



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.

LT340CBU*

LT340C0U*

LT340HBU*

LT340H0U*

LT340C9U*

LT340H9U*



* M F L 7 0 2 6 2 3 0 4 *

(2210-REV00)

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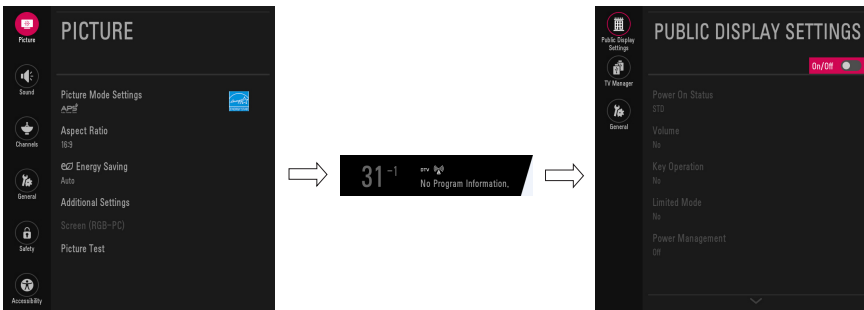
INSTALLATION MENU

Introduction

The abundant functions for Hotel TV linked with software installation can be projected on OSD as **Public Display Settings**.

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.

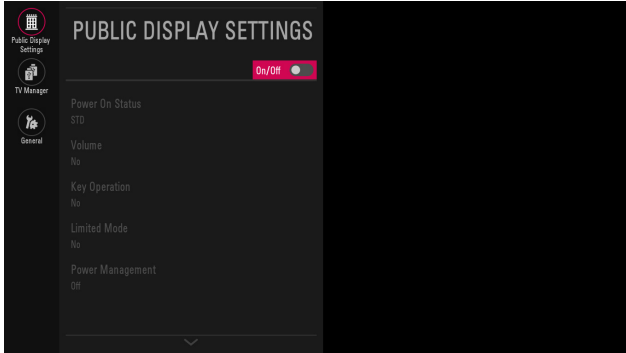
* Image shown may differ from your TV.



- 1 Press the ⚙️ (Settings) button for more than 5 seconds using the user remote control, channel 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.

PUBLIC DISPLAY SETTINGS

* Image shown may differ from your TV.



- 1 Select **Public Display Settings**. When **Public Display Settings** is set to **On** (Work), all functions of Public Display Settings apply.

Public Display Settings (ATSC)

- Decide to work all functions of **Public Display Settings** or not by setting **Public Display Settings** as **On** (Work) or **Off** (Do Not Work)
- When **Public Display Settings** is set to **On** (Work), all functions of Public Display apply.
- When **Public Display Settings** is set to **Off** (Do Not Work), all functions of Public Display do not apply.
- When it is set to **On**, **Key Lock** of the User Menu is disabled and it can be set through **Local Key Operation** of the Public Display Settings.
- The TV triggered by the external device (ex: SIMPLINK, TV Link-Tuner, etc.) operates separately from the **Public Display Settings**.
- When it is set to **On**, User Menu → **General** → **Reset to Initial Settings** 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.

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).

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** of User Menu must be fixed to start volume when **HTNG HotelMode (Enable)** 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**. ($0 \leq \text{Min} \leq 100$)
- 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 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.

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.

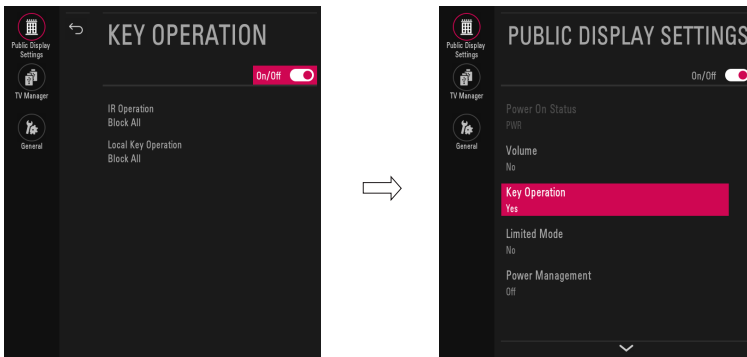
Local Key Operation

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)



Limited Mode

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

Setup Menu

Decide to enter **Channels** of user menu as **On** (Enter possible) or **Off** (Enter impossible).

- When **Setup Menu** is set to **On**
 - The **Channels** of user menu is disabled.
- When **Setup Menu** is set to **Off**
 - The **Channels** of user menu is enabled.

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 channel)
 - User's input (pressing Channel key, numeral key, List key, Flash back key in all Input source except TV source) doesn't work.
 - Entering **Channels** of User Menu item in the main menu OSD except TV mode doesn't accepted. Because entering **Channels** item of User Menu makes present mode as TV mode even though present mode is not TV. Change to TV mode isn't allowed.
 - Entering **Channels** of User Menu except TV mode is impossible regardless of **Channel Change** or **Channels** items' value of User Menu.
 - 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.

Channel Change

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

- When **Channel Change** is set to **Off** (Change Impossible)
 - Channel Key, Numeral Key, List Key, Flash back Key don't work and entering channel Menu in the Main Menu OSD is impossible.
 - Channel item in **Timer Power On** of User menu will be fixed.
 - Entering **Channels** of User Menu is impossible regardless of **Channels** item of User Menu.
- When **Channel Change** is set to **On** (Change Possible), Channel Key, Numeric Key, List Key, Flash back 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.
 - Input select screens
 - Sleep Timer
 - Aspect Ratio
 - Closed Caption
 - Safety / My Media / About This TV
- Q.menu, which is related to **Channels** of User Menu, is not accessible.
- If the channel map is empty, Auto-tuning guide dialog should be blocked by pressing List, Fav, CH+ (Page up), CH- (Page down) keys.

