPCM, WMA, HE-AAC, RA6(Cook)
	Bit rate : within 32 kbps to 320 kbps (MP3)
	External Subtitle format : *.smi/*.srt/*.sub(MicroDVD,Subviewer1.0/2.0)/*.ass/*.ssa/*.txt(TMPlayer)/*.psb(PowerDivX)
	Internal Subtitle format : Only XSUB (It is the subtitle format used in DivX6 files)

Viewing photos

View image files saved in a USB storage device. The displays on the screen may differ from the model.

1 Press **SETTINGS** to access the main menus.

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

3 Press the Navigation buttons to scroll to **PHOTO LIST** and press **OK ◉**.

4 Press the Navigation buttons to scroll to a folder/file you want and press **OK ◉**.

5 View photos by using the following menus buttons.
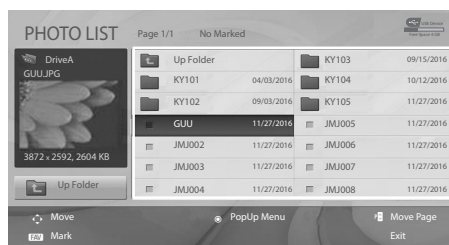
PHOTO LIST   Page 1/1   No Marked

DriveA GUU.JPG	Up Folder	KY103	09/15/2016
	KY101 04/03/2016	KY104	10/12/2016
	KY102 09/03/2016	KY105	11/27/2016
3872 x 2592, 2604 KB	GUU 11/27/2016	JMJ005	11/27/2016
Up Folder	JMJ002 11/27/2016	JMJ006	11/27/2016
	JMJ003 11/27/2016	JMJ007	11/27/2016
	JMJ004 11/27/2016	JMJ008	11/27/2016

Move   PopUp Menu   Move Page
Mark   Exit

Button	Description
Navigation button	Scrolls through the files.
OK ◉	Views the highlighted file or enters the mark mode.
∧P∨	Moves to the previous or next page.
FAV	Enters the mark mode.
Menu	**Description**
View	Views the selected photo.
Mark All	Selects all files.
Close	Exits the Mark Mode.

⚠ **NOTE**

• Non-supported files are displayed the preview image by icon only ⚠.

• Abnormal files are displayed in the form of bitmap ⊗.

6 The following options are available while viewing photos.

2/13
Slide show   BGM   ↻   Hide   Q.MENU Option

Option	Description
Slideshow	Starts or stops a slideshow with selected photos.
	If there are no selected photos, all photos saved in the current folder display during a slideshow.
	To set a slideshow speed, select **Option**.

BGM	Turns the background music on or off. To set the background music folder, select **Option**.
↻ **(Rotate)**	Rotates photos clockwise (90°, 180°, 270°, 360°). **⚠ NOTE** • The supported photo size is limited. You cannot rotate a photo if the resolution of the rotated width is larger than the supported resolution size.
Hide	Hides the option window. To display the options, press **OK ◉**.

Q.MENU options for photo list

1 Press **Q.MENU**.
 A pop-up window will appears.

2 Press the Navigation buttons to scroll to **Set photo view.** and press **OK ◉**.

3 Press the Navigation buttons to scroll to one of the following options and press **OK ◉**.

Set photo view.

Option	Description
Slide Speed	Selects a slideshow speed (Fast, Normal, Slow).
Music Folder	Selects a music folder for the background music.

Set video.

Allows you to change Video presets. (See p. 23)

Set audio.

Allows you to change Audio presets. (See p. 24)

Listening to music

1 Press **SETTINGS** to access the main menus.

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

3 Press the Navigation buttons to scroll to **MUSIC LIST** and press **OK ◉**.

4 Press the Navigation buttons to scroll to a folder/file you want and press **OK ◉**.

5 Play music by using the following menus/buttons.

Button	Description
Navigation button	Scrolls through the files.
OK ◉	Views the highlighted file or enters the mark mode.
⌃**P**⌄	Moves to the previous or next page.
FAV	Enters the mark mode.
Menu	**Description**
Play	Plays the selected music file.
Play with Photo	Displays photos during playback.
Mark All	Selects all files.
Close	Exits the Mark Mode.

6 Control playback by using the following buttons.

Button	Description
◼	Stops playback.
▶	Plays a music file.
⏸	Pauses or resumes playback.
⏩	Skips to the next file.
⏪	Skips to the previous file.
⏪ or ⏩	When playing, When you press the ⏪ button, the previous music file will be played. When you press the ⏩ button, the next music file will be played.
EXIT	When you press the **EXIT** button, only the music will be stopped and the player will go to TV viewing.
▲ or ▼	When using the ▲ or ▼ button during playback a cursor indicating the position can be played.

