

INSTALLATION MANUAL

LED TV*

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

UU66*

UU76*

www.lg.com

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Location and Function of Controls

Parts and Button



Basic functions

	Power On (Press)
	Power Off ¹ (Press and Hold)
	Menu Control (Press ²)
	Menu Selection (Press and Hold ³)

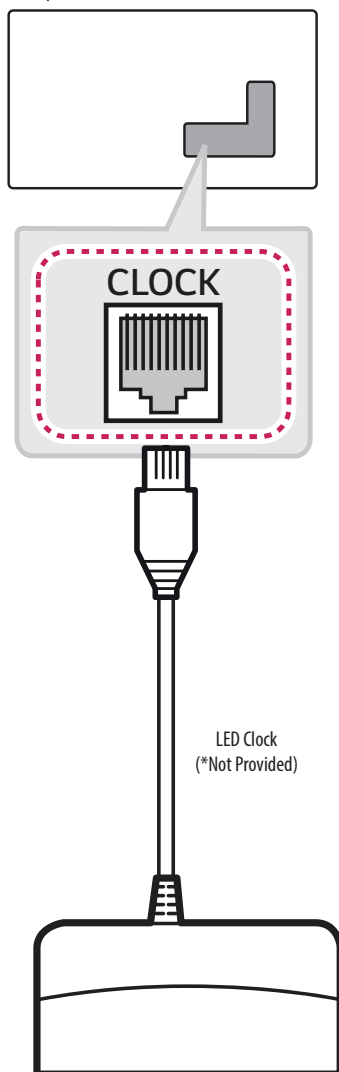
- 1 All running apps will close.
- 2 You can access and adjust the menu by pressing the button when TV is on.
- 3 You can use the function when you access menu control.

LED Clock Connection

(Depending on model)

This TV can be connected to a LED Clock via the **CLOCK** port.

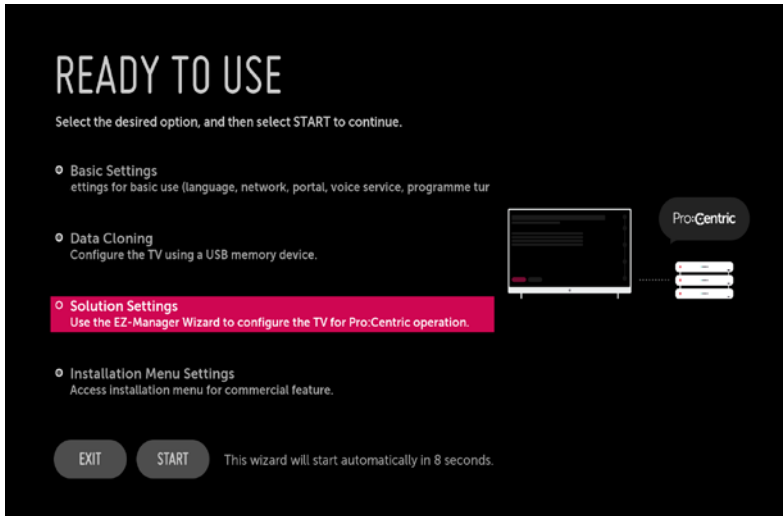
ENGLISH



First Use Wizard

* Image shown may differ from your TV.

- There are four options - **Basic Settings**, **Data Cloning**, **Solution Settings**, and **Installation Menu Settings**. Each menu can access by **START** button.



Basic Settings

This menu is for basic settings related to language, network, portal and channel tuning without SI (Pro:Centric) setting. There are three steps for it.

Language & Location

- Select the **Language** and **Country**. Some countries need to select the Time Zone.

LANGUAGE & LOCATION

Confirm your language and location settings.

Language ▾
English

Country ▾
United Kingdom

BACK NEXT This wizard will continue automatically in 9 seconds.

Network Settings

- Set Network connection. You can connect easily to wired/wireless network. ("Network Setting" on page 22)

NETWORK SETTINGS

Configure network settings.

Network Connection Type ▾
Wired (Ethernet)

Advanced Options

☒ Automatically Assign IP Address

IP Address
192.168.0.211

Subnet Mask
255.255.255.0

BACK NEXT This wizard will start automatically in 9 seconds.

Portal Settings

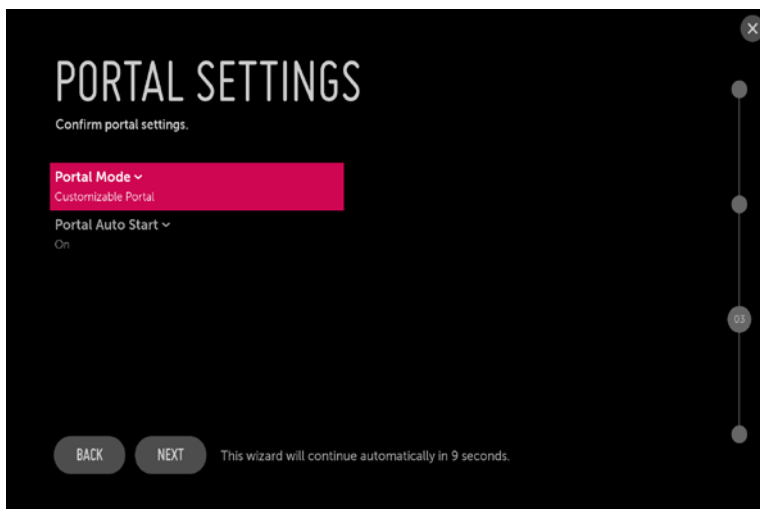
- Set the Portal Mode and Portal Auto Start.

Portal Mode

- You can select 'Default Portal' (Use webOS default portal), 'Customizable Portal' (Use editable Portal), or 'None' (Do not use portal).

Portal Auto Start

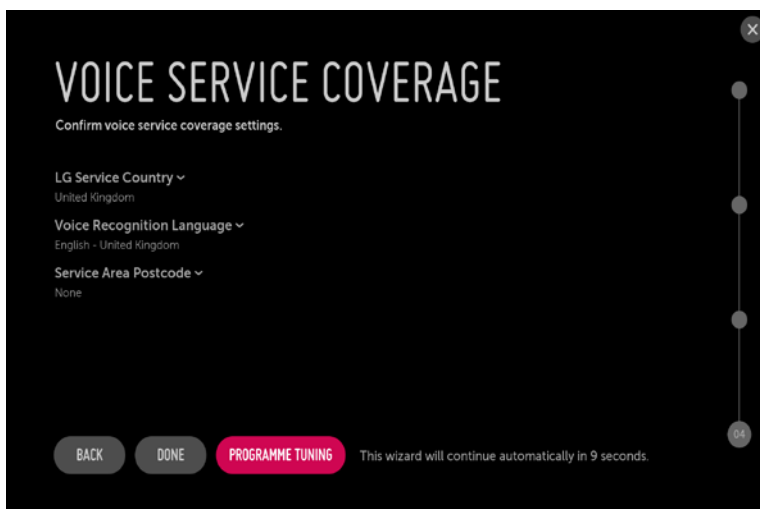
- You can select 'On' or 'Off'. If you select 'On', Portal (Home Launcher) will be execute automatically after TV on.



Voice Service Coverage

(Depending on model)

- Set the voice service coverage. You can set **LG Service Country**, **Voice Recognition Language**, and **Service Area Postcode** for voice service.



Data Cloning

Access Data cloning menu of TV Manger application for applying cloning file.

Solution Settings

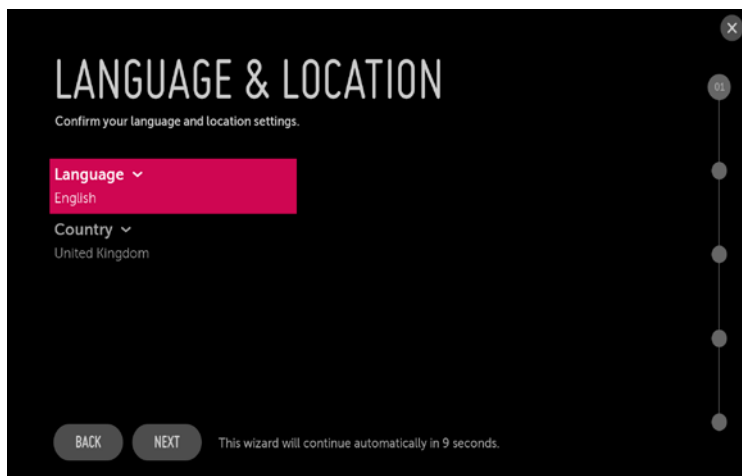
The Pro:Centric Platform enables you to simply install, manage and use guest-centric solutions. The default Domain “procentric.local” and IP Server Address are needed to be registered in DNS TV will contact the IP Server using the default Domain “procentric.local” via IP on server search page. If TV doesn’t contact the Server, TV will search the pre-defined channel earlier than all channels. (Only DVB-C)

The frequencies of pre-defined channels are below.

- Germany: ‘51000, 858000, 778000, 698000, 618000, 538000, 458000, 378000, 298000, 218000, 138000 khz’.
- Philippines 6 Mhz: ‘57000, 651000, 591000, 531000, 471000, 411000, 351000, 291000, 231000, 171000, 111000 khz’.
- Other Country: ‘50000, 842000, 762000, 682000, 602000, 522000, 442000, 362000, 282000, 202000, 122000 khz’.

