

INSTALLATION MANUAL

LED TV*

* LG LED TV applies LCD screen with LED backlights.

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

LU34**-Z/T*

LU54**-T*

TABLE OF CONTENTS

3 INSTALLATION MENU

- 3 Introduction

4 LG HOTEL MODE SETUP

- 4 (1) Hotel Mode Operation (DVB)
 4 (2) Power On Status
 5 (3) Volume ($0 \leq \text{Min} \leq \text{Start} \leq \text{Max} \leq 100$)
 5 - (3-1) Start Volume
 5 - (3-2) Maximum Volume
 5 - (3-3) Minimum Volume
 6 (4) Key Operation
 6 - (4-1) IR Operation
 6 - (4-2) Local Key Operation
 7 (5) Limited Mode
 7 - (5-1) Setup Menu
 7 - (5-2) Input Source Change
 7 - (5-3) Programme Change
 7 - (5-4) Menu Display
 8 - (5-5) OSD Display
 8 - (5-6) System Provider Mode
 8 (6) Power Management
 8 (7) DTV Programme Update
 9 (8) Power On Default
 9 - (8-1) Input Source
 9 - (8-2) Programme
 9 - (8-3) A/V Setting
 9 - (8-4) Aspect Ratio
 10 (9) Aux Source Setting
 10 (10) Radio Name Display
 10 (11) Radio Video Blank
 10 - (11-1) Start PR. No.
 10 - (11-2) No. of. PR.
 11 (12) Factory Reset

13 TV MANAGER

- 13 - 1. USB
 17 - 2. Diagnostics

19 NETWORK

20 PRO:CENTRIC

22 GENERAL

- 22 Password Change
 22 Set ID Setup
 23 Configuration Setup
 26 Time Scheduler
 26 Lock Mode
 27 External Speaker
 28 Speaker Output Setup
 28 - Method of Volume control port
 29 HCEC Setup
 30 Power Saving
 31 Clock Setup
 33 Insert Image
 34 Welcome Video
 35 Crestron

36 CUSTOMIZABLE PORTAL

- 36 Portal Settings
 39 Customizable Portal

40 AUDIO PROGRAMME

41 KEY CODES

42 EXTERNAL CONTROL DEVICE SETUP

- 42 RS-232C Setup
 42 USB to Serial converter with USB Cable
 42 RS-232C with RS-232C Cable
 43 - Connector type : D-Sub 9-pin male
 43 - RS-232C configurations
 43 Set ID
 44 Communication Parameters
 44 IR OUT Using Guide
 44 - Suitable / Not Recommend remote-controller data format
 44 - IR Receiver specifications
 45 Command reference list

46 TRANSMISSION / RECEIVING PROTOCOL

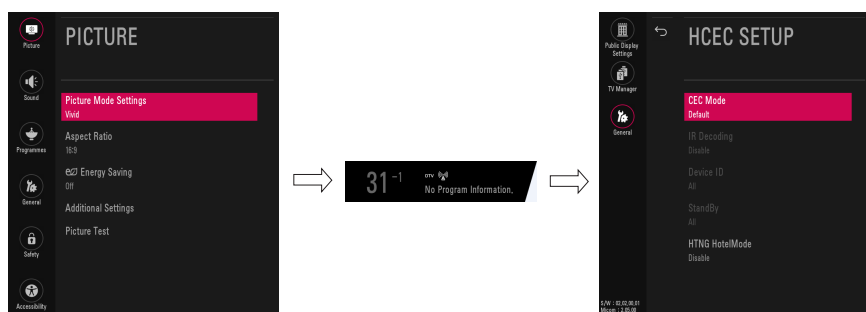
INSTALLATION MENU

Introduction

The abundant functions for Hotel TV linked with software installation can be projected on OSD as installation menu.

The wide range of hotel features can be performed simply on additional window to enhance the LG hotel TV's easy installation and convenient operation for Hotelier and System Integrators.

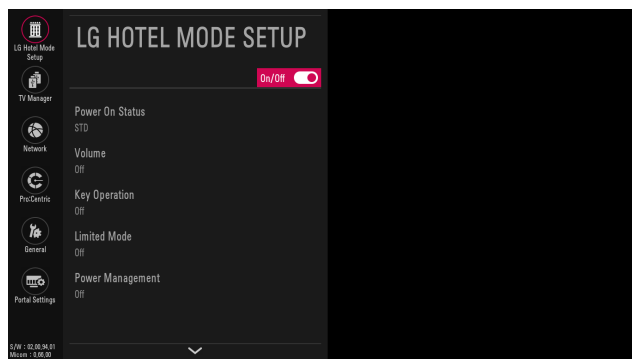
* Image shown may differ from your TV.



- 1 Press the **SETTINGS** / **⚙** (Settings) button for more than 5 seconds using the user remote control, Programme information will appear at top left on the screen.
- 2 Enter a four digit password and press OK button. The TV is set with the initial password "1-1-0-5".
- 3 Use the **^** **v** button to select the desired menu.

LG Hotel Mode Setup

* Image shown may differ from your TV.



1 Select LG Hotel Mode Setup.

- When **LG Hotel Mode Setup** is set to **On(Work)**, all functions of Hotel Mode apply.

(1) Hotel Mode Operation (DVB)

- **LG Hotel Mode Setup (DVB)** Decide to work all functions of **LG Hotel Mode Setup** or not by setting **LG Hotel Mode Setup** as **On(Work)** or **Off(Do Not Work)**
- When **LG Hotel Mode Setup** is set to **On(Work)**, all functions of Hotel Mode apply.
- When **LG Hotel Mode Setup** is set to **Off(Do Not Work)**, all functions of Hotel Mode Do Not apply.
- When it is set to **On**, 'Key Lock' item of the Safety menu is disabled and the OSD is displayed same to the Local Key Operation setting of the Hotel mode.
- When it is set to **On**, all items reserved at the Schedule list are deleted and the reservation function is not supported. (applied for the model offering the reservation function)
- The TV triggered by the external device (ex: SIMPLINK, TVLink-Tuner, etc.) operates separately from the Hotel mode.
- When it is set to **On**, User Menu-> **General-> Reset to Initial Settings** is disabled.
- When it is set to **On**, User Menu-> **General-> Demo Mode** is disabled

(2) Power On Status

- Decide to select working status of TV Set when turn on main power.
- You can set with **PWR, STD, LST**.
- **PWR** always make TV set On status when turn on main power .
- **STD** make Stand-by status when turn on main power.
- **LST** make TVSet work like previous power status. As same concept as Power Backup mode; If main power were turned off in **Power On status**, TVSet would work in On status. If main power were turned off in Stand-by status, TVSet would work in Stand-by status.

(3) Volume ($0 \leq \text{Min} \leq \text{Start} \leq \text{Max} \leq 100$)

- Decide to apply volume policy of **Start Volume**, **Maximum Volume** and **Minimum Volume** as **On** (Work) or **Off** (Do Not Work).

(3-1) Start Volume

This entry sets the start volume level when is power on.

- The level is specified as a number between minimum volume to maximum value. ($\text{Min} \leq \text{Start} \leq \text{Max}$)
- The default setting is **Off** (disabled).
- When enabled, if the value is lower then the minimum specified in the minimum volume entry, the minimum volume entry must be used.
- When enabled, if the value is larger then the maximum specified in the maximum volume entry, the maximum volume value must be used.
- Access to a volume in **Timer Power On** must be fixed to start volume when **LG Hotel Mode Setup (On)** and **Start Volume (Off, 0 ~ 100)** were set simultaneously.

(3-2) Maximum Volume

This entry sets the **Maximum Volume** level the set.

- The level is specified as a number between **Minimum Volume** to **100**. ($\text{Min} \leq \text{Max} \leq 100$)
- If the command volume up to higher than maximum volume is received, that should be ignored.
- The default value is **100**.

(3-3) Minimum Volume

This entry sets the **Minimum Volume** level the set will produce.

- The level is specified as a number between **0** to **Maximum Volume**. ($0 \leq \text{Min} \leq \text{Max}$)
- If the command volume down to lower than minimum volume is received, that should be ignored.
- The default value is **0**.

(4) Key Operation

- Manage key usability of Local(Front) Key and Remote Control. When selected to **On**, following **IR Operation** and **Local Key Operation** will be worked by below.

(4-1) IR Operation

Decide whether work the LG remote control or not.

- Able to set **Normal**, **Use PWR Only**, **Block All**
- When **IR Operation** is set to **Block All**, all normal remote keys don't work. **Use PWR Only** (Block except power) makes block all remote keys except power key.
- Although **IR Operation** value is **Use PWR Only** or **Block All**. It can work in service mode. (In-Start, In-Stop, Power-Only, ADJ, Hotel-Mode, Hotel-Mode-Ready, P-Check, S-check, In-Time, FMode-Init, FMode-Start, FMode-AV, FMode-F1)
- Menu key action to enter the installation menu and key action with special menu(In-Start / EZ-Adjust ...) are still available.
- When **IR Operation** is set to **Normal** (Work), all remote keys are available.

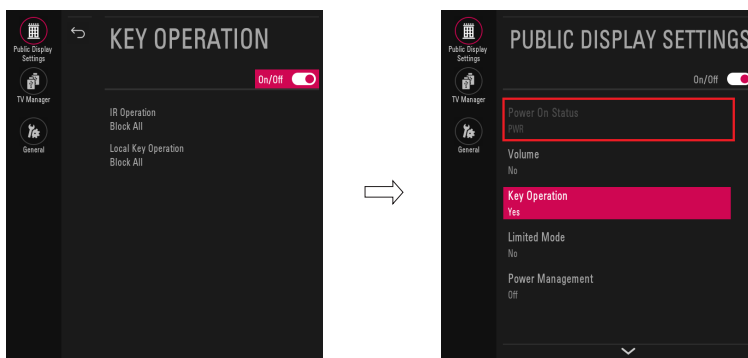
(4-2) Local Key Operation

Decide to operate Local/Front Key working behavior by setting **Local Key Operation** as **Normal**, **Use PWR Only**, **Block All**

- When **Local Key Operation** is set to **Block All**, all local keys don't work. (If value is **Use PWR Only**, it blocks all local keys except power key.)
- When **Local Key Operation** is set to **Normal**, all local key are available.

Exception)

In case of power off condition with all key are blocked, **Power On Status** value turns to **PWR**, and disabled status to fix value for power on operation. (fool-proof routine)



(5) Limited Mode

- Configure TV function's limitation. When selected to **On**, following sub-menus will be worked by below.

(5-1) Setup Menu

Decide to enter **Setup Menu** or **Programmes Menu** as **On** (Enter possible) or **Off** (Enter impossible)

(5-2) Input Source Change

Decide to change input source or not by setting **Input Source Change** as **On** (Change possible) or **Off** (Change impossible).

- When **Input Source Change** is set to **Off** (Change impossible)
 - Input key doesn't work, and **Input Source Changing** via TV D/A key, TV/RADIO key aren't possible (ex. Press TV/RADIO Key in HDMI source to view TV Programme)
 - User's input (pressing Programme key, numeral key, List key, Flash back key in all Input source except TV source) doesn't work.
 - Entering **Programmes** of User Menu item in the main menu OSD except TV mode doesn't accepted. Because entering **Programmes** of User Menu item makes present mode as TV mode even though present mode is not TV. Change to TV mode isn't allowed.
 - Entering **Programmes** of User Menu except TV mode is impossible regardless of **Programme Change** or **Programmes** of User Menu items' value.
 - TV can be only turned on with the input source which is irrelevant from the programme related information set (volume, input) in **Timer Power On** of User Menu.
 - Auto AV and HDMI-CEC still work regardless of Input Source Change's value.
- When **Input Source Change** is set to **On** (Change possible), changing input source is available.