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 check key time interval again.
- 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.

DTV Channel Update

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

- When **DTV Channel Update** is set to **Auto**, the function to update TV's channel map according to DTV channel's stream information
- **DTV Channel Update** is set to **Manual**, the function to keep TV's channel map even though DTV channel's information is changed.

Power On Default

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

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 the **TV** (TV, DTV, CATV, CADTV), Channel menu (Tune Mode, Major, Minor) is available.
- Access to an input source item and a channel in **Timer Power On** of User Menu must be disabled when Power On Default is activated.

Tune Mode

Tune the selected start channel with **Physical** or **Virtual** method. Usually, digital channel uses virtual channel and analog channel uses physical channel.

Major

Select major part of start channel number if Input source value is **TV**. (in case of **ATV**, it means physical channel number.)

Minor

Select minor part of start channel number if Input source value is **TV**.

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.

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.

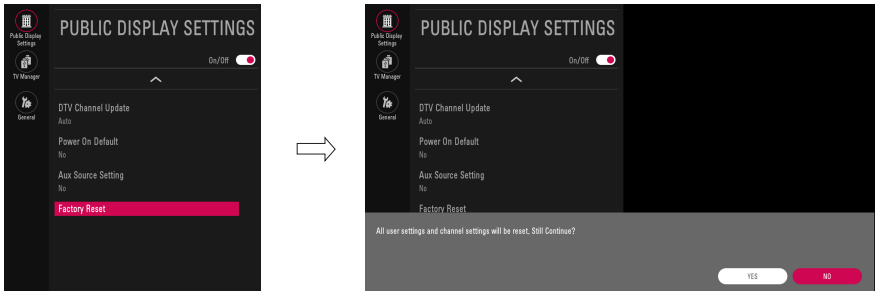
Aux Source Setting

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 **Off** (Disable).
- User cannot disable the current input's **Aux Source Setting**.

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 **YES**, all television settings except UTT value should write to the default settings.

Public Display Settings

Item	Enable	Disable	Initial
Public Display Settings	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
Channel 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 Channel Update	Auto	Manual	Auto
Power On Default	On	Off	Off
Input Source	Off, TV, DTV, ...		TV
Tune Mode	Physical	Virtual	Physical
Major	Subject to Ch. Type		2
Minor	1 ~ 999 (DTV, CADTV)		0
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
Factory Reset	Confirmation window (YES / NO)		

TV MANAGER

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.

- 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 ^ v button to select the **TV Manager** option and then press the OK button.
- 3 Use the ^ v 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 > 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.
- The download files may vary by model.

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 Settings, 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.

Introduction

1 Overview USB Cloning Procedure

- Commercial TVs have the capability to support cloning internal TV data and Channel 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 Channel information includes:
 - A. Channel numbers
 - B. Channel label
 - C. Channel attributes including channel type, skipping status and etc.

3 Input Source

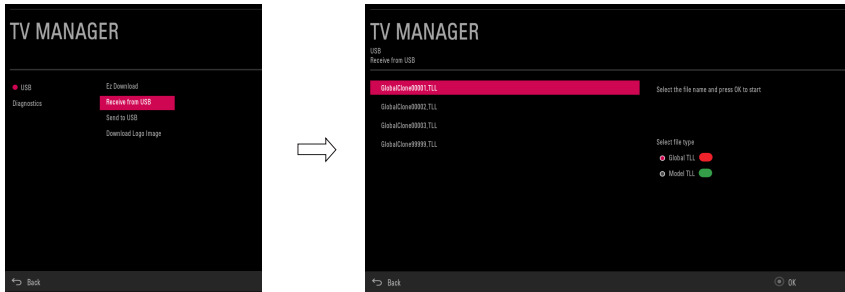
The user needs a USB memory card with FAT formatted to make successive cloning via USB port. A USB memory card size more than 128 MB and less than 4 GB is recommended.

! 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.



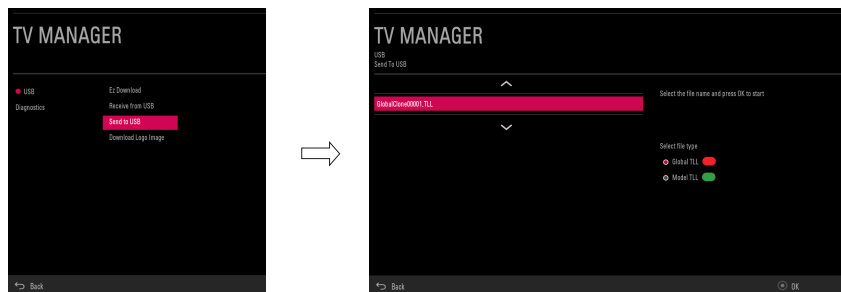
- 1 Plug USB memory card into the USB port of the TV.
- 2 Use the \wedge \vee button to select the **TV Manager** option and then press the OK button.
- 3 Use the \wedge \vee button to select the **USB** and **Receive from USB** and press the OK button.

* Below explains the naming rules for *.TTL 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 *.TTL file without regard to the screen size. ex) The name of '*.TTL' file is 'xxLT340C0UB0000.TTL' for xxLT340C0UB model.

- 4 Use the \wedge \vee button to select the desired *.TTL 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.