Language & Country selection

(Depending on model)

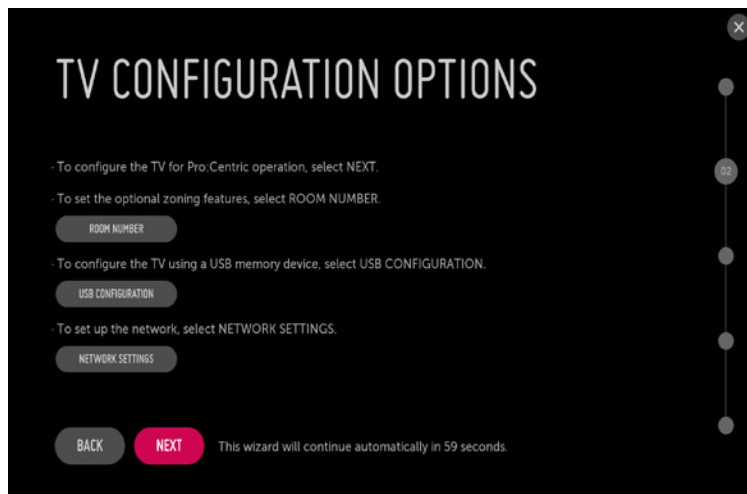


- Please select the **Language** and **Country**. Some countries need to select the **Time Zone**.

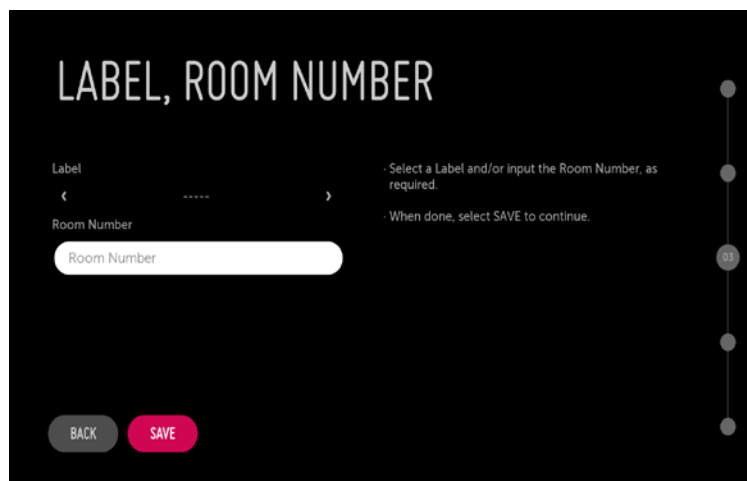
Automatically for Setup

(Depending on model)

- 1 From the TV Configuration Options screen, you can choose how to proceed with the configuration of this TV. Whether you will configure the TV for Pro:Centric operation via the wizard or use a USB memory device to configure the TV, you may first wish to set the Room Number on the TV. Also, you can configure the network environment.



- If you intend to set Room Number as part of the TV configuration, use the Room Number option to assign the Room # for this TV before you continue with additional configuration.
- In the Label field, use the Left/Right arrow keys to specify a North, South, East, or West designation for this TV.
- In the Room Number field, you can use the number keys on the Installer Remote to direct enter a room number or use the virtual keyboard on the TV screen.



- If you intend to apply the files via USB, use USB Configuration option to access TV Manager app. ("TV Manager" on page 37)
- To continue, move and select **NEXT**.

- If you intend to set network, use the Network Settings option. You can connect easily to wired/wireless network by this option. ("Network Setting" on page 22)

NETWORK SETTINGS

Configure network settings.

Network Connection Type ▾
Wired (Ethernet)

Advanced Options

☒ Automatically Assign IP Address

IP Address
192.168.0.211

Subnet Mask
255.255.255.0 ▾

BACK

NETWORK SETTINGS

Configure network settings.

Network Connection Type ▾
Wireless (Wi-Fi)

Wireless (Wi-Fi) Network ▾
E3iptime

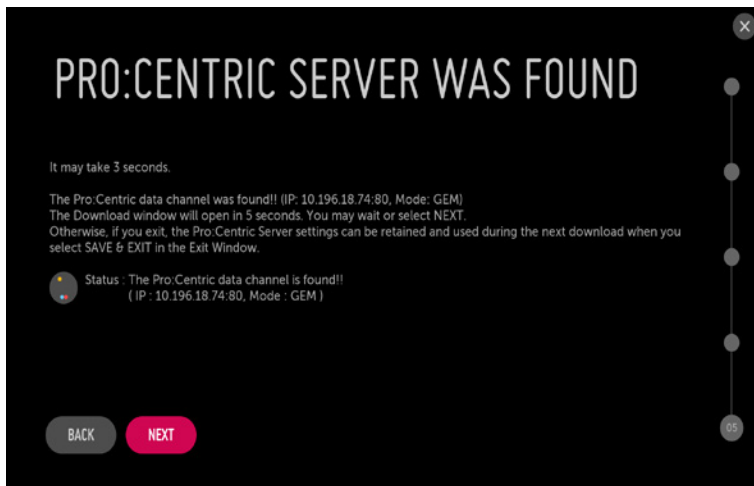
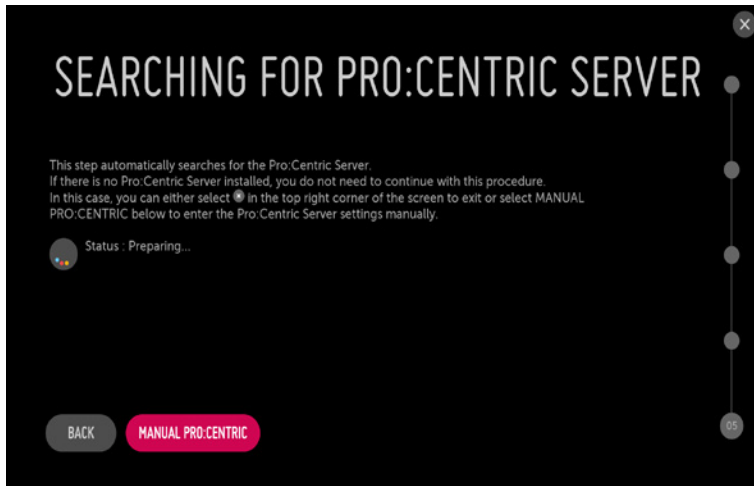
Advanced Options

☒ Automatically Assign IP Address

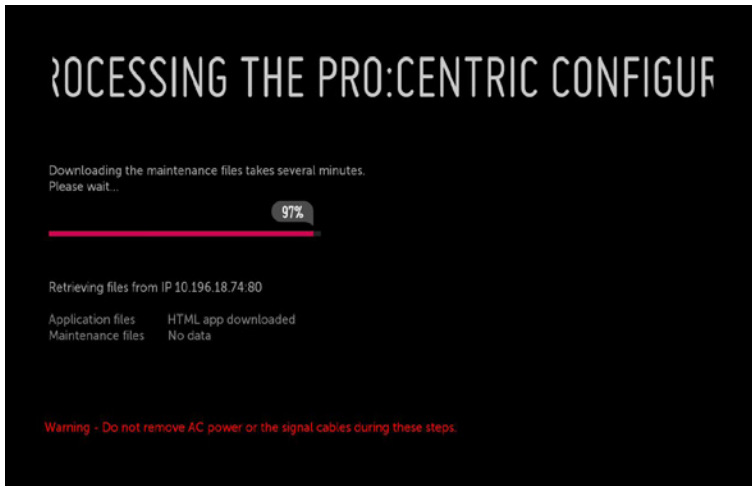
IP Address ▾

BACK

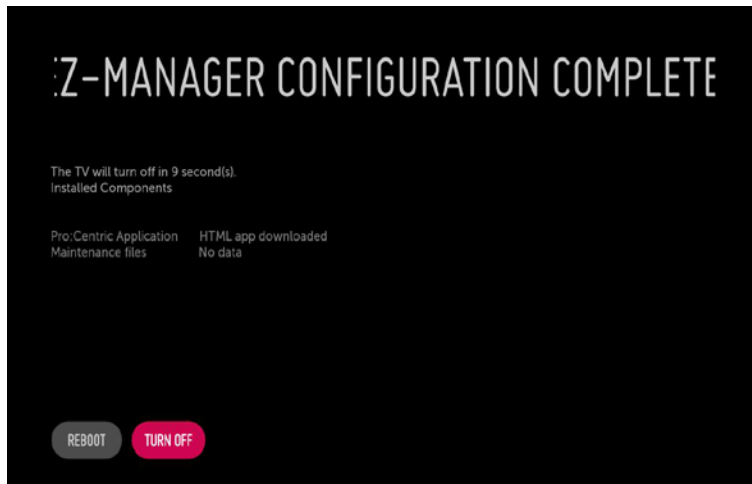
- 2 This step automatically searches for the Pro:Centric Server. If was found the Pro:Centric data channel, select the **NEXT**.



- 3 Downloading the Pro:Centric application files takes few minutes.



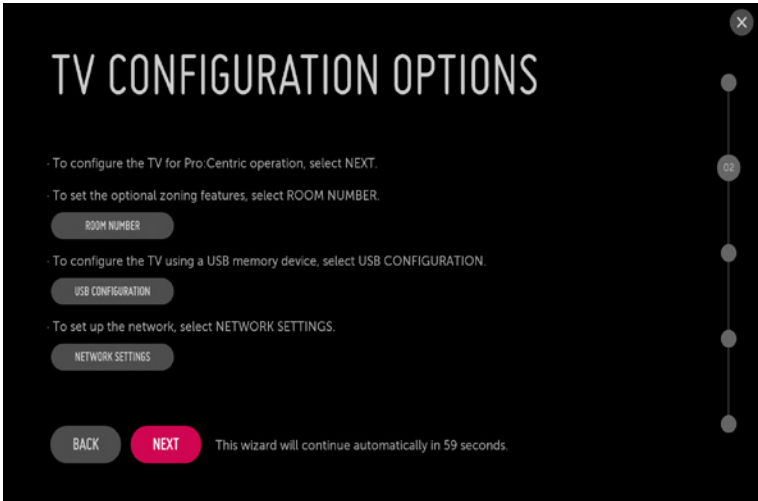
- 4 After the installation is completed, the following screen will be displayed.