1 Press **Q.MENU**.
   A pop-up window will appears.

Set audio.

Allows you to change Audio presets. (See p. 24)

> ⓘ **NOTE**
>
> • The TV will not play copy protected files.
> • If the TV is not in use for some time during playback, the information box as a screensaver will appear to prevent image burn. To return to the Music list screen, press **OK ◉** or ⤺ **BACK**.

File name ————→ 📁 Musics
001.mp3

▶ 00:53 / 05:31

Time elapsed / Duration
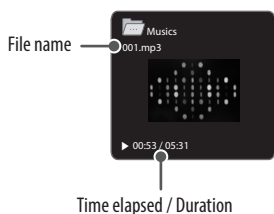
Viewing movies

1 Press **SETTINGS** to access the main menus.

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

3 Press the Navigation buttons to scroll to **MOVIE LIST** and press **OK ◉**.

4 Press the Navigation buttons to scroll to a folder/file you want and press **OK ◉**.

5 Play movie by using the following menus/buttons.

MOVIE LIST   Page 1/1   No Marked

Top Folder DriveA	Title	Duration
	📁 DriveA	
4 folder(s), 2 file(s)		
Up Folder		

Move   ● PopUp Menu   Move Page
Mark   Exit

Button	Description
Navigation button	Scrolls through the files.
OK ◉	Views the highlighted file or enters the mark mode.
⌃**P**⌄	Moves to the previous or next page.
FAV	Enters the mark mode.

Menu	Description
Play	Plays the selected movie file. Once a movie file finishes playing, the next selected one will be played automatically.
Mark All	Marks all movie files on the screen.
Close	Exits the Mark Mode.

6 Control playback by using the following buttons.

▶ | 07:10 | 00:22:05 | Q.MENU Option

Button	Description
(■)	Stops the playback.
(▶)	Plays a video.
(❙❙)	Pauses or resumes the playback.
(▶▶)	Scans forward in a file.
(◀◀)	Scans backward in a file.
Q.MENU	Shows the **Option** menu.
⤺**BACK**	Hides the menu on the full-sized screen.
EXIT	Returns to normal TV viewing.
◀ or ▶	Skips to specific points in a file during playback. The time of a specific point will appear on the status bar. In some files, this function may not work properly.

• Some user-created subtitles may not work properly.
• Some special characters are not supported in subtitles.
• HTML tags are not supported in subtitles.
• Subtitles in languages other than the supported languages are not available.
• Changing font and colour in subtitles is not supported.

- Subtitles in languages other than one specified are not supported.
- Video files with subtitle files of 1 MB or larger may not be played properly.
- The screen may suffer temporary interruptions (image stoppage, faster playback, etc.) when the audio language is changed.
- A damaged movie file may not be played correctly, or some player functions may not be usable.
- Movie files produced with some encoders may not be played correctly.
- If the video and audio structure of recorded file is not interleaved, either video or audio is outputted.
- HD videos with a maximum of 1920 x 1080 @ 25/30P or 1280 x 720 @ 50/60P are supported, depending on the frame.
- Videos with resolutions higher than 1920 X 1080 @ 25/30P or 1280 x 720 @ 50/60P may not work properly depending on the frame.
- Movie files other than the specified types and formats may not work properly.
- Max bit rate of playable movie file is 20 Mbps. (only, Motion JPEG : 10 Mbps)
- We do not guarantee smooth playback of profiles encoded level 4.1 or higher in H.264/AVC.
- DTS Audio codec is not supported.
- A movie file more than 30 GB in file size is not supported for playback. The file size limit is dependent on the encoding environment.
- A DivX movie file and its subtitle file must be located in the same folder.
- A video file name and its subtitle file name must be identical for it to be displayed.
- Playing a video via a USB connection that doesn't support high speed may not work properly.
- Files encoded with GMC (Global Motion Compensation) and Qpel (Quarterpel Motion Estimation) may not be played.
- Trick Mode does not support other functions than if video files do not have index information.
- Video file names that contain special characters may not be playable.

Video options

1 Press **Q. MENU** to access the Pop-Up menus.

2 Press the Navigation buttons to scroll to **Set video play**., **Set video.** or **Set audio.** and press **OK** ⊙.

When you select the **Set video play**.

