LG
Life's Good

INSTALLATION MANUAL
LED TV

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

LV3**C-C/D*

www.lg.com

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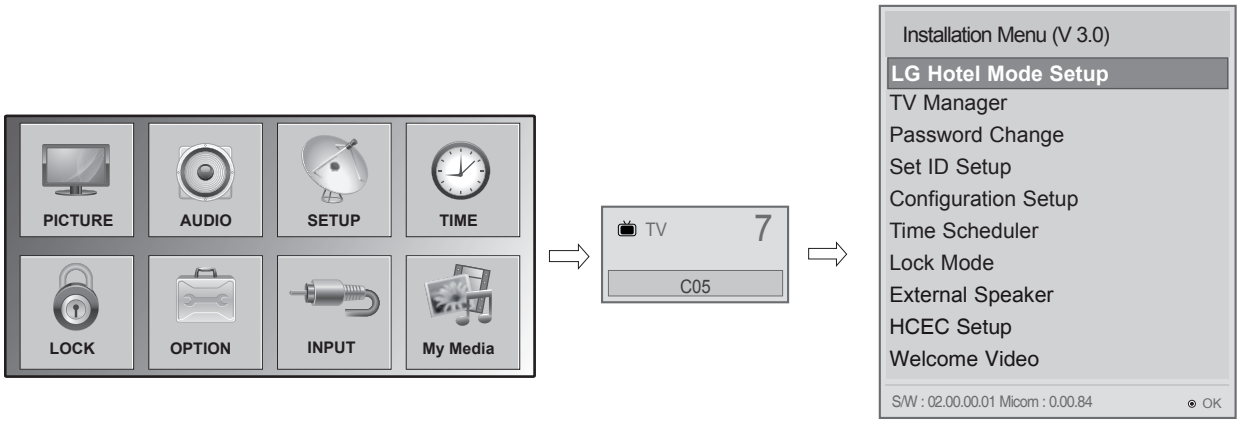
INSTALLATION MENU

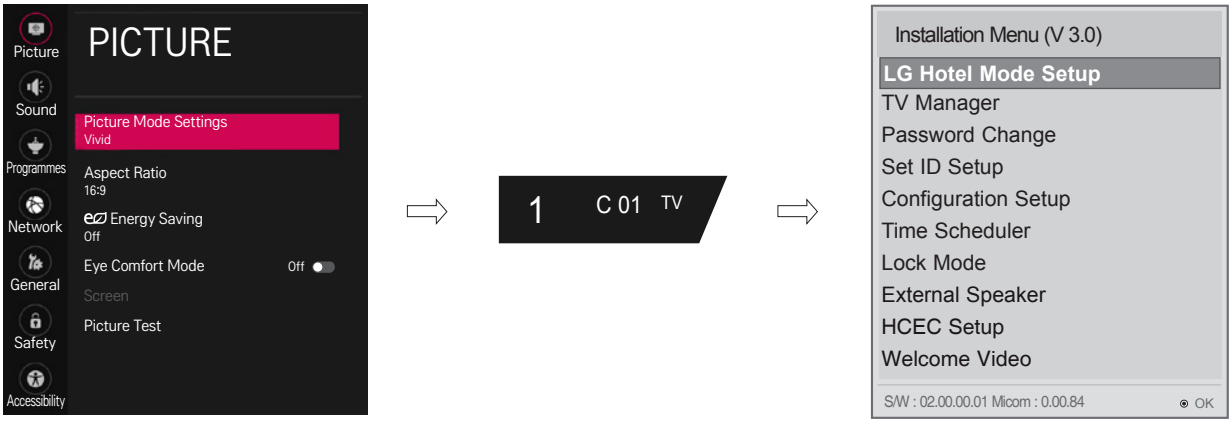
Introduction

The abundant functions for Hotel TV linked with software installation can be projected on OSD as 'Installation Menu'.
The wide range of hotel features can be performed simply on additional window to enhance the LG hotel TV's easy installation and convenient operation for Hotelier and System Integrators.

- Image shown may differ from your TV.



or



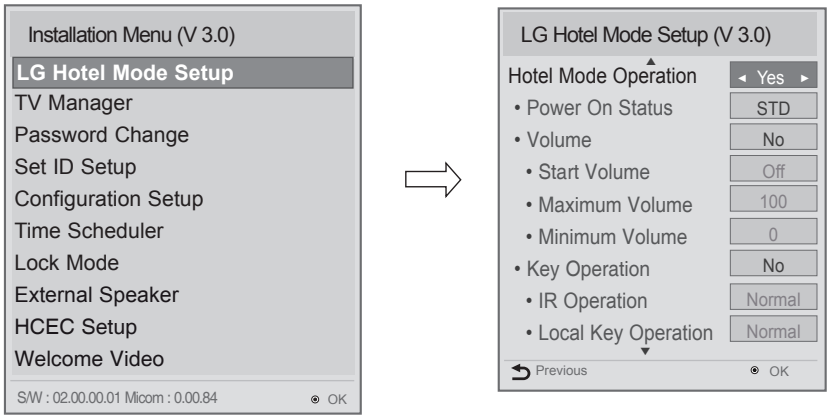
1. Press the ⚙ **(SETTINGS)** button for more than 5 seconds using the user remote control, programme information will appear at top left on the screen.

2. Enter a four digit password and press OK button.
   - The TV is set with the initial password "1-1-0-5".

3. Use the ∨ ∧ button to select the desired menu.

LG Hotel Mode Setup

- Image shown may differ from your TV.



1. Use the ∨ ∧ button to select the LG Hotel Mode Setup.
2. Use the **OK** button and then ∨ ∧ button to select Hotel Mode Operation.
   *When 'Hotel Mode Operation' is set to Yes(Work), all functions of Hotel Mode apply.

(1) Hotel Mode Operation (DVB)

- Decide to work all functions of ‘Hotel Mode Operation’ or not by setting’ Hotel Mode Operation’ as Yes(Work) or No(Do Not Work)
- When ‘Hotel Mode Operation’ is set to Yes(Work), all functions of Hotel Mode apply.
- When ‘Hotel Mode Operation’ is set to No(Do Not Work), all functions of Hotel Mode Do Not apply.
- When it is set to ‘Yes’, ‘Key Lock’ item of the User menu is disabled and the OSD is displayed same to the Local Key Operation setting of the Hotel mode.
- When it is set to ‘Yes’, 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 ‘Yes’, User Menu-> Option -> ‘Factory Reset’ is disabled.

(2) Power On Status

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

(3) Volume (0 ≤ Min ≤ Start ≤ Max ≤ 100)

- Decide to apply volume policy of ‘Start Volume’, ‘Maximum Volume’ and ‘Minimum Volume’ as Yes(Work) or No(Do Not Work).

(3-1) Start Volume

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

- The level is specified as a number between minimum volume to maximum value. (Min ≤ Start ≤ 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’ (Yes) and ‘Start Volume’ (Off, 0 ~ 100) were set simultaneously.

(3-2) Maximum Volume

This entry sets the maximum volume level the set. The level is specified as a number between ‘Minimum Volume’ to 100. (Min ≤ **Max** ≤ 100)

- If the command volume up to higher than maximum volume’ is received, that should be ignored.
- The default value is 100.

(3-3) Minimum Volume

This entry sets the minimum volume level the set will produce.

- The level is specified as a number between 0 to ‘Maximum Volume’. (0 ≤ **Min** ≤ Max)
- If the command volume down to lower than minimum volume is received, that should be ignored.
- The default value is 0.

(4) Key Operation

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

(4-1) IR Operation

Decide whether work the LG remote control or not.

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

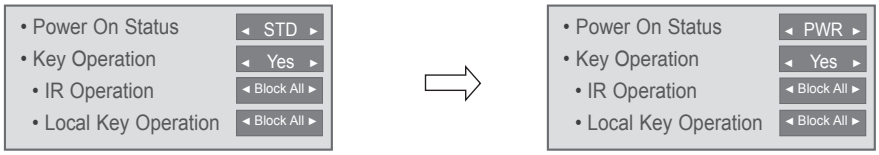
(4-2) Local Key Operation

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

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

Exception)

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



(5) Limited Mode

Configure TV function’s limitation. When selected to ‘Yes’, following sub-menus will be worked by below.

(5-1) Setup Menu

Decide to enter 'Setup’ Menu’ as ‘Yes’(Enter possible) or ‘No’(Enter impossible)

(5-2) Input Source Change

Decide to change input source or not by setting 'Input Source Change' as Yes(Change possible) or No (Change impossible).