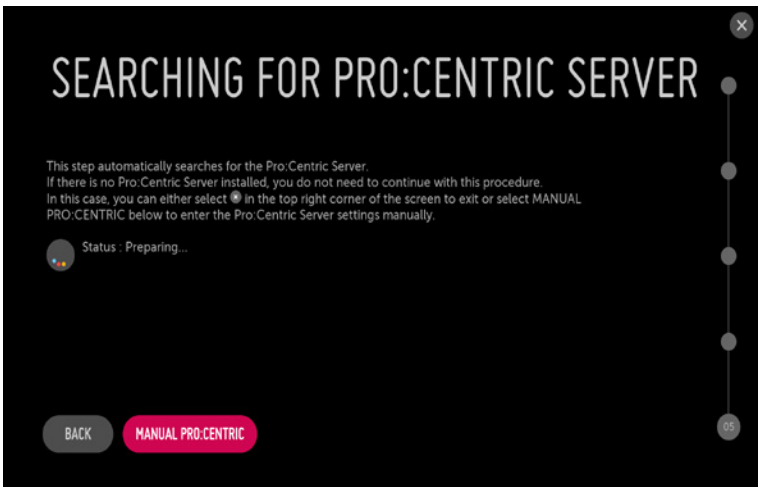
Manually for Setup

(Depending on model)

- 1 Select a Label and/or enter the Room Number using the numeric keypad on the remotes or using the virtual keyboard on the TV screen. To continue, move and select **NEXT**.



- 2 Please select the **MANUAL PRO:CENTRIC**.



- 3 Configure the appropriate Pro:Centric settings in the TV. (Taiwan does not support RF)

×

PRO:CENTRIC MANUAL CONFIGURATION

Pro:Centric Mode

< CONFIGURATION ONLY >

Media Type

< RF >

Frequency(KHz)

< 698000 >

Symbol rate(kS/s)

< 6900 >

Modulation

< 16QAM >

Signal Strength

0%

Signal Quality

0%

Data Channel Not Found

BACK

SEARCH

05

×

PRO:CENTRIC MANUAL CONFIGURATION

Pro:Centric Mode

< CONFIGURATION ONLY >

Media Type

< IP >

Server Address

< Domain Name >

Domain Name

IP Port

80

IP Server Not Found

BACK

SEARCH

05

PRO:CENTRIC MANUAL CONFIGURATION

Pro:Centric Mode < CONFIGURATION ONLY >

Media Type < IP >

Server Address < IP Address >

IP Type < IPv4 >

IP Address 10 196 18 74

IP Port 80

IP Server Not Found

BACK SEARCH

- 4 Downloading the Pro:Centric application files takes few minutes.

PROCESSING THE PRO:CENTRIC CONFIGURATION

Downloading the maintenance files takes several minutes.
Please wait...

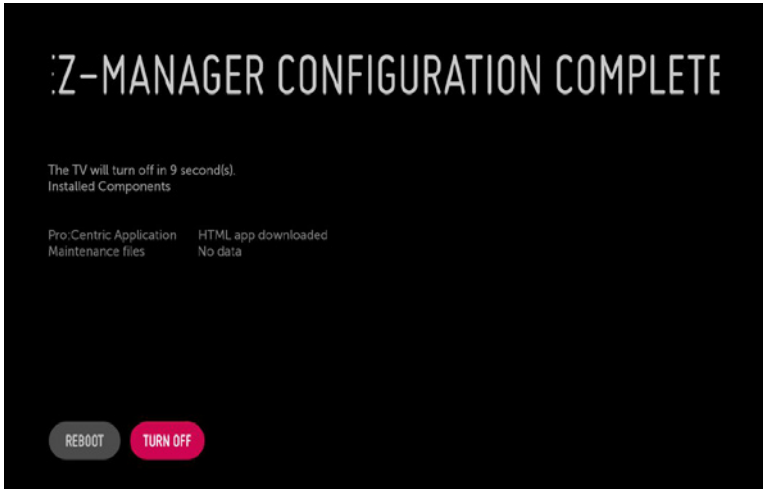
97%

Retrieving files from IP 10.196.18.74:80

Application files	HTML app downloaded
Maintenance files	No data

Warning - Do not remove AC power or the signal cables during these steps.

- 5 After the installation is completed, the following screen will be displayed.



Installation Menu Settings

Access Installation menu for commercial feature settings.

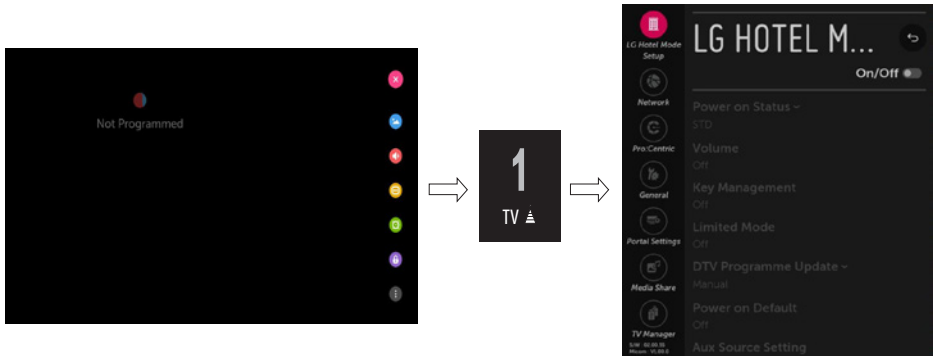
Installation Menu

* Image shown may differ from your TV.

Introduction

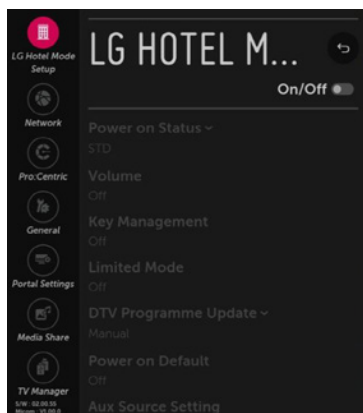
The abundant functions for Hotel TV linked with software installation can be projected on OSD as 'Installation Menu'.

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.



- 1 Press the Setting 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".

LG Hotel Mode



When 'Hotel Mode Operation' is set to On (Work), all functions of Hotel Mode apply.

Hotel Mode Operation

- Decide to work all functions of 'Hotel Mode Operation' or not by setting 'Hotel Mode Operation' as On (Work) or Off (Do Not Work).
- When 'Hotel Mode Operation' is set to On (Work), all functions of Hotel Mode apply.
- When 'Hotel Mode Operation' is set to Off (Do Not Work), all functions of Hotel Mode Do Not apply.
- 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** and **Home/Store Mode** are disabled.
- When 'Hotel Mode Operation' is set to On (Work), all skipped programs are not tuned by number keys.
- When 'Hotel Mode Operation' is set to On (Work), Detailed Information about the programme is not available in the EPG.
- When 'Hotel Mode Operation' is set to On (Work), User Menu ⇒ **Timers** ⇒ **Auto Power Off** is disabled.
- When 'Hotel Mode Operation' is set to On (Work), User Menu ⇒ **Timers** ⇒ **2 Hour Auto Power Off** is disabled.

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.
- If there Block All is both IR Operation and Local Key Operation from Key Management, In order to provide the Option that must be able to turn on the TV in the TV turned off situation, change the value of the PWR. (Reference the Key Management)

Volume

- Decide to apply volume policy of 'Start Volume', 'Maximum Volume' and 'Minimum Volume' as On (Work) or Off (Do Not Work).
- ($0 \leq \text{Min} \leq \text{Start} \leq \text{Max} \leq 100$)

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 'On Timer' must be fixed to start volume when 'Hotel Mode Operation' (On) and 'Start Volume' (Off, 0 ~ 100) were set simultaneously.

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.

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.

Key Management

- 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.

IR Operation

- Decide whether work the LG remote control or not.
 - When 'IR Operation' is set to 'Normal', all remote keys are available.
 - 'Use PWR Only' makes block all remote keys except power key.
 - When 'IR Operation' is set to 'Block All', all normal remote keys don't work.

Local Key Operation

- Decide to operate 'Local/Front Key' working behavior by setting 'Local Key Operation' as 'Normal', 'Use PWR Only' and 'Block All'.
 - When 'Local Key Operation' is set to 'Normal', all local keys are available.
 - 'Use PWR Only' makes block all local keys except power key.
 - When 'Local Key Operation' is set to 'Block All', all local keys don't work.

Limited Mode

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

Setup Menu

- Permit to tune and manage programmes as 'On' (permitted) or 'Off' (not permitted).

Programme Change

- Decide to change channel 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)
 - » Programme Key, Numeral Key, List Key, Q.View Key don't work and entering 'Channel Menu' in the Main Menu OSD is impossible.
 - » 'Programme' item in 'On Time' menu will be fixed.
 - » Entering 'Programmes' in the 'Main Menu' OSD is impossible regardless of 'Programmes' item.
 - When 'Programme Change' is set to On (Change Possible), 'Programme Key', 'Numeric Key', 'List Key', 'Q.View' Key, 'TV/RAD Key' does work and entering 'Channel Menu' in the Main Menu OSD is possible.

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.

