![LG Life's Good]

42LP870H
47LP870H
55LP870H

Lodging Guest Interactive Pro:Centric® TVs

Commercial Mode Setup Guide

Note: Selected features shown in this guide may not be available on all models.

For Customer Support/Service, please call:
1-888-865-3026

The latest product information and documentation is available online at:
www.LGsolutions.com

MODEL and SERIAL NUMBER
The model and serial numbers of this TV are located on the back of the cabinet. For future reference, LG suggests that you record those numbers here:

Model No._____ Serial No._____

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

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

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

CAUTION:
Do not attempt to modify this product in any way without written authorization from LG Electronics U.S.A., Inc. Unauthorized modification could void the user's authority to operate this product.

COMPLIANCE:
The responsible party for this product's compliance is: LG Electronics U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs, NJ 07632, USA • Phone: 1-201-816-2000

206-4235

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources, such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where it exits from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination in order to avoid injury from tip-over.

PORTABLE CART WARNING

13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

14. Never touch this apparatus or antenna during a thunder or lightning storm.

15. When mounting a TV on the wall, make sure not to install the TV by the hanging power and signal cables on the back of the TV.

16. Do not allow an impact shock or any objects to fall into the product, and do not drop objects onto the screen.

17. Power Cord
Caution: It is recommended that appliances be placed upon a dedicated circuit; that is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the TV specifications.

Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized servicer. Protect the power cord from physical or mechanical abuse, such as twisting, kinking, or pinching or being closed in a door or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

Do not use a damaged or loose power cord. Be sure to grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the TV.

18. Overloading
Do not connect too many appliances to the same AC power outlet as this could result in fire or electric shock. Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in fire or electric shock.

19. Outdoor Use/Wet Location

 Warning: To reduce the risk of fire or electrical shock, do not expose this product to rain, moisture or other liquids.

Do not touch the TV with wet hands. Do not install this product near flammable objects such as gasoline or candles or expose the TV to direct air conditioning.

Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc., on or over the apparatus (e.g., on shelves above the unit).

20. Grounding
Ensure that you connect the earth ground wire to prevent possible electric shock (i.e., a TV with a three-prong grounded AC plug must be connected to a three-prong grounded AC outlet). If grounding methods are not possible, have a qualified electrician install a separate circuit breaker. Do not try to ground the unit by connecting it to telephone wires, lightning rods, or gas pipes.

21. Disconnect Device
The mains plug is the disconnecting device. The plug must remain readily operable.

As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if you turn off this unit by SWITCH.

IMPORTANT SAFETY INSTRUCTIONS

(Continued from previous page)
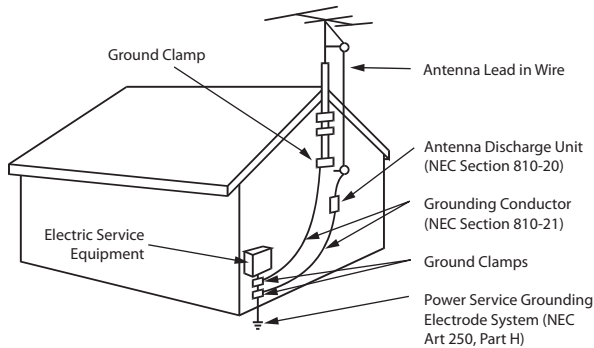
22. Outdoor Antenna Grounding
If an outside antenna or cable system is connected to the product, follow the precautions below.

An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits or where it can come into contact with such power lines or circuits as death or serious injury can occur.

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges.

Article 810 of the National Electrical Code (NEC) in the U.S.A. provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Antenna Grounding According to NEC, ANSI/NFPA 70

Ground Clamp

Antenna Lead in Wire

Antenna Discharge Unit
(NEC Section 810-20)

Grounding Conductor
(NEC Section 810-21)

Ground Clamps

Power Service Grounding
Electrode System (NEC
Art 250, Part H)

Electric Service
Equipment

23. Cleaning
When cleaning, unplug the power cord and wipe gently with a soft cloth to prevent scratching. Do not spray water or other liquids directly on the TV as electric shock may occur. Do not clean with chemicals such as alcohol, thinners or benzene.

24. Transporting Product
Make sure the TV is turned Off and unplugged and that all cables have been removed. It may take two or more people to carry larger TVs. Do not press against or put stress on the front panel of the TV during transport.

25. Ventilation
Install the TV where there is proper ventilation. Do not install in a confined space such as a bookcase. Do not cover the TV with cloth or other materials (e.g., plastic) while it is plugged in. Do not install in excessively dusty places.

26. Do not touch the ventilation openings, as they may become hot while the TV is operating.

27. If you smell smoke or other odors coming from the TV or hear strange sounds, unplug the power cord, and contact an authorized service center.

28. Do not press against the front panel of the TV with your hand or a sharp object (e.g., a nail, pencil, or pen) or make a scratch on it.

29. Keep the product away from direct sunlight.

30. Dot Defect
The LCD panel is a high technology product with resolution of two million to six million pixels. In a very few cases, you could see fine dots on the screen while you are viewing the TV. Those dots are deactivated pixels and do not affect the performance and reliability of the TV.

31. Generated Sound
"Cracking": A cracking noise that occurs while the TV is On or when it is turned Off is generated by plastic thermal contraction due to temperature and humidity. This noise is common for products where thermal deformation is required.

Electrical circuit humming/panel buzzing: A low level noise is generated from a high-speed switching circuit, which supplies a large amount of current to operate a product. It varies depending on the product. This generated sound does not affect the performance and reliability of the product.

32. For LCD TV
If the TV feels cold to the touch, there may be a small "flicker" when it is turned On. This is normal; there is nothing wrong with the TV. Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots. However, they have no adverse effect on the TV's performance. Avoid touching the LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

Notes
- Installer Menu content is intended for use primarily by qualified TV electronics technicians.
- Refer to the applicable Quick Reference Guide for additional information on TV installation, specifications, maintenance, and safety instructions.
- Design and specifications subject to change without prior notice. This document provides examples of typical TV displays. Your displays may vary from those shown in this document.

Commercial Mode Overview

This document describes how to set up LP870H Pro:Centric® TVs for Commercial Mode operation. LG commercial TV functionality is based on "ownership" of the Channel Map; that is, the Channel Map resides in the TV's CPU, Protocol Translator Card (PTC), or embedded *b*-LAN™ (EBL) module, or it resides externally from the TV (i.e., in a device from the solution provider).

These TV models are capable of Free-To-Guest (FTG) Mode operation via the TV CPU. Alternatively, the EBL module can be configured either for Pass-through Mode (default) or FTG Mode. When neither the CPU nor EBL is in FTG Mode, these TV models also allow external control via the TV's MPI port.

Setup Checklist

Note: This document provides information specific to Commercial Mode operation. Refer to the Quick Reference Guide for information on TV installation and hardware and cable connections.

Installation
__ Unpack TV and all accessories.
__ Install batteries in the Installer Remote.
__ Install TV on VESA mount or stand.
    Note: It may be advisable to make all cable connections before installing on VESA mount or stand, as appropriate.

Hardware Connections
__ Install any additional hardware as appropriate to your institution, LAN, etc.

Cable Connections
__ Make all rear jack panel connections, as appropriate.

Commercial Mode Setup
__ Complete appropriate procedures as described in this document for Commercial Mode operation.

Pass-through Mode

This mode allows you to configure individual TVs for Pro:Centric and/or FTG Mode via CPU operation or create a Master TV Setup for cloning purposes. This mode also allows external control via the GAME CONTROL/MPI port on the TV rear jack panel.

There are two methods for configuring individual TVs that are currently in Pass-through Mode: either using the EZ-Manager Wizard or the Custom Master TV Setup procedure as described in this document.

EZ-Manager Wizard

When the TV is in a factory default state, the EZ-Manager Wizard provides automated or manual options for configuring essential items for Pro:Centric operation and also provides an option for using a USB memory device to configure the TV. Use the Installer Remote to make selections and complete each step. See "EZ-Manager Wizard" on pages 11 to 18 for detailed information.

Custom Master TV Setup

The Custom Master TV Setup procedure enables you to create a customized Master TV Setup for cloning purposes for TVs that are to remain in Pass-through Mode. Use the Installer Remote to configure Installer Menu items as required for TV operation and set up TV features (Channel, Picture, Audio, etc.). See "Custom Master TV Setup" on pages 31 to 34 for detailed information.

Commercial Mode Overview (Cont.)

Installer Menu

To create a Master TV Setup, you will need to know how to access the commercial controller (PTC) Installer Menu and make changes to the default values as required. If necessary, familiarize yourself with the Installer Menu and how to make and save changes. Refer to pages 21 to 30 for information on accessing the Installer Menu and for detailed descriptions of the Installer Menu items.

TV Setup Menus

On-screen setup menus control the features of the TV. Use the Installer Remote to access the TV setup menus, and set the TV features to the desired configuration for the end user.

Cloning

Cloning refers to the process of capturing a Master TV Setup and transferring it to a Target TV. Both TVs must be identical models. The Master TV's clonable setup menu features should be configured as part of the Master TV Setup. If there are features in the Master TV's setup—channel icons or labels, digital font options, etc.—that are not set or that are set incorrectly, those features also will not be set or will be set incorrectly in the Target TVs. Refer to pages 36 to 44 for detailed information on cloning requirements and procedures.

External MPI Control

To control the TV using an external MPI control device, you must use the TV's GAME CONTROL/MPI port for communication purposes. In these TVs, Installer Menu item 118 POWER SAVINGS controls the power circuitry for both the embedded *b*-LAN module and the GAME CONTROL/MPI port; therefore, to ensure that the GAME CONTROL/MPI port circuitry is powered, thus enabling MPI communication, Installer Menu item 118 POWER SAVINGS must be set appropriately. See Installer Menu item descriptions as well as Reference section, "*b*-LAN Setup & Overview," for further information.

Note: These TV models are not equipped with MPI card slots.
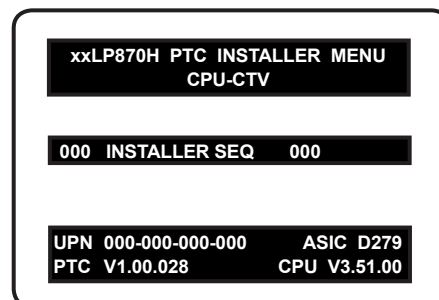
Typical Installer Menu

TV Setup Menus

206-4235
7
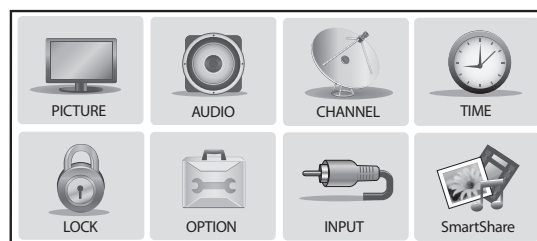
Commercial Mode Overview (Cont.)

FTG Mode

In this mode, an FTG Channel Map enables the decryption of each Pro:Idiom$^®$ encrypted channel. The FTG Channel Map also provides logical channel mapping of physical RF channels (analog and digital), IP channels, and Aux inputs. The method for creating the FTG Channel Map is ultimately determined by which element of the TV will "own" the FTG Channel Map—the CPU or the EBL.

Note: Logical channel mapping of physical RF channels eliminates dash tuning (for example, physical 19-3 can be mapped to logical channel 9). It also allows physical RF channels, IP channels, and Aux inputs to be listed in any order, not only in physical numeric ascending order. Physical channel tuning requires that you include the dash when direct entering RF channel numbers and Aux inputs (the latter designated by 130-0 through 137-0).

For these TV models, there are two FTG Modes—FTG Mode via CPU and FTG Mode via EBL—which are separate and distinct FTG Modes of operation, each with its own unique advantages and requirements as described later in this document. When the TV CPU is configured with an FTG Channel Map, the CPU controls and restricts the tuning operation of the TV, and when the EBL is configured with an FTG Channel Map, the EBL controls and restricts the tuning operation of the TV.

You must determine which element of the TV will own the FTG Channel Map before you can begin configuration. See "FTG Mode of Operation Overview" on pages 45 to 46 for further information on FTG Mode operation and configuration.

Remote Management in FTG Mode

When the TV is configured for FTG Mode via CPU, remote management of the FTG Channel Map and FTG Installer Menu settings is provided by a Pro:Centric server, via a TLX file loaded on the Pro:Centric server Admin Client. Refer to the **_Pro:Centric Server Admin Client User Guide_** for further information.

When the TV is configured for FTG Mode via EBL, the _b_-LAN module, which is internal to the TV, allows hotel/institution head end equipment (for example, an FMA-LG101) with _b_-LAN technology to provide remote management of the FTG Channel Map and FTG Installer Menu settings. See Reference section, "_b_-LAN Setup & Overview," for further information.

Pro:Centric TV Interactive Menu Features

LG's Pro:Centric application enables guests to locate and select television entertainment using an interactive channel guide, check the daily weather, and view hotel and surrounding amenities via custom billboards and points-of-interest maps.

Pro:Centric application features include:

• Portal and information screens/pages (including a "Welcome" page) that include branding logos.

• An optional customized user interface (custom "skins").

• Billboards and points-of-interest maps that can be customized to focus on hotel amenities, local attractions and businesses, restaurants, news, events, etc.

• An optional Weather billboard that includes a local radar map, current conditions, and a four day forecast.

• An interactive channel guide that provides a channel list with channel icons. An electronic program guide (EPG) is an optional feature that displays up to three days of programming information viewable by channel and time.

• Video spooling that enables the hotel to deliver a video file to guest TVs for promotion and information purposes.

The Pro:Centric server Admin Client web editor/content wizard is provided for customer configuration of portal messages and billboards/maps.

Note: Customized content is typically defined by the service integrator and/or hotel administrators. LG does not provide hotel-specific content.

Pro:Centric Interactive Menu Navigation

An LG Pro:Centric-capable TV remote control provides access to both interactive menus and regular TV features. Press **PORTAL** on the remote to access the interactive menus.

Note: Interactive menu options may vary, depending on Pro:Centric features enabled for the site. The following are default interactive menus.

Channel Guide
Shows available TV networks and logical channels. When available, EPG data provides additional channel and program information.

Information
Typically displays information on hotel amenities, for example, restaurants, in-room dining, business centers, facilities, etc., as well as information on local weather and attractions.

Help
Provides help for navigating the interactive menus.

Watch TV
Removes the interactive menu from the screen and returns to the previously tuned TV channel.

Pro:Centric Operation (Cont.)

Pro:Centric Setup

Administration and management options for the Pro:Centric server are described in detail in the *Pro:Centric Server Admin Client User Guide*. This document describes only those settings that must be specified on the TVs to enable Pro:Centric remote management and/or the Pro:Centric application.

• Remote management (TV E-Z Installation): The Pro:Centric server Admin Client provides remote management facilities for downloading splash screen image and software/firmware updates as well as facilities for downloading a TLX file for FTG Mode via CPU configuration.

• Pro:Centric application: The application, which operates in conjunction with FTG and PPV Modes, comprises the Pro:Centric interactive menus/features described on the previous page. Pro:Centric application settings are managed via the Pro:Centric server Admin Client.

The Pro:Centric server settings can be configured using one of the methods described below.

TV in Factory Default State

When the TV is in a factory default state, the EZ-Manager Wizard provides automated or manual options for configuring the Pro:Centric server settings.

The EZ-Manager Wizard also provides a USB Configuration option that enables you to configure a TV for FTG Mode via CPU using an FTG Configuration (.tlx) file stored on a USB memory device. The FTG Configuration file incorporates FTG Installer Menu settings, including Installer Menu items 098 PRO:CENTRIC and 119 DATA CHANNEL, which are used to set up the TV's Pro:Centric feature.

Refer to "EZ-Manager Wizard" on pages 11 to 18 for further information on the EZ-Manager Wizard options.

Note: If Pro:Centric data delivery will be over IP and there is a DNS server at the site, you can create a DNS entry "procentric.local" for the Pro:Centric server that will enable automated Pro:Centric IP configuration via the EZ-Manager. If there is no DNS entry for procentric.local, you will need to manually enter the Pro:Centric server IP address and port number during configuration.

TV in Pass-through Mode

If the TV is in Pass-through Mode, either:

• Set Installer Menu items 098 PRO:CENTRIC and 119 DATA CHANNEL to the appropriate values. Refer to "Installer Menu" information on pages 21 to 30 for further details. Also, as necessary, refer to "Custom Master TV Setup" information on pages 31 to 34 and/or cloning information on pages 36 to 44.

• Configure the appropriate Pro:Centric server settings in the IP Environment / Pro:Centric Menu. You must use this option, in particular, if you wish to configure IP settings for the Pro:Centric server. See "Accessing the IP Environment Menu" on page 58 and "Pro:Centric Setup" on pages 62 to 63 for further information.

Note: When the TV is in either Pass-through Mode or FTG Mode via CPU, you can also leave Installer Menu item 119 DATA CHANNEL set to its default value (255) to enable the TV's Data Channel Auto Search feature to set the DATA CHANNEL value. See item 119 description on page 30 for additional information.

TV in FTG Mode

If the TV is in FTG Mode (via CPU or EBL), use the appropriate FTG application software to update Installer Menu items #98 Data Channel and #119 Pro:Centric (along with their affiliated fields). Then, transfer the FTG Installer Menu settings to the TV in accordance with the FTG Mode of configuration. Refer to "FTG Mode of Operation Overview" on pages 45 to 46 for further information on FTG Mode operation and configuration. Also—for FTG Mode via CPU only—see note above regarding the option to use the TV's Data Channel Auto Search feature to set the DATA CHANNEL value.

The primary purpose of the EZ-Manager Wizard is to guide you through the process (automated or manual) of configuring the essential Installer Menu items for Pro:Centric operation. The wizard will appear on the screen each time the TV is turned ON, until one of its configuration methods has been completed or the wizard is exited. Use the Installer Remote to make selections and complete each wizard step.

While the EZ-Manager Wizard is intended primarily for Pro:Centric-related configuration, the wizard also offers Zoning as well as USB configuration options.

• LP870H TVs support the TV Zoning and Wi-Fi Zoning features, both of which enable location-specific settings (see Reference section, "Using the TV's Zoning Features," for further information). The EZ-Manager Wizard enables you to set the TV Zone # and/or the Wi-Fi Zone # in the TV as part of the configuration process.

• The EZ-Manager Wizard also enables you to redirect to the TV's standard USB Download Menu as part of the configuration process, if desired, to perform USB configuration and/or update functions.

• You can connect a USB memory device to the TV at any time while the wizard is in progress (starting at the Welcome screen) to use the LG Smart Install utility to perform USB configuration and/or update functions. Any file(s) you wish to use for configuration/update purposes must be stored in a folder named "LGSMARTINSTALL" in the root directory of the USB memory device. See "LG Smart Install Utility" on pages 19 to 20 for further information.

⚠ **Caution: Do NOT unplug the TV power cord or remove the antenna cable or, if applicable, the LAN cable during the configuration process, as doing so will interrupt the current step and may corrupt the configuration data.**

Before You Begin

• If you plan to create a Master TV Setup using the procedure described on pages 31 to 34, be sure to exit the EZ-Manager Wizard in order to avoid setting modes that may restrict the custom setup procedure. See also "Initiate Configuration or Exit the EZ-Manager Wizard" on the following page.

• If it has been completed or exited and therefore does not display, the EZ-Manager Wizard can be reactivated; however, this requires that you restore the TV to a factory default condition. See Reference section, "Restoring Factory Defaults on the TV(s)," for further information.

• Each wizard step is allotted a time frame after which the wizard proceeds without user interaction. If the Pro:Centric server is configured on the system and if no location-specific settings are required in the TV, for example, TV Zone, Wi-Fi Zone, Label, and/or Room Number settings, you can simply turn ON the TV, and once initiated, the wizard will proceed through each of the configuration steps with no further user interaction.

• If any of the configuration steps fails, you will see a "Diagnostics" screen with an indication of the failure. You will then have the opportunity to reinitiate the configuration process from the previous screen or exit the EZ-Manager Wizard.

• If you wish to enable media sharing (i.e., Smart Share, Wi-Fi Screen Share, and DMR) on the TV without using a TLX file for configuration purposes, you will need to create a custom Master TV Setup and use the IP Environment Menu to specify the settings. Custom Master TV Setup is described on pages 31 to 34. Refer to "IP Environment Setup" on pages 58 to 65 for information on the IP Environment Menu.

EZ-Manager Wizard (Cont.)

Initiate Configuration or Exit the EZ-Manager Wizard

The Welcome screen provides a brief introduction to the EZ-Manager Wizard.

Note: If there is no user action in this screen within 10 seconds, the wizard will proceed to the first configuration step. Once the wizard has proceeded, it is not possible to return to the Welcome screen; however, if you simply wish to exit the wizard, you can do so by selecting the "Exit" option from the subsequent screen(s).

Note: As indicated on the previous page, you may use the LG Smart Install feature to configure the TV using a USB memory device at any time while the EZ-Manager Wizard is in progress. However, if you want to use the Zoning feature(s) on the TV for location-specific configuration purposes, proceed to the EZ-Manager's Zones, Label, and Room Number screen and assign the appropriate TV Zone # and/or a Wi-Fi Zone # for this TV before inserting your USB device. See "TV Configuration Options" on the following page for further information.

From the Welcome screen, you have the following options:

- To proceed with the EZ-Manager Wizard, use the arrow keys on the Installer Remote to select/highlight **Next** and press **OK**. Then, continue to the "TV Configuration Options" section on the following page.

- To exit the wizard, but retain the use of the Pro:Centric remote management feature on this TV (i.e., Installer Menu item 119 DATA CHANNEL set to 255) in the future, use the arrow keys on the Installer Remote to select/highlight **Exit** and press **OK**. In the confirmation pop-up window, select **OK**, and then press **OK** once more on the Installer Remote.

- If you do not intend to install a Pro:Centric server on this system and you do not wish to use the wizard's Zoning or USB configuration options, exit the wizard as follows: Use the arrow keys on the Installer Remote to select/highlight **No Pro:Centric** and press **OK**. This will disable the Pro:Centric feature of this TV (i.e., Installer Menu item 119 DATA CHANNEL will be set to 0) and exit the wizard. In the confirmation pop-up window, select **OK**, and then press **OK** once more on the Installer Remote.

TV Configuration Options

From the TV Configuration Options screen, you can choose how to proceed with the configuration of this TV (assuming you do not opt to exit the wizard, which you may also do at any time).

⚠️ **Note: If you intend to use the Zoning feature(s) on the TV for location-specific configuration purposes, select the "Zones & Room Number" option from this screen and assign the appropriate TV Zone # and/or the Wi-Fi Zone # in the TV BEFORE you continue with additional configuration.**

```
EZ-Manager Wizard
① ② ③ ④
                TV Configuration Options
        • To configure the TV for Pro:Centric operation, select 'Next'.
        • To set the optional Zoning features, select 'Zones & Room Number'.
        • To access the TV's USB Download Menu, select 'USB Configuration'.


            This setup wizard will continue automatically in 60 seconds.

    Exit        USB Configuration    Zones & Room Number      Next
```
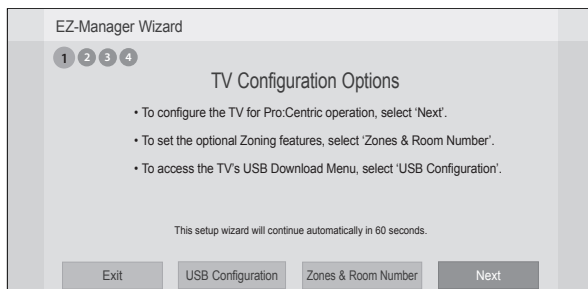
Note: If there is no user action in this screen within one minute, the wizard will automatically continue to the next configuration step.

Use the Left/Right arrow keys on the Installer Remote to navigate between options on this screen. Each time you select/highlight one of the following options, the screen text and fields will change in accordance with your selection.

• To continue with Pro:Centric configuration, select **Next** (default) and press **OK** on the Installer Remote. Refer to "Configure Pro:Centric Settings" on pages 15 to 17 for additional information.

• To set the Zoning feature(s) on the TV, select **Zones & Room Number**. See "Zones and Room Number Assignments" below for further information.

• Select **USB Configuration** to access the TV's USB Download Menu. See "USB Configuration" on page 18 for further information.

Note: If you have already inserted a USB memory device with the intent to use the LG Smart Install utility and the Integrated USB Downloading screen is on display, you may still set the Zoning features on this TV by selecting **Previous** to return to the EZ-Manager's TV Configuration Options screen. Set the Zoning features as required, and then select **USB Configuration** and press **OK** on the Installer Remote to return to the Integrated USB Downloading screen.

Note: If you choose to exit the EZ-Manager Wizard from this point on, you will have the option to save any settings made by selecting **Save and Exit** in the exit confirmation pop-up window. Or, you can exit the wizard without saving any settings by simply selecting **OK** in the confirmation pop-up window.

Zones and Room Number Assignments

You may complete one or more of the fields in the Zones, Label, and Room Number screen or leave them at their default settings (TV Zone and Wi-Fi Zone) or blank (Label and Room Number), as desired. However, if you intend to use either of the Zoning features—TV Zoning and/or Wi-Fi Zoning—on this TV, you MUST specify the appropriate values in the TV Zone and/or Wi-Fi Zone fields as described on the following page. See also Reference section, "Using the TV's Zoning Features," for further information.

EZ-Manager Wizard (Cont.)

Note: Zoning features are only applicable for TVs that will be configured using a TLX file (local or remote configuration).

1. Complete the appropriate field(s) as described below. Use the Left/Right arrow keys on the Installer Remote to navigate between each of the fields.

   • Wi-Fi Zone: Enables you to set a Wi-Fi Zone # so that the TV can be configured with a particular access point's login data for wireless networking. Login data (i.e., SSID, security type, and security key) may be provided in a TLX file to be used for configuration. If the Wi-Fi Zone # is set to 0, the TV will not be configured with login data from a TLX file.

     To assign a Wi-Fi Zone, navigate to the Wi-Fi Zone field at the far left of the screen, and use the Up/Down arrow keys to specify the desired Wi-Fi Zone # (1–99).

   • TV Zone: Enables you to set a TV Zone # so that the TV can be configured with Installer Menu and/or TV Setup Menu settings intended only for the assigned Zone. The Installer Menu and/or TV Setup Menu settings may be provided in a TLX file to be used for configuration. If the TV is being configured for FTG Mode via CPU, the TV Zone # setting also allows the TV to omit channels that have been restricted in the FTG Channel Map.

     To change the TV Zone from its default value (0), navigate to the TV Zone field, and use the Up/Down arrow keys to specify the desired TV Zone # (1–8).