(5-3) Programme Change

Decide to change Programme or not by setting **Programme Change** as **On** (Change Possible) or **Off** (Change Impossible) when present source is TV.

- When **Programme Change** is set to **Off** (Change Impossible)
 - Program Key, Numeral Key, List Key, Q.View Key don't work and entering **Programmes Menu** in the Main Menu OSD is impossible.
 - **Programme** item in **Timer Power On** menu will be fixed.
 - Entering **Setup Menu** or **Programmes Menu** in the **Main Menu** OSD is impossible regardless of **Setup Menu** or **Programmes Menu** item
- When **Program Change** is set to **On** (Change Possible), Programme Key, Numeric Key, List Key, Q.View Key does work and entering **Programmes Menu** in the Main Menu OSD is possible.

(5-4) Menu Display

Function to decide whether work with menu (including relevant menus too) of control key (**On** – Enter possible) or not (**Off** – Enter Impossible).

- Although select **Off** (Enter impossible), the action that press a Menu button for 5 seconds to enter installation menu is available.
- When select **On** (Enter possible), Menu works.

(5-5) OSD Display

Decide to display OSD or not by setting **OSD Display** as **On** (Display) or **Off** (Do not Display).

- When **OSD Display** is set to **Off** (Do not Display), all OSD is not displayed except some exception.
- Although select **Off** (Do not Display), the action that press a (SETTINGS) for 5 seconds to enter installation menu and entering service menu are available. (In-Start, Power-Only, Adjust, Installation Menu ...)

(5-6) System Provider Mode

System Provider Mode allows access to the menu system from the front panel or remote control but access is controlled as follows:

- When value is **On**, Accessible Items on the menu system, others are not permissible.
 - Input select screens
 - **Sleep Timer**
 - Alarm (Only for LU5**H series)
 - **Aspect Ratio**
 - Subtitles
 - Lock System, Set Password
 - My Media / **Network Menu**
 - **Support Menu**(* LU30* C series use 'About This TV')
- Q.menu, which is related to **Setup Menu** or **Programmes Menu**, is not accessible.
- If the Programme map is empty, Auto-tuning guide dialog should be blocked by pressing List, Fav, CH+ (Page up), CH- (Page down) keys.

(6) Power Management

The **Power Management** feature will turn off the television receiver if no input control command is received from either the Local or IR Key within a selected hours.

- Activity on either of these inputs shall restart the **Power Management** timer and prevent interruption of TV viewing.
- This entry can be set to a value which is corresponding to the desired hours (1 to 7).
- Default value is **Off** (disabled).
- TV should off and on after apply this setting.

(7) DTV Programme Update

It is a mode to set whether to update DTV Programme information automatically or not.

- When **DTV Programme Update** is set to **Auto**, the function to update TV's Programme map according to DTV Programme's stream information
- **DTV Programme Update** is set to **Manual**, the function to keep TV's Programme map even though DTV Programme's information is changed.
- For LU5**H series, this function is available in CONFIGURATION SETUP

(8) Power On Default

Set the input source or Programme to display and. A/V settings when turn on power in AC Power On or Stand-by status.

(8-1) Input Source

Set whether it is turned on by the set input source or by the last stored input source.

- It is turned on by the Last Memory Input if the **Input Source** is turned off.
- It is turned on by the Last Pr. If the **Input Source** is turned off and the last memory Input is the RF.
- The available **Input Source** values should be rotated.
- If both the **Input Source** and the **Timer Power On** of User Menu are set, the Input source takes the priority.
- When the **Input Source** is changed to the **TV, Programmes** menu is available.
- When the **Input Source** is changed to the **ATV**, the Programme No. is set to **0**. (If the Programme map structure does not support this, it depends on model's Programme handling.)
- Access to an input source item and a Programme in **Timer Power On** of User Menu must be disabled when Power On Default is activated.

(8-2) Programme

Select start Programme number if Input source's value is TV. (in case of ATV, it means physical Programme number.)

(8-3) A/V Setting

If **A/V Setting** is changed from **Off** to **On**, parameters that are set before entering installation menu are applied whenever turn on power.

- Following Parameters are applied to basic.
 - Picture section - PSM mode, Picture Data (Contrast, Brightness, Color, Sharpness, Tint)
 - Sound section - SSM mode, Sound Data (Balance, Equalizer Data)
 - AVL (Auto Volume Level) and Language, Teletext language, ARC Data.
- Except these, other parameters are applied differently according to the TV-Set.

(8-4) Aspect Ratio

The aspect ratio determines the default aspect ratio that the set returns to on power up.

- The modes are as follows:
 - Aspect ratio = "**Disable** (0)" stays at previous state, same as consumer model.
 - Aspect ratio = "**Original** (1)"
 - Aspect ratio = "**4:3** ratio (2)"
 - Aspect ratio = "**16:9** ratio (3)"
- If enabled, upon power up the television resets the aspect ratio to the specified state regardless of how the user has previously changed the aspect ratio.
- If **Original** is not supported, the television set the aspect ratio to **16:9**.

(9) Aux Source Setting

The Auxiliary (Input) Source Setting feature will enable or disable for each external input. When **Aux Source Setting** is set to **On** (Work), the RJP or HDMI-CEC / HTNG will not operate.

- Available Input Source List
- Decide whether selected **Input Source** is set to On (Enable) or not (Disable).
- User cannot disable the current input's **Aux Source Setting**.

(10) Radio Name Display

Instead of 'Audio Only', the name of a radio Programme is displayed on the screen when a radio broadcast is playing. Set to **On** (Work) or **Off** (Do Not Work).

If the setting is **On**, the name of a radio Programme is displayed for the radio Programme.

- Set to **On** (Work) or **Off** (Do Not Work).
- If the setting is **On**, the name of a radio Programme is displayed for the radio Programme.
- For LU5**H series, this function is available in CONFIGURATION SETUP.

(11) Radio Video Blank

Manage video blank Programme(sound only). This feature affects on analog Programme (ATV) only.

(11-1) Start PR. No.

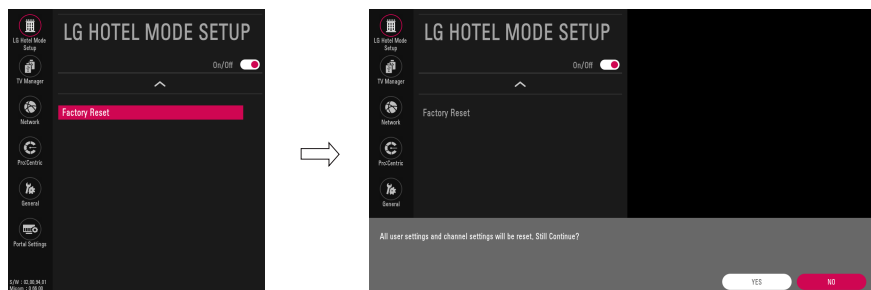
- Start Programme number to video blank.
- Available programme to set are 0~199 (For Taiwan : TV 2~69, CATV 1~199).

(11-2) No. of. PR.

- Number of Programmes to blank
- The max value for the 'No. of PR' is 10.
- Can not set more than maximum available Programme number. For example if Start PR. set to 195, "Number of PR". can not set more than 5.
- Radio programme should be in sequence with starting programme number.

(12) Factory Reset

Factory reset returns all the parameters to the default settings.



- 1 Press Enter key to proceed factory reset. and confirmation message window will be shown.
- 2 When select **On**, all television settings except UTT value should write to the default settings.

Public Display Settings / LG Hotel Mode Setup (Value Range Table)

Item	Enable	Disable	Initial
LG Hotel Mode Setup	On	Off	Off
Power On Status	LST, STD, PWR		STD
Volume	On	Off	Off
Start Volume	Off, Minimum Volume ~ Maximum Volume		Off
Maximum Volume	Minimum Volume ~ 100		100
Minimum Volume	0 ~ Maximum Volume		0
Key Operation	On	Off	Off
IR Operation	Normal / Use PWR Only / Block All		Normal
Local Key Operation	Normal / Use PWR Only / Block All		Normal
Limited Mode	On	Off	Off
Setup Menu	On	Off	On
Input Source Change	On	Off	On
Programme Change	On	Off	On
Menu Display	On	Off	On
OSD Display	On	Off	On
System Provider Mode	On	Off	Off
Power Management	Off, 1 Hour ~ 7 Hours		Off
DTV Programme Update	Auto	Manual	Auto
Power On Default	On	Off	Off
Input Source	Off, ATV, DTV, ...		Off
Programme	Minimum Program ~ Maximum Program		Minimum Program
A/V Setting	On	Off	Off
Aspect Ratio	Disable / Original / 4:3 / 16:9		Disable
Aux Source Setting	On	Off	Off
Aux Input (AV1 ~ MAX_INPUT)	On	Off	On
Radio Name Display	On	Off	Off
Radio Video Blank	On	Off	Off
Start PR. No.	0 ~ 199 (Taiwan TV 2 ~ 69 / CATV 1 ~ 199)		1
No. Of. PR.	0 ~ 10 (Start PR. NO + No. of PR. <= Max Start PR. NO. + 1)		1
Factory Reset	Confirmation window (On / Off)		

TV Manager

1. USB

Ez Download

Ez Download is a function that enables users to download the desired items all at once, such as EPK (software update file), TLL (See **Send to USB** descriptions for more information regarding file types), Logo Image, etc (TLX, MICOM for Pro:Centric).

- Splash images and EPK files should be copied into the folder named LG_DTV on the USB.
 - TLL files should be copied to the root folder of the USB.
 - Insert Image files should be copied into the folder named LG_SIG on the USB.
- * Image shown may differ from your TV.



- 1 Plug USB memory card into the USB port of the TV.
- 2 Use the \wedge \vee button to select the **TV Manager** option and then press the OK button.
- 3 Use the \wedge \vee button to select the **USB** and **Ez Download** and press the OK button.
- 4 Select a list to download and press the OK button.
- 5 Select the EPK option (software update) and then use the two dots and three dots buttons to download either SPI Boot or LG Boot Logo. If you checked the LG Boot Logo checkbox, then the Splash image, if selected, will be unchecked. Also, if you select the LG Boot Logo and proceed with the download, the existing Splash image will be deleted.
- 6 When you are finished with your selections, use the \triangleright button to select Apply and then press OK.
- 7 Wait for the download to complete. When it is finished, your TV will be turned off.

NOTE

- If the DZM file is still in the USB after the download is complete:
An Ez Download pop-up window will appear and list the file types, such as TLL, Logo Image, Background Images, EPK or Micom with the previously downloaded lists checked automatically.
- If the global TLL and model TLL files exist in the same USB root directory, then only the global TLL will be shown. If the global TLL has been deleted, then the model TLL will be shown.

An Installer can quickly set up and clone multiple TV sets at a property. These cloned TVs will all have the same Master TV Setup: Public Display Settings, Installation menu settings, User A/V settings and the Programme Map. This newer procedure significantly decreases the installation time that would be necessary if the standard RS-232C method were used instead.

Introduction

(1) Overview USB Cloning Procedure

- Commercial TVs have the capability to support cloning internal TV data and Programme information with an external clone device called **USB Cloning**, in order to copy TV data accurately and quickly. The clone internal functions use slightly different internal processes for the two types of commercial TVs. However, the UI of cloning feature remains the same in both. Regarding the demands over the current cloning feature for quicker cloning, better portability and etc, we would like to announce the cloning process via USB port, named as **USB Cloning**. USB cloning process is divided into 2 main processes. One is writing the previously saved TV data into the TV, and one another is reading of current TV data into USB memory card. To avoid any confusion due to the words, it is clearly specified as **Receive from USB** and **Send to USB** in the whole process.