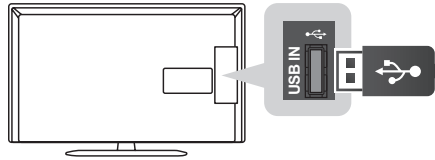


- 1 Plug USB memory card into the USB port of the TV.
- 2 Use the \wedge \vee button to select the **TV Manager** option and then press the OK button.
- 3 Use the \wedge \vee button to select the **USB** and **Send to USB** and press the OK button.
- 4 Use the \wedge \vee button to select the desired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

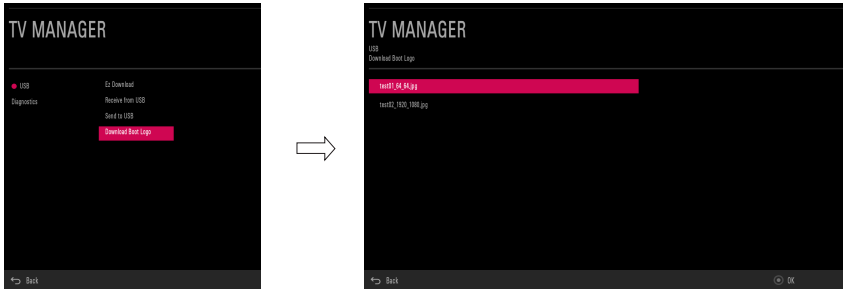
Download Boot Logo

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 ^ v button to select the **TV Manager** option and then press the OK button.
- 3 Use the ^ v button to select the **USB** and **Download Boot Logo** and press the OK button.
- 4 Use the ^ v button to select the desired file name and press the OK button.

! NOTE

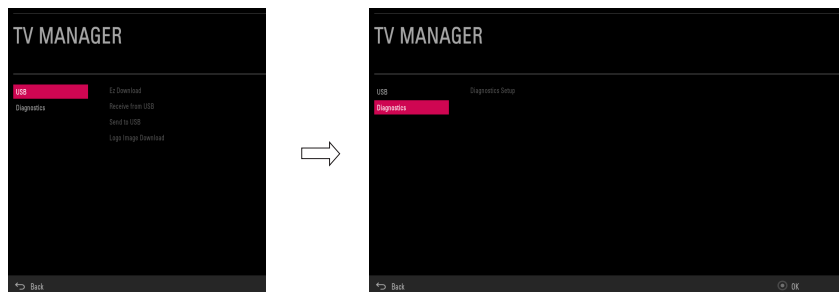
- Splash Image update function supports only JPEG format file of less than 1 MB file size.
- Except for JPEG images with progressive encoding.
- We recommend you that splash image resolution match the TV's panel resolution.
- Max resolution of splash image : Full HD → 1920 x 1080, HD → 1360 x 768.
- 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.

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 channel that the user tuned to. It checks and records good and bad channel signals, and then provides the signal information to a USB storage device in XML file format.



1 Overview Diagnostics

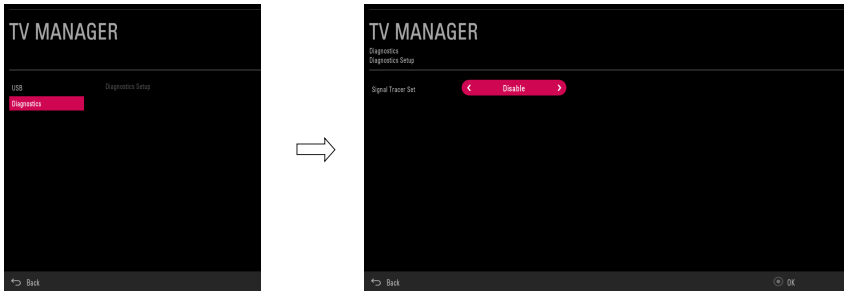
- It provides status information of the TV and information about the current input in XML file format. (There are two kinds of information. There is information which is extracted regardless of the model, such as the model name or boot version, and there is information which is available depending on 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 channel signal with less than 30 tuning counts to the digital broadcasting channel. 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: $BML < \text{strength}$ and $(\text{strength} - BML) \rightarrow \text{Signal Tracer Set}$
 - Good signal: $BML < \text{strength}$ and $(\text{strength} - BML) \rightarrow \text{Signal Tracer Set}$
- It provides the good and bad signals, average signal value, channel 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 channels through SignalTrace in XML format

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



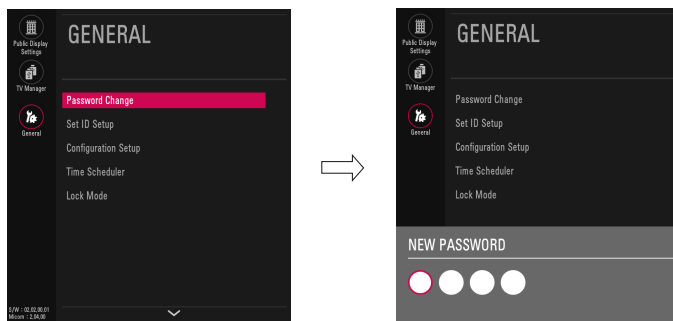
- Change the channel and tune to a digital channel, then maintain the status for more than 5 seconds.
 - Create an empty file named tv_signal.rms in the LG_SVC folder.
 - Insert the USB device into the TV.
 - If the "Diagnostics is completed" message is displayed, remove the USB, open the tv_signal.rms file on a PC and check XML created in the file.
- * If the user tunes to the same digital channel 30 times, the signal average is calculated. If the tuning count to the same digital channel is more than 30, the good/bad signals, current signal, average signal, date and channel 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.