   • Label: Allows you to select a North, South, East, or West text label for this TV. In the Label field, use the Up/Down arrow keys to select the applicable label.

   • Room Number: Allows you to specify the number of the room in which the TV is located. In the Room Number field, you can use the number keys on the Installer Remote to direct enter a room number. Use the Dash key on the Installer Remote as necessary to toggle between number and letter characters in the Room Number field. Also, you can use the Flashback key on the Installer Remote to delete characters in this field.

2. When you are ready to continue, select the appropriate option, as follows:

   • To proceed to the next EZ-Manager screen, use the arrow keys to select **Next**, and then press **OK** on the Installer Remote. Continue to the "Configure Pro:Centric Settings" section on the following page.

   • If you wish to use a USB memory device in conjunction with the TV's standard USB Download Menu to complete the configuration, continue to "USB Configuration" on page 18.

   • If you wish to use a USB memory device in conjunction with the LG Smart Install utility to complete the configuration, see "LG Smart Install Utility" on pages 19 to 20.

Configure Pro:Centric Settings

Once you select "Next" from the TV Configuration Options screen, the Searching for Pro:Centric Server screen is displayed (see example at right), and you have the following options:

• You can allow the EZ-Manager Wizard to proceed with a series of automated steps to configure the TV for Pro:Centric operation and then to look for the Pro:Centric application and maintenance (E-Z Installation) files to download. In this case, the wizard uses a search algorithm to determine the Data Channel and the Pro:Centric Application Mode to set in the TV.

  Continue with the "Automated Pro:Centric Configuration" sub-section below.

• If you already know the settings (i.e., Data Channel and Pro:Centric Application Mode) that need to be configured in order for the TV to connect to the Pro:Centric server and/or if the Pro:Centric server is not yet installed, you may expedite the setup process by entering this data manually.

  Continue with the "Manual Pro:Centric Configuration" subsection on the following page.

Automated Pro:Centric Configuration

Note: If the server is not yet configured on the system, use the manual configuration option to configure the Pro:Centric operation. See also note below.

Note: If Pro:Centric data delivery will be over IP and there is a DNS server at the site, you can create a "procentric.local" DNS entry for the Pro:Centric server that will enable automated Pro:Centric IP configuration via the EZ-Manager. If there is no DNS entry for procentric.local, you must use the manual configuration option to configure the Pro:Centric IP operation.

Once the Pro:Centric data channel is found (the Pro:Centric Server Was Found screen will be displayed—see example at right) and the Pro:Centric Application Mode is determined, the wizard will advance to the Processing the Pro:Centric Configuration screen, which shows the progress of the data downloads. Note that some steps may require a few minutes.

If the process is successful, no further user interaction is required, though, in some instances, where the option (for example "Next") is available, you may manually move forward to subsequent steps within the wizard to speed up the process.

Note: You can select the "Back" button, where available, to check previous settings, as necessary.
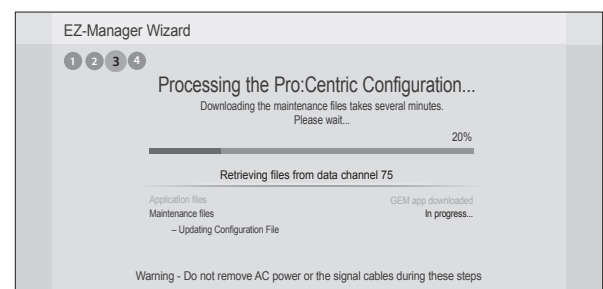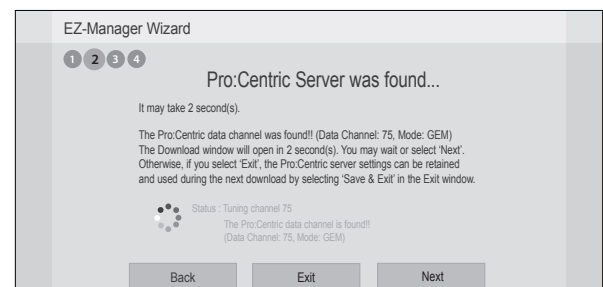
EZ-Manager Wizard (Cont.)

(Continued from previous page)

Note: If, after completing the search, the TV is unable to find the Pro:Centric data channel (while the Searching for Pro:Centric Server screen is on display), the wizard will stop and show a Diagnostics screen that enables you to manually return to the previous screen (to reinitiate the configuration) or exit the wizard.

When the Pro:Centric Configuration is complete, an EZ-Manager Configuration Complete screen is displayed, and after 10 seconds, the wizard exits, and the TV turns OFF.

Note: With the EZ-Manager Configuration Complete screen on display, you can also manually turn off or reboot the TV. If desired, select **Turn Off** or **Reboot**, respectively, and then press **OK** on the Installer Remote.

Manual Pro:Centric Configuration

1. With the Searching for Pro:Centric Server screen on display, use the arrow keys on the Installer Remote to select/highlight **Manual Pro:Centric** at the bottom right of the screen, and then press **OK**.

   In the Pro:Centric Manual Configuration screen (see examples at right below and on the following page), you will be able to configure the appropriate Pro:Centric settings in the TV. Use the Up/Down arrow keys on the Installer Remote to navigate between fields.

2. In the Pro:Centric Mode field, use the Left/Right arrow keys to select the appropriate Pro:Centric Application Mode— GEM, FLASH, HTML, or Configuration Only.

   Note: For remote management only, select "Configuration Only." The TV will search for TV E-Z Installation data downloads; however, Pro:Centric application data will not be downloaded, i.e., Installer Menu item 098 PRO:CENTRIC will be set to 0.

3. Refer to the appropriate subsection below, depending on the Pro:Centric server configuration, to complete the remaining fields.

   ### RF Configuration

   a) In the Media Type field, use the Left/Right arrow keys to select **RF**.

   b) In the Data Channel field, either key in or use the Left/ Right arrow keys to select the RF channel number that will be used by the Pro:Centric server as its data channel. The Data Channel value can be set from 1 to 135. *
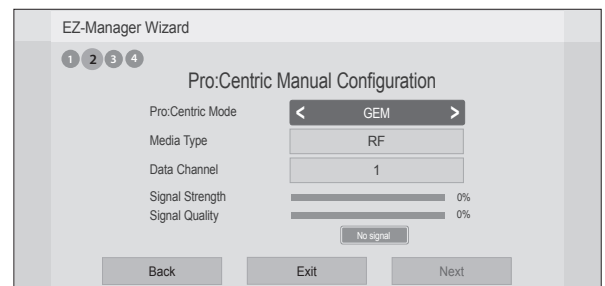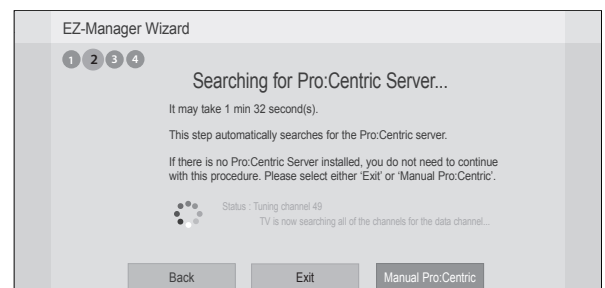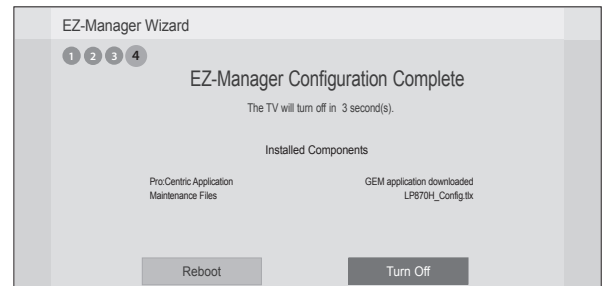
Pro:Centric Manual Configuration Screen with RF Media Fields

* PCS150R and later Pro:Centric servers do not support HRC or IRC cable channel frequencies.

(Continued from previous page)

IP Configuration

a) In the Media Type field, use the Left/Right arrow keys to select **IP**.

   Note: By default, the Pro:Centric Manual Configuration screen initially shows RF configuration fields. When you select "IP" as the Media Type, the Data Channel and Signal Strength/Quality fields are replaced with IP Address and Port fields.

b) In the Address and Port fields, either key in or use the Left/Right arrow keys to select the appropriate values for the Pro:Centric server IP address and port number.

   The IP address must match the IPv4 multicast address and the port number must match the port number that is set in the Pro:Centric server.

4. Once all fields are completed as required, you have two options (see also note below):

   • To save the data entered and exit the wizard, use the arrow keys to select **Exit** and then press **OK**. In the subsequent pop-up confirmation window, select **Save and Exit**, and then press **OK** once more. The Pro:Centric application and/or E-Z Installation data will be downloaded to the TV at a later time. This option is useful, in particular, if the Pro:Centric server has not yet been configured.

   • To initiate a real-time download of Pro:Centric application and/or E-Z Installation data, use the arrow keys to select **Next**, and then press **OK**.

   The EZ-Manager Wizard will proceed with the remaining Pro:Centric application and/or E-Z Installation data download steps, as shown on the Processing the Pro:Centric Configuration screen.

   Note: With RF configuration, Pro:Centric server data must be present on the RF channel selected as the TV's Data Channel in order for you to select "Next" (you will see a "Data Channel found" message below the Signal Quality indicator). With IP configuration, Pro:Centric server data must be present via the wired LAN cable connection in order for you to select "Next" (you will see a "IP server found" message below the Port field).

When the Pro:Centric configuration is complete, an EZ-Manager Configuration Complete screen is displayed, and after 10 seconds, the wizard exits, and the TV turns OFF.

Note: With the EZ-Manager Configuration Complete screen on display, you also have the option to manually turn off or reboot the TV. If desired, select **Turn Off** or **Reboot**, respectively, and then press **OK** on the Installer Remote.
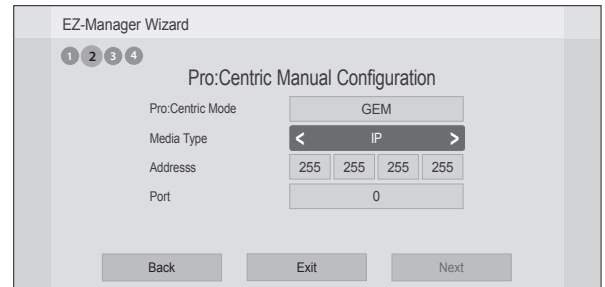
Pro:Centric Manual Configuration Screen with IP Media Fields
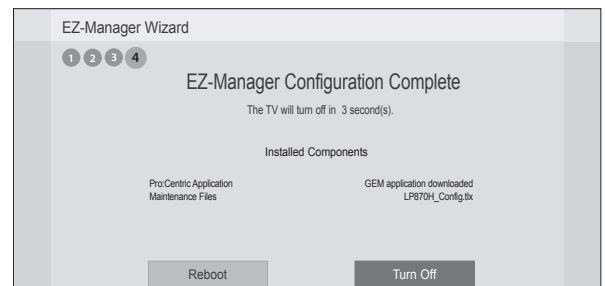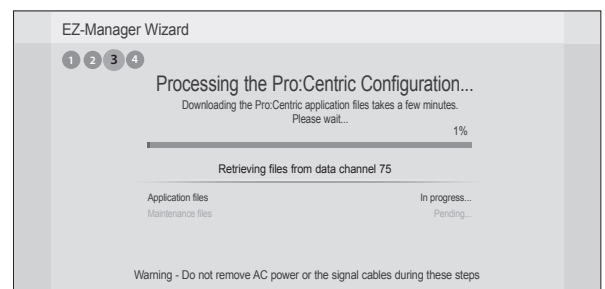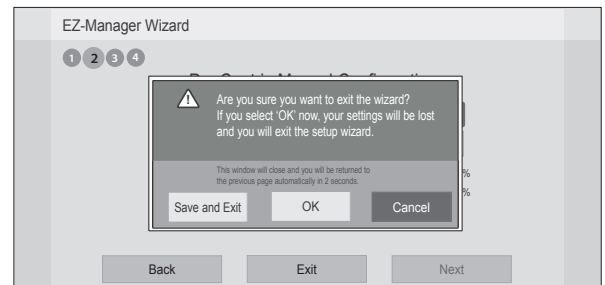
EZ-Manager Wizard (Cont.)

USB Configuration

The USB Download Menu provides options that enable you to download configuration or software files individually to the TV.

Each of the USB Download Menu functions requires that you have the appropriate file(s) loaded on a USB memory device. If you wish to perform a software upgrade or download a splash screen image from the USB Download Menu, the software/image file(s) must be stored in a folder named "LG_DTV" in the root directory of the USB device. TLX/TLL files for cloning or FTG Configuration (.tlx) files should simply be stored in the root directory of the USB device. The procedure below assumes that the desired file(s) is/are already loaded onto the USB device. For further information on USB Download Menu functions and file requirements, and/or for information on creating configuration files, refer to the appropriate section(s) in this document.

Before You Begin

* If you intend to use the Zoning feature(s) on this TV, make sure to assign the appropriate TV Zone # and/or Wi-Fi Zone # in the EZ-Manager's Zones, Label, and Room Number screen BEFORE continuing with USB Configuration. See "TV Configuration Options" on page 13 for further information.

* Ensure the USB device to be used has been formatted with FAT format.

* When creating files to be downloaded, avoid using special characters (?, &, @, etc.) in filenames.

* Refer to "Custom Master TV Setup" on pages 31 to 34 for information on creating a TLX or TLL file for cloning purposes, and/or refer to "Creating an FTG Configuration File" on pages 47 to 48 for information on creating an FTG Configuration (.tlx) file for FTG Mode via CPU configuration.

* See Reference section, "Downloading a Splash Screen Image using a USB Memory Device," for splash screen image guidelines.

* See Reference section, "Upgrading TV/PTC Software using a USB Memory Device," for further information on software upgrades.

USB Configuration via EZ-Manager Wizard

With either the TV Configuration Options or the Zones, Label, and Room Number screen on display, proceed as follows to configure the TV using the USB memory device.

1. Insert the USB memory device that contains the appropriate file(s) into either of the TV's USB ports.

2. Use the arrow keys on the Installer Remote to select **USB Configuration**, and then press **OK**. You will be redirected to the TV's USB Download Menu (see example at right).

3. Select the appropriate option from the USB Download Menu, and complete the download as required.

   Note: If you perform a software upgrade, the TV will complete the upgrade and then reboot. Upon restart, the TV will display the EZ-Manager TV Configuration Options screen. If desired, you can re-access the USB Download Menu (to perform additional functions), proceed with configuration via the wizard, or exit the wizard.

4. Remove the USB memory device, and verify that the appropriate configuration/update(s) is/are resident on the TV.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
↩ Previous   ◉ OK
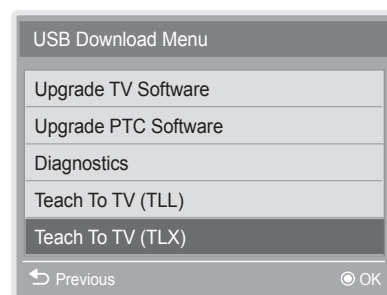
Note: You can press ↩ on the Installer Remote at any time to return to the EZ-Manager Wizard.

The LG Smart Install utility enables you to select multiple files at one time from the files loaded on a USB memory device. You may use this utility to download any one or all of the following to a TV: a TLX file for configuration purposes, a TV or PTC software update, a splash screen image.

Before You Begin

• Ensure the USB device has been formatted with FAT format.

• All files must be stored in a folder named "LGSMARTINSTALL" in the root directory of the USB memory device.

• Cloning using a TLL file is only available from the TV's USB Download Menu.

• When creating files to be downloaded, avoid using special characters (?, &, @, etc.) in filenames.

• Refer to "Custom Master TV Setup" on pages 31 to 34 for information on creating a TLX file for cloning purposes, and/or refer to "Creating an FTG Configuration File" on pages 47 to 48 for information on creating an FTG Configuration (.tlx) file for FTG Mode via CPU configuration.

• See Reference section, "Downloading a Splash Screen Image using a USB Memory Device," for splash screen image guidelines.

• See Reference section, "Upgrading TV/PTC Software using a USB Memory Device," for further information on software upgrades.

⚠ **Caution: Do not unplug the TV power cord or remove the USB memory device during a data download, as doing so may cause the TV to malfunction or harm the USB device, respectively.**

Accessing and Using the LG Smart Install Utility

1. If it is not ON already, turn ON the TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV:

   • If the wizard is displayed, you can insert the USB memory device that contains the appropriate file(s) into either of the TV's USB ports at any time to initiate the LG Smart Install utility. With the LG Smart Install utility Integrated USB Downloading screen on display (see example on following page), continue with step 4.

   • If the wizard is not displayed, insert the USB memory device that contains the appropriate file(s) into either of the TV's USB ports, and continue with step 3.

   ⚠ **Note: If you intend to use the Zoning feature(s) on this TV for location-specific configuration purposes, make sure to assign the appropriate TV Zone # and/or the Wi-Fi Zone # in the TV BEFORE continuing with the LG Smart Install utility. If the EZ-Manager is currently active, see "TV Configuration Options" on page 13 for further information. If the TV is currently in Pass-through Mode, see Reference section, "Using the TV's Zoning Features," for further information.**

3. To access the LG Smart Install utility Integrated USB Downloading screen from the TV menus:

   • Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus (TV is in Pass-through Mode) or the Function Menu (TV is not in Pass-through Mode).

LG Smart Install Utility (Cont.)

(Continued from previous page)

- Use the arrow navigation keys to select/highlight either the **Option** menu icon from the TV setup menus or the **Lock** menu icon from the Function Menu. Then, press the number "**7**" key a total of seven times.

4. The Integrated USB Downloading screen contains a listing of the files stored in the LGSMARTINSTALL folder on the USB device.

   To select or de-select a file, respectively, use the Up/Down arrows on the Installer Remote to highlight the filename, and press **OK** to add or remove the checkmark at the left of the filename.

   The utility will only allow you to select one of each file type for downloading. For example, if there are two TLX files in the LGSMARTINSTALL folder, you can only select one or the other of those two files. By default, the first instance of each file type listed on the screen is selected.

   Note: Use the arrow keys on the Installer Remote to select **Previous** and press **OK**, as necessary, to exit the LG Smart Install utility. If you accessed the utility via the EZ-Manager Wizard, you will be returned to the last screen on display before you inserted the USB device. If you accessed the utility via the TV menus, you will be returned to program viewing.

5. When you are ready to continue, use the arrow keys on the Installer Remote to select **Next**, and then press **OK**.

   Update progress will be shown in a new screen. Do NOT remove the USB device while updates are in progress. When the LG Smart Install process is complete, the TV will briefly display an overview of the results and then either return to program viewing or reboot (the latter if software has just been downloaded).

6. Remove the USB memory device, and verify that the appropriate configuration/update(s) is/are resident on the TV.

Note for TLX configuration: When configuration is complete, the TV tunes according to the Start Channel setting in the Installer Menu. If a Start Channel is specified, the TV will tune to that channel, though in the case of FTG Mode via CPU configuration, a channel banner will only be displayed if the Start Channel is included in the FTG Channel Map. Otherwise, the TV will either return to the last channel tuned (TV in Pass-through Mode) or tune to the first channel in the FTG Channel Map (TV in FTG Mode via CPU).

Note for TLX configuration: If the TLX file used for Teaching includes Wi-Fi settings, you will need to turn the TV OFF/ON in order for the Wi-Fi connection to be activated.

USB LG Smart Install Utility

Integrated USB Downloading

Select the configuration file(s) to download, and then select 'Next'.

- xxLP870H-UA00001.TLX
- Splash-Image-1920-x-1080.jpg
- xxLP870H_v3.51.00_usb.epk

[Previous]   [Next]

USB LG Smart Install Utility

Downloading Data...

Warning - Do not remove the USB device during this process

Maintenance File
File Name : xxLP870H-UA00001.TLX — Complete

Boot Logo File
File Name : Splash-Image-1920-x-1080.jpg — Ready

Software File
File Name : xxLP870H_v3.51.00_usb.epk — Ready

USB LG Smart Install Utility

Complete

The TV will reboot in 2 second(s).

Installed Components

Maintenance File : xxLP870H-UA00001.TLX
Boot Logo File : Splash-Image-1920-x-1080.jpg
Software File (CPU) : xxLP870H_v3.51.00_usb.epk

Use the Installer Menu to set up, change, or view operational settings. This section describes how to access, use, and exit the Installer Menu from the TV itself. However, you should also refer to the Installer Menu descriptions in this document if you are configuring the TV CPU using a TLX file created using LG's FTG File Manager software or configuring the EBL locally (.rml) or remotely (via FMA-LG101 / .fma) using the FTG Device Configuration Application software.

Refer to the table on pages 23 and 24 for brief descriptions of Installer Menu items. More detailed descriptions follow the table listing.

Accessing the Installer Menu

1. Turn ON the TV.

   If the EZ-Manager Wizard appears on the screen when you turn ON the TV, exit the wizard.

2. Using an Installer Remote, press **MENU SETTINGS** repeatedly until the on-screen display of the TV setup menus (if the TV is in Pass-through Mode) or the Function Menu (if the TV is not in Pass-through Mode) no longer toggles, and then press the Installer Menu entry sequence (e.g., **9**-**8**-**7**-**6**) + **OK** to access the Installer Menu.

   Note: The default Installer Menu entry sequence is "9876"; however, if Installer Menu item 000 INSTALLER SEQUENCE has been modified, the entry sequence may be one of three additional options. See Installer Menu detailed descriptions for further information.

The Installer Menu opens with item 000 INSTALLER SEQ 000.

```
xxLP870H PTC INSTALLER MENU
          CPU-CTV


000  INSTALLER SEQ      000



UPN 000-000-000-000      ASIC D279
PTC V1.00.028         CPU V3.51.00
```

PTC Version   CPU Version
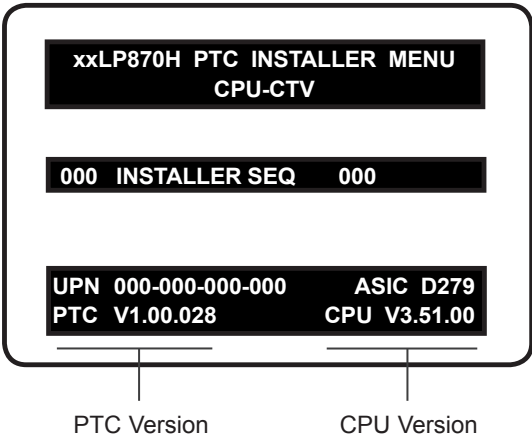
Typical Installer Menu

The Installer Menu header will vary depending on the TV you are setting up. In the Installer Menu footer, you can see the current software versions of the TV, as indicated.

Note: If the password (entry sequence) is not entered or registered correctly, you will see the message "ENTER PASSWORD 0000" at the top of the screen instead of the Installer Menu header. Once you re-enter the correct password (e.g., press 9-8-7-6 + OK), the Installer Menu will display.

Note: If the TV is not in Pass-through Mode, the Installer Menu is accessible as read-only. Also, the TV Zone # will be indicated in the Installer Menu header under the configuration mode indicator described below.

Installer Menu (Cont.)

As part of the Installer Menu header (in all modes), two 3-character acronyms are displayed to indicate the TV's current configuration mode. The table below lists all possible mode identifiers for these TV models.

Acronym	Description
CPU-CTV	Pass-through Mode with Channel Map in CPU
CPU-FTG	FTG Mode via CPU
CPU-P:C	Application Tuning Mode via CPU
EBL-FTG	FTG Mode via EBL
EBL-LNT	SONIFI PPV Mode
MPI-EXT	External MPI Control
PTC-CTV	Pass-through Mode with Channel Map in PTC

Using the Installer Menu

Refer to the table starting on the next page for an overview of the available Installer Menu items, including their item numbers, functions, value ranges, and default values.

Installer Menu items not relevant to these TV models are not present in the Installer Menu; therefore, some numbers are missing. For example, item 006 will not appear. In addition, items that are dependent on other Installer Menu item settings will not be initially accessible. For example, item 046 STRT AUX SRCE will not display in the Installer Menu unless item 004 STRT CHANNEL is set to 0. See Installer Menu detailed descriptions for further information.

Navigation within the Installer Menu

Use the Up/Down arrow keys on the Installer Remote to sequence through the available menu items, or access an item directly by keying in the item number and then pressing **MENU SETTINGS**. For example, to access the SLEEP TIMER option, which is item 015, press 0-1-5 + MENU SETTINGS.

Changing Installer Menu Settings

To change an Installer Menu item value, use the Left/Right arrow keys on the Installer Remote, or enter a valid value directly. To save the new setting, press **OK**, or use the Up/Down arrow keys to navigate to a new Installer Menu item if you have additional items to edit. Note that invalid values will not be saved.

Exiting the Installer Menu and Activating Settings

After you have adjusted all required Installer Menu item settings, press **OK** once on the Installer Remote to save your changes; then, press **OK** again to exit the Installer Menu. Any changes you make will be stored in non-volatile memory.

Note: Each time you exit the Installer Menu in Pass-through Mode, all V-Chip (Parental Control) settings in the TV are reset to their default values; that is, the Lock System, if previously enabled from the Lock setup menu, will now be disabled, and the individual Parental Control settings will be restored to default values.