- When ‘Input Source Change’ is set to ‘No’ (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 Programme key, numeral key, List key, Q.View key in all Input source except TV source) doesn't work.
  - » Entering 'Setup Menu' item in the 'Main Menu OSD' except TV mode doesn't accepted. Because entering 'Setup Menu' item makes present mode as TV mode even though present mode is not TV. Change to TV mode isn’t allowed.
  - » TV set always turns on fixed input source and volume information regardless of already set information.
  - » Entering 'Setup Menu' except TV mode is impossible regardless of ‘Programme Change' or 'Setup Menu' items’ value.
  - » TV can be only turned on with the input source which is irrelevant from the programme related information set (volume, input) in ‘On Time’ Menu.
  - » Auto AV and HDMI-CEC still work regardless of Input Source Change’s value.
  - » When 'Input Source Change' is set to Yes(Change possible), changing input source is available.

(5-3) Programme Change

Decide to change channel or not by setting ‘Program Change' as ‘Yes’(Change Possible) or ‘No’(Change Impossible) when present source is TV.

- When ‘Programme Change' is set to No (Change Impossible)
  - » Program 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 ‘Setup Menu' in the 'Main Menu’ OSD is impossible regardless of ‘Setup Menu' item.
- When 'Program Change’ is set to Yes(Change Possible), ‘Program Key’, ‘Numeric Key’, ‘List Key’, ‘Q.View’ Key does work and entering ‘Channel Menu' in the Main Menu OSD is possible.

(5-4) Menu Display

Function to decide whether work with menu (including relevant menus too) of control key (Yes – Enter possible) or not (No – Enter Impossible).

- Although select No(Enter impossible), the action that press a Menu button for 5 seconds to enter ‘Installation Menu’ is available.
- When select Yes(Enter possible), Menu works.

(5-5) OSD Display

Decide to display OSD or not by setting ‘OSD Display’ as Yes(Display) or No(Do not Display).

- When ‘OSD Display’ is set to ‘No’(Do not Display), all OSD is not displayed except some exception.
- Although select ‘No’ (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 …)

(5-6) System Provider Mode

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

- When value is ‘Yes’, Accessible Items on the menu system, others are not permissible.
  - » Input select screens
  - » Sleep timer
  - » Aspect Ratio
  - » Closed Caption
  - » ‘Lock’ / ‘My Media’ / ‘Network’ / ‘Support’ / ‘Bluetooth’ Menu
- ‘Q.menu’, which is related to ‘Setup’ 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.

(6) Power Management

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

- Activity on either of these inputs shall restart the ‘Power Management’ timer and 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.

(7) DTV Programme Update

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

- When DTV Programme Update is set to ’Auto’, the function to update TV’s programme map according to DTV channel’s stream information
- DTV Programme Update is set to ‘Manual’, the function to keep TV’s channel map even though DTV programme’s information is changed.

(8) 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.

(8-1) Input Source

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

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

(8-2) Programme

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

(8-3) A/V Setting

If ‘A/V Setting’ is changed from ‘No’ to ‘Yes’, parameters that are set before entering ‘Installation Menu’ are applied whenever turn on power.

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

(8-4) Aspect Ratio

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

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

(9) Aux Source Setting

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

(9-1) Input Source

- Available Input Source List

(9-2) Setting

- Decide whether selected ‘Input Source’ is usable (Enable) or not (Disable).
- User cannot disable the current input’s ‘Aux Source Setting’.

(10) Radio Name Display

Instead of ‘Audio Only’, the name of a radio channel is displayed on the screen when a radio broadcast is playing.

- Set to Yes(Work) or No(Do Not Work).
- If the setting is ‘Yes’, the name of a radio channel is displayed for the radio channel.
- If the setting is ‘No’, the text ‘Audio Only’ is displayed for the radio channel.

(11) Radio Video Blank (Except for 43/49/55LV340C-DB)

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

(11-1) Start PR. No.

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

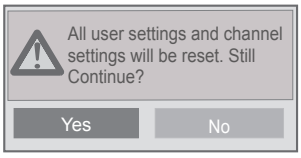
(11-2) No. Of. PR.

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

(12) Factory Reset

Factory reset returns all the parameters to the default settings.

- Press 'Enter key' to proceed factory reset. and confirmation message window will be shown.



- When select 'Yes', all television settings except UTT value should write to the default settings.

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

Item	Enable	Disable	Initial
Hotel Mode Operation	Yes	No	No
Power On Status	-	-	*STD
Volume	Yes	No	No
Start Volume	Off, Minimum Volume ~ Maximum Volume		Off
Maximum Volume	Minimum Volume ~ 100		100
Minimum Volume	0 ~ Maximum Volume		0
Key Operation	Yes	No	No
LG IR Operation	Normal / Use PWR Only / Block All		Normal
Local Key Operation	Normal / Use PWR Only / Block All		Normal
Limited Mode	Yes	No	No
Setup Menu	Yes	No	Yes
Input Source Change	Yes	No	Yes
Programme Change	Yes	No	Yes
Menu Display	Yes	No	Yes
OSD Display	Yes	No	Yes
System Provider Mode	Yes	No	No
Power Management	Off, 1 ~ 7		Off
DTV Channel Update	Auto	Manual	Auto
Power On Default	Yes	No	No
Input Source	Off, ATV, DTV, ...		Off
Programme	Minimum Program ~ Maximum Program		Minimum Program
A/V Setting	Yes	No	No
Aspect Ratio	Disable / Original / 4:3 / 16:9		Disable

LG Hotel Mode Setup (Value Range Table)

Item	Enable	Disable	Initial
Aux Source Setting	Yes	No	No
Input Source	Aux Input(AV1 ~ MAX_INPUT)		AV1
Settng	Enable	Disable	Enable
Radio Name Display	Yes	No	No
Radio Video Blank	Yes	No	No
Start PR. No.	0 ~ 199 (Taiwan TV 2 ~ 69 / CATV 1 ~ 199)		1
No. Of. PR.	0 ~ 10 (Start PR. NO + No. of PR. <= Max Start PR. NO. + 1)		1
Factory Reset	Confirmation window (Yes / No)		

TV Manager

1. USB

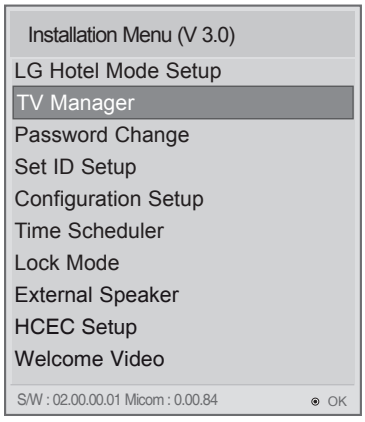
Ez Download

Ez Download is a function that enables users to download the desired items all at once, such as EPK (software update file), TLL (see Send to USB descriptions for more information regarding file types), Logo Image, etc (TLX, MICOM for Pro:Centric).
* Splash images and EPK files should be copied into the folder named LG_DTV on the USB.
TLL files should be copied to the root folder of the USB. Insert Image files shoud be copied into the folder named LG_SIG on the USB.

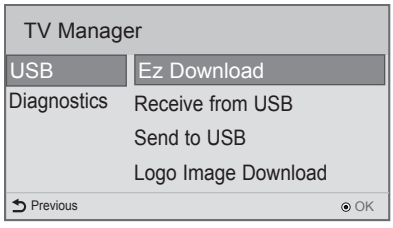
- Image shown may differ from your TV.

1. Plug USB memory card into the USB port of the TV.

2. Use the ∧∨ button to select the **TV Manager** option and then press the **OK** button.

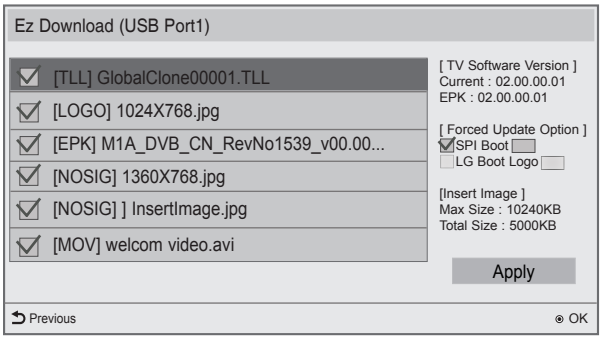


3. Use the ∧∨ button to select the **USB** and **Ez Download** and press the **OK** button.



4. Select a list to download and press the **OK** button.

5 Select the EPK option (software update) and then use the green and yellow 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, or EPK, 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.
- If Micom file is selected, SPI Boot file can't be selected. (For LV5** series)
- If SPI Boot is selected, Micom file can't be selected. (For LV5** series)

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.