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 Menu button for 5 seconds to enter 'Installation Menu' and entering service menu are available. (In-Start, Power-Only, Adjust, Installation Menu...)

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. (Depending on model)
 - » Input select screens
 - » Sleep timer
 - » Aspect Ratio
 - » Subtitles
 - » Programmes (Except for Programme Tuning & Settings and Programme Manager)
 - » 'Safety' / 'Photo & Video' / 'Music' / 'Network' / 'Bluetooth' Menu
 - » Input Manager
 - If the channel map is empty, 'Auto-tuning' guide dialog should be blocked by pressing 'List', 'CH+', 'CH-' keys.

DTV Programme Update

- 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.

Power On Default

- Set the channel to display and Volume Level, etc. when turn on power in AC Power On or Stand-by status.
- Set to On (Work) or Off (Do Not Work).
- When 'Power On Default' is set to Off, it is not applied to the subordinate Input, Programme, A/V Setting, Aspect Ratio menu.
- When Power On Default is set to On, it can set by entering the subordinate menu.

Input

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

Programme

- Select start channel number if Input source's value is TV.

A/V Setting

- If 'A/V Setting' is changed from 'Off' to 'On', A/V parameters that are set before entering 'Installation Menu' are applied whenever turn on power.

Aspect Ratio

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

Aux Source Setting

- Set to On (Work) or Off (Do Not Work).
- The Auxiliary (Input) Source Setting feature will enable or disable for each external input.
- User cannot disable the current input's 'Aux Source Setting'.

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 reset 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 hour to 7 hours).
 - Default value is 'Off (disabled)'.

Radio Video Blank

- Set to On (Work) or Off (Do Not Work).
- Programme that is set to 'Radio Programme' and only has Sound should decide whether to set 'Video Blank' or not.
- When 'Radio Video Blank' is set to On (Work), 'Video Blank' works only in case of Radio Programme.
- Although set to On (Work), if there are Video signal, 'Video Blank' wouldn't work. In consideration of case that display background screen and broadcast only with Radio, 'Video Blank' works only when there is no Video signal.
- When set to Off (Do Not Work), 'Video Blank' do not work although it is the Radio Programme.
- This operates only in the Analog TV Mode.

Factory Reset

- Change all settings to their default values.

Network



MAC Address

- Displays the MAC address (not customizable).

Network Setting

One-click network connection

- Connects easily to a wired/wireless network.
- This menu supports to connect to an available network.

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).
 - 1 Select a network connection, either Wired or Wireless.
 - 2 When connecting via Wired, Configures the IP settings of the TV set. You can set the IP address, subnet mask, gateway and DNS server.
 - 3 When connecting via Wi-Fi, use the one of the following network connection methods.

AP List	Connects to the network selected from the AP List.
Enter the SSID	Connects to the wireless AP typed in.
WPS-PBC	Connects easily when the button of a wireless AP supporting PBC is pressed.
WPS-PIN	Connects easily when the PIN of the wireless AP that you wish to connect to is entered in to the AP website.
Advanced Wi-Fi Settings	After connects Wi-Fi, you can set the IP address, subnet mask, gateway and DNS server.

LG Connect

(Depending on model)

- Sets the LG Connect function to on or off.
 - You can connect TV via LG TV Plus app in smart device.
 - Default setting is on.

IP Stream Control

(Depending on model)

Audio PTS Offset

- Controlling output stream timing of audio.
- You can set the '-500~500'. (Change step is -10 or +10)

Video PTS Offset

- Controlling output stream timing of video.
- You can set the '-500~500'. (Change step is -10 or +10)

IGMP

- You can set IGMP version. (2 or 3)

Wake On LAN

- Sets the Wake On LAN function to Enable or Disable.
 - The Wake On LAN feature enables the TV to receive software updates and/or be powered ON upon receipt of Wake Up Frame packets and/or Magic Packet data via the wired LAN. To facilitate use of this feature, note that the appropriate wired connection must be made. ('Wake up Frame'- Depending on model)

VLAN ID

- This menu provides TV with VLAN settings.
- Recommend that the network manager set this menu.
- If you set different ID between switch and TV, you cannot use network.

LAN ID

- Set VLAN ID for TV network.

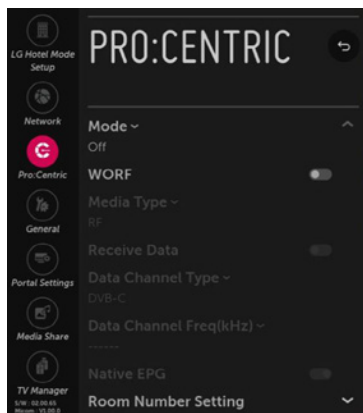
Aux LAN ID

(Depending on model)

- Set AUX LAN ID for devices connected via **AUX LAN** port.

Pro:Centric

(Depending on model)



Mode

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

WORF

- When WORF is set to 'Enable', Hour and Minute items are enabled and then the WORF function is enabled.
- When WORF is set to 'Disable', 'Hour' and 'Minute' items are disabled and then the WORF function is disabled.

Room Number Setting

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

Media Type

(Taiwan does not support RF)

- Sets the medium type to RF or IP.
- The default value is RF.

RF

- **Data Channel Freq (KHz)**
 - Sets the RF frequency at which the Pro:Centric data is received.
- **Data Channel Type**
 - Sets the RF modulation type to DVB-T or DVB-C.
The default value is DVB-C.

- P:C IP Setting
 - Server Address is set to IP Address.
 - Can select IPv4 or IPv6 type using 'IP Type'. (Depending on model)

(IP Address)	Set IPv4 or IPv6 address.
(Port Number)	Sets the actual port or number where the Pro:Centric server is running.

- Server Address is set to Domain Name.

(Domain Name)	Sets the domain name where the Pro:Centric server is running.
(Port Number)	Sets the actual port or number where the Pro:Centric server is running.

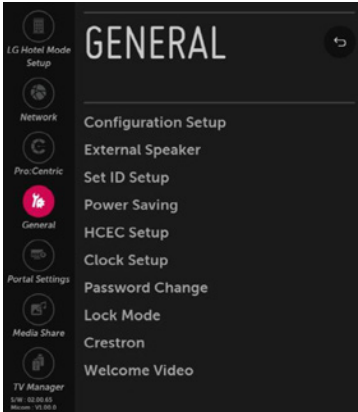
- The default value of IP(IPv4) is 0 and the range is between 0 and 255.
- The default value of IP(IPv6) is 0 and the range is between 0 and FFFF.
- The default value of Port is 0 and the range is between 0 and 65535.

Receive Data

- Sets Enable or Disable. When it is set to Disable, all the sub items are disable.

Native EPG

- When Pro:Centric Mode is set to 'Off' or 'Configuration Only', 'Native EPG' is forced to be 'Enable' and unable to change.
- Disable
- Enable
 - You can use the TV Guide Application in Pro:Centric.



Configuration Setup

Select RCU

- It is a mode to set whether to use Select RCU or not. When 'Select RCU' is set to 'Enable', You can adjust 'Number of RCU' menu.

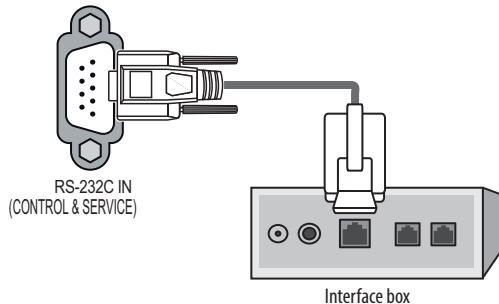
Number of RCU

- It is a mode to set Number of RCU.
- Number of RCU value range 1~9. (When 'Select RCU' is set to 'Enable')
- Number of RCU value range 0. (When 'Select RCU' is set to 'Disable')
 - RCU (Remote Control Unit) : It is special RCU that operates only setted number of RCU in TV.

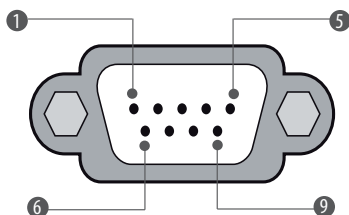
RS232 DC Power Outlet

(Depending on model)

- 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.



» Type of Connector: D-Sub 9-Pin Male



Male connector on box, viewed towards connector.

No.	Signal	Signal requirements
1	VCC	
2	RX RS232	Standard RS232 specification
3	TX RS232	Standard RS232 specification
4	IR from TV	
5	GND	Power ground
6, 8	Not connected	
7	2 A	+5 V DC 10 %, max 100 mV ripple
9	1.5 A	+12 V DC 10 %, max 100 mV ripple

One Channel Map

(Depending on model)

- If 'One Channel Map' is 'Enable', the TV will operate as below.
 - A. When the TV is auto-scanning, it searches both air and cable channels.
 - B. User can assign a channel number him/herself by manual scan.
 - C. In 'Programme Edit' window, all channels are shown in a single list regardless of input source.
 - D. Automatically scanned channels may not have the user-desired channel numbers.
- If user change the 'Enable/Disable' value, a pop-up window will be displayed to warn that all channel information will be deleted. The Default value is 'Enable'.

DTV Programme Update

- 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.

On Timer Operation

- It is a mode to select 'On Timer Operation' working one time or repeatedly.
- 'Once': 'On Time' in the user menu operates only one time when the **On Time** menu is set to **On**.
- 'Repeat': 'On Time' operates repeatedly when the **On Time** menu is set to **On**.

Radio Name Display

- Instead of "Audio Only", the name of a radio channel 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 channel is displayed for the radio channel.
- If the setting is "Off", the text "Audio Only" is displayed for the radio channel.