> ⚠ **Caution: Installer Menu settings may affect options available from the TV setup menus or the Function Menu.**

Installer Menu Items 000 through 073

Item	Function	Value Range	Default Value	Brief Description of Function
000	INSTALLER SEQ	0 ~ 3	0	Leave default set to 0.
001	POWER MANAGE	0 ~ 7	0	Selects the number of hours of inactivity allowed before the TV automatically turns itself OFF. Set to 0 to disable Power Management.
002	AC ON	0 ~ 3	0	Set to 1 to enable TV to turn ON when AC power is applied. Set to 2 or 3 to enable Instant ON when AC power is applied. (See detailed descriptions.)
003	BAND/AFC	0 ~ 3	1	Selects Tuning Band: 0=Broadcast, 1=CATV, 2=HRC, 3=IRC
004	STRT CHANNEL	0 ~ 127, 253, 255	255	Channel tuned when TV is turned ON. (Set to 255 to tune to channel tuned before TV turned OFF.)
005	CHAN LOCK	0 / 1	0	If set to 1, cannot tune from current channel.
007	STRT VOLUME	0 ~ 63, 255	255	Volume level when TV is turned ON. (Set to 255 to use volume level before TV turned OFF.)
008	MIN VOLUME	0 ~ 63	0	Sets minimum allowable volume setting.
009	MAX VOLUME	0 ~ 63	63	Sets maximum allowable volume setting.
010	MUTE DISABLE	0 / 1	0	Set to 1 to disable Mute Function.
011	KEY DEFEAT	0 / 1	0	If set to 1, menu navigation buttons on display panel are not functional.
015	SLEEP TIMER	0 / 1	1	Set to 1 to enable Sleep Timer.
016	EN TIMER	0 / 1	0	Set to 1 to enable On/Off Timers.
017	ALARM	0 / 1	1	Set to 1 to enable Alarm.
020	FEATURE LEVEL	0, 16 ~ 24	0	Determines an additional IR code scheme to which the TV will respond.
021	V-CHIP	0 / 1	1	Set to 1 to enable V-Chip (Parental Control) functions.
022	MAX BLK HRS	0 ~ 99	12	Sets number of V-Chip blocking hours.
023	CAPTION LOCK	0 / 1	0	Set to 1 to retain caption setting set before TV turned OFF.
028	CH. OVERIDE	0 / 1	1	If set to 0, user access to channel settings in the TV setup menus is restricted and users can only tune to channels that are included in the channel lineup.
029	OLD OCV	0 / 1	0	Set to 1 to remap the PTC's direct tune channels for Aux inputs from 13x to 9x.
030	ACK MASK	0 / 1	0	If set to 1, enables ACK feature of MPI.
031	POLL RATE	20 ~ 169	94	Selects poll rate for MPI.
032	TIMING PULSE	186 ~ 227	207	Sets baud rate for MPI.
035	HDMI1 ENABLE	0 ~ 2	1	Set to 0 to disable HDMI 1. Set to 1 (DTV Mode) or 2 (PC Mode), as applicable, to enable HDMI 1.
039	REAR AUX EN.	0 / 1	1	Set to 1 to enable display panel Video 1 input jack.
041	SIMPLINK EN	0 ~ 3	0	Determines the status of the SIMPLINK feature. (See detailed descriptions.)
042	AUTO INPUTS	0 ~ 255	0	Determines the Aux inputs for which auto-sensing is enabled. (See detailed descriptions.)
046	STRT AUX SRCE	1, 3 ~ 5, 7, 255	7	Sets the starting Aux source (if item 004 STRT CHANNEL is set to 0).
047	AUX STATUS	0 / 1	0	Set to 1 for MPI Aux source to be reported as a channel number instead of Channel 0.
053	DIS. CH-TIME	0 / 1	0	Set to 1 to disable Channel-Time display.
069	EN. CH-T COL.	0 / 1	1	Set to 1 to enable custom color for the Channel-Time display.
070	FOR. CH-TIME	0 ~ 7	2	Chooses custom foreground color for the Channel-Time display.
071	BCK. CH-TIME	0 ~ 7	2	Chooses custom background color for the Channel-Time display.
073	CH NOT AVBLE	0 / 1	0	If set to 1 and item 028 CH. OVERIDE is set to 0, a "CHANNEL NOT AVAILABLE" message is displayed if user attempts to direct tune a channel that is not included in the channel lineup.

Installer Menu (Cont.)

Installer Menu Items 075 through 122

Item	Function	Value Range	Default Value	Brief Description of Function
075	REVERT CH	0 / 1	0	If set to 1 and loss of MPI communication occurs, TV tunes to Start Channel.
078	UPN MSB	0 ~ 255	0	User programmable number, most significant byte.
079	UPN MSB-1	0 ~ 255	0	User programmable number, most significant byte - 1.
080	UPN MSB-2	0 ~ 255	0	User programmable number, most significant byte - 2.
081	UPN LSB	0 ~ 255	0	User programmable number, least significant byte.
082	CHKSM ERROR	0 / 1	1	Enforces rigid MPI checksum.
083	HANDSHK TIME	0 ~ 5	5	Relaxes MPI timing to be compatible with PC-based Windows-controlled systems.
084	PERMANENT BLK	0 / 1	0	Removes block hours setting for Parental Control and makes block permanent.
086	V. MUTE TIME*	0 ~ 50	0	Use to extend the normal video mute time during channel change.
087	REAR RGB EN.	0, 1, 17	1	Dependent on item 093 RJP AVAILABLE setting. Set to 0 to disable RGB input. Set to 1 to enable RGB input. Set to 17 for Auto Configure.
088	EN NOISE MUTE	0 / 1	1	(Analog channels only) If set to 1, audio is muted if no signal is present.
090	KEY LOCK	0 / 1	0	If set to 1, all display panel buttons are locked. IR is still functional.
091	HDMI2 ENABLE	0 ~ 2	1	Set to 0 to disable HDMI 2. Set to 1 (DTV Mode) or 2 (PC Mode), as applicable, to enable HDMI 2.
092	HDMI3 ENABLE	0 ~ 2	1	Set to 0 to disable HDMI 3. Set to 1 (DTV Mode) or 2 (PC Mode), as applicable, to enable HDMI 3.
093	RJP AVAILABLE	0, 1, 2, 5, 6	0	Set to 0 to disable. Set to 1, 2, 5, or 6 for HDMI or DVI Mode. (See detailed descriptions.)
094	SAP MENU EN	0 / 1	1	Set to 1 to enable SAP feature in Function Menu.
096	DEF. ASP. RATIO	0 ~ 4	2	Sets default aspect ratio at power up. See detailed descriptions and item 106.
097	AUDIO OUTPUT	0 ~ 9	7	Set as required in accordance with external audio equipment connected to the TV. See detailed descriptions.
098	PRO:CENTRIC	0 ~ 3	0	Set to 0 to disable Pro:Centric operation. Set to 1 for Flash Mode. Set to 2 for GEM (Java Application) Mode. Set to 3 for HTML Mode.
099	BACK LIGHTING	1 ~ 200, 255	255	Sets the level of the TV picture back lighting. (See detailed descriptions.)
101	IR FEEDBACK	0 / 1	1	Set to 1 to enable IR Feedback. Set to 0 to disable IR Feedback.
102	ATSC BAND	0 ~ 4	4	Selects ATSC band.
103	ATSC TUNE MODE	0 / 1	1	Set to 1 (default) for Physical Channel scan. Set to 0 for Virtual Channel scan.
104	START MINOR CH	0 ~ 255	0	Selects Minor Start Channel. Set to 0 for NTSC.
106	ASP RATIO LOCK	0 / 1	0	To retain set aspect ratio on power cycle, set to 1. Set to 0 for default ratio on power cycle.
116	VIDEO MUTE EN	0 / 1	0	(Analog channels only) If set to 1, video mutes (blank screen) when no signal is present.
117	FACT DEFAULT	0 / 1	0	Set to 1 to restore the factory default settings of all Installer Menu items.
118	POWER SAVINGS	1, 3, 7, 9	3	Determines the powered status of the embedded *b*-LAN module and the GAME CONTROL/MPI port. (See detailed descriptions.)
119	DATA CHANNEL	0 ~ 135, 253, 255	255	Set to 0 to disable. Set from 1 to 135 to match the RF channel number used by the Pro:Centric server as its data channel. Set to 255 to use Auto Search to find the Pro:Centric RF channel. (See detailed descriptions.)
121	UPDATE TIME HR	0 ~ 23, 128	128	Sets the Wake For Update hour. The value "128" is displayed as "OFF." Directly entering 128 turns the Wake For Update feature OFF.
122	UPDATE TIME MN	0 ~ 59, 255**	0	Sets the minute for Wake For Update. (See detailed descriptions.)

* Applicable for LP870H TVs with CPU v3.51.00 or later and PTC v1.00.028 or later.   ** 255 applicable for LP870H TVs with PTC v1.00.028 or later.

Detailed Descriptions of Installer Menu Items

000 - INSTALLER SEQUENCE
Specifies entry sequence to the Installer Menu.

0 = 9876	1 = 4321
2 = 1478	3 = 3698

001 - POWER MANAGE (Power Management)
Energy saving feature. Determines the number of hours, in the range 1 to 7, of inactivity allowed, either at the TV control panel or from the remote, before the TV automatically turns itself OFF. If set to 0, Power Management is disabled.

002 - AC ON (AC Power Switchable)
If set to 1, this allows the TV to turn ON when AC power is applied. Pressing the POWER button is not necessary. This is desirable if the TV is plugged into a switched AC outlet (i.e., a set-top box). Set to 2 or 3 to enable the Instant ON feature (see additional information below). Set to 0 (default) for standard TV turn ON/OFF operation.

The Instant ON feature allows the TV to turn ON when AC power is applied, but with video and audio muted (Muted ON). The TV retains its ON status while appearing to be OFF. Pressing the POWER button toggles Off/On the video and audio mutes, so that the TV appears to turn ON instantly.

• If this item is set to 2, the TV will reboot and, if applicable (i.e., item 119 DATA CHANNEL set from 1 to 135 or 253), check for and download any available updates from the Pro:Centric server at every turn OFF. This setting is not recommended if the TV will be configured with a resident application.

• If this item is set to 3, the TV will not reboot to check for and download updates at turn OFF, with the following exception: the first time the TV is turned OFF after this item is set to 3, the TV will reboot and initiate an update event (Data Channel Auto Search and/or check for and download of updates—see also paragraph below). This setting is recommended if the TV will be configured with a resident application. In this mode, the standard check for and download of updates is under application control. Refer to your site-specific documentation for further information on configuring the TV with a resident application.

When this item is set to 2 or 3, the TV also will reboot and initiate an update event once every 24 hours. During the update event, the TV, as applicable, performs a Data Channel Auto Search (item 119 set to 255) and/or checks for and downloads any available updates from the Pro:Centric server (item 119 DATA CHANNEL set from 1 to 135 or 253). The time at which this event occurs depends on the setting of item 121 UPDATE TIME HR. See item 119 and 121 descriptions for further information. Once the update cycle is complete, the TV completes the reboot and resumes its Muted ON state.

Note: If set to 1, the TV does not respond to ON/OFF commands from either the remote or the display panel, and the SLEEP TIMER is also nonfunctional.

003 - BAND/AFC (Band/Automatic Frequency Control)
There are four possible settings for this option:

0 = Broadcast	1 = CATV (default)
2 = HRC	3 = IRC

If some channels were not found by Auto Tuning (Channel Search), select the appropriate Band setting here, and add the channels using the Channel Edit option in the Channel Menu.

004 - STRT CHANNEL (Start Channel)
If active, this function allows you to determine the initial Major Start Channel number when the TV is turned ON. This feature is useful for an in-house information channel, since the TV would always select that channel when it is turned ON. If set to 255, the last channel tuned before the TV was turned OFF will be the channel tuned when the TV is turned ON again.

0 = Aux	127 = Map to Major CH 4
1 ~ 125 = Major Ch. #	253 = IP Start Channel
126 = Map to Major CH 3	255 = Last Channel

Note: For a digital Start Channel, always remember to set item 104 to the Minor Start Channel number.

Note: 126 and 127 are mapped only in SONIFI PPV Mode.

Note: The IP Start Channel shown above can only be set in the FTG File Manager, which is used to configure TV CPUs for FTG Mode. The same applies for the additional Major Channel number range of 128 ~ 135 in Physical tuning and 128 ~ 999 in Virtual tuning mode. This means that these values, if set, will only be visible in the read-only Installer Menu when the TV is in FTG Mode via CPU. The read-only display also will show additional information about the channel, for example, the IP address and port number, etc.

005 - CHAN LOCK (Channel Lock)
Channel Lock is ideal if the system must always be on the same channel. Changing channels with the Channel Up/Down or keypad numbers is impossible. Channel Lock is inactive if set to 0 (default).

Generally, this feature is used in connection with item 004 STRT CHANNEL where the Start Channel may, for example, be set to 3 or 4. If the Start Channel is 3, then the TV will remain locked on channel 3.

NOTE: For items 007, 008, and 009
For legacy reasons, the scale used is 0 – 63. The PTC software will translate this to the 0 – 100 scale used by the TV.

To translate a TV volume level to the Installer Menu value, use the following formula:

$$\text{Installer Value} = \frac{\text{TV Value} \times 63}{100}$$

Enter only the whole number (disregard fractions).

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007 - STRT VOLUME (Start Volume)
This function allows the Installer to determine the initial volume level setting when the TV is turned ON. This feature is useful for an in-house information channel, since the TV will always select that volume level when it is turned ON. The range of values is 0 to 63, 255. If set to 255, the last volume level before the TV was turned OFF will be the current volume level when the TV is turned ON again.

008 - MIN VOLUME (Minimum Volume)
This function determines the minimum volume level allowable with the Volume (VOL) Up/Down control. In this way, for example, someone cannot set the volume too low to hear. The value range is from 0 to 63. The factory default is 0, which provides the full range of volume control, if item 009 MAX VOLUME is set to 63. It is recommended to set the same value on every TV.

Note: The minimum volume level cannot have a value setting higher than the maximum volume level (described below).

009 - MAX VOLUME (Maximum Volume)
This function determines the maximum volume level allowable with the Volume (VOL) Up/Down control. In this way, for example, someone cannot set the volume level high enough to disturb others. The value range is 0 to 63, with 63 as the default, which gives the user the full range of volume control, if item 008 MIN VOLUME is set to 0. It is recommended to set the same value on every TV.

Note: The maximum volume level cannot have a value setting lower than the minimum volume level (described above).

010 - MUTE DISABLE
Enables or disables sound mute function. If set to 1, sound cannot be muted. If set to 0, sound can be muted.

011 - KEY DEFEAT
If set to 1, Key Defeat is enabled, which means that end users cannot access or navigate within the on-screen menu(s) from the display panel, i.e., SETTINGS, OK, and menu navigation buttons will not function. Set to 0 to disable Key Defeat. Note that all IR features remain functional regardless of this setting; users can always access the menus by pressing MENU SETTINGS on the remote.

015 - SLEEP TIMER
If set to 1, the Sleep Timer feature may be used. If set to 0, the Sleep Timer is not available.

016 - EN TIMER (Enable On/Off Timers)
If set to 1, the Timer function is available to the end user and enabled continuously. Set to 0 to disable On/Off timers.

Note: The TV clock must be set in order for timers to be used.

017 - ALARM
Gives the installer the option of making the Alarm function available to the end user. If set to 1, the Alarm function is available to the end user. Set to 0 to disable the Alarm function.

Note: The TV clock must be set before the Alarm function will work.

020 - FEATURE LEVEL
Determines an additional IR code scheme to which the TV will respond, allowing for the use of unique IR codes based on "bed number" in a multi-TV single room installation. First determine the IR mode; then select the bed number.

Values	IR Mode	Bed #
0	Disabled	N/A
16 – 24	Multi-code Remote	1 – 9

Note: For further information, see documentation for the accessory package that includes the multi-code remote.

021 - V-CHIP (Parental Control)
Set to 1 to activate V-Chip (Parental Control) and have it available to the end user to filter and control or otherwise restrict programming content that can appear. Set to 0 to turn the V-Chip feature Off (not available to user); no programming restrictions can be set.

022 - MAX BLK HRS (Maximum Block Hours)
Sets hours from 0 to 99 for the maximum V-Chip (Parental Control) block hours. Default setting is for 12 blocking hours.

Note: This item is not available in the Installer Menu when item 021 V-CHIP is set to 0 or when item 084 PERMANENT BLK is set to 1.

023 - CAPTION LOCK
If set to 0, captions are OFF when the TV is turned ON. Set to 1 to use the caption setting configured before the TV was turned OFF when the TV is turned ON.

028 - CH. OVERIDE (Channel Override)
Applicable for Pass-through Mode only. If set to 1, users can select channels with either Channel Up/Down or by direct keypad entry. This setting also allows full access to channel settings in the TV setup menus (channels may be added or removed from the channel lineup, channel labels and icons may be edited, etc.). If set to 0, the channel lineup is locked. That is, user access to channel settings in the TV setup menus is restricted, and users can only tune to the channels that are included in the channel lineup. Also, in this case, if the channel lineup has not been transferred to the PTC (via 2-5-5 + MENU Mode during Master TV Setup), users can only select channels using Channel Up/Down; direct keypad entry is not available.

029 - OLD OCV (On Command Video™)
Set to 1 to remap the PTC's direct tune channels for Aux inputs from 13x to 9x. This allows 2-digit only tuning systems (i.e., legacy OCV) to direct tune Aux inputs. See also Reference section, "TV Aux Input Configuration."

030 - ACK MASK
MPI Communication Parameter. When set to 1, enables ACK feature of MPI.

031 - POLL RATE
MPI Communication Parameter. Selects poll rate for MPI. Step size of 16 ms. Changing from default may affect communication via MPI.

032 - TIMING PULSE
MPI Communication Parameter. Sets baud rate for MPI. Step size of 4.3 uS. Changing from default may affect communication via MPI.

035 - HDMI1 ENABLE
Set to 1 to enable HDMI 1 input in DTV Mode. Set to 2 to enable HDMI 1 input in PC Mode. Set to 0 to disable display panel HDMI 1 input.

Note: This setting is ignored if item 093 RJP AVAILABLE is set to 1.

039 - REAR AUX EN. (Rear Aux Enable)
Set to 1 to enable display panel rear Aux (Video 1) input. Set to 0 to disable display panel rear Aux (Video 1) input.

041 - SIMPLINK EN
Set to 0 to disable the SIMPLINK feature. Set to 1 to enable SIMPLINK functionality without enabling remote control access to the SIMPLINK Menu. Set to 2 to enable both SIMPLINK function-ality and SIMPLINK Menu access, though note that the Speaker menu option will be inaccessible/grayed out. Set to 3 to enable all aspects of SIMPLINK feature and SIMPLINK Menu. If a home theater device is connected to the TV, users can select either the TV or HT (home theater) speaker.

Note: When both this item *and* item 042 AUTO INPUTS are enabled in the Installer Menu, HDMI inputs will be detected by SIMPLINK, but the Auto Input(s) Sensing Feature will not function.

042 - AUTO INPUTS
Determines the Aux inputs for which auto-sensing is enabled. Set to 0 to disable auto-sensing for all available inputs. Set to 255 to enable auto-sensing for all available inputs. For information on options for individual input settings, see Reference section, "Auto Input(s) Sensing Feature."

Note: In order for auto-sensing to be enabled for an input, that input must also be enabled in the Installer Menu. For example, to enable auto-sensing for HDMI 1, item 035 HDMI1 ENABLE must also be set to 1 or 2. Also, see note above regarding TV operation when both this item and item 041 SIMPLINK EN are enabled.

Note: When this item is enabled in the Installer Menu, item 093 RJP AVAILABLE is automatically set to 0.

046 - STRT AUX SRCE (Start Aux Source)
Sets the starting Aux source. When turned ON, the TV will tune to starting Aux source if item 004 STRT CHANNEL is set to 0.

1 = Video 1	4 = RGB	7 = HDMI 3
3 = HDMI 1	5 = HDMI 2	255 = Last Aux

Note: Above is applicable only if all Aux sources are enabled.

Note: This item is not available in the Installer Menu unless item 004 STRT CHANNEL is set to 0.

047 - AUX STATUS
Set to 1 for MPI Aux source to be reported as a channel number instead of channel 0. Set to 0 to disable Aux identification change. Controls MPI status channel response for Aux inputs.

053 - DIS. CH-TIME (Disable Channel-Time)
Set to 1 to disable the Channel-Time display; Channel-Time display will not appear. Set to 0 to enable the Channel-Time display.

069 - EN. CH-T COL. (Enable Channel-Time Custom Color)
Set to 1 to enable custom color for the Channel-Time display. Set to 0 to disable custom color for the Channel-Time display.

070 - FOR. CH-TIME (Channel-Time Display Foreground Color)
Set according to Color Chart:

0 = Black	3 = Cyan	6 = Yellow
1 = Blue	4 = Red	7 = White
2 = Green	5 = Violet	

Note: If foreground color and background color are the same, the menu background will be transparent.

Note: Applies only to "Channel Not Available" message if item 073 CH NOT AVBLE is set to 1 (enabled). Also, items 070 FOR. CH-TIME and 071 BCK. CH-TIME are not available in the Installer Menu when item 069 EN. CH-T COL. is set to 0.

071 - BCK. CH-TIME (Channel-Time Display Background Color)
See description for item 070 FOR. CH-TIME above. The color chart is the same for both items.

073 - CH NOT AVBLE (Channel Not Available)
If set to 1 and item 028 CH. OVERIDE is set to 0, a "CHANNEL NOT AVAILABLE" message is displayed when a user attempts to direct tune a channel that is not included in the channel lineup.

Note: This item is not available in the Installer Menu when item 028 CH. OVERIDE is set to 1.

075 - REVERT CH (Revert to Start Channel)
If set to 1 and loss of MPI communication occurs, TV automatically tunes to the specified Start Channel.

Note: This item is not available in the Installer Menu when item 004 STRT CHANNEL is set to 255.

078 - UPN MSB (UPN Most Significant Byte)
User programmable number, most significant byte readable by MPI command. Note: Not linked to serial number.

079 - UPN MSB-1 (UPN Most Significant Byte-1)
User programmable number, most significant byte-1 readable by MPI command. Note: Not linked to serial number.

080 - UPN MSB-2 (UPN Most Significant Byte-2)
User programmable number, most significant byte-2 readable by MPI command. Note: Not linked to serial number.

081 - UPN LSB (UPN Least Significant Byte)
User programmable number, least significant byte readable by MPI command. Note: Not linked to serial number.

082 - CHKSM ERROR (Checksum Error)
Enforces rigid MPI checksum validation. Set to 1 for validation. Set to 0 to disable (does not check checksum on MPI async port). SPI is always checked.

083 - HANDSHK TIME (Handshake Time)
Adds an additional delay to the handshake time which is 64 msec, thus relaxing MPI timing requirements to be compatible with PC-based Windows controlled systems. Range is 0 - 5.
(Timeout = 25.5MS + [25.5 MS* Handshake time].)

084 - PERMANENT BLK (Permanent Block)
Allows Lock (Parental Control) blocking schemes to be permanent by disabling the blocking hours function. Set to 1 to install Parental Control restrictions permanently. Set to 0 for user-specified hours control of blocking schemes.

Note: This item is not available in the Installer Menu when item 021 V-CHIP is set to 0.

086 - V. MUTE TIME (Video Mute Time)
(Applicable for LP870H TVs with CPU v3.51.00 or later and PTC v1.00.028 or later) Use to extend the normal video mute time during channel change. For example, you may wish to extend the normal video mute time to prevent the display of encrypted video (i.e., from a Pro:Idiom encrypted channel) that has not yet been decrypted. When set to 0, the normal video mute time is not extended. Set from 1 to 50 to increase the normal video mute time in 100 ms step increments up to a maximum of 5 seconds (e.g., the value of 25 represents 2.5 seconds, or 25 x 100 ms = 2.5 seconds).

087 - REAR RGB EN. (Rear RGB Enable)
Controls access to rear RGB input on TV. Set to 0 to disable RGB input. Set to 1 to enable RGB input. Set to 17 to initiate a one-time automatic configuration after an AC power cycle; otherwise, automatic adjustment will be performed each time the RGB input is accessed.

088 - EN NOISE MUTE (Enable Noise Mute)
Applicable for analog channels only. If set to 1, audio mutes if no signal is present.

090 - KEY LOCK
If set to 1, Key Lock is enabled, which means that all display panel buttons will be locked, i.e., non-functional. Set to 0 to disable Key Lock. Note that all IR features remain functional regardless of this setting.

091 - HDMI2 ENABLE
Set to 1 to enable HDMI 2 input in DTV Mode. Set to 2 to enable HDMI 2 input in PC Mode. Set to 0 to disable display panel HDMI 2 input.

092 - HDMI3 ENABLE
Set to 1 to enable HDMI 3 input in DTV Mode. Set to 2 to enable HDMI 3 input in PC Mode. Set to 0 to disable display panel HDMI 3 input.

093 - RJP AVAILABLE (Remote Jack Pack Available)
- 0 = Remote jack pack is not available or disabled.
- 1 = Legacy Model RJPs: HDMI Mode
  Enables RJP feature for use with full cable bundle models. In this mode, when an HDMI source is connected to the RJP, both digital video and audio are expected via the HDMI cable. If no digital audio is present, no audio will be heard.
- 2 = Legacy Model RJPs: DVI Mode
  Enables RJP feature for use with full cable bundle models. In this mode, when an HDMI/DVI source is connected to the RJP, only digital video is expected via the HDMI cable. Analog audio is provided via a separate cable, from the source, connected to an RJP AUDIO IN. If no analog audio cable is connected, tuner audio will be heard.
- 5 = Scaler Model RJPs: HDMI Mode
  Enables RJP feature for use with reduced cable bundle models. In this mode, when an HDMI source is connected to the RJP, both digital video and audio are expected via the HDMI cable. If no digital audio is present, no audio will be heard.
- 6 = Scaler Model RJPs: DVI Mode
  Enables RJP feature for use with reduced cable bundle models. In this mode, when an HDMI/DVI source is connected to the RJP, only digital video is expected via the HDMI cable. Analog audio is provided via separate cable, from the source, connected to an RJP AUDIO IN. If no analog audio cable is connected, tuner audio will be heard.

Note: See also Reference section, "RJP Model List & Input Auto-sensing Hierarchy." Settings 1, 2, 5, and 6 allow the lodge staff to customize each TV's RJP setup based on customer requirements.

Note: When this item is enabled in the Installer Menu, item 042 AUTO INPUTS is automatically set to 0.

094 - SAP MENU EN (2nd Audio Program)
Set to 1 to enable the SAP feature in the Function Menu, when the Function Menu is available (i.e., TV is not in Pass-through Mode). Set to 0 to disable the SAP feature in the Function Menu, when the Function Menu is available.

096 - DEF. ASP. RATIO (Default Aspect Ratio)

Selects default aspect ratio at power up:

0 = Set By System	1 = 4:3
2 = 16:9 (default)	3 = Just Scan
4 = Zoom	

Note: This item is not available in the Installer Menu unless item 106 ASP RATIO LOCK is set to 0.

097 - AUDIO OUTPUT

Determines availability and signal type/level (fixed speaker, variable speaker, or fixed line level [amplifier]) of the audio output to be used by external audio equipment connected to the SPEAKER OUT / LINE OUT jack on the TV. Set to 0 to disable audio output. Otherwise, see the table below and set as required in accordance with audio equipment. See also Reference section, "External Stereo Speaker Specifications."

	Value	Status
Speaker Output	1	Fixed 0.01 Watts
	2	Fixed 0.03 Watts
	3	Fixed 0.05 Watts
	4	Fixed 0.10 Watts
	5	Fixed 0.20 Watts
	6	Fixed 0.50 Watts
	7	Fixed 1.00 Watt (default)
	8	Control with volume
Line Output	9	Fixed line level (typically 400 mVrms ± 100 mVrms @10KΩ) output

098 - PRO:CENTRIC

Selects the Pro:Centric Application Mode. Set to 0 (default) to disable the Pro:Centric application. Set to 1 for Flash Mode. Set to 2 for GEM (Java Application) Mode. Set to 3 for HTML Mode.