(2) Data To Be Cloned

- The data cloned are the same data cloned by previous **USB Cloning**. Details are explained in the following:
 - 1. TV data includes:
 - A. Installer Menu settings
 - B. Main menu settings (Audio, Picture etc)
 - 2. Analog / Digital Programme information includes:
 - A. Programme numbers
 - B. Programme label
 - C. Programme attributes including Programme type, skipping status and etc.

(3) Input Source

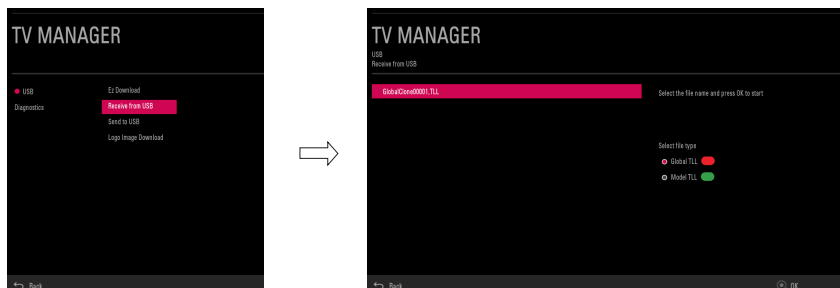
The user needs a USB memory card with FAT formatted to make successive cloning via USB port. A USB memory card size more than 128 MB and less than 4 GB is recommended.

! NOTE

- Currently, support the preceding USB file system for FAT file format only. Other file formats including NTFS is not currently supported. Microsoft Windows officially supports FAT for the USB memory card.

Receive From USB

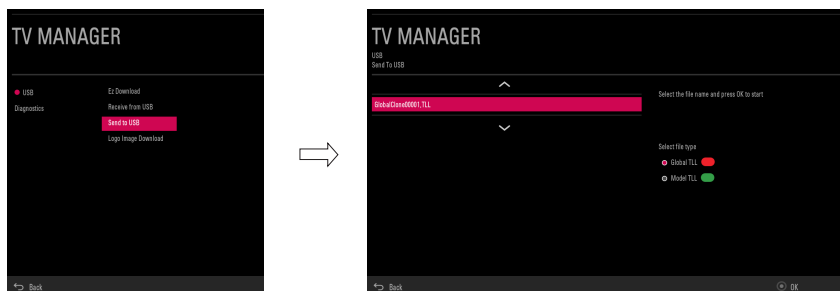
* Image shown may differ from your TV.



- 1 Plug USB memory card into the USB port of the TV.
 - 2 Use the $\wedge \vee$ button to select the **TV Manager** option and then press the OK button.
 - 3 Use the $\wedge \vee$ button to select the **USB** and **Receive from USB** and press the OK button.
- * Below explains the naming rules for *.TLL files. The supported model line will be in the name of the file but the screen size will be listed as "xx". This allows TVs having the same chassis model number to use the same "*.TLL" file without regard to the screen size. ex) The name of "*.TLL" file is 'xxLU340L-UA00000.TLL' for 32/43LU340L-UA model.
- 4 Use the $\wedge \vee$ button to select the desired *.TLL files name and press the OK button.
 - 5 The TV is changed to Standby mode after a successful download. If the download failed, the TV will maintain the current screen.

Send To USB

* Image shown may differ from your TV.

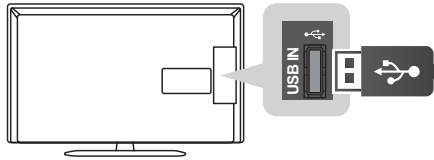


- 1 Plug USB memory card into the USB port of the TV.
- 2 Use the $\wedge \vee$ button to select the **TV Manager** option and then press the OK button.
- 3 Use the $\wedge \vee$ button to select the **USB** and **Send to USB** and press the OK button.
- 4 Use the $\wedge \vee$ button to select the desired file name and press the OK button.
- 5 The TV will be changed to the TV Manager main screen after a successful download.

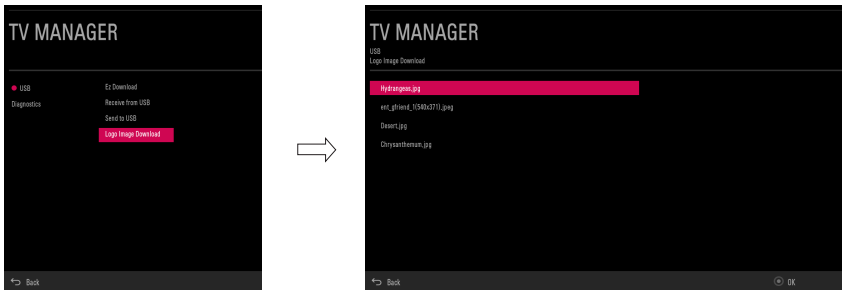
Logo Image Download

Make a 'LG_DTV' folder on the USB flash drive and then copy the splash image file to that folder.

* Image shown may differ from your TV.



- 1 Connect the USB device to the USB IN jack on the TV.



- 2 Use the \wedge \vee button to select the **TV Manager** option and then press the OK button.
- 3 Use the \wedge \vee button to select the **USB** and **Logo Image Download** and press the OK button.
- 4 Use the \wedge \vee button to select the desired file name and press the OK button.

! NOTE

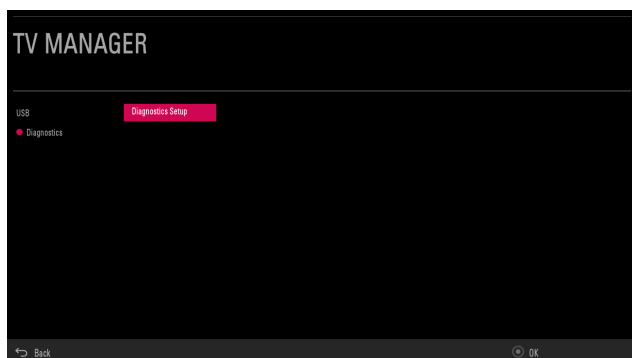
- Splash Image update function supports only JPEG format file of less than 1 MB file size.
- Except for JPEG images with progressive encoding.
- We recommend you that splash image resolution match the TV's panel resolution.
- Max resolution of splash image : Full HD -> 1920 x 1080, HD -> 1360 x 768.
- Min resolution of splash image : Full HD -> 64 x 64, HD -> 64 x 64.
- TV keep splash image until you change a new splash image.
- Please do not use the ampersand character(&) and the left angle bracket (<) in the file name to use DZM file on **EZ Download**.
- Non-standard photo/image file may not be displayed.

2. Diagnostics

Diagnostics Setup

Introduction

This diagnostic function provides current status information of the TV in XML file format using a USB device. If the user sets a signal standard level, **Signal Tracer Set** checks the signal strength status of the digital Programme that the user tuned to. It checks and records good and bad Programme signals, and then provides the signal information to a USB storage device in XML file format.



(1) Overview Diagnostics

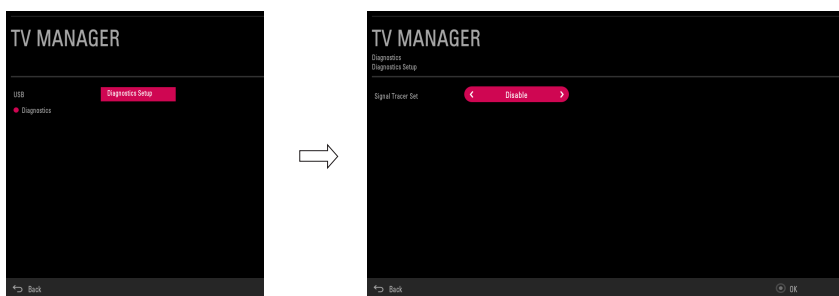
- It provides status information of the TV and information about the current input in XML file format. (There are two kinds of information. There is information which is extracted regardless of the model, such as the model name or boot version, and there is information which is available depending on the model, such as the micom version, PTC version, etc.). The information created in the XML file can be checked in the TV's UI by pressing 88888888 in the TV's General menu.
- If a SignalTrace standard level is set, it saves the average value of the Programme signal with less than 30 tuning counts to the digital broadcasting Programme. If the count is more than 30, it saves good and bad signals by comparing the average signal value to the current signal strength and signalTrace standard level (**Signal Tracer Set**) value.
 - Bad signal: $BML (average\ value) > strength (current\ signal\ strength) \text{ and } (BML - strength) > \text{Signal Tracer Set}$
 - Good signal: $BML < strength \text{ and } (strength - BML) > \text{Signal Tracer Set}$
- It provides the good and bad signals, average signal value, Programme information, and date information etc. in USB in XML file format. (Saved in changedSignal_report tag) Up to 127 reports for good and bad signals are saved. If the reports number more than 127, they are written again beginning from 1.

(2) Saving some status information of the TV set through USB in XML file format

- Create an LG_SVC folder on the USB on a PC.
- Create an empty file named tv_signal.rms in the LG_SVC folder.
- Insert the USB device into the TV.
- If the "Diagnostics is completed" message is displayed, remove the USB, open the tv_signal.rms file on a PC and check the XML (model name, FirmwareVersion, bootVersion etc.) created within the file.
- The information created in the XML file can be checked in the TV's UI by pressing 88888888 in the TV's General menu

(3) Saving signal status information of digital Programmes through SignalTrace in XML format

- Go to Installation menu -> **TV Manager** -> **Diagnostics** -> **Diagnostics Setup**
- Set the level value in Signal Tracer Set. (Disable, 10 to 90)

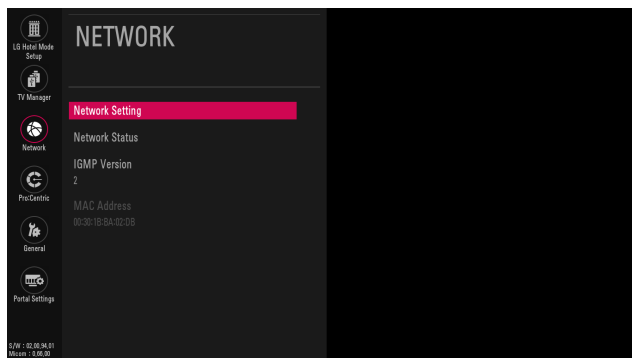


- Change the Programme and tune to a digital Programme, then maintain the status for more than 5 seconds.
 - Create an empty file named tv_signal.rms in the LG_SVC folder.
 - Insert the USB device into the TV.
 - If the "Diagnostics is completed" message is displayed, remove the USB, open the tv_signal.rms file on a PC and check XML created in the file.
- * If the user tunes to the same digital Programme 30 times, the signal average is calculated. If the tuning count to the same digital Programme is more than 30, the good/bad signals, current signal, average signal, date and Programme information are saved in changedSignal_report XML tag.
- * The information created in SignalTrace is not displayed in the TV's UI.
- * In USB cloning, the configured Signal Tracer value is not cloned.
- * When a factory reset is performed, Signal Tracer Set is disabled and traced information is deleted.

Network

* Only for LU5**H series

* Image shown may differ from your TV.



1 Use the \wedge \vee button to select the Network Setup.

(1) Network Setting

- One-click network connection
 - Connects easily to a wired network.
 - Network Connection to connect to an available network automatically. Follow the prompts on the 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).

! NOTE

- When connecting via Wired, Configures the IP settings of the TV set. You can set the IP address, subnet mask, gateway and DNS server.

(2) Network Status

- You can also check whether the IP settings are configured properly using the Enter button.

(3) IGMP Version

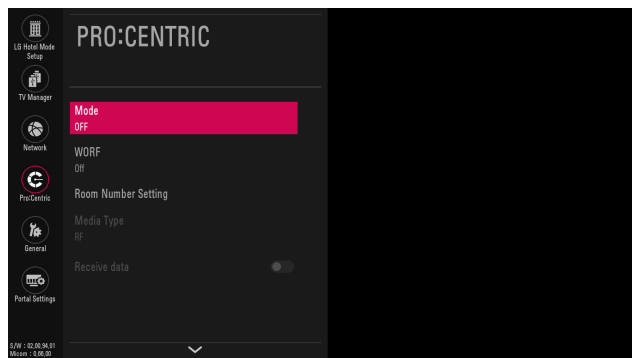
- You can set up the IGMP Version. The initial value is version 2, and it can be changed version 3.

