LG
Life's Good

Laser TV

Please read the safety information carefully before using the product.

HECTO2

LICENSE

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This device meets the EMC requirements for home appliances (Class B) and is intended for home usage. This device can be used in all regions.

ⓘ NOTE

• The product images and On-Screen Display (OSD) in this manual are examples to help you understand how to operate the product, so they may be different from the actual Laser TV.

SAFETY INSTRUCTIONS

Please take note of the safety instructions to prevent any potential accident or misuse of the Laser TV.

• Safety precautions are given in two forms, i.e. Warning and Caution as detailed below.

⚠ **WARNING**: Failure to follow the instructions may cause serious injury and even death.

⚠ **CAUTION**: Failure to follow the instructions may cause injury to persons or damage to the product.

• Read the owner's manual carefully and keep it to hand.

WARNING/CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING/CAUTION

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

Read these instructions.

Keep these instructions.

Heed all warnings.

Follow all instructions.

Indoor Installation

⚠ **WARNING**

• Do not place the product in direct sunlight or near heat sources such as radiators, fires, stoves, etc.
  – This may cause fire.

• Do not place inflammables such as flammable spray near the product.
  – This may cause fire.

• Do not allow children to cling to or climb up to the product.
  – This may cause the product to fall, causing injury or death.

- Do not place the product directly on a carpet, rug or place where ventilation is restricted such as a book shelf or closet.
  – This may cause the product's internal temperature to rise and cause fire.
- Do not place the product close to sources of steam, oil or oil mist, such as humidifiers and kitchen counters.
  – Failure to do so may result in fire, electric shock, or corrosion.
- Do not install the product onto a wall or ceiling that is close to sources of oil or oil mist.
  – The product may be damaged and fall, resulting in serious injury.
- Do not place the product where it might be exposed to dust.
  – This may cause fire.
- Do not use the product in a damp place, such as a bathroom or a place exposed to the wind and rain, where it is likely to get wet.
  – This may cause fire or electric shock.
- Do not allow a tablecloth or curtain to block the vents.
  – This may cause the internal temperature of the product to rise and cause fire.
- The distance between the air vent of the product and the wall should be more than 30 cm for ventilation purposes.
  – Otherwise, this may cause the internal temperature of the product to rise and cause fire.

- When installing the product on a ceiling, a professional technician should install it using the authorized tools. If installed improperly, the product may fall.
  – This may cause personal injury or property damage. For installation of the product, please contact the customer support center.
- If you use a ceiling mounting device, use adhesive to prevent loosening of screws, or apply oil or lubricant to the product, this may cause the case to crack and the product to fall.
- This may also cause serious personal injury to the person below the device (if any) and damage to the product as well.

⚠ CAUTION

- When installing the product on a table or shelf, be careful not to place it near the edge.
  – This may fall causing injury to persons or the product malfunction. Make sure that you use the cabinet or stand that fits the product.
- Turn off the product, disconnect it from the power supply and all connected apparatus before moving it.
  – Otherwise, the power cord may be damaged causing fire or electric shock.
- Do not place the product on an unstable or vibrating surface such as a wobbly shelf or a slope.
  – It may fall or flip and cause injury.
- Be careful not to tip or drop the product over when connecting external devices to the product.
  – This may cause injury to persons or damage to the product.

Power

⚠ **WARNING**

- The appliance coupler is used as the disconnect device.
  - Please make sure the device is installed near the wall outlet to which it is connected and that the outlet is easily accessible.
- The grounding wire should be connected.
  - Be sure to connect the grounding wire to avoid damage to the product or an electric shock when there is a short circuit.
- If it is not possible to ground the unit, purchase a circuit breaker and connect the product to its wall outlet.
- Do not try to ground the product to the gas pipe, water pipe, lightning rod, or telephone line, etc.
- The power plug should be inserted fully into the power outlet.
  - An unstable connection may cause fire.
- Do not place heavy objects on the power cord.
  - This may cause fire or electric shock.
- Never touch the power plug with a wet hand.
  - This may cause electric shock.
- Do not plug too many devices into one multi-power outlet.
  - This may cause fire due to the power outlet overheating.
- Remove dust or contaminants around power plug pins or wall outlets.
  - Failure to do so may cause fire.
- To turn off the main power, remove the power plug, which should be positioned so it is easy to access for operation.

⚠ **CAUTION**

- Hold the plug firmly when unplugging.
  - A broken wire in the cord may cause fire.
- Ensure the power cord and plug are not damaged, modified, severely bent, twisted, pulled, sandwiched or hot. Do not use the product if the power outlet is loose.
  - This may cause fire or electric shock.
- Keep the power cord away from any heating devices.
  - The cord coating may melt and cause fire or electric shock.
- Place the product where people will not trip over or tread on the power cord to protect the power cord and plug from any damage.
  - This may cause fire or electric shock.
- Do not turn the product on or off by plugging in the power plug or unplugging it from the wall outlet. (Do not use the power plug as a switch.)
  - This may cause electric shock or product malfunction.
- Do not insert a conductor into the other side of the wall outlet while the power plug is inserted into the wall outlet.
- In addition, do not touch the power plug immediately after it is disconnected from the wall outlet.
  - This may cause electric shock.
- Only use the official power cord provided by LG Electronics. Do not use other power cords.
  - This may cause fire or electric shock.

When in Use

⚠ WARNING

- Do not place anything containing liquid on top of the product, such as a vase, flower pot, cup, cosmetics, or medicine; or ornaments, candles, etc.
  – This may cause fire or electric shock, or injury due to falling.
- In the event that there is a heavy impact on the product or the cabinet is damaged, switch it off, unplug it from the power outlet and contact an authorized service center.
  – Failure to do so may cause fire or electric shock.
- Do not insert pieces of metal, such as coins, hairpins or metal debris, or flammable materials, such as paper or matches, into the product.
  – This may cause fire or electric shock.
- In the event that liquid or a foreign object falls into the product, switch it off and unplug it from the power outlet and contact our service center.
  – Failure to do so may cause fire or electric shock.
- Make sure that a child does not swallow the batteries when you replace the old remote control batteries with new ones. Keep batteries out of reach of children.
  – If a child swallows a battery, consult a doctor immediately.
- Do not look directly into the lens when the product is in use. The strong light may damage your eyes.
- When the product is on or has just been turned off, avoid touching the air vent because it will be very hot.

- If there is a gas leak, do not touch the wall outlet. Open the window for ventilation.
  – A spark may cause a fire or burn.
- Never touch the product or power cord during thunder or lightning.
  – This may cause electric shock.
- Do not use the product near electronic devices that generate a strong magnetic field.
- Do not wear the plastic package used to pack the product around your head.
  – This may cause suffocation.
- Do not touch the product with your hand for a long time when it is running.
- When you play a game by connecting a game console to a product, it is recommended that you maintain a distance of more than 1.5 times the diagonal length of the screen.
- Make sure that the length of connecting cable is long enough.
  – Otherwise, the product may fall causing personal injury or damage to the product.

⚠ CAUTION

- Do not place a heavy object on the product.
  – It may fall down and cause physical injury.
- Be careful to protect the lens from heavy impact during transportation.
- Do not touch the cover glass of the product.
  – Otherwise, the cover glass may be damaged.
- Do not use any sharp tools on the product, such as a knife or hammer, because this may damage the casing.

- In the event that no image appears on the screen or no sound is heard, stop using the product. Switch off the product, unplug it from the power outlet and contact our service center.Failure to do so may cause fire or electric shock.
- Do not drop anything onto the product or apply heavy pressure to it.
  – This may cause injury to persons or the product malfunction.
- It is recommended that you maintain a distance of more than 1.5 - 3 times the diagonal length of the screen between your eyes and the screen.
  – If you watch the screen at a close distance for a long time, your eyesight may become worse.
- When closing the door of the product, be careful not to jam your finger.
  – This may cause injury to persons or the product malfunction.
- Do not block the light emitted from the product's lens with a book or a cover. Long exposure to the light may melt or burn the object, possibly causing fire. In addition, the lens may be overheated and the product may be damaged by the reflected light. Stop projecting temporarily or turn off the power.
- Do not start the product with volume high.
  – High volume may damage hearing. Be sure to lower the volume before turning off the product. Raise the volume gradually after turning on the product.
- When you go out, place the product out of reach of pets or other animals, and unplug it from the wall outlet.
  – Otherwise, it may cause short circuit and fire.
- Do not use high voltage electrical equipment near the projector, (e.g. bug zapper).
  – This may result in product malfunction.

Cleaning

⚠ WARNING

- Do not spray water directly to the product when cleaning. Do not allow water to get into the product or do not allow it to get wet.
  – This may cause fire or electric shock.
- In the event that smoke or a strange smell comes out from the product or a foreign object falls into the product, stop using it. Switch off the product, unplug it from the power outlet and contact our service center.
  – Otherwise, this may cause fire or electric shock.
- To remove dust or stains on the cover glass, use an air spray or use a swab or soft cloth to wipe the glass gently.

⚠ CAUTION

- Contact your seller or our service center once a year to clean the internal parts of the product.
  – If you do not clean the Laser TV for a long period of time, dust will accumulate, which may cause fire or damage to the product.
- When cleaning plastic parts, such as the product case, unplug the power first and wipe with a soft cloth. Do not spray with water or wipe with a wet cloth. When cleaning the plastic parts, such as the product case, do not use cleanser, automobile or industrial shiner, abrasive or wax, benzene, alcohol, etc., which can damage the product.
  – This can cause fire, electric shock or product damage (deformation, corrosion and damage).

Others

⚠ WARNING

- Only a qualified technician can disassemble or modify the product. For inspection, adjustment, or repair, contact your seller or our service center.
  – Otherwise, this may cause fire or electric shock.
- Do not stare directly into lens when in operation, eye damage can occure.
- No user serviceable parts inside unit. High voltage parts can cause shock and even electrocution.
- Proper ventilation required, do not block airflow around unit.
  Doing so can cause injury and internal overheating.
- To prevent damage to lamp, unit must remain plugged in for approximately 3 minutes after power down to allow for proper cool down (not applicable on LED models).
- Do not touch the lens; doing so can result in burns or damage to lens. Lens and unit may be HOT during and immediately after use. Use caution when handling unit, allowing for proper cool down.
- Only use a grounded electrical outlet.
- Do not insert anything into or cover up the exhaust vents.
  – This may result in fire or electric shock.
- Follow all maintenance guidelines for optimal use; service only at an authorized service center.
- Lamp contains mercury and as such must be disposed of according to local, state and federal laws (not applicable on LED models).

⚠ CAUTION

- Make sure you use the same type of new battery for replacement.
- Do not mix new batteries with old ones.
  – Burst or leaking batteries may cause fire or electric shock.
- Unplug the power cord if the product is not used for a long period.
  – Accumulated dust may cause electric shock due to overheating, ignition, or poor insulation, or fire due to a short circuit.
- Do not charge the battery using any devices other than the one provided with the product.
  – This may cause damage to the battery or fire.
- Dispose of the used battery properly.
  – Failure to do so may cause explosion or fire. The correct method of disposal may vary depending on your country or region. Dispose of the battery pack according to the appropriate instructions.
- Do not throw or disassemble the battery.
  – This may cause fire or explosion due to damage to the battery.
- Always use batteries approved and certified by LG Electronics.Failure to do so may cause fire or explosion.
- Store the battery away from metallic objects, such as keys and paper clips.
  – Excess current may cause a rapid increase in temperature, resulting in damage to battery, fire or burns.
- Do not store the battery near any heat source, such as a heater. This may cause fire or product malfunction.

- Do not store it at temperatures higher than 60 °C or in high humidity.
  – This may cause explosion or fire.
- Keep the battery out of reach of children.
  – Failure to do so may cause personal injury or product malfunction.
- Make sure that the battery is installed correctly.Failure to do so may cause explosion or fire.
- The battery contains lithium-ion, so it must be handled with care.
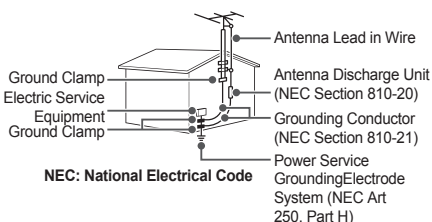 – Failure to do so may cause explosion or fire.

Antenna

⚠ WARNING

- If you are using an outdoor antenna, please install it away from electrical wires to make sure it does not touch any nearby wires even when it falls down due to heavy wind.
- Failure to do so may cause electric shock or physical injury.

⚠ CAUTION

- To prevent any raindrops flow into the product, bend the outdoor antenna wire where it comes indoors.
- Raindrops flowing into the product may cause fire or electric shock.

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

Antenna Lead in Wire
Antenna Discharge Unit (NEC Section 810-20)
Ground Clamp
Electric Service Equipment
Grounding Conductor (NEC Section 810-21)
Ground Clamp
Power Service GroundingElectrode System (NEC Art 250, Part H)

NEC: National Electrical Code

For USA

NOTE TO CABLE/TV INSTALLER

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

Eye Care Sensor

⚠ WARNING

- Do not poke the sensor with a sharp object.
  – This can damage the sensor and cause it to malfunction.

Laser

⚠ WARNING

- This product contains a laser module. Do not disassemble or modify the product as this could be dangerous.
- You risk being exposed to laser radiation if you manipulate or alter the product in a way not specified in the user manual.
- To protect your eyes avoid looking directly into the bright light from the unit.
- Prevent babies and children or anyone with a disease or injury from looking at the light.
- Please kindly take a 5 W 440 - 460 nm Laser protective goggles when you need direct access the Light, and do not use sun glasses for the eye protection.

⚠ CAUTION

• Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

• This product is a class 2 laser device that meets IEC 60825-1.

Laser TV standard: class 2 laser product

• Wavelength: 446 nm

• Wave source : Approximately 0.2 mW

• Light output: < 24.5 mW

• Radiation angle: 66 °

• Built-in laser standard: Class 3B laser module

• Wavelength: 440 nm - 455 nm

• Light output: approx. 3.5 W x 24
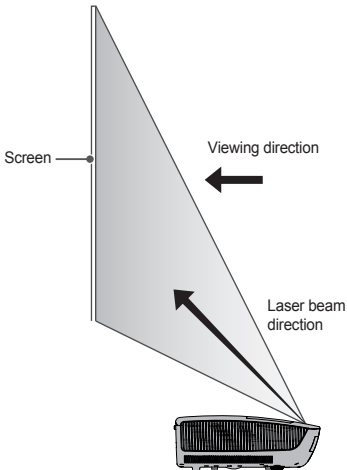
LASER RADIATION

DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT
– This laser Laser TV is a Risk Group 2 device that meets safety standard IEC 62471 standard.

> ### Risk Group 2
> ### Groupe exposé 2
>
> CAUTION Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eye.
>
> MISE EN GARDE Risque de rayonnement optique nocif émis par ce produit.
> Évitez de fixer la lampe de fonctionnement.
> Cela pourrait endommager vos yeux.

The label of Laser TV is attached to the top of the product.

Laser TV Label

Laser warning symbol and danger symbol

USA

Federal Communications Commission (FCC) Statement

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) this device may not cause harmful interference, and

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

CAUTION : Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC Radio Frequency Interference Requirements (for UNII devices)

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

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. End users must follow the specific operating instructions for satisfying RF exposure compliance.

CANADA

Industry Canada Statement:

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

1) this device may not cause interference and

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

Avis d'Industrie Canada :

Cet appareil est conforme à la norme CNR-210 des règlements d'Industrie Canada. Son fonctionnement est sujet aux deux conditions suivantes :

1) Cet appareil ne doit pas provoquer d'interférences et

2) Cet appareil doit accepter toutes les interférences, y compris celles pouvant entraîner son dysfonctionnement.

IC Radiation Exposure Statement:

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

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

Avis d'Industrie Canada sur l'exposition aux rayonnements

Cet appareil est conforme aux limites d'exposition aux rayonnements d'Industrie Canada pour un environnement non contrôlé. Il doit être installé de façon à garder une distance minimale de 20 centimètres entre la source de rayonnements et votre corps.

REMARQUE : LE FABRICANT N'EST PAS RESPONSABLE DES INTERFÉRENCES

RADIOÉLECTRIQUES CAUSÉES PAR DES MODIFICATIONS NON AUTORISÉES APPORTÉES À CET APPAREIL. DE TELLES MODIFICATIONS POURRAIENT ANNULER L'AUTORISATION ACCORDÉE À L'UTILISATEUR DE FAIRE FONCTIONNER L'APPAREIL.

For product having the wireless function using 5 GHz frequency bands

Warning

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

ii. the maximum antenna gain permitted for devices in the bands 5250–5350 MHz and 5470–5725 MHz shall comply with the e.i.r.p. limit; and

iii. the maximum antenna gain permitted for devices in the band 5725–5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

iv. High-power radars are allocated as primary users (i.e. priority users) of the bands 5250–5350 MHz and 5650–5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement

i. les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

ii. le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;

iii. le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

iv. Radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

LG Recycling Policy

LG Electronics offers a customized e-waste take-back & recycling service that meets local needs and requirements in the countries where e-waste regulations are in place, and also provides product and packaging take-back & recycling service voluntarily in some countries. LG Electronics evaluates products' recyclability at the design step using LG's recyclability evaluation tool, with the goal of improving recyclability where practicable. Through these activities, LG seeks to contribute to conserving natural resources and protecting the environment.

For more information about the LG Recycling Policy, please visit our global site at http://www.lg.com/global/sustainability/environment/take-back-recycling
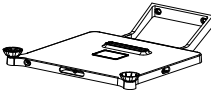
# CONTENTS

PREPARATION

Accessories

Check the accessories provided with the product.

The picture may be different from the actual product.

Accessories are subject to change without prior notice in order to improve the performance of the product. New accessories may be added or old ones may be removed.

Magic Remote Control Two AA Batteries	Tag On	User Guide
Owner's Manual CD	Power Cord	Polishing Cloth
Ez Bracket (AJ-BB105)		

• When connecting an HDMI or USB cable, or connecting a USB flash drive to the HDMI or USB port, use a product that has a width of 24 mm or less and a height of 10 mm or less. If the USB cable or USB flash drive does not fit the USB ports of the Laser TV, use an extension cable that supports USB 2.0.

A ≤ 10 mm   B ≤ 24 mm
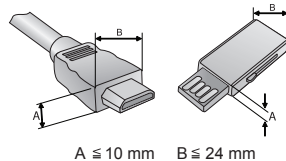
• Use a certified cable with the HDMI logo attached.

• 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
    – High-Speed HDMI®/™ Cable with Ethernet

Optional Accessories

To purchase optional accessories, visit an electronics store or an online shopping site.

Optional extras are subject to change without prior notice in order to improve the product quality, and new optional accessories may be added.

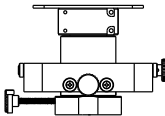Video Cable

Audio Cable
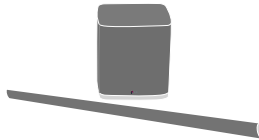
HDMI Cable

Optical Cable

PC Audio Port
Connection Cable

Cables for Connecting
External Devices

Ceiling Bracket
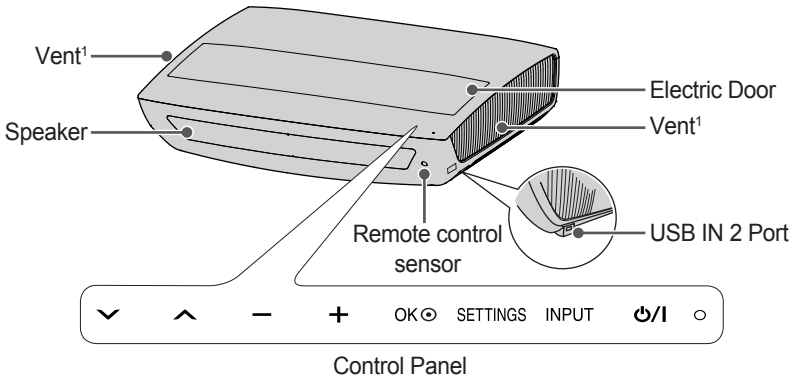(AJ-CB100)

Sound Bar

MHL Cable

Laser TV Projection
Screen (SC200)

Parts and Components

- This Laser TV is manufactured using high-precision technology. You may, however, see tiny black dots and/or bright spots that continuously appear on the screen. This is a normal result of the manufacturing process and does not indicate a malfunction.
- Ceiling light glare depends on the light levels in a room and the distance between the product and the ceiling. It is not a product defect.

Front

Vent[1]

Speaker

Electric Door

Vent[1]

Remote control sensor

USB IN 2 Port

OK⊙   SETTINGS   INPUT   ⏻/| ○

Control Panel

| Button	Description
⌄ ⌃	Changes the channel or sets the features.
− +	Adjusts the volume level, or enters a sub menu and changes the settings.
OK⊙	Shows the current mode and saves changes to the settings.
SETTINGS	Displays or closes the Settings menu.
INPUT	Changes the input source.
⏻/|	Turns the the Laser TV on or off.