GENERAL

Password Change

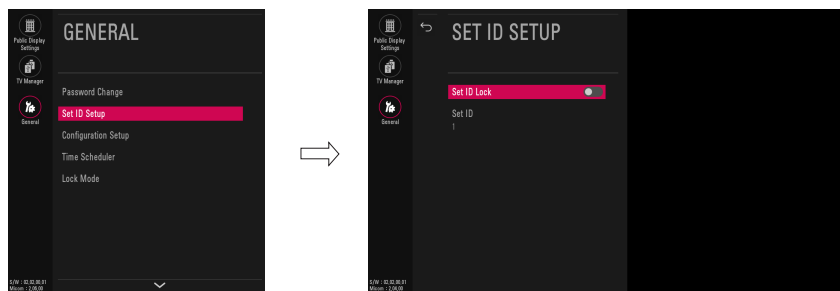
* Image shown may differ from your TV.

- 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.

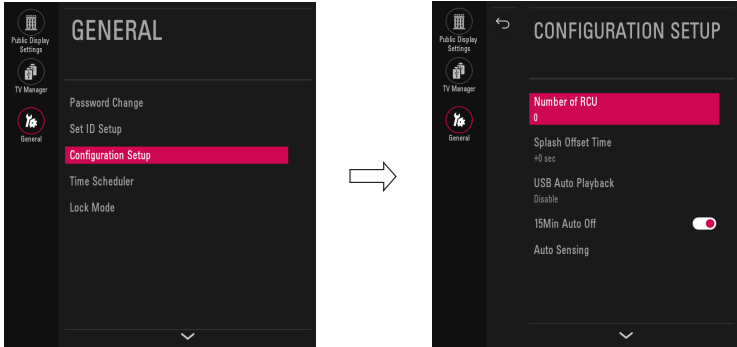
Set ID Setup



- 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 15Min Auto Off

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

5 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.)

6 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.
- For the audio signal, the priority order is the RGB → AV → Audio In component ports.

7 Video Mute

- When **Video Mute** is set to **On**, for Blank.

8 Noise Mute

- When **Noise Mute** is set to **On**, audio mutes when no signal is present.

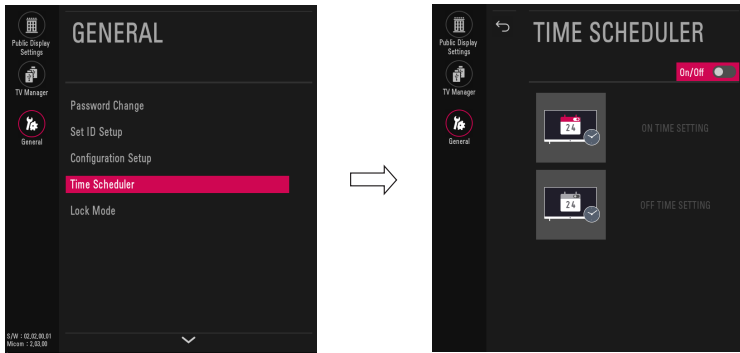
9 Wake On Lan (Depending upon model)

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

10 DPM

- You can configure the **DPM** (Display Power Management) function.
- If this option is not set to **Off**, the TV set enters the **DPM** mode when there is no input signal. **DPM** can be set to Off / 5 sec / 10 sec / 15 sec / 1 min / 3 min / 5 min / 10 min.
- If you set this option to **Off**, the **DPM** function is disabled.

Time Scheduler



1 Go to **General** → **Configuration Setup** → **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.

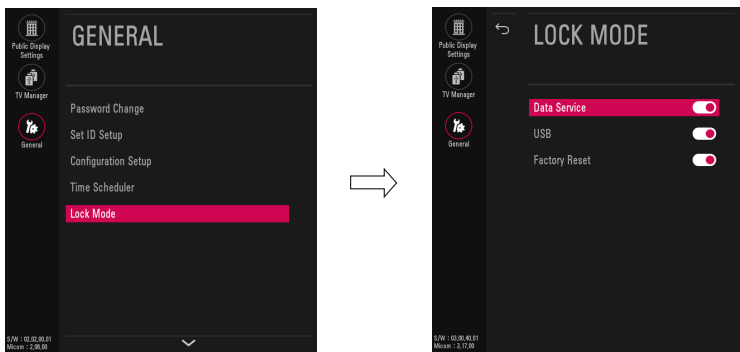
(a) ON TIME SETTING

- 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

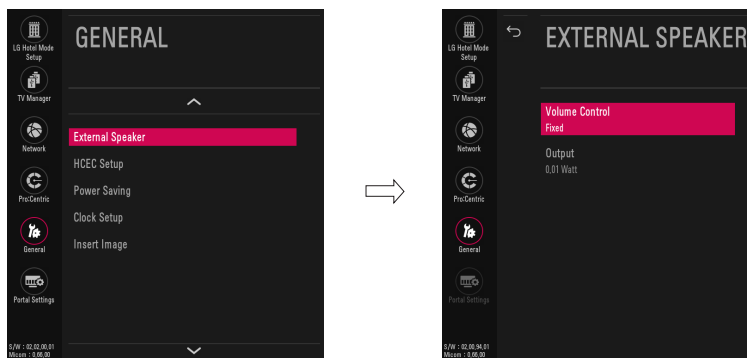


1 Go to **General** → **Lock Mode**.

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

External Speaker

(Depending on model)



1 Go to **General** → **External Speaker**.

(1) Volume Control

- Selects the volume control method of an external speaker. You can choose either **Off/Int Variable** or **Fixed**.