(4) MAC Address

- Displays the MAC address (not customizable).

Pro:Centric

- * Only for LU5**H, LU3**H series
- * Image shown may differ from your TV.



1 Use the ^ v button to select the Network Setup.

(1) Mode

- Sets whether or not enable Pro:Centric and the service method.
- You can set to **Off**, Configuration only, Flash or GEM. The default value is Off; when it is set to Off, all the sub items are disabled. (Except for WORF, Room Number Setting)

(2) WORF

- * Only for LU54** series
 - When WORF is set to **On**, Hour and Minute items are enabled and then the WORF function is enabled.
 - When WORF is set to **Off**, Hour and Minute items are disabled and then the WORF function is disabled.

(3) Room Number Setting

- You can set or change Label and Room Number using the Room Number Setting.

(4) Media Type

- * LU3**H series do not support IP mode
- You can set to IP or RF.
 - If it is set to IP, RF is disabled.
 - If it is set to RF, P:C IP Setting is disabled.

(5) Receive data

- Set to On or Off.
 - If the setting is **On**, receive data via RF or IP.
 - If the setting is **Off**, data carousel is not supported. It can be downloaded via only USB.

(6) RF Type

- Sets the RF modulation type to DVB-T or DVB-C. The default value is DVB-T.

(7) RF Freq.(kHz)

* Frequency range can vary with country

- Sets the RF frequency at which the Pro:Centric data is received.
- Frequency tolerance: start frequency~end frequency for each country
 - If the RF Type is DVB-T, it can be changed in the range of 47000~890000. (End frequency may vary by country.)
 - If the RF Type is DVB-C, it can be changed in the range of 46000~890000.

(8) P:C IP Setting

* Only for LU54** series

- It can be set using the < > button or number buttons.
 - (IP a): Sets the first number in the IPv4 address.
 - (IP b): Sets the second number in the IPv4 address.
 - (IP c): Sets the third number in the IPv4 address.
 - (IP d): Sets the fourth number in the IPv4 address.
 - (Port): Sets the actual port number where the Pro:Centric server is running. It can be set using the < > or number buttons.
- The default value of IP a/b/c/d is 0 and the range is between 0 and 255. The default value of Port is 80 and the range is between 0 and 65535.

(9) Native EPG

* Only for LU541H-ZA

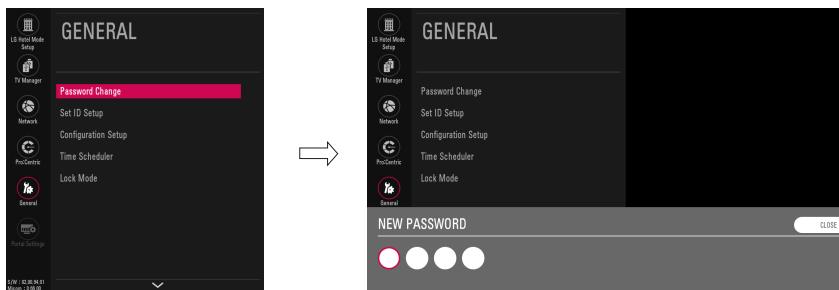
- Set to **On** or **Off**.
 - When set to **On**, Native EPG feature can be used.
 - When set to **Off**, Native EPG feature cannot be used.
 - The feature is set to **Off** as default.

General

Password Change

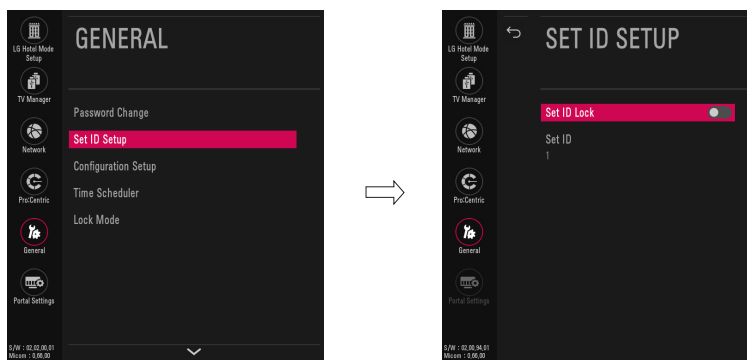
* Image shown may differ from your TV.

- To ensure more security, Password can be changed by installers' own design.



- 1 Go to General -> Password Change.
- 2 Enter four digit password.
- 3 Input the password again for confirmation.

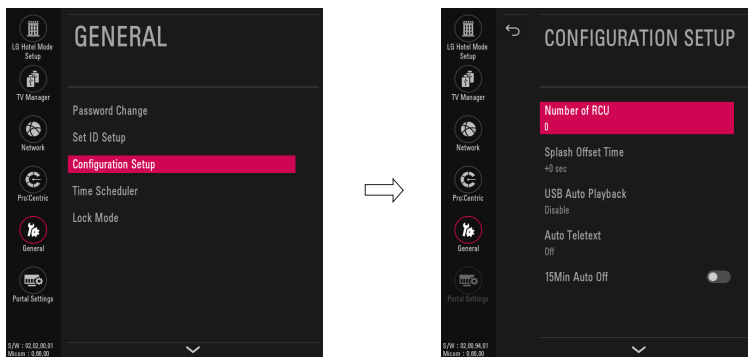
Set ID Setup



- 1 Go to General -> Set ID Setup.
 - **Set ID Lock**
 - Set the **Set ID** item in **General** Menu whether to activate or not.
 - Set to **On** (Work) or **Off** (Do Not Work).
 - **Set ID**
 - Set the **Set ID** of TV Set with 1~99.

Configuration Setup

* Image shown may differ from your TV.



(1) Number of RCU

- It is a function to set whether to use Select RCU or not and set number of RCU.
- When Number of RCU is set to 0, this function do not use.
- Number of RCU value range 1~9

* RCU(Remote Control Unit) : It is special RCU that operates only setted number of RCU in TV.

(2) Splash Offset Time

- Set the splash image display time
- When **Splash Offset Time** is set to **Off**, TV logo(splash image) do not display.
- The time can be set to between 0 and 10 seconds.

(3) USB Auto Playback

- When **USB Auto Playback** is set to **Movie**, TV finds and plays the USB's movie files located at the root(top) directory Movies if USB is plugged in. (Some menu OSDs may prevent this function.)
- When **USB Auto Playback** is set to **Photo**, TV finds and plays the USB's photo files located at the root(top) directory Photos if USB is plugged in. (Some menu OSDs may prevent this function.)
- If it reaches the last file, it starts the first file again.

(4) Auto Teletext

- **Auto Teletext** function can be operated only in Australia.
- If Auto Teletext is set to **On**, the teletext mode stays enabled even when the Programme signal disappears on the teletext screen.
- If Auto Teletext is set to **Auto**, the teletext mode is disabled when the Programme signal disappears on the teletext screen.

(5) 15Min Auto Off

- When **15Min Auto Off** is set to **On**, TV will turn off if there is no signal in 15Min.

(6) Auto Sensing

- The input is automatically switched when the input signal that you set to **On** is received.
- If **Auto Sensing** is set to **Off**, the input is not switched when the input signal is received.
- If **SIMPLINK** is set to **On**, **HDMI** is automatically set to **Off** and can not work.
- If the signal is removed while **Auto Sensing** (automatic input switch) is enabled, the input returns to the previous setting.
- If the several inputs are connected by enabling **Auto Sensing** and the automatic input switch is performed several times, the input returns to the previous setting only for the last input and does not repeat the operation for the rest.
- For the AV input connected using the euro scart cable, **Auto Sensing** does not work for the TV input because the Auto AV function is enabled.(For other inputs, **Auto Sensing** works normally.)

(7) Forced DVI Audio

- When Forced DVI Audio is selected, the audio signal from the HDMI port will be transmitted through the RGB, AV, or Audio In #1 component ports.
- The video signal will be transmitted through HDMI to be displayed on the screen in standard quality.

(8) One Channel Map

- If **One Channel Map** is **On**, the TV will operate as below.
 - When the TV is auto-scanning, it searches both air and cable Programmes.
 - In Programme Edit window, all Programmes are shown in a single list regardless of input source. (DTV/RADIO/TV) (For satellite supported models, a Satellite input source is also included.)
 - Select the **Auto Sort** button in the Programme Edit window to sort Programmes sequentially.

(9) RS232 DC Power Outlet

* Only for LU5**H series

- It is a mode to decide whether to output DC or not for power supply to IB Box in Installation Menu.
- We offer a output terminal in one Pin of RS232C Jack for the use of communication.
- 5 V DC Power Outlet and 12 V DC Power Outlet must operate mutually exclusively. That is, only one of the two sides must be turned on.
- You can select **Off**, **5 V** or **12 V**.
 - When select **5 V** the 5 V is forwarded through the port. when select **12 V** the 12 V is forwarded through the port.

(10) DTV Programme Update

* Only for LU5**H series

- It is a mode to set whether to update dtv Programme automatically or not.
- When DTV Programme Update is set to **Auto**, the function to update TV's programme map according to dtv programme's stream information.
- DTV Programme Update is set to **Manual**, the function to keep TV's programme map even though dtv programme's information is changed.

(11) Radio Name Display

* Only for LU5**H series

- Instead of "Audio Only", the name of a radio Programme is displayed on the screen when a radio broadcast is playing.
- Set to **On** (Work) or **Off** (Do Not Work).
- If the setting is **On**, the name of a radio Programme is displayed for the radio Programme.
- If the setting is **Off**, the text "Audio Only" is displayed for the radio Programme.

(12) DVB-C

* Only for T/G* series

- DVB-T/C programmes (Programmes) are searchable and selectable like following if DVB-C is **On**.
 - A. Country which uses analog only
 - DVB-T(DTV) can be tuned.
VHF: 5 – 12 (7M Band)
UHF: 21 – 69 (8M Band)
 - DVB-C is able to be tuned.
Frequency: 50000 – 858000 (8M Band)
 - B. Country which uses DVB-T(DTV)
 - DVB-C is able to be tuned.
Frequency: 50000 – 858000 (8M Band)

(13) Instant On

* Only for LU5**H series

- **Off:** TV will go standby mode whenever TV is powered off.
- **Mute Mode:** TV will move on WARM mode automatically whenever TV is powered off. Therefor user will feel no booting time.
- **Reset Mode:** whenever TV is powered off, TV will go standby mode and then move on WARM mode automatically . Therefor user will feel no booting time.
- But Mute Mode & Reset Mode cause more power consumption in power off.

(14) WOL(Wake On Lan)

* Only for LU34*C series

- If Set to **On**, User can turn on the TV by using LAN network.

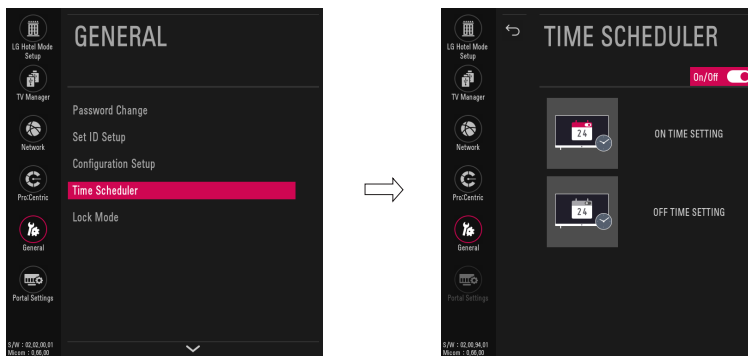
(15) DVB-C Bandwidth

- If country is 'Philippines', **DVB-C Bandwidth** menu will be shown.
- Select the bandwidth of cable tuning (6Mhz/8Mhz). The default is 6Mhz.