The TV must be turned OFF for a few seconds to initiate the Pro:Centric application download. When the TV is turned back ON, it may take several minutes to load the Pro:Centric application after the initial download.

Note: This item is not available in the Installer Menu when item 119 DATA CHANNEL is set to 0.

099 - BACK LIGHTING

Sets the TV screen brightness at power up. Default setting is 255.

- 1 - 100 Static Back Lighting
  (1 = Dimmest picture, 100 = Brightest picture)
- 101 - 200 Dynamic Back Lighting
  (101 = Dimmest picture, 200 = Brightest picture)

If set between 101 and 200, the TV automatically controls back lighting depending upon the picture level of the current program. If set to 255, back lighting is controlled via the Picture settings in the TV setup menus.

101 - IR FEEDBACK

Set to 1 to enable IR Feedback in response to remote control key presses. Feedback is typically provided by an LED/LG logo on the front of the TV display panel. Set to 0 to disable IR Feedback.

102 - ATSC BAND

Sets up TV to receive different types of incoming signals:

0 = Broadcast	1 = CATV	2 = HRC
3 = IRC	4 = Same as NTSC	

103 - ATSC TUNE MODE

Sets ATSC tuning mode. Default set to 1 for Physical Channel scan. Set to 0 for Virtual Channel scan.

104 - START MINOR CHANNEL

Sets Minor Start Channel number at power up. 0 = NTSC. If not 0, number selected is the digital channel's Minor Start Channel number.

Note: This item is not available in the Installer Menu when item 004 STRT CHANNEL is set to 0 or 255.

106 - ASP RATIO LOCK (Aspect Ratio Lock)

Set to 1 to retain previous aspect ratio with power off. Set to 0 to retain default aspect ratio with power off. See item 096 DEF. ASP. RATIO above.

116 - VIDEO MUTE EN (Video Mute Enable)

Applicable for analog channels only. If set to 1, video mutes (blank screen) when no signal is present.

117 - FACT DEFAULT (Factory Default)

Set to 1 and press OK to restore the factory default settings of all Installer Menu items. Once complete, the value returns to 0.

⚠ **Caution: If set to 1, this clears all Installer Menu custom settings and restores the factory default settings. It also clears the channel lineup, including any assigned channel icons and custom text labels.**

Note: See also Reference section, "Restoring Factory Defaults on the TV(s)," for further information.

118 - POWER SAVINGS

Default set to 3—the power circuitry for both the embedded *b*-LAN module and the GAME CONTROL/MPI port is only powered when the TV is turned ON. When the TV is turned OFF, the embedded *b*-LAN and the GAME CONTROL/MPI port are not powered.

Note that the TV must be turned ON in order to communicate with the embedded *b*-LAN module for configuration and control when POWER SAVINGS is set to 3. If POWER SAVINGS is set to 1, the *b*-LAN module is always powered.

Similarly, if MPI communication is required for external MPI control, POWER SAVINGS should be set to 1 so that the GAME CONTROL/MPI port circuitry is always powered.

Installer Menu (Cont.)

For specific applications, the RS-232 (DB9) port may be used to provide +12v/1A external power (for example, to an external MPI control device). In this case, Installer Menu item 118 POWER SAVINGS must be set to 9—both the *b*-LAN module and the GAME CONTROL/MPI port circuitry are always powered, and the external power is provided on pin 9 of the RS-232 port.

Note: See Reference section, "*b*-LAN Setup & Overview," for further information.

⚠️ **Caution: POWER SAVINGS should NEVER be set to 7. This setting is intended for factory use only.**

119 - DATA CHANNEL
Set to 0 to disable. Set from 1 to 135 to match the RF channel number that will be used by the Pro:Centric server as its data channel.*

For TVs in Pass-through Mode or FTG Mode via CPU, if this item is left at its default value (255), the TV's Data Channel Auto Search feature will be enabled (see additional information below).

Note: The Data Channel Auto Search feature is not available when the TV's EBL is in FTG Mode. If the DATA CHANNEL value is 255 when the TV is configured for FTG Mode via EBL, DATA CHANNEL is defaulted to 0.

Data Channel Auto Search feature: When this item is set to 255 (default), once every 24 hours, the TV will initiate a search of 10 predefined channels (10, 20, 30, ... 100) and then, if necessary, perform a complete search of the RF channels (1 to 135) in an attempt to find the RF channel used by the Pro:Centric server as its data channel. If the Pro:Centric RF channel is found, the DATA CHANNEL value will be changed from 255 to match the server's RF channel number. The time at which the Auto Search occurs depends on the setting of item 121 UPDATE TIME HR. See item 121 description for further information.

Note: Pro:Centric application updates are downloaded from the Pro:Centric server to the TV when the TV is turned ON; however, TV E-Z Installation updates are downloaded to the TV when the TV is turned OFF. While E-Z Installation updates are in progress, it is not possible to turn ON the TV.

Note: The Data Channel is automatically set to "253" if Media Type is set to "IP" either in the EZ-Manager Wizard or in the IP Environment / Pro:Centric Menu on the TV (see "EZ-Manager Wizard" on pages 11 to 18 or "Pro:Centric Setup" on pages 62 to 63, respectively) or if the Data Channel Installer Menu item is set to "IP Address" in the FTG File Manager, which is used to configure TV CPUs for FTG Mode operation. It is not possible to change the value to "253" directly in the Installer Menu.

121 - UPDATE TIME HR
Based on the settings of this item and item 122 UPDATE TIME MN, the Wake For Update feature wakes the TV once daily to check for and, if applicable, download updates from the Pro:Centric server.

Set the Wake For Update hour from 0 to 23. This item uses the 24-hour clock format. The value "128" (default) is displayed as "OFF." Directly entering 128 resets the default value (OFF) for this item, though note that this setting does not mean the TV will not initiate update events—see additional information below.

Under standard TV OFF/ON operating conditions (i.e., item 002 AC ON is set to 0), a Wake For Update event occurs when the TV is OFF and causes the TV's CPU to temporarily turn ON, perform the update cycle, and then turn back OFF, all while the TV appears to be OFF. If item 002 AC ON is set to 2 or 3 for Instant ON, then the TV's CPU is always ON and Wake For Update occurs when the TV is in its Muted ON state (i.e., the TV only appears to be OFF). The Wake for Update event causes the TV's CPU to reboot in order to perform the update cycle and then return to its Muted ON state. See also description for item 002.

If this item is set to 128 (OFF), the time at which a Data Channel Auto Search (item 119 set to 255) and/or an Instant ON update (item 002 set to 2 or 3) occurs is determined as follows, depending on the PTC version:

* PTC v1.00.028 or later (Random Distribution of Update Time): Each TV initiates the search and/or checks for updates during the 2 AM hour (if TV clock is set) or after two hours of elapsed time from when AC power was applied (if TV clock is not set). Also, in this case, a fixed update time minute from 0 to 59 that has been assigned to each TV is used. (The intention of this feature is to prevent all of the installed TVs from performing updates at the same time; however, note that in installations that have a large quantity of TVs, there will be some TVs that have the same update minute assignments.) The update time for the TV is displayed at the right of this item in the Installer Menu, for example:

> **121   UPDATE TIME HR   OFF   02:34**

* PTC v1.00.027 or earlier: The TV will initiate the search and/or check for updates at 2:00 PM (if TV clock is set) or after 14 hours of elapsed time from when AC power was applied (if TV clock is not set).

If the TV display is ON when Wake For Update is to occur, the update will take place the next time the TV is turned OFF.

Note: This item is not available in the Installer Menu when item 119 DATA CHANNEL is set to 0, except when item 002 AC ON is set to 2 or 3 for Instant ON.

Note: The TV clock must be set in order for a Wake For Update event to occur at the precise time of day in accordance with item 121 and item 122 settings.

122 - UPDATE TIME MN
Set the Wake For Update minute from 0 to 59. For TVs with PTC v1.00.028 or later: If item 121 is NOT set to 128 and you wish to invoke the "random" minute assignment on the TV, set this item to 255. See also description for item 121 UPDATE TIME HR above.

Note: This item is not available in the Installer Menu unless item 121 UPDATE TIME HR is set from 0 to 23.

Note: The TV clock must be set in order for a Wake For Update event to occur at the precise time of day in accordance with item 121 and item 122 settings.

* PCS150R and later Pro:Centric servers do not support HRC or IRC cable channel frequencies.

This section describes how to create a customized Master TV Setup for cloning purposes when the TV is in Pass-through Mode.

Note: Cloning requirements and procedures are described in detail on pages 36 to 44. Refer to "FTG Mode of Operation Overview" on pages 45 to 46 for information on FTG Mode operation and configuration.

Before You Begin

• It is recommended that you disconnect all Aux inputs if you intend to run Auto Tuning (Channel Search). Under certain conditions, Auto Tuning is disabled if there is an Aux input active.

• Determine which cloning tool—USB memory device or clone programmer—is appropriate for your application; several of the Master TV Setup procedure steps are dependent on the cloning tool to be used. See "Cloning Methods" below for further information.

• If you intend to use a USB memory device, see "Cloning Methods" below to determine the type of file—either the TLX file format or the legacy TLL file format—to use for cloning purposes; several of the Master TV Setup procedure steps are dependent on the desired file type.

Cloning Methods

See also "Clonable TV Setup Menu Features" list below.

Using a USB Memory Device / TLX File

• The TLX file format clones Installer Menu settings, IP Environment Menu settings (with the exception of unique TV attributes), and all TV sources' (analog, digital, AV1, HDMI, etc.) clonable setup menu settings.

• Not intended for cloning an auto-tuned/edited channel lineup, as the channel lineup is converted to a logical FTG Channel Map when saved (Learned) from a TV to a TLX file. If the TLX file with the FTG Channel Map is then used for Teaching purposes, the Target TV(s) will be configured for FTG Mode via CPU.

Using a USB Memory Device / TLL File

The TLL file format only clones the contents of the commercial controller (PTC) memory, which is limited to an auto-tuned/edited channel lineup, Installer Menu settings, and one TV source's (analog, digital, or Aux) clonable setup menu settings.

Using a Clone Programmer (TLL-1100A or LT2002)

Both the TLL-1100A and LT2002 only clone the contents of the commercial controller (PTC) memory, which is limited to an auto-tuned/edited channel lineup, Installer Menu settings, and one TV source's (analog or Aux) clonable setup menu settings.

Clonable TV Setup Menu Features

Channel
  Auto Tuning (Channel Lineup)
  Manual Tuning
  Channel Edit
  Channel Label
Picture
  Picture Mode *

Audio
  Sound Mode *
  Volume Mode
  Virtual Surround
  Clear Voice
  AV Sync *
  Sound Setting

Time
  Clock Mode (Auto/Manual) *
  Time Zone
  Auto Off
Option
  Language
  Caption
  Pointer *

* Advanced Control & Picture Option (Picture Mode), User EQ (Sound Mode), AV Sync, DST (Clock Mode), and Pointer settings are cloned via TLX file only.

 Note: Some menu options vary between analog and digital channels and Aux inputs.

Custom Master TV Setup (Cont.)

Custom Master TV Setup Procedure

1. **Turn ON the TV.**

    The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV:

    *   If the wizard is displayed, the TV is in the required factory default state. Exit the wizard, and then continue with step 2.

    *   If the wizard is not displayed, restore the TV to a factory default condition before continuing with this procedure. See Reference section, "Restoring Factory Defaults on the TV(s)," as necessary, for further information.

2. **Set Installer Menu items.**

    This step provides specific instruction only on the Installer Menu items that should be set on a Master TV. Refer to pages 21 to 30 for detailed information on all Installer Menu items.

    a) Use the Installer Remote to access the PTC Installer Menu (see "Accessing the Installer Menu" on page 21 for further information).

    b) Set Installer Menu item **003 BAND/AFC**, as appropriate.

    *   Broadcast: Set to 0.
    *   HRC: Set to 2.
    *   CATV: Set to 1 (default).
    *   IRC: Set to 3.

    c) Set any other Installer Menu items that affect your TV programming network to the required configuration. For example, enable/disable Aux inputs, set a Start Channel, etc.

    If you intend to use a USB memory device / TLX file for cloning purposes, you may also configure selected settings in the IP Environment Menu (accessible from the Installer Menu). In particular, if you intend to use the Wi-Fi Zoning feature, you must configure the wireless network connection as part of the Master TV Setup. See "IP Environment Setup" on pages 58 to 65 for further information.

    Note: You cannot return directly to the Installer Menu from the IP Environment Menu; thus, you may wish to set all Installer Menu items as needed before you access the IP Environment Menu. Otherwise, you will need to reaccess the Installer Menu to set additional items.

    d) After you have adjusted all Installer Menu item settings as required, press **OK** once on the Installer Remote to save your changes; then, press **OK** again to exit the menu.

3. **Set up TV features.**

    On-screen setup menus control the features of the TV. Press **MENU SETTINGS** on the Installer Remote to access the TV setup menus, and then set Channel, Picture, Audio, Time, etc. options to the desired configurations. See "Clonable TV Setup Menu Features" list on previous page and also notes on the following page.

| xxLP870H PTC INSTALLER MENU |
| CPU-CTV |
| |
| 000   INSTALLER SEQ   000 |
| |
| UPN 000-000-000-000   ASIC D279 |
| PTC V1.00.028   CPU V3.51.00 |

Typical Installer Menu

| 003   BAND/AFC   001 |
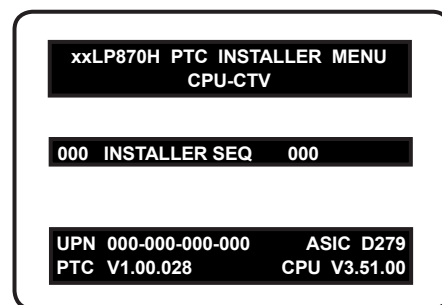
Adjust the value for this
Installer Menu item, as required.

(Continued from previous page)

> **Note:** If you intend to use a USB memory device / TLX file for cloning purposes, and you wish to use the Zoning feature(s) on this TV, make sure to assign the appropriate TV Zone # and/or Wi-Fi Zone # at this time as described in Reference section, "Using the TV's Zoning Features."
>
> **Note:** If you intend to clone the PTC, remember that only one TV source's clonable setup menu settings will be cloned. Thus, for a clone programmer, the TV setup menu settings should be applicable to either an analog channel or Aux input, while for a USB device / TLL file, the TV setup menu settings should be applicable to the analog or digital channel or Aux input to which the Target TV will be set during Teaching.
>
> **Note:** If desired and if appropriate depending on the cloning method to be used (see "Cloning Methods" on page 31), you can run Auto Tuning (see step 4) prior to completing this step.
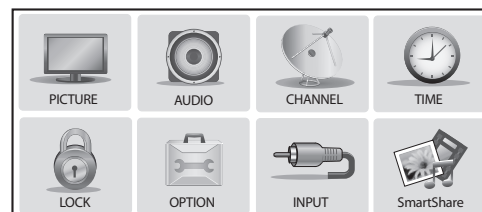
Use the TV setup menus to set the TV features to the desired configuration for the end user.

> ⚠ **Note: The next three steps (4 to 6) are applicable for PTC cloning only (i.e., cloning using a USB memory device / TLL file or clone programmer). If you intend to use a USB memory device / TLX file for cloning purposes, proceed directly to step 7 to verify the TV setup.**

4. **(PTC cloning only / Optional) Run Auto Tuning.**

   Note: If you run Auto Tuning with the intention to clone the resulting channel lineup and the Target TV(s) is/are to remain in Pass-through Mode, you MUST use a USB memory device / TLL file or clone programmer for this cloning purpose.

   a) Use the Installer Remote to access the Channel Menu. Then, select **Auto Tuning** and follow the on-screen instructions to search for all available analog and digital channels.

   b) Use the **Channel Edit** option in the Channel Menu to edit the channel lineup, as necessary. Add/delete channels per your system requirements.

   c) Use the **Channel Label** option in the Channel Menu to select the appropriate trademark/icon for each channel's Channel-Time on-screen display. Icons are available for familiar channels, such as ABC, CBS, NBC, etc. Identifiable labels (icons) should enable the end user to readily know what common networks are available.

   Note: If Installer Menu item 103 ATSC TUNE MODE is set for Physical Channel tuning (default and recommended setting), channels with minor channel numbers higher than 255 will not transfer correctly in step 5. If item 103 is set for Virtual Channel tuning and either the major or minor channel numbers are higher than 255, the channel(s) will not transfer correctly in step 5.

   Note: You can add channel icons in this step or as described in step 6. Also in step 6, you can add custom text labels for channels without icons.
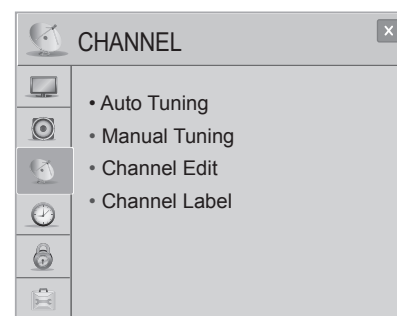
(Optional) Use Channel Menu options to run Auto Tuning, edit channels, and select channel icons.

Custom Master TV Setup (Cont.)

(Continued from previous page)

5. **(PTC cloning only) Transfer the auto-tuned/edited channel lineup (if applicable) and TV setup menu settings to the PTC: 2-5-5 + MENU Mode**

   ⚠ **Note: This step is essential for successful cloning using a USB memory device / TLL file or a clone programmer. Without this step, the PTC will not contain any channels or TV setup menu settings.**

   ⚠ **Note: The maximum number of channels (analog and digital) that can be transferred to the PTC is 141. An attempt to transfer more than 141 channels of any combination will result in a PTC Channel Map of exactly 141 channels; any extra channels will not be available in the PTC Channel Map.**

   a) After the TV channel lineup has been edited and channel label icons added, tune to the channel (source) for which you wish to transfer TV setup menu settings.

      Note: If you intend to use a clone programmer for cloning purposes, this must be either an analog channel or Aux input.

   b) Access the Installer Menu, and press **2-5-5** + **MENU SETTINGS** on the Installer Remote to initiate the transfer of the Master TV Setup to the PTC. The TV exits the Installer Menu and then tunes through the channels in the channel lineup during the transfer. When the transfer is complete, the TV tunes back to the channel that was tuned before the transfer began.

6. **(PTC cloning only / Optional) Add Custom Channel and Aux Input Labels: 2-5-4 + MENU Mode**

   2-5-4 + MENU Mode enables you to add/edit channel icons and custom text labels in the PTC Channel Map once the Master TV Setup has been transferred as described in the previous step.

   Access the Installer Menu, and press **2-5-4** + **MENU SETTINGS** on the Installer Remote. Add/edit custom text labels and/or change icons for the Channel-Time on-screen displays (see 2-5-4 + MENU procedural information on page 35). Note that broadcast digital channels often already have a broadcaster generated label. When you are finished, press **MENU SETTINGS** to exit 2-5-4 + MENU Mode.

Custom text label "WXYZ" created in 2-5-4 + MENU Mode.

7. **Verify the TV setup.**

   Make sure the TV features are set per your requirements. Also, if cloning an auto-tuned/edited channel lineup, verify that the channel lineup, channel icons, and custom text labels (as applicable) are correct.

8. **(Recommended) Lock the channel lineup.**

   Access the Installer Menu. Set item **028 CH. OVERIDE** to **0** and press **OK** to lock the channel lineup and restrict access to the TV setup menus. This step prevents end users from accessing channel settings (i.e., the Channel Menu will be inaccessible/grayed out). Press **OK** again to save your changes and exit the Installer Menu.

After verifying the TV Setup, it is recommended that you set Installer Menu item 028 CH. OVERIDE to 0.

The Master TV Setup is now ready to be saved to the predetermined cloning tool—a USB memory device (TLX or TLL file) or a clone programmer. See cloning procedures in this document.
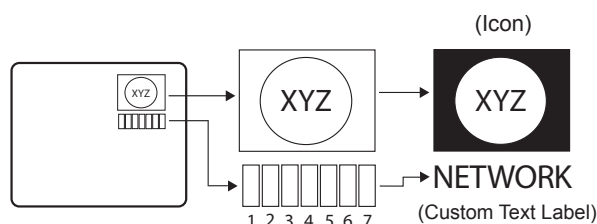
Changing Channel Icons and/or Adding or Editing Custom Text Labels in the Channel-Time Display

If there is no pre-assigned icon for a channel, you can add a custom text label of up to seven (7) characters to help identify the channel or network. Also, if desired, a custom text label can be added to the Channel-Time display in addition to a pre-assigned icon. You may also add text labels for the Aux input sources to clearly identify the devices that are connected to the Aux inputs.

(Icon)

XYZ

XYZ

NETWORK
(Custom Text Label)

1 2 3 4 5 6 7

Changing icons and/or adding or editing custom text labels can only be done if there are channels that have been transferred to the TV's PTC either during Master TV Setup (see pages 31 to 34) or by cloning (USB memory device / TLL file or clone programmer only).

Note: A blank letter space is available between "Z" and "!".

To perform channel editing/labeling:

1. Access the Installer Menu (see "Accessing the Installer Menu" on page 21 for further information).

2. Press **2-5-4** + **MENU SETTINGS** on the Installer Remote to access the Channel Label Editing Menu.

3. Change channel icons and/or add or edit custom text labels as described in the procedures below. (You can do this more than once.)

4. To exit the menu when done, press **MENU SETTINGS**.

Changing a Channel's Icon on the Master TV

1. Use Channel Up/Down to select the desired channel.

2. Use the Left/Right arrow keys to select the thin letter "**I**" on the Channel-Time display.

3. Use the Up/Down arrow keys to select the icon with which you want to identify the channel. (If you know the icon number, enter the number, and press **OK**.)

4. Proceed to add/edit custom text labels, or go to the next channel.

Adding/Editing Channel Labels on the Master TV

1. Use Channel Up/Down to select the desired channel.

2. Press the Left or Right arrow repeatedly until the numbers 1 to 7 appear on the display. The number shows the position of the character that can be changed. Number 1 is the first character, number 2 the second character, etc.

3. Use the Up/Down arrow keys to select the desired character.

4. Proceed to the next number position, or go to the next channel.

Adding/Editing Source Labels on the Master TV

1. Press **INPUT** to select the desired Aux input source: AV, RGB, HDMI, HDMI2, or HDMI3.

2. Press the Left or Right arrow repeatedly until the numbers 0 to 9 appear on the display. The number shows the position of the character that can be changed.

3. Use the Up/Down arrow keys to select the desired character.

4. Press **INPUT** for the next Aux input, or use Channel Up/Down to return to channels.

Installer Remote Control Key Functions for Master TV Channel Label Editing Menu

• **Channel Up/Down**: Tunes to the next channel in scan.
• **Left/Right Arrows**: Select the item to change. If "I" is shown, the icon can be changed. If a number is shown, it indicates the position of the character that can be changed.
• **Up/Down Arrows**: Select the icon or the character to be displayed. Tip: Arrows can be held down for fast scrolling.

• **0 – 9**: Use to enter the index number of the icon, if known.
• **OK**: Changes the icon after the icon number has been entered.
• **INPUT**: Changes the Aux input label.
• **MENU SETTINGS**: Exits the editing process.

Cloning Overview

IMPORTANT CLONING INFORMATION

Cloning refers to the process of capturing a Master TV Setup and transferring it to a Target TV that is to remain in Pass-through Mode. There are four different procedures for cloning a Master TV Setup, each with its own advantages and limitations (see also "Cloning Methods" on page 31):

• Using a USB memory device / TLX file

• Using a USB memory device / TLL file

• Using a TLL-1100A clone programmer

• Using a LT2002 clone programmer

Each cloning method is described in further detail on the pages that follow. As you perform cloning procedures, be sure to complete each task as indicated. If a procedure or step is omitted or not performed completely, cloning may not work. At each step, pay attention to ensure the TV screen shows the proper message when cloning. If the message indicated does not appear, there is a problem with that step, and cloning may not be successful.

⚠ **Caution: Copying a blank or incorrect memory into a TV from a clone programmer will cause the TV to operate erratically or become inoperable.**

⚠ **Caution: If the TV is in SONIFI PPV Mode or FTG Mode via EBL (check with the site administrator if you are not certain), do not connect a clone programmer to the GAME CONTROL/MPI port, as this will damage the clone programmer.**

Before you begin cloning:

• Complete the Custom Master TV Setup procedure (see pages 31 to 34).

• All equipment should be connected to power and turned ON.

• Learning and Teaching is only possible between identical model TVs.

• If using a USB memory device, ensure the USB device has been formatted with FAT format.

• If using a USB memory device / TLX file and you would like the Target TV(s) to remain in Pass-through Mode after Teaching, ensure the Master TV does not have an auto-tuned/edited channel lineup; otherwise, Teaching the Learned file will result in the Target TV(s) being configured for FTG Mode via CPU.

• For both Master and Target TVs—If using a clone programmer, ensure the TV is tuned to either an Aux input or an analog (not a digital) channel.

• LT2002 only—Make sure the batteries in the clone programmer are fresh. If batteries are removed, the clone programmer clock time (if set) will be lost (see page 44 for information on the clone programmer clock).

⚠ **Caution: Do not unplug the TV power cord or remove/disconnect the USB memory device/ clone programmer while Learning or Teaching, as doing so may cause the TV to malfunction or harm the USB device/clone programmer, respectively.**
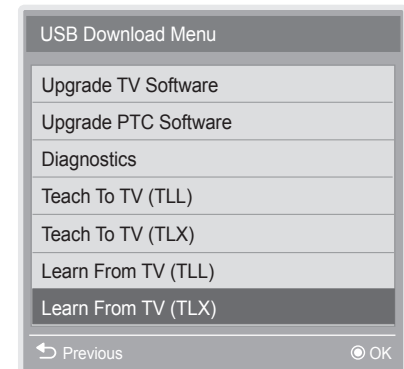
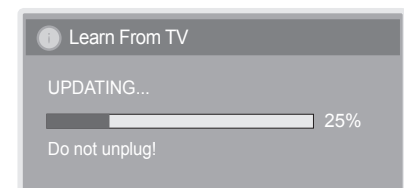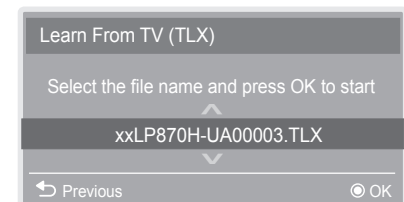## Learning / Teaching a Master TV Setup using a TLX File

TLX Cloning Notes

• Read the IMPORTANT CLONING INFORMATION on page 36 before beginning any cloning procedures. In particular, if you would like the Target TV(s) to remain in Pass-through Mode after Teaching, ensure that the Master TV does not have an auto-tuned/edited channel lineup; otherwise, Teaching will result in the Target TV(s) being configured for FTG Mode via CPU.