NOTE
- Press the "USB IN 2" label shown in the figure above to make the USB IN 2 port visible.

Back
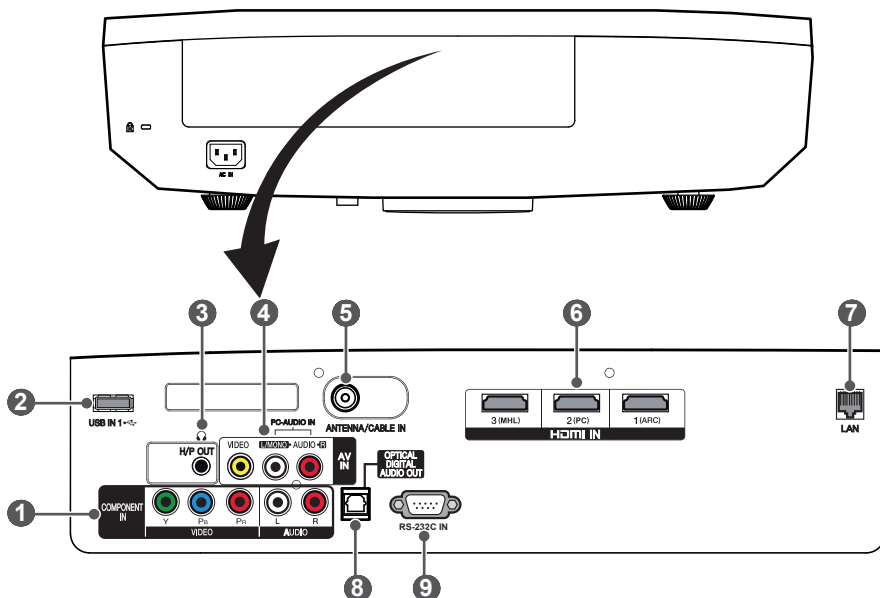
	Description
1	COMPONENT IN Port
2	USB IN 1 Port
3	H/P OUT Port
4	AV IN Port
5	ANTENNA/CABLE IN Port
6	HDMI IN 1 (ARC), 2 (PC), 3 (MHL) Port
7	LAN Port
8	OPTICAL DIGITAL AUDIO OUT Port In standby mode, digital audio is not output.
9	RS-232C IN Port

Status Indicator
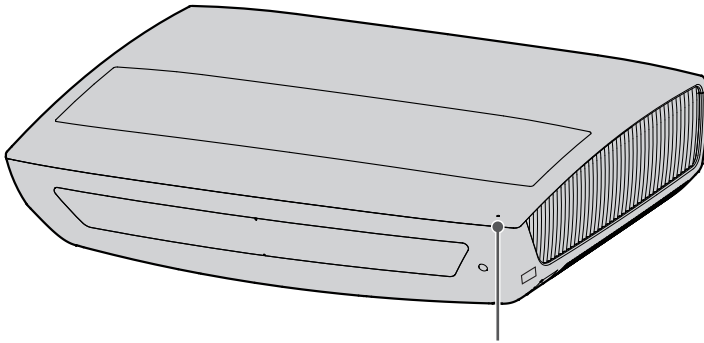
Operation/Status Indicator

|		
Operation/ Status Indicator	**Off**	Power standby state (Power is off.)
	Red	Power standby state
	White	Warm stand-by (Power standby state)
	White (Brightness changes slowly.)	The Laser TV is in the process of turning on or off.
	Off	In operation
	Red (blinking)	High temperature warning
	Red (blinking) + Purple once (blinking)	The Laser TV has turned off due to the high temperature.
	Red (blinking) + Purple twice (blinking)	There may be a problem inside the product, so contact a local service center.
	Red (blinking) + Purple three times (blinking)	
	White (blinking) + Purple once (blinking)	
	White (blinking) + Purple twice (blinking)	
	White (blinking) + Purple three times (blinking)	

NOTE

• If you turn off the power, the Laser TV may not complete the operation in progress depending on conditions and the operation/status indicator may turn red (standby mode).

Installation

Installation Precautions

• Place the product in a well-ventilated environment.
  – To prevent the internal heat from building up, install the Laser TV in a well-ventilated place.
 Do not place anything near the Laser TV. That may block its air vents. If the air vents are blocked, the internal temperature will increase.
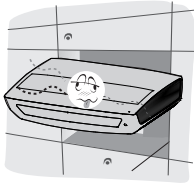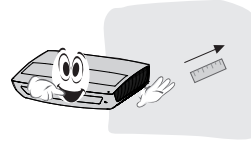

  – Do not place the Laser TV on a carpet or rug. If a product has its inlet vent on its bottom, do not block the vent and use the product on a leveled solid surface.

 – Be sure to prevent foreign objects, such as scraps of paper, from entering the inlet vent.
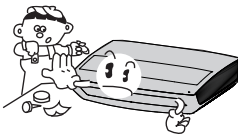
  – Leave enough distance (30 cm or more) around the vent of the Laser TV.

• Do not place the Laser TV in a hot or humid environment.
• Do not place the Laser TV in a dusty place.
  – This may cause fire.
• Never open any cover on the Laser TV. There is a high risk of electric shock.
• The Laser TV is manufactured using high-precision technology. You may, however, see tiny black dots and/or bright spots that continuously appear on the screen. This is a normal result of the manufacturing process and does not indicate a malfunction.
• The remote control may not work in an environment where a lamp equipped with electronic ballasts or a three-wavelength fluorescent lamp is installed. Replace the lamp with an international standard lamp for the remote control to work normally.
• Do not open or press the electric door or by force.
  – This may cause product malfunction.

Projection Distance per Screen Size

1 Place the Laser TV on a sturdy level surface, together with the computer or audio/video source.

2 Place the Laser TV at an appropriate distance away from the screen. The distance between the Laser TV and the screen determines the actual size of the image.

3 Position the Laser TV so that the lens is perpendicular to the screen. If the lens is not perpendicular to the screen, the image displayed on the screen may be distorted. To correct the distortion, use the Edge Adj function.

4 Connect the power cords of the Laser TV and the connected devices to the wall outlet.
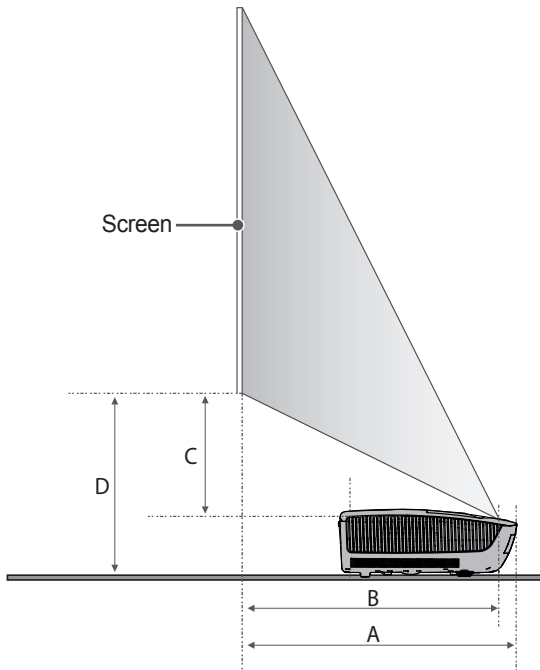
16:9 Aspect Ratio (Unit: mm)	
ARC	2540 (2213 x 1245)
A	550
B	530
C	262.5
D	370

Kensington Security System

• This the Laser TV has a Kensington Security Standard connector to prevent theft. Connect a Kensington Security System cable as shown below.

• For more information on installation and use of the Kensington Security System, refer to the user guide provided with the Kensington Security System.

• The Kensington Security System is an optional accessory.

• What is Kensington?
Kensington is a company that provides safety systems for laptops and other electronic devices.
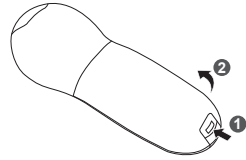Website: http://www.kensington.com
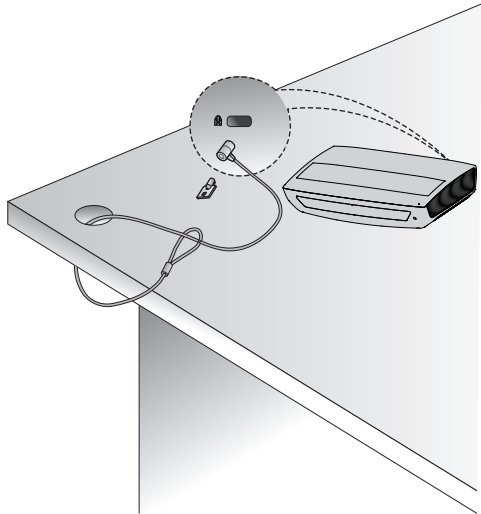
MAGIC REMOTE CONTROL

If the battery low message appears while using the Laser TV, replace the batteries.

As shown in the figure, press the top of the battery cover and slide it down the cover. Insert two new and identical batteries (1.5 V, AA type) with + and - poles pointing in the correct direction in the remote control.

> ⓘ **NOTE**
>
> • Do not mix new batteries with old ones.

Pointer Signal
Transmitter
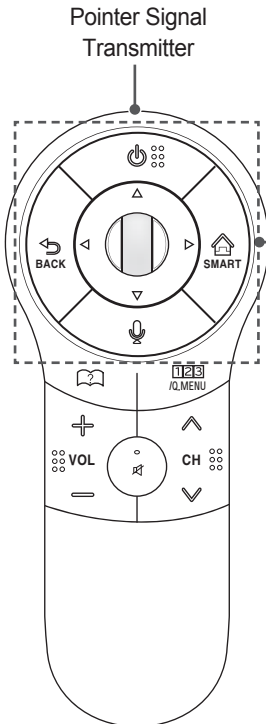
(POWER)
Turns the Laser TV on or off.

△ ▽ ◁ ▷
(Up/Down/Left/Right)

↩ **BACK**
Press this button during menu selection to return to the previous step.

⌂ **SMART**
Displays the Home menu.

◯ **Wheel (OK)**
Select a menu or option. If you press the △ ▽ ◁ ▷ button while the pointer is moving, the pointer disappears and the magic remote control operates as a normal remote control.

To display the pointer on the screen, shake the magic remote control to the left/right.

🎤 **(Voice recognition)**
Check the network connection before using the voice recognition function.

1. Press the voice recognition button.

2. Speak your request when the voice display bar on the left of the Laser TV screen is activated. Use the magic remote control no further than 10 cm from your face. The voice search may fail if you speak too quickly or too slowly. The recognition rate may vary depending on the user's characteristics (voice volume, pronunciation, intonation, and speed) and the environment (noise and Laser TV volume).

📖
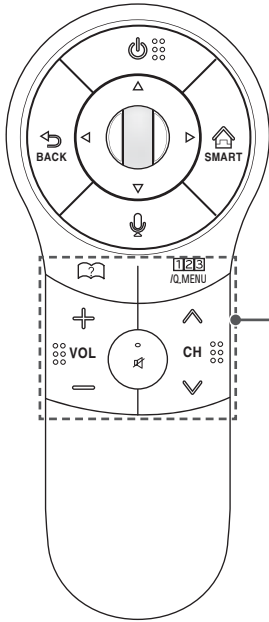
Opens the self-diagnosis window.

1️⃣2️⃣3️⃣
/Q.MENU

The universal remote is displayed. Allows you to change the Laser TV settings easily.

➕ ➖ **VOL**

Adjusts the volume level.

🔇 **(MUTE)**

Mutes the sound of the Laser TV.

∧ ∨ **CH**

Changes the TV channel.

	1		2
1	Displayed when you press the ⚪ **Wheel (OK)** button on the magic remote control. Check program information.	**2**	If you point and hold the pointer at the bottom left of the screen while watching Laser TV, the **MY APPS** icon is displayed. Clicking the icon displays the **MY APPS** menu.

To Register the Magic Remote Control

To use the magic remote control, register it with your Laser TV first.

1 Turn on the Laser TV and wait for about 10 seconds and then press the ⚪ **Wheel (OK)** button while pointing the remote control at the Laser TV.

2 The remote control is automatically registered and the registration completion message appears on the Laser TV screen.

• If you failed to register the magic remote control, turn off the Laser TV and try again.

To Re-register the Magic Remote Control

1 Press the ⌂ **SMART** and ↩ **BACK** buttons together for about 5 seconds.

2 Press the ⚪ **Wheel (OK)** button towards the Laser TV to re-register the magic remote control.

• Press the ⌂ **SMART** and ↩ **BACK** buttons at the same time, for five seconds, to reset the Magic Remote Control.

• Press the ↩ **BACK** button while pointing the remote control at the Laser TV for five seconds to reset and re-register it.

Using the Magic Remote Control

1 Shake the magic remote control lightly when there is no pointer displayed on the screen. A pointer will be displayed on the screen.
  – The pointer disappears if the remote control is not used for a certain period of time.

2 When you move the pointer signal transmitter up/down/left/right while pointing it toward the Laser TV, the pointer moves.
  – If the pointer is not working properly, do not move the magic remote control for about 10 seconds, and then try again.

3 If you press the navigation button while moving the pointer on the screen, the pointer disappears, and the magic remote control works as a common remote control.

4 Use within an effective distance of 10 meters. Using the remote control from greater distances or when obstructions block the sight line may cause malfunctions.

5 Electronic devices nearby may cause communication interference. Devices such as microwave ovens and wireless LANs use the same frequency range (2.4 GHz) as the Magic Remote Control and may cause interference.

6 Take care not to bang it against other hard objects such as furniture or the floor.
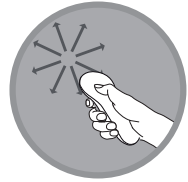
SETTING UP THE TV

Connecting the Antenna or Cable

To watch TV using an indoor/outdoor antenna, connect a wall terminal and the **ANTENNA/CABLE IN** port of the Laser TV using an RF cable (75 Ω).

You can watch public TV or cable (analog, digital) TV.
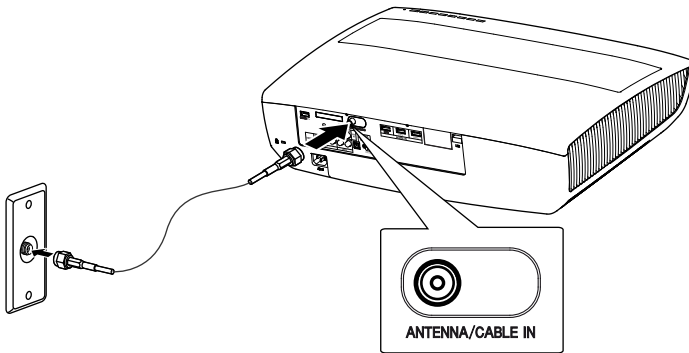
> ### ! NOTE
>
> • Be careful not to bend the copper wire when connecting the coaxial cable (75 Ω).
>   Fasten the cable connection terminal by turning it clockwise.
>
> • Ensure you use a standard coaxial cable (75 Ω) when connecting to the Laser TV input.
>
> • To obtain better image quality in locations where signal strength is low, please purchase and install a signal amplifier (booster).
>
> • A signal splitter is required to use one antenna to send a signal to more than two Laser TVs.
>
> • If you have any problems with antenna installation, please consult the antenna specialized retailer or the store where you purchased the antenna.

Copper Wire
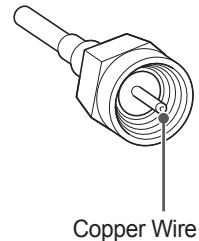
Watching Laser TV

Initial Setup

The menu screen display in this owner's manual is an example to help users understand how to operate the product and may look different from the actual screen.

1 Connect the power cord correctly.

2 After waiting for a moment, press the **POWER** button on the magic remote control or the control panel.

3 When you turn on the Laser TV for the first time, a setting screen appears as shown below. Here, you can specify the items required for watching the Laser TV more easily.
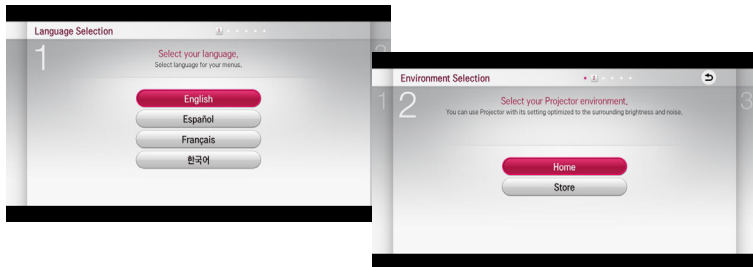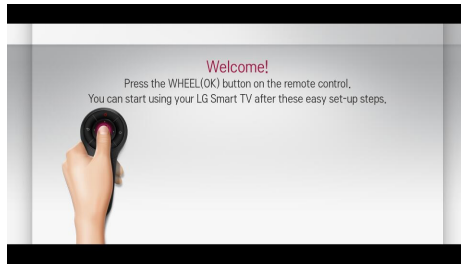
– **Store** mode is used when displaying the product in-store. The picture mode is automatically reset after a certain period of time. You can select **Home** to use the product at home.

Time Zone Setting

Select your region.
You can use Projector based on the selected region's time zone.

| Eastern |
| Central |
| Mountain |
| Pacific |
| Alaska |
| Hawaii |

Time Zone Setting

Select daylight saving options.
You can set Projector to daylight saving time.

Auto
On
Off

Network Connection

Connect to your wired or wireless network.
Enjoy various Smart TV features through network.

To connect to a wired network:
Connect a LAN cable to the back of TV.

or

To connect to a wireless network:
Requires a wireless router or access point.

Start Connection   Skip

ZIP Code

Input your Zip Code.
Use the channels and services optimized for your region.

ZIP Code

1	2	3
4	5	6
7	8	9
	0	

OK   Skip

Select TV Watching Type

Select a type to watch TV.
Set the TV and set-top box fitted for each watching type.

TV   Set-top Box   TV + Set-top Box

Watch channels from antenna and cable.

– The initial settings are completed when you select the settings above.
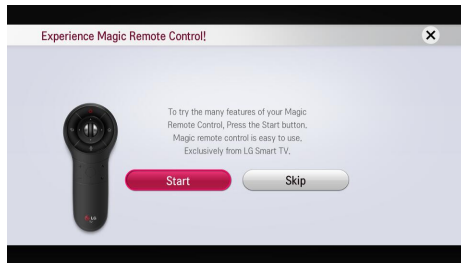
– Simple guide of Magic Remote Control.

> **⚠ NOTE**
>
> • For **Auto Tuning** while using the Laser TV, go to ⌂ **SMART** → **Settings** →
>   **CHANNEL** and select **Auto Tuning**.
> • To change the mode while using the Laser TV, go to ⌂ **SMART** → **Settings** →
>   **OPTION** and select **Mode Setting**.

Watching with the TV

1 In Standby mode, press the **POWER** button to turn the Laser TV on.
2 Select ⌂ **SMART** → **Input List** and select the input signal you want.
3 Control the Laser TV using the following buttons while watching Laser TV.

Button	Description
⋀⋁ **CH**	Changes the TV channel.
╋ ━ **VOL**	Adjusts the volume level.
⌀ **(MUTE)**	Mutes the sound from the Laser TV

4 To turn the Laser TV off, press the **POWER** button.

To Set Channel

Displays information on current program or current time, etc.
Image shown may differ from your Laser TV.

To View Program Information

1 Move the pointer of the magic remote control to the top of the Laser TV screen.
2 Click the activated channel banner area.
3 The program details will be displayed at the bottom of the Laser TV screen.
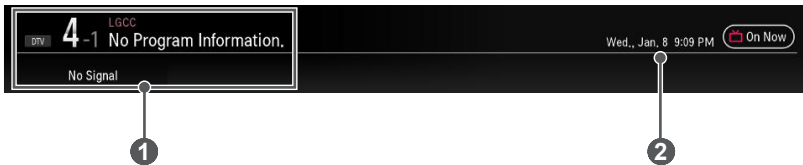
	Description
❶	Program name/ Detail information on program (for digital broadcast)
❷	Current time

To set favorite channels

⌂ **SMART → Settings → CHANNEL → Channel Edit**

1 Move to the desired channel on ◯ **Wheel (OK)** button. Channel is selected.

2 Press **Set as Favorite**.

3 Select the desired Favorite channel group.

4 Select **OK**. Favorite is set.

To use Favorite

⌂ **SMART → Ch. List**

Channel list will appear. Select the desired preset favorite channel from Favorite List A to D.

Additional Options

Adjusting Aspect Ratio

Select ⌂ **SMART → Settings → PICTURE → Aspect Ratio**, to change the aspect ratio.