! NOTE

- **Instant on** supported models:
- If **Instant on** of Configuration Setup is enable (Reset mode or Mute Mode), **USB Auto Playback** can't be used.

Time Scheduler



- 1 Go to **General** -> **Time Scheduler**.

(1) Time Scheduler

- It is a mode to set whether to use or not.
- When **Time Scheduler** is set to **On**, You can adjust **ON TIME SETTING**, **OFF TIME SETTING** menu.

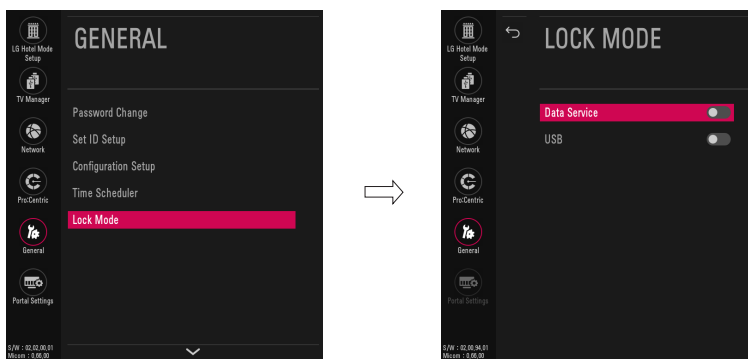
(a) ON TIME SETTING

- It sets the time for turning the TV on. A maximum of 7 timers can be set.

(b) OFF TIME SETTING

- It sets the time for turning the TV off. A maximum of 7 timers can be set.

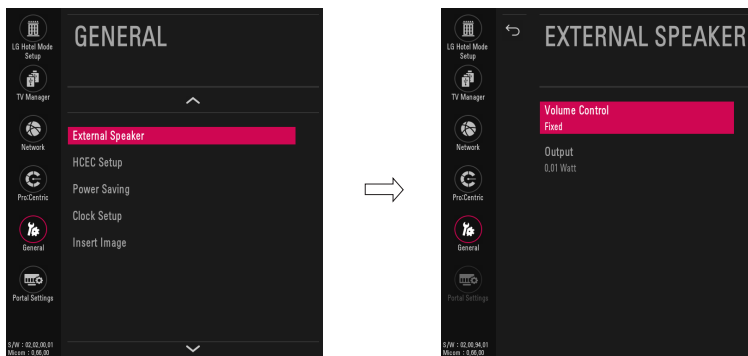
Lock Mode



- 1 Go to **General** -> **Lock Mode**.

- If **Lock Mode** Items set to **On**, the following features will be unavailable.
 - **Data Service**(Teletext, EPG, Sub-Title, Caption (Include MPEG4), MHEG)
 - **USB Enable**(Exclude S/W update)
 - **Factory Reset**

External Speaker



1 Go to General -> External Speaker.

(1) Volume Control

- Selects the volume control method of an external speaker. You can choose either Ext/Int Variable or Fixed.
- Ext Variable uses the External Vol Up/Down Control Line to change the volume up to 1 Watts. Int variable is linked to the main volume OSD and change the volume 0 - 1 Watts. Fixed produces a fixed output. The default is Off. (Ext Variable is able to be supported with LU54*H series.)

(2) Output

- This item is enabled when Volume Control is set to Fixed. You can choose one of 7 steps. (0.01/0.03/0.05/0.1/0.2/0.5/1 Watts)
- Some models can choose one of 9 steps. (0.01/0.03/0.05/0.1/0.2/0.5/1/1.5/2 Watts)

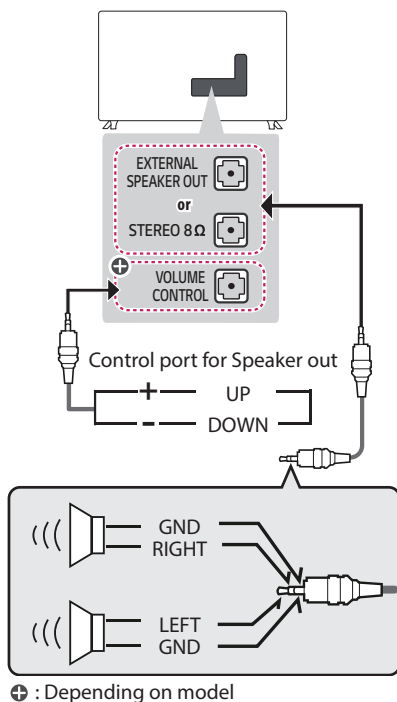
! NOTE

- Optical supported models :
 - If You set External Speaker as Variable Output Mode, User cannot select 'External Speaker(Optical)' in Sound-Out menu.
- HeadPhone supported models :
 - External Speaker and HeadPhone can not be used simultaneously.
 - Disconnect Headphone to use External Speaker. External Speaker only works when HeadPhone is disconnected.

Speaker Output Setup

* Depending on model

- Connect the external speaker to the external speaker out jack on the TV.



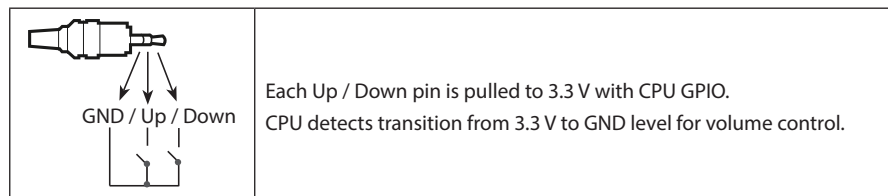
! NOTE

- External speaker must be used three plug (SE : Single Ended, Stereo) as shown in the drawings and external speaker fully inserted with external Speaker Jack.
- Otherwise it will cause defect.
- Use only with the 3 Pole 3.5 mm Stereo Jack.
- Do not connect your headphones or earphones to the port for connecting an external speaker.

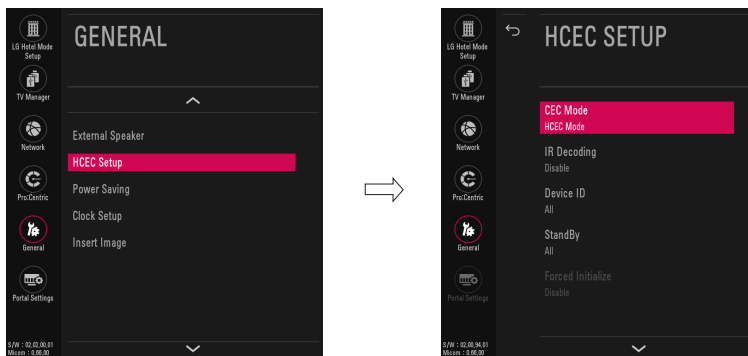
Method of Volume control port

* Depending on model

- Cable Spec.



HCEC Setup



1 Go to General -> HCEC Setup.

(1) HCEC Setup

(a) CEC Mode

* TVLink-CEC is only for LU5**H Series

- You will have 3 modes to choose **Default**, **HCEC** and **TVLink-CEC**.
- If **Default** is selected, you can use SIMPLINK which is provided in LG TV. Also you can enable and disable SIMPLINK through SIMPLINK MENU.
- If **HCEC** is selected, you can use TVLink-HCEC Protocol. (For more detailed information, please refer to TVLink-HCEC Protocol document)
- If **TVLink-CEC** is selected, TV will not directly work for key input except for power key. And volume related keys will work just in case of Follower volume control mode. (For more detailed information regarding the scenario of volume control, please refer to "TVLink-CEC protocol" document)

(b) IR Decoding

- When **IR Decoding** is set to **Enable**, the TV decodes and changes it into a CEC Message and sends it to Command via the HDMI CEC Line. The default value is **Disable**.

(c) Device ID

- Sets the ID of a device(Logical Address) connected to the CEC Line. You can choose between **All** and **E**.
- The default value is **All**.

(d) Stand By

- Sets the sending and receiving scenario of the operation about [CEC Op standby(0x0c) Command(Device Power)].
- The detailed scenario is described on the table below.

	Send	Receive
All	O	O
Send Only	O	X
Receive Only	X	O
Off	X	X

(2) Forced Initialize

* Only for LU5**H series

- If **Disable** is selected, a command should be sent and received between the TV and a -device for proper initialization.
- If **Enable** is selected, initialization is implemented when a device receives a command. If initialization is not implemented, the TV remote control and local key will work.

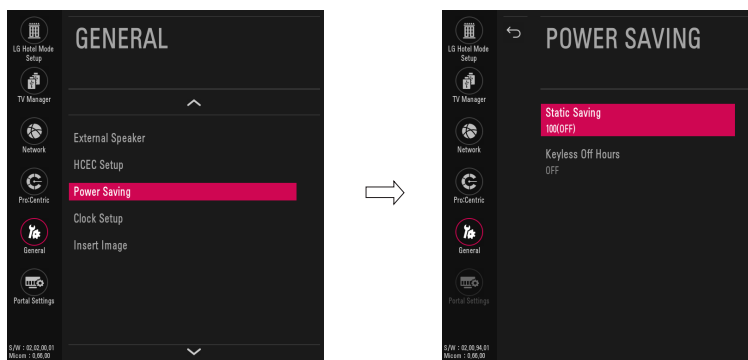
(3) HTNG HotelMode

- If the following options are selected because of the HTNG command:
 - * Power On Default, Start Volume, Maximum Volume, Minimum Volume, then the value for the HTNG HotelMode changes automatically to **Enable** and, even if the HotelMode is set to **Off**, the above options are still affected.
- If you change it to **Disable**, then the values set by the HTNG will be canceled.

Power Saving

* Only for LU5**H series

* Image shown may differ from your TV.



1 Go to General -> Power Saving.

(1) Static Saving

- It is the item for setting the level to reduce the backlight control from the items for saving the consuming power, which is increased or decreased by 10 steps from 0 to 100.
- 100 makes the consuming power set to the same one from the TV. 0 reduces the consuming power to the minimum. The default value is 100.
- The value displayed at the OSD is not changed and only the actual setting value is converted to percentage based on the static saving value to set.
 - 0 ~ 30: HIGH, 40 ~ 60: MID, 70 ~ 90: LOW, 100: OFF

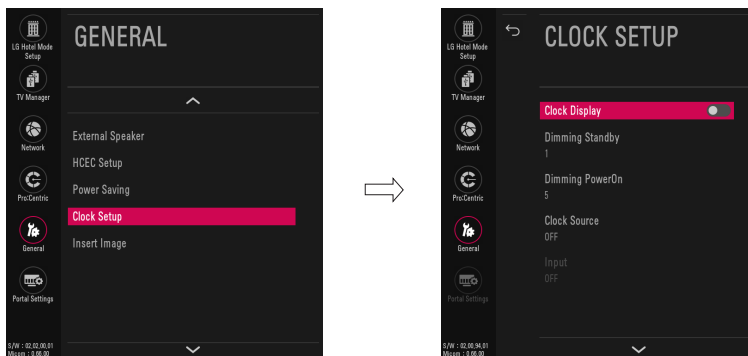
(2) Keyless Off Hours

- Automatically TV will be turned off if there is no key input for the preset time period.
 - Set the OFF, 1 ~ 99.

Clock Setup

* Except for LU3**C series

* Image shown may differ from your TV.



1 Go to **General** -> **Clock Setup**.

(1) Clock Display

* Only for LU5**H series

- After selecting **On**, you can see the LED Clock TV.
 - Dimming Standby Value Range: 1 ~ 2
 - Dimming PowerOn Value Range: 1 ~ 5

(2) Clock Source

- You can select **Off**, **TV**, **Pro:Centric**.