• If a TV Zone # and/or a Wi-Fi Zone # has/have been set in the Master TV (for location-specific configuration) before the Learning process is initiated, the Zone designation(s) will be used during the subsequent Teaching process(es). This means that in order for the "Learned" clone data with TV Zone and/or Wi-Fi Zone assignments to be applied, any Target TVs will need to be assigned the same Zone designation(s) BEFORE Teaching is performed. See Reference section, "Using the TV's Zoning Features," for further information. See also bullet below.

• If you intend to use the TV's Zoning feature(s), make sure to assign the appropriate TV Zone # and/or Wi-Fi Zoning # as described in Reference section, "Using the TV's Zoning Features," BEFORE continuing with the Learning procedure below. See also bullet above. For Wi-Fi Zoning in particular, the Master TV's wireless network connection settings should be configured in the IP Environment Menu before Learning is initiated.

• It is not possible to clone a Master TV's clock using a USB device. Either set a Target TV's clock manually, or use the Auto Clock setting in the TV setup menus.

Learn Setup from Master TV

1. Ensure the Master TV is set up completely and in Pass-through Mode (i.e., the TV setup menus should be displayed when you press **MENU SETTINGS** on the Installer Remote).

2. Insert the USB memory device into either of the USB ports on the Master TV.

3. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus. Use the arrow navigation keys to select/highlight the **Option** menu icon, and then press the number "**7**" key a total of seven times to display the USB Download Menu.

4. To gain access to the "Learn From TV" options in the USB Download Menu, key in the following number sequence on the Installer Remote: **9**-**8**-**7**-**6**.

5. Use the Up/Down arrow keys to select **Learn From TV (TLX)**, and then press **OK**.

6. In the Learn From TV (TLX) window, to differentiate this TLX file from others, you can use the Up/Down arrow keys to change the last five digits of the filename. Press **OK** when you are ready to initiate Learning.

   Learning status will be shown on a progress bar in a new window. Do NOT remove the USB device until Learning is complete. When the Learning process is complete, the USB Download menu will reappear on the screen.

7. When Learning is done, press ↰ on the Installer Remote to exit the USB Download Menu, and remove the USB memory device from the Master TV.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
Learn From TV (TLL)
Learn From TV (TLX)
↰ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

Learn From TV (TLX)
Select the file name and press OK to start
⌃
xxLP870H-UA00003.TLX
⌄
↰ Previous   ◉ OK

ⓘ Learn From TV
UPDATING...
▬▬▬▬▬▬   25%
Do not unplug!

USB Cloning Procedures (Cont.)

Teach Master TV Setup to Target TV

1. Turn ON the Target TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV:

   • If the wizard is displayed, the TV is in the required factory default state. To continue with this procedure (see also note below), exit the wizard, and then, continue with step 3.

   • If the wizard is not displayed, restore the TV to a factory default condition before continuing with this procedure. See Reference section, "Restoring Factory Defaults on the TV(s)," as necessary, for further information.

   Note: If desired, you can complete the Teaching process via the EZ-Manager Wizard (see "USB Configuration" on page 18) or using the LG Smart Install utility (see "LG Smart Install Utility" on pages 19 to 20).

3. If the Master TV Setup contains a TV Zone # and/or a Wi-Fi Zone # assignment, make sure to assign the same Zone designation(s) in the Target TV at this time. See Reference section, "Using the TV's Zoning Features," for further information.

   ⚠ **Note: In order for the proper location-specific TV Zone and/or Wi-Fi Zone profile data to be applied, the Zone designation(s) must be assigned in the Target TV(s) BEFORE Teaching is performed.**

4. Insert the USB memory device with the TLX file into either of the Target TV's USB ports.

5. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus. Use the arrow navigation keys to select/highlight the **Option** menu icon, and then press the number "**7**" key a total of seven times to display the USB Download Menu.

6. With the USB Download Menu on display, use the Up/Down arrow keys to select **Teach To TV (TLX)**, and then press **OK**.

7. In the Teach To TV (TLX) window, use the Up/Down arrow keys to select the Master TV Setup you want to install.

   Note: Filenames for TLX files Learned from a TV are comprised of the TV model and a five-digit number, for example, xxLP870H-UA00003.TLX.

8. Press **OK** when you are ready to initiate the Teaching process.

   Teaching status will be shown on a progress bar in a new window. Do NOT remove the USB device until Teaching is complete. When the Teaching process is complete, a "Teaching Completed" window is briefly displayed, and then the TV exits the USB Download Menu.

9. Remove the USB memory device from the Target TV, and verify that the Master TV Setup is now resident on the Target TV.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
↰ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

Teach To TV (TLX)
xxLP870H-UA00003.TLX
↰ Previous   ◉ OK

ⓘ Teach To TV
UPDATING...
▬▬▬▬▬▬▬▬▬▬   50%
Do not unplug!
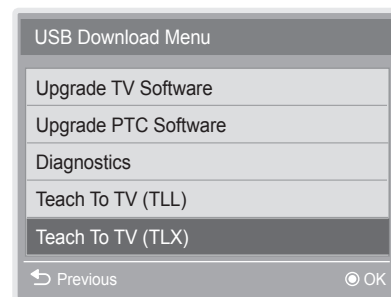
(Continued from previous page)

After the Teaching process is complete, the TV tunes according to the setting of Installer Menu item 004 STRT CHANNEL (Start Channel). If a Start Channel is specified, the TV will tune to that channel; otherwise, the TV will return to the last channel tuned.

Note: If the TLX file used for Teaching includes Wi-Fi settings, you will need to turn the TV OFF/ON in order for the Wi-Fi connection to be activated.

Learning / Teaching a Master TV Setup using a TLL File

TLL Cloning Notes

• Read the IMPORTANT CLONING INFORMATION on page 36 before beginning any cloning procedures.

• You may edit the filename as part of the Learning procedure; however, a file with edited contents will not be recognized.

• It is not possible to clone a Master TV's clock using a USB device. Either set a Target TV's clock manually, or use the Auto Clock setting in the TV setup menus.

Learn Setup from Master TV

1. Ensure the Master TV is set up completely and in Pass-through Mode (i.e., the TV setup menus should be displayed when you press **MENU SETTINGS** on the Installer Remote).

2. Insert the USB memory device into either of the USB ports on the Master TV.

3. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus. Use the arrow navigation keys to select/highlight the **Option** menu icon, and then press the number "**7**" key a total of seven times to display the USB Download Menu.

4. To gain access to the "Learn From TV" options in the USB Download Menu, key in the following number sequence on the Installer Remote: **9**-**8**-**7**-**6**.

5. Use the Up/Down arrow keys to select **Learn From TV (TLL)**, and then press **OK**.

6. In the Learn From TV (TLL) window, to differentiate this TLL file from others, you can use the Up/Down arrow keys to change the last five digits of the filename. Press **OK** when you are ready to initiate Learning.
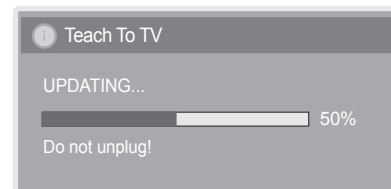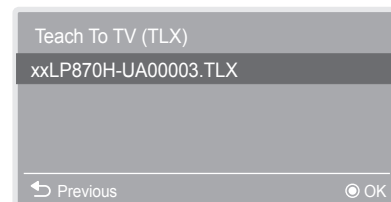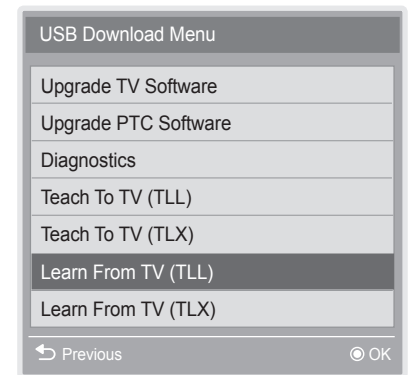
   Learning status will be shown on a progress bar in a new window. Do NOT remove the USB device until Learning is complete. When the Learning process is complete, the USB Download Menu will reappear on the screen.

7. When Learning is done, press ↰ on the Installer Remote to exit the USB Download Menu, and remove the USB memory device from the Master TV.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
Learn From TV (TLL)
Learn From TV (TLX)
↰ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

Learn From TV (TLL)
Select the file name and press OK to start
⌃
xxLP870H-UA00001.TLL
⌄
↰ Previous   ◉ OK

⚠ Learn From TV
UPDATING...
▇▇▇▇▇▇▇▇▇▇▁▁▁▁▁▁▁▁ 25%
Do not remove the USB from the port! Do not unplug!

USB Cloning Procedures (Cont.)

Teach Master TV Setup to Target TV

1. Turn ON the Target TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV:

   • If the wizard is displayed, the TV is in the required factory default state. To continue with this procedure (see also note below), exit the wizard, and then continue with step 3.

   • If the wizard is not displayed, restore the TV to a factory default condition before continuing with this procedure. See Reference section, "Restoring Factory Defaults on the TV(s)," as necessary, for further information.

   Note: If desired, you can complete the Teaching process via the EZ-Manager Wizard (see "USB Configuration" on page 18).
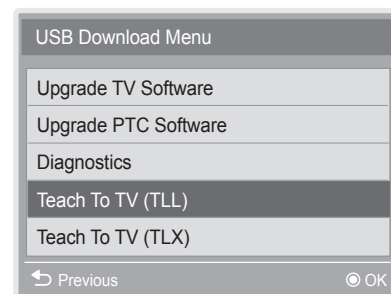
3. Tune/set the TV to an analog or digital channel or Aux input (ideally the same source tuned for 2-5-5 + MENU Mode during the Master TV Setup procedure).

4. Insert the USB memory device with the TLL file into either of the Target TV's USB ports.

5. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus. Use the arrow navigation keys to select/highlight the **Option** menu icon, and then press the number "**7**" key a total of seven times to display the USB Download Menu.

6. With the USB Download Menu on display, use the Up/Down arrow keys to select **Teach To TV (TLL)**, and then press **OK**.

7. In the Teach To TV (TLL) window, use the Up/Down arrow keys to select the Master TV Setup you want to install.

   Note: Filenames for TLL files Learned from a TV are comprised of the TV model and a five-digit number, for example, xxLP870H-UA00001.TLL.

8. Press **OK** when you are ready to initiate the Teaching process.

   Teaching status will be shown on a progress bar in a new window. Do NOT remove the USB device until Teaching is complete. When the Teaching process is complete, the USB Download menu will reappear on the screen.

9. When Teaching is done, press � on the Installer Remote to exit the USB Download Menu, remove the USB memory device from the Target TV, and turn OFF the TV.

10. After a few seconds, turn ON the TV, and verify that the Master TV Setup is now resident on the Target TV.

When you turn it back ON, the TV will tune according to the setting of Installer Menu item 004 STRT CHANNEL (Start Channel). If a Start Channel is specified, the TV will tune to that channel; otherwise, the TV will return to the last channel tuned.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
↺ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

Teach To TV (TLL)
xxLP870H-UA00001.TLL
↺ Previous   ◉ OK

⚠ Teach To TV

UPDATING...

▮▮▮▮▮▮▮▮▯▯ 50%

Do not remove the USB from the port!
Do not unplug!
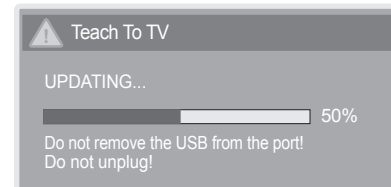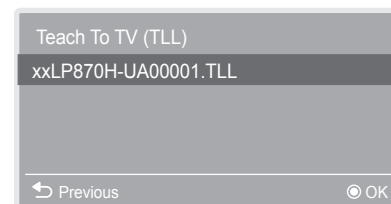
Learning / Teaching a Master TV Setup using a TLL-1100A Clone Programmer

⚠ **Caution: If the TV is in SONIFI PPV Mode or FTG Mode via EBL (check with the site administrator if you are not certain), do not connect a clone programmer to the GAME CONTROL/MPI port, as this will damage the clone programmer.**

Cloning is accomplished using the TV/clone programmer MPI ports for communication (see figure).

TLL-1100A Cloning Notes

• Read the IMPORTANT CLONING INFORMATION on page 36 before beginning any cloning procedures.

• Ensure the TLL-1100A is either fully charged or connected to AC power.

• Learning and Teaching is only possible between identical model TVs; however, the TLL-1100A can store up to eight different Master TV Setups.
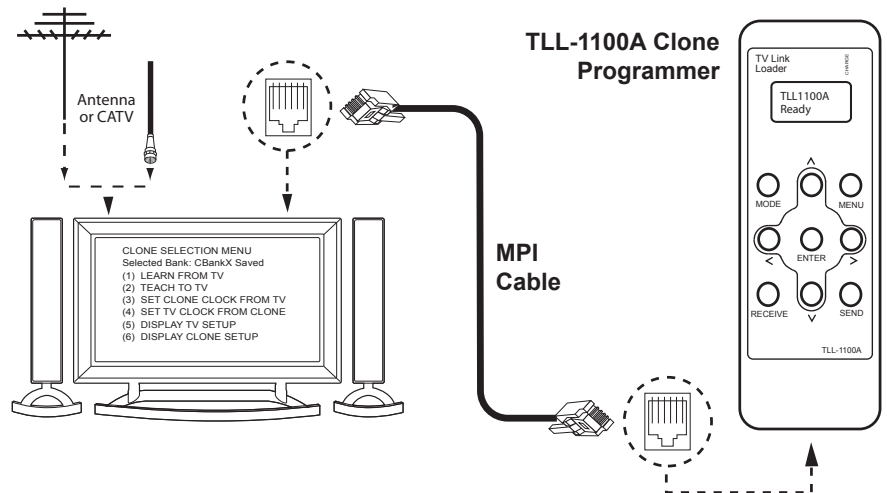
Learn Setup from Master TV

1. Ensure the Master TV is set up completely and in Pass-through Mode (i.e., the TV setup menus should be displayed when you press **MENU SETTINGS** on the Installer Remote).

2. Tune/set the TV to an analog channel or Aux input, and then, plug one end of the MPI cable into the TV MPI port.

3. Turn ON the TLL-1100A.

4. Use the **MODE** button on the TLL-1100A to select **Clone Mode**.

5. Use the Left/Right arrows on the TLL-1100A to select the Memory CBank (1 to 8) in which to store the Master TV Setup.

6. Plug the other end of the MPI cable into the MPI port on the bottom of the TLL-1100A. The Clone Selection Menu will display on the TV screen.

7. Press **1** on the Installer Remote to select **LEARN FROM TV** from the Clone Selection Menu. Then, press **OK** to transfer the Master TV Setup into CBankX on the TLL-1100A.

   Learning usually takes about 90 seconds. "LEARNING IN PROGRESS" will be displayed on the screen while the TLL-1100A copies the Master Setup. When the Learning process is complete, a "LEARNING COMPLETE" message will be displayed.

8. When Learning is done, disconnect the MPI cable from the Master TV.

Clone Programmer Cloning Procedures (Cont.)

(Optional) Set the Clock

Set the time on a Master TV's clock. (If the time has already been copied from a TV into the TLL-1100A clone programmer, you can set the Master TV's clock by copying the time from the clone programmer.) The TLL-1100A can copy the current time to both a Master TV and to the clone's internal clock—accurate to within one minute.

Since the TLL-1100A's time cannot be set directly, the current time needs to be copied from an LG TV equipped with an enabled MPI port.

After the time is copied to the TLL-1100A clone programmer, the current time will be maintained and can then be transferred to another TV. (This can be a Master TV or another TV which has already had the features set up.)

Teach Master TV Setup to Target TV

1. Turn ON the Target TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV

   • If the wizard appears is displayed, the TV is in the required factory default state. Exit the wizard, and then continue with step 3.

   • If the wizard is not displayed, restore the TV to a factory default condition before continuing with this procedure. See Reference section, "Restoring Factory Defaults on the TV(s)," as necessary, for further information.

3. Tune/set the TV to an analog channel or Aux input (ideally the same source tuned for 2-5-5 + MENU Mode during the Master TV Setup procedure), and then connect the MPI cable to the MPI port on the Target TV. The Clone Selection Menu will display on the TV screen.

4. Ensure the correct Memory CBank(X) is selected on the TLL-1100A.

5. Press **2** on the Installer Remote to select **TEACH TO TV** from the Clone Selection Menu. Then, press **OK** to transfer the Master TV Setup to the Target TV.

   Teaching usually takes 3 to 4 minutes. "TEACHING IN PROGRESS" will be displayed on the screen during Teaching. When the Teaching process is complete, a "TEACHING COMPLETE" message will be displayed.

6. When Teaching is done, disconnect the MPI cable from the Target TV, and turn OFF the TV.

7. After a few seconds, turn ON the TV, and verify that the Master TV Setup is now resident on the Target TV.

CLONE SELECTION MENU
Selected Bank: CBankX Saved
(1) LEARN FROM TV
(2) TEACH TO TV
➤ (3) SET CLONE CLOCK FROM TV
➤ (4) SET TV CLOCK FROM CLONE
(5) DISPLAY TV SETUP
(6) DISPLAY CLONE SETUP

CLONE CLOCK = XX:XX
TV   CLOCK = XX:XX
THE CLONE IS VERSION VX.X.X
- To change menu items, press channel keys or digits.
- To execute item, press Enter.

CLONE SELECTION MENU
Selected Bank: CBankX Saved
(1) LEARN FROM TV
➤ (2) TEACH TO TV
(3) SET CLONE CLOCK FROM TV
(4) SET TV CLOCK FROM CLONE
(5) DISPLAY TV SETUP
(6) DISPLAY CLONE SETUP

CLONE CLOCK = XX:XX
TV   CLOCK = XX:XX
THE CLONE IS VERSION VX.X.X
- To change menu items, press channel keys or digits.
- To execute item, press Enter.

Learning / Teaching a Master TV Setup using an LT2002 Clone Programmer
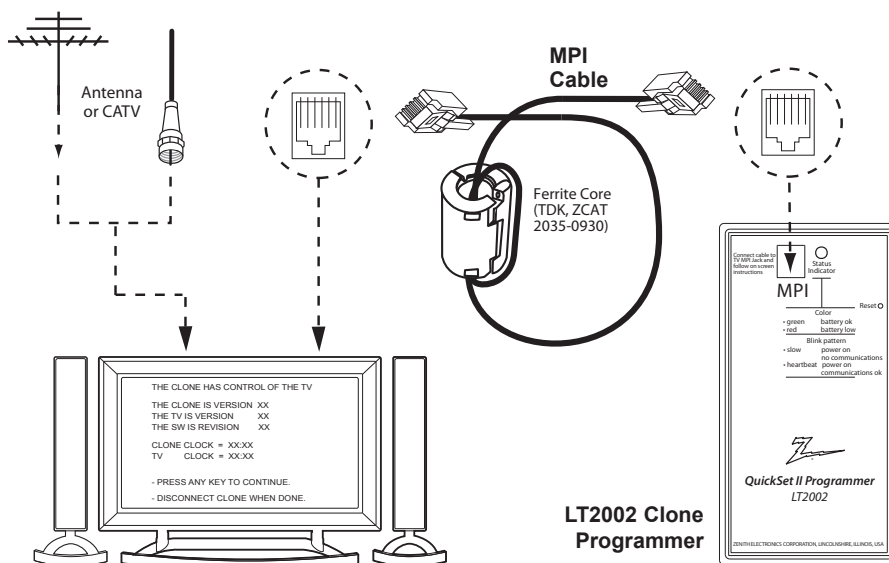
⚠ **Caution: If the TV is in SONIFI PPV Mode or FTG Mode via EBL (check with the site administrator if you are not certain), do not connect a clone programmer to the GAME CONTROL/MPI port, as this will damage the clone programmer.**

Cloning is accomplished using the TV/clone programmer MPI ports for communication (see figure).

LT2002 Cloning Notes

• Read the IMPORTANT CLONING INFORMATION on page 36 before beginning any cloning procedures.

• A slow flashing green light indicates that there are communication problems between the TV and the LT2002. If this is the case, check for a damaged cable, poor contacts, or other connection troubles.

• If the status indicator is red, the LT2002 batteries are low and should be replaced. Install four (4) high-quality alkaline AA batteries.

• Learning and Teaching is only possible between identical model TVs; however, the LT2002 can store up to three different Master TV Setups.

THE CLONE HAS CONTROL OF THE TV

THE CLONE IS VERSION XX
THE TV IS VERSION   XX
THE SW IS REVISION   XX

CLONE CLOCK = XX:XX
TV   CLOCK = XX:XX

- PRESS ANY KEY TO CONTINUE.
- DISCONNECT CLONE WHEN DONE.

LT2002 Clone Programmer

QuickSet II Programmer
LT2002

Learn Setup from Master TV

1. Ensure the Master TV is set up completely and in Pass-through Mode (i.e., the TV setup menus should be displayed when you press **MENU SETTINGS** on the Installer Remote).

2. Tune/set the TV to an analog channel or Aux input, and then plug one end of the MPI cable into the TV MPI port.

3. If there is a good connection after the LT2002 is connected to the TV MPI port, "THE CLONE HAS CONTROL OF THE TV" message will appear on the TV screen. Press any key on the Installer Remote to access the LT2002 Clone Selection Menu.

4. Press **1** on the Installer Remote to select **LEARN FROM TV** from the Clone Selection Menu; then press **OK** to proceed to the Memory Bank Selection Menu.

5. Press 1, 2, or 3 on the Installer Remote to select the clone Memory Bank in which to store the Master Setup. Then, press **OK**.

   Note: If you choose a Memory Bank that already has a Master device's setup programmed into it, that setup will be overwritten by the new Master TV Setup.

6. Verify the Learning setup information on the next screen, and then press **POWER** to transfer the Master TV Setup into the selected Memory Bank on the LT2002.

```
CLONE SELECTION MENU

(1)  LEARN FROM TV
(2)  TEACH TO TV
(3)  SET CLONE CLOCK FROM TV
(4)  SET TV CLOCK FROM CLONE
(5)  DISPLAY TV SETUP
(6)  DISPLAY CLONE SETUP

- TO CHANGE MENU ITEMS, PRESS
  CHANNEL KEYS OR DIGITS.

- TO EXECUTE ITEM, PRESS ON/OFF,
  POWER, OR ENTER.
```

```
SAVE TV SETUP IN SELECTED
CLONE MEMORY

(1)  MEMORY 1  VER XX  REV XX
(2)  MEMORY 2  VER XX  REV XX
(3)  MEMORY 3  VER XX  REV XX
(4)  RETURN TO CLONE MENU

- TO CHANGE MENU ITEMS, PRESS
  CHANNEL KEYS OR DIGITS.

- TO EXECUTE ITEM, PRESS ON/OFF,
  POWER, OR ENTER.
```

Clone Programmer Cloning Procedures (Cont.)

(Continued from previous page)

> Learning usually takes about 90 seconds. "LEARNING IN PROGRESS" will be displayed on the screen while the LT2002 copies the Master Setup. When the Learning process is complete, a "LEARNING COMPLETE" message will be displayed.

7. When Learning is done, disconnect the MPI cable from the Master TV.

(Optional) Set the Clock

Set the time on a Master TV's clock. (If the time has already been copied from a TV into the LT2002 clone programmer, you can set the Master TV's clock by copying the time from the clone programmer.) The LT2002 can copy the current time to both a Master TV and to the clone's internal clock—accurate to within one minute. (Another reason that the LT2002 should be equipped with fresh, high-quality alkaline batteries, is for it to keep the time as accurately as possible.)

Since the LT2002's time cannot be set directly, the current time needs to be copied from an LG TV equipped with an enabled MPI port.

After the time is copied to the LT2002 clone programmer, the current time will be maintained and can then be transferred to another TV. (This can be a Master TV or another TV which has already had the features set up.)

Teach Master TV Setup to Target TV

1. Turn ON the Target TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV

   • If the wizard appears is displayed, the TV is in the required factory default state. Exit the wizard, and then continue with step 3.

   • If the wizard is not displayed, restore the TV to a factory default condition before continuing with this procedure. See Reference section, "Restoring Factory Defaults on the TV(s)," as necessary, for further information.

3. Tune/set the TV to an analog channel or Aux input (ideally the same source tuned for 2-5-5 + MENU Mode during the Master TV Setup procedure), and then connect the MPI cable to the MPI port on the Target TV.

4. With "THE CLONE HAS CONTROL OF TV" message on display, press **2** on the Installer Remote to select **TEACH TO TV** from the LT2002 Clone Selection Menu. Then, press **OK**.

5. Select the LT2002 Memory Bank in which the new Master TV Setup is located, and press **OK**.

6. Verify the Teaching setup information on the next screen, and then press **POWER** to transfer the Master TV Setup to the Target TV.

   Teaching usually takes 3 to 4 minutes. "TEACHING IN PROGRESS" will be displayed on-screen during Teaching. When the Teaching process is complete, a "TEACHING COMPLETE" message will be displayed.

7. When Teaching is done, disconnect the MPI cable from the Target TV, and turn OFF the TV.

8. After a few seconds, turn ON the TV, and verify that the Master TV Setup is now resident on the Target TV.

CLONE SELECTION MENU

(1) LEARN FROM TV
(2) TEACH TO TV
► (3) SET CLONE CLOCK FROM TV
► (4) SET TV CLOCK FROM CLONE
(5) DISPLAY TV SETUP
(6) DISPLAY CLONE SETUP

- TO CHANGE MENU ITEMS, PRESS
  CHANNEL KEYS OR DIGITS.

- TO EXECUTE ITEM, PRESS ON/OFF,
  POWER, OR ENTER.

CLONE SELECTION MENU

(1) LEARN FROM TV
► (2) TEACH TO TV
(3) SET CLONE CLOCK FROM TV
(4) SET TV CLOCK FROM CLONE
(5) DISPLAY TV SETUP
(6) DISPLAY CLONE SETUP

- TO CHANGE MENU ITEMS, PRESS
  CHANNEL KEYS OR DIGITS.

- TO EXECUTE ITEM, PRESS ON/OFF,
  POWER, OR ENTER.

COPY SELECTED CLONE MEMORY
TO TV

(1) MEMORY 1 VER XX REV XX
► (2) MEMORY 2 VER XX REV XX
(3) MEMORY 3 VER XX REV XX
(4) RETURN TO CLONE MENU

- TO CHANGE MENU ITEMS, PRESS
  CHANNEL KEYS OR DIGITS.