(1) 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)

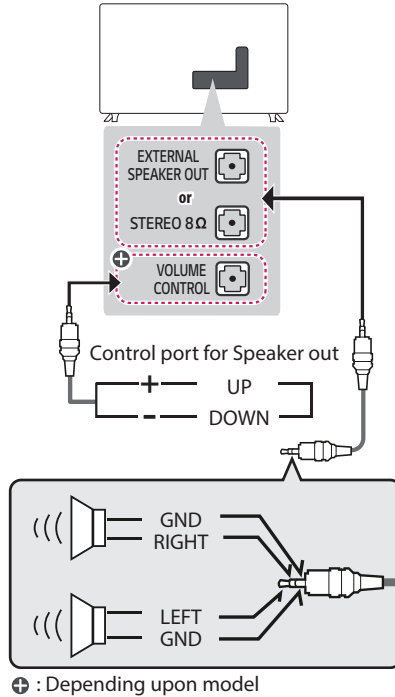
! NOTE

- 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 upon model

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



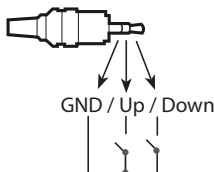
! NOTE

- 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

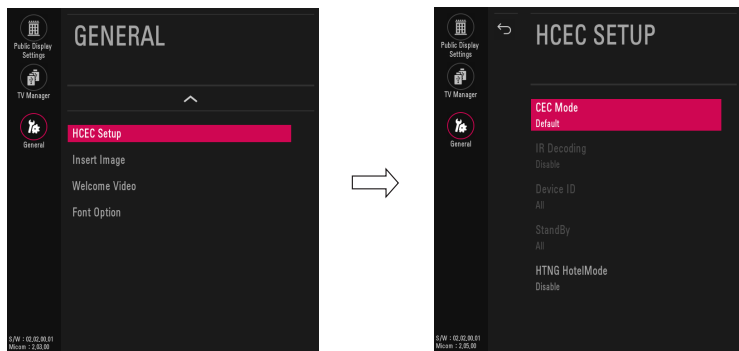
* Depending upon model

- Cable Spec.



- Each Up / Down pin is pulled to 3.3 V with CPU GPIO.
- CPU detects transition from 3.3 V to GND level for volume control.

HCEC Setup



- 1 Go to **General** → **HCEC Setup**.

(1) HCEC Setup

- When **HCEC Setup** is set to **CEC Mode**, You can adjust **IR Decoding**, **Device ID**, **StandBy** menu and **SIMPLINK** feature automatically changed to the on state, and the user can not change this status.

(a) IR Decoding

- When **CEC Mode** is set to **HCEC Mode**, 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**.

(b) 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**.

(c) 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.

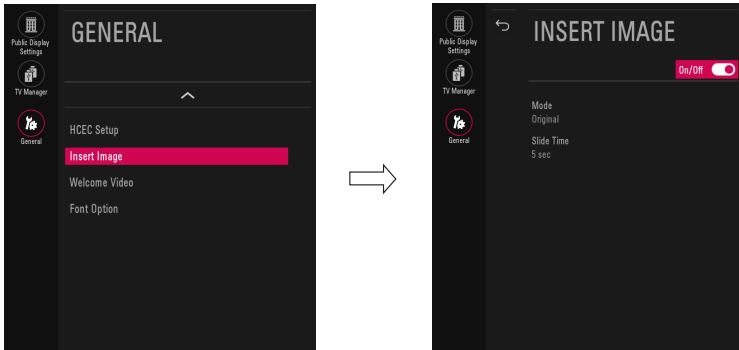
	Send	Receive
Send Only	O	X
Receive Only	X	O
All	O	O
Off	X	X

(2) 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 **Disable**, the above options are still affected.
- If you change it to **Disable**, then the values set by the HTNG will be canceled.

Insert Image

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**.

(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

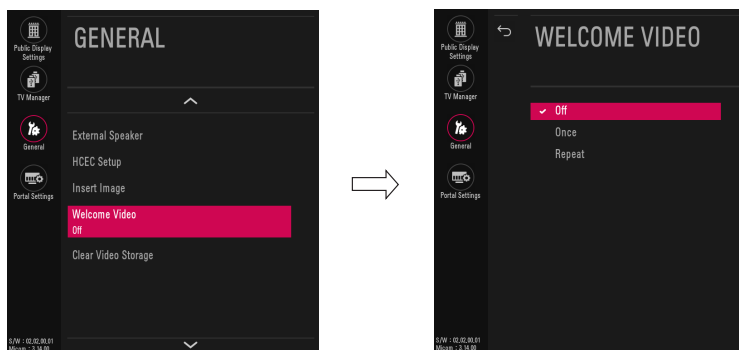
- Select 5, 10, 15, or 20 seconds to display the selected image.

! 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** using the **^** **v** button

! 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

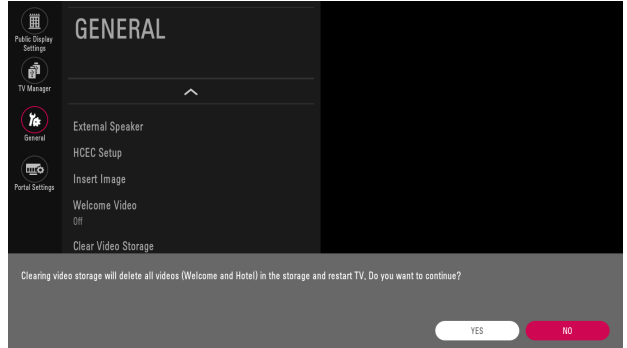
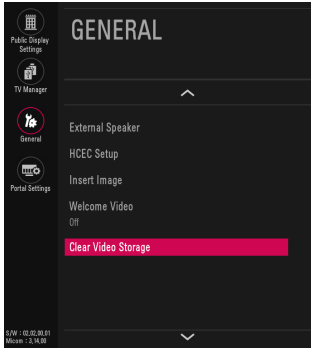
- Only the following commands work: KE(mute), KF (volume), and MC(data – volume, mute, ch).

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**.

Clear Video Storage

* (Depending upon model)



- This feature allows you to delete downloaded videos(Hotel Video and Welcome Video) and reset the feature back to default.