Introduction

(1) Overview USB Cloning Procedure

- Commercial TVs have the capability to support cloning internal TV data and programme information with an external clone device called “USB Cloning”, in order to copy TV data accurately and quickly. The clone internal functions use slightly different internal processes for the two types of commercial TVs. However, the UI of cloning feature remains the same in both.
  Regarding the demands over the current cloning feature for quicker clonin g, 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 Mega Bytes and less than 4 Giga Bytes is recommended.

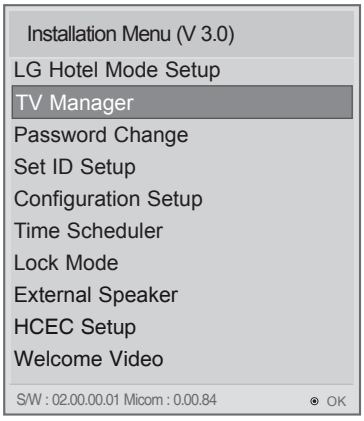
NOTE

- 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.

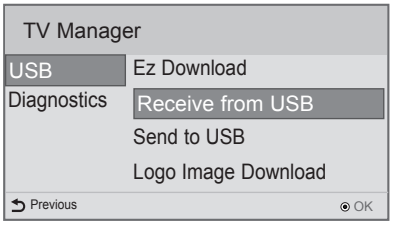
Receive From USB

- Image shown may differ from your TV.

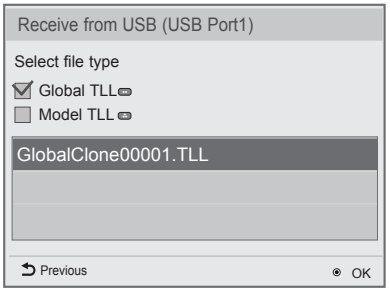
1. Plug USB memory card into the USB port of the TV.
2. Use the ∧∨ button to select the **TV Manager** option and then press the **OK** button.



3. Use the ∧∨ 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 ‘xxLP360H-TA00000.TLL’ for 32/42LP360C model.



4. Use the ∧∨ button to select the desired *.TTL files name and press the **OK** button.



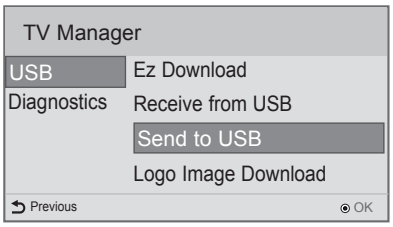
5. The TV is changed to Standby mode after a successful download.
   If the download failed, the TV will changed to the initial installation screen.

Send To USB

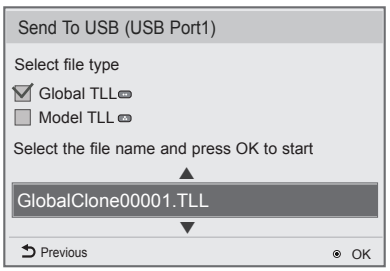
- Image shown may differ from your TV.

1. Plug USB memory card into the USB port of the TV.
2. Use the ^ v button to select the **TV Manager** option and then press the **OK** button.

3. Use the ^ v button to select the **USB and Send to USB** and press the **OK** button.



4. Use the ^ v button to select the desired file name and press the **OK** button.

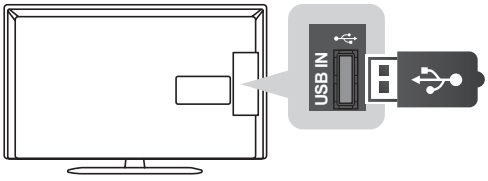


5. The TV is changed to the initial installation screen after a successful download.

Logo Image Download

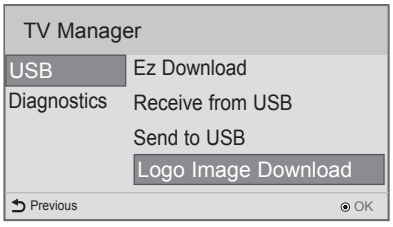
Make a ‘LG_DTV’ folder on the USB flash drive and then copy the splash image file to that folder.
• Image shown may differ from your TV.

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

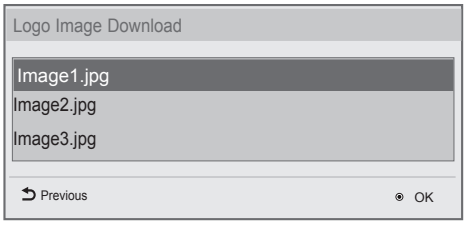


2 Use the ∧ ∨ button to select the **TV Manager** option and then press the **OK** button.

3 Use the ∧ ∨ button to select the **USB and Logo Image Download** and press the **OK** button.



4 Use the ∧ ∨ button to select the desired file name and press the **OK** button.



NOTE

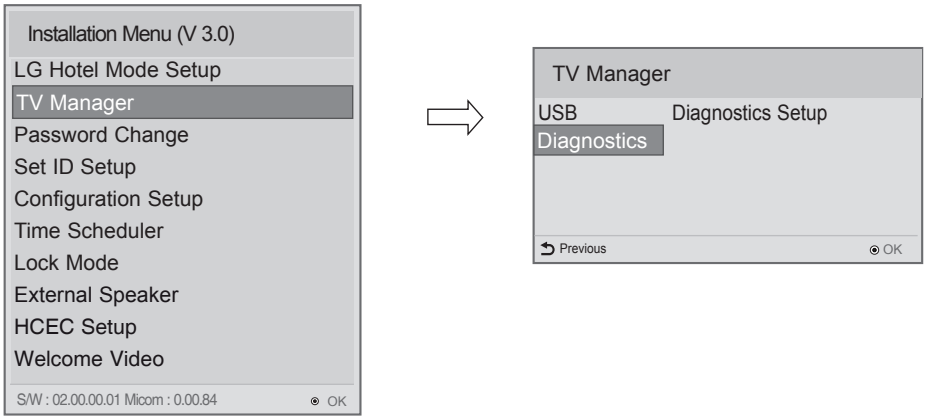
- Splash Image update function supports only JPEG format file of less than 1 MB filesize.
- Except for JPEG images with progressive encoding.
- We recommend you that splash image resolution match the TV`s panel resolution.
- 'Max resolution of splash image : Full HD->1920x1080, HD->1360x768.
- 'Min resolution of splash image : Full HD->64x64, HD->64x64.
- 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 filename to use DZM file on EZ Download.
- Non-standard photo/image file may not be displayed.

2. Diagnostics

Diagnostics Setup

Introduction

This diagnostic function provides current status information of the TV in XML file format using a USB device. If the user sets a signal standard level, SignalTrace 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

1 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 Option menu.

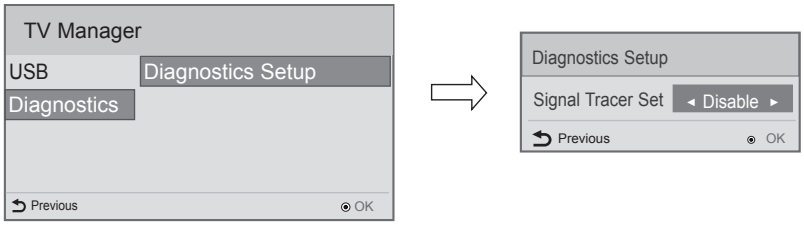
2 If a SignalTrace standard level is set, it saves the average value of the channel signal with less than 30 tuning counts to the digital broadcasting channel. If the count is more than 30, it saves good and bad signals by comparing the average signal value to the current signal strength and signalTrace standard level (SignalTracer Set) value.
▷ Bad signal: BML (average value) > strength (current signal strength) and (BML - strength) > SignalTracer Set
▷ Good signal: BML< strength and (strength - BML) > SignalTracer 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 Option menu.

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

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



- Change the 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.