- TO EXECUTE ITEM, PRESS ON/OFF,
  POWER, OR ENTER.

FTG Mode via CPU or EBL

In FTG Mode, an FTG Channel Map enables the decryption of each Pro:Idiom encrypted channel and also provides logical channel mapping of physical RF channels (analog and digital), IP channels, and Aux inputs.

As indicated in the introduction to this document, there are two separate and distinct methods for configuring LP870H TVs for FTG Mode of operation: one method is to configure the TV CPU for FTG Mode operation, while the other is to configure the TV EBL for FTG Mode operation. FROM A LOCAL CONFIGURATION STANDPOINT, EACH OF THESE METHODS IS MUTUALLY EXCLUSIVE. IF THE CPU IS IN FTG MODE, THE EBL CANNOT BE SWITCHED TO FTG MODE. LIKEWISE, IF THE EBL IS IN FTG MODE, THE CPU CANNOT BE SWITCHED TO FTG MODE.

FTG Mode via CPU

This mode provides the following features:

• Logical tuning of physical RF channels and Aux inputs.

• Logical tuning of IP channels.

• Mapping of RF channels with minor (program) numbers up to 999.

• FTG Channel Map of up to 600 logical channels.

• Start Channel set for RF, Aux input, or IP delivered content.

• Pro:Centric data delivery over RF or IP.

• TV Zoning and Wi-Fi Zoning options for location-specific configuration.

LG's FTG File Manager PC software enables you to create an FTG Configuration (.tlx) file, which may be used to configure the CPU for FTG Mode. You can also save (Learn) a TLX file from a Master TV. In this mode, the TV's CPU must be configured with an FTG Channel Map and FTG Installer Menu settings using one of the following processes:

• Local: Configure an individual LP870H TV via its USB port using a USB memory device / TLX file. The "Teach to TV (TLX)" process and associated procedures are described on pages 47 to 53.

• Remote: Configure all LP870H TVs at the site using a Pro:Centric server (Example: PCS150R). Refer to the ***Pro:Centric Server Admin Client User Guide*** for further information.

FTG Mode via EBL

This mode provides the following features:

• Logical tuning of physical RF channels and Aux inputs.

• Mapping of RF channels with minor (program) numbers up to 255.

• FTG Channel Map of up to 141 logical channels.

• Start Channel set for RF or Aux input delivered content.

• Pro:Centric data delivery over RF.

LG's FTG Device Configuration Application PC software is required to configure the EBL. In this mode, the TV's EBL must be configured with an FTG Channel Map and FTG Installer Menu settings using one of the following processes:

• Local: Configure an individual LP870H TV's EBL via its TV-LINK CFG jack using a direct PC-to-TV (EBL) connection and the FTG Device Configuration Application. See Reference section, "FTG Mode via EBL (Local Configuration)," for information on the "Write" process for an FTG Channel Map and FTG Installer Menu settings.

• Remote: Configure all LP870H TV EBLs at the site using a Free-To-Guest Management Appliance (FMA) head end device (Example: FMA-LG101). Refer to the ***Free-To-Guest (FTG) Device Configuration Application User Guide*** and/or the Installation & Configuration Guide for the FMA device for further information.

FTG Mode of Operation Overview (Cont.)

While the TV is in FTG Mode:

• Users can still access the Installer Menu using an LG Installer Remote; however, all Installer Menu items will be read-only.

• FTG Mode via CPU configuration changes must be made using a TLX file (typically edited in the FTG File Manager, while FTG Mode via EBL configuration changes must be made using the FTG Device Configuration Application. FTG Channel Map Configuration and FTG Installer Menu Configuration utilities in both PC applications enable you to make changes, respectively, to the FTG Channel Map and FTG Installer Menu settings as necessary. Based on the initial method used to configure the TV for FTG Mode operation (via CPU or EBL), all subsequent changes must be transferred to either the TV CPU or the EBL via a process that is in accordance or compatible with that method (see information on local configuration in this document or refer to documentation for the head end device/server for information on remote management).

• If it becomes necessary to restore the TV to Pass-through Mode, there are several options that will enable you to do so. See Reference section, "Restoring Factory Defaults on the TV(s)," for further information.

Pages 54 to 57 provide overviews of the utilities that comprise the FTG File Manager. Refer to the *Free-To-Guest (FTG) File Manager User Guide* for further information on the FTG File Manager. Refer to the *Free-To-Guest (FTG) Device Configuration Application User Guide* for information on the FTG Device Configuration Application.

Determining the TV Operating Mode

To determine the operating mode of the TV, press **MENU SETTINGS** on the Installer Remote. The menu displayed depends on the operating mode. See examples below.

If the Function Menu appears, the TV is in a mode (FTG, PPV, etc.) that does not allow the end user to change the fundamental TV setup. If the TV setup menus appear, the TV is in Pass-through Mode.

Function Menu
Indicates the TV is not in Pass-through Mode. While the TV is in this mode, Installer Menu settings can be accessed as read-only.
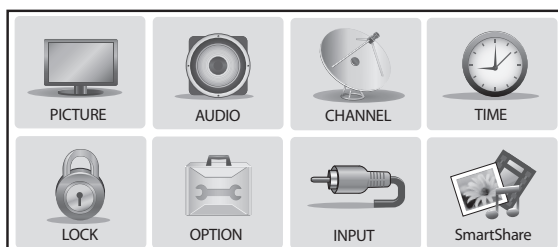
TV Setup Menus
Shows that the TV is in Pass-through Mode.

Creating an FTG Configuration File

The procedure below describes how to use the FTG File Manager utilities to create an FTG Configuration (.tlx) file that can be saved to a USB memory device. In order to enable decryption of Pro:Idiom encrypted channels, it is recommended that you create or view/edit an FTG Configuration file using the FTG File Manager.

FTG File Manager software is available online at: www.LGsolutions.com/ftgsoftware.

Note: There is also an option to save (Learn) FTG Configuration from a TV, which may be desirable or required if you want to save customized TV setup menu settings to the FTG Configuration file and/or if you do not know the RF channels at the site. See "Learning FTG Configuration from a TV" on pages 51 to 52 for further information.

This procedure provides an overview of the steps required to create the FTG Configuration (.tlx) file. Refer to the *Free-To-Guest (FTG) File Manager User Guide* for further information. See also FTG File Manager sample screens on pages 54 to 57.

1. Install (if necessary) and launch the FTG File Manager (v1.1.3 or later) on the PC that will be used to create the FTG Configuration (.tlx) file.

2. You have a number of options:

   • To view and/or base a new FTG Configuration file on an existing FTG Configuration (.tlx) file, click the **Open** button in the TLX File command section of the FTG File Manager main screen, and select/double-click on the desired ".tlx" file.

   A list of the file's contents will be displayed in the TLX File Contents window. Either double-click on an individual item to copy it or click the **Copy All** button directly above the TLX File Contents window to automatically copy all the contents of the opened file to the FTG Configuration List and, if applicable, TV Setup Menu List. Note, though, that while TV setup menu settings can be included in the new FTG Configuration file, the TV setup menu settings are not available for editing.

   Edit the configuration of the items in the FTG Configuration List as well as the FTG Configuration List itself and/or the TV Setup Menu List, as necessary, to create a new file. Then, proceed to step 3 when you are ready to continue.

   • To open an existing FTG Configuration (.rml) file created in the FTG Device Configuration Application to use its FTG Channel Map and/or FTG Installer Menu settings, click **File** and then **Open** from the FTG File Manager menu bar, and select/double-click on the desired ".rml" file.

   Edit channels and/or settings as necessary. Then, proceed to step 3 when you are ready to continue.

   • Create a new FTG Channel Map using the FTG Channel Map Editor in the FTG Channel Map Configuration Utility. Up to 600 logical channels (combined total of both RF and IP mapped channels) can be defined in the FTG Channel Map.

   When you are ready to continue, click **Configure** and then **FTG File Manager** from the FTG File Manager menu bar to return to the FTG File Manager main screen, and then proceed to step 3.

   Note: To remove an individual item from the FTG Configuration List or the TV Setup Menu List, click on/highlight the item to be removed, and then click the **Remove Item** button directly above the applicable "List" window. To clear both the current FTG Configuration List and TV Setup Menu List contents, click the **Clear** button in the List command section of the FTG File Manager main screen.

FTG Mode via CPU (Cont.)

(Continued from previous page)

Note: To clear the current TLX File Contents, click the **New** button in the TLX File command section of the FTG File Manager main screen (above the TLX File Contents window).

3. To add an FTG Channel Map to the FTG Configuration List, click >> under FTG Channel Map. This will copy the current mapped RF and IP channels to the FTG Configuration List.

   Note: If you make any change(s) in the FTG Channel Map Configuration Utility to the current data to be included in the FTG Configuration List, you will need to recopy the FTG Channel Map to the FTG Configuration List.

4. (Optional) Load default FTG Installer Menu settings for the TV:
   - Click the down arrow at the right of the Chassis field in the Installer Menu Templates section of the FTG File Manager main screen, and select the appropriate chassis (depending on the TV type) from the drop-down list of available models.
   - Click the **Load** button.
   - Use the FTG Installer Menu Configuration Utility to modify settings, if necessary, including Media Share settings, Wi-Fi Zoning settings, etc. Then, return to the FTG File Manager main screen.

5. If you wish to change the Zone assignment for the current FTG Installer Menu settings, click on the down arrow at the right of the Zone field (below the FTG Installer Menu Settings field), and select the appropriate Zone (0–8).

   Note: See Reference section, "Using the TV's Zoning Features," for further information on the TV Zoning feature and setting the TV Zone # in the TV(s).

6. To add FTG Installer Menu settings to the FTG Configuration List, click >> under FTG Installer Menu Settings. This will copy the selected model settings to the FTG Configuration List.

   Note: If you make any change(s) in the FTG Installer Menu Configuration Utility to the current data to be included in the FTG Configuration List, you will need to recopy the FTG Installer Menu settings to the FTG Configuration List.

   Note: At the top of both the FTG Configuration List and TV Setup Menu List windows, an Edit Zone field enables you to change the Zone assignment for each LP870H Installer Menu and/or TV Setup Menu profile, if desired. Select/highlight the desired profile, and then click on the down arrow at the right of the applicable Edit Zone field to select the appropriate Zone.

7. Click the **Save** button in the List command section of the FTG File Manager main screen to save the FTG Configuration List and, if present, TV Setup Menu List contents to an FTG Configuration (.tlx) file on the PC's hard drive for later use.

   In the Save As pop-up window, name the file (avoid using special characters, such as ?, &, @, etc.) and click **Save**. The default folder path is C:\Program Files\Zenith\FTG\TLX. Note that the FTG Configuration file will have a ".tlx" file extension.

   Note: To remove an individual item from the FTG Configuration List or the TV Setup Menu List before saving the new file, click on/highlight the item to be removed, and then click the **Remove Item** button directly above the applicable window. To clear both the current FTG Configuration List and TV Setup Menu List contents, click the **Clear** button in the List command section of the FTG File Manager main screen.

8. Transfer the FTG Configuration (.tlx) file to a USB memory device, and proceed to "Teaching FTG Configuration to a TV" on the following page to transfer the FTG Configuration file to an LP870H TV.

Teaching FTG Configuration to a TV

This section describes how to transfer (Teach) an FTG Configuration file from a USB memory device to a TV using the USB Download Menu "Teach To TV (TLX)" option. The FTG Configuration file may be created either in the FTG File Manager or from a Master TV Setup that was saved (Learned) from a Master TV. Refer to "Creating an FTG Configuration File" on pages 47 to 48 for information on creating an FTG Configuration file using the FTG File Manager.

Before You Begin

• Ensure the USB device has been formatted with FAT format.

• Avoid using special characters, such as ?, &, @, etc., in the FTG configuration (.tlx) filename.

• If the EZ-Manager Wizard appears on the screen when you turn ON the Target TV, you can use the wizard's "USB Configuration" option to access the USB Download Menu and complete the Teaching process (see "TV Configuration Options" and/or "USB Configuration" on pages 13 and 18, respectively, as necessary).

• You may also use the LG Smart Install utility to complete the Teaching process. See "LG Smart Install Utility" on pages 19 to 20 for further information.

• If the Target TV is currently in Pass-through Mode and you intend to use the TV's Zoning feature(s)—i.e., the FTG Configuration file you are Teaching contains an FTG Channel Map and/or FTG profile(s) with TV Zone and/or Wi-Fi Zone assignments—make sure to assign the appropriate TV Zone # and/or Wi-Fi Zone # in the TV when directed to do so in the procedure below. See Reference section, "Using the TV's Zoning Features," for further information.

• If the FTG Configuration file contains an FTG Channel Map that was created in the FTG File Manager, each logical channel number in the FTG Channel Map has been assigned a physical RF channel, an IP channel, or an Aux input (the latter designated by 130-0 through 137-0—see also Reference section, "TV Aux Input Configuration"). If the FTG Configuration file contains an FTG Channel Map that was Learned from a Master TV, the physical RF channels in the FTG Channel Map have been assigned logical channel numbers (see "Learning FTG Configuration from a TV" on pages 51 to 52).

• If the Target TV EBL is already in FTG Mode, you cannot use this procedure to make changes to the FTG Channel Map and FTG Installer Menu settings. You must use a direct PC-to-TV connection as described in Reference section, "FTG Mode via EBL (Local Configuration)," or an FMA head end device to reconfigure the EBL.

• If the preceding condition applies, but you wish to switch the TV to FTG mode via CPU, see Reference section, "Restoring Factory Defaults on the TV(s)," for further information before proceeding.

• If the FTG Configuration file was created in the FTG File Manager, it may contain multiple zoned FTG Installer Menu profiles for different TV models. Make sure it includes the appropriate Installer Menu profile(s) for the Target TV(s) before Teaching.

⚠ **Caution: Do not unplug the TV power cord or remove the USB memory device while Teaching, as doing so may cause the TV to malfunction or harm the USB device, respectively.**

FTG Mode via CPU (Cont.)

Teach FTG Configuration to Target TV

1. Turn ON the Target TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV:

   • If the wizard is displayed, you can complete the Teaching process via the wizard, as indicated above (see "Before You Begin"). However, to continue with this procedure and access the "Teach to TV (TLX)" option from the TV menus, exit the EZ-Manager Wizard. Then, continue with step 3.

   • If the wizard is not displayed, go directly to step 3.

3. If applicable (see also "Before You Begin" on previous page), make sure to assign the appropriate Zone designation(s) in the Target TV at this time.

   ⚠ **Note: In order for the proper location-specific TV Zone and/or Wi-Fi Zone profile data to be applied, the Zone designation(s) must be assigned in the Target TV(s) BEFORE Teaching is performed.**
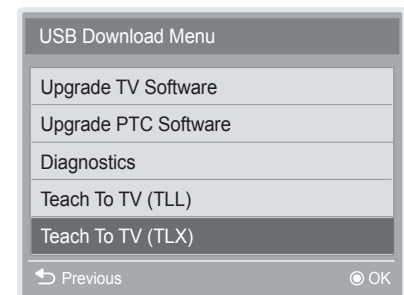
4. Insert the USB memory device with the FTG Configuration file into either of the TV's USB ports.

5. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus (TV is in Pass-through Mode) or the Function Menu (TV is already in FTG Mode).

6. Use the arrow navigation keys to select/highlight either the **Option** menu icon from the TV setup menus or the **Lock** menu icon from the Function Menu. Then, press the number "**7**" key a total of seven times to display the USB Download Menu.

7. With the USB Download Menu on display, use the Up/Down arrow keys to select **Teach To TV (TLX)**, and then press **OK**.

8. In the Teach To TV (TLX) window, use the Up/Down arrow keys to select the FTG Configuration file you want to install.

   Note: Filenames for TLX files that were Learned from a TV are comprised of the TV model and a five-digit number, for example, xxLP870H-UA00005.TLX.

9. Press **OK** when you are ready to initiate the Teaching process.

   Teaching status will be shown on a progress bar in a new window. Do NOT remove the USB device until Teaching is complete. When the Teaching process is complete, a "Teaching Completed" window is briefly displayed, and then the TV exits the USB Download Menu.

10. Remove the USB memory device from the Target TV, and verify that the FTG Configuration is resident on the Target TV.

Note: If it was previously in Pass-through Mode, the Target TV CPU is now in FTG Mode. After the Teaching process is complete, the TV tunes according to the Start Channel setting in the Installer Menu. If a Start Channel is specified, the TV will tune to that channel, though a channel banner will only be displayed if the Start Channel is included in the FTG Channel Map; otherwise, the TV will tune to the first channel in the FTG Channel Map.

Note: If the TLX file used for Teaching includes Wi-Fi settings, you will need to turn the TV OFF/ON in order for the Wi-Fi connection to be activated.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
↰ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

Teach To TV (TLX)
xxLP870H-UA00005.TLX
↰ Previous   ◉ OK

ⓘ Teach To TV
UPDATING...
�_____ 50%
Do not unplug!
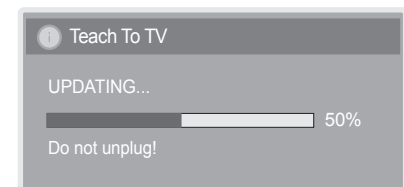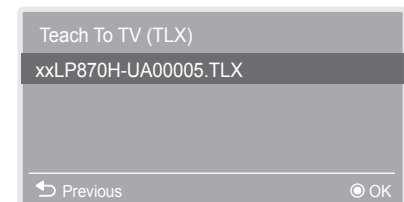
Learning FTG Configuration from a TV

To ensure that decryption of Pro:Idiom encrypted channels is enabled, it is recommended that you create an FTG Configuration file using the FTG File Manager as described on pages 47 to 48. However, if necessary, there is an option to save (Learn) an FTG Configuration file from an LP870H TV to a USB memory device.

The option to save (Learn) an FTG Configuration file from a TV may be desirable or required in either or both of the following situations:

• If you want to save customized TV setup menu settings to the FTG Configuration file, in addition to the FTG Channel Map and FTG Installer Menu settings.

• If you do not know the RF channels at the site, and you would like to use the TV to search for the available RF channels.

Before You Begin

• Ensure the USB device has been formatted with FAT format.

• If the TV is NOT already in FTG Mode, you may need to perform some manual configuration on the TV before you start this procedure (see "Optional Manual Configuration / TV Setup" on next page).

• If you intend to use the TV's Zoning feature(s), make sure to assign the appropriate TV Zone # and/or Wi-Fi Zone # as described in Reference section, "Using the TV's Zoning Features," BEFORE continuing with the procedure below. Also, for Wi-Fi Zoning in particular, the TV's wireless network connection settings should be configured in the IP Environment Menu before Learning is initiated.

• Since the Learn From TV (TLX) process retrieves the Channel Map from the CPU, it is not possible to Learn an FTG Channel Map from a TV that is currently in FTG Mode via EBL (Channel Map resides in EBL).

⚠ **Caution: Do not unplug the TV power cord or remove the USB memory device while Learning, as doing so may cause the TV to malfunction or harm the USB device, respectively.**

Learn FTG Configuration from Master TV

1. Turn ON the Master TV, and then insert a USB memory device into either of the TV's USB ports.

2. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus (TV is in Pass-through Mode) or the Function Menu (TV is already in FTG Mode).

3. Use the arrow navigation keys to select/highlight either the **Option** menu icon from the TV setup menus or the **Lock** menu icon from the Function Menu. Then, press the number "**7**" key a total of seven times to display the USB Download Menu.

4. To gain access to the Learn From TV options in the USB Download Menu, key in the following number sequence on the Installer Remote: **9**-**8**-**7**-**6**.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
Learn From TV (TLL)
Learn From TV (TLX)
↶ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

Learn From TV (TLX)
Select the file name and press OK to start
⌃
xxLP870H-UA00005.TLX
⌄
↶ Previous   ◉ OK
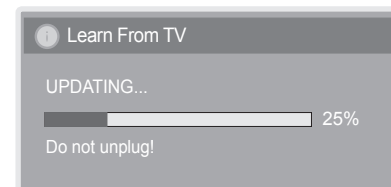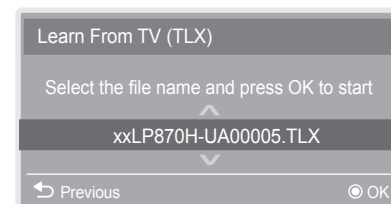
ⓘ Learn From TV
UPDATING...
25%
Do not unplug!

FTG Mode via CPU (Cont.)

(Continued from previous page)

5. Use the Up/Down arrow keys to select **Learn From TV (TLX)**, and then press **OK**.

6. In the Learn From TV (TLX) window, to differentiate this TLX file from others, you can use the Up/Down arrow keys to change the last five digits of the filename. Press **OK** when you are ready to initiate Learning.
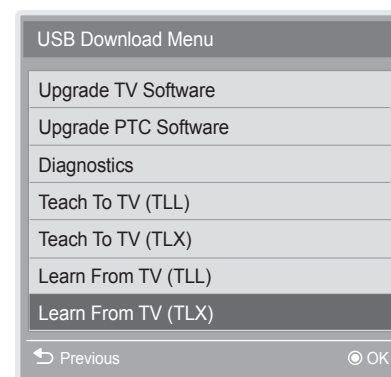
    Learning status will be shown on a progress bar in a new window. Do NOT remove the USB device until Learning is complete. When the Learning process is complete, the USB Download Menu will reappear on the screen.

7. When Learning is done, press ↰ on the Installer Remote to exit the USB Download Menu, and remove the USB memory device.

⚠ **Note: If the Master TV has a channel lineup, during Learning, logical channel numbers are automatically assigned in ascending order, starting with 0 (zero), to the physical RF channels of the TV channel lineup to create an FTG Channel Map. See also note below.**

⚠ **Note: It is highly recommended that you open this FTG Configuration file in the FTG File Manager—BEFORE transferring (Teaching) the file to any Target TVs—to verify FTG Channel Map and FTG Installer Menu settings and enable decryption by marking Pro:Idiom encrypted channels. This will also enable you to confirm channels and add channel attributes, labels, etc.**

Optional Manual Configuration / TV Setup

The manual configuration procedures below should only be performed if you want to save customized TV setup menu settings to the FTG Configuration file and/or if you do not know the RF channels at the site and need to "Learn" FTG Configuration from an LP870H TV as described above.

Note: These configuration procedures parallel the initial steps required for creating a Master TV Setup. See also screen examples on pages 32 to 33.

Set Installer Menu Items

These steps provide specific instruction only on the Installer Menu items that should be set on an LP870H TV. Refer to pages 21 to 30 for detailed information on all Installer Menu items.

1. Turn ON the TV.

2. The next step depends on whether the EZ-Manager Wizard appears on the screen when you turn ON the TV:

    • If the wizard is displayed, the TV is in the required factory default state. Exit the wizard, and then continue with step 3.

    • If the wizard is not displayed, restore the TV to a factory default condition before continuing with this procedure. See Reference section, "Restoring Factory Defaults on the TV(s)," as necessary, for further information.

(Continued from previous page)

3. Use the Installer Remote to access the PTC Installer Menu (see "Accessing the Installer Menu" on page 21 for further information).

4. Set Installer Menu item **003 BAND/AFC**, as appropriate.

   • Broadcast: Set to 0.   • HRC: Set to 2.

   • CATV: Set to 1 (default).   • IRC: Set to 3.

5. Set any other Installer Menu items that affect your TV programming network to the required configuration. For example, enable/disable Aux inputs, set a Start Channel, etc.

   You may also configure any required settings in the IP Environment Menu (accessible from the Installer Menu), for example wireless network connection settings, Pro:Centric IP settings, etc. See "IP Environment Setup" on pages 58 to 65 for further information. However, note that you cannot return directly to the Installer Menu from the IP Environment Menu; thus, you may wish to set all Installer Menu items as needed before you access the IP Environment Menu. Otherwise, you will need to reaccess the Installer Menu to set additional items.

6. After you have adjusted all Installer Menu item settings as required, press **OK** once on the Installer Remote to save your changes; then, press **OK** again to exit the menu.

Set Up TV Features

On-screen setup menus control the features of the TV. Press **MENU SETTINGS** on the Installer Remote to access the TV setup menus, and then set Channel, Picture, Audio, Time, etc. options to the desired configurations. In particular, if you intend to use the TV's Zoning feature(s), make sure to assign the appropriate TV Zone # and/or Wi-Fi Zone # as described in Reference section, "Using the TV's Zoning Features."

Run Auto Tuning (Channel Search)

Note: Decryption of Pro:Idiom encrypted channels will not be enabled unless you use the FTG File Manager to set the channel attributes.

1. Use the Installer Remote to access the Channel Menu. Then, select **Auto Tuning** and follow the on-screen instructions to search for all available analog and digital channels.

2. Use the **Channel Edit** option in the Channel Menu to edit the channel lineup, as necessary. Add/delete channels per your system requirements.

Once you have completed these procedures, return to "Learning FTG Configuration from a TV" above to complete the Learn sequence.

FTG File Manager Utilities Overview

FTG File Manager Main Screen

The FTG File Manager main screen enables you to compile, modify, and save FTG Configuration (.tlx) files. It also allows you to change the Zone assignment for each Installer Menu profile, if desired (see Reference section, "Using the TV's Zoning Features," for further information).

FTG CONFIGURATION LIST
Data to be saved in FTG Configuration (.tlx) file.

CLEAR/SAVE
FTG Configuration and TV Setup Menu List options.

NEW/OPEN
TLX File options.

Filename of opened FTG Configuration (.rml) file created using FTG Device Configuration Application.

Copy FTG Channel Map to and from FTG Configuration List.

Copy FTG Installer Menu settings to and from FTG Configuration List. Assign Zone as applicable.

Load default FTG Installer Menu for LP870H chassis.

TV SETUP MENU LIST
Data to be saved in FTG Configuration file.

TLX FILE CONTENTS
Data contained in opened FTG Configuration (.tlx) file.