Menu	Description
16:9	Resizes the image ratio to fit a 16:9 screen.
Just Scan	Displays high-quality image without loss. • In DTV/HDMI/Component (over 720p) mode, **Just Scan** is available.
Set By Program	Depending on the input signal, screen aspect ratio changes to 4:3 or 16:9.
4:3	Resizes the image ratio to fit 4:3 screen.
Zoom	Resizes the image to fit the screen width. The top and bottom parts of the image may be cut off.
Cinema Zoom 1	Formats an image to the cinemascope ratio (2.35:1) and zooms in on the ratio.

🛈 NOTE

• Available picture size may differ depending on the input signal.

• The screen aspect ratios on HDMI-PC input are available in 4:3 and 16:9 only.

Using the Edge Adj Function

Edge Adj adjusts the right, left, top, and bottom width of the projected image if the projected image and screen are not perpendicular to each other due to a tilted screen or TV.

Because the **Edge Adj** function may cause inferior screen image quality, use this fuction only when it is not possible to set up the Laser TV at an optimal angle.
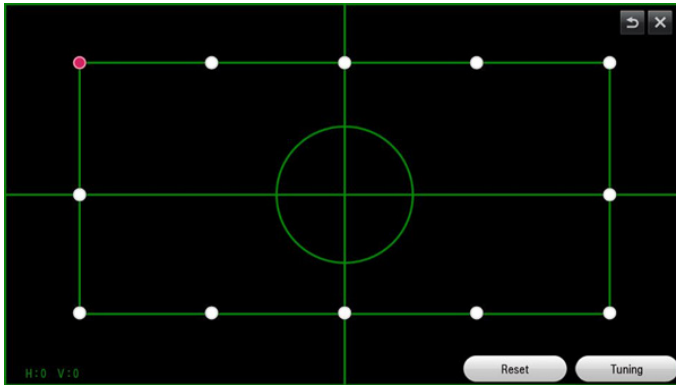
1 Go to ⌂ **SMART → Settings → OPTION → Edge Adj**.

2 Move to a point you want to adjust using the △, ▽, ◁, ▷ **(Up, Down, Left, or Right)** button of the Magic Remote Control and select the point by pressing the ◯ **Wheel (OK)**.

3 The four-way arrows △, ▽, ◁, ▷ **(Up, Down, Left, or Right)** are shown around the selected point.

4 The vertical and horizontal value of the point can be changed by pressing the △, ▽, ◁, ▷ **(Up, Down, Left, or Right)** buttons of the magic remote control.

5 Adjust the value of the point to the desired value and complete the adjustment by pressing the ◯ **Wheel (OK)** button of the magic remote control.
   – The vertical and horizontal value of each point is changed by 5 in **Tuning** mode, and by 1 in **Fine Tuning** mode.

6 After all adjustments have been made, close the **Edge Adj** function by pressing the ⤺ **BACK** button.

🛈 NOTE

- As the pointer cursor of the Magic Remote Control is disabled while running the **Edge Adj** function, press the △, ▽, ◁, ▷ **(Up, Down, Left, or Right)** buttons or the ⬤ **Wheel (OK)** button of the Magic Remote Control to adjust the value of a point.
- Select **Reset** to initialize the vertical and horizontal values of the 12 points to 0.
- Tuning mode is the default mode upon running the **Edge Adj** function. Press the **Tuning** button to change the mode to fine tuning. Press the **Fine Tuning** button to change the fine tuning mode to tuning mode.
- While running the **Edge Adj** function, the keys on the control panel are disabled.
- While running the **Edge Adj**, the **Eye Care Sensor** is disabled.
- If the power cord is unplugged while running the **Edge Adj** function, the adjusted value may not be saved.
- The adjustable value ranges of each point are as follows:
  – Top leftmost point (H: 0 ~ 70, V: 0 ~ 70)
  – Top left point (H: -70 ~ 70, V: 0 ~ 70)
  – Top center point (H: -70 ~ 70, V: 0 ~ 70)
  – Top right point (H: -70 ~ 70, V: 0 ~ 70)
  – Top rightmost point (H: -70 ~ 0, V: 0 ~ 70)
  – Center left point (H: 0 ~ 70, V: -70 ~ 70)
  – Center right point (H: -70 ~ 0, V: -70 ~ 70)
  – Bottom leftmost point (H: 0 ~ 70, V: -70 ~ 0)
  – Bottom left point (H: -70 ~ 70, V: -70 ~ 0)
  – Bottom center point (H: -70 ~ 70, V: -70 ~ 0)
  – Bottom right point (H: -70 ~ 70, V: -70 ~ 0)
  – Bottom rightmost point (H: -70 ~ 0, V: -70 ~ 0)

Changing Input Device

To select an external input

Selects external input.
- Select ⌂ **SMART** → **Input List** to display the input selection screen.
  – Connected inputs are displayed first.
- You can use the ◁ , ▷ button to switch among all the input modes.

Selecting an Input Label

Displays which devices are connected to which input ports.
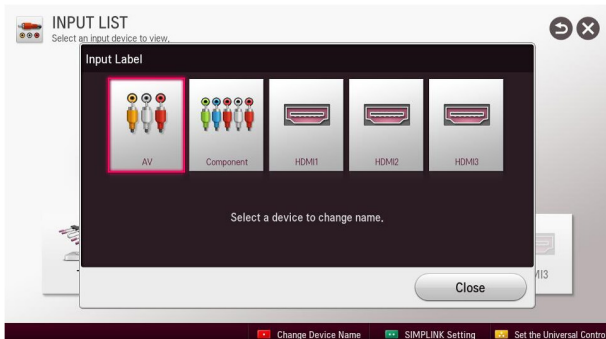
1 Select ⌂ **SMART** → **Input List**.
2 Select the **Change Device Name**.
3 Press the ◁ or ▷ button to go to the desired input and press the ⚪ **Wheel (OK)** button.
4 User the △ , ▽ , ◁ , or ▷ button to select a device name.

To Use SIMPLINK

SIMPLINK is a feature that enables you to control and manage various multimedia devices conveniently using the Laser TV remote control only via the SIMPLINK menu.

1 Connect the Laser TV's HDMI IN terminal with SIMPLINK device's HDMI output terminal using HDMI cable. For home theater units with SIMPLINK function, connect HDMI terminals as above and use an optical cable to connect Optical Digital Audio Out from the Laser TV to Optical Digital Audio In of the SIMPLINK device.

2 Select ⌂ **SMART** → **SIMPLINK**. SIMPLINK menu window appears.

3 Select **SIMPLINK Setting** on SIMPLINK menu window. SIMPLINK setup window appears.

4 **SIMPLINK Setting** to **On** in SIMPLINK setup window.

5 Close SIMPLINK setup window.

6 Select the device to control from ⌂ **SMART** → **SIMPLINK**.

🛈 NOTE

• This function only works on devices with the SIMPLINK logo (ⓈimPLink). Verify that the external device has a SIMPLINK logo.

• To use the SIMPLINK function, you need to use a high-speed HDMI® cable (with CEC, or Consumer Electronics Control, feature added). High-speed HDMI® cables have the No. 13 pin connected for information exchange between devices.

• Turn on or select the media of a device with home theatre features to see the speaker switch to External Speaker.

• Connect with an Optical cable (sold separately) to use External Speaker.

• Switching to external input causes devices operating with SIMPLINK to stop.

• Use of a third-party device with HDMI-CEC features may cause malfunctions.

Explanation Of SIMPLINK Features

Menu	Description
Direct Play	Plays the multimedia device on the Laser TV instantly.
Select multimedia device.	Selects the desired device via the SIMPLINK menu to control it from the Laser TV screen instantly.
Disc playback	Manages the multimedia device with the Laser TV remote control.
Power off all devices	If the **Auto Power** function is set to **On** in the SIMPLINK settings, turning the Laser TV off will turn the power off on all SIMPLINK-connected devices.
Sync Power on	If the **Auto Power** function is set to **On** in the SIMPLINK settings, turning on a SIMPLINK device will turn the Laser TV on.
Speaker	Selects speaker either on the home theatre unit or the Laser TV.

Using the Quick Menu

You can customize frequently used menus.

1 Press the ⌂ **SMART** button and select **Quick Menu**.

2 Press the ◁ or ▷ button to select a menu and press ◯ **Wheel (OK)**.

Menu	Description	
Aspect Ratio	Resizes the picture.	
Picture Mode	Changes the picture mode.	
Sound Mode	Sets the sound mode.	
Sleep Timer	Sets the Laser TV to be turned off at the specified time.	
Caption	Sets whether to display captions.	
Multi Audio	Sets **MONO** or **STEREO**, or a language for a bilingual broadcast (Digital signal).	
SAP	Changes the MTS sound (Analog signal).	
Energy Saving	Adjusts the brightness.	
AV Mode	Sets the genre.	
	Mode	
	Off	You can watch using the settings in the video/audio menu.
	Cinema	Change to optimal video/audio settings for movies.
	Game	Change to optimal video/audio settings for games.
Del/Add	Can delete or add channels.	
USB Device	Allows you to remove a connected USB device in a safe manner.	

3 Press the △ , ▽ , ◁, or ▷ button to scroll through the following menus.

SETTING UP THE TV   41

To Set Sound

To Set Sound Output

To use Laser TV's speakers

• ⌂ **SMART → Settings → SOUND → Sound Out → TV Speaker**

Sound is output through the TV speaker.

To use External Speakers

• ⌂ **SMART → Settings → SOUND → Sound Out → External Speaker (Optical/HDMI ARC)**

Sound is output through the speaker connected to the optical port.

SIMPLINK is supported.

To use Digital Sound Out

• ⌂ **SMART → Settings → SOUND → Sound Out → External Speaker (Optical/HDMI ARC) → Digital Sound Out**

Sets up **Digital Sound Output**.

Item	Sound Input	Digital Sound Output
Auto	MPEG	PCM
	Dolby Digital	Dolby Digital
	Dolby Digital Plus	Dolby Digital
	HE-AAC	Dolby Digital
PCM	All	PCM

To connect and use an LG audio device

LG audio device allows you to enjoy rich powerful sound easily.

• **Wired Connection**:
  ⌂ **SMART** → **Settings** → **SOUND** → **Sound Out** → **LG Sound Sync (Optical)**
  Connect an LG audio device with the $_{Sync}^{Sound}$ logo to the optical digital audio output port.

• **Wireless Connection**:
  ⌂ **SMART** → **Settings** → **SOUND** → **Sound Out** → **LG Sound Sync (Wireless)**
  An LG audio device with the $_{Sync}^{Sound}$ logo can be connected wirelessly.

❶ NOTE

• You can use the Laser TV remote control to adjust the volume of the connected device.

• For a wireless connection, if the device fails to connect, check the device power and make sure the LG Audio device is set up properly.

• When you select **LG Sound Sync (Wireless)**, devices available for connection are searched and one of searched devices is automatically connected. When a device is connected, its name is shown.

• If two or more devices are detected, the first detected device is connected first. To view more detected devices to connect, press the **Show More** button.

• When **LG Sound Sync (Wireless)** is active and you turn on the Laser TV, it will search and try to connect the device which recently connected.

To connect and use a Bluetooth headset

Sound output is through the Bluetooth headset.

• ⌂ **SMART** → **Settings** → **SOUND** → **Sound Out** → **LG Sound Sync (Wireless)**
• The devices that can be connected are:LG BTS1, LG HBS-700, LG HBS-730, LG HBS-800 (Product availability may vary by country.)
• For wireless connection, if the device fails to connect. Check the device power to connect and if the LG Audio device is in a proper operating condition.
• If two or more devices are detected, the first detected device is connected first. To view more detected devices to connect, press the **Show More** button.

Using the Multi Audio

Multi Audio means stereo and multiple language broadcast from the channel provider.

• ⌂ **SMART** → **Quick Menu** → **Multi Audio**

In the case of digital broadcast

Multiple languages can be selected depending on the multi-language signals from the TV station.

• For default language, select at ⌂ **SMART** → **Settings** → **OPTION** → **Language** → **Audio Language**.

In the case of analog broadcast

Item	Description
MONO	Left and right speakers produce sound, and the sound model is mono. Select this menu to listen in **MONO** mode regardless of broadcast state. This can be set for a stereo broadcast signal. Select **MONO** in poor reception areas (e.g., areas with weak or erratic signals) or when multi audio reception is not clear.
STEREO	The sound mode is in stereo when the sound comes out of both left and right speakers.
SAP	Changes the MTS sound.

ENTERTAINMENT

To Use Smart Features

To Use Home Screen

With all smart Laser TV features on one screen, everyone can access a wealth of content and applications conveniently via the quick and easy-to-use menu, arranged by themes such as Card, MY APPS, etc.

- Press the ⌂ **SMART** button on the remote control.
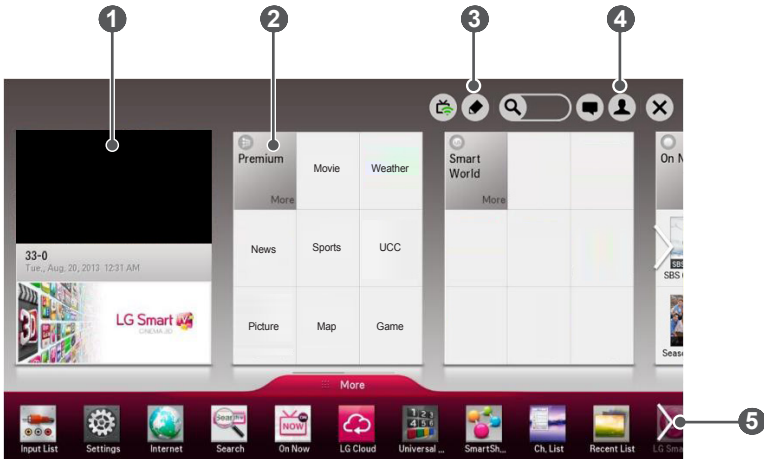
	Description
❶	Displays the screen you are currently watching.
❷	Displays the premium menu.
❸	Edit the card list.
❹	Login button
❺	Displays the list of my apps. Select **More** at the bottom of the Home screen. Select **More** to check pre-installed and downloaded apps. Select an app to use.

To Use MY APPS

- ⌂ **SMART** → **More**
- Select **More** at the bottom of the home screen.
- Select **More** to check apps pre-installed apps and apps you have downloaded.
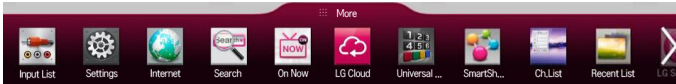
To Edit Items in MY APPS

On the **MY APPS** page, select ⬤ **(Edit)** at the top of the screen to move or delete apps. Please note that system apps can be moved, but cannot be deleted.

- Select ⌂ **SMART** → **More** → **MY APPS** → ⬤ **(Edit)**.
- Changes orders / deletes items by dragging the app icons with a magic remote control.
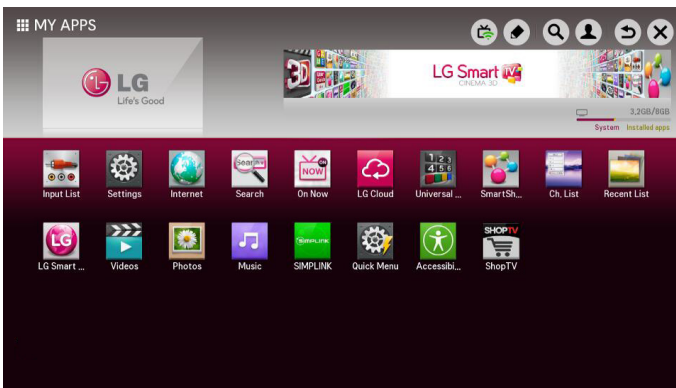
To Connect Network

A wireless or wired network connection is required to use smart features.

When connected to the network, you can use premium content, LG Smart World, DLNA and more.

One-click Network Connection

Connects easily to a wired/wireless network.

- ⌂ **SMART → Settings → NETWORK → Network Connection** to connect to an available network automatically. Follow the prompts on the Laser TV.

To Connect to a Network Through Set Expert

For use in special circumstances such as in offices (in cases where a static IP is used).

- Select ⌂ **SMART → Settings → NETWORK → Network Connection → Start Connection → Other Network List → Manual Setup**.

1 Select a **Network Connection**, either **Wired** or **Wireless**.

2 When connecting via Wi-Fi, use the one of the following network connection methods.

Item	Description
AP List	Connects the network by selecting a network from the AP (Access Point) List.
Enter the SSID	Connects by typing in the name of wireless AP.
WPS-PBC	Connects easily by pressing the button of a wireless access point supporting PBC.
WPS-PIN	Connects easily by typing in the PIN from the admin page of the desired wireless AP.

To Use the Wi-Fi Direct Function

Wi-Fi Direct is a function that allows your Laser TV to connect with a Wi-Fi Direct device without Internet connection. With SmartShare™, you can watch the files stored on a device connected via Wi-Fi Direct.

- Select ⌂ **SMART → Settings → NETWORK → Wi-Fi Direct**.

1 Set **Wi-Fi Direct** to **On**. (If you do not use it, please change it to **Off**.)

2 Enable the Wi-Fi Direct settings on the device that you want to connect to.

3 A list of devices that can be connected to the Laser TV is displayed.

4 Select a device to connect.

5 Select **Yes** when the connection request message appears.

6 If the device that you want to connect accepts the request, **Wi-Fi Direct** is connected.

To Use the Miracast™ / Intel's WiDi Function

You can view the screen of a device with Miracast™ and Intel's WiDi technologies on your Laser TV. Contact the device manufacturer to find out if the device supports this function.

• Select ⌂ **SMART** → **Settings** → **NETWORK** → **Miracast™ / Intel's WiDi**.

1 Set **Miracast™ / Intel's WiDi** to **On**. (If you do not use it, please change it to **Off**.)

2 Enable the **Miracast™ / Intel's WiDi** settings on the device that you want to connect to.

3 A list of devices that can be connected to the Laser TV is displayed.

4 Select a device to connect.

5 Select **Yes**, when the connection request message appears.

6 If the device that you want to connect accepts the request, **Miracast™ / Intel's WiDi** is connected.

• When **Wi-Fi Direct** is set to **Off**, if you set **Miracast™ / Intel's WiDi** to **On**, **Wi-Fi Direct** is automatically set to **On**.

• When you set the **Miracast™ / Intel's WiDi** function to **Off**, Wi-Fi Direct returns to the previous setting.

❗ NOTE

• It is recommended to connect a laptop using **Intel's WiDi** within close range.

• Though **Intel's WiDi** can be connected without a wireless router, it is recommended to connect the wireless router first for optimal performance.

• You may not connect your Laser TV to a non-LG Electronics device even when it is detected.

• It is recommended you to connect a device to a 5 GHz router.

• The response rate may vary depending on the user's environment.

• For more information on the device you want to connect to, refer to its owner's manual.

Tips for Network Settings

- Use a standard LAN cable (Cat5 or higher with RJ45 connector, 10 Base-T or 100 Base TX LAN port).
- Resetting your modem can cause network connection problems. To resolve the problem, turn the power off, disconnect and reconnect, and then turn the power back on.
- LG Electronics is not responsible for any network connection problems or any faults, malfunctions and errors caused by an network connection.
- A network connection may not work properly depending on the Internet service provider.
- A DSL modem is required for a DSL service; a cable modem is required for a cable service. Only a limited number of network connections may be available, and Laser TV network setting may not be available depending on your contract with your Internet Service Provider (ISP.)
  (If only one device is allowed per line and the PC is already connected, other devices cannot be used.)
- Wireless networks can be subject to interference from other devices operating at a frequency of 2.4 GHz (wireless phones, Bluetooth devices or microwave ovens). There may also be interference from devices with a frequency of 5 GHz, same as other Wi-Fi devices.
- The surrounding wireless environment can cause the wireless network service to run slowly.
- If you do not turn off the entire local home network, network traffic may occur on some devices.
- For an AP connection, an access point device that supports wireless connection is required and the wireless connection feature must be enabled on the device. Contact your service provider regarding availability of wireless connection on your access point.
- Check the SSID and security settings of the AP for AP connection. Refer to the appropriate documentation for SSID and security settings of the AP.
- Invalid settings on network devices (wired/wireless line sharer, hub) can cause the Laser TV to run slowly or not operate properly. Install the devices correctly according to the appropriate manual and set the network.
- Connection method may differ according to the AP manufacturer.

Tag On

What is Tag On?

Tag On is a data transmission technology that can be used on smartphones with NFC (Near Field Communication). Simply by tapping your smartphone to a Tag On sticker, you can share content between your smartphone and Laser TV.

• To connect your smartphone to the Laser TV using Tag On, they must be connected on the same Wi-Fi network or **Miracast™ / Intel's WiDi** of the smart Laser TV is set to **On**.