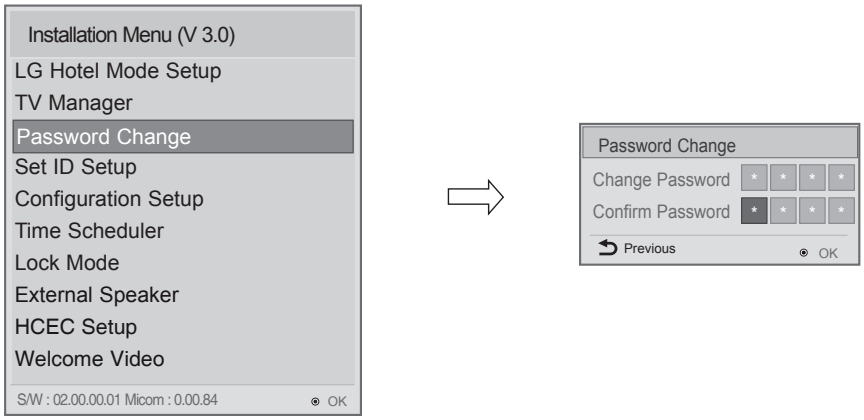
※ In USB cloning, the configured Signal Tracer value is not cloned.

※ When a factory reset is performed, Signal Tracer Set is disabled and traced information is deleted.

Password Change

• Image shown may differ from your TV.

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

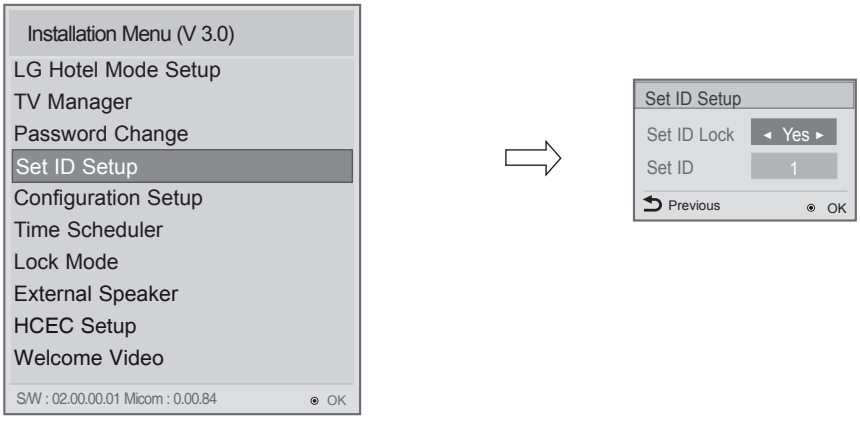


1. Use the ∨ ∧ button to select the Password Change and then press the **OK** button.

2. Enter four digit password.

3. Input the password again for confirmation.

Set ID Setup



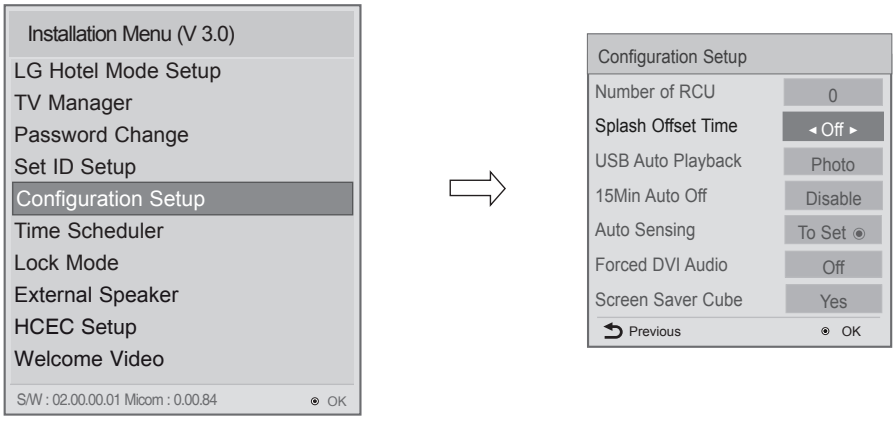
1 Use the ∨ ∧ button to select the Set ID Setup.

- **Set ID Lock**
  - Set the ‘Set ID’ item in ‘Option’ Menu whether to activate or not.
  - Set to Yes(Work) or No(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

- If 'Auto Sensing' is set to 'To Set ⊙', 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.
- If SIMPLINK is set to On, HDMI is automatically set to Disable 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) Screen Saver Cube

- When ‘Screen Saver Cube’ is set to ‘No’, TV will do not display LG Screen Cube.

(8) One Channel Map

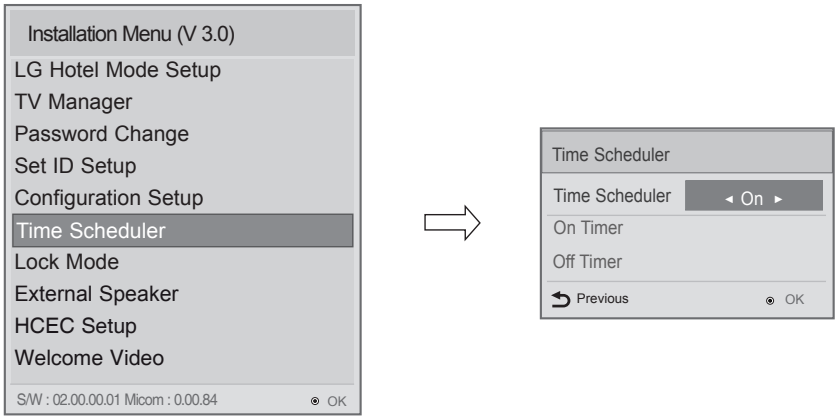
(*Except for LV3**C-D* series)

- If 'One Channel Map' is 'YES', the TV will operate as below.
  A. In ‘Programme Edit’ window, all channels are shown in a single list regardless of input source. (DTV/RADIO/TV) (For satellite supported models, a Satellite input source is also included.)
  B. Select the ‘Auto Sort’ button in the ‘Programme Edit’ window to sort channels sequentially.

(9) Wake On Lan

- WOL(Wake On Lan) : If Set to "YES", User can turn on the TV by using LAN network. (*Only for LV34*C series)
  - Only Magic Packet is valid.
  - If TV get a magic packet that include TV's mac address, TV will be turned on.
  - TV will sustain WOL setting value, although user unplug the TV.

Time Scheduler



1 Use the ∨ ∧ button to select the **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 Timer’, ‘Off Timer’ menu.

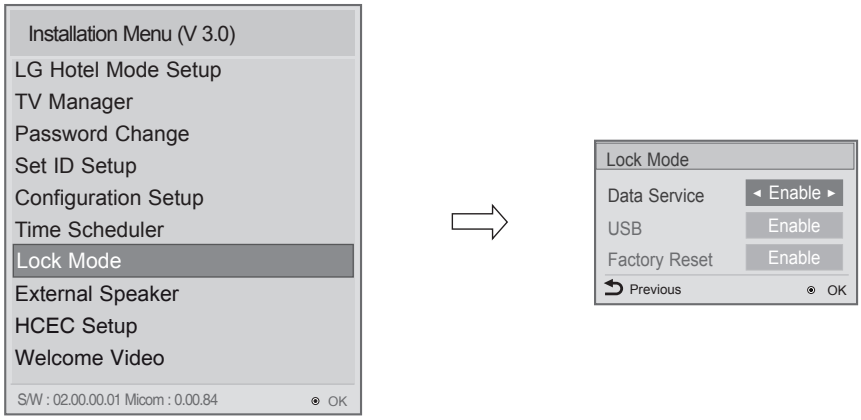
(2) On Timer

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

(3) Off Timer

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

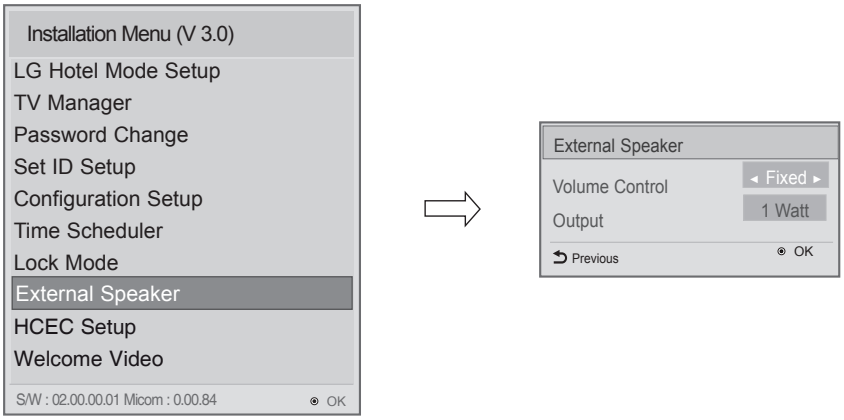
Lock Mode



1 Use the ∨ ∧ button to select the Lock Mode.

- If 'Lock Mode' items are disabled, the following features will be unavailable.
  - Data Service(Teletext, EPG, Sub-Title, Caption (Include MPEG4), MHEG)
  - USB Enable(Exclude S/W update)
  - Factory Reset(Except for 43/49/55LV340C-DB)

External Speaker



1 Use the ∨ ∧ button to select the External Speaker.

(1) Volume Control

- Selects the volume control method of an external speaker. You can choose either Variable or Fixed. Variable is linked to the main volume OSD and change the volume 0-1 Watts.
- Fixed produces a fixed output. The default is Off. (Ext Variable is able to be supported with LV54*H series.)