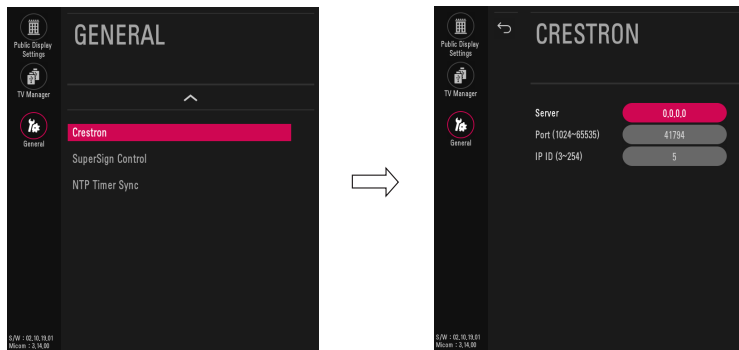
1 Go to **General** → **Clear Video Storage**.

- Set to **Yes** or **No**.

Crestron

* (Depending upon model)

* Image shown may differ from your TV.



1 Go to **General** → **Crestron**

(1) **Server**

- This menu sets the server's IP address for the network connection with the server. (Equipment provided by **Crestron**).
- This function enables synchronization with applications provided by **Crestron**.

(2) **Port (1024~65535)**

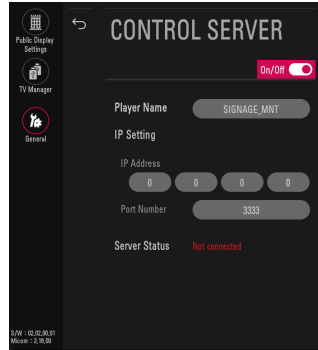
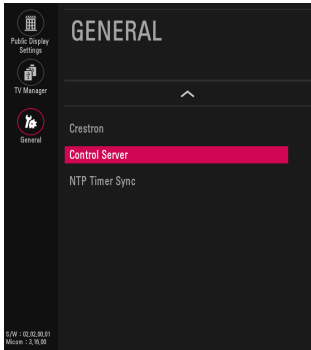
- This menu sets the port for the network connection with the server. The default port number is 41794.

(3) **IP ID (3~254)**

- This menu sets a unique ID for synchronizing with the application.

Control Server

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



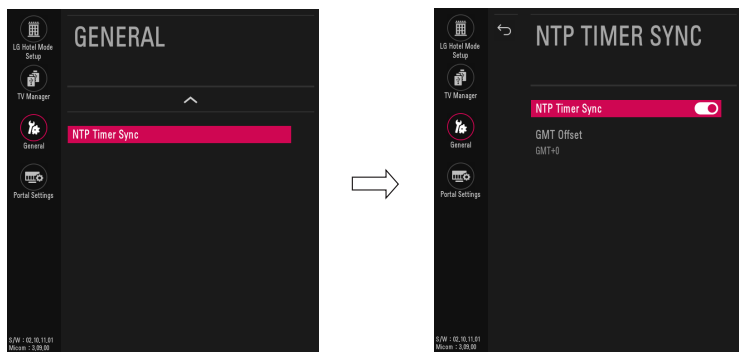
1 Go to **General** → **Control Server**

- Set up to connect your TV to a control server.

NTP Timer Sync

* (Depending upon model)

* Image shown may differ from your TV.



1 Go to **General** → **NTP Timer Sync**

(1) NTP Timer Sync

- Enable or disables **NTP Timer Sync**.

(2) GMT Offset

- Set GMT(Greenwich Mean Time) offset(hour) of your location.

! NOTE

- This feature allows you to receive time information via NTP(Network Time Protocol) Time Server to set **Current Clock**.

KEY CODES

* This feature is not available for all models.

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
00	CH / PAGE	R/C Button	45	Q.MENU	R/C Button
01	CH / PAGE	R/C Button	4C	(Dash) / LIST	R/C Button
02	VOL	R/C Button	4D	PICTURE	R/C Button
03	VOL	R/C Button	52	SOUND	R/C Button
06		R/C Button	5B	EXIT	R/C Button
07		R/C Button	61	(Blue)	R/C Button
08	(Power)	R/C Button	63	(Yellow)	R/C Button
09	(Mute)	R/C Button	71	(Green)	R/C Button
0B	(Input)	R/C Button	72	(Red)	R/C Button
0E	SLEEP	R/C Button	79	RATIO	R/C Button
0F	TV	R/C Button	7C	(Home)	R/C Button
10 - 19	Number Key 0 - 9	R/C Button	8E		R/C Button
1A	Q.VIEW	R/C Button	8F		R/C Button
1E	FAV	R/C Button	91	SAP/* / AUDIO	R/C Button
28	BACK	R/C Button	AA	INFO	R/C Button
39	CAPTION	R/C Button	B0		R/C Button
40		R/C Button	B1		R/C Button
41		R/C Button	BA		R/C Button
43	(Settings)	R/C Button	--	GUIDE/*	R/C Button
44		R/C Button			

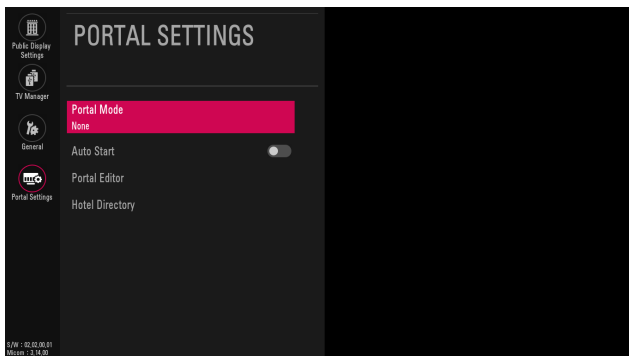
- Key code 4C (0 x 4C) is available on ATSC/ISDB models which use major/minor channel. (For South Korea, Japan, North America, Latin America except Colombia models)

Customizable Portal

* (Depending upon model)

This feature provides Hotel Template and Quick Menu.