USB Auto Playback

(Depending on model)

- 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.
- 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.
- If it reaches the last file, it starts the first file again

Teletext

(Depending on model)

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

15Min Auto Off

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

DVB-C

(Depending on model)

- DVB-T/C programmes (channels) are searchable and selectable like following if DVB-C is "Enable".

DVB-C Bandwidth

(Depending on model)

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

Auto Sensing

- If 'Auto Sensing' is set to 'On', the input is automatically switched when the input signal that you set to "ON" is received.
 - If 'Auto Sensing' is set to 'Disable', the input is not switched when the input signal is received.
 - SIMPLINK and Auto Sensing cannot work simultaneously. If SIMPLINK is set to On, Auto Sensing is automatically set to Disable.
 - If the signal is removed while Auto Sensing (automatic input switch) is enabled, the input returns to the previous setting.
- If the several input are connected by enabling Auto Sensing and the automatic 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.

Instant On

(Depending on model)

- Set to 'Instant On Mute Mode' or 'Instant On Reboot mode' to enable the Instant ON feature. The Instant ON feature allows the TV to turn ON when AC power is applied, but with video and audio muted (Muted ON). The TV retains its ON status while appearing to be OFF. Pressing the POWER button toggles Off/On the video and audio mutes, so that the TV appears to turn ON instantly.
 - If this item is set to Instant On Mute Mode, the TV will not reboot to check for and download updates at turn OFF. TV seems to be turned off to user(panel is off), but both micom and chipset are on.
 - If this item is set to Instant On Reboot mode, the TV will reboot to check for and download updates from the Pro:Centric server at every turn OFF.
 - If this item is set to Instant On Mute mode or Instant On Reboot mode when 'WORF' is 'Disable', 'WORF' is set to 'Enable' and 'Update Time' is set to auto(random) time. (Depending on model)

Insert Image

- Set to Enable (Work) or Disable (Do Not Work).
- It is a mode to decide whether to display background image when using Bluetooth Sound Sync app or watching Radio channel.
- You can download the background image at TV Manager app.

No Signal Image

(Depending on model)

- Set to On or Off.
- It is a mode to decide whether to use no signal image when there is no signal.

Healthcare Headphone Mode

- **Healthcare Headphone On**
 - Mute is always applied to TV Speaker.
 - Sound Out menu is displayed as Internal TV Speaker + Wired Headphone, and all Sound Out submenus are gray out (Disable).
 - Internal TV Speaker / Headphone Simultaneous output, Volume key is adjust TV volume (Mute off).
 - Select TV Speaker User Interface. Volume key adjusts the internal TV Speaker volume.
 - Select Headphone User Interface. Volume key adjusts the headphone volume.
- **Healthcare Headphone Off**
 - Sound Out Normal Scenario on Commercial Hotel TV.
 - Sound Out has Menu in default mode (Internal TV Speaker + Audio Out (Optical)).

Screen Saver

(Depending on model)

- When the currently displayed app has not received any user input for an hour, it will be replaced by a Screen Saver.
- If you turn this option 'Off', the current picture may create an afterimage burned onto your screen, possibly permanently.

External Speaker

(Depending on model)

Volume Control

- Selects the volume control method of an external speaker.
- You can select 'Off', 'Int Variable' Fixed. 'Ext Variable'.
- Ext Variable uses the External Vol Up/Down Control Line to change the volume up to 2 Watts.
- Int variable is linked to the main volume OSD and change the volume 0 - 2 Watts.
- Fixed produces a fixed output. The default is Off.

Output

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

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.

Power Saving**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.

Keyless Off Hours

- Automatically TV will be turned off if there is no key input for the preset time period.
- When it is set to 'Enable', User Menu ⇒ **Timers** ⇒ **Auto Power Off** is disabled.
- When it is set to 'Enable', User Menu ⇒ **Timers** ⇒ **2Hour Auto Power Off** is disabled.

HCEC Setup**CEC Mode**

(Depending on model)

- 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)

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.

Device ID

- Sets the ID of a device(Logical Address) connected to the CEC Line. You can choose 'All' and from '0 x 01' to '0 x 0E' (All, 0 x 01 ~ 0 x 0e).
- The default value is 'All'.

StandBy

- Set the sending and receiving scenario of OpStandBy(0 x 0c) command.
- This detailed scenario is described on the table below.

	Send	Receive
Send Only	0	X
Receive Only	X	0
All	0	0
Off	X	X

Forced Initialize

- This setting will be enabled When CEC mode is set as 'TVLink-CEC'.
- If 'Enable' is selected, TV will change its input source to HDMI1 by any HDMI-CEC simulation from a device.

HTNG Hotel Mode

- If you use following functions via TVLink-HCEC, HTNG Hotel mode will be set as "Yes" automatically.
 - Power On Default, Start Volume, Maximum Volume, Minimum Volume, or Start Volume.
- Even if 'Hotel Mode Operation' is set as No, above settings are still effective.

Clock Setup**Clock Display**

(Depending on model)

- You can select 'Enable' or 'Disable'.
- After selecting 'Enable', you can see the LED Clock TV.

Dimming Standby

(Depending on model)

- Standby Dimming value Range : 1~2

Dimming PowerOn

(Depending on model)

- PowerOn Dimming value Range: 1~5

Clock Source

- You can select 'Off', 'Pro:Centric', 'TV', 'NTP', 'Admin'.
- NTP : Clock is synchronized using Network Time Protocol. It's only enabled when network cable is connected.
- Admin : It's automatically set to Admin when clock is updated by commercial protocols like TVLink-HCEC, TVLink-Interactive, or HCAP API.
- Off : Clock is synchronized using any available clock source.
- Pro: Centric : Clock is synchronized using Pro:Centric server. (Depending on model)
- TV : Clock is synchronized using particular TV programme.

- **Input** (Depending on model)
 - » You can select 'Input' according to 'Clock Source'.
 - » You can select 'RF' or 'IP' when Clock Source is 'Pro:Centric'.
 - » You can select TV source when Clock Source is 'TV'.
 - » Input is set to 'None', 'HCAP', 'Protocol', 'HTNG' automatically when Clock Source is 'Admin'.
- **Programme / Frequency** (Depending on model)
 - » Sets the Frequency to get the time information when Clock Source is 'Pro:Centric'.
 - » You can select programme when Clock Source is 'TV'.
- **Timezone (City) / Timezone (Custom) / Timezone (Offset)** (Depending on model)
 - » In the case when there is difference between the time information received from the Teletext and the time of the current area, it can be set up to correct this. The initial value is 0, and it can be changed in the range of -12 Hrs ~ +14 Hrs. (Timezone (Offset) range is -12 Hrs ~ +12 Hrs)

Password Change

- To ensure more security, Password can be changed by installers' own design.
 - 1 Change password by using virtual keyboard.
 - 2 Input the password again for confirmation.

Lock Mode

- If 'Lock Mode' is 'Yes', the following features will be unavailable.

USB

- If it is set to 'Enable', USB devices do not work in relative features. (Exclude S/W update)

Factory Reset

- If it is set to 'Enable', User Menu ⇒ **General** ⇒ **Reset to Initial Settings** is disabled.

Crestron

(Depending on model)

- This function enables synchronization with applications provided by Crestron.
- Server: This menu sets the server's IP address for the network connection with the server. (equipment provided by Crestron)
- Port (1024~65535): This menu sets the port for the network connection with the server. The default port number is 41794.
- IP ID (3~254): This menu sets a unique ID for synchronizing with the application.

Welcome Video

(Depending on model)

Welcome Video Mode

- You can set to Off, Once or Repeat.

Video Download

- You can download video file from USB.
- Video file locate LG_DTV folder.

Reset

- Delete Downloaded video file.

Operation

- The video displays after your TV is turned on and the boot logo appears.

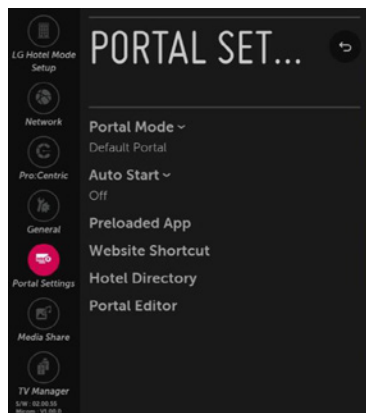
- If Welcome Video is enabled and a video is downloaded on the TV, the video plays.
- The time it takes a video to be displayed may differ depending on the decoding time of the video.
- Controls for playing the video are not available. (Pause, stop, fast forward, etc.)
- Videos in any file format that the TV supports can be downloaded and displayed.

Developer Mode

(Depending on model)

- This feature provides great convenience to the app developers.
- Set up to install the Developer mode app.

Portal Settings



Portal Mode

- You can select 'Default Portal' (Use webOS default portal), 'Customizable Portal' (Use editable Portal), or 'None' (Do not use portal).

Auto Start

- You can select 'Off', 'Website Shortcut', or 'Portal Mode'.
- If you select 'Website Shortcut', Shortcut app will be excute automatically after TV on.
- If you select 'Portal Mode', Portal(Home Launcher) will be excute automatically after TV on.

PreLoaded App

- If you want to use a particular app, you can choose from the menu. you can setting each apps activation.
- You can check or uncheck by pressing **OK**  button.

Website Shortcut

Shortcut

- Sets Enable or Disable. When it is set to Enable, Shortcut app is displayed at launcher bar.

Shortcut Name

- You can set Shortcut app name (title).

Shortcut URL

- Sets URL to connect when execute Shortcut app.

Shortcut Icon

- You can select default icon, fav icons, downloaded icon or Download(Go to TV Manager).
- You can download the shortcut icon at TV Manager app.