(2) Output

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

NOTE

(Optical supported models)

- If You set External Speaker as Variable Output Mode, User cannot select ‘External Speaker(Optical)’ in Sound-Out menu.

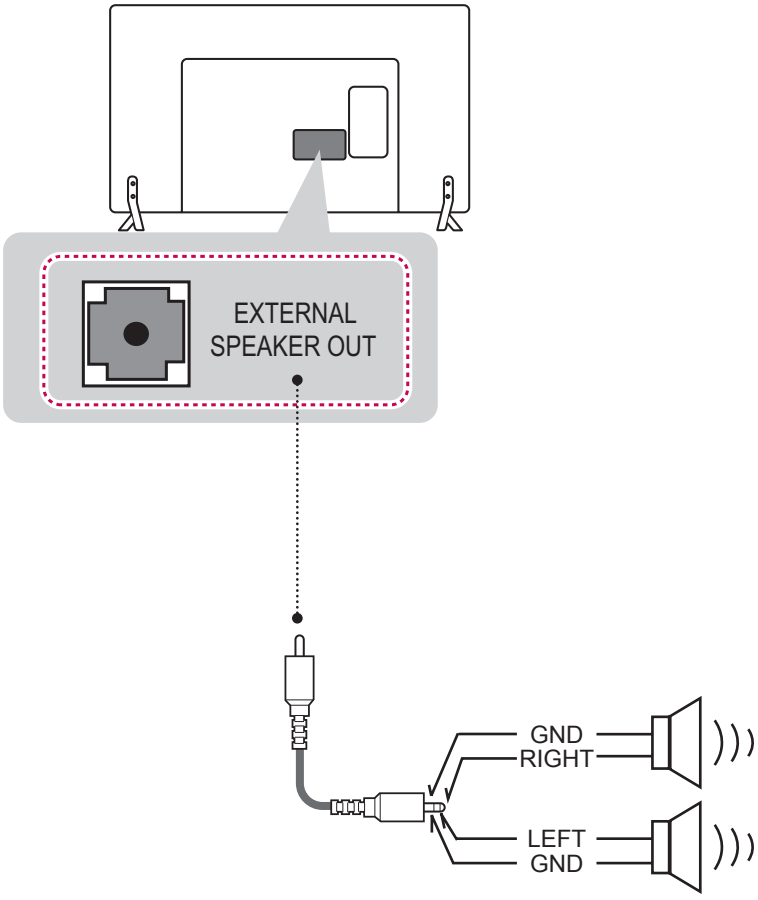
NOTE

(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

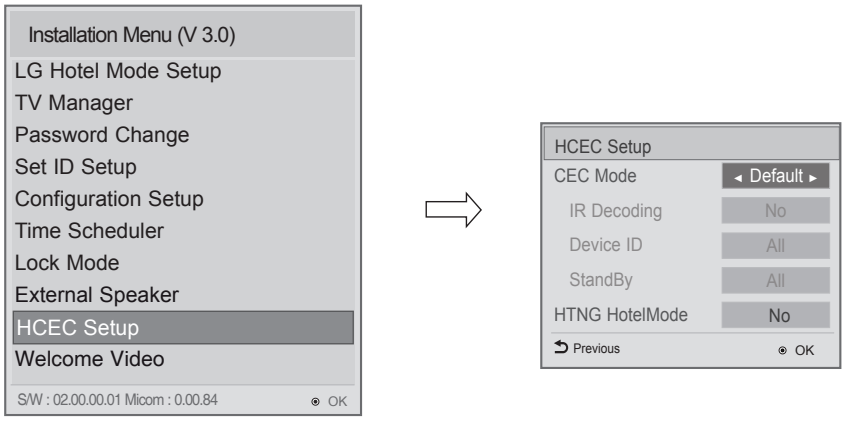
1 Connect the external speaker to the external speaker out jack on the TV.



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.

HCEC Setup



1 Use the ∨ ∧ button to select the HCEC Setup.

(1) HCEC Setup

- When ‘HCEC Setup’ is set to ‘HCEC Mode’, You can adjust ‘IR Decoding’, ‘Device ID’, ‘Stand By’ menu and SIMPLINK feature automatically changed to the ON state, and the user can not change this status.

(a) IR Decoding

- When ‘IR Decoding’ is set to ‘Yes’, the TV decodes and changes it into a CEC Message and sends it to Command via the HDMI CEC Line. The default value is No.

(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.

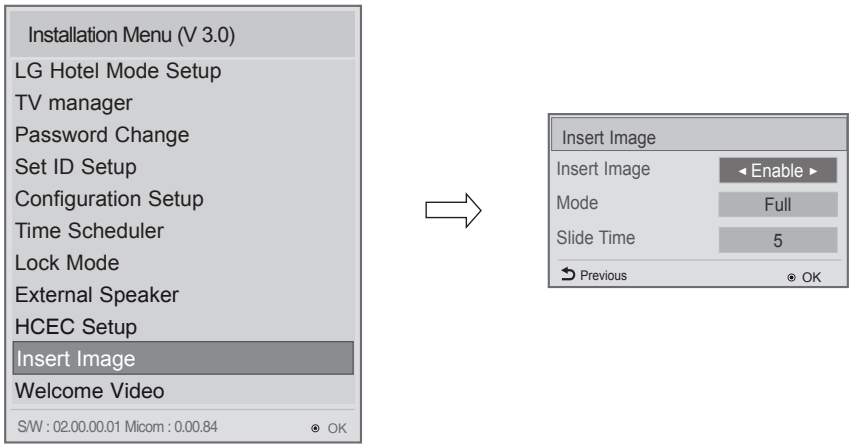
	Send	Receive
Send Only	O	X
Receive Only	X	O
All	O	O
OFF	X	X

(2) HTNG HotelMode

- If the following options are selected because of the HTNG command:
  *Power On Default, Start Volume, Maximum Volume, Minimum Volume, or Start Volume, then the value for the HTNG HotelMode changes automatically to Yes and, even if the HotelMode is set to No, the above options are still affected.
- If you change it to No, 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 Select Insert Image with the ∨ and ∧ buttons and then press the **OK** button.

2 Insert Image

- Enables or disables Insert Image .

3 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.

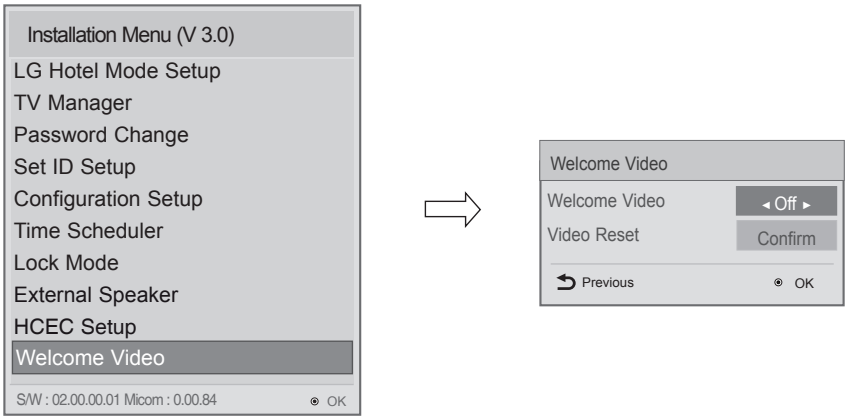
4 Slide Time

- 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*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



- 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 Select Welcome Video with the ∨ and ∧ buttons and then press the **OK** button.