> **⚠ NOTE**
>
> • Do not attach the sticker to a metal part of the Laser TV. Otherwise, your smartphone cannot recognize the Tag On sticker.
> • Do not crumple or fold the Tag On sticker. Otherwise, the Tag On is not recognized.
> • To purchase a Tag On sticker, please contact the LG Electronics Service Centre.
> • This function is supported only on a smartphone with Android 4.0 (ICS) or later.

To Start Tag On For the First Time

To connect your smartphone to the Laser TV using NFC, install the Tag On app on the smartphone and complete the authentication process.

1 Make sure that the smart Laser TV is on the same network as your smartphone. If Wi-Fi cannot be enabled, go to ⌂ **SMART** → **Settings** → **NETWORK** → **Miracast™ / Intel's WiDi** and set to **On**.

2 Enable the smartphone's NFC function and set to **Read/Write and P2P Mode**. For more information on enabling NFC and setting the mode, refer to the owner's manual of your smartphone.

3 Tap your smartphone to a Tag On sticker. Make sure to follow the instructions on the smartphone screen and install the Tag On app and LG TV Remote app.

4 Tap the smartphone to the Tag On sticker again.

5 Enter the pairing key displayed on the smart Laser TV into the smartphone. When two or more Laser TVs are detected, the pairing key is displayed only after the Laser TV you want to connect to is selected in the device list.

6 When the connection is made properly, you can use Tag On.

• The information of the connected Laser TV is saved in the Tag On sticker. You can change or reset the information in the Settings menu of the smartphone Tag On app.

To use the Tag On

Follow the steps below to share content on your NFC-enabled smartphone.

1 Tap the NFC-enabled smartphone to a Tag On sticker.

2 The Tag On app starts running on the smartphone to connect to the smart Laser TV.
  – To use a Wi-Fi network, make sure that the smart Laser TV is on the same network as your smartphone.
  – If the smart Laser TV and the smartphone are not on the same network, use Wi-Fi Direct.

• If the Tag On app is not installed, the installation page appears automatically.

• For more information on how to share content between your smartphone and Laser TV, refer to the Tag On app's help. Click to run the Tag On app on your smartphone and select the Settings menu to view the help.

SMARTSHARE

Before Using

Connecting a USB Device

Connect a USB device (external HDD, USB memory)
to the USB port of Laser TV to enjoy the content files
stored in the USB device with your Laser TV. You
cannot write or delete data in the USB device. Connect
a USB flash drive as shown on the right.

USB Flash Drive
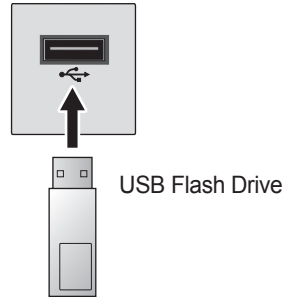
Removing a USB Device

1 Select ⌂ **SMART** → **Quick Menu**.
2 Use the ◁ or ▷ button to move to **USB Device** and press the ◯ **Wheel (OK)** button.
3 Select a USB to remove. Wait for confirmation that the USB device has stopped before
   removing the USB.

> ⓘ **NOTE**
>
> • If detached early, an error may occur on the Laser TV or the USB storage device.
> • Once a USB device has been selected for removal, it can no longer be read.
>   Remove the USB storage device and then re-connect it.

Tips for Using a USB Device

- If the USB storage device has a built-in auto recognition program or uses its own driver, it may not work.
- Some USB storage devices may not work or may work incorrectly.
- If you use a USB extension cable, the USB device may not be recognized or may not work properly.
- Use only USB storage devices formatted with the Windows FAT32 or NTFS file system.
- 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 500 mA.
- It is recommended to use a USB hub or hard disk drive with power supplied. (If the power supplied is not enough, the USB storage device may not be detected properly.)
- It is recommended that you use USB flash drives of 32 GB or less and USB HDDs of 2 TB or less.
- If a USB HDD with power-saving function does not work properly, turn the power off and on. For more information, refer to the user manual of the USB HDD.
- Data in USB storage device can be damaged so be sure to back up important files to other devices. Data maintenance is the user's responsibility and the manufacturer is not responsible for data loss.

To use SmartShare™

1 Press the 🏠 **SMART** button on the magic remote control.

2 Select **SmartShare™**.

Playback photo/music/video files on the Laser TV from a USB device or home network(DLNA). The photo, music and video of all devices connected to the Laser TV are displayed.
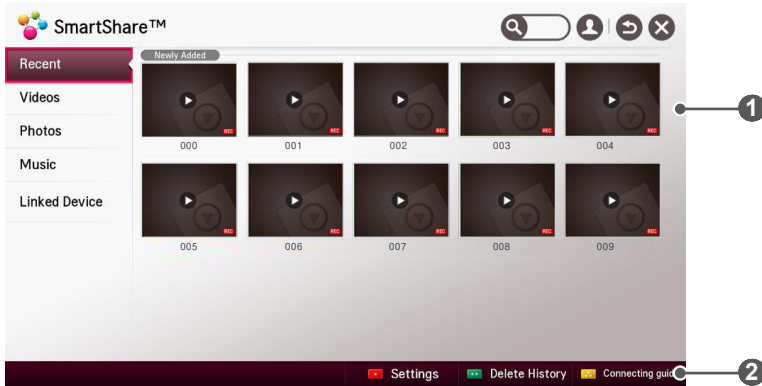
	Description
❶	Displays photo/music/video files on all devices connected to the Laser TV.
❷	Shows how to connect PC, smartphone/device, and USB.

Watching the Videos

In the **Videos**, you can watch movies stored on the connected USB device.

Controls playback and sets options while viewing videos.

Playing video - warning

- Some subtitles created by users may not work properly.
- The video and subtitle files should be placed in the same folder. In this case, you must assign the same names for the video and subtitle files for proper display.
- Subtitles on an NAS (Network Attached Storage) device may not be supported depending on the manufacturer and model.
- We do not support any stream that contains GMC (Global Motion Compensation) or Qpel (Quarterpel Motion Estimation).
- Full HD Video: 1920 X 1080
  – Only H.264 / AVC profile level 4.1 and lower is supported.
- The file size limit is dependent on the encoding environment.
- Only Window Media Audio V2 and above is supported.
- AAC Main Profile is not supported.
- Video files created by some encoders may not be played back.
- Video files in formats other than the ones specified here may not be played back.
- Playback of video files stored on a USB device that does not support High Speed, may not work properly.
- The Laser TV supports DTS audio codec when the USB/HDMI video file playback.

To control video playback

You can control playback using the following buttons.

Wildlife in HD
00:00:01   1280 x 720 | WMA / WMV   00:00:30
Option

Shows the current playing position.
Use the ◁ , ▷ button to move forward or backward.

Item	Description
▶	Resumes normal playback.
⏸	Pauses the video player.
	⏸ ⏩ Displays in slow motion.
◀◀ ▶▶	Whenever this button is pressed, the playback speed is increased or decreased by one unit.
⏮ ⏭	Plays the previous/next file.
Option	Sets the option.

Viewing the Photos

You can view photos stored on a connected device.

To control photo view

You can control playback using the following buttons.
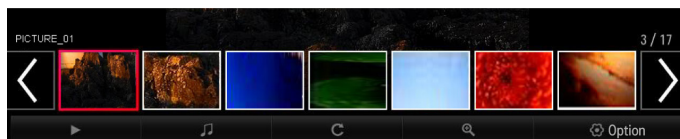
Item	Description
〈 , 〉	Selects the previous or next photo.
▶	If no picture is selected, all photos in the current folder are displayed in a slide show. If some photos are selected, those photos are displayed in a slide show. • Set **Slide Speed** in the **Option** → **Set Photo View.** menu.
♫	You can listen to music while viewing full-size photos. • Set **BGM** in the **Option** → **Set Photo View.** menu.
C	Rotates photos. • Rotates a photo 90 °, 180 °, 270 °, 360 ° clockwise. • Photos cannot be rotated if their width is greater than the height of the maximum supported resolution.
⊕	Enlarges or reduces the photo. Use the △ ▽ ◁ ▷ (**Up/Down/Left/Right)** buttons to select a page and press the ⬤ **Wheel (OK)** button.
Option	A setting popup window will appear.

Listening to Music

You can play audio files stored on the connected device.

To control music playback

You can control playback using the following buttons.
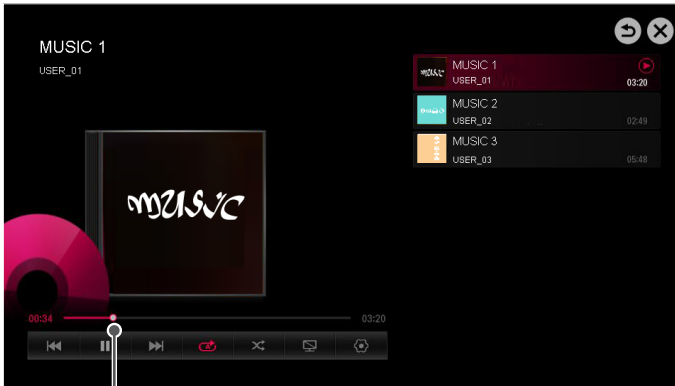
Changes the playing position.

Item	Description
⏮⏭	Plays the previous/next file.
⏸	Pauses the music player.
▶	Resumes normal playback.
⇆	Sets the repeat playback.
⤬	Sets the random playback.
🖵	Plays music with the Laser TV screen turned off.
⚙	Sets Option for the music list.

If you use the USB device, time information will be not shown on screen.

To Set SmartShare™ Related Functions

Select ⌂ **SMART** → **SmartShare™** → **Settings**.

Changes settings related to SmartShare™ content playback.

Advanced Setting

Item	Description
My TV Name	Changes the name that appears when searching for the Laser TV from other devices.
Network Status	Checks the network connection.
Wi-Fi Direct	Allows use of wireless connection functions such as Wi-Fi Direct and WiDi.
Auto Play on Receive	Accepts / rejects content transferred from other devices.
DivX(R) VOD	Registers or releases DivX. Checks DivX Registration Code for playing DivX-protected videos. Register at http://vod.divx.com. Uses Registration Code to rent or purchase movies at www.divx.com/vod. • When using the DivX Registration Code of another device, the rented/purchased DivX file cannot be played. Use only the DivX Registration Code granted to this device. • Converted files not conforming to DivX Codec Standard may produce abnormal images and sound.

Delete History

• To delete contents history, press **Delete History** button. Use the contents at **Recent** menu.

SmartShare™ supporting file

• Maximum data transfer rate: 20 Mbps (Mega bit per second)

• External subtitle formats supported: *.smi, *.srt, *.sub (MicroDVD, SubViewer 1.0/2.0), *.ass, *.ssa, *.txt (TMPlayer), *.psb (PowerDivX), *.dcs(DLP Cinema)

• Internal subtitle formats supported: XSUB (supports internal subtitles generated from DivX6)

Video Supported Codec

Maximum resolution: 1920 x 1080 @ 30p

Extension		Codec
.asf	Video	VC-1 Advanced Profile, VC-1 Simple and Main Profile
.wmv	Audio	WMA Standard, WMA 9 Professional
.divx	Video	DivX3.11, DivX4, DivX5, DivX6, XViD, H.264/AVC, Motion Jpeg, MPEG-4 Part 2
.avi	Audio	MPEG-1 Layer I, II, MPEG-1 Layer III (MP3), Dolby Digital, Dolby Digital Plus, LPCM, ADPCM, DTS
.mp4	Video	H.264/AVC, MPEG-4 Part 2
.m4v .mov	Audio	AAC , MPEG-1 Layer III (MP3)
.3gp	Video	H.264/AVC, MPEG-4 Part 2
.3g2	Audio	AAC, AMR-NB, AMR-WB
.mkv	Video	H.264/AVC
	Audio	HE-AAC, Dolby Digital
.ts .trp .tp .mts .m2ts	Video	H.264/AVC, MPEG-2, VC-1
	Audio	MPEG-1 Layer I, II, MPEG-1 Layer III (MP3), Dolby Digital, Dolby Digital Plus, AAC
.vob	Video	MPEG-1, MPEG-2
	Audio	Dolby Digital, MPEG-1 Layer I, II, DVD-LPCM
.mpg	Video	MPEG-1, MPEG-2
.mpeg	Audio	MPEG-1 Layer I, II, MPEG-1 Layer III(MP3), AAC

Audio File

File type	Item	Info
mp3	Bit rate	32 Kbps - 320 Kbps
	Sample freq.	16 kHz - 48 kHz
	Support	MPEG1, MPEG2, Layer2, Layer3

Available photo file

File type	Item	Info
2D (jpeg, jpg, jpe)	JPEG	Minimum: 64 x 64 Maximum: Normal Type: 15360 (W) x 8640 (H) Progressive Type: 1920 (W) x 1440 (H)

To Use the LG Cloud

What is LG Cloud?

LG Cloud is a service that allows you to enjoy your contents, such as video, music and photos on your LG Laser TV, Smartphone and LG Website at any time, regardless of where you are.

• ⌂ **SMART → More → LG Cloud**
• Sign up for LG Cloud to use the services.
• You can sign up from your LG Smart Laser TV, Smartphone or LG Website.
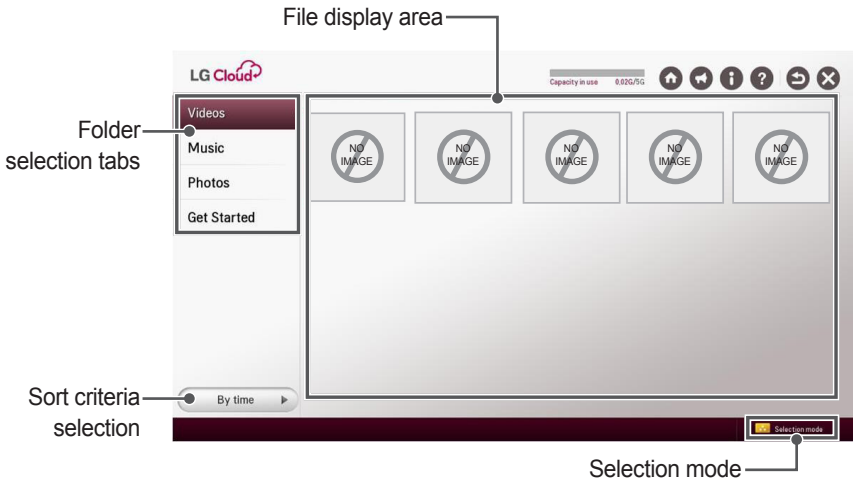• The service or membership can only be cancelled at the LG Cloud website (http://www.lgecloud.com).

To Use LG Cloud

• ⌂ **SMART → More → LG Cloud**
• Enter the e-mail and password you provided during the sign-up procedure to sign in to the service.

Main screen layout

This is the main screen you will see first after signing in.

File display area

Folder
selection tabs

Sort criteria
selection

Selection mode

Video playback

Set options

Playback control   Add or remove favorites

LG Cloud Move to Home/Notice/My Account/FAQ

Item	Description
Move to Home	Displays a default screen.
Notice	Shows notices about the LG Cloud service.
My Account	Shows the user ID and e-mail address.
FAQ	Displays the FAQ regarding LG cloud service.

To connect DLNA

DLNA stands for Digital Living Network Alliance, which allows you to enjoy video / music / photo files stored on a PC or server on your Laser TV via home networking.

To Connect a DLNA-authenticated Smartphone

TV and the smartphone should be on the same network.

1 Enable Wi-Fi on the smartphone.

2 Install/run a DLNA app to share content on the smartphone (It's called SmartShare on LG phones).

3 Run "Share my mobile phone Content".

4 Select the kind of Content (video/music/photo) to play.

5 Select the video, music, or photo file to play on the Laser TV.

6 Select **Add to Play List**.

7 Select Laser TV model name on the device to replay content. (Laser TV model name is on the label of the device.)

8 Press Play ▶ to enjoy the selected file on the Laser TV.

To connect a DLNA DMR (Digital Media Renderer)

With the Windows 7 or Windows 8 PC operating system or DLNA-certified device (e.g. mobile phone), music/videos/photos may be played on the Laser TV without installing a separate program.

1 Configure the Laser TV and PC on the same network. Configure the Windows 7 or Windows 8 PC on the network.

2 To play a music/video/photo file, right-click on the file and use the Remote Playback or PlayTo Windows 7 or Windows 8 feature.
For playback on devices like a mobile phone, refer to the model's user guide.

3 Content will be played on only one device even if more than one Laser TV or device is connected. Play speed can vary depending on network speed.

To connect a DLNA DMP (Digital Media Player)

With a PC having SmartShare PC Software, music/video/photo files may be played on the Laser TV via home networking.

1 Configure the Laser TV and the PC on the same network. The Laser TV and each device should be connected through a single access point to enable DLNA service.

2 Install the SmartShare PC Software from the web site onto a PC. Before installation, close all running programs including firewall and Anti-Virus programs.

3 The server should be running in order to watch shared files on your Laser TV.

• For the website information, go to ⌂ **SMART** → **Settings** → **SUPPORT** → **Product/ Service Info**.

• For how to use the SmartShare PC software, refer to the software help.

SmartShare™ PC SW Installing and Setting

Install the SmartShare™ PC SW (DLNA) program on your PC.

1 Download the setup file from the path below in order to use the DLNA function. http://liu.lge.com/smartshare/release/smartshare.zip

2 Install the downloaded SmartShare™ PC software.

3 You can run the program when installation is complete.

> **NOTE**
>
> • DLNA or Media Link service is only available if Laser TV and other devices are connected via a single router.

PC requirement for installing LG SmartShare™

Item	Minimum Specifications	Recommended Specifications
CPU	Intel Pentium4 2.0 G or higher/ AMD Sempron 2000 or higher	Intel Pentium Dual Core or higher/ AMD Athlon 64 x 2 or higher
RAM	1 GB or higher	2 GB or higher
VGA	64 MB RAM, 1024 x 768 or higher resolution, and a video card that supports 16 bit or more colors	128 MB RAM, 1024 x 768 or higher resolution, and a video card that supports 16 bit or more colors
Hard Disk Drive	200 MB or higher	
Operating System	Windows XP (Service Pack 2 or later), Windows Vista, Windows 7, Windows 8 l Windows Media Player: 11.0.5721.5280 or higher is recommended	
Network Environment	100 MB Ethernet, Wireless LAN (WLAN) IEEE 802.11g or higher	

• Program speed can be delayed depending on the system performance and the network environment.

In Case of a DLNA Malfunction

• If a DLNA feature does not work properly, check network settings.
• A 5-GHz access point is needed to view 1080p videos via DLNA.
• A 2.4-GHz access point may cause frequent buffering or other problems.
• DLNA may not work properly on a wireless network. It is recommended to use a wired connection.
• Multi audio and internal subtitles are not supported in DLNA mode.
• If more than one Laser TV is connected to a single server in DLNA mode, the content may not play depending on server performance.
• Subtitles may not be supported depending on DLNA device.
• The DLNA feature may not work properly in all network environments.
• The DLNA feature cannot be used with some access points that do not support multicasting. For more information, refer to access point manual or consult with the manufacturer.

- Supported file types may differ depending on the DLNA server environment, even for the file types supported by Laser TV.
- Too many sub-folders and files included in one folder may cause a malfunction.
- Information about the file from DLNA server may not be displayed correctly.
- SmartShare PC Software is recommended when watching video subtitles from a DLNA server.
- To add a subtitle file later, turn off the shared folder and reset.
- DRM files located in SmartShare PC Software server are not played.

To Use A Premium Service

- ⌂ **SMART** → **Premium**
- This service gives you easy access to a wide variety of content, such as video, news, and UCC, at any time, as long as you are connected to the network. Premium content includes specialized country-specific services taking regional cultural sensitivities into account as well as global content.
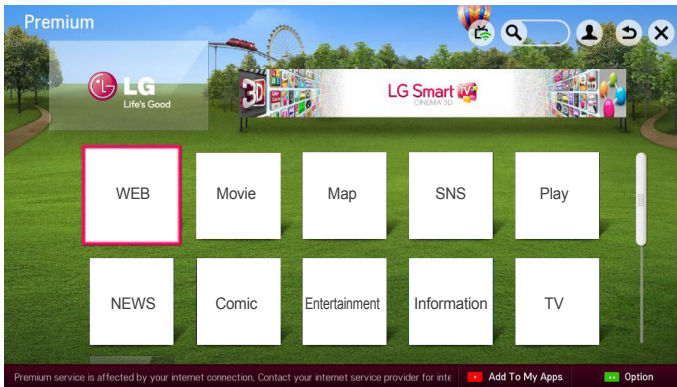
To Use Paid Content

• A fee is payable for some Premium content. Fee-paying services are paid for either through LG Electronics' proprietary billing system or through that of the relevant content provider. Before using the LG billing system, you will need to sign up for membership and register payment information on Laser TV or the website (www.lgappstv.com) to purchase paid content.