1 Press the Navigation buttons to scroll to show the **Picture Size, Audio Language, Subtitle**.

2 Press the Navigation buttons to scroll to make appropriate adjustments.

Menu	Description
Picture Size	Selects your desired picture format during movie play.
Audio Language	Changes the Language Group of the audio during movie play. Files with a single audio track cannot be selected.
Subtitle	Turns on/off the subtitle.
Language	Activated for SMI subtitle and can select the language within the subtitle.
Code Page	Selects the font for subtitle. When set to default, same font as general menu will be used.
Sync	Adjusts the time synchronisation of the subtitle from -10 secs to +10 secs by steps of 0.5 secs during movie play.

Code Page	Support Language
Latin1	English, French, Spanish, Portuguese, Bahasa Malaysia, Bahasa Indonesia
Cyrillic	Russian
Thai	Thai
Hebrew	Hebrew
Arabic	Arabic, Persian, Kurdish
Vietnam	Vietnamese

NOTE

- Only 10,000 of sync blocks can be supported within the subtitle file.
- When playing a video, you can adjust the Picture Size by pressing **Q.MENU** or accessing Aspect Ratio in the **PICTURE** menu.

When you select the **Set video.**

1 Press the Navigation buttons to scroll to make appropriate adjustments. (See p. 23)

When you select the **Set audio.**

1 Press the Navigation buttons to scroll to show the **Sound Mode, Auto Volume, Balance**.

2 Press the Navigation buttons to scroll to make appropriate adjustments. (See p. 24)

DivX® VOD Guide

In order to play purchased or rented DivX® VOD contents, you should register your device with 10 digit DivX registration code from your device at *www.divx.com/vod*.

1 Press **SETTINGS** to access the main menus.

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

3 Press the Navigation buttons to scroll to **DivX(R) VOD** and press **OK ⊙**.

4 Press the Navigation buttons to scroll to **Registration** and press **OK ⊙**.

5 View the registration code of your TV.

> ⓘ You must register your device to play DivX(R) protected videos.
> Registration code : **********
> Register at http://vod.divx.com
>
> **Close**
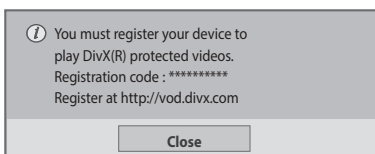
6 When you are finished, press **EXIT**. When you return to the previous menu, press ↶ **BACK**.

ⓘ NOTE

- Movie files are supported as follows
- **Resolution** : Under 1920 x 1080 (W x H) pixels
- **Frame Rate** : Under 30 frames/sec
- **Video Codec** : MPEG 1, MPEG 2, MPEG 4, H.264/AVS, DivX 3.11, DivX 4, DivX 5, DivX 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta1, Xvid 1.10-beta2, JPEG, VC1, Sorenson H.263/H.264, RV30, RV40

You should deregister your device with 8 digit DivX deregistration code from your device at *www.divx.com/vod*.

ⓘ NOTE

- Once the deregistration is executed, you must register your device again to see DivX® VOD contents.

1 Press **SETTINGS** to access the main menus.

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

3 Press the Navigation buttons to scroll to **DivX(R) VOD** and press **OK ⊙**.

4 Press the Navigation buttons to scroll to **Deregistration** and press **OK ⊙**.

5 Press the Navigation buttons to select **Yes** to confirm.

> ⓘ Deregistration code :
> ********
> Deregister at http://vod.divx.com
> Continue with registration?
>
> **Yes** **No**
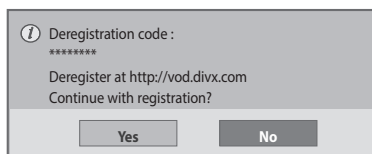
6 When you are finished, press **EXIT**. When you return to the previous menu, press ↶ **BACK**.

Customizing TV setting

> * Image shown may differ from your TV.

Accessing main menus

1 Press **SETTINGS** to access the main menus.

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

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

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

Menu	Description
SETUP	Sets up and edit programmes.
PICTURE	Adjusts the image size, quality, or effect.
AUDIO	Adjusts the sound quality, effect, or volume level.
TIME	Sets the time, date, or timer feature.
OPTION	Customizes the general settings.
LOCK	Locks or unlocks programmes.
INPUT	Views the input sources with their labels.
ENTERTAINMENT	Displays photo and play music, movie, game (Depending on model) contents.

Customizing settings

SETUP settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **SETUP**.
2 Press the Navigation buttons to scroll to the setting or option you want and press **OK ⊚**.
3 When you return to the previous menu, press ⤺ **BACK**.