2 Welcome Video
- You can set to Off, Once or Repeat using the < > button

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

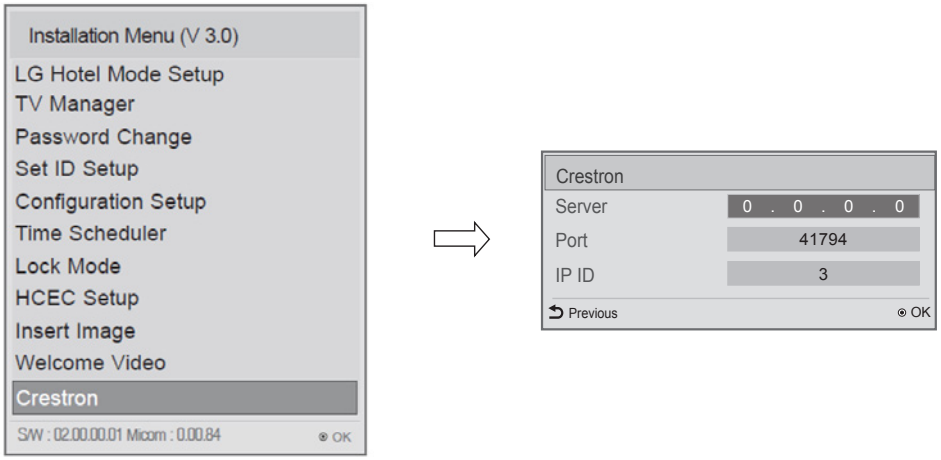
NOTE

1. Operation
   - The video displays after your TV is turned on and the boot logo appears.
   - If Welcome Video is enabled and a video is downloaded on the TV, the video plays.
   - The time it takes a video to be displayed may differ depending on the decoding time of the video.
   - In case of a corrupted or damaged file, the video may abruptly stop without an error displayed.
   - The timer features such as Off Timer and Sleep Timer are not available during playback.
   - USB Autoplayback starts after the Welcome Video.
   - Controls for playing the video are not available. (Pause, stop, fast forward, etc.)
2. Using the keys
   - Only eight keys (Vol +, Vol -, Mute, OK, Exit, CH up, CH down and Back) can be used while playing video.
   - The OK, Exit, CH up, CH down, or Back key can cancel playing a video.
3. Using RS232C
   - Only the following commands work: KE(mute), KF(volume), and MC(data – volume, mute, ch).
4. Downloading
   - Videos in any file format that the TV supports can be downloaded and displayed.
   - Videos up to 50MB can be downloaded.
   - For detailed information about downloading videos, go to TV Manager > Ez Download.
   - Please do not use the ampersand character(&) and the left angle bracket (<) in the filename to use DZM file on EZ Download.

Crestron

(*Only for LV34** series)

- Image shown may differ from your TV.
- This function enables synchronization with applications provided by Crestron.



(1) Server

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

(2) Port

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

(3) IP ID

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

EXTERNAL CONTROL DEVICE SETUP

Key Codes

- This feature is not available for all models.

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
00	CH +, PR +	R/C Button	53	List	R/C Button
01	CH -, PR -	R/C Button	5B	Exit	R/C Button
02	Volume +	R/C Button	60	PIP(AD)	R/C Button
03	Volume -	R/C Button	61	Blue	R/C Button
06	> (Arrow Key / Right Key)	R/C Button	63	Yellow	R/C Button
07	< (Arrow Key / Left Key)	R/C Button	71	Green	R/C Button
08	Power	R/C Button	72	Red	R/C Button
09	Mute	R/C Button	79	Ratio / Aspect Ratio	R/C Button
0B	Input	R/C Button	91	AD (Audio Description)	R/C Button
0E	SLEEP	R/C Button	7A	User Guide	R/C Button
0F	TV, TV/RAD	R/C Button	7C	Smart / Home	R/C Button
10 - 19	* Number Key 0 - 9	R/C Button	7E	SIMPLINK	R/C Button
1A	Q.View / Flashback	R/C Button	8E	►► (Forward)	R/C Button
1E	FAV (Favorite Channel)	R/C Button	8F	◄◄ (Rewind)	R/C Button
20	Text (Teletext)	R/C Button	AA	Info	R/C Button
21	T. Opt (Teletext Option)	R/C Button	AB	Program Guide	R/C Button
28	Return (BACK)	R/C Button	B0	► (Play)	R/C Button
30	AV (Audio / Video) Mode	R/C Button	B1	■ (Stop / File List)	R/C Button
39	Caption/Subtitle	R/C Button	BA	II (Freeze / Slow Play / Pause)	R/C Button
40	Λ (Arrow Key / Cursor Up)	R/C Button	BB	Soccer	R/C Button
41	V (Arrow Key / Cursor Down)	R/C Button	BD	● (REC)	R/C Button
42	My Apps	R/C Button	DC	3D	R/C Button
43	Menu / Settings	R/C Button	99	AutoConfig	R/C Button
44	OK / Enter	R/C Button	9F	App / *	R/C Button
45	Q.Menu	R/C Button	9B	TV/PC	R/C Button
4C	List, - (ATSC Only)	R/C Button			

* Key code 4C (0x4C) is available on ATSC/ISDB models which use major/minor channel.
(For South Korea, Japan, North America, Latin America except Colombia models)

EXTERNAL CONTROL DEVICE SETUP

- Image shown may differ from your TV.

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

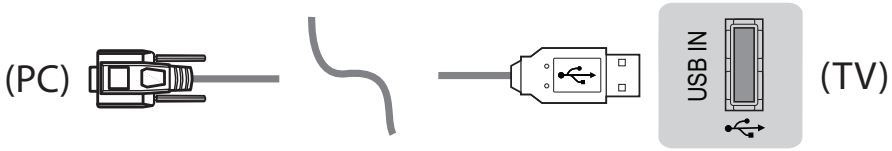
Note: The type of control port on the TV can be different between model series.

* Please be advised that not all models support this type of connectivity.

* Cable is not provided.

USB to Serial converter with USB Cable

USB Type

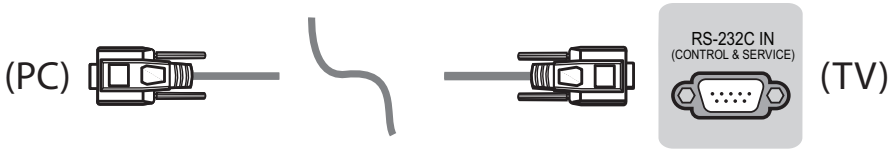


- LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial converter which is not made nor provided by LG.
- It can be purchased from computer stores that carry accessories for IT support professionals.

RS-232C With RS232C Cable

DE9 (D-Sub 9pin) Type

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



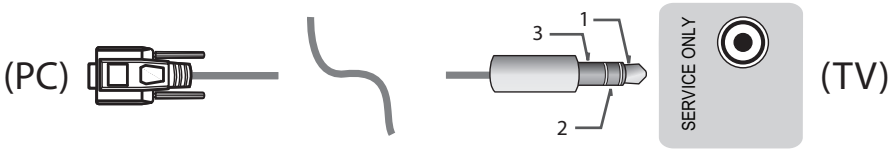
The connection interface may differ from your TV.

Phone jack Type

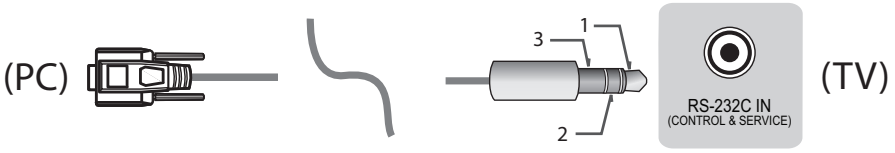
- You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV, which is specified in the manual.

* For other models, connect to the USB port.

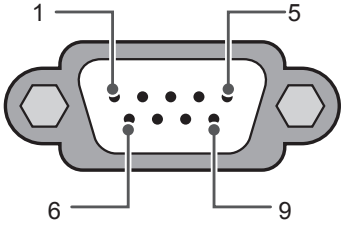
* The connection interface may differ from your TV.



- or



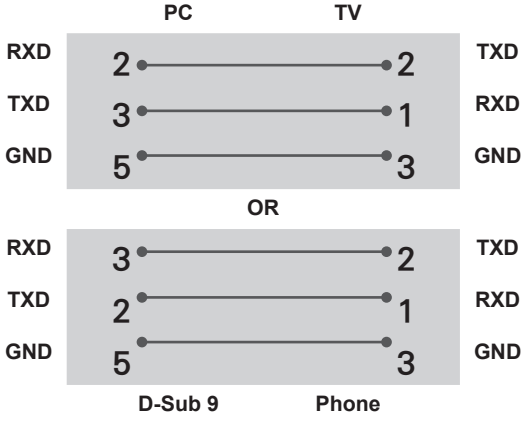
Customer Computer



RS-232C
(Serial port)

RS-232C configurations

3-Wire Configurations(Not standard)



Set ID

For Set ID number, see "**Real Data Mapping**".