• You can sign up for membership on the login screen on your Laser TV or our website. You can then log into both the Laser TV and the website with one ID.

1 Click Sign In button on the upper-right side of the screen on the home page to sign in.

2 Moves to the desired Premium service. (For some premium services, separate sign-in is required after signing up for the premium service.)

3 After reviewing the pricing and service information for the content, click the Purchase button. (There may be limitations on the available period and number of times depending on content.)

4 Once the purchasing process is complete, view your purchased content by clicking the Buy button.

5 Select your ID on upper menu of Home screen and check history of purchases from **My Page → Payment inquiry**. It is also available on **My Page → Purchase History** of web site (www.lgappstv.com).

To Reset Premium

• ⌂ **SMART → Premium → Option → Initialization of Premium**

• Resets premium list, premium information, country setting, and user sign-in information.

• Resetting will resolve errors occurring during premium update.

❗ NOTE

• Content offered by service providers are subject to change or deletion without prior notice to enhance their service quality. Refer to the website of the relevant content provider for questions, troubleshooting, or the latest information about content. LG Electronics assumes no legal responsibility for content services and related information, even when a service is discontinued by the service provider.

• The quality of your premium service may be affected by your Internet connection. For any questions related to Internet speed or other service problems, consult your Internet service provider.

• For best service quality, we recommend that you subscribe to an Internet service providing a speed of 4.0 Mbps (1.5 Mbps or faster). If you experience any Internet speed problem, contact your Internet service provider.

• Some content providers may provide content that is unsuitable for minors. Parental discretion is advised.

To use LG Smart World

• ⌂ **SMART → LG Smart World**

LG Smart World is a TV application service available through Smart TV Service. You can download and enjoy many different apps (for fee or free) including education, entertainment, life and news.
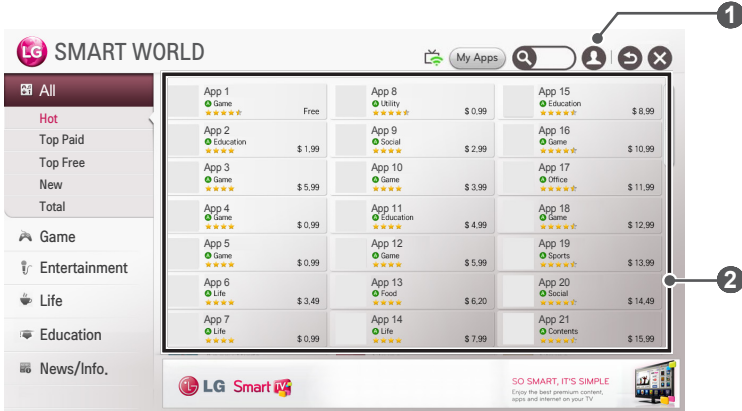
	Description
1	Sign in. When you sign in, ID is displayed. When you select the ID, you can select **My Page** and **Sign Out**.
2	Select the app to install.

To Use Search Function

- ⌂ **SMART → Search**
- You can search apps and contents using the **Search** function of LG Smart Laser TV. When you enter keywords using the input device, such as the remote control, you can find apps of LG Smart World and some contents of the Premium service. Links are also provided to go for web search. If you are using SmartShare™, you can also search contents of SmartShare™. The Search categories and content types vary depending on the country and will be kept updating.
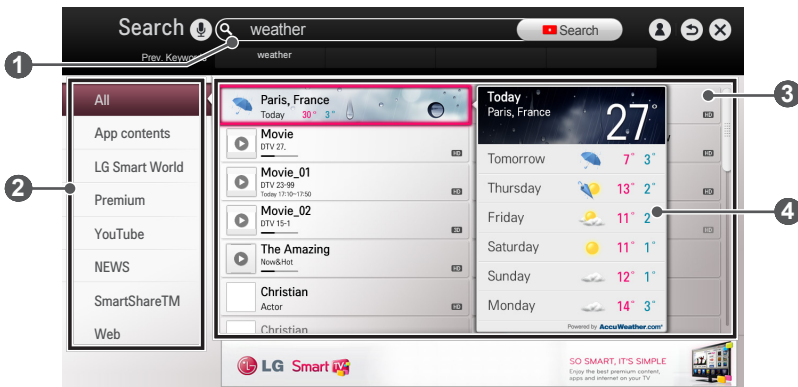
	Description
❶	Enter search terms.
❷	Category of search results
❸	Search results
❹	Detailed information about the search item

To Use the Voice Recognition Function

Using this Function Through Search

1 Go to ⌂ **SMART** → **Search**. Select the voice recognition icon 🎤 on the left of the text field.

2 Speak slowly and clearly after the voice recognition window appears.

3 After the voice recognition is completed, the Similar List window pops up. If the pop-up window does not have the results you want, press Retry to try again. Select the most similar result, then it will be displayed in the text field. Press the **Search** button to get the result you want.

Using this Function on the Internet

1 Go to ⌂ **SMART** → **Internet**. Move the Magic Remote Control pointer in the text field on a website to open the virtual keyboard.

2 Select the voice recognition icon 🎤 on the left the virtual keyboard.

3 Speak slowly and clearly after the voice recognition window appears.

4 After the voice recognition is completed, the Similar List window pops up. If the pop-up window does not have the results you want, press **Retry** to try again. Select the most similar result, then it will be displayed on the text field. Press the **Search** button on the website to get the result you want.

To Use Voice Mate Function

What Is Voice Mate?

Voice Mate allows you to search desirable programs and content with your voice and adjust the Laser TV.

1 Press the voice recognition 🎤 button on the magic remote control.

2 When the Voice Display bar is activated on the left of the screen, say what you want to watch.

3 Press the ⚪ **Wheel (OK)** button with the Voice Search standby to see the supported language in the voice guide.

How to Use Voice Mate?

• To use all the functions and services of Voice Mate, you need to set Smart Wizard and Time. Set up the network, region, auto tuning, and universal remote control through the Smart Wizard.

• In order to use Voice Mate, you must set up the network, time, region, and tuning.

• Set the language of your country to use Voice Mate.

• You can change the language for Voice Search in ⌂ **SMART** → **Settings** → **OPTION** → **Language** → **Voice Recognition Language**.

• You can turn the avatar **On**/**Off** in ⌂ **SMART** → **Settings** → **OPTION** → **See Avatar**.

• Point the universal remote control towards the set-top box when you use Voice Mate with it.

• When speaking a command, hold the remote within 10 cm of your face.

• The voice search may fail when you speak too fast or too slow.

• The recognition rate of Voice Mate may vary depending on the user's characteristics (voice, pronunciation, intonation, and speed) and the environment (noise and Laser TV volume).

• If your voice is not recognized properly, Voice Mate may function regardless of your intention.

What Are Other Functions of Voice Mate?

You can access various Laser TV features using Voice Mate.

Item	Description
Channel	You can tune TV channels and search channel information. Example: "What time is *** on?"
Recommen-dation and Search	You can recommend and search TV programs and content files. Example: "Look up ***"
Information and Internet	You can also search other information such as today's weather. Example: "How's the weather today?"

• Available functions may vary depending on the country.

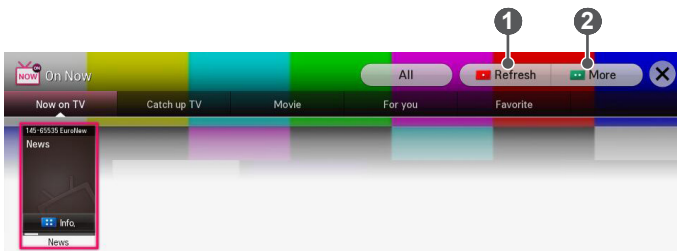• For more supported examples, see the voice user guide.

What Is On Now?

On Now allows you to select and watch recommended programs currently available on your Laser TV. The Favorite function allows you to select and watch recommended content related to the program you are watching.

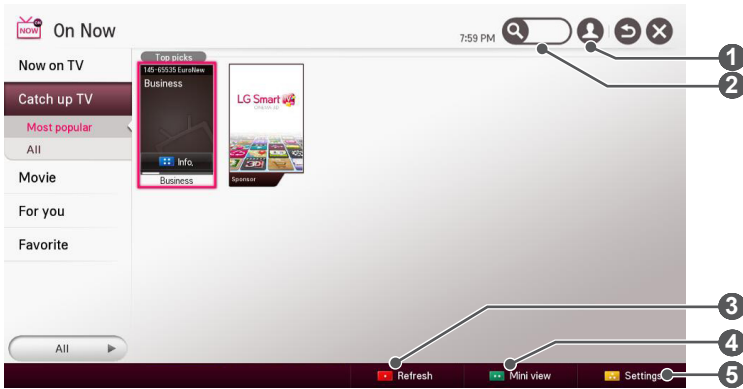## To Use On Now

To see in Mini view

• ⌂ **SMART** → **On Now**

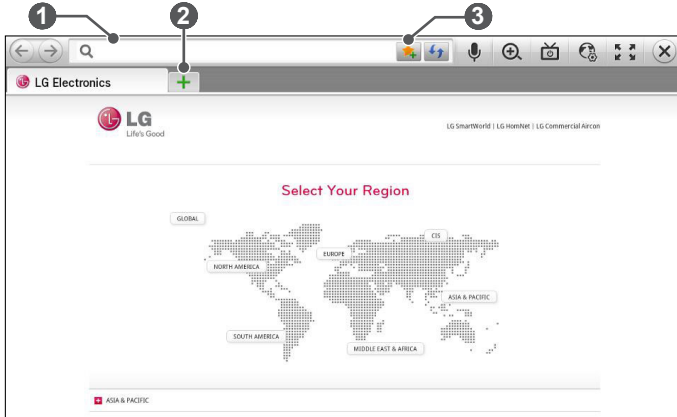|	Description
❶	Refreshes all list items and moves to the beginning of the screen simultaneously.
❷	Moves to Full View.

To See in Full View

- ⌂ **SMART** → **My Card** → **On Now**

		Description
1		Sign in
2		Search
3		Refreshes all the list items and moves the screen up simultaneously.
4		Move to Mini view
5		Sets the options.

- For TV channels, you need to complete Auto Tuning to use this service properly.
- If you move to a different region, you need to set the region to your current location in order to use this service.
- The digital EPG (Electronic Program Guide) information which the TV receives may be different from the programs on the On Now TV list which uses an external EPG (Electronic Program Guide).
- You can control a connected set-top box tuner with the magic remote control.
- An internet connection is required to use On Now.
- The channels in the On Now TV list are provided from the cable broadcasting service provider. If the provider changes them without notice, the actual TV channels may differ.
- The channel names of analog cable broadcasting on the On Now TV list are provided from an external EPG (Electronic Program Guide), so each name refers a cable broadcasting service provider but may not match.
- The program thumbnail image on the On Now TV list is the representative image of the program, and it may be different from the image of the actual TV program schedule.
- If the channel information on the On Now TV list is different from the actual TV channel or set-top box channel, set the set-top box and channel menu in the On Now Settings.

To Use Internet

- ⌂ **SMART** → **Internet**
- Types URL manually on Laser TV or visits websites added to favorite.

	Description
1	Types in the web address.
2	Chooses when you open several web browsers.
3	Add the current page to favorites.

- **Internet** supports up to Flash 11 but does not support platform-dependent technology like ActiveX.
- **Internet** only works with a pre-installed plug-in.
- **Internet** may not play any media file format other than the following: JPEG / PNG / GIF
- **Internet** will be forcibly closed when there is insufficient memory.
- For the **Internet**, fonts installed on the Laser TV are used and may not be displayed normally depending on the content played.
- **Internet** does not support file and font download.
- **Internet** is made for Laser TV so it may have a different function to browsers made for PC.
- **Internet** is a Laser TV browser and may not work properly when playing some content files.

Frequently Asked Questions for Smart Laser TV

Sign up is required to use LG Smart World.

You can sign up on either your Laser TV or the LG website (www.lgappstv.com). Free apps are available immediately after signing up.

You can purchase paid apps using your credit card registered with the website or credits. Paid apps can also be purchased through carrier billing.

Problem	Solution
When entering menu, the Initializing message always appears.	• The **Initializing** message shows you how long it takes to reboot the microprocessor and hardware, set up network communications, and communications with SDP (device authentication and basic information download). It takes about 20 seconds and this is a normal process.
There is no content shown on the Premium card.	• Content may not be shown after changing the country setting on Smart Laser TV. Change to desired country in ⌂ **SMART → Settings → OPTION → Service Country Setting**
While using internet features, there is a blank space on some Web pages.	• The internet of the Laser TV supports up to Flash 11 and may not replay any file format other than the following : JPEG, PNG, GIF
Internet closes automatically when visiting website.	• If memory is insufficient because of large volume of image information in the web page, the browser may be forced to close.
I already signed up on Laser TV. Do I need to sign up again at web site (www.lgappstv.com)?	• If you sign up on your Laser TV, no additional sign-up on the LG website (www.lgappstv.com) is required. • After signing up on the Laser TV, you can sign into the website by using the same ID and password and entering the additional information to complete the email verification process.
Can each family member use a different ID with a single Laser TV?	• It is possible to register and use more than one ID on one Laser TV. • To check the ID registered with Laser TV from ⌂ **SMART → Sign In → ID List**. • You can check the list of apps purchased by each ID. However, you can see all apps installed by each ID in ⌂ **SMART → Sign In → My Page**.

Problem	Solution
What should I do if I forget my ID?	• After signing up on a PC, use the Forgot ID? feature on web site (www.lgappstv.com) when needed. • After signing up on Laser TV, check it from ⌂ **SMART** → **Sign In** → **Find ID**.
I purchased an app from the LG web site (www.lgappstv.com). How can I use it on the Laser TV?	• To check purchased apps from the Laser TV, sign in and open the Purchased Apps menu. • Select the ID at the top of Home and check the app in **My Page** → **Purchased apps**.
Can I see history of my purchased apps?	• Select the ID at the top of Home and check the app in **My Page** → **Purchased apps**. • Sign in to website (www.lgappstv.com) and then select **My Page** → **Purchase History**.
I deleted a paid app. Do I have to purchase again to download it?	• If a purchased app is accidentally deleted, you can download and reinstall it without having to buy it again, as long as it is still in service. • Select the ID at the top of Home and re-download apps in **My Page** → **Purchased apps**. (Previously owned apps may not be re-downloaded or run depending on the software version.)
Can I use apps from LG Smart Laser TV's LG Smart World on both a Laser TV and a PC?	• Please check if the Laser TV model supports LG Smart World. • The apps provided from LG Smart Laser TV's LG Smart World can only be used on an LG Smart Laser TV. • Apps may be purchased from the website (www. lgappstv.com) but cannot be used on a PC or Mac. Use care when purchasing.
How can I check the ID currently signed in on the Laser TV?	• Select the ID at the top of Home and check the currently signed-in ID in **My Page** → **My Information**.
I installed an app on the Laser TV. Where can I check the installed app?	• Select ⌂ **SMART** → **MY APPS**. All paid and free apps installed on Laser TV are displayed.

Problem	Solution
There is a difference between the app size shown on the screen and the actual app size installed on Laser TV.	• The app size shown in the screen includes the additional space needed for installing apps so it may be different from actually installed app size.
I forgot my password on the Laser TV. What should I do?	• If you only provide the ID and password when signing up on your Laser TV, you cannot recover your password when it is lost. Create a new ID and sign up with the ID. • If you provide other information than the ID and password when signing up on your Laser TV or the LG website (www.lgappstv.com), you can recover your password on the website.
Do I need to store payment information in web site to purchase paid apps?	• The following payment methods are available to purchase paid apps on your Laser TV: credit card, credits, and carrier billing. • To purchase paid apps using your credit card or credits, you should have a credit card registered with the LG website (www.lgappstv.com) or have enough credits. Paid apps can also be purchased through carrier billing if your credit card details are not registered with the website or you do have enough credits. If you purchase paid apps on the website, the following payment methods are available: credit card or credits.
Can I cancel an app that I have purchased?	• As a member you cannot demand refund just because you changed your mind after purchase. • If there is a defect in the product or a problem of using the product, which does not caused by your fault, you can ask for a refund. However, the valid reason for refund must be provided.
Should I use only an email address for my ID?	• For new sign-up members, the ID format has changed from a combination of alphanumerics to your email address. • You can only use an email address for your ID when signing up.
Do I need to change my ID format to the email address?	• For new sign-up members, the ID format has changed from a combination of numbers and alphabets to the email address. • If you are already a member, you can still use your existing ID or change it to the email address.

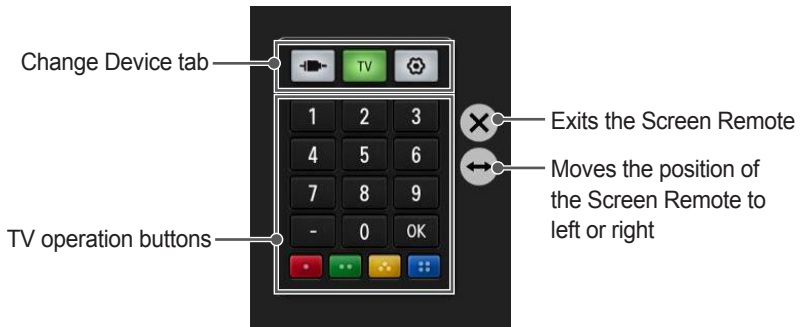| Problem	Solution
What is the LG account?	• The LG account allows you to sign into all of the LG Smart service with a single ID and password. You can use the following services with your LG account: • LG Smart TV, LG Smart Laser TV, LG Cloud, LG Smart World (excluding some countries), LG Smart ThinQ, and LG Smart air conditioning, etc. • Additional information may be required depending on the service.

USING ADVANCED FUNCTIONS

To Use Screen Remote

To Use Screen Remote

Press the 1̲2̲3̲ button on the magic remote control.

Select a button on the screen remote displayed on the screen using the magic remote control.

• The type of buttons on the screen remote varies depending on the region or the type of a connected device.

• Image shown may differ from your Laser TV.

Change Device tab

TV operation buttons

Exits the Screen Remote

Moves the position of the Screen Remote to left or right

To Control a Device Connected to the Porjector Using the Screen Remote

You can control a device connected via SIMPLINK or MHL using the Screen Remote.

1 Check if the device is connected to the Laser TV.

2 After pressing the 1̲2̲3̲ button on the magic remote control, select the device you want to control in the Change Device tab. The screen remote that can control the device appears.

  – This may not work with some buttons.

To Use the Universal Control function

With the magic remote control, you can control a set-top box, Blu-ray player, home theatre system, etc.

1 Check if a device you want to set is connected to your Laser TV.

2 After pressing the 1️⃣2️⃣3️⃣ button on the magic remote control, select the icon of a device you want in the change device tab.
If there is no device you want, press the ⚙️ on the tab, and select the external device you want. Once the setup is complete, the name of the selected device is displayed in the Change Device tab.

3 When you select a device you want in the change device tab, the screen remote that can control the device appears on the screen.

To change or clear the Universal Control settings

1 After pressing the 1️⃣2️⃣3️⃣ button on the magic remote control, select the ⚙️ (TV/input selection) button.

2 Select **Change Setting** or **Cancel Setting** at the bottom of the device to be changed.

• When change setting, check if the power of the device to be changed is turned on.

• You can set one device per type.

• With the screen remote, you can only control the devices of a brand or manufacturer that you can select in the setup screen.

• If you connect to a network before setting the universal remote control, update for the latest manufacturer list is available.

• Some buttons may not work depending on the external device model.

• Place the device near the Laser TV for seamless operation.

• If the device is in a drawer, open the drawer.

• Go to ⌂ **SMART** → **Universal Control** or ⌂ **SMART** → **Input List** → **Set the Universal Control** and add, delete, or change a device.

To Control a Laser TV Using a Smartphone

You can download the LG TV Remote app from Google Play Store or Apple App Store and use it on any Laser TV connected with your smartphone.

– Now you can enjoy your favorite Laser TV shows on your smartphone. (Some models only.)
– You can easily enter your account information to log in.
– You can add your favorite channels on your smartphone.
– You can use the functions such as **Premium**, **MY APPS**, and **SmartShare™** directly on your smartphone.
– The text input function is supported, so you can enter text easily. (Text cannot be entered on some screens.)
– Select the app's touch pad to control in the same way the pointer of the magic remote control works.
– Keypad which allows you to control the set-top box and media devices is provided. (Some models with specified conditions only.)
– You can set the Laser TV to the power-saving mode while watching Laser TV on your smartphone.

To Use a USB Input Device On a Laser TV

To Use a USB Wired/wireless Mouse

Connect your mouse to the USB port. Use the mouse to move the pointer on the Laser TV screen and select the menu you want.