> ⚠ **Note: The data referenced in the FTG Configuration List is only a snapshot of the current FTG Channel Map and FTG Installer Menu settings when copied to the list. If you make any change(s) to the current data to be included in the FTG Configuration List, you will need to recopy Channel Map and Installer Menu settings to the FTG Configuration List.**

FTG Channel Map Configuration Utility

The FTG Channel Map Configuration Utility enables you to create, view, edit, and print a Logical Channel Map.
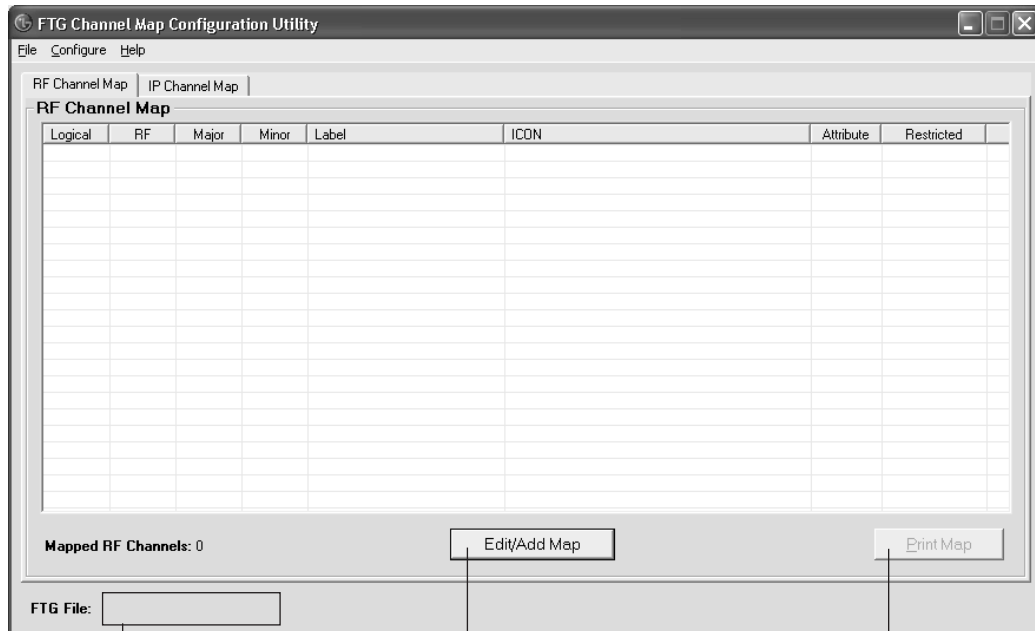
EDIT/ADD MAP
Click to open the FTG Channel Map Editor to create or edit an FTG Channel Map (see next page).

PRINT MAP
Click to display a printable FTG Channel Map Report. The report can also be exported as an HTML or Text file.

Filename of opened FTG Configuration (.rml) file created using FTG Device Configuration Application.

FTG File Manager Utilities Overview (Cont.)

FTG Channel Map Editor

The FTG Channel Map Editor shows a single Logical Channel's data and the FTG Channel Map.

LOGICAL CHANNEL MAPPING
Select a Logical Channel number. Then, assign the RF, Major, and Minor channel numbers to complete the mapping.

CUSTOM CHANNEL LABELS/ICONS
Enter custom labels and select icons by name on menu or by number.

SET CHANNEL ATTRIBUTES
Check/select Encrypted, OSD, or Blank Video.

ZONE RESTRICTION
Set Zone restriction(s) per channel. See Reference section, "Using the TV's Zoning Features," for further information.

ADD
After defining a new Logical Channel, click to add channel to the FTG Channel Map.

EXIT
Click to exit editor and return to FTG Channel Map Configuration Utility.

UPDATE
After editing an existing Logical Channel's data, click to commit the changes in the FTG Channel Map.

DELETE
Click to remove highlighted channel from FTG Channel Map.

FTG Installer Menu Configuration Utility

CONFIGURATION SETTINGS
Select tabs for categories of Installer
Menu items to set up TV.

Filename of opened FTG Configuration
(.rml) file created using FTG Device
Configuration Application.

Notes:

• The Pro:Centric tab enables you to set up Pro:Centric-specific parameters. The
LAN tab enables you to set up a variety of LAN features, including the Wi-Fi Zoning
feature. Refer to the ***Free-To-Guest (FTG) File Manager User Guide*** for further
information. Also, see Reference section, "Using the TV's Zoning Features," for
additional information on Wi-Fi Zoning.

• Hospital parameters are not applicable for these TV models.

IP Environment Setup

The IP Environment Menu enables you to set up the network features of the TV. If you intend to create a Master TV Setup for cloning purposes (using a USB memory device / TLX file—see Master TV Setup procedure on pages 31 to 34), all IP Environment settings, with the exception of Wired Network Connection settings and the TV name (editable in the Media Share Menu), may be cloned.

Note: With the exception of Network Connection settings, the IP Environment settings are editable (with the Installer Remote) only if the TV is in Pass-through Mode and read-only when the TV is not in Pass-through Mode.

Accessing the IP Environment Menu

1. Use the Installer Remote to access the Installer Menu (see "Accessing the Installer Menu" on page 21 for further information).

2. Navigate to Installer Menu item 119 DATA CHANNEL, and press **2**-**5**-**3** + **MENU SETTINGS** to launch the IP Environment Menu (see example at right).

Use the Up/Down arrow keys on the Installer Remote to select the desired menu option and then press **OK**. Refer to the following sections for information on each of the IP Environment setup options.

When you have completed your IP Environment configuration as required, press **EXIT** or ↰ on the Installer Remote to exit the IP Environment Menu.
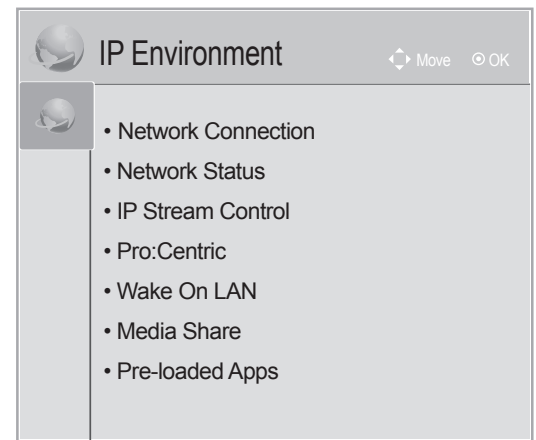
Configuring the Network Connection

This option launches a Network Connection wizard that guides you through the process of setting up the TV's wired and/or wireless network connection. Use the arrow keys on the Installer Remote to navigate between options.

Note: If desired, you can configure both wired and wireless connections. However, note that a wired connection is always prioritized over a wireless connection. That is, when the TV is turned OFF and then back ON, if a LAN cable is detected between the TV and the network, the TV will default to the wired connection. If the LAN cable is removed, the TV will then attempt to establish the wireless connection. Whenever the LAN cable is reconnected, the TV will re-establish the wired connection.

1. If you will use a wired network connection, connect the appropriate cable between the TV and the network.

2. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **Network Connection**. Then, press **OK**.

3. In the first Network Connection wizard window, use the arrow keys to select the type of network—Wired or Wireless—to configure. Then, press **OK**.

4. Refer to the appropriate subsection below to complete the network connection configuration.

IP Environment ◆ Move ⊙ OK

- Network Connection
- Network Status
- IP Stream Control
- Pro:Centric
- Wake On LAN
- Media Share
- Pre-loaded Apps

Note: When you enter the IP Environment Menu, the Installer Menu is exited all current settings are saved automatically upon exit). If you are also in the process of updating Installer Menu items, you may wish to set all items as needed before you access the IP Environment Menu. Otherwise, after exiting the IP Environment Menu, you will need to reaccess the Installer Menu to set additional items.

Network Connection

Select the type of network.

Wired

Wireless
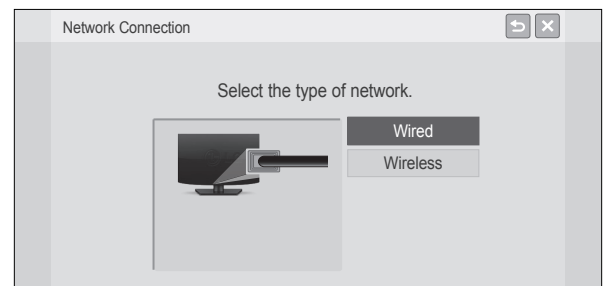
Wired Network Connection

1. The next Network Connection window will enable you to specify the IP and DNS configuration for this TV. Auto (DHCP) tabs will be selected by default. If a DHCP server is configured and a static configuration is not required, you can simply select **OK** (on the screen) and then press **OK** on the Installer Remote. The DHCP server will assign an IP address and DNS server to the TV once the TV successfully connects to the network.

   Otherwise, use the arrow keys to select the Static tab(s), and specify the static configuration data for both the IP and DNS modes. When all fields are completed, select **OK** (on the screen) and press **OK** on the Installer Remote.

   Note: You can specify a static DNS server with an auto-configured IP address but not vice versa.

   The TV will attempt to connect to the network and you will see a progress screen that indicates status as each network element is confirmed (see example at right). If the network is connected successfully, a "Wired network is connected" message will be displayed at the top of the screen and the network configuration data will be displayed in the lower half of the screen.

2. Select **Complete** (if not already selected), and then press **OK** on the Installer Remote to exit the Network Connection wizard and return to the IP Environment Menu.

Note: If the network connection is not successful, the progress screen will identify the network element in which the connection failed. Check your cabling and/or, if necessary, press ↵ on the Installer Remote to return to the Configure IP and DNS Modes screen to verify the configuration data.

Wireless Network Connection

Note: If you intend to use the Wi-Fi Zoning feature with cloning configuration, you must configure the wireless network connection as part of the Master TV Setup.

1. In the next Network Connection window, use the arrow keys on the Installer Remote to select the type of wireless connection to configure and press **OK**.

   • AP List: Select from a list of available access points.

   • Enter the SSID: Direct enter the SSID of an access point whose SSID has not been enabled for broadcast (i.e., the access point does not appear in the AP List).

   • WPS-PBC: Connect to a network via an access point that is enabled for PBC.

   • WPS-PIN: Complete network/PIN verification via the access point web interface.

   • Ad-hoc: Connect to a network via a Wi-Fi device, such as a PC, mobile phone, etc.

IP Environment Setup (Cont.)

(Continued from previous page)

> **Note:** Make sure you have the network security password/PIN available if you are attempting to connect to a secured network.

> **Note:** (AP List and Enter the SSID options only) As with a wired connection, a second Network Connection window will enable you to specify the IP and DNS configuration for this network connection. Auto (DHCP) tabs will be selected by default. If a DHCP server is configured and a static configuration is not required, you can simply select **OK** (on the screen) and then press **OK** on the Installer Remote. The DHCP server will assign an IP address and DNS server to the TV for this network connection once the TV successfully connects to the network. Otherwise, use the arrow keys to select the Static tab(s), and specify the static configuration data for both the IP and DNS modes. When all fields are completed, select **OK** (on the screen) and press **OK** on the Installer Remote.

2. Follow the on-screen instructions to complete the appropriate network configuration. Use the Installer Remote navigate fields and make entries, etc.

   Once you have specified configuration details as necessary, the TV will attempt to connect to the network and you will see a progress screen that indicates status as each network element is confirmed (see example at right). If the network is connected successfully, a "Wireless network is connected" message will be displayed at the top of the screen and the network configuration data will be displayed in the lower half of the screen.

3. Select **Complete** (if not already selected), and then press **OK** on the Installer Remote to exit the Network Connection wizard and return to the IP Environment Menu.

Note: If the network connection is not successful, the progress screen will identify the network element in which the connection failed. Check your cabling and/or, if necessary, press ↰ on the Installer Remote to return to previous screens to verify the configuration data.

Network Status

This option enables you to check the status of the network connection.

Note: If both wired and wireless network connections were configured in a previous session in the IP Environment Menu, and a LAN cable is connected/detected between the TV and the network, the Network Status operation first will attempt to connect to the network via the wired connection. If a wired connection is not detected, the Network Status then will attempt a wireless connection, if one has been configured. On the other hand, if, during the current session, you configured first a wired and then a wireless network connection, the Network Status operation will first attempt to connect to the network via the wireless connection (i.e., the last connection configured).

1. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **Network Status**. Then, press **OK**.

(Continued from previous page)

The TV will display a status screen as it confirms each of the network elements, including the TV status, the gateway status, the DNS status, and the Internet status (see example at right). If the network is connected successfully, a "Wired/Wireless network is connected" message will be displayed at the top of the screen and the network configuration data will be displayed in the lower half of the screen.

Note: If a problem is detected, the status screen will identify the network element in which the connection failed. Check cabling and/or configuration data, as necessary. If the status screen is still on display, you can select **Try again** and press **OK** to recheck the network status.

2. When the status screen shows that the network is connected, select **Complete** (if not already selected) and press **OK** on the Installer Remote to return to the IP Environment Menu.

Note: If you cancel the status check while it is in progress, the TV will exit both the status window and the IP Environment Menu. If you wish to return to the IP Environment Menu while the status check is in progress, press ↰ on the Installer Remote.

IP Stream Control

If necessary, due to an audio and/or video stream delay, IP Stream Control options enable you to compensate for synchronization irregularities by allowing audio PTS, video PTS, and PCR offset modifications. This menu also enables you to specify the IGMP version (2 or 3). Note that any modifications to these settings should be performed by qualified personnel only.

1. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **IP Stream Control**. Then, press **OK**.

2. In the IP Stream Control pop-up window, use the Up/Down arrow keys on the Installer Remote to navigate to the appropriate field: Audio PTS Offset, Video PTS Offset, PCR Offset, or IGMP Version.

3. Use the Left/Right arrow keys to set the appropriate value for the selected field.

Note: Offset values represent offset time in milliseconds (ms) and can be adjusted from -500 ms to +500 ms in 10 ms increments.

4. When you have completed all modifications as required, either select **Close** and then press **OK** on the Installer Remote or press ↰ to return to the IP Environment Menu.
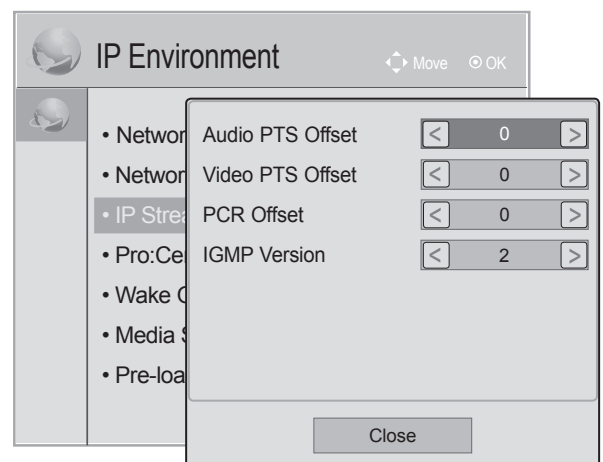
IP Environment Setup (Cont.)

Pro:Centric Setup

Pro:Centric options enable you to configure the TV with the appropriate settings to connect to the Pro:Centric server. Use the Up/Down arrow keys on the Installer Remote to navigate between fields.

1. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **Pro:Centric**. Then, press **OK**.

   Note: Options that are initially grayed out/inaccessible in the Pro:Centric Menu are dependent upon other settings in the display. For example, if "IP" is selected in the Media Type field, the Server IP and Port Number fields become accessible.

2. Refer to the appropriate subsection(s) below to configure the TV's Pro:Centric settings to match those of the Pro:Centric server.

   While the Pro:Centric application (Mode) itself is an additional feature, the appropriate Pro:Centric server configuration must be completed to enable TV E-Z Installation (splash screen, configuration, and/or firmware) data downloads and, if configured, the Pro:Centric application download.

   Note: For those fields that permit direct entry of numerical values (for example, Server IP, Port Number, Data Channel, etc.), once you key in the maximum number of digits allowed in the highlighted field, the next available field will be highlighted.

RF Configuration

a) In the Media Type field, use the Left/Right arrow keys to select **RF**.

   Note: If the Media Type has already been set in the EZ-Manager Wizard, the specified value will be reflected in this field.

b) In the Data Channel field, either key in or use the Left/Right arrow keys to select the RF channel number that will be used by the Pro:Centric server as its data channel. The Data Channel value can be set from 0 (disabled) to 135.*

   For TVs in Pass-through Mode or FTG Mode via CPU, if this item is left at its default value (255), the TV's Data Channel Auto Search feature will be enabled. See Installer Menu item 119 DATA CHANNEL description on page 30 for further information.

   Note: If the Data Channel has already been set in the Installer Menu (Installer Menu item 119) or in the EZ-Manager Wizard, the specified channel will appear in this field. If you change the Data Channel in this menu, Installer Menu item 119 will now show the value you entered here.

IP Configuration

a) In the Media Type field, use the Left/Right arrow keys to select **IP**.

   Note: If the Media Type has already been set in the EZ-Manager Wizard, the specified value will be reflected in this field.

---
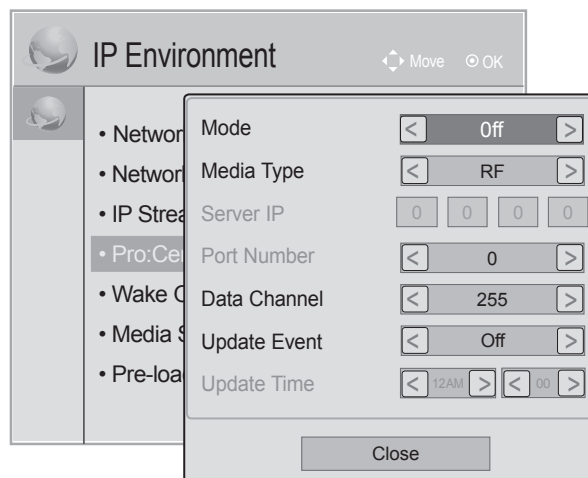
* PCS150R and later Pro:Centric servers do not support HRC or IRC cable channel frequencies.

(Continued from previous page)

> **Note:** Setting the Media Type to "IP" automatically sets the Data Channel field to "253." You cannot alter this setting (unless you revert Media Type to "RF"). Also, it is not possible to direct enter "253" in the Data Channel field.

b) In the Server IP and Port Number fields, either key in or use the Left/Right arrow keys to select the appropriate values for the Pro:Centric server IP address and port number. The IP address must match the IPv4 multicast address and the port number must match the port number that is set in the Pro:Centric server.

> **Note:** If the server IP address and port number have already been set in the EZ-Manager Wizard, the specified data will be reflected in these fields.

Pro:Centric Application Mode Configuration

In the Mode field, use the Left/Right arrow keys to select the appropriate Pro:Centric Application Mode setting—**Off**, **FLASH**, **GEM**, or **HTML**. If the Pro:Centric Mode is set to "Off," Pro:Centric application data will not be downloaded.

> **Note:** If the mode has already been set in the Installer Menu (item 098 PRO:CENTRIC) or in the EZ-Manager Wizard, the specified mode will be reflected in this field. If you change the mode in this menu, Installer Menu item 098 will now reflect the value you selected here.

3. In the Update Event field, use the Left/Right arrow keys to select **On** or **Off**, as required. Based on the Update Time settings, the Wake For Update feature wakes the TV once daily to check for, and if applicable, download updates from the Pro:Centric server. See Installer Menu item 121 UPDATE TIME HR description on page 30 for additional information on Wake For Update functionality. If you set Update Event to "On," specify the appropriate Wake For Update time in the Update Time fields, as desired. Note that the Update Time set in this menu is based on a 12-hour clock. Ensure the AM/PM specification is set accordingly.

4. Once all fields are completed as required, either select **Close** and then press **OK** on the Installer Remote or press ↰ to return to the IP Environment Menu.

Wake On LAN Setup

The Wake On LAN feature enables the TV to receive software updates and/or be powered ON upon receipt of Wake Up Frame packets and/or Magic Packet data via the wired LAN or upon receipt of Magic Packet data from the Wi-Fi network. To facilitate use of this feature, note that the appropriate wired connection must be made and/or the wireless network connection must be configured. This menu option enables you to specify Wake On LAN parameters.

1. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **Wake On LAN**. Then, press **OK**.

2. In the Wake On LAN pop-up window, use the Up/Down arrow keys on the Installer Remote to navigate between fields, and use the Left/Right arrow keys to select the appropriate value— Disabled, Update, or Power ON—for each parameter.

3. Once all fields are completed as required, either select **Close** and then press **OK** on the Installer Remote, or press ↰ to return to the IP Environment Menu.
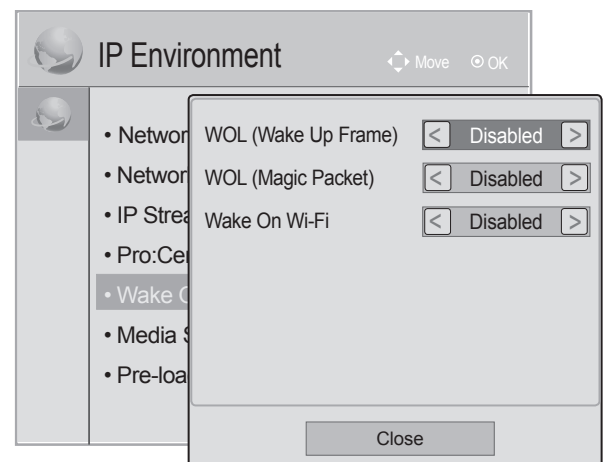
IP Environment Setup (Cont.)

Media Share Setup

Media Share allows you to enable Smart Share®, Wi-Fi Screen Share, and DMR options on this TV.

- The LG Smart Share feature allows guests to use the TV to access and view data shared either by wired DLNA Certified® devices connected to the same LAN as the TV or by wireless LG devices using LG's Smart Share application with Wi-Fi Direct®.

- Wi-Fi Screen Share enables screen sharing with a Smart Mirroring or Wireless Display (WiDi) capable device (e.g., a laptop with Intel® hardware).

- DMR enables the TV to act as a Digital Media Renderer (DMR) device to receive content from DLNA Certified devices on the same network.

Note: On TVs with CPU v3.51.00 or later, each of these options can be enabled or disabled independently. Otherwise, Wi-Fi Screen Share and DMR can only be enabled if Smart Share is enabled. See also Reference section, "Using Media Share Features," for additional information on these features.

1. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **Media Share**. Then, press **OK**.

2. In the Media Share pop-up window, use the Up/Down arrow keys on the Installer Remote to navigate between fields, and use the Left/Right arrow keys to select the appropriate value—Disabled or Enabled—for each of the Smart Share, Wi-Fi Screen Share, and DMR parameters.

   Note: On TVs with CPU v3.50.00 or earlier, if you wish to select pre-loaded Media Share applications to display in the TV's Application Launch bar (see "Pre-loaded Applications" on following page), both the Smart Share and Wi-Fi Screen Share options must be enabled.

3. Once Smart Share is enabled, the Edit option for the TV Name becomes accessible, and you can specify a name for this TV so that it is easy to identify and differentiate from other TVs for which sharing has been enabled.

   To edit the TV name, use the Up/Down arrow keys to select **Edit**, and then press **OK**. Then, use the arrow and/or number keys on the Installer Remote to specify a name.

   Note: The default name of each LP870H TV is its serial number. While Smart Share, Wi-Fi Screen Share, and DMR settings are clonable, the TV name cannot be cloned.

4. Once all fields are completed as required, either select **Close** and then press **OK** on the Installer Remote or press ↰ to return to the IP Environment Menu.
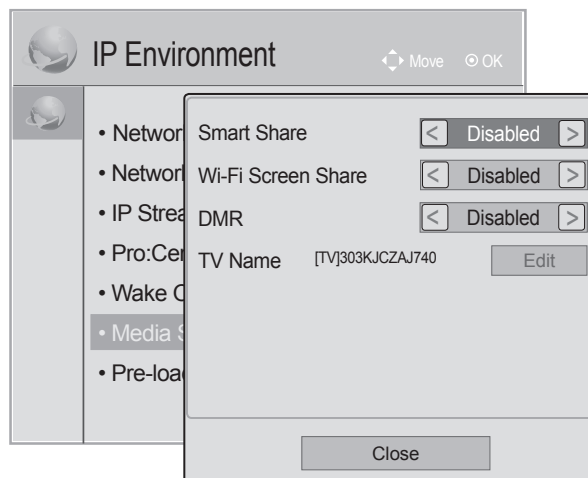
Pre-loaded Applications

This option allows you to select which of the pre-loaded application icons to display in the TV's Application Launch bar. The Application Launch bar is available when the Pro:Centric application is disabled. If the Pro:Centric application is enabled, it is not necessary for pre-loaded applications to be selected as described below.

When the Pro:Centric application is disabled, the selected applications are available to end users via the PORTAL button on the remote control and appear in the Application Launch bar along the bottom of the screen.

1. With the IP Environment Menu on display, use the arrow keys on the Installer Remote to select **Pre-loaded Apps**. Then, press **OK**.

2. Available application options will be displayed in a horizontal scrollable list along the bottom of the screen. Use the Left/Right arrow keys to highlight the application you wish to select or de-select, and press **OK** on the Installer Remote. When an application is selected, a red checkmark is displayed at the top left of its icon.

   The available application list includes three Media Share applications: Wi-Fi Direct, Smart Mirroring, and WiDi. In order to select any of these applications, you must first enable the appropriate Media Share options. See "Media Share Setup" on the previous page.

3. When you are done selecting the pre-loaded application icons to be displayed in the Application Launch bar, as required, press ↰ to return to the IP Environment Menu.

(Application Launch Bar)
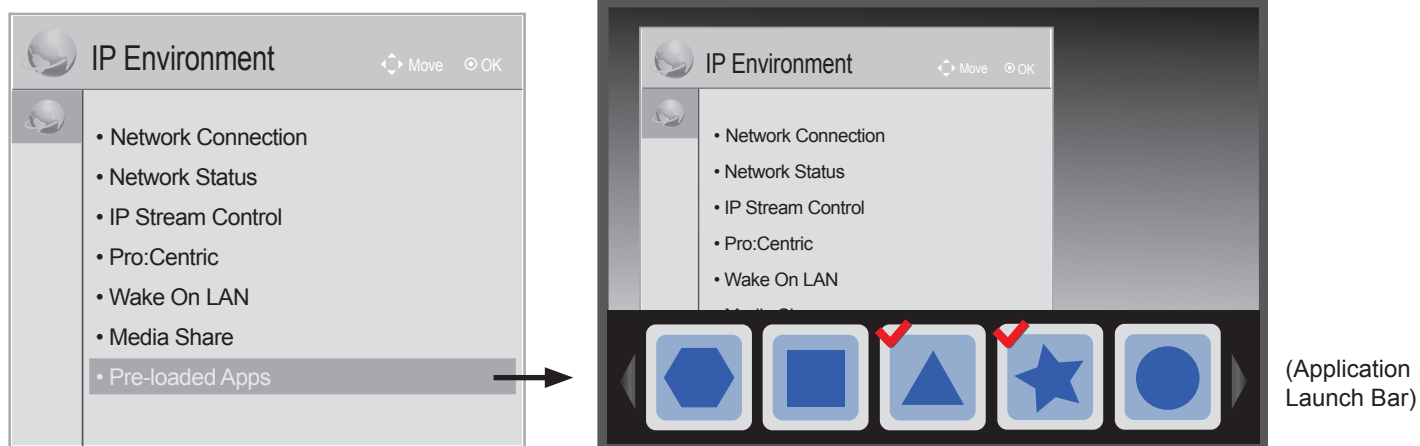
Reference: Remote Jack Pack / TV Connections & Setup

Remote Jack Pack Setup

RJP Available? If you will use a Remote Jack Pack (RJP) in your system, set Installer Menu item **093 RJP AVAILABLE** appropriately (for example, on a legacy model RJP: HDMI Mode, set RJP AVAILABLE to 1). See Installer Menu detailed descriptions for further information.

```
093  RJP AVAILABLE      001
```

TV Connections

⚠️ **Caution: Make these connections ONLY after Master TV Setup and TV cloning procedures are complete. Also, make sure to use the RJ-45 Control cable from the RJP cable bundle to make the connection to the TV's RJP port. Do NOT connect a standard Ethernet cable to the RJP port, as this may damage the TV and network equipment.**

Refer to the figure below, and connect the RJ-45 Control cable from the RJP cable bundle to the RJP port on the TV's rear jack panel. Then, connect HDMI, RGB, and Composite Video/Audio connectors, as applicable, for the cable bundle.