(3) Input

- Select a specific source to receive time information from. When the Clock Source is set to **TV**, the available options are: **ATV**, **DTV**, **RADIO**, **CATV**, **CADTV**, **CA-Radio**, and **SDTV**. When it is set to **Pro:Centric**, the available options are **RF** and **IP**. If **RF** is selected, you can set the **Program/Frequency** to receive time information. If **IP** is selected, the **Program/Frequency** option is disabled. You can set the **IP** address and port number to receive time information.

(4) Program/Frequency

- Select the program number or frequency to get the time information when tuning on TV. If the current setting for clock source is '**DTV**'; you can get the clock information when selecting the decided source and program. If the current setting for clock source is '**ATV**'; you can get the clock information of teletext at the number of program. Set up the program in accordance with the condition of the hotel clock source.

(5) Time Zone

- The city corresponding to the state designated in the TV settings is set as default. You can change the selected city to Offset. If the selected city is changed to Offset, you can change the time value from GMT+12 to GMT-11.

(6) IP Address

* Only for LU54** series

- You can set the IP address and port number to receive time information.

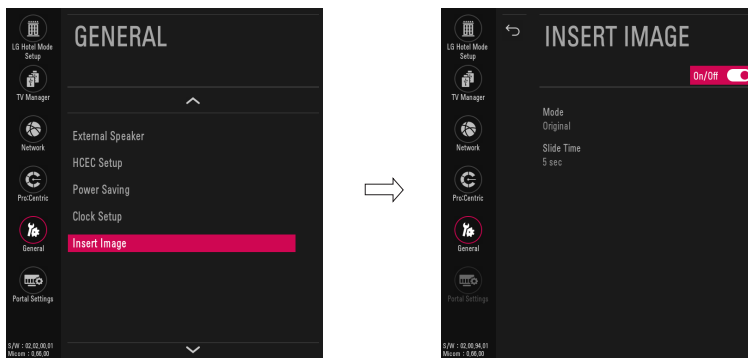
! NOTE

- Options of Clock Display, Dimming Standby and Dimming PowerOn are only available for the models that support the external LED clock.
- For clock setup, select **On** for Clock Display only if the LED clock is connected to your TV. If you do not use the LED clock, select **Off** for Clock Display. If you connect an external device, other than the LED clock, to the port for the LED clock connection on the TV, it may cause damage to the TV.
- If the current setting for clock source is **Pro:Centric**, **City** and **Offset** deactivates.

Insert Image

* Image shown may differ from your TV.

This feature allows you to display an image you have stored on the TV instead of the LG Cube when there is no signal due to DTV signal attenuation, external device failure, or cable removal.



- 1 Go to **General** -> **Insert Image**.
- 2 Select **Insert Image** with the $\wedge \vee$ button and then press the OK button.
- 3 **Insert Image: On or Off** Insert Image.

(1) Mode

- Select **Original**, **Fit**, or **Full** mode as the mode for Insert Image .
 - **Original**: displays the original size of the image stored on your USB storage.
 - **Fit**: displays the image at a size that fits the aspect ratio of the TV.
 - **Full**: displays the image at a size that fits the full screen of the TV.

(2) Slide Time

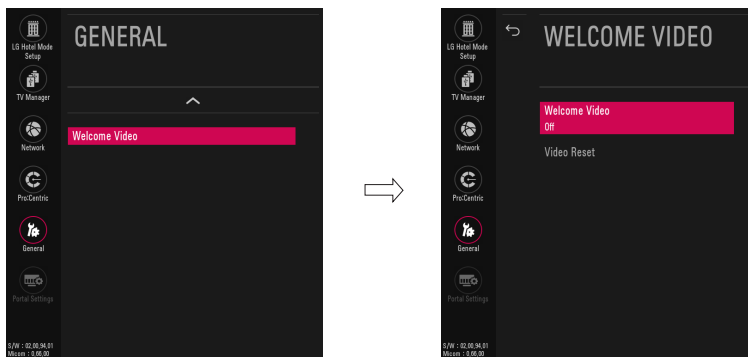
- Select 5, 10, 15, or 20 seconds to display the selected image.

! NOTE

- Only images in a JPG file format can be downloaded and displayed.
- The size of the images to be downloaded should not exceed 10 MB. You can select multiple images to download.
- For best results, the resolution of the images downloaded should be 1920 x 1080 (FHD) or smaller.
- For detailed information about downloading images, go to **TV Manager > Ez Download**.
- Non-standard photo/image file may not be displayed.

Welcome Video

* Depending upon model



- This feature allows you to download videos via USB storage to display on your TV after your TV boots up and the boot logo appears.

1 Go to **General** -> **Welcome Video**.

(1) **Welcome Video**

- You can set to **Off**, **Once** or **Repeat**.

(2) **Video Reset**

- Delete downloaded videos and reset the feature back to default.

! NOTE

1 Operation

- The video displays after your TV is turned on and the boot logo appears.
- If **Welcome Video** is enabled and a video is downloaded on the TV, the video plays.
- The time it takes a video to be displayed may differ depending on the decoding time of the video.
- In case of a corrupted or damaged file, the video may abruptly stop without an error displayed.
- The timer features such as **Timer Power Off** and **Sleep Timer** are not available during playback.
- USB Autoplayback starts after the **Welcome Video**.
- Controls for playing the video are not available. (Pause, stop, fast forward, etc.)

2 Using the keys

- Only eight keys (Vol +, Vol -, Mute, OK, Exit, CH up, CH down and Back) can be used while playing video.
- The OK, Exit, CH up, CH down, or Back key can cancel playing a video.

3 Using RS232C

- Only the following commands work: KE(mute), KF (volume), and MC(data – volume, mute, ch).

4 Downloading

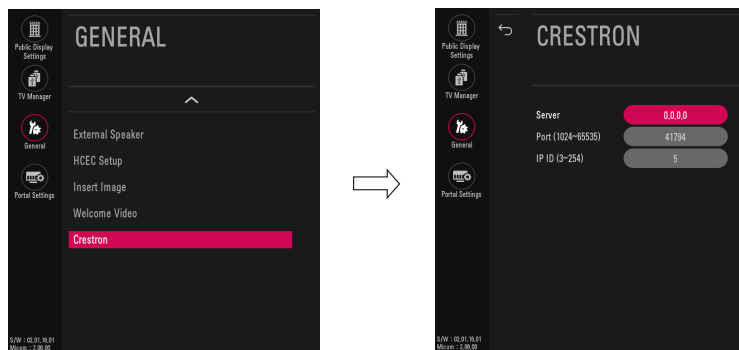
- Videos in any file format that the TV supports can be downloaded and displayed.
- Videos up to 50MB can be downloaded.
- For detailed information about downloading videos, go to **TV Manager > Ez Download**.
- Please do not use the ampersand character(&) and the left angle bracket (<) in the filename to use DZM file on **EZ Download**.

Crestron

* (Depending upon model)

* Image shown may differ from your TV.

* This function enables synchronization with applications provided by **Crestron**.



1 Go to **General** > **Crestron**.

(1) **Server**

- This menu configures the server IP for establishing a network connection with a server. (equipment provided by **Crestron**)

(2) **Port**

- This menu configures the port number for establishing a network connection with a server. The default port number is **41794**.

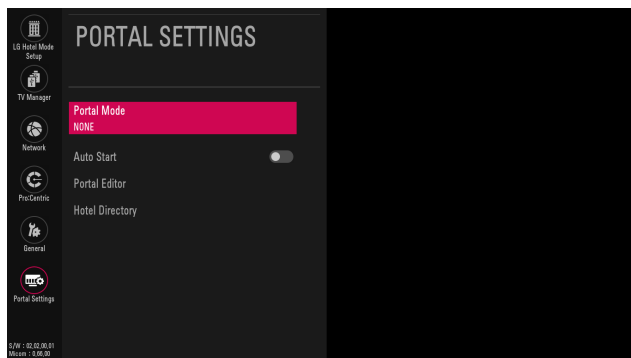
(3) **IP ID**

- This menu configures a unique ID for synchronizing with applications. The default value is **3**.
- IP ID value range : **3~254**

Customizable Portal

This feature provides Hotel Template and Quick Menu.

Portal Settings



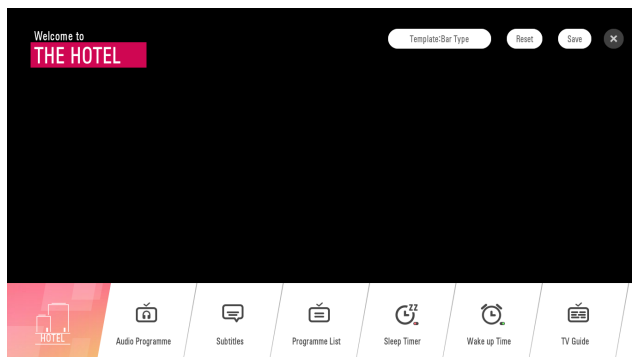
(1) Portal Mode

- You can set this mode to **None/Customizable**.
 - **None:** Disable Customizable Portal.
 - **Customizable:** Enter the HOME or PORTAL key to enter Customizable Portal.

(2) Auto Start

- You can set this mode to **On/Off**.
 - When set to **On**, Customizable Portal automatically starts when the TV is On.

(3) Portal Editor

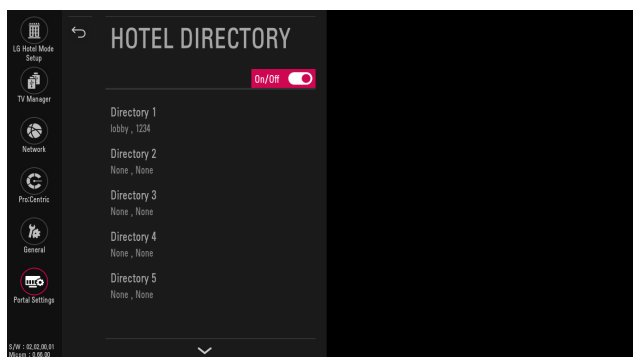


- **Template:** You can set Template when selecting focus. Select between Bar Type or Tile Type (City, Beach, and Forest).
- **Reset:** Revert edits back to the original state.
- **Save:** Save the latest changes.
- **X:** Exit the edit screen. At the time of exit, if changes have been made, a message pops up to ask whether to save such changes.
 - Yes Save and exit
 - No Reset and exit
- **Welcome Message, Hotel Name:** Select the focus to set messages.
- **HOTEL icon:** Select the focus to change the hotel icon.
 - Select images for **Off/Default/Download**. (Template: for the Bar Type, this feature cannot be set to Off.)
 - You can download and save up to 3 images.
 - **Download:** Copy and paste the image you want to download in the "LG_HOTEL" folder in the USB device and connect the USB device to a TV.
 - Select **Download** to go to **TV Manager > Ez Download**. (The download method is the same as the existing Ez Download.)
 - After downloading a file of the image, enter Portal Editor and select the HOTEL icon to select the downloaded file.



- **Change Item:** Move the focus to the item you want to change and enter the OK key. Select a new item from the list.

(4) Hotel Directory

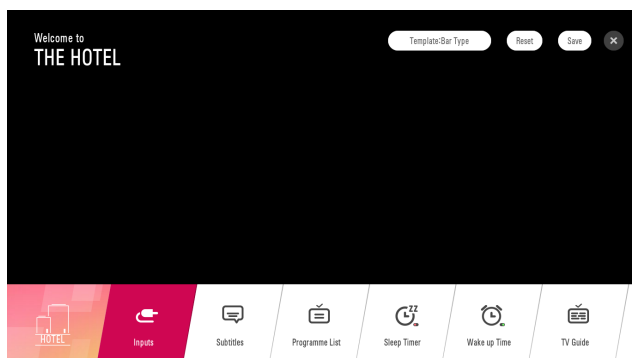


- You can set the information to be displayed in **Customizable Portal > Hotel Directory**.
- You can set this mode to **On/Off**.
 - When set to **Off**, this feature cannot be selected as an item in Customizable Portal.
 - If you are already using Hotel Directory in Customizable Portal, this feature cannot be set to Off. (The mode is still set to On.)
- You can set up to 7 directories.