Mouse	Magic Remote Control
Left Button	**OK** Button on Magic Remote Control
Wheel Button	**Wheel** Button on Magic Remote Control

• The right mouse button and any special buttons will not work with the Laser TV.
• The usability of a wireless USB mouse and keyboard may be affected by Radio Frequency environment and the distance.

To Use a USB Wired/wireless Keyboard

Connect your keyboard to the USB port. You can enter text with the keyboard when using the search function and the Internet.

• Text cannot be entered on some screens.
• It is recommended to use the product which is tested for compatibility with the LG Laser TV.
• LOGITECH K200, LOGITECH K400, MICROSOFT Comfort Curve 2000, MICROSOFT MS800, and LG Electronics ST-800
• You can change the input language by pressing the language switch key (or the right Alt key) on your keyboard.

CUSTOMIZING SETTINGS

SETTINGS

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select the desired item and press the ◉ **Wheel (OK)** button.

3 Use the △ , ▽ , ◁ , or ▷ button to set up the desired item and press the ◉ **Wheel (OK)** button.

4 Press the ↩ **BACK** button when completed.

Menu	Description
PICTURE	Adjusts the image quality for optimal viewing.
SOUND	Adjusts the sound quality and volume level.
CHANNEL	Sets up or edits a channel.
TIME	Sets the time and time-related features.
LOCK	Locks or unlocks a channel or a program.
OPTION	Customizes the general settings.
NETWORK	Sets the network.
SUPPORT	Shows the Laser TV information.

PICTURE Settings

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select **PICTURE** and press the ◯ **Wheel (OK)** button.

3 Use the △ , ▽ , ◁ , or ▷ button to set up the desired item and press the ◯ **Wheel (OK)** button.
  – To return to the previous menu, press the ⤺ **BACK** button.

```
┌─────────────────────────────────────┐
│ 🖥  PICTURE                        ✕ │
│                                      │
│ 🟩             ⌃                     │
│ ⊙    • e⌀ Energy Saving   : Minimum  │
│ 🌀   • Picture Mode       : Standard │
│            • Contrast    100  ▭      │
│ 🕐         • Brightness   50   ▭      │
│ 🎨         • Sharpness    20   ▭      │
│ 🖼         • Color        60   ▭      │
│ 🌐         • Tint          0  ▭▭▭     │
│ ❓             ⌄                     │
└─────────────────────────────────────┘
```
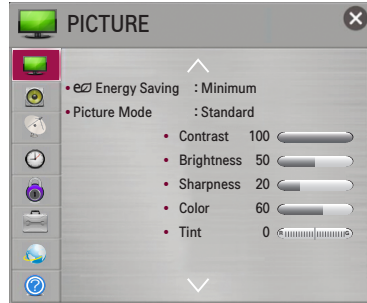
The available picture settings are described as follows.

Item	Description	
Energy Saving	Reduces power consumption by adjusting screen brightness.	
	Mode	
	Minimum/ Medium/ Maximum	Applies the pre-set **Energy Saving** mode. – If **Energy Saving** is set to **Minimum** and the ambient temperature is 35 °C or higher, **Energy Saving** will be disabled.
Picture Mode	Selects the picture mode optimized for the viewing environment or the programme. You can also customize advanced options for each mode.	
	Mode	
	Vivid	Maximizes the visual effect of video. Heightens contrast, brightness, and sharpness to display vivid images.
	Standard	Displays images in standard levels of contrast, brightness, and sharpness.
	Cinema	Optimizes the image for a movie.
	Game	Optimizes the image for playing games on fast-moving screens.
	Expert1/2	Menu for adjusting picture quality that allows experts and amateurs to enjoy the best Laser TV viewing. – Expert mode is for picture tuning professionals to control and fine-tune using a specific image. For normal images, the effects may not be dramatic.
Contrast	Adjusts the difference between bright and dark regions of the screen.	

Item	Description
Brightness	Adjusts the overall screen brightness.
Sharpness	Adjusts the sharpness of the borders between bright and dark. Horizontal and Vertical Sharpness are available only in **Expert1/2**.
Color	Adjusts the intensity of all colors.
Tint	Adjusts the red/green color balance.
Advanced Control (Expert Control)	Customizes the advanced settings.
Picture Option	Sets optional settings.
Picture Reset	Resets values customized by the user. Each picture mode is reset. Select the picture mode you wish to reset.
Aspect Ratio	Resizes the picture.
Picture Wizard II	Use the remote control and follow the instructions of the Picture Wizard to calibrate and adjust for optimum picture quality without expensive pattern devices or help from a specialist. Follow the instructions to obtain the optimum picture quality.

Advanced Control

Item	Description	
Dynamic Contrast	Adjusts contrast and color to the optimal level according to the screen's brightness.	
Dynamic Color	Adjusts colors for more natural-looking colours.	
Preferred Color	**Skin Color**	Skin color spectrum can be separately set to implement the skin color as defined by the user.
	Grass Color	Natural color spectrum (meadows, hills, etc.) can be separately set.
	Sky Color	Sky color is set separately.
Super Resolution	Provides a crystal-clear picture by improving the details in areas where the picture is blurry or unclear.	
Gamma	Sets the gradation curve according to the output of the picture signal in relation to the input signal.	

Expert Control

Item	Description
Dynamic Contrast	Adjusts contrast and color to the optimal level according to the screen's brightness.
Super Resolution	Provides a crystal-clear picture by improving the details in areas where the picture is blurry or unclear.
Color Gamut	Selects the range of colors that can be expressed. • **Standard**: Displays the original colors of an input signal regardless of the display features. • **Wide**: Sets to use the rich colors of the display.
Edge Enhancer	Shows clearer and distinctive yet natural edges of the video.
Color Filter	Filters a specific color spectrum in RGB colours to fine-tune colour saturation and hue accurately.
Expert Pattern	Patterns used for expert adjustment.
Gamma	Sets the gradation curve according to the output of the picture signal in relation to the input signal.

Item	Description
White Balance	Adjusts white balance. Detailed adjustment is possible as shown below. **a. Method: 2 points** – **Pattern**: **Inner**, **Outer** – **Points**: **Low**, **High** – **Red/Green/Blue**: Adjustable range **-50** - **+50**. – **Apply to all inputs**: The values of the **White Balance** is applied to all the input modes. **b. Method: 20 point IRE** – **Pattern**: **Inner**, **Outer** – I**nstitute of Radio Engineers (IRE)** is the unit indicating the size of a video signal and can be set to **5**, **10**, **15**, ... **100**. You can fine-tune for each setting as shown below. – **Red/Green/Blue**: The adjustment range is **-50** - **+50**. – **Apply to all inputs**: The values of the **White Balance** is applied to all the input modes.
Color Management System	Adjusts Red/Green/Blue/Cyan/Magenta/Yellow colors. Allows an expert to adjust the tint using a test pattern. Six colors (Red/Green/Blue/Cyan/Magenta/Yellow) can be selectively adjusted without affecting other colors. You may not see colors change on a normal picture even after adjustment. – **Saturation Red/Green/Blue/Yellow/Cyan/Magenta**, **Tint Red/Green/Blue/Yellow/Cyan/Magenta**, **Luminance Red/Green/Blue/Yellow/Cyan/Magenta**: The adjustment range is **-30** - **+30** each.

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

Picture Option

Item	Description		
Noise Reduction	Reduces screen noise in the video.		
MPEG Noise Reduction	Eliminates noise generated while creating digital picture signals.		
Black Level	Adjusts the brightness or darkness of the screen to suit the black level of the picture input using the degree of darkness (black level) of the screen.		
Real Cinema	Optimizes the screen for movie viewing.		
TruMotion	Corrects images to display smoother motion sequences.		
	Mode		
	Smooth	De-Judder value is set to 3.	
	Clear	De-Judder value is set to 7.	
	User	De-Judder can be set manually. • **De-Judder**: This function adjusts juddering of the screen.	
	Off	• De-Judder value is set to **0**	
Color Temperature	Adjusts the overall color of the screen to suit your preference. You can select **Natural**, **Cool**, **Medium**, or **Warm**.		

* If the video signal is 60 Hz, **TruMotion** may not work.

SOUND Settings

1 Press the ⌂ **SMART** button and select **Settings**.
2 Use the △ or ▽ button to select **SOUND** and press the ⬤ **Wheel (OK)** button.
3 Use the △ , ▽ , ◁, or ▷ button to set up the desired item and press the ⬤ **Wheel (OK)** button.
   – To return to the previous menu, press the ⤺ **BACK** button.

⊙ SOUND	✕
• Smart Sound Mode : Off	
• Sound Mode : Standard	
• Virtual Surround Plus : Off	
• Clear Voice II : Off	
• Volume Mode	
• Sound Out : TV Speaker	
• AV Sync. Adjust : Off	

The available sound settings are described as follows.

Item	Description		
Smart Sound Mode	Provides the optimized sound adjusted for each content type. • If the **Smart Sound Mode** function is enabled, **Sound Mode**, **Virtual Surround Plus** and **Clear Voice II** are automatically adjusted.		
Sound Mode	Sets the sound mode.		
	Mode		
	Standard	Suitable for all types of video.	
	Music/ Cinema/ Sport/ Game	Sets audio optimized for a specific genre.	
	User Setting	Adjusts volume level. • **100 Hz/ 300 Hz/ 1 kHz/ 3 kHz/ 10 kHz**: Sets EQ by manual adjustment of sound bands. • **Reset**: Resets the equalizer value changed by the user.	
Virtual Surround Plus	Provides realistic 5.1 channel stereo sound from two speakers. • If **Clear Voice II** is set to **On**, **Virtual Surround plus** will not be chosen.		
Clear Voice II	Boosts voice clarity.		

Item	Description	
Volume Mode	Sets various modes for volume control.	
	Mode	
	Auto Volume	Sets **Auto Volume** to **On**. The volume varies from channel to channel and program to program. When clicking through the channels, the volume is adjusted automatically to maintain the same level.
	Volume Control	Using a single volume curve may result in an inaudible or loud sound depending on the environment. Adjusts volume levels depending on the time of day (day/night).
Sound Out	Sets the audio output of the Laser TV.	
	Mode	
	TV Speaker	Sound is output through the Laser TV speaker.
	External Speaker (Optical/ HDMI ARC)	Sound is output through the speaker connected to the optical port. SIMPLINK is supported. • **Digital Sound Out**: Sets up digital sound output.
	LG Sound Sync (Optical)	Sound is output through an LG audio device connected to the optical digital audio output port.
	LG Sound Sync (Wireless)	Sound is output through a wirelessly connected LG audio device.
	Headphone	Sound is output through headphones. • Headphones are detected and connected automatically when the Laser TV is on.

Item	Description	
AV Sync. Adjust	Synchronizes video and audio directly when they do not match.	
	If you set **AV Sync. Adjust** to **ON**, you can adjust the sound output (Laser TV speakers or SPDIF) to the screen image.	
	Mode	
	TV Speaker	Adjusts the synchronization of the sound from the Laser TV's internal speakers.
		The + and - buttons allow the viewer to synchronize the audio with the video.
	External Speaker	Adjusts how the sound is synced to external speakers, such as an external speaker connected to the digital audio output port, LG audio device and headphone.
		The + and - buttons allow the viewer to synchronize the audio with the video.
	Bypass	Outputs broadcasting signals or the audio of an external device without audio delay. Audio may be output before video as it takes time to process video input into the Laser TV.
Sound Option Setting	**Balance**: Adjusts left/right audio balance.	

CHANNEL Settings

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select **CHANNEL** and press the ⬤ **Wheel (OK)** button.

3 Use the △ , ▽ , ◁ , or ▷ button to set up the desired item and press the ⬤ **Wheel (OK)** button.
  – To return to the previous menu, press the ⤺ **BACK** button.

CHANNEL ✕
• Auto Tuning
• Manual Tuning
• Channel Edit

The available channel settings are described as follows.

Item	Description
Auto Tuning	Remembers a channel which is currently broadcasting. You should use this function when you move to another house or move the Laser TV to other place. It must be used while the antenna is connected and there are channel broadcasting signals. • Channels are not registered properly unless the antenna/cable is connected correctly. • **Auto Tuning** only finds programs that are currently broadcasting. only finds programs that are currently broadcasting. • If **Lock System** is turned on, a pop-up window will appear asking for password.
Manual Tuning	Adjusts programs manually and saves the results. For digital broadcasting, signal strength and signal quality can be checked.
Channel Edit	Edits the saved programs. Set as favorite program, block/unblock program, skip program etc. of the selected program.

TIME Settings

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select **TIME** and press the ◯ **Wheel (OK)** button.

3 Use the △ , ▽ , ◁ , or ▷ button to set up the desired item and press the ◯ **Wheel (OK)** button.
  – To return to the previous menu, press the ↩ **BACK** button.

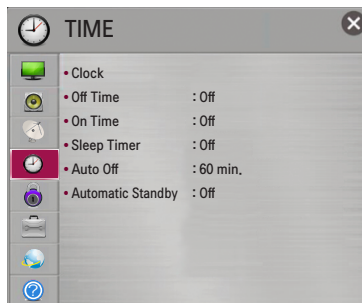| ⏱ TIME	❌
• Clock	
• Off Time	: Off
• On Time	: Off
• Sleep Timer	: Off
• Auto Off	: 60 min.
• Automatic Standby	: Off

The available time settings are described as follows.

Item	Description	
Clock	Checks or changes the time while watching Laser TV.	
	Mode	
	Auto	Synchronizes the Laser TV clock to the digital time information sent by the TV station.
	Manual	Sets the time and date manually if the auto setup does not correspond to the current time.
Off Time/ On Time	Sets On/Off time. Select **Off** on **Repeat** to discontinue **On Time/Off Time**. • To use **On Time/Off Time**, set the current time correctly. • Even when the **On Time** function is on, the Laser TV will turn off automatically in 120 minutes when no button is pressed within that time.	
Sleep Timer	Turns off the Laser TV after a preset number of minutes. To cancel the **Sleep Timer**, select **Off**.	
Auto Off	If there is no signal, the Laser TV automatically turns off after the preset time has elapsed.	
Automatic Standby	If you do not press any button on the Laser TV or remote control for a certain period, the Laser TV will automatically turns off.	

LOCK Settings

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select **LOCK** and press the ⬤ **Wheel (OK)** button.
 – To enter the **LOCK** menu, enter the preset 4-digit password. The initial password is set as 0000.

3 Use the △ , ▽ , ◁ , or ▷ button to set up the desired item and press the ⬤ **Wheel (OK)** button.
 – To return to the previous menu, press the ↫ **BACK** button.

The available lock settings are described as follows.

Item	Description	
Set Password	Sets or changes Laser TV password.	
	• The initial password is set as **0000**.	
Lock System	Permits only specific programs by blocking channels or external input. Select the **Lock System** to **On**.	
	Item	
	Block Channel	Blocks the programs that contain inappropriate contents for children. The programs can be selected but the screen is blank and the audio is muted. To watch a locked program, enter the password.
	Movie Rating	Blocks the movies that are only broadcasted on the TV and contain inappropriate contents, based on the Motion Picture Association of America (MPAA) rating.
		• **G** (General audiences) All ages admitted
		• **PG** (Parental guidance suggested) Some material may not be suitable for children
		• **PG-13** (Patents strongly cautioned) Some material may be inappropriate for children under 13
		• **R** (Restricted) Under 17 requires accompanying parent or adult guardian
		• **NC-17** No one 17 and under admitted.
		• **X** Adults only

Item	Description	
	Item	
Lock System	**TV Rating-Children**	Blocks the children's TV programs that parents do not want their children to watch. To block other TV programs, you should set the TV Rating-General feature. • **Age** TV-Y (All children, including children from ages 2-6), TV-Y7 (Directed to older children, suitable for children age 6 and above) • **Fantasy Violence** TY-Y7 (Directed to older children - Fantasy violence, suitable for children age 6 and above, containing more intense or combative fantasy violence)
	TV Rating-General	Blocks the TV programs that you want based on the ratings by using the Parental Control Function (V-Chip). The V-Chip electronically reads TV program ratings and allows parents to block program that are unsuitable for children. • **Age** TV-G (General audience, suitable for all ages) TV-PG (Parental guidance suggested, containing material that are unsuitable for younger children) TV-14 (Parents strongly cautioned, containing material that are unsuitable for children age 14 and under) TV-MA (Mature audience only, unsuitable for children age • **Dialog** (suggestive dialogue) TV-PG or TV-14 • **Language** (coarse language)TV-PG, TV-14, or TV-MA • **Sex** (sexual situation) TV-PG, TV-14, or TV-MA • **Violence** TV-PG, TV-14, or TV-MA
	Downloadable Rating	This function operates only when TV has received Region5 Rating data. The name of the rating option may differ.
	Input Block	Block the input sources.
	Application Lock	Lock the application.

OPTION Settings

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select **OPTION** and press the ◯ **Wheel (OK)** button.

3 Use the △ , ▽ , ◁ , or ▷ button to set up the desired item and press the ◯ **Wheel (OK)** button.
 – To return to the previous menu, press the ⤺ **BACK** button.

```
┌──────────────────────────────┐
│ 🖵  OPTION                  ✕  │
│ ▄                    ⌃        │
│ ⊙  • Language                 │
│ ⊙  • Service Country Setting  │
│    • ZIP Code                 │
│ ⊙  • Caption          : Off   │
│ 🔴  • Set the Universal Control│
│ 📁  • Live Plus       : On    │
│    • Live Shopping    : On    │
│ 🌐                            │
│ ⊙                    ⌄        │
└──────────────────────────────┘
```

The available option settings are described as follows.

Item	Description		
Language	Selects **Menu Language** and **Audio Language** displayed on the screen.		
	Item		
	Menu Language	Selects a screen menu language.	
	Audio Language	Selects the desired language when watching digital broadcasting containing several audio languages. (In digital mode only)	
	Voice Recognition Language	Select the language to make voice search.	
Service Country Setting	You can change the country setting of your smart Laser TV. The premium service and LG Smart World that are available for the country you selected will be provided. • If a network is disconnected while setting the service country, it may not be set properly.		
	Item		
	Auto Setting	A service country is automatically set for your smart Laser TV.	
	Manual Setting	A service country can be set manually for your smart Laser TV.	
ZIP Code	You can check the information of area when network is connected. • This function sets your area as the ZIP Code. • You can check the information of area when network is connected.		

Item	Description		
Caption	View subtitles when the TV station provides subtitled programing. Program subtitles work only on digital/analog broadcasts or external input. Change Caption to On and select caption setting.		
	Mode	**CC 1-4** (Closed Captioning) / **Text 1-4 Text 1-4** Displays the audio portion of a TV program as text on the TV screen. CC1 is the most common mode in use. Field 1 data channels: two Captions (CC1, CC2), two Text (T1, T2). Field 2 data channels: two Captions (CC3, CC4), two Text (T3, T4). **Service 1-6** This is only available for the digital broadcasting system.	
	Digital Option	Set up the size and color of the subtitles on **Digital Option**. Please select **Set by Program** or **Custom**. Select **Custom** to adjust minute options such as the subtitles' size and color.	
		Item	
		Size	Selects the wordsize.
		Font	Selects a typeface for the text.
		Text Color	Selects a color for the text.
		Text Opacity	Adjusts the opacity for the text color.
		Bg Color	Selects a color for the background color.
		Bg Opacity	Adjusts the opacity for the background color.
		Edge Type	Selects an edge type.
		Edge Color	Selects a color for the edges.
		Window Color	Selects a color for the window color.
		Window Opacity	Adjust the opacity for the window color.
Set the Universal Control	With the magic remote control, you can control a set-top box, blu-ray player, home theatre system, etc.		
Live Plus	**Live Plus** is a service that provides various information on the program you watch in a pop-up format. • Press the ⬤ **Wheel (OK)** button in the first pop-up while watching a program to use **Live Plus**. • **Live Plus** is available only with the LG remote control. • Information only some some programs and broadcasting companies provide this service.		

Item	Description	
Live Shopping	**Live Shopping** is a T-commerce (TV shopping service) that provides information, in a pop-up, about various products related to the TV program that you are watching. • To use **Live Shopping**, press Shop Now in the first pop-up window that appears when watching a program. • **Live Shopping** is available only using the LG remote control. • The service is available only for some programs. • **Live Plus** should be **On** to use **Live Shopping** function.	
Pointer	Sets the speed and shape of the pointer that appears on the Laser TV screen.	
	Speed	Sets the moving speed of the pointer.
	Shape	Selects a pointer shape from various options.
	Size	Chooses the size of the pointer.
	Alignment	Set to **On**. If there is any misalignment between the pointer and the actual direction the remote control indicates, move the magic remote control left and right to realign. The pointer will automatically realign to the centre, making it easier to control. • If it is set to **Off**, the alignment function will not work even when you move the magic remote control left and right.
PJT Mode	This function turns the projected image upside down or flips horizontal.	
Edge Adj	**Edge Adj** adjusts the right, left, top, and bottom width of the projected image if the projected image and screen are not perpendicular to each other due to a tilted screen or TV. (Refer to "Using the Edge Adj Function" on 35 page)	
Auto Power	Makes the Laser TV turn on automatically when the power code is connected to the Laser TV.	
	Item	
	On	When the power code is connected to the Laser TV, it turns on automatically.
	Off	When the power code is connected to the Laser TV, it goes into standby mode.
Power Sound	The alert sound plays upon turning on/off the power.	