* Image shown may differ from your TV.

```
SETUP                    ⟷ Move  ⊚ OK

     Auto Tuning
     Manual Tuning
     Programme Edit
```
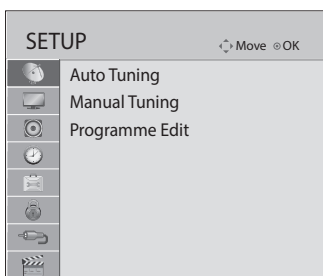
The available programme settings are described in the following:

Setting	Description
Auto Tuning	Tunes and stores all available programmes through antennas inputs. (See p. 13)
Manual Tuning	Tunes and stores the programmes you want manually. (See p. 13)
Programme Edit	Edits programmes. (See p. 14)

PICTURE settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **PICTURE**.
2 Press the Navigation buttons to scroll to the setting or option you want and press **OK ⊚**.
3 When you return to the previous menu, press ⤺ **BACK**.

* Image shown may differ from your TV.

```
PICTURE                          ⟷ Move   ⊚ OK

     Aspect Ratio       : 16:9
     Energy Saving      : Off
     Picture Mode       : Standard
                         • Backlight        100
                         • Contrast         100
                         • Brightness        50
                         • Sharpness         20
                         • Colour            55
                         • Tint               0  R          G
                         • Colour Temperature  C20 W          C
                         • Advanced Control
                         • Reset
```

The available picture settings are described in the following.

Setting	Description		
Aspect Ratio	Changes the image size to view images at its optimal size. (See p. 15)		
Energy Saving	Reduces the power consumption by adjusting the screen brightness.		
	Option		
	Off	The **Energy Saving** is off.	
	Minimum/ Medium/ Maximum	Selects the brightness level.	
	Screen off	The screen turns off in 3 seconds.	
	⓵ NOTE		
	• When you select **Screen Off**, the screen will be turned off in 3 seconds and **Screen Off** will start. • If you adjust "**Energy Saving- Maximum**", Backlight feature will not work.		
Picture Mode	Selects one of the preset image or customizes options in each mode for the best TV screen performance. You are also able to customize advanced options of each mode.		
	Mode		
	Vivid	Adjusts the video image for the retail environment by enhancing the contrast, brightness, colour, and sharpness.	
	Standard	Adjusts the image for the normal environment.	
	Cinema	Optimizes the video images for a cinematic look to enjoy movies as if you are in a movie theatre.	
	Soccer / Cricket (Depending on model)	Optimizes the video image for high and dynamic actions by emphasizing primary colours such as white, grass, or sky blue.	
	Game	Optimizes the video image for a fast gaming screen such as games.	

Basic image options

Setting	Description
Backlight	Adjusts the brightness of the screen by controlling the LCD backlight. If you decrease the brightness level, the screen becomes darker and the power consumption will be reduced without any video signal loss.
Contrast	Increases or decreases the gradient of the video signal. You may use **Contrast** when the bright part of the picture is saturated.
Brightness	Adjusts the base level of the signal in the picture.
Sharpness	Adjusts the level of crispness in the edges between the light and dark areas of the picture. The lower the level, the softer the image.
Colour	Adjusts intensity of all colours.
Tint	Adjusts the balance between red and green levels.
Colour Temperature	Adjusts the overall tone of the screen as desired. Set to warm to enhance hotter colours such as red, or set to cool to see less intense colours with more blue.
Advanced Control	Customizes the advanced options.
Reset	Restores the options of each mode to the factory default.

Advanced image options (Depending on model)

Setting	Description
Dynamic Contrast	Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker.
Dynamic Colour	Adjusts screen colours so that they look livelier, richer and clearer. This feature enhances hue, saturation and luminance so that red, blue and green white look more vivid.
Noise Reduction	Reduces screen noise without compromising video quality.

Setting	Description
Gamma	You can adjust brightness of dark area and middle gray level area of the picture. • Low: Make the dark and middle gray level areas brighter. • Medium: Express the original picture level. • High: Make the dark and middle gray level area darker.
Black Level	Sets black level of the screen to proper level. This function is available in the following modes: RF, AV or HDMI. • Low: The reflection of the screen gets darker. • High: The reflection of the screen gets brighter.
Motion Eye Care	Adjusts screen brightness to prevent eye glare.
Film Mode	Makes video clips recorded in film look more natural. This feature operates only in 480i / 576i / 1080i Resolution.
Colour Gamut	**Advanced control** Maximizes the utilization of colour to increase colour quality. • Standard: Displays standard set of colours. • Wide: Increase number of colours used.
Edge Enhancer	Shows clearer and distinctive yet natural edges of the video.

! **NOTE**

• Depending on input signal or other picture settings, the range of detailed items for adjustment may differ.

AUDIO settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **AUDIO**.