! NOTE

- English is the only keyboard language for Welcome Message, Hotel Name, and Hotel Directory.

Customizable Portal



- 1 How to enter: Enter the HOME or PORTAL key.

(1) Items

- **Wake up Time:** You can set the On Timer feature. This setting is linked to **General > Timers > Timer Power On**, and you can set **On /Off, Time**, and **Volume** of Timer Power On.
 - While On Timer is operating, the **Input** and **Programme** settings are set in accordance with **General > Timers > Timer Power On**.
 - **Repeat:** Operate as **Once**.
- **Audio Programme:** Provide a page where you can only set Audio Only Programme.
- **Subtitles:** Move to the Subtitles menu. (Move to the Settings page.)
- **Programme list (Programme list):** If the current input is TV, move to the Programme list. (The UI is the same as the existing LIST hotkey.)
- **Hotel Directory:** Show the set items in **Installation > Portal Settings > Hotel Directory**.
- **Inputs:** Move to the Input settings screen. (The UI is the same as the existing INPUT hotkey).
- **My Media:** When a USB device is connected, move to My Media. (The UI is the same as the existing My Media.)
- **Sleep Timer:** You can set the sleep timer. (This setting is linked to **General > Timers > Sleep Timer**.)
- **TV Guide:** Move to TV Guide. (The UI is the same as the existing GUIDE hotkey.)

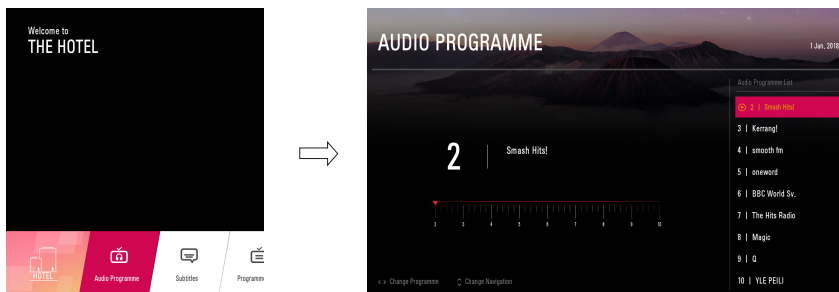
! NOTE

- Entry of items in Customizable Portal is in accordance with the settings in **Hotel Mode Setup > limited Mode**.
- When **Installation > Time Scheduler** is set, Wake up Time cannot be entered.
- In models that support Pro:Centric, Interactive, Portal Settings is disabled when the Pro:Centric Mode and Interactive Mode are set. (Portal Mode: None, Auto Start: Switched to Off)
- Since the keyboard in Portal Settings only supports English, sub-items of Welcome Message, Hotel Name and Hotel Directory in Customizable Portal are displayed in English even if you change the language.

Audio Programme

This feature provides list of “Audio Only” programmes

* Only available in models with Customizable Portal





























1 Go to Customizable Portal -> Audio Programme.





















(1) Items

- Move to the first Programme on the list when you enter **Audio Programme**. (When the current input is Audio Programme, the current programme is maintained.)
- Press the < > button to switch programmes.
- Press the ^ v button to move the focus of the list.
- Screen Saver is turned on after 3 minutes of inactivity. Enter any key to go back to the Audio Programme screen.

KEY CODES

* This feature is not available for all models.

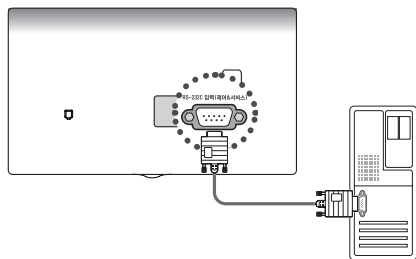
Code (Hexa)	Function	Note
08	 (POWER)	Remote control Button (Power On/Off)
F0	TV/RAD  / 	Remote control Button
39	SUBTITLE	Remote control Button
91	AD	Remote control Button
79	 RATIO / RATIO	Remote control Button
0B	 (INPUT) /  INPUT	Remote control Button
10-19	Number Key 0-9	Remote control Button
53	LIST	Remote control Button
1A	Q.VIEW	Remote control Button
02	 +	Remote control Button
03	 -	Remote control Button
1E	FAV	Remote control Button
AB	GUIDE	Remote control Button
09	 (MUTE) / MUTE 	Remote control Button
00	P  / PAGE  / PAGE 	Remote control Button
01	P  / PAGE  / PAGE 	Remote control Button
20	 TEXT	Remote control Button
21	T.OPT (T.Option)	Remote control Button
43	 (SETTINGS) / SETTINGS	Remote control Button
45	Q.MENU	Remote control Button
AA	 INFO / INFO 	Remote control Button
5B	EXIT / EXIT 	Remote control Button
28	BACK /  (BACK)	Remote control Button
44	 OK / OK 	Remote control Button
40	 / 	Remote control Button

Code (Hexa)	Function	Note
41	 / 	Remote control Button
07	 / 	Remote control Button
06	 / 	Remote control Button
72		Remote control Button
71		Remote control Button
63		Remote control Button
61		Remote control Button
B1		Remote control Button
B0		Remote control Button
BA		Remote control Button
8E		Remote control Button
8F		Remote control Button
7C	 (HOME)	Remote control Button
BD	 REC/*	Remote control Button
95	 ENERGY SAVING	Remote control Button
30	 AV MODE	Remote control Button
0C	PORTAL	Remote control Button
7E	 SIMPLINK	Remote control Button
E8	ALARM/*	Remote control Button

EXTERNAL CONTROL DEVICE SETUP

- * Image shown may differ from your TV.
- * Cable is not provided.
- * The connection interface may differ from your TV.

RS-232C Setup



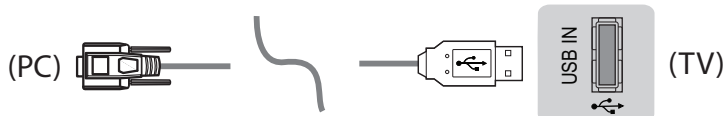
- Connect the USB to Serial converter/RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.
- Connect the serial port of the control device to the RS-232C jack on the product back panel.

! NOTE

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

USB to Serial converter with USB Cable

USB Type



- LG TV supports PL2303 chip-based (Vendor ID : 0 x 0557, Product ID : 0 x 2008) USB to serial converter which is not made nor provided by LG.
- It can be purchased from computer stores that carry accessories for IT support professionals.

RS-232C with RS-232C Cable

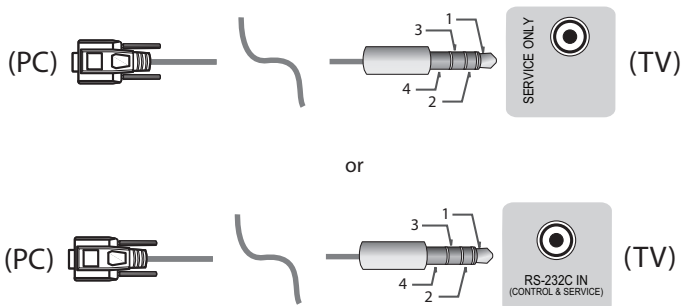
DE9 (D-Sub 9pin) Type



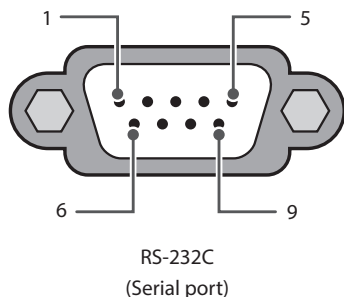
- You need to purchase the RS-232C (DE9, D-Sub 9 pin female-to-female type) to RS-232C cable required for the connection between the PC and the TV, which is specified in the manual.
- The connection interface may differ from your TV.

Phone jack Type

- You need to purchase the phone-jack to RS-232C cable required for the connection between the PC and the TV, which is specified in the manual.
- For other models, connect to the USB port.
- The connection interface may differ from your TV.

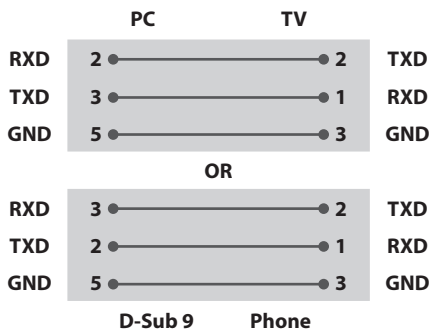


Connector type : D-Sub 9-pin male



RS-232C configurations

3-Wire Configurations(Not standard)



Set ID

For Set ID number, see "Real data mapping (Hexadecimal : Decimal)".

- 1 Press **⚙ (Q.Settings)** / **ⓘ (All Settings)** to access the main menus.
- 2 Press the Navigation buttons to scroll to (* **General** → **Set ID Setup**) and press **OK** button.
- 3 Press the Navigation buttons to scroll to and press **OK** button.
- 4 Scroll left or right to select a set ID number and select **BACK**. The adjustment range is 1-99.
- 5 When you are finished, press **EXIT**.

Communication Parameters

- Baud rate : 9600 bps (UART)
- Data length : 8 bits
- Parity : None
- Stop bit : 1 bit
- Communication code : ASCII code
- Use a crossed (reverse) cable.

IR OUT Using Guide

Suitable / Not Recommend remote-controller data format

Item	Formats
Suitable data format	NEC, RC5, Toshiba
Not recommend data format	Continuous data format (short burst/gap signal)

IR Receiver specifications

Carrier frequency	37.9 KHz
Peak Wavelength	940 nm
Minimum burst length	Min. 300 us
Minimum gap time is required of	Min. 350 us
Data word length	Max. 100 ms
Minimum gap time in the data stream is needed of	Min. 50 ms

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
High Level Out Pulse Width	Twh	Burst Wave = 600 μ s	400	-	800	μ s
Low Level Out Pulse Width	Twl	Period = 1.2 ms	400	-	800	μ s



- If not use the remote-controller with data formats recommended, IR output signals will be suppressed automatically by IR receiver.
- In this case, LG does not guarantee IR working function.
- To make sure of this matter, here are two methods as below.
 - Use the remote-controller with suitable data formats.
 - Use the IR dongle receiver of the set-top box.

Command reference list

* Depending on model

	COMMAND1	COMMAND2	DATA (Hexadecimal)
1 Power	k	a	00 to 01
2 Aspect Ratio	k	c	(page 47)
3 Screen Mute	k	d	(page 47)
4 Volume Mute	k	e	00 to 01
5 Volume Control	k	f	00 to 64
6 Contrast	k	g	00 to 64
7 Brightness	k	h	00 to 64
8 Color	k	i	00 to 64
9 Tint	k	j	00 to 64
10 Sharpness	k	k	00 to 32
11 OSD Select	k	l	00 to 01
12 Remote Control Lock Mode	k	m	00 to 01
13 Treble	k	r	00 to 64
14 Bass	k	s	00 to 64
15 Balance	k	t	00 to 64
16 Color Temperature	x	u	00 to 64
17 Equalizer	j	v	(page 49)
18 Energy Saving	j	q	00 to 05
19 Tune Command	m	a	(page 49)
20 Programme Skip/Add	m	b	00 to 01
21 Key	m	c	Key Codes
22 Control Backlight	m	g	00 to 64
23 Input select	x	b	(page 52)
24 Auto Configure	j	u	(page 52)

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

TRANSMISSION / RECEIVING PROTOCOL

* (Depending on Model)

Transmission

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

[Command 1] : First command to control the TV. (j, k, m or x)

[Command 2] : Second command to control the TV.