Item	Description
High Altitude	If the Laser TV is used at an altitude higher than 1200 meters, turn this on. Otherwise, the Laser TV may overheat or its protection function may be activated. If this happens, turn the Laser TV off and then on again after waiting for several minutes.
Test Pattern	You can run this option when installing the Laser TV to adjust the screen size and focus. **⓵ NOTE** • While you use the Test Pattern option, the keys on the control panel do not work.
Auto Input Search	Automatically searches for and displays the input signal type when it is received. It is available only with external inputs (HDMI, AV, and Component).

Eye Care Sensor

Change the eye care sensor settings.

Item	
Sensor	Turn the eye care sensor on/off.
Sensitivity	Set the sensitivity of the eye care sensor. The default is medium, but set it higher for better sensitivity or lower for less sensitivity.

⓵ NOTE

• If a user gets closer to the product while the eye care sensor is turned on, the sensor detects it and reduces the light intensity automatically to protect the user's eyes.
• The eye care sensor does not work when the test pattern or the Edge Adj function is used.
• The eye care sensor may not work properly if the sensor is blocked by an object or placed in an area where direct sunlight or wind comes in contact with it.

Item	Description
Eye Care Sensor	**① NOTE** • The eye care sensor is more sensitive to horizontal movement than vertical movement. • The detection range may vary depending on the installation environment, temperature, or brightness. • The eye care sensor detects heat sources, so it may respond to animals moving or heaters placed close by. • The eye care sensor detects heat sources, so it may not be able to detect the user if there is no exposed skin or if an obstacle is placed between the sensor and the user. • It may not be able to detect the user if there is no movement for a long time. • The eye care sensor may also detect a small animal (e.g. cat or dog) or rotating heater. • The eye care sensor may not be able to detect when room temperature rises to skin temperature (30 °C or more in summer) or when a user is wearing thick clothes or standing with their back to the sensor. • The detection area may change if curtains or plants move in the wind. Detection also depends on variable conditions such as clothing and temperature. • The eye care sensor works normally even if the product is wobbling. • A wired/wireless communication device may cause the sensor to malfunction. • The eye care sensor may not work for a maximum of one minute after it is turned on. • When a user moves away from the unit, the light intensity is recovered within three seconds. • The eye care sensor may be disabled if the **Energy Saving** settings are changed while the eye care sensor is enabled.

Item	Description
Balloon Help	Enables/disables the balloon help.
Control Device List	Displays the list of control devices connected to the Laser TV.
See Avatar	Turns the Avatar function on or off.
Initial Setting	Deletes all optional settings and returns to initial default mode. Once initialization is complete, the Laser TV will turn off and on by itself. • If **Lock System** is activated, a pop-up password prompt will appear. • Do not turn off the power during initialization.
Set ID	The range of the set ID is 1 - 99. Only the saved set ID takes effect.
Mode Setting	Selects **Home Use** or **Store Demo**. For use at home, select **Home Use**. **Store Demo** is a mode used for store display.

Item	Description
Miracast™ / Intel's WiDi	The **Miracast™** allows you to enjoy video and audio from a portable device through the Laser TV wirelessly. **Intel's WiDi** allows you to view a laptop screen through the Laser TV without a cable.
My Laser TV Name	Changes the name that appears when searching for the Laser TV from other devices.

SUPPORT

1 Press the ⌂ **SMART** button and select **Settings**.

2 Use the △ or ▽ button to select **SUPPORT** and press the ⬭ **Wheel (OK)** button.

3 Use the △ , ▽ , ◁, or ▷ button to set up the desired item and press the ⬭ **Wheel (OK)** button.
  – To return to the previous menu, press the ⤺ **BACK** button.

SUPPORT
• Software Update
• Picture Test
• Sound Test
• Product/Service Info.
• Initialization of App
• Self Diagnosis
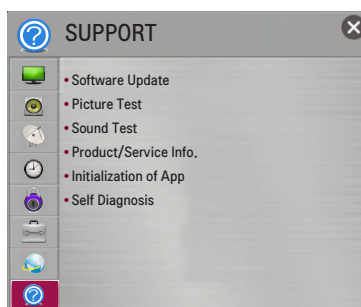
The available support settings are described as follows.

Item	Description
Software Update	Updates to the latest software.
Picture Test	Check whether a video signal is properly displayed.
Sound Test	Check whether an audio signal is properly output.
Product/Service Info.	Shows the product/service information.
Initialization of App	If problems occur after updates, try initializing the system. • During initialization, the Laser TV will restart automatically.
Self Diagnosis	Troubleshoots functional problems that can arise while using the product.

CONNECTING DEVICES

You can connect various external devices to the Laser TV.

Computer/Laptop   USB   Video/DVD

Digital Device   LG Audio Device

Headphones   Mobile Phone   Game console
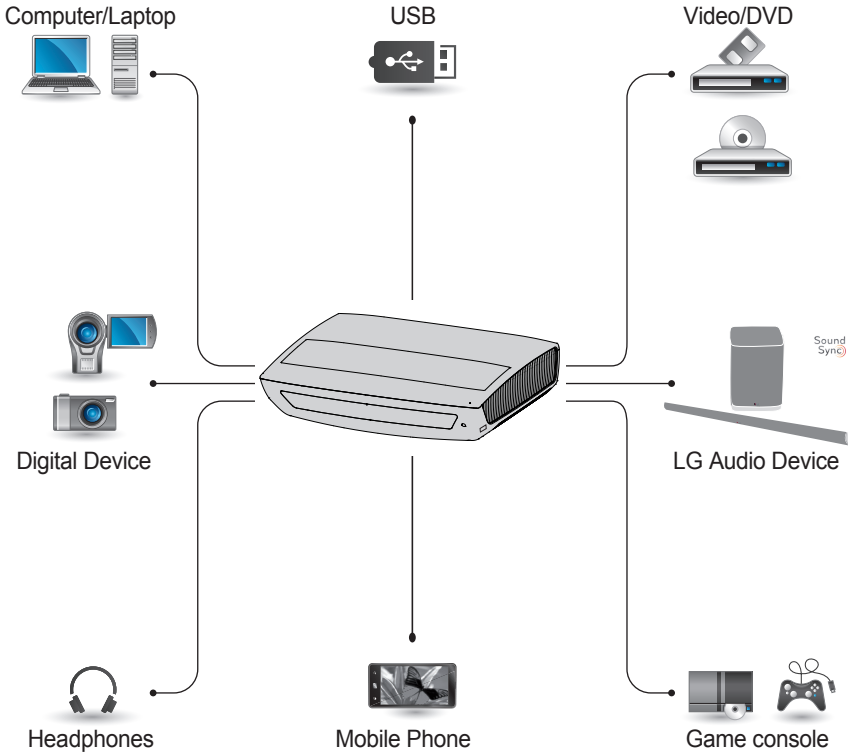
HDMI - page 106
Composite (AV) - page 108
Component - page 108
PC - page 109
USB Devices - page 51
Headphones - page 110
Mobile Phone - page 113

Connecting an HD Receiver, DVD Player, or VCR

Connect an HD receiver, DVD, or VCR player to Laser TV and select an appropriate input mode.

HDMI connection

With an HDMI cable, you can enjoy high quality picture and sound. Connect the HDMI input port of Laser TV to the HDMI output port.

Press the ⌂ **SMART** button and select the **Input List** to select **HDMI**. You can use any HDMI input port for connection.

Optional Accessories
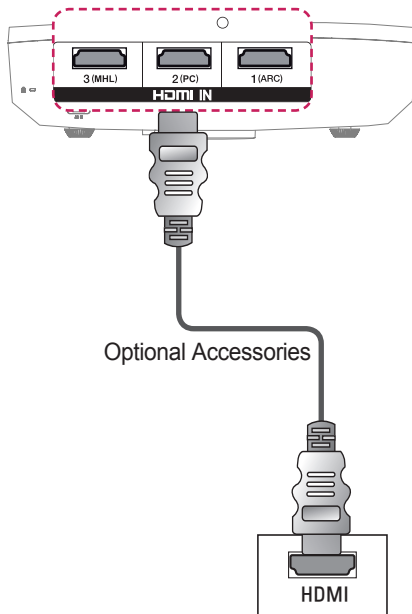
HDMI

❶ NOTE

Audio Return Channel (ARC)

• An external audio device that supports SIMPLINK and ARC must be connected using **HDMI IN 1 (ARC)** port.

• When connected with a high-speed HDMI® cable, the external audio device supporting ARC outputs optical SPDIF works with the SIMPLINK function without additional optical audio cable.

HDMI to DVI Connection

Use the HDMI to DVI cable to connect the HDMI input port of the Laser TV to the DVI output port.

Press the ⌂ **SMART** button and select the **Input List** to select **HDMI**. You can select any HDMI input port for connection.
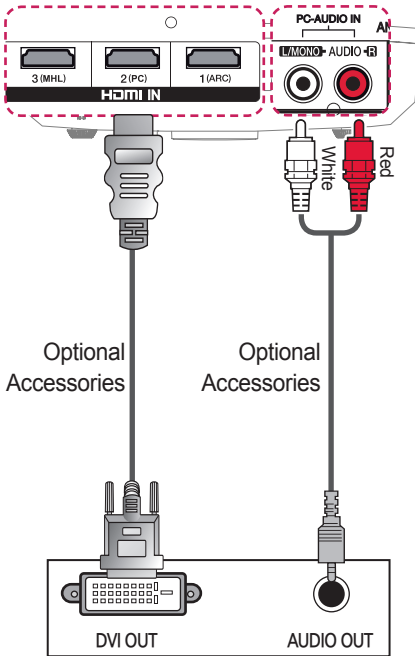
Connecting External Devices

This Laser TV supports the Plug & Play function. Your PC will automatically detect the Laser TV and requires no driver installation.

AV Connection

Connect the output ports of an external device and the **AV IN** ports of the Laser TV using AV connection cables. Press the ⌂ **SMART** button and select the **Input List** to select **AV**.
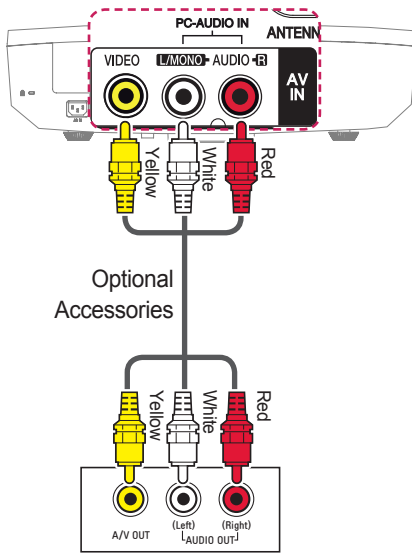
Component Connection

You can enjoy more vivid images when you connect an external device with a component port to the **COMPONENT IN** port of the Laser TV.

Press the ⌂ **SMART** button and select the **Input List** to select **Component**.

The output jack Y, PB or PR of the DVD player may be marked as Y, B-Y, R-Y/Y, Cb, Cr/Y, Pb or Pr depending on the model.
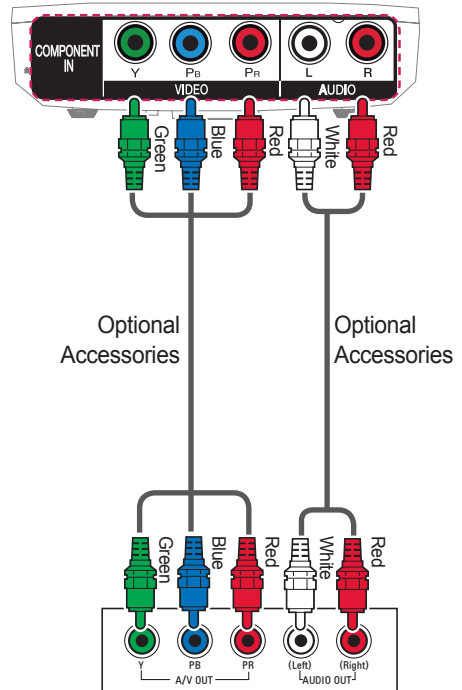
Connecting a PC

HDMI Connection

Choose any **HDMI IN** port to connect. It does not matter which port you use.

Optional Accessories
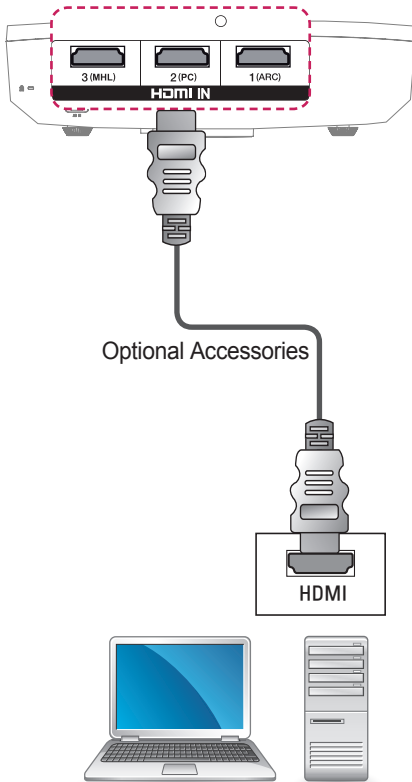
HDMI

> ### ⓘ NOTE
>
> • It is recommended to use an HDMI connection for the best image quality.
>
> • Depending on the graphics card, DOS mode video may not work if a HDMI to DVI Cable is in use.
>
> • In PC mode, there may be noise associated with the resolution, vertical pattern, contrast, or brightness. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the **PICTURE** menu until the picture is clear.
>
> • The synchronization input form for Horizontal and Vertical frequencies is separate.
>
> • Depending on the graphics card, some resolution settings may not allow the image to be positioned on the screen properly.
>
> • If you are using DVI out from a PC, you have to connect analog audio separately.
>
> • When using the HDMI/DVI cable, Single link is only supported.

Connecting Headphones

You can listen to the sound from Laser TV using headphones.

Optional
Accessories
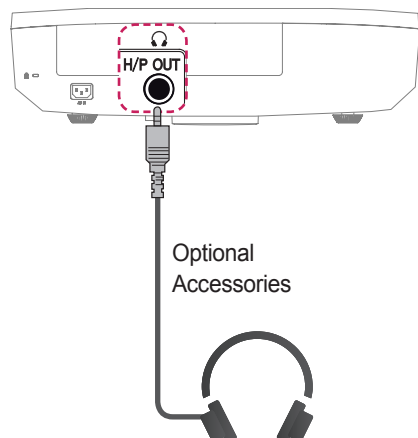
Connecting a Laptop

You can connect the Laser TV to a laptop to use various functions.

HDMI connection

Connect the **HDMI IN** port of Laser TV to the HDMI output port.

Optional
Accessories
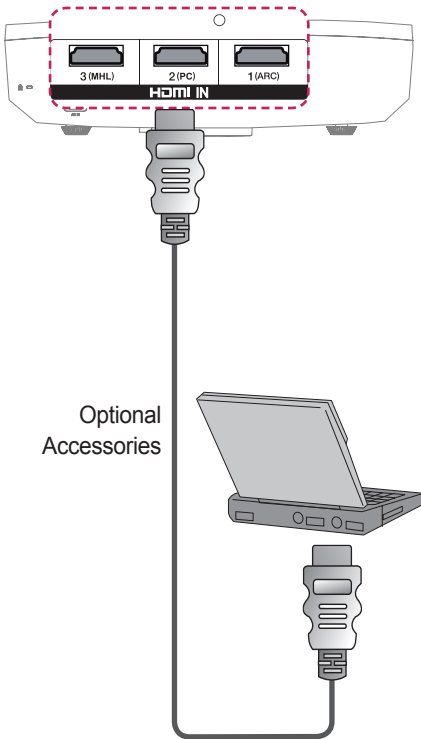
The table below shows examples of switching the output. For more information, refer to the **External Output**, **Connecting to an External Monitor**, or similar sections of the owner's manual of your computer.

Brand	Switching Output
NEC	[Fn]+[F3]
Panasonic	[Fn]+[F3]
Toshiba	[Fn]+[F5]
IBM	[Fn]+[F7]
Sony	[Fn]+[F7]
Fujitsu	[Fn]+[F10]
LG	[Fn]+[F7]
Samsung	[Fn]+[F4]
Macintosh	Adjust the control panel to enable mirroring after start-up.

Connecting a Digital Amp

Using an optical cable, connect the digital audio input port of a digital amp to the **OPTICAL DIGITAL AUDIO OUT** port of the Laser TV. The output of an amp with a digital converter must be set to the desired audio format. When using a HDMI cable to connect a home theater or when connecting an optical output to an external audio device, set Sound Out to External Speaker (Optical/HDMI ARC) as shown below. If a Laser TV, home theater, or the speaker of an external audio device is operating at the same time, there will be an echo.

Optional
Accessories

Digital Audio Input
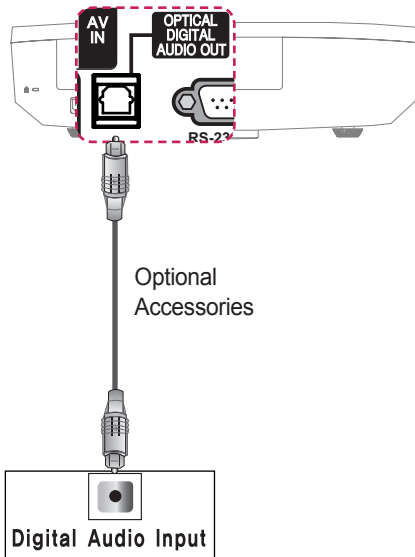
ⓘ NOTE

- Also, refer to the user manual of the audio device to connect.
- When connecting this product to other devices, make sure to turn off and unplug all the devices.
- The audio output of this product has wide-ranging audio bandwidth, so the receiver volume must be adjusted properly. Speakers can be damaged by unexpected high frequencies.
- Connecting the **OPTICAL DIGITAL AUDIO OUT** port of the Laser TV to the digital audio input port of a digital amp and the audio input port of the Laser TV to the analog audio output port of the digital amp can cause sound oscillation due to the closed loop. Remove one of the two connections to prevent this. (This also applies to home theater devices.)

Using the Mirroring Function of a Mobile Phone

MHL Connection

The Mobile High-definition Link (MHL) is an interface that can connect a mobile phone to the Laser TV and play video and audio from the mobile phone through the Laser TV.

This only applies to products with a HDMI input that supports MHL. (Contact the device manufacturer to find out if the device supports this function.)

For MHL support, check the **HDMI IN 3 (MHL)** port.

Use a dedicated cable for MHL.

Optional
Accessories
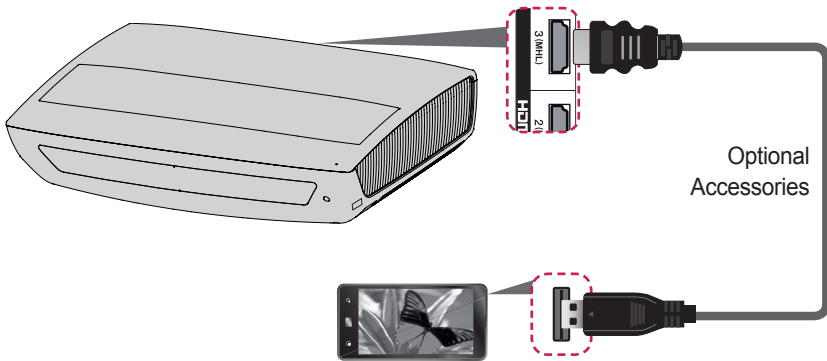
NOTE

- When you connect a mobile phone to the **HDMI IN 3 (MHL)** port, you can see the mobile phone screen through a Laser TV.
  – This only applies to mobile phones that support MHL.
  – You can use the remote control for some applications.
- Disconnect the MHL cable from the Laser TV when:
  – The MHL function is disabled.
  – Your mobile device is fully charged in standby mode.

SERIAL COMMUNICATION FUNCTION

Using Serial Communication

If the Laser TV is connected to a PC through an RS-232C cable, you can use the PC to control functions of the Laser TV such as power On/Off or input selection, etc.

This function may not be available for a particular menu or input mode.

Establishing Serial Communication

Connect the RS-232C (serial connector) of the PC to the RS-232C connector at the back of the Laser TV.