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

3 When you return to the previous menu, press ↰**BACK**.
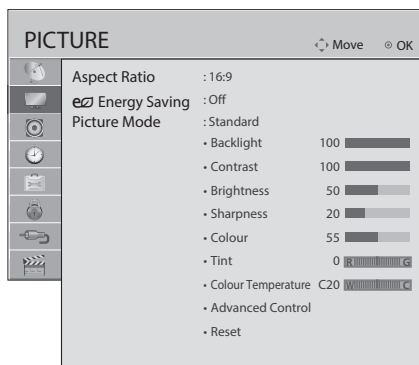
* Image shown may differ from your TV.

```
AUDIO                              ⬦ Move    ⦿ OK

      Auto Volume      : On
      Balance                       0  L▮▮▮▮▮▮▮▮R
      Sound Mode       : Standard
                        • Treble    50  ▮▮▮▮▮
                        • Bass      50  ▮▮▮▮▮
                        • Reset
      TV Speaker       : On
```

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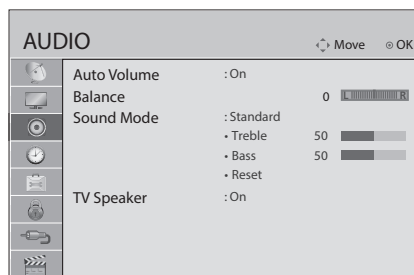
The available audio settings are described in the following.

Setting	Description
Auto Volume	Activates the Auto Volume feature to keep the volume level consistent whenever you change programmes. The volume level may not be consistent due to different signal conditions of broadcasting stations.
Balance	Adjust balance between the left and right speakers according to your room environment.
Sound Mode	Selects one of the preset sound modes or customizes options in each mode.

Mode	
Standard	Select when you want standard-quality sound.
Music/ Bollywood (depending on model)	Select when you listen to music.(Bollywood is india special music mode)
Cinema	Select when you watch movies.
Soccer / Cricket (Depending on model)	Select when you watch sports events.
Game	Select when you play games.

Option	
Treble	Controls the dominant sounds in the output. When you turn up the treble, it will increase the output to the higher frequency range.
Bass	Controls the softer sounds in the output. When you turn up the bass, it will increase the output to the lower frequency range.
Reset	Resets the sound mode to the default setting.

TV Speaker	Turns off the internal speaker of the TV when using an external Hi-Fi system.

This feature may not be applied based on country broadcasting circumstance.

Stereo/Dual Reception

When a programme is selected, the sound information for the station appears with the programme number and station name.

Press **I/II** button to select the **Multi Audio** menu.

Broadcast	On Screen Display
Mono	MONO
Stereo	STEREO
Dual	DUAL I , DUAL II , DUAL I + II
NICAM	NICAM

- **Mono sound selection**
  If the stereo signal is weak in stereo reception, you can switch to mono. In mono reception, the clarity of sound is improved.

- **Language selection for dual language broadcast**
  If a programme can be received in two languages (dual language), you can switch to DUAL I, DUAL II or DUAL I+II.

DUAL I	Sends the primary broadcast language to the loudspeakers.
DUAL I I	Sends the secondary broadcast language to the loudspeakers.
DUAL I+I I	Sends a separate language to each loudspeaker.

Nicam Reception

If the TV is equipped with a receiver for NICAM reception, high quality NICAM (Near Instantaneous Companding Audio Multiplex) digital sound can be received.

Sound output can be selected according to the type of broadcast received.

1 When **NICAM** mono is received, you can select **NICAM MONO** or **FM MONO**.
2 When **NICAM** stereo is received, you can select **NICAM STEREO** or **FM MONO**.
   If the stereo signal is weak, switch to **FM MONO**.
3 When **NICAM** dual is received, you can select **NICAM DUAL I**, **NICAM DUAL II** or **NICAM DUAL I+II** or **FM MONO**.

Speaker Sound Output Selection

In AV, Component, HDMI mode, you can select output sound for the left and right loudspeakers.

Select the sound output.

L+R: Audio signal from audio L input is sent to the left loudspeaker and audio signal from audio R input is sent to the right loudspeaker.

L+L: Audio signal from audio L input is sent to left and right loudspeakers.

R+R: Audio signal from audio R input is sent to left and right loudspeakers.

TIME settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **TIME**.