Tile Color (Color Code)

- You can change Shortcut app tile color using RGB color code.

Hotel Directory

- Set the information to display at Hotel Directory app.

Facility or Service Name

- Set the facility or service name.

Details or Extension

- Set the detailed information.

Related Photo

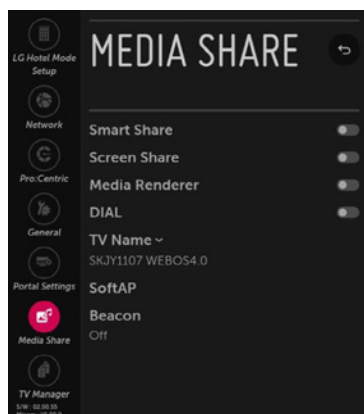
- You can select None, downloaded images or Download (Go to TV Manager).
- You can download the directory images at TV Manager app.

Portal Editor

- If you press 'Portal Editor' menu, each portal editor is launched according to 'Portal Mode'.

Media Share

(Depending on model)



SmartShare

- Smart Share enables DLNA function. If this value is enabled, TV acts as Media Player and displays Media Server contents through Smart Share app.

Screen Share

- Screen Share enables WiFi p2p functions such as Miracast and WiDi. If this value is enabled, Screen Share app is displayed at launcher bar and TV can display the screen of mobile phone by Miracast or laptop by WiDi.
- If you want Completely Exit Screen Share App, Click 'X' Button on right top side.

Media Renderer

- Media Renderer enables the TV to act as a Media Renderer device to receive contents from devices on the same network.

DIAL

(Depending on model)

- With this DIAL service, you can launch the target app at Smart Home Launcher bar without select the target app by remote controller. Before this function enables, the target app should be selected at Installer Menu ⇒ **Portal Settings** ⇒ **Preloaded App**.

TV Name

- When media devices(ex: smart phone, desktop, laptop) are searching TV, this string will be displayed.

SoftAP

- SoftAP is similar to Access Point. When you enable this function, TV acts as an Access Point.
- Regardless of the Instant On mode, the SoftAP setting stays unchanged after power off/on. (Depending on model)

Use Default

- If you want to use default password(this password was generated randomly), you must select 'Enable' in this item.

Security Key

- If you want to change default password, you need to change 'Use Default' value into 'Disable'.

Wi-Fi Signal Strength

- You can control wireless signal strength on SoftAP. This is controlled by 5 step. If you select 'Not Used', wireless signal strength will be set to Max value.

Wi-Fi Channel

- You can control wireless channel on SoftAP mode. This is controlled from 1 to 11 channel. If you select 'Auto', wireless channel of SoftAP will be set to random channel.

Mode

- You can select NAT (Network address translation) mode and BRIDGE mode for Soft AP.

Security Type

- You can select 'WPA2-PSK', 'WPA2-Enterprise' and 'Open' if you selected 'BRIDGE' mode.

Radius Server IP, Radius Server Port, Radius Server Key

- You should enter Radius Server information if you selected 'WPA2-Enterprise'.

Beacon

- This option enables BLE Beacon, one of Bluetooth 4.0's features.
- Beacon Mode (On/Off Toggle): enables the Beacon feature.
- The iBeacon/Eddystone Type Beacon features are supported.

iBeacon

- Beacon UUID (hex): Set the UUID.
 - 1 Field1: 4byte hex value (8 digits)
 - 2 Field2: 2byte hex value (4 digits)
 - 3 Field3: 2byte hex value (4 digits)
 - 4 Field4: 2byte hex value (4 digits)
 - 5 Field5: 6byte hex value (12 digits)
- Major (0–65535): Sets the Major value.
- Minor (0–65535): Sets the Minor value.

Eddystone

- Frame: Set UUID or URL.
 - Beacon UUID (hex): Set the UUID
 - 1 Field1: 10 byte hex value (20 digits)
 - 2 Field2: 6 byte hex value (12 digits)
 - Setting the URL method
 - » URL Prefix: Sets the prefix of the URL.
 - » URL Suffix: Set the suffix of the URL.
 - » URL: Enter the part of the URL that excludes the prefix and suffix.
 - » URL string length is limited to 15 characters.

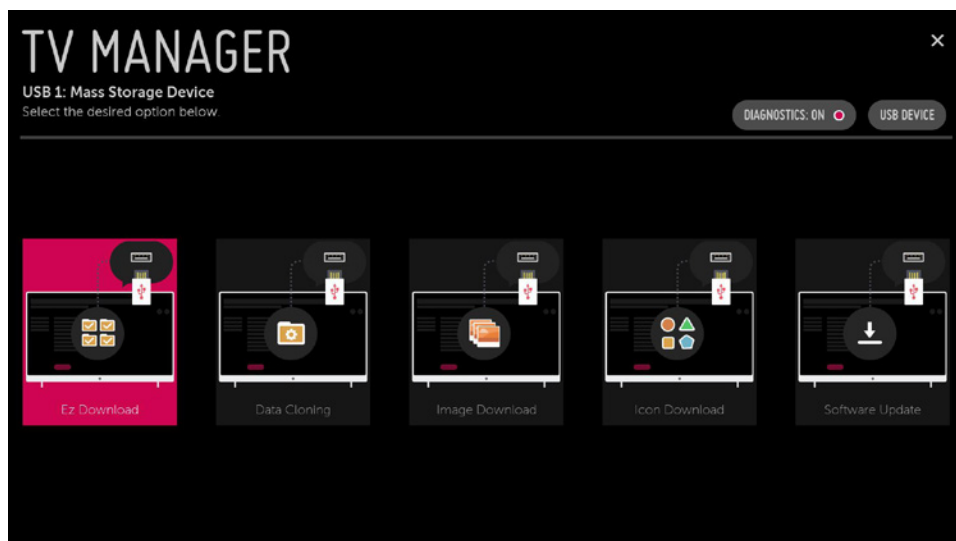
- The button used to confirm and apply the settings that you have entered.



- Some models do not support background screening services in iOS.
- A reboot is recommended for the settings to be applied properly.
- The UUID value is hexadecimal and the exact number of digits must be entered.
- The distance of the beacon may vary depending on the external device.
- Beacon's distance may vary depending on the app you use on your external device.
- The Beacon feature uses Bluetooth Low Energy (BLE) technology and is therefore susceptible to radio waves. 2.4 GHz environment if not, normal operation may not be possible.

TV Manager

You can update files from USB to TV through the TV manager.



Diagnostics

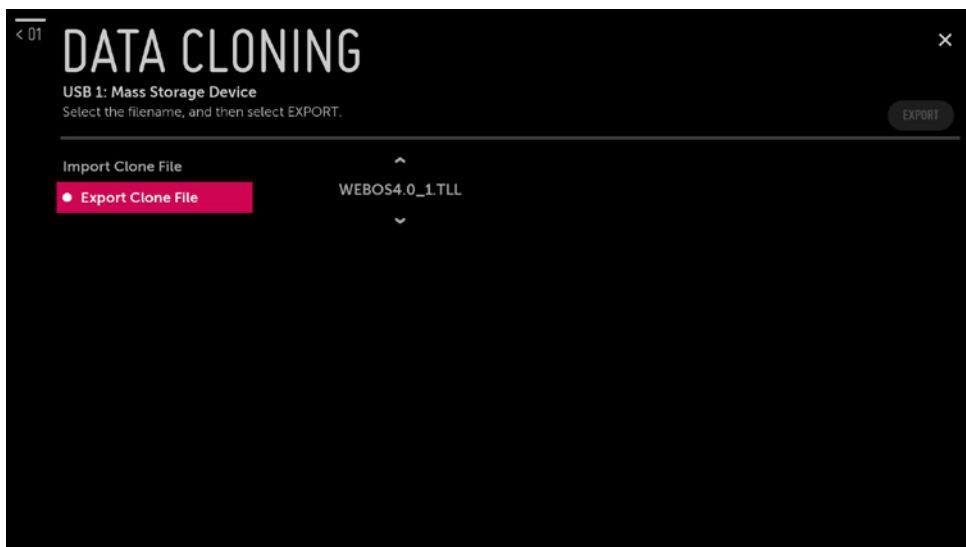
- Sets Enable or Disable. When it is set to Disable, user can't control TV via RMS. The changed setting is applied after reboot.

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, Image, Icon, Micom.
 - Images, Icon and Software Update 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.
 - » If you press 'EZ Download' menu, EZ Download is launched.
 - » If .DZM file exist file will be selected previously download file.
- 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 EPK (software update file), TLL, Image, Icon, Micom with the previously downloaded lists checked automatically.

Export Clone File

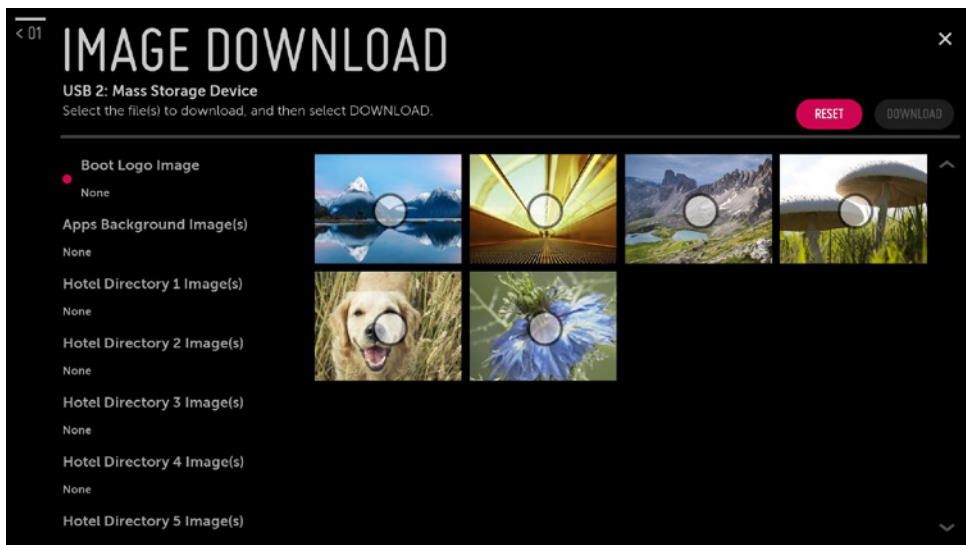


- "Import Clone File" needs *.TLL file which is generated by "Export Clone File" process. While writing is in process, the user must not turn TV off nor unplug the USB memory card. The following reference images might be slightly different.