HDMI/DVI IN 1
Connect HDMI connector from RJP cable bundle.

RGB IN (PC)
Connect RGB connector from RJP cable bundle (legacy RJP only).

AUDIO/VIDEO IN
Use A/V adapter cable provided with TV, and connect Composite Video/Audio connectors from RJP cable bundle. (Composite Video on legacy RJP only.)

RJP
Connect RJ-45 Control cable from RJP cable bundle.
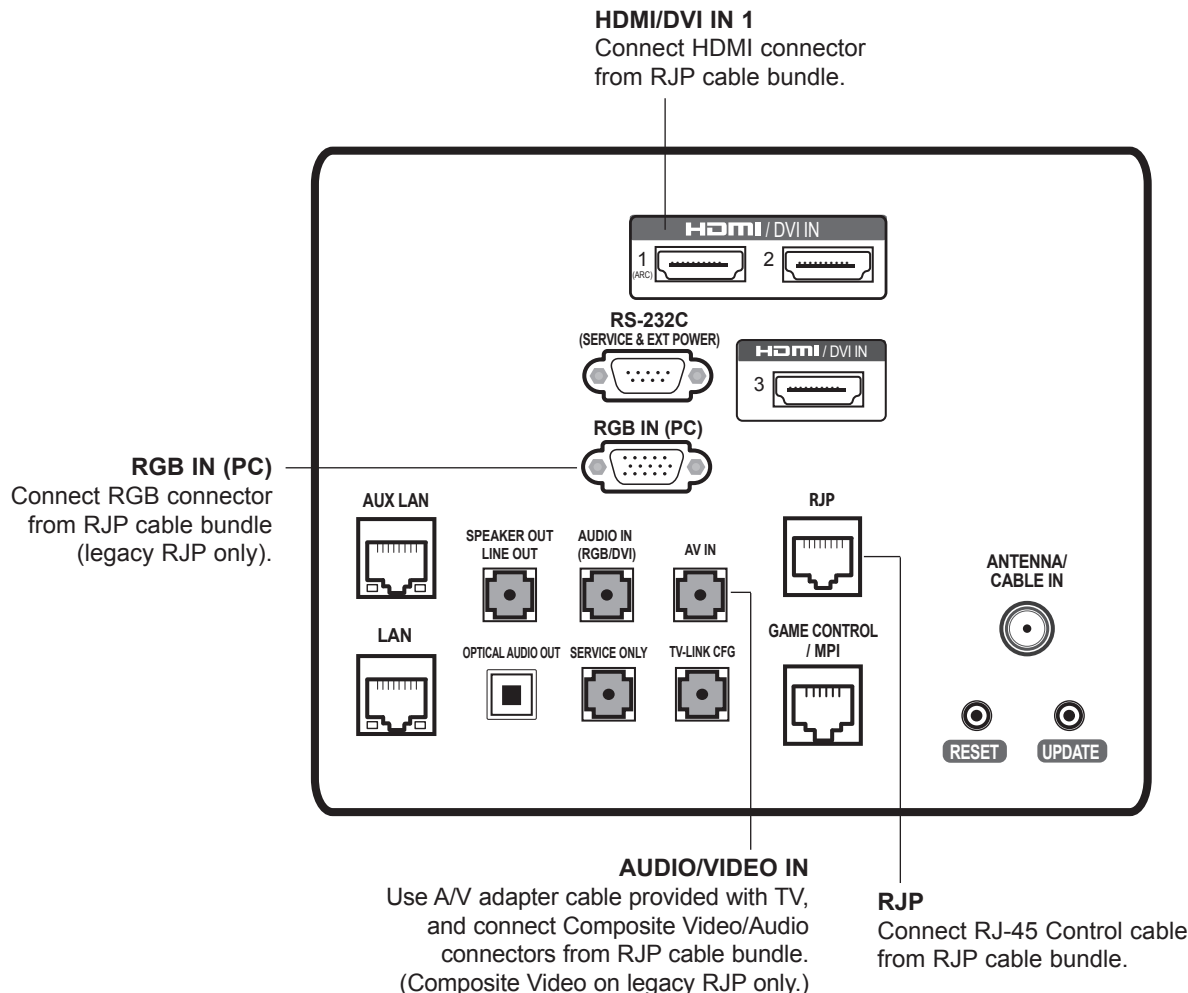
Reference: Upgrading TV/PTC Software using a USB Memory Device

This section describes how to update TV (CPU) and/or PTC software using the USB Download Menu, though you may also use the LG Smart Install utility to upgrade software, if desired. See "LG Smart Install Utility" on pages 19 to 20 for further information.

Before You Begin

• Software upgrade files must be stored in a folder named "LG_DTV" in the root directory of the USB memory device.

• Ensure the USB device has been formatted with FAT format.

Upgrade the TV/PTC Software

Note: You can check the TV/PTC software versions by accessing the Installer Menu with the Installer Remote. See "Accessing the Installer Menu" on page 21 for further information. PTC and CPU versions are displayed in the Installer Menu footer.

Note for TV CPU Software Upgrade only: If the TV detects a later version of software on the USB device, it will automatically display a dialog from which you can start the software upgrade immediately. Otherwise, you can close the dialog, and access the USB Download Menu as described below.

1. Turn ON the TV, and then insert the USB memory device into either of the USB ports on the TV.

2. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus (TV is in Pass-through Mode) or the Function Menu (TV is not in Pass-through Mode).

3. Use the arrow navigation keys to select/highlight either the **Option** menu icon from the TV setup menus or the **Lock** menu icon from the Function Menu. Then, press the number "**7**" key a total of seven times to display the USB Download Menu.

4. Use the Up/Down arrow keys to select **Upgrade TV Software** or **Upgrade PTC Software**, as applicable, and press **OK**.

5. Select the appropriate option(s), depending on the type of upgrade:

   • TV Software Upgrade: (See screen samples at right.) Select **TV Software Update** from the first TV Software Update window. In the second TV Software Update window, select/highlight the update file to install and press **OK**.

   Note: Do not select Forced Update options unless you have been specifically instructed to do so or have previous experience with Expert Software Updates.

   • PTC Software Upgrade: In the PTC Software Update window, select/highlight the update file to install and press **OK**.

   Note: The PTC Software Update window is similar to the second TV Software Update window, though there are no Forced Update options. Current software version information is shown at the top and update files on the USB device are listed at the bottom of the window.

The TV will show update progress in a new window. Do NOT remove the USB device until the software upgrade is complete. When the software upgrade is complete, the TV will automatically reboot.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
↩ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

ⓘ TV Software Update (Expert)
TV Software Update
LOGO Image Download

ⓘ TV Software Update (Expert)

[Current TV Software Version Information]
EPK : 03.44.00

The following software files are found in the memory card.
Select the file you want to download to this TV
or press EXIT to cancel the update.
EPK: 03.51.00

[Forced Update Option]
☐ Ext. MICOM
☐ LOGO Image

xxLP870H_v3_51_RevNo100_USB

Reference: Downloading a Splash Screen Image using a USB Memory Device

This section describes how to download a splash screen image using the USB Download Menu, though you may also use the LG Smart Install utility to download the splash image, if desired. See "LG Smart Install Utility" on pages 19 to 20 for further information.

Splash Screen Image File Guidelines

- The splash screen image may be either a baseline (not progressive) JPEG or a 24-bit (RGB 8x8x8) BMP.
- A JPEG image should be no larger than 1 MB.
- A BMP image should be no larger than 8 MB.
- The maximum resolution allowed for an LP870H splash screen image is 1920 x 1080 pixels (FHD).
- Avoid using special characters, such as ?, &, @, etc., in the splash screen image filename.

Before You Begin

- The splash screen image file must be stored in a folder named "LG_DTV" in the root directory of the USB memory device.
- Ensure the USB device has been formatted with FAT format.

Download the Splash Screen Image

1. Turn ON the TV, and then insert the USB memory device into either of the USB ports on the TV.
2. Press **MENU SETTINGS** on the Installer Remote to display the TV setup menus (TV is in Pass-through Mode) or the Function Menu (TV is not in Pass-through Mode).
3. Use the arrow navigation keys to select/highlight either the **Option** menu icon from the TV setup menus or the **Lock** menu icon from the Function Menu. Then, press the number "**7**" key a total of seven times to display the USB Download Menu.
4. Use the Up/Down arrow keys to select **Upgrade TV Software**, and then press **OK**.
5. Select **LOGO Image Download** from the first TV Software Update window.
6. In the second TV Software Update window, use the Up/Down arrow keys to select the image file to download, and then press **OK**.

The TV will show update progress in a new window. Do NOT remove the USB device until the splash screen image update is complete. When the image update is complete, the TV will automatically reboot. During the reboot, you should see the new splash screen.

USB Download Menu
Upgrade TV Software
Upgrade PTC Software
Diagnostics
Teach To TV (TLL)
Teach To TV (TLX)
⤺ Previous   ◉ OK

Note: The Diagnostics option in this menu is for service use only.

ⓘ TV Software Update (Expert)

TV Software Update
LOGO Image Download

ⓘ TV Software Update (Expert)

The following software files are found in the memory card. Select the file you want to download to this TV or press EXIT to cancel the update.

Splash Image 1920 x 1080 ProCentric
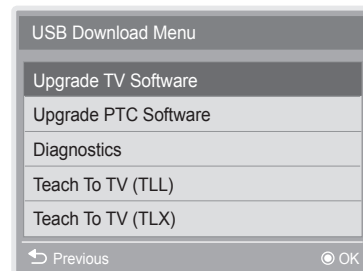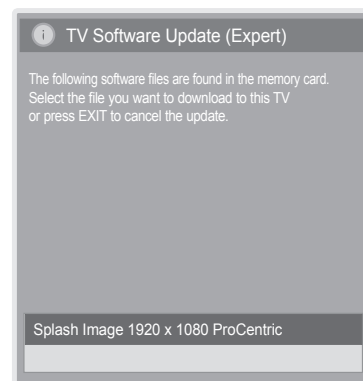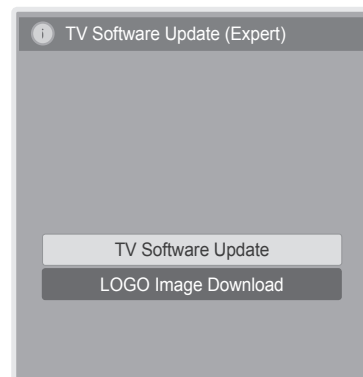
Reference: Power Consumption Settings

The following tables assume that Installer Menu item 118 POWER SAVINGS is set to 3 (default) and Installer Menu item 099 BACK LIGHTING is set as shown below (default value is 255).

Item 099 Back Lighting (Static)	42LP870H		47LP870H		55LP870H	
	Power Consumption (Watts)	Percent Savings	Power Consumption (Watts)	Percent Savings	Power Consumption (Watts)	Percent Savings
100	55.8	0.0%	62.7	0.0%	64.9	0.0%
90	53.0	5.0%	59.4	5.4%	61.2	5.7%
80	50.3	9.9%	56.4	10.2%	57.8	10.9%
70	49.1	12.0%	53.7	14.5%	56.3	13.3%
60	47.9	14.2%	51.2	18.5%	54.8	15.6%
50	47.4	15.1%	47.5	24.4%	54.1	16.6%
40	45.5	18.5%	45.0	28.3%	51.7	20.3%
30	41.1	26.3%	42.2	32.8%	46.2	28.8%
20	37.4	33.0%	39.6	36.9%	41.7	35.7%
10	33.2	40.5%	36.0	42.7%	36.1	44.4%
1	30.1	46.1%	33.7	46.3%	32.1	50.5%

Item 099 Back Lighting (Dynamic)	42LP870H		47LP870H		55LP870H	
	Power Consumption (Watts)	Percent Savings	Power Consumption (Watts)	Percent Savings	Power Consumption (Watts)	Percent Savings
200	55.7	0.0%	62.8	0.0%	65.1	0.0%
190	52.9	5.0%	59.5	5.3%	61.4	5.4%
180	50.2	9.9%	56.5	10.0%	58.0	10.6%
170	49.1	11.8%	53.8	14.3%	56.6	12.8%
160	47.9	14.0%	51.2	18.5%	55.2	14.9%
150	47.5	14.7%	47.6	24.2%	54.4	16.2%
140	45.5	18.3%	45.0	28.3%	52.1	19.7%
130	41.1	26.2%	42.3	32.6%	46.6	28.2%
120	37.5	32.7%	39.7	36.8%	42.2	35.0%
110	33.2	40.4%	36.1	42.5%	36.3	44.1%
101	30.1	46.0%	33.7	46.3%	32.2	50.4%

Note: Values are results of controlled experiments under laboratory conditions.

Reference: TV Aux Input Configuration

| DIRECT ACCESS Tuning * | | TV | | ENABLE | | | | | MPI DATA | | | Installer Menu Item 046 START AUX SRCE (Start Aux Source) Value |
| | | | | Installer Menu | | | MPI DATA STATUS TYPE 0x41 SOURCES ENABLED (R/W) | | DATA STATUS TYPE 0xD2 CURRENT AV SOURCE (R) | DATA STATUS TYPE 0x0D AUX SOURCE (R) | | |
Installer Menu Item 029 OLD OCV = 0	Installer Menu Item 029 OLD OCV = 1	Aux Input	Input Mode	Item	Function	Value	Enable Bit	Label	Value	Value	Description	
131-0	91-0	Video1 (Rear)	CV	39	REAR AUX EN	1	1	Rear Video (Aux)	1	0	VIDEO	1
132-0	92-0	HDMI2	DTV	91	HDMI2 ENABLE	1	2	S-Video Rear	2	0	VIDEO	5
			PC			2				2	COMPUTER	
133-0	93-0	HDMI1/ DVI	DTV	35	HDMI1 ENABLE	1	3	Front Computer	3	0	VIDEO	3
			PC			2				2	COMPUTER	
134-0	94-0	RGB	PC	87	REAR RGB EN	1	5	SVGA Rear Computer	4	2	COMPUTER	4
135-0	95-0	HDMI3	DTV	92	HDMI3 ENABLE	1	6	NTSC Rear Computer	5	0	VIDEO	7
			PC			2				2	COMPUTER	

* Use Installer Remote to enter channel number indicated based on OLD OCV Installer Menu setting.

The *b*-LAN module is internal to the TV. It allows hotel/institution head end equipment with *b*-LAN technology to communicate, via the institution's RF distribution system, with the TV for configuration and control.

Installer Menu item 118 POWER SAVINGS controls the power circuitry for both the embedded *b*-LAN module and the GAME CONTROL/MPI port. The default value is 3—the *b*-LAN module is only powered when the TV is turned ON. See chart below.

POWER SAVINGS	TV OFF	TV ON
	b-LAN & GAME CONTROL/MPI Port Power	*b*-LAN & GAME CONTROL/MPI Port Power
1	On	On
3 (default)	Off	On

A *b*-LAN enabled head end device, such as an LG FMA-LG101, broadcasts over the RF distribution system to communicate to multiple TVs. When the TV is first installed, it must be turned ON in order for its embedded *b*-LAN module to receive communication from the head end device. At this point, if it is desired for the *b*-LAN module to always be powered, including while the TV is turned OFF, set Installer Menu item 118 POWER SAVINGS to 1.

Also, if MPI communication is required for external MPI control, set Installer Menu item 118 POWER SAVINGS to 1 so that the GAME CONTROL/MPI port circuitry is always powered.

For specific applications, the RS-232 (DB9) port may be used to provide +12v/1A external power (for example, to an external MPI control device). In this case, Installer Menu item 118 POWER SAVINGS must be set to 9—both the *b*-LAN module and the GAME CONTROL/MPI port circuitry are always powered, and the external power is provided on pin 9 of the RS-232 port.

⚠ **Caution: POWER SAVINGS should NEVER be set to 7. This setting is intended for factory use only.**

Reference: FTG Mode via EBL (Local Configuration)

The following steps outline local FTG configuration of individual TV EBLs using a direct PC-to-TV (EBL) connection. Refer to the ***Free-To-Guest (FTG) Device Configuration Application User Guide*** for further information.

FTG Device Configuration Application software is available online at: www.LGsolutions.com/ftgsoftware.

Note: If the TV CPU is already in FTG Mode, you cannot use this procedure to make changes to the FTG Channel Map and FTG Installer Menu settings. Instead, refer to and use the processes described on pages 47 to 53 to reconfigure the TV CPU.

Note: If the preceding condition applies, but you wish to switch the TV to FTG Mode via EBL, see Reference section, "Restoring Factory Defaults on the TV(s)," for further information before proceeding.

1. Install (if necessary) and launch the FTG Device Configuration Application (v5.4.1 or later) on the PC that will be used to configure the EBL.

2. Build an FTG Channel Map using the FTG Channel Map Editor in the FTG Channel Map Configuration Utility (or, if applicable, open an existing FTG Configuration [.rml] file).

   Note: Up to 141 logical channels can be defined in the FTG Channel Map.

3. Connect the PC to the TV-LINK CFG jack on the TV's rear jack panel using a USB-to-TTL serial cable (TTL-232R-5V-AJ). If necessary, install the device driver on the PC.

4. Turn ON the TV.

   Note: If Installer Menu item 118 POWER SAVINGS is set to 3 (default), the TV must be ON in order for steps 5 and 6 below to be successful.

5. "Write" the FTG Channel Map to the EBL (switches the EBL from Pass-through Mode to FTG Mode).

   Note: After a "Write" of new data, the TV will briefly display a green text banner that shows the EBL firmware version and release date.

6. "Read" the current FTG Installer Menu settings from the EBL using the FTG Installer Menu Configuration Utility. If necessary to make changes to Installer Menu items, "Write" them back to the EBL in FTG Mode.

7. Save the FTG Channel Map and FTG Installer Menu settings to an FTG Configuration (.rml) file for future use.

8. Tune the TV to a logical channel in the FTG Channel Map.

USB-to-TTL Serial Cable
Required for local FTG Mode via EBL configuration.

Laptop PC

TV-LINK CFG
Use to connect PC to TV (EBL) for local FTG Mode via EBL configuration.

206-4235
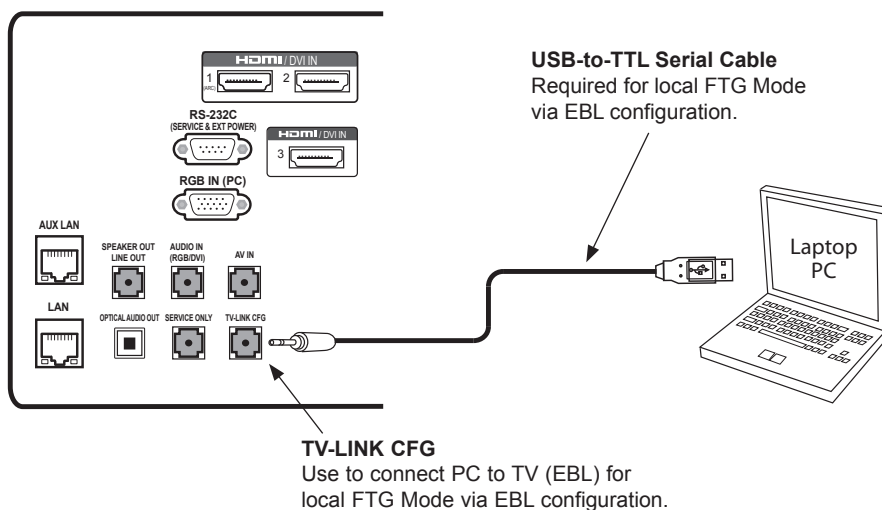
Reference: Auto Input(s) Sensing Feature

This section provides detailed settings information for Installer Menu item 042 AUTO INPUTS. To disable auto-sensing for all available Aux inputs, set item 042 to 0. To enable auto-sensing for all available Aux inputs, set item 042 to 255. For specifications on all other available settings (i.e., settings for individual inputs), refer to the table on the following page.

Note: When both item 042 AUTO INPUTS *and* item 041 SIMPLINK EN are enabled in the Installer Menu, HDMI inputs will be detected by SIMPLINK, but the Auto Input(s) Sensing Feature will not function.

In the Installer Menu, an informational code is displayed at the right of each Auto Inputs value, for example:

```
xxLP870H  PTC  INSTALLER  MENU
           CPU-CTV


042  AUTO INPUTS    241  7654XXX0


UPN  000-000-000-000      ASIC  D279
PTC  V1.00.028            CPU  V3.51.00
```
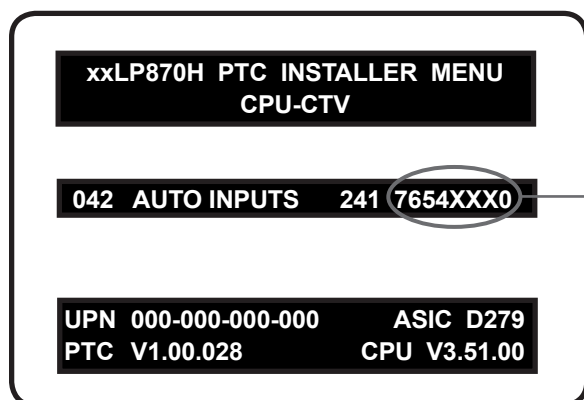
AUTO INPUTS Display Code
This example illustrates Installer Menu item 042 value 241, which enables auto-sensing for all available Aux inputs. The input #s in the display code (7, 6, 5, 4, 0 in this example) identify the enabled Aux inputs. See table below for a listing of the LP870H Aux inputs and their corresponding display code input #s. The table on the following page shows the display codes for all item 042 values.

Each code consists of eight characters that identify the Aux input(s) for which auto-sensing is enabled. The following table identifies the Installer Menu display code Input # for each Aux input that is available on the LP870H TV models. The table also identifies the Installer Menu item associated with each Aux input. Remember that in order for auto-sensing to be enabled for an input, that input must also be enabled in the Installer Menu.

Installer Menu Display Code Input #	Aux Input	Installer Menu	
		Item	Function
0	AV1	039	REAR AUX EN
4	RGB	087	REAR RGB EN
6	HDMI 1	035	HDMI1 ENABLE
7	HDMI 2	091	HDMI2 ENABLE
5	HDMI 3	092	HDMI3 ENABLE

Reference: Auto Input(s) Sensing Feature (Cont.)

Item 042 Value	Inputs					Installer Menu Display
	AV1	RGB	HDMI 1	HDMI 2	HDMI 3	
001	Enabled	Disabled	Disabled	Disabled	Disabled	DDDDXXX0
016	Disabled	Enabled	Disabled	Disabled	Disabled	DDD4XXXD
017	Enabled	Enabled	Disabled	Disabled	Disabled	DDD4XXX0
032	Disabled	Disabled	Disabled	Disabled	Enabled	DD5DXXXD
033	Enabled	Disabled	Disabled	Disabled	Enabled	DD5DXXX0
048	Disabled	Enabled	Disabled	Disabled	Enabled	DD54XXXD
049	Enabled	Enabled	Disabled	Disabled	Enabled	DD54XXX0
064	Disabled	Disabled	Enabled	Disabled	Disabled	D6DDXXXD
065	Enabled	Disabled	Enabled	Disabled	Disabled	D6DDXXX0
080	Disabled	Enabled	Enabled	Disabled	Disabled	D6D4XXXD
081	Enabled	Enabled	Enabled	Disabled	Disabled	D6D4XXX0
096	Disabled	Disabled	Enabled	Disabled	Enabled	D65DXXXD
097	Enabled	Disabled	Enabled	Disabled	Enabled	D65DXXX0
112	Disabled	Enabled	Enabled	Disabled	Enabled	D654XXXD
113	Enabled	Enabled	Enabled	Disabled	Enabled	D654XXX0
128	Disabled	Disabled	Disabled	Enabled	Disabled	7DDDXXXD
129	Enabled	Disabled	Disabled	Enabled	Disabled	7DDDXXX0
144	Disabled	Enabled	Disabled	Enabled	Disabled	7DD4XXXD
145	Enabled	Enabled	Disabled	Enabled	Disabled	7DD4XXX0
160	Disabled	Disabled	Disabled	Enabled	Enabled	7D5DXXXD
161	Enabled	Disabled	Disabled	Enabled	Enabled	7D5DXXX0
176	Disabled	Enabled	Disabled	Enabled	Enabled	7D54XXXD
177	Enabled	Enabled	Disabled	Enabled	Enabled	7D54XXX0
192	Disabled	Disabled	Enabled	Enabled	Disabled	76DDXXXD
193	Enabled	Disabled	Enabled	Enabled	Disabled	76DDXXX0
208	Disabled	Enabled	Enabled	Enabled	Disabled	76D4XXXD
209	Enabled	Enabled	Enabled	Enabled	Disabled	76D4XXX0
224	Disabled	Disabled	Enabled	Enabled	Enabled	765DXXXD
225	Enabled	Disabled	Enabled	Enabled	Enabled	765DXXX0
240	Disabled	Enabled	Enabled	Enabled	Enabled	7654XXXD
241	Enabled	Enabled	Enabled	Enabled	Enabled	7654XXX0

X = Aux input source is Disabled or Not Available (i.e., on these TV models)
D = Auto-sensing for input is Disabled
Input # = Auto-sensing for input is Enabled

RJP Legacy Models

- RJP-101M
- RJP-101ML
- RJP-110F
- RJP-110FW
- RJP-110W
- RJP-110WBR
- RJP-110S
- RJP-120G
- RJP-120T
- RJP-201B/202B

RJP Scaler Models

- RJP-201M
- RJP-301B
- RJP-401