Press ⚙ **(SETTINGS)** to access the main menus.

1. Press the Navigation buttons to scroll to **(*General → About this TV or OPTION)** and press **OK**.
2. Press the Navigation buttons to scroll to **SET ID** and press **OK**.
3. Scroll left or right to select a set ID number and select **CLOSE**. The adjustment range is 1-99.
4. When you are finished, press **EXIT**.
   * (Depending on model)

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

CAUTION

- 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.

Communication Parameters

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

Command reference list

(Depending on model)

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power*	k	a	00 to 01	15. Balance	k	t	00 to 64
02. Aspect Ratio	k	c	(p.39)	16. Color (Colour) Temperature	x	u	00 to 64
03. Screen Mute	k	d	(p.39)	17. ISM Method (Only Plasma TV)	j	p	(p.40)
04. Volume Mute	k	e	00 to 01	18. Equalizer	j	v	(p.40)
05. Volume Control	k	f	00 to 64	19. Energy Saving	j	q	00 to 05
06. Contrast	k	g	00 to 64	20. Tune Command	m	a	(p.41)
07. Brightness	k	h	00 to 64	21. Channel (Programme) Add/Del(Skip)	m	b	00 to 01
08. Color/ Colour	k	i	00 to 64	22. Key	m	c	Key Codes
09. Tint	k	j	00 to 64	23. Control Backlight, Control Panel Light	m	g	00 to 64
10. Sharpness	k	k	00 to 32	24. Input select (Main)	x	b	(p.43)
11. OSD Select	k	l	00 to 01	25. 3D (Only 3D models)	x	t	(p.43)
12. Remote Control Lock Mode	k	m	00 to 01	26. Extended 3D (Only 3D models)	x	v	(p.43)
13. Treble	k	r	00 to 64	27. Auto Configure	j	u	(p.44)
14. Bass	k	s	00 to 64				

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

Transmission / Receiving Protocol

Transmission

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

[Command 1] : First command to control the TV. (j, k, m or x)
[Command 2] : Second command to control the TV.
[Set ID] : You can adjust the [Set ID] to choose desired monitor ID number in option menu. Adjustment range in TV is 1 to 99. If [Set ID] value is selected to '0', every connected set can be controlled.
* [Set ID] is indicated as decimal (1 to 99) on menu and as Hexadecimal (0x00 to 0x63) on transmission/receiving protocol.
[DATA] : To transmit command data (hexadecimal). Transmit 'FF' data to read status of command.
[Cr] : Carriage Return - ASCII code '0x0D'
[ ] : Space – ASCII code '0x20'

OK Acknowledgement

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

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

Error Acknowledgement

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

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

Data 00: Illegal Code

Real data mapping (Hexadecimal : Decimal)

* When you enter the [data] in hexadecimal, refer to following conversion table.
* Channel Tune (ma) Command uses two-byte hexadecimal value([data]) to select channel number.

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

* Commands may work differently depending on model and signal.

01. Power (Command: k a)

► To control Power *On or Off of the set.

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

Data 00 : Power Off 01 : *Power On

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

► To Show TV is Power On or *Off

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

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

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

02. Aspect Ratio (Command: k c)
(Main Picture Size)

► To adjust the screen format. (Main picture format)
You can also adjust the screen format using the Aspect Ratio in the Q.MENU. or PICTURE menu.

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

Data 01 : Normal screen (4:3)
02 : Wide screen (16:9)
04 : Zoom
05 : Zoom 2 (Latin America except Colombia Only)
06 : Set by Program/ Original
07 : 14:9 (Europe, Colombia, Mid-East, Asia except South Korea and Japan)
09 : * Just Scan
0B : Full Wide (Europe, Colombia, Mid-East, Asia except South Korea and Japan)
10 to 1F : Cinema Zoom 1 to 16

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

* Using the PC input, you select either 16:9 or 4:3 screen aspect ratio.
* In DTV/HDMI/Component mode (high-definition), Just Scan is available.
* Full wide mode may work differently based on model and is supported for DTV fully, and ATV, AV partially.

03. Screen Mute (Command: k d)

► To select screen mute on/off.

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

Data 00 : Screen mute off (Picture on) Video mute off
01 : Screen mute on (Picture off)
10 : Video mute on

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

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

04. Volume Mute (Command: k e)

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

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

Data 00 : Volume mute on (Volume off)
01 : Volume mute off (Volume on)

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

05. Volume Control (Command: k f)

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

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

Data Min : 00 to Max : 64

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

06. Contrast (Command: k g)

► To adjust screen contrast.
You can also adjust contrast in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

07. Brightness (Command: k h)

► To adjust screen brightness.
You can also adjust brightness in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

08. Color/Colour (Command: k i)

► To adjust the screen Color(Colour).
You can also adjust colour in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

09. Tint (Command: k j)

► To adjust the screen tint.
You can also adjust tint in the PICTURE menu.

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

Data Red : 00 to Green : 64

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

10. Sharpness (Command: k k)

► To adjust the screen sharpness.
You can also adjust sharpness in the PICTURE menu.

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

Data Min : 00 to Max : 32

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

11. OSD Select (Command: k l)

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

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

Data 00 : OSD off 01 : OSD on

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

12. Remote control lock mode (Command: k m)

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

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

Data 00 : Lock off 01 : Lock on

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

* If you are not using the remote control, use this mode. When main power is off & on (plug-off and plug-in, after 20 - 30 seconds), external control lock is released.
* In the standby mode (DC off by off timer or 'ka', 'mc' command), and if key lock is on, TV will not turn on by power on key of IR & Local Key.

13. Treble (Command: k r)

► To adjust treble.
You can also adjust in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

* (Depending on model)

14. Bass (Command: k s)

► To adjust Bass.
You can also adjust in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

* (Depending on model)

15. Balance (Command: k t)

► To adjust balance.
You can also adjust balance in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

16. Color(Colour) Temperature (Command: x u)

► To adjust colour temperature. You can also adjust Color(Colour) Temperature in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

17. ISM Method (Command: j p) (Only Plasma TV)

► To control the ISM method. You can also adjust ISM Method in OPTION menu.

Transmission [j][p][ ][Set ID][ ][Data][Cr]

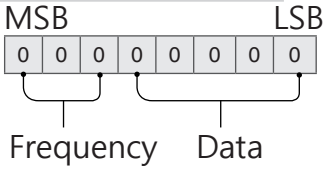
Data Min : 02: Orbiter
08: Normal
20: Color(Colour) Wash

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

18. Equalizer (Command : j v)

► Adjust EQ of the set.

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



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)

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

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

19. Energy Saving (Command: j q)

► To reduce the power consumption of the TV. You can also adjust Energy Saving in PICTURE menu.

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

Data
00 : Off
01 : Minimum
02 : Medium
03 : Maximum
04 : Auto (For LCD TV / LED TV) /
Intelligent sensor (For PDP TV)
05 : Screen off

* (Depending on model)

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

20. Tune Command (Command: m a)

* This command may work differently depending on model and signal.

• For Europe, Mid-East, Colombia, Asia except South Korea and Japan Model

► Select channel to following physical number.