[Set ID] : You can adjust the set ID to choose desired monitor ID number in option menu.

Adjustment range 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 (0 x 0 to 0 x 63) on transmission/receiving protocol.

[Data] : To transmit command data (hexadecimal). Transmit 'FF' data to read status of command.

[Cr] : Carriage Return - ASCII code '0 x 0D'

[] : Space - ASCII code '0 x 20'

OK Acknowledgement

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

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

Error Acknowledgement

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

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

Data 00: Illegal Code

Real data mapping (Hexadecimal : Decimal)

* When you enter the [Data] in hexadecimal, refer to following conversion table.

* Programme Tune (ma) Command uses two-byte hexadecimal value([Data]) to select Programme number.

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

1 Power (Command: k a)

- To control power on or off of the set.

Transmission

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

Data 00 : Off

Data 01 : On

Ack

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

- To show TV is power on or *Off

Transmission

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

Ack

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

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

* OK Ack., Error Ack. and other message may display on the screen when TV is power on.

2 Aspect Ratio (Command: k c) (Main Picture Size)

- To adjust the screen format. (Main picture format) You can also adjust the screen format using the picture settings.

Transmission

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

Data 01 : 4:3 (Just Scan: Off)

Data 02 : 16:9 (Just Scan: Off)

Data 06 : Original (Just Scan: Off)

Data 09 : Just Scan (Ratio is fixed to 16:9)

Ack

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

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

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

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

3 Screen Mute (Command: k d)

- To select screen mute on/off.

Transmission

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

Data 00 : Screen mute off (Picture on) / Video mute off

Data 01 : Screen mute on (Picture off)

Data 10 : Video mute on

Ack

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

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

4 Volume Mute (Command: k e)

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

Transmission

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

Data 00 : Volume mute on (Volume off)

Data 01 : Volume mute off (Volume on)

Ack

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

5 Volume Control (Command: k f)

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

Transmission

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

Data Min : 00 to Max : 64

Ack

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

6 Contrast (Command: k g)

- To adjust screen contrast. You can also adjust contrast in the picture settings.

Transmission

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

Ack

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

7 Brightness (Command: k h)

- To adjust screen brightness. You can also adjust brightness in the picture settings.

Transmission

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

Data Min : 00 to Max : 64

Ack

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

8 Color (Command: k i)

- To adjust the screen color. You can also adjust colour in the picture settings.

Transmission

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

Data Min : 00 to Max : 64

Ack

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

9 Tint (Command: k j)

- To adjust the screen tint. You can also adjust colour in the picture settings.

Transmission

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

Data Red : 00 to Green : 64

Ack

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

10 Sharpness (Command: k k)

- To adjust the screen sharpness. You can also adjust sharpness in the picture settings.

Transmission

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

Data Min : 00 to Max : 32

Ack

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

11 OSD Select (Command: k l)

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

Transmission

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

Data 00 : Off

Data 01 : On

Ack

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

12 Remote Control Lock Mode (Command: k m)

- To lock the front panel controls on the monitor and remote control.

Transmission

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

Data 00 : Off

Data 01 : On

Ack

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

* If you are not using the remote control, use this mode. When main power is off & on (plug-off and plug-in, after 20 - 30 seconds), external control lock is released.

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

13 Treble (Command: k r)

(Depending on model)

- To adjust treble. You can also adjust Treble in the audio settings.

Transmission

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

Data Min : 00 to Max : 64

Ack

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

14 Bass (Command: k s)

(Depending on model)

- To adjust bass. You can also adjust Bass in the audio settings.

Transmission

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

Data Min : 00 to Max : 64

Ack

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

15 Balance (Command: k t)

- To adjust balance. You can also adjust balance in the audio settings.

Transmission

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

Data Min : 00 to Max : 64

Ack

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

16 Color Temperature (Command: x u)

- To adjust colour temperature. You can also adjust color temperature in the picture settings.

Transmission

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

Data Min : 00 to Max : 64

Ack

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

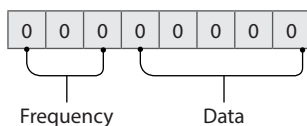
17 Equalizer (Command : j v)

- Adjust EQ of the set.

Transmission

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

MSB LSB



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

Ack

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

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

18 Energy Saving (Command: j q)

(Depending on model)

- To reduce the power consumption of the TV. You can also adjust energy saving in picture settings.

Transmission

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

Data 00 : Off

Data 01 : Minimum

Data 02 : Medium

Data 03 : Maximum

Data 04 : Auto

Data 05 : Screen off

Ack

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

19 Tune Command (Command: m a)

- * This command may work differently depending on model and signal.
- * For Europe, Mid-East, Colombia, Asia except South Korea and Japan Model

- Select Programme to following physical number.

Transmission

[m][a][][Set ID][][Data 00][][Data 01]

[][Data 02][Cr]

- Analog Antenna/Cable

[Data 00][Data 01] Programme Data

Data 00 : High byte Programme data

Data 01 : Low byte Programme data

- 00 00 ~ 00 C7 (Decimal : 0 ~ 199)

Data 02 : Input Source (Analog)

- 00 : Antenna TV (ATV)

- 80 : Cable TV (CATV)

- Digital Antenna/Cable/Satellite

[Data 00][Data 01]: Programme Data

Data 00 : High byte Programme data

Data 01 : Low byte Programme data

- 00 00 ~ 27 0F (Decimal: 0 ~ 9999)

Data 02 : Input Source (Digital)

- 10 : Antenna TV (DTV)

- 20 : Antenna Radio (Radio)

- 40 : Satellite TV (SDTV)

- 50 : Satellite Radio (S-Radio)

- 90 : Cable TV (CADTV)

- a0 : Cable Radio (CA-Radio)

- Tune Command Examples:

- 1 Tune to the Analog antenna (PAL) Programme 10.
Set ID = All = 00
Data 00 & 01 = Programme Data is 10 = 00 0a
Data 02 = Analog Antenna TV = 00
Result = ma 00 00 0a 00
- 2 Tune to the digital antenna (DVB-T) Programme 01.
Set ID = All = 00
Data 00 & 01 = Programme Data is 1 = 00 01
Data 02 = Digital Antenna TV = 10
Result = ma 00 00 01 10
- 3 Tune to the satellite (DVB-S) Programme 1000.
Set ID = All = 00
Data 00 & 01 = Programme Data is 1000 = 03 E8
Data 02 = Digital Satellite TV = 40
Result = ma 00 03 E8 40

Ack

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

[Data 02][x][a][][Set ID][][NG][Data 00][x]

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

- To tune Programme to following physical/ major/minor number.

Transmission

[m][a][][0][][Data 00][][Data 01][]

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

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

- Analog Antenna/Cable

Data 00 : Physical Programme Number

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

[Data 01 ~ 04]: Major/Minor Programme Number

Data 01 & 02: xx (Don't care)

Data 03 & 04: xx (Don't care)

Data 05: Input Source (Analog)

- 00 : Antenna TV (ATV)
- 01 : Cable TV (CATV)

- Digital Antenna/Cable

Data 00 : xx (Don't care)

[Data 01][Data 02]: Major Programme Number

Data 01 : High byte Programme Data

Data 02 : Low byte Programme Data

- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor Programme Number

Data 03 : High byte Programme Data

Data 04 : Low byte Programme Data

Data 05 : Input Source (Digital)

- 02 : Antenna TV (DTV) – Use Physical Programme Number
- 06 : Cable TV (CADTV) – Use Physical Programme Number
- 22 : Antenna TV (DTV) – Don't Use Physical Programme Number
- 26 : Cable TV (CADTV) – Don't Use Physical Programme Number
- 46 : Cable TV (CADTV) – Use Major Programme Number Only (One Part Programme)

- * Two bytes are available for each major and minor Programme data, but usually the low byte is used alone (high byte is 0).

- Tune Command Examples:

- 1 Tune to the Analog cable (NTSC) Programme 35.

Set ID = All = 00
 Data 00 = Programme Data is 35 = 23
 Data 01 & 02 = No Major = 00 00
 Data 03 & 04 = No Minor = 00 00
 Data 05 = Analog Cable TV = 01
 Total = ma 00 23 00 00 00 01

- 2 Tune to the digital antenna (ATSC) Programme 30-3.

Set ID = All = 00
 Data 00 = Don't know Physical = 00
 Data 01 & 02 = Major is 30 = 00 1E
 Data 03 & 04 = Minor is 3 = 00 03
 Data 05 = Digital Antenna TV = 22
 Total = ma 00 00 00 1E 00 03 22

Ack

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

* For Japan Model

- To tune Programme to following physical/major/minor number.

Transmission

```
[m][a][ ][0][ ][Data 00][ ][Data 01][ ][Data 02]
[ ][Data 03][ ][Data 04][ ][Data 05][Cr]
```

- Digital Antenna/Satellite

Data 00 : xx (Don't care)
 [Data 01][Data 02] : Major Programme Number
 Data 01 : High byte Programme Data
 Data 02 : Low byte Programme Data
 - 00 01 ~ 27 0F (Decimal: 1 ~ 9999)
 [Data 03][Data 04] : Minor/Branch Programme Number (Don't care in Satellite)
 Data 03 : High byte Programme Data
 Data 04 : Low byte Programme Data
 Data 05 : Input Source (Digital/Satellite for Japan)
 - 02 : Antenna TV (DTV)
 - 07 : BS (Broadcasting Satellite)
 - 08 : CS1 (Communication Satellite 1)
 - 09 : CS2 (Communication Satellite 2)

- Tune Command Examples:

- 1 Tune to the digital antenna (ISDB-T) Programme 17-1.

Set ID = All = 00
 Data 00 = Don't know Physical = 00
 Data 01 & 02 = Major is 17 = 00 11
 Data 03 & 04 = Minor/Branch is 1 = 00 01
 Data 05 = Digital Antenna TV = 02
 Total = ma 00 00 00 11 00 01 02

- 2 Tune to the BS (ISDB-BS) Programme 30.

Set ID = All = 00
 Data 00 = Don't know Physical = 00
 Data 01 & 02 = Major is 30 = 00 1E
 Data 03 & 04 = Don't Care = 00 00
 Data 05 = Digital BS TV = 07
 Total = ma 00 00 00 1E 00 00 07

* This feature is varied based on the model.

Ack

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

20 Programme Skip/Add (Command: m b)

- To skip current Programme for next time.

Transmission

```
[m][b][ ][Set ID][ ][Data][Cr]
Data 00 : Del(ATSC,ISDB)/Skip(DVB)
Data 01 : Add
```

Ack

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

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

21 Key (Command: m c)

- To send IR remote key code.

Transmission

```
[m][c][ ][Set ID][ ][Data][Cr]
Data : Key code - page 41
```

Ack

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

22 Control Backlight (Command: m g)

- To control the backlight.

Transmission

[m][g][][Set ID][][Data][Cr]

Data Min : 00 to Max : 64

Ack

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

23 Input select (Command: x b) (Main Picture Input)

- To select input source for main picture.

Transmission

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

Data 00 : DTV

Data 01 : CADTV

Data 02 : Satellite DTV ISDB-BS (Japan)

Data 03 : ISDB-CS1 (Japan)

Data 04 : ISDB-CS2 (Japan)

Data 10 : ATV

Data 11 : CATV

Data 20 : AV or AV1

Data 21 : AV2

Data 40 : Component1

Data 41 : Component2

Data 60 : RGB

Data 90 : HDMI1

Data 91 : HDMI2

Data 92 : HDMI3

Data 93 : HDMI4

Ack

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

* This function depends on model and signal.

24 Auto Configure (Command: j u)

(Depending on model)

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

Transmission

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

Data 01 : To set

Ack

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