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

3 When you return to the previous menu, press ↰ **BACK**

* Image shown may differ from your TV.

```
TIME                              ⬩ Move    ◉OK

      Clock
      Off Time           : Off
      On Time            : Off
      Sleep Timer        : Off
      Automatic Standby  : 4 hours


```
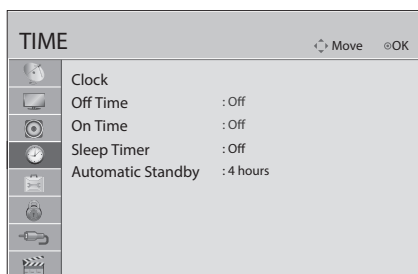
The available time settings are described in the following.

Setting	Description
Clock	Sets the time.
Off Time / On Time	Sets the time to turn on or off the TV automatically. To use this function, you should set the current time and date in advance. 🚫 **NOTE** • If you do not press any button within 2 hours after the TV turns on by the **On Time** feature, the TV enters the Standby mode automatically. • If you set both **Off Time** and **On Time** features to the same time, the **Off Time** feature overrides the **On Time** feature.

Setting	Description
Sleep Timer	Sets the length of time until the TV to turns off. When you turn the TV off and turn it on again, the **Sleep Timer** feature will be set to off.
Automatic Standby (Depending on model)	If you do not press any button on the TV or remote control for a certain period, the TV will automatically switch to standby mode.

OPTION settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **OPTION**.

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

3 When you return to the previous menu, press ↰ **BACK**.

* Image shown may differ from your TV.

```
OPTION                            ⬩ Move    ◉ OK

      Menu Language
      Input Label
      Factory Reset      : Home Use


```
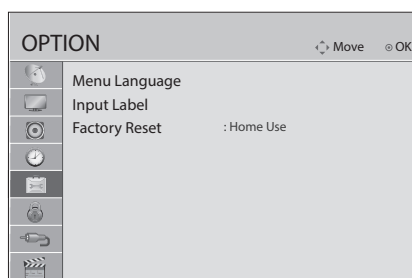
The available option settings are described in the following.

Setting	Description	
Menu Language	Selects a desired language.	
Input Label	Indicates which device is connected to which input port.	
Factory Reset	Customizes the TV settings to suit your preference. The initial setup screen will appear when you turn on the TV for the first time.	
	Home Use	Selects it for the Home environment.
	Store Demo	Selects it for the retail environment.

LOCK settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **LOCK**.

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

3 When you return to the previous menu, press ↶**BACK**.

  * Image shown may differ from your TV.

```
LOCK                          ↕ Move    ⊚ OK

   Lock System          : Off
   Set Password
   Block Programme
   Input Block
```
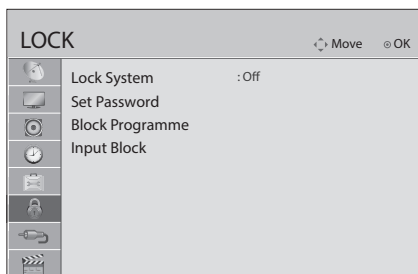
The available lock settings are described in the following.

Setting	Description
Lock System	Activates or deactivates the lock system.
Set Password	Changes the 4-digit password. The default PIN is "0 0 0 0".
Block Programme	Blocks the programmes that contain inappropriate contents for children by pressing the Blue button. The Lock icon appears in front of the blocked programmes. The programmes can be selected but the screen blank and the audio is muted.
Input Block	Blocks the input sources.

ENTERTAINMENT settings

1 Press **SETTINGS** and the Navigation buttons to scroll to **ENTERTAINMENT**.

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

3 When you return to the previous menu, press ↶**BACK**.

  * Image shown may differ from your TV.

```
ENTERTAINMENT                 ↕ Move    ⊚ OK

   Photo List
   Music List
   Movie List
   DivX(R) VOD
   Game
```
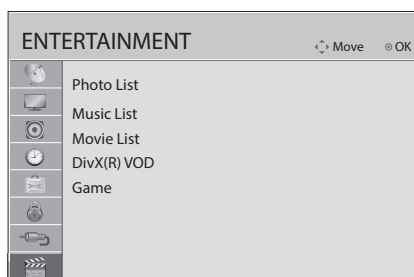
The available entertainment settings are described in the following.

Setting	Description
Photo List	Views image files(photos) on TV which are stored on USB device. (See p. 18)
Music List	Plays back music files on TV which are stored on USB device. (See p. 19)
Movie List	Plays movie files on TV which are stored on usb device. (See p. 20)
DivX(R) VOD	Views the registration code of your TV. (See p. 22)
Game (Depending on model)	Plays game contents on your TV.

Teletext

  * This feature is not available in all countries.

Teletext is a free service broadcast by most TV stations which gives up-to-the minute information on news, weather, television programmes, share prices and many other topics.