Portal Settings



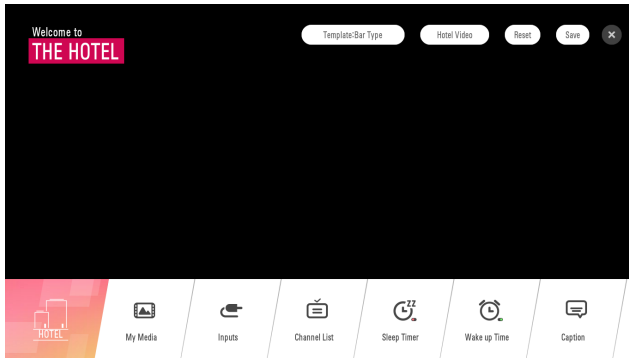
(1) Portal Mode

- 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

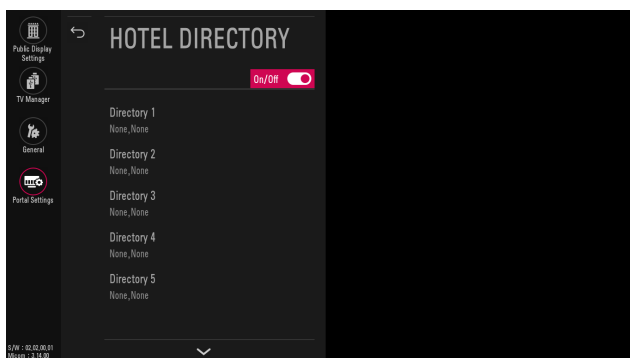


- **Template:** You can set Template when selecting focus. Select between Bar Type or Tile Type (City, Beach, and Forest).
- **Hotel Video:** You can set this mode to **On/Off** when selecting Customizable Portal. You can download it.
 - **Off:** Disable to play **Hotel Video** when selecting Customizable Portal.
 - **On:** You can play **Hotel Video** when selecting Customizable Portal. You can see the menu only if you have downloaded **Hotel Video**.
 - **Download:** Copy and paste the video 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.)
- **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

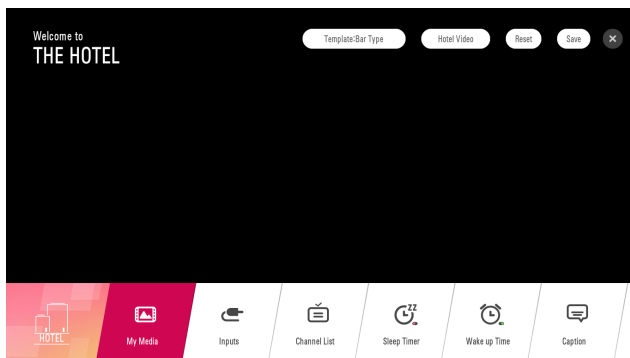


- You can set the information to be displayed in **Customizable Portal** → **Hotel Directory**.
- You can set this mode to **On/Off**.
 - When set to **Off**, this feature cannot be selected as an item in Customizable Portal.
 - If you are already using Hotel Directory in Customizable Portal, this feature 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 Channel:** Provide a page where you can only set Audio Only Programme.
- **Caption:** Move to the Subtitles menu. (Move to the Settings page.)
- **Channel 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.)
- **Hotel Video:** You can play Hotel Video as full screen.

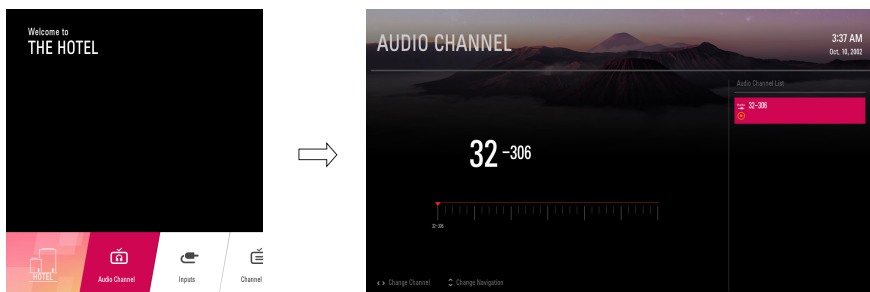
! NOTE

- Entry of items in Customizable Portal is in accordance with the settings in **Public Display Settings** → **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 Channel

This feature provides list of "Audio Only" channels.

* Only available in models with **Customizable Portal**



1 Go to **Customizable Portal** → **Audio Channel**.

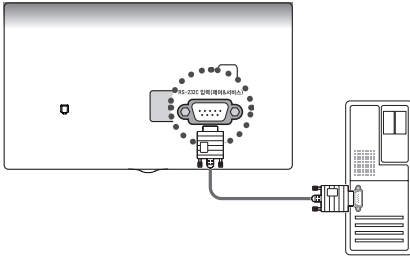
(1) Items

- Move to the first Channel on the list when you enter **Audio Channel**. (When the current input is **Audio Channel**, the current channel is maintained.)
- Press the < > button to switch channels.
- 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 Channel** screen.

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



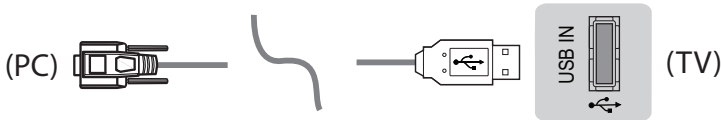
- Connect the USB to Serial converter/RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.
- Connect the serial port of the control device to the RS-232C jack on the product back panel.