You need to purchase a cable to connect the RS-232C connectors as it is not provided as an accessory.

A RS-232C cable is necessary for the remote control of the Laser TV (see Figure 1).

(PC)   **(Laser TV)**
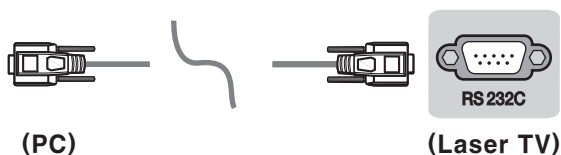
Figure 1: RS-232 Connection Diagram

RXD	2	2	RXD
TXD	3	3	TXD
DTR	4	4	DTR
GND	5	5	GND
DSR	6	6	DSR
RTS	7	7	RTS
CTS	8	8	CTS

PC   Laser TV
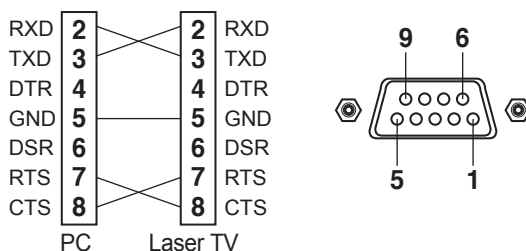
* There is no connection to Pin 1 and Pin 9.

Communication Parameter Setup

• Baud Rate: 9600 bps(UART)
• Data Length: 8 bit
• Parity: none
• Stop bit: 1 bit
• Flow Control: none
• Communication code: ASCII code

Communication Protocol

1. Transmission

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

* [Command1]: The first command to control the Laser TV (k. j, x, m, n, ASCII code, 1 Character)
* [Command2]: The second command to control the Laser TV (ASCII code, 1 character)
* [Set ID]: You can adjust the set ID to choose desired monitor ID number in option menu. Adjustment range is 1 to 99. When selecting Set ID '0', every connected set is controlled. Set ID is indicated as decimal (1 to 99) on menu and as Hexa decimal (0x0 to 0x63) on transmission/ receiving protocol.

Data Structure

* [Data]: To transmit command data (hexadecimal). Transmit 'FF' data to read status of command.
* [Cr]: Carriage Return It corresponds to ASCII code '0x0D'.
* [ ]: ASCII code 'space (0x20)

2. 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.

3. Error Acknowledgement

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

* If a set receives an abnormal piece of data such as a non-supported function or there is a communication error, it returns ACK in the above format.
Data [00]: Illegal Code
(This command is not supported.)

10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16	10	16
0	00																		
1	01	11	0B	21	15	31	1F	41	29	51	33	61	3D	71	47	81	51	91	5B
2	02	12	0C	22	16	32	20	42	2A	52	34	62	3E	72	48	82	52	92	5C
3	03	13	0D	23	17	33	21	43	2B	53	35	63	3F	73	49	83	53	93	5D
4	04	14	0E	24	18	34	22	44	2C	54	36	64	40	74	4A	84	54	94	5E
5	05	15	0F	25	19	35	23	45	2D	55	37	65	41	75	4B	85	55	95	5F
6	06	16	10	26	1A	36	24	46	2E	56	38	66	42	76	4C	86	56	96	60
7	07	17	11	27	1B	37	25	47	2F	57	39	67	43	77	4D	87	57	97	61
8	08	18	12	28	1C	38	26	48	30	58	3A	68	44	78	4E	88	58	98	62
9	09	19	13	29	1D	39	27	49	31	59	3B	69	45	79	4F	89	59	99	63
10	0A	20	14	30	1E	40	28	50	32	60	3C	70	46	80	50	90	5A	100	64

Command Reference List

	Command 1	Command 2	Data (Hexadecimal)
01. POWER	k	a	00 - 01
02. Aspect Ratio	k	c	*
03. Contrast	k	g	00 - 64
04. Brightness	k	h	00 - 64
05. Color	k	i	00 - 64
06. Tint	k	j	00 - 64
07. Sharpness	k	k	00 - 32
08. OSD Control	k	l	00 - 01
09. Key Lock	k	m	00 - 01
10. Color Temperature	k	u	00 - 04 (excluding 03)
11. Black Level	n	m	00 - 01
12. Energy Saving	n	p	00 - 02
13. Input	x	b	*
14. Key	m	c	Key Code
15. Picture Mode	n	s	00 - 05
16. Mute	k	e	00 - 01
17. Volume	k	f	00 - 64
18. Channel(Add/Del)	m	b	00 - 01

- For more information about the data(*), refer to next page.
- When playing a video or photo file stored on a storage media (USB flash drive or HDD, etc.) that is connected through USB, all commands are disabled, other than Power (ka) and Key (mc). If a command cannot be used in a specific menu or input state, it is processed as NG.

01. Power (Command : ka)

Powers the set on/off.

Transmission

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

Data   00: Power Off
        01: Power On

Ack

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

Data   00: Power Off
        01: Power On

* To Show Power On (Only working when
  the Laser TV is turned on)

Transmission

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

Ack

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

Data   01: Power On

* As with other functions, if data is
  transmitted as '0 x FF' in the above format,
  the current status of each function is
  returned as a feedback in Ack data.

02. Aspect Ratio (Command : kc)

Adjusts the aspect ratio.

Transmission

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

Data   01: 4:3
        02: 16:9
        04: Zoom
        06: Set By Program
        09: Just scan
        10 - 1f: Cinema Zoom 1 - 16

Ack

[c][] [Set ID][][OK][Data][x]

Data   01: 4:3
        02: 16:9
        04: Zoom
        06: Set By Program
        09: Just scan
        10 - 1f: Cinema Zoom 1 - 16

03. Contrast (Command: kg)

Adjusts the screen contrast.

Transmission

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

Data   Min: 0H - Max: 64H
(* Transmitted in hexadecimal code)

* See the data structure.

Ack

[g][][Set ID][][OK][Data][x]

Data   Min: 0H - Max: 64H

04. Brightness (Command: kh)

Adjusts the screen brightness.

Transmission

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

Data   Min: 0H - Max: 64H
(* Transmitted in hexadecimal code)

* See the data structure.

Ack

[h][] [Set ID][][OK][Data][x]

Data   Min: 0H - Max: 64H

05. Color (Command: ki)

Adjusts the screen color.

Transmission

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

Data   Min: 0H - Max: 64H
(* Transmitted in hexadecimal code)

* See the data structure.

Ack

[i][][Set ID][][OK][Data][x]

Data   Min: 0H - Max: 64H

06. Tint (Command: kj)

Adjusts the screen tint.

Transmission

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

Data   Red: 0H - Green: 64H
(* Transmitted in hexadecimal code)

* See the data structure.

Ack

[j][][Set ID][][OK][Data][x]

Data   Red: 0H - Green: 64H

07. Sharpness (Command : kk)

Adjusts screen sharpness.

Transmission

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

Data   Min: 0H - Max: 32H
(* Transmitted in hexadecimal code)

* See the data structure.

Ack

[k][][Set ID][][OK][Data][x]

Data   Min: 0H - Max: 32H

08. OSD Control (Command: kl)

Selects OSD On/Off.

Transmission

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

Data   00: OSD selection mode off
        01: OSD selection mode on

Ack

[l][][Set ID][][OK][Data][x]

Data   00: OSD selection mode off
        01: OSD selection mode on

09. Key Lock (Command: km)

To Set the function of locking the remote control and front panel control on the Laser TV.

Transmission

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

Data   00: Disables the key lock.
        01: Enables the key lock.

Ack

[m][] [Set ID][][OK][Data][x]

Data   00: Disables the key lock.
        01: Enables the key lock.

* This function is configured when the keys on the remote control or control panel are not used. If the unit is fully discharged after its power plug is pulled out of a wall outlet, the LOCK function is cleared.

* If the unit is in the key lock standby mode, the Laser TV will not respond to the power button on the remote control or control panel.

10. Color Temperature (Command: ku)

Adjusts the value of color temperature.

Transmission

[k][u][][Set ID][][Data][Cr]

Data   00: Medium   01:Cool
        02: Warm   04: Natural
(* Transmitted in hexadecimal code)

* Data 03 is not used.

Ack

[u][][Set ID][][OK][Data][x]

Data   00: Medium   01: Cool
        02: Warm   04: Natural

11. Black Level (Command: nm)

Adjusts the value of black level.

Transmission

[n][m][][Set ID][][Data][Cr]

Data   00: Low   01: High
(* Transmitted in hexadecimal code)

Ack

[m][][Set ID][][OK][Data][x]

Data   00: Low   01: High

12. Energy Saving (Command: np)

Sets the energy saving mode.

Transmission

[n][p][][Set ID][][Data][Cr]

Data   00: Minimum   01: Medium
        02: Maximum
(* Transmitted in hexadecimal code)

Ack

[p][] [Set ID][][OK][Data][x]

Data   00: Minimum   01: Medium
        02: Maximum

13. Input (Command: xb)

Selects the input signal.

Transmission

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

Data   00: DTV (Digital broadcasting)
        01: DTV cable
        10: TV (Analog broadcasting)
        11: TV cable
        20: AV
        40: Component
        90: HDMI 1
        91: HDMI 2
        92: HDMI 3
(* Transmitted in hexadecimal code)

Ack

[b][] [Set ID][][OK][Data][x]

Data   00: DTV (Digital broadcasting)
        01: DTV cable
        10: TV (Analog broadcasting)
        11: TV cable
        20: AV
        40: Component
        90: HDMI 1
        91: HDMI 2
        92: HDMI 3

14. Key (Command : mc)

Sends a key code of the IR remote control.

Transmission

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

Data Key Code: See "Key Code" on page 122.
(* Transmitted in hexadecimal code)

Ack

[c][] [Set ID][][OK][Data][x]

Data Key Code

15. Picture Mode (Command: ns)

Sets the picture mode.

Transmission

[n][s][][Set ID][][Data][Cr]

Data   00: Vivid
          01: Standard
          02: Cinema
          03: Game
          04: Expert1
          05: Expert2
(* Transmitted in hexadecimal code)

Ack

[b][] [Set ID][][OK][Data][x]

Data   00: Vivid
          01: Standard
          02: Cinema
          03: Game
          04: Expert1
          05: Expert2
(* Transmitted in hexadecimal code)

16. Mute (Command: ke)

Enables/disables the mute function.

Transmission

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

Data   00: Mute On (volume off)
          01: Mute Off (volume on)

Ack

[e][][Set ID][][OK][Data][x]

Data   00: Mute On (volume off)
          01: Mute Off (volume on)

17. Volume (Command: kf)

Controls the volume.

Transmission

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

Data   Min: 0H(Vol 0) - Max: 64H(Vol 100)
(* Transmitted in hexadecimal code)

* See the data structure.

Ack

[f][] [Set ID][][OK][Data][x]

Data   Min: 0H(Vol 0) - Max: 64H(Vol 100)

18. Channel Add/Del (Command: mb)

To add and delete the channels.

Transmission

[m][b][ ][Set ID][ ][Data][Cr]

Data   00: Channel Delete
          01 : Channel Add

Ack

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

Data   00: Channel Delete
          01 : Channel Add

Key Code

Key Name	Key Code	Key Name	Key Code
∧	0x40	MUTE 🔇	0x09
∨	0x41	CH ∧	0x00
>	0x06	CH ∨	0x01
<	0x07	EXIT	0x5B
POWER	0x08	0	0x10
INPUT	0x0B	1	0x11
SETTINGS	0x43	2	0x12
↰ BACK	0x28	3	0x13
OK	0x44	4	0x14
ENERGY SAVING	0x95	5	0x15
RATIO	0x79	6	0x16
AV MODE	0x30	7	0x17
VOL+	0x02	8	0x18
VOL -	0x03	9	0x19
RED	0x72	⏩	0x8E
GREEN	0x71	⏪	0x8F
YELLOW	0x63	▶	0xB0
BLUE	0x61	■	0xB1
SIMPLINK	0x7E	⏸	0xBA
TV	0x0F	FAV	0x1E
FLASHBK	0x1A	INFO	0xAA
LIST,-	0x4C	Q.MENU	0x45
HOME	0x7C	MY APPS	0x42

MAINTENANCE

Clean your Laser TV to keep it in optimal condition.

Cleaning

Cleaning Cover Glass

To remove dust or stains on the cover glass, use an air spray or use a swab or soft cloth to wipe the glass gently.

Cleaning the Laser TV Case

To clean the case of Laser TV, first unplug the power cord.

To remove dust or stains, use only a dry, lint-free, soft cloth to polish the lens.

Do not use alcohol, benzene, thinners or other chemicals, which may damage the case.

INFORMATION

To update Laser TV software

Uses Software Update to check and obtain the latest version.

It is also possible to check manually for available updates.

1 Press the ⌂ **SMART** button and select **Settings**.

2 Select **SUPPORT** and go to **Software Update**.

Item	Description
Software Update	Set it to **On**. If an update is available, a prompt will appear to perform the update.
Automatic update mode	If an update is available, the update automatically starts without prompting.
Check Update Version	Checks the latest update version installed. When a new update is available, the download process can be performed manually.

- When the update starts, the update progress window appears for a short time and disappears.
- The latest version can be obtained via an internet connection.
- If software is not updated, certain functions may not work properly.

Before reporting a problem, check the following:

If the following symptoms occur, please carry out the checks and adjustments described below. There may be no malfunction.

General

Problem	Solution
Cannot view certain programs.	• Adjust the location or orientation of the antenna. • Save the programmes you wish to view later using **Auto Tuning** or **Channel Edit**.
There is a delay after the Laser TV is switched on before the image is fully visible.	• This is not a problem. Image noise that may occur when the Laser TV is first switched is being cleaned up.

Picture

⌂ **SMART → Settings → SUPPORT → Picture Test**

First run a Picture Test to verify that the image signal output is normal.

If there is no problem with the test image, check external device connections and broadcast signals.

Problem	Solution
Images from previous program or other programs linger or the screen displays annoying lines.	• Adjust the orientation of the antenna to the TV transmitter, or refer to the manual for instructions on connecting the antenna.
Vibrating horizontal/ vertical lines and fishnet patterns appear momentarily.	• Such a problem may happen when there is strong electronic interference. Turn off other electronic devices such as mobile phones, power tools, and other small electrical appliances.
The screen display freezes or does not work properly during a digital broadcast.	• This may occur in case of a weak signal or unstable reception. Adjust the antenna orientation and cable connections. • If the signal strength or quality is low on **Manual Tuning**, check with the TV station or administration office.

Problem	Solution
Digital broadcasting is not available even though the cable is connected.	• Check with the cable operator providing your subscription and/or signal. (Depending on your subscription, digital broadcasting may not be supported.)
The display is inactive or unclear when connected to an HDMI® source.	• Check the HDMI® cable specifications. If your HDMI® cable is not genuine, images may fade in and out or not be displayed properly. • Ensure that all cables are securely connected. When connections are not secure, images may not be properly displayed.
Does not work with a USB storage device.	• Verify that the USB device and cable is version 2.0 or higher.

Sound

⌂ SMART → Settings → SUPPORT → Sound Test

First run a Sound Test to verify that the sound signal output is normal.

If there is no problem with the test sound, check connected external devices and the broadcast signal.

Problem	Solution
Screen display is on but there is no sound.	• Check other TV programs. • Check if the audio output settings for the Laser TV are configured correctly.
For an analogue broadcast, stereo is not clear or sound comes from one speaker only.	• In a poor reception area (areas with weak or unstable signals) or if multi audio is not stable, select **Mono** on **Multi Audio**. • Adjust the balance using the navigation button.
TV sound is not in sync with the image or the sound breaks up occasionally.	• If the issue affects a specific TV program only, it may be caused by problems with the broadcast signal for the individual station. Check with the TV station or your cable operator.
The volume changes when I change program.	• Volume can vary from program to program. • Set **Auto Volume** to **On**.

Problem	Solution
On certain programmes, there is no sound at all, or only the background music can be heard (in case of a programs created for overseas viewers).	• In Language, set **Language → Audio Language** to the language of your choice. Even if you change the language on **Multi Audio**, you can go back to the default setup once you turn off the power or change the programme.
There is no sound when connected to HDMI / USB.	• Verify that the HDMI® cable is high speed. • Check if the USB device and cable is version 2.0 or higher. • Use only regular music (*mp3) files.

PC connection problem

Problem	Solution
The screen display does not come on after connecting to the computer.	• Verify that the computer and the Laser TV are securely connected. • Turn the Laser TV off and back on using the remote control. • Restart the PC with the Laser TV on. • Check whether the resolution is correctly set for PC input. • Reconnect the HDMI cable.
There is no sound after connecting the computer with the HDMI cable.	• Check with manufacturer of your video card to ensure it supports HDMI voice output. (Video cards in DVI format require connection of a separate sound cable.)
When connected to the computer, the display is partially cut off or shifts to one side.	• Set the resolution to support PC input. (If this does not work, reboot the computer.)

Problems replaying movies in My Media

Problem	Solution
I cannot view the files on the Movie List.	• Check whether the file on the USB storage device can be read on a computer. • Check whether the file extension is supported.
This file is invalid. message appears or the image display is not normal even though the sound is OK.	• Make sure that the file replays normally on the computer's video player. (Check for damaged files.) • Check whether the resolution is supported by the computer. • Verify that the video/audio codec is supported. • Verify that the frame rate is supported.
Audio not supported. message appears or the sound is not normal even though the image display is OK.	• Make sure that the file replays normally on the computer's video player. (Check for damaged files.) • Check if the audio codec is supported by the computer. • Verify that the bit rate is supported. • Verify that the sample rate is supported.
Subtitles are not displayed.	• Make sure that the file replays normally on the computer's video player. (Check for damaged files.) • Check if the video file has the same name as the subtitle file. • Make sure that the video and subtitle files are in the same folder. • Verify that the subtitle file format is supported. • Verify that the subtitle language is supported. (Subtitle files can be opened in Notepad to check the language.)

• Image shown may differ from your Laser TV.
• For information on requesting service, refer to the following menu.
  ⌂ **SMART → Settings → SUPPORT → Product/Service Info.**

SPECIFICATIONS

MODELS	HECTO2 (HECTO2-NA)		
Resolution (Pixel)	1920 (Horizontal) × 1080 (Vertical)		
Aspect ratio	16:9 (Horizontal:Vertical)		
Panel size (mm)	14.5152 (Horizontal), 8.1648 (Vertical)		
Projection distance (Video size)	0.53 m (2.54 m)		
Ratio of upward projection	123 %		
POWER	AC 100 - 240 V, 50/60 Hz		
Audio output	10 W + 10 W		
Reception type	NTSC-M, ATSC		
Reception channels	VHF 2 - 13, UHF 14 - 69, CATV 1 - 135, DTV 2 - 69, CADTV 1 - 135		
External Antenna Impedance	75 Ω		
Height (mm)	145 (excluding foot), 156.1 (including foot)		
Width (mm)	546.3		
Depth (mm)	406.6		
Weight (kg)	14		
USB Device	5 V, 0.5 A (Max.)		
Operation environment	Temperature		
	Operation	0 °C to 40 °C	
	Storage	-20 °C to 60 °C	
	Relative humidity		
	Operation	0 % - 80 %	
	Storage	0 % - 85 %	

* Contents in this manual may be changed without prior notice due to upgrade of product functions.

HDMI(DTV) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480	31.469	59.94
	31.50	60.00
1280 x 720	44.96	59.94
	45.00	60.00
1920 x 1080	33.72	59.94
	33.75	60.00
	26.97	23.97
	27.000	24.000
	33.716	29.976
	33.75	30.00
	67.43	59.94
	67.500	60

HDMI (PC) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
640 x 480	31.469	59.94
800 x 600	37.879	60.31
1024 x 768	48.363	60.00
1152 x 864	54.348	60.053
1360 x 768	47.712	60.015
1280 x 1024	63.981	60.020
1920 x 1080	67.5	60.00

- If an invalid signal is input into the product, it will not be displayed properly on the screen or a message such as "No Signal" or "Invalid Format" will be displayed.
- The product supports the DDC1/2B type as the Plug & Play function (Auto-recognition of PC monitor).
- 1920 x 1080 is recommended as the best picture quality in the PC mode.

Component supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480i	15.73	59.94
	15.75	60.00
720 x 480p	31.47	59.94
	31.50	60
1280 x 720p	44.96	59.94
	45.00	60.00
1920 x 1080i	33.72	59.94
	33.75	60.00
1920 x 1080p	26.97	23.976
	27.00	24.00
	33.71	29.97
	33.75	30.00
	67.432	59.94
	67.500	60.00

Component port Connecting information

Component ports on the TV	Y	PB	PR
Video output ports on DVD player	Y	PB	PR
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	Pb	Pr

Open Source Software Information

To obtain the source code under GPL, LGPL, MPL and other open source licenses, that is contained in this product, please visit http://opensource.lge.com.

In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download.

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.