The teletext decoder of this TV can support the SIMPLE and FASTEXT systems. SIMPLE (standard teletext) consists of a number of pages which are selected by directly entering the corresponding page number. FASTEXT are more modern methods allowing quick and easy selection of teletext information.

Switch On/Off

Press the TEXT button to switch to teletext. The initial page or last page viewed appears on the screen.

Two page numbers, TV station name, date and time are displayed on the screen headline. The first page number indicates your selection, while the second shows the current page displayed.

Press the TEXT button to switch off teletext. The previous mode reappears.

Simple text

Page selection

1 Enter the desired page number as a three digit number with the Number buttons. If during selection you press a wrong number, you must complete the three digit number and then re-enter the correct page number.

2 The ⌄P⌄ button can be used to select the preceding or following page.

Fastext

The teletext pages are colour coded along the bottom of the screen and are selected by pressing the corresponding coloured button.

Page selection

1 Press the **INDEX** button to select the index page.

2 You can select the pages which are colour coded along the bottom line with corresponding coloured buttons.

3 AS with SIMPLE teletext mode, you can select a page by entering its three digit page number with the Number buttons in FASTEXT mode.

4 The ⌄P⌄ button can be used to select the preceding or following page.

Special teletext function

Index

Select the each index page.

Time

When viewing a TV programme, select this menu to display the time at the top right hand corner of the screen.

In the teletext mode, press this button to select a sub page number. The sub page number is displayed at the bottom of the screen. To hold or change the sub page, press the Red/Green, ◀ ▶ or Number buttons.

Hold

Stops the automatic page change which will occur if a teletext page consists of 2 or more sub pages.

The number of sub pages and the sub page displayed is, usually, shown on the screen below the time. When this menu is selected the stop symbol is displayed at the top left-hand corner of the screen and the automatic page change is inactive.

Reveal

Select this menu to display concealed information, such as solutions to riddles or puzzles.

Update

Displays the TV picture on the screen while waiting for a new teletext page. The display will appear at the top left hand corner of the screen. When the updated page is available then display will change to the page number. Select this menu again to view the updated teletext page.

Troubleshooting

Cannot control the TV with the remote control.

- Check the remote control sensor on the product and try again.
- Check if there is any obstacle between the product and the remote control.
- Check if the batteries are still working and properly installed (⊕ to ⊕, ⊖ to ⊖).

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 **Automatic Standby** (Depending on model) / **Sleep Timer** / **Off Time** is activated in the **TIME** settings.
- If there is no signal while the TV is on, the TV will turn off automatically after 15 minutes of inactivity.

Specifications

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

	Analogue TV (Depending on Country)
Television system	PAL/SECAM-B/G/D/K, PAL-I, NTSC-M, PAL B/B
Programme coverage	VHF, UHF, CATV
Maximum number of storable programmes	200
External antenna impedance	75 Ω

HDMI-DTV supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480	31.469 31.5	59.94 60.00
720 x 576	31.25	50.00
1280 x 720	44.96 45 37.5	59.94 60.00 50.00
1920 x 1080	28.125 33.72 33.75 56.25 67.43 67.5 27 33.75 26.97 33.716	50.00 59.94 60.00 50.00 59.94 60.00 24.00 30.00 23.97 29.976

Component port connecting information

Component ports on the TV	Y	P_B	P_R

Video output ports on DVD player	Y	P_B	P_R
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	Pb	Pr

Signal	Component
480i / 576i	O
480p / 576p	O
720p / 1080i	O
1080p	O (Only 50 Hz / 60 Hz)

AC/DC Adapter

32LH510*, 32LH511*, 32LH512*
Manufacturer : Honor Model : ADS-45EI-19 19040GPI, ADS-45FSN-19 19040GPG, ADS-45FSN-19 19040GPCU, ADS-40LSI-19-2 19040G, ADS-45SN-19-2 19040G,   Manufacturer : APD Model : WA-40D19FI   Manufacturer : Lien Chang Model : LCAP16B-E, LCAP16B-A, LCAP25B
Input: AC 100-240 V~ 50/60 Hz Output: 19 V ⎓ 2.1 A
32LH505*, 43/49LH511*, 32LH516*, 43LH516*, 32LH517*, 32LH518*
Manufacturer : Lien Chang Model : LCAP40   Manufacturer : APD Model : DA-65F19
Input: AC 100-240 V~ 50/60 Hz Output: 19 V ⎓ 3.42 A

- The energy information provided with the product is indicated in accordance with the regulations of each country. (Depending on Country)
  - The Energy consumption is measured in accordance with IEC 62087.
- Actual Energy consumption may vary depending on factors such as the type of video content being played and TV settings.

WARNING!