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

* Analog Antenna/Cable

[Data 00][Data 01] Channel Data
Data 00 : High byte channel data
Data 01 : Low byte channel data
- 00 00 ~ 00 C7 (Decimal : 0 ~ 199)

Data 02 : Input Source (Analog)
- 00 : Antenna TV (ATV)
- 80 : Cable TV (CATV)

* Digital Antenna/Cable/Satellite

[Data 00][Data 01]: Channel Data
Data 00 : High Channel data
Data 01 : Low Channel data
- 00 00 ~ 27 0F (Decimal: 0 ~ 9999)

Data 02 : Input Source (Digital)
- 10 : Antenna TV (DTV)
- 20 : Antenna Radio (Radio)
- 40 : Satellite TV (SDTV)
- 50 : Satellite Radio (S-Radio)
- 90 : Cable TV (CADTV)
- a0 : Cable Radio (CA-Radio)

* Tune Command Examples:

1. Tune to the Analog antenna (PAL) Channel 10.
   Set ID = All = 00
   Data 00 & 01 = Channel Data is 10 = 00 0a
   Data 02 = Analog Antenna TV = 00
   Result = **ma 00 00 0a 00**

2. Tune to the digital antenna (DVB-T) Channel 01.
   Set ID = All = 00
   Data 00 & 01 = Channel Data is 1 = 00 01
   Data 02 = Digital Antenna TV = 10
   Result = **ma 00 00 01 10**

3. Tune to the satellite (DVB-S) Channel 1000.
   Set ID = All = 00
   Data 00 & 01 = Channel Data is 1000 = 03 E8
   Data 02 = Digital Satellite TV = 40
   Result = **ma 00 03 E8 40**

Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]
[Data 02][x][a][ ][Set ID][ ][NG][Data 00][x]

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

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

Transmission [m][a][ ][0][ ][Data00][ ][Data01]
[ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]

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

* Analog Antenna/Cable

Data 00 : Physical Channel Number
- Antenna (ATV) : 02~45 (Decimal: 2 ~ 69)
- Cable (CATV) : 01, 0E~7D (Decimal : 1, 14~125)

[Data 01 ~ 04]: Major/Minor Channel Number
Data 01 & 02: xx (Don't care)
Data 03 & 04: xx (Don't care)
Data 05: Input Source (Analog)
- 00 : Antenna TV (ATV)
- 01 : Cable TV (CATV)

* Digital Antenna/Cable

Data 00 : xx (Don't care)

[Data 01][Data 02]: Major Channel Number
Data 01 : High byte Channel Data
Data 02 : Low byte Channel Data
- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor Channel Number
Data 03 : High byte Channel Data
Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)
- 02 : Antenna TV (DTV) – Use Physical Channel Number
- 06 : Cable TV (CADTV) – Use Physical Channel Number
- 22 : Antenna TV (DTV) – Don’t Use Physical Channel Number
- 26 : Cable TV (CADTV) - Don’t Use Physical Channel Number
- 46 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)

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

* Tune Command Examples:

1. Tune to the Analog cable (NTSC) channel 35.
   Set ID = All = 00
   Data 00 = Channel Data is 35 = 23
   Data 01 & 02 = No Major = 00 00
   Data 03 & 04 = No Minor = 00 00
   Data 05 = Analog Cable TV = 01
   Total = **ma 00 23 00 00 00 00 01**

2. Tune to the digital antenna (ATSC) channel 30-3.
   Set ID = All = 00
   Data 00 = Don’t know Physical = 00
   Data 01 & 02 = Major is 30 = 00 1E
   Data 03 & 04 = Minor is 3 = 00 03
   Data 05 = Digital Antenna TV = 22
   Total = **ma 00 00 00 1E 00 03 22**

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

- For Japan Model

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

Transmission [m][a][ ][0][ ][Data00][ ][Data01]
[ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]

* Digital Antenna/Satellite
Data 00: xx (Don't care)

[Data 01][Data 02]: Major Channel Number
Data 01: High byte Channel Data
Data 02: Low byte Channel Data
- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor/Branch Channel Number
(Don't care in Satellite)
Data 03: High byte Channel Data
Data 04: Low byte Channel Data

Data 05 : Input Source (Digital/Satellite for Japan)
- 02 : Antenna TV (DTV)
- 07 : BS (Broadcasting Satellite)
- 08 : CS1 (Communication Satellite 1)
- 09 : CS2 (Communication Satellite 2)

* Tune Command Examples:
1 Tune to the digital antenna (ISDB-T) channel 17-1.
Set ID = All = 00
Data 00 = Don't know Physical = 00
Data 01 & 02 = Major is 17 = 00 11
Data 03 & 04 = Minor/Branch is 1 = 00 01
Data 05 = Digital Antenna TV = 02
Total = **ma 00 00 00 11 00 01 02**

2. Tune to the BS (ISDB-BS) channel 30.
Set ID = All = 00
Data 00 = Don't know Physical = 00
Data 01 & 02 = Major is 30 = 00 1E
Data 03 & 04 = Don't Care = 00 00
Data 05 = Digital BS TV = 07
Total = **ma 00 00 00 1E 00 00 07**

* This feature is varied based on the model.

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

21. Channel(Programme) Add/Del(Skip) (Command: m b)

► To skip current channel(programme) for next time.

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

Data 00 : Del(ATSC,ISDB)/Skip(DVB) 01 : Add

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

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

22. Key (Command: m c)

► To send IR remote key code.

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

Data Key code - p.33.

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

23. Control Backlight (Command: m g)

- For LCD TV / LED TV

► To control the backlight.

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

Data Min : 00 to Max : 64

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

Control Panel Light (Command: m g)

- For Plasma TV

► To control the panel light.

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

Data Min : 00 to Max : 64

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

24. Input select (Command: x b)
(Main Picture Input)

► To select input source for main picture.

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

Data

00 : DTV	01 : CADTV
02 : Satellite DTV ISDB-BS (Japan)	10 : ATV
03 : ISDB-CS1 (Japan)	
04 : ISDB-CS2 (Japan)	
11 : CATV	
20 : AV or AV1	21 : AV2
40 : Component1	41 : Component2
60 : RGB	
90 : HDMI1	91 : HDMI2
92 : HDMI3	93 : HDMI4

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

* This function depends on model and signal.

25. 3D(Command: x t) (only 3D models)
(Depending on model)

► To change 3D mode for TV.

Transmission [x][t][ ][Set ID][ ][Data 00][ ][Data 01]
[ ][Data 02][ ][Data 03][Cr]

* (Depending on model)

Data Structure

[Data 00] 00 : 3D On
01 : 3D Off
02 : 3D to 2D
03 : 2D to 3D

[Data 01] 00 : Top and Bottom
01 : Side by Side
02 : Check Board
03 : Frame Sequential
04 : Column interleaving
05 : Row interleaving

[Data 02] 00 : Right to Left
01 : Left to Right

[Data 03] 3D Effect(3D Depth): Min : 00 - Max : 14
(*transmit by Hexadecimal code)

* [Data 02], [Data 03] functions depend on model and signal.
* If [Data 00] is 00 (3D On), [Data 03] has no meaning.
* If [Data 00] is 01 (3D off) or 02 (3D to 2D), [Data 01], [Data 02] and [Data 03] have no meaning.
* If [Data 00] is 03 (2D to 3D), [Data 01] and [Data 02] have no meaning.
* If [Data 00] is 00 (3D On) or 03 (2D to 3D), [Data 03] works when 3D Mode (Genre) is manual only.
* All 3D pattern options ([Data 01]) may not be available according to broadcasting/video signal.

[Data 00]	[Data 01]	[Data 02]	[Data 03]
00	O	O	O
01	X	X	X
02	X	X	X
03	X	O	O

X : don't care

Ack [t][ ][Set ID][ ][OK][Data00][Data01][Data02]
[Data03][x]
[t][ ][Set ID][ ][NG][Data00][x]

26. Extended 3D(Command: x v) (only 3D models)
(Depending on model)

► To change 3D option for TV.

Transmission [x][v][ ][Set ID][ ][Data 00][ ]
[Data 01][Cr]

[Data 00] 3D option
00 : 3D Picture Correction
01 : 3D Depth (3D Mode is Manual Only)
02 : 3D Viewpoint
06 : 3D Color Correction
07 : 3D Sound Zooming
08 : Normal Image View
09 : 3D Mode (Genre)

[Data 01] It has own range for each 3D option determined by [Data 00].

1) When [Data 00] is 00
00 : Right to Left
01 : Left to Right

2) When [Data 00] is 01, 02
Data Min: 0 - Max: 14 (*transmit by Hexadecimal code)
Data value range(0 - 20) converts Viewpoint range (-10 - +10) automatically (Depending on model)
* This option works when 3D Mode (Genre) is manual only.

3) When [Data 00] is 06, 07
00 : Off
01 : On

4) When [Data 00] is 08
00 : Revert to 3D video from 3D-to-2D converted 2D video
01 : Change 3D video to 2D video, except 2D-to-3D video
* If conversion condition doesn't meet, command is treated as NG.

5) When [Data 00] is 09

00 : Standard	01 : Sport
02 : Cinema	03 : Extreme
04 : Manual	05 : Auto

Ack [v][ ][Set ID][ ][OK][Data00][Data01][x]
[v][ ][Set ID][ ][NG][Data00][x]

27. Auto Configure (Command: j u)
(Depending on model)

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

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

Data 01 : To set

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

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