! 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.

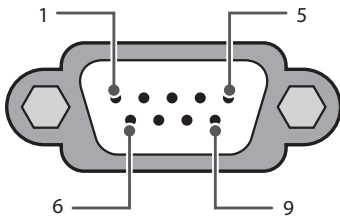
RS-232C with RS-232C Cable

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.

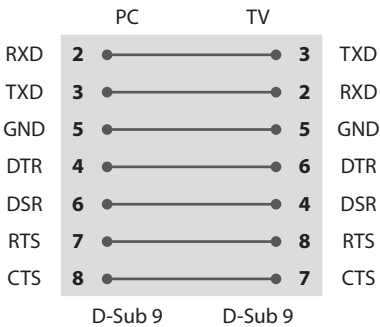
Connector type : D-Sub 9-pin male



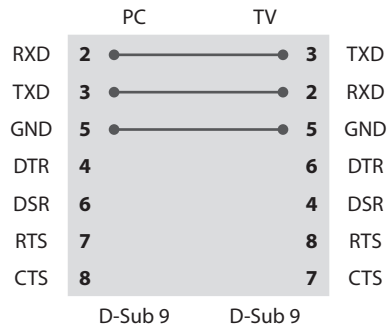
RS-232C
(Serial port)

RS-232C configurations

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



3-Wire Configurations
(Not standard)



Set ID

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

- 1 Press **⚙️ (Settings)** to access the main menus.
- 2 Press the Navigation buttons to scroll to **(* General → Set ID)** and press **Ⓞ** button.
- 3 Scroll left or right to select a set ID number and select **BACK**. The adjustment range is 1-99.
- 4 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.

Command reference list

* (Depending on model)

	COMMAND1	COMMAND2	DATA (Hexadecimal)
1 Power	k	a	00 to 01
2 Aspect Ratio	k	c	(page 42)
3 Screen Mute	k	d	(page 42)
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 44)
18 Energy Saving	j	q	00 to 05
19 Tune Command	m	a	(page 44)
20 Channel 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 47)
24 Auto Configure	j	u	(page 47)

- During playing media, all commands except Power (ka) and Key (mc) are not executed and treated as NG. With RS-232C 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.

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

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

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 (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.
- * 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 operation 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)

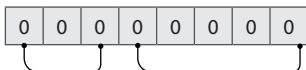
- ▶ Adjust EQ of the set.

Transmission

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

MSB

LSB



Frequency

Data

7	6	5	Frequency	4	3	2	1	0	Step
0	0	0	1st Band	0	0	0	0	0	0(decimal)
0	0	1	2nd Band	0	0	0	0	1	1(decimal)
0	1	0	3rd Band
0	1	1	4th Band	1	0	0	1	1	19(decimal)
1	0	0	5th Band	1	0	1	0	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 channel to following physical number.

Transmission

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

- Analog Antenna/Cable

[Data 00][Data 01] Channel Data

Data 00 : High byte channel data

Data 01 : Low byte channel data

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

Data 02 : Input Source (Analog)

- 00 : Antenna TV (ATV)

- 80 : Cable TV (CATV)

- Digital Antenna/Cable/Satellite

[Data 00][Data 01]: Channel Data

Data 00 : High byte channel data

Data 01 : Low byte channel data

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

Data 02 : Input Source (Digital)

- 10 : Antenna TV (DTV)

- 20 : Antenna Radio (Radio)

- 40 : Satellite TV (SDTV)

- 50 : Satellite Radio (S-Radio)

- 90 : Cable TV (CADTV)

- a0 : Cable Radio (CA-Radio)

- Tune Command Examples:

1 Tune to the Analog antenna (PAL) Channel 10.

Set ID = All = 00

Data 00 & 01 = Channel Data is 10 = 00 0a

Data 02 = Analog Antenna TV = 00

Result = ma 00 00 0a 00

2 Tune to the digital antenna (DVB-T) Channel 01.

Set ID = All = 00

Data 00 & 01 = Channel Data is 1 = 00 01

Data 02 = Digital Antenna TV = 10

Result = ma 00 00 01 10

3 Tune to the satellite (DVB-S)

Channel 1000.

Set ID = All = 00

Data 00 & 01 = Channel Data is 1000 = 03 E8

Data 02 = Digital Satellite TV = 40

Result = ma 00 03 E8 40

Ack

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

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

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

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

Transmission

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

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

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

- Analog Antenna/Cable

Data 00 : Physical Channel Number

- Antenna (ATV) : 02~45 (Decimal: 2 ~ 69)

- Cable (CATV) : 01, 0E~87 (Decimal : 1, 14~135)

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

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

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

Data 05: Input Source (Analog)

- 00 : Antenna TV (ATV)

- 01 : Cable TV (CATV)

- Digital Antenna/Cable

Data 00 : xx (Don't care)

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

Data 01 : High byte Channel Data

Data 02 : Low byte Channel Data

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

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

Data 03 : High byte Channel Data

Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)

- 02 : Antenna TV (DTV) – Use Physical Channel Number

- 06 : Cable TV (CADTV) – Use Physical Channel Number

- 22 : Antenna TV (DTV) – Don't Use Physical Channel Number

- 26 : Cable TV (CADTV) - Don't Use Physical Channel Number

- 46 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)

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

- Tune Command Examples:

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

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

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

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

Ack

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

* For Japan Model

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

Transmission

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

- Tune Command Examples:

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

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

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

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

* This feature is varied based on the model.

Ack

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

20 Channel Skip/Add (Command: m b)

▶ To skip current channel 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 channel 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 31

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]