Never place a television set in an unstable location. 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:

- Using cabinets or stands recommended by the manufacturer of the television set.
- Only using furniture that can safely support the television set.
- Ensuring the television set is not overhanging the edge of the supporting furniture.
- Not placing the television set on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television set to a suitable support.
- Not placing the television set on cloth or other materials that may be located between the television set and supporting furniture.
- Educating children about the dangers of climbing on furniture to reach the television set or its controls.

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

Symbols

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

(Only Jordan)

WEEE

CE

LG
Life's Good

Record the model number and serial number of the TV.
Refer to the label on the back cover and quote this information to your dealer when requiring any service.

MODEL _____

SERIAL _____

For any Suggestion, Opinion,
Complaints, Please Call
800 54 in UAE
0800 545454 in South Africa
080 100 54 54 in Morocco
19960 in Egypt
021 36 54 54 in Algeria
Other countries, Please contact our
local dealer or log into
http://www.lg.com

EXTERNAL CONTROL DEVICE SETUP

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

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, - (ATSC Only)	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 converter/RS-232C 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 converter with USB Cable

USB Type

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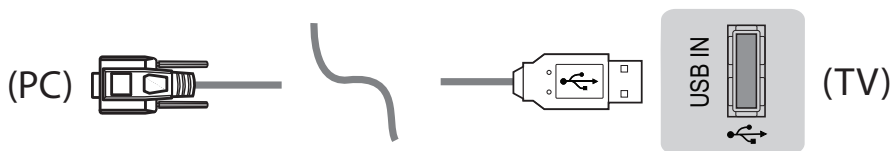
• LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial converter which is not made nor provided by LG.
• It can be purchased from computer stores that carry accessories for IT support professionals.

RS-232C With RS232C Cable

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

(PC)   RS-232C IN (CONTROL & SERVICE)   (TV)

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) ... SERVICE ONLY (TV)

- or

(PC) ... RS-232C IN (CONTROL & SERVICE) (TV)
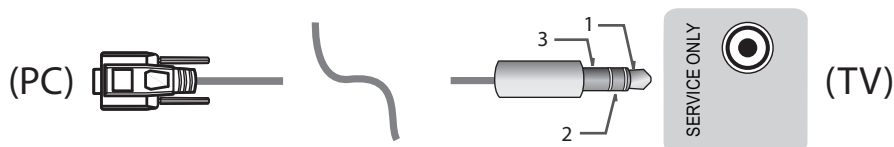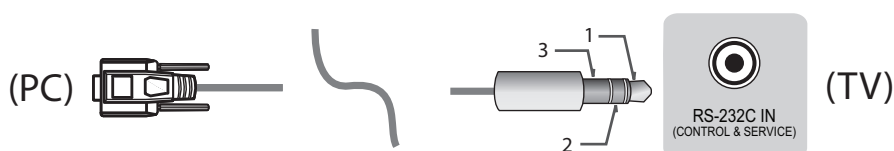
Customer Computer
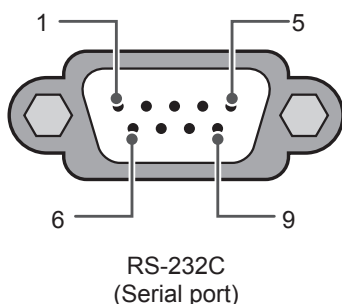
RS-232C
(Serial port)

RS-232C configurations

3-Wire Configurations(Not standard)

	PC		TV	
RXD	2		2	TXD
TXD	3		1	RXD
GND	5		3	GND
		OR		
RXD	3		2	TXD
TXD	2		1	RXD
GND	5		3	GND
	D-Sub 9		Phone	
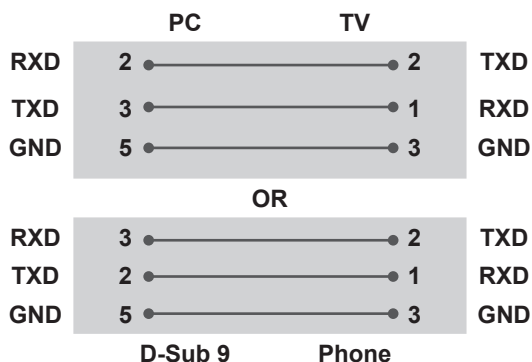
Set ID

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. 8)
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. 11)
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 |
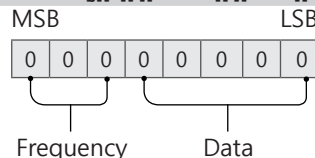
Frequency   Data

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)
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)
   - 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 : Run Auto Configure

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