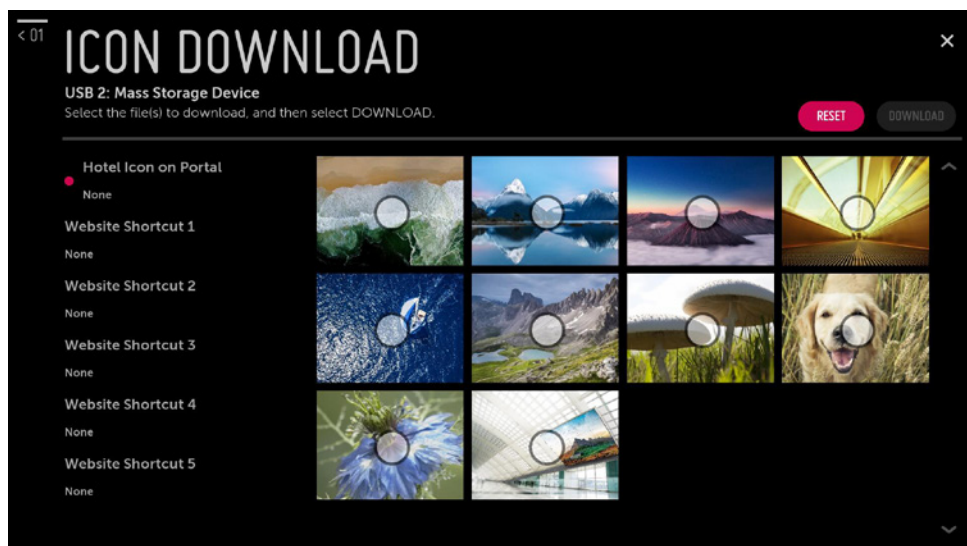
Import Clone File



- Once the internal TV data and its channel map information are written to the USB memory card, the user can start “Import Clone File” process with the data file generated and stored in USB memory card. The user should not turn TV off nor unplug the USB memory card while processing. The following reference images might be slightly different.

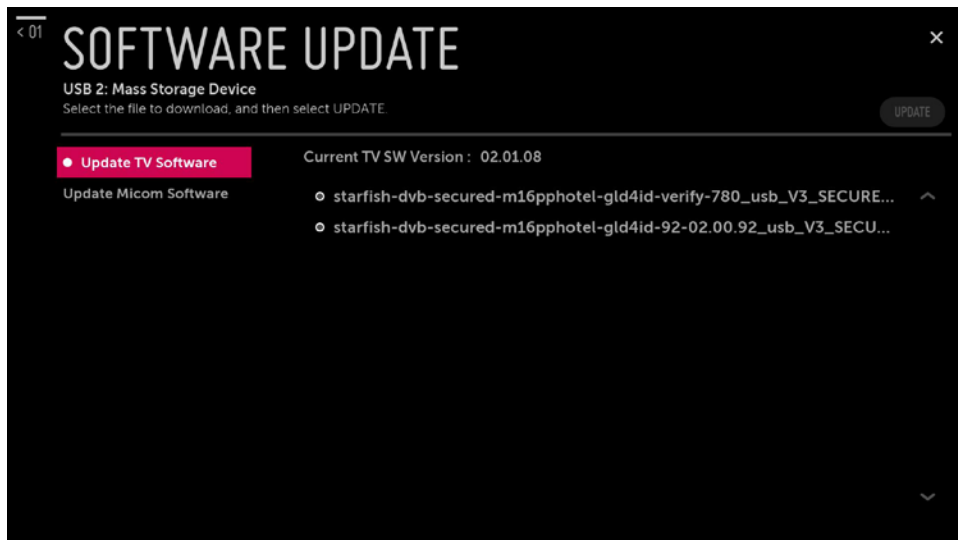


- If there are more than two USB Memory Device, It is possible to select the USB.
- The download sequence is Image Download ⇒ Select Image(s) ⇒ Download.
- The target file is located in LG_DTV folders.
 - **Boot Logo Image**
 - » Boot Logo Image can download only one file.
 - » Boot Logo Image update function supports only JPG, JPEG, BMP format file of less than 8 MB filesize.
 - » 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 : 64 x 64.
 - **Apps Background Image(s) & Hotel Directory Image(s)**
 - » Image update function supports only JPG, JPEG, PNG format file(s).
 - » Max resolution of image : UHD → 3840 x 2160, Full HD → 1920 x 1080, HD → 1360 x 768.
 - » Min resolution of image : 64 x 64.
 - » The maximum number of images to choose from per feature is 12.
 - » Images per feature can not be downloaded beyond 10 MB.
 - » If you updates the images, original images will be removed.
 - » If you want to use inserted image in Bluetooth Sound Sync app and Live TV's Radio Programme, Clock please change the value of 'Insert Image' property to enable ('Insert Image' in Installation ⇒ **General** ⇒ **Configuration Setup**).



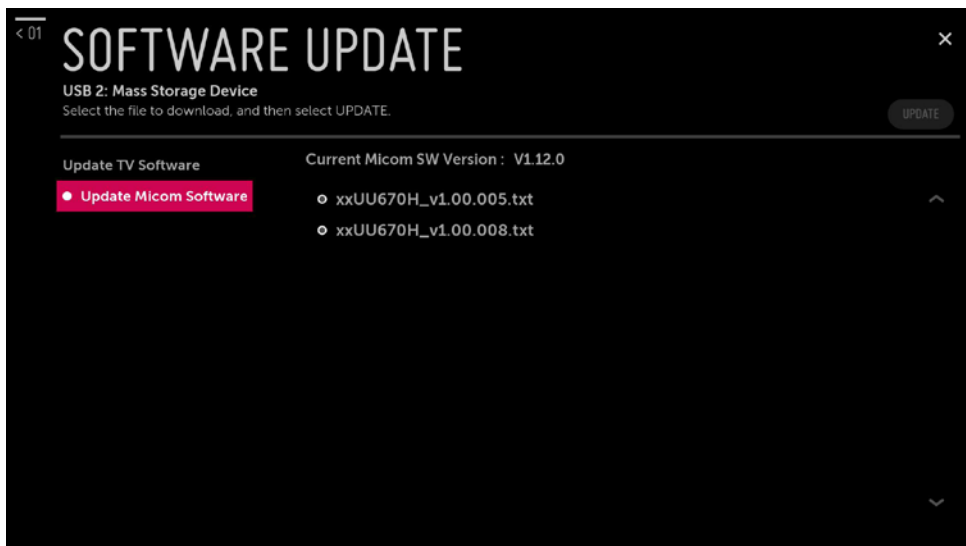
- Images should be copied to ₩ LG_DTV of the USB.
- The download sequence is Icon Download ⇔ Select Images ⇔ DOWNLOAD.
- Icon Image can download only one file.
- Icon update function supports only JPG, JPEG, PNG format file.
- Max resolution of icon : UHD → 3840 x 2160, Full HD → 1920 x 1080, HD → 1360 x 768.
- Min resolution of icon : 64 x 64.

► Update TV Software



- This feature updates TV software through the EPK file in USB.
- The target file is located in ₩ LG_DTV folder.
- The download sequence is Software Update ⇒ Update TV Software ⇒ Select file(EPK) ⇒ UPDATE.

► Update Micom Software



- This feature updates Micom software through the txt file in USB.
- The target file is located in ₩ LG_DTV folder.
- The download sequence is Software Update ⇒ Update Micom Software ⇒ Select file(txt) ⇒ UPDATE.

USB Cloning

- 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 Mode Installation Menu settings, User A/V settings and the Channel Map. This newer procedure significantly decreases the installation time that would be necessary if the standard RS-232C method were used instead.

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 "Import Clone File" and "Export Clone File" 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:

- TV data includes :
 - A. Installer Menu settings
 - B. Main menu settings (Audio, Picture etc)
- Analog / Digital Channel information includes:
 - A. Channel numbers
 - B. Channel label
 - C. Channel attributes including channel type, skipping status and etc.

IR Codes

- This feature is not available for all models.

Code (Hexa)	Function	Note
08	(POWER)	Remote control Button (Power On/Off)
95	ENERGY SAVING	Remote control Button
AF	LIVE ZOOM *	Remote control Button
0B	INPUT	Remote control Button
F0	TV/RAD	Remote control Button
10-19	Number Key 0-9 Alphabet buttons (Space)	Remote control Button
53	LIST	Remote control Button
1A	Q.VIEW	Remote control Button
02		Remote control Button
03		Remote control Button
7C	SMART	Remote control Button
B5	APP	Remote control Button
09	MUTE	Remote control Button
00	P PAGE	Remote control Button
01	P PAGE	Remote control Button
AB	GUIDE	Remote control Button
0C	PORTAL	Remote control Button
AA	INFO	Remote control Button
40		Remote control Button
41		Remote control Button

Code (Hexa)	Function	Note
07		Remote control Button
06		Remote control Button
44	OK	Remote control Button
43	SETTINGS	Remote control Button
28	(BACK)	Remote control Button
5B	EXIT	Remote control Button
72		Remote control Button
71		Remote control Button
63		Remote control Button
61		Remote control Button
20	TEXT	Remote control Button
21	T.OPT(T.Option)	Remote control Button
39	SUBTITLE	Remote control Button
B1		Remote control Button
B0		Remote control Button
BA		Remote control Button
8F		Remote control Button
8E		Remote control Button
DC	/*	Remote control Button
9F	DATA /*	Remote control Button
91	AD /*	Remote control Button
E8	ALARM /*	Remote control Button

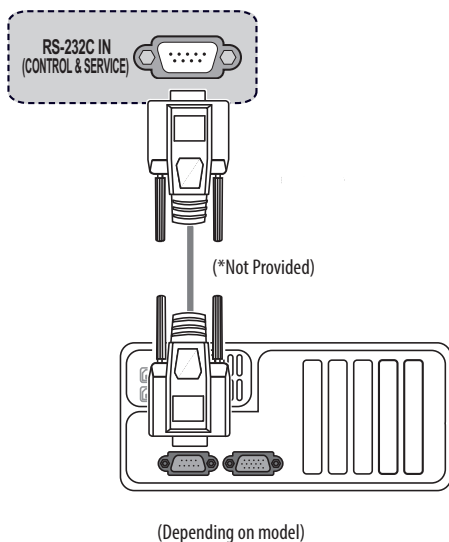
External control device Setup

RS-232C Setup

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

Connect the serial port of the control device to the RS-232C jack on the product back panel.

- RS-232C connection cables are not supplied with the product.



Phone jack Type

(Depending on model)

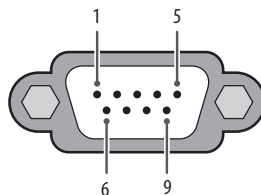
- You need to purchase the phone-jack to RS-232C cable required for the connection between the PC and the TV, which is specified in the manual.

* For other models, connect to the USB port.

* The connection interface may differ from your TV.



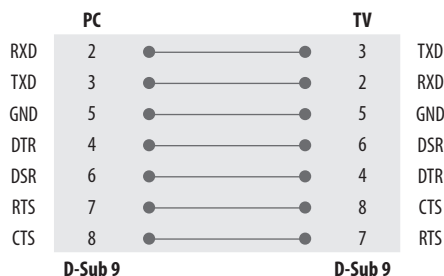
Type of Connector : D-Sub 9-Pin Male



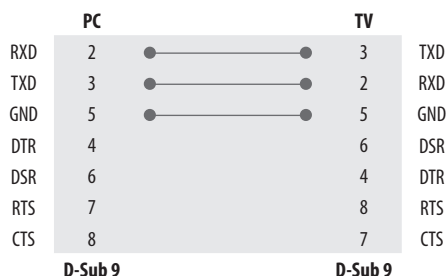
No.	Pin name
1	3.5 V
2	RXD (Receive data)
3	TXD (Transmit data)
4	IR OUT from TV
5	GND
6	No Connection
7	No Connection (5 V available in some models)
8	No Connection
9	No Connection (12 V available in some models)

RS-232C Configurations

7-Wire Configurations (Standard RS-232C cable)



3-Wire Configurations (Not standard)



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	38 KHz
Peak Wavelength	940 nm
Minimum burst length	16 cycles (420 μs)
Minimum gap time is required of	21 cycles (550 μs)
Data word length	Max. 100 ms
Minimum gap time in the data stream is needed of	30 ms

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
High Level Out Pulse Width	T_{WH}	Burst Wave = 600 μs Period = 1.2 ms	400	-	800	μs
Low Level Out Pulse Width	T_{WL}		400	-	800	μs

Communication Parameters

- Baud rate: 9,600 bps (UART)
- Data length: 8 bits
- Parity : None
- Stop bit: 1 bit
- Communication code: ASCII code
- Use a crossed (reverse) cable.



- 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)
01. Power	k	a	00 to 01
02. Aspect Ratio	k	c	(See p. 49)
03. Screen Mute	k	d	(See p. 49)
04. Volume Mute	k	e	00 to 01
05. Volume Control	k	f	00 to 64
06. Contrast	k	g	00 to 64
07. Brightness	k	h	00 to 64
08. Colour	k	i	00 to 64
09. 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. Balance	k	t	00 to 64
14. Colour Temperature	x	u	00 to 64
15. Energy Saving	j	q	(See p. 51)
16. Auto Configuration	j	u	01
17. Equalizer	j	v	(See p. 51)
18. Tune Command	m	a	(See p. 8)
19. Programme Skip/Add	m	b	00 to 01
20. Key	m	c	(See p. 52)
21. Control Backlight	m	g	00 to 64
22. Input select	x	b	(See p. 52)

- During USB operations such as DivX or EMF, all commands except Power(ka) and Key(mc) are not executed and treated as NG.

Transmission / Receiving Protocol

(Depending on Model)

Transmission

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

[Command1] : First command to control the TV. (j, k, m or x)

[Command2] : 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. Transmit 'FF' data to read status of command.

[Cr] : Carriage Return

ASCII code '0 x 0D'

[] : ASCII code 'space (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

1 Power (Command: k a)

- To control Power On/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/Off.

Transmission

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

Ack

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

* Similarly, if other functions transmit '0 x FF' data based on this format, Acknowledgement data feed back 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 (Normal screen - Just Scan Off)

Data 02 : 16:9 (Wide screen - Just Scan Off)

Data 06 : Original (Just Scan Off)

Data 09 : Just Scan

Ack

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

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

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

* Refer to "Real data mapping".

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]`

Data Min : 00 to Max : 64

* Refer to "Real data mapping".

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

* Refer to "Real data mapping".

Ack

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

8 Colour (Command: k i)

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

Transmission

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

Data Min : 00 to Max : 64

* Refer to "Real data mapping".

Ack

`[i][ ][Set ID][ ][OK/NG][Data][x]`**9 Tint** (Command: k j)

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

Transmission

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

Data Red : 00 to Green : 64

* Refer to "Real data mapping".

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

* Refer to "Real data mapping".

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 on/off, external control lock is released.
- * In the standby mode, if key lock is on, TV will not turn on by power on key of IR & Local Key.

13 Balance (Command: k t)

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

Transmission

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

Data L : 00 to R : 64

* Refer to "Real data mapping".

Ack

`[t][ ][Set ID][ ][OK/NG][Data][x]`**14 Colour Temperature** (Command: x u)

- To adjust Colour Temperature. You can also adjust Colour Temperature in the picture settings.

Transmission

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

Data Warm: 00 to Cool:64

* Refer to "Real data mapping".

Ack

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

15 Energy Saving (Command: j q)

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

Transmission

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

Power Saving Function				Level				Description
7	6	5	4	3	2	1	0	
0	0	0	0	Low Power	0	0	0	Off
0	0	0	0	Low Power	0	0	0	Minimum
0	0	0	0	Low Power	0	0	1	Medium
0	0	0	0	Low Power	0	0	1	Maximum
0	0	0	0	Low Power	0	1	0	Screen Off
0	0	0	0	Low Power	0	1	0	Auto

- 'Auto' is available in TV that supports 'Intelligent Sensor'.

Ack

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

16 Auto Configuration (Command: j u) (Only RGB support 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

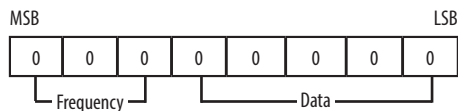
[u][][Set ID][][OK/NG][Data][x]

17 Equalizer (Command : j v)

- To adjust equalizer.

Transmission

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



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]

18 Tune Command (Command: m a)

- Select channel to following physical number.

Transmission

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

Data 00 : High channel data

Data 01 : Low channel data

ex. No. 47 → 00 2F (2FH)

No. 394 → 01 8A (18AH),

DTV No. 0 → Don't care

Data 02 : [Antenna]

0 x 00 : Analogue Main

0 x 10 : DTV Main

0 x 20 : Radio

[Cable]

0 x 80 : Analogue Main

0 x 90 : DTV Main

0 x A0 : Radio

[Satellite]

0 x 40 : DTV Main

0 x 50 : Radio Main

Channel data range

Min : 00 Max : 270F (0 to 9999)

Ack

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

19 Programme Skip/Add (Command: m b)

- To set skip status for the current Programme.

Transmission

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

Data 00 : Skip

Data 01 : Add

Ack

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

20 Key (Command: m c)

- To send IR remote key code.

Transmission

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

Data IR CODES

Ack

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

21 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]

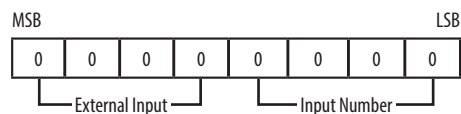
22 Input select (Command: x b) (Main Picture Input)

- To select input source for main picture.

Transmission

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

Data Structure



External Input				Data
0	0	0	0	DTV
0	0	0	1	Analogue
0	0	1	0	AV
0	1	0	0	Component
0	1	1	0	RGB
0	1	1	1	HDMI
1	0	0	0	
1	0	0	1	
1	0	1	0	

Input Number				Data
0	0	0	0	Input1
0	0	0	1	Input2
0	0	1	0	Input3
0	0	1	1	Input4

Ack

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

*** Real data mapping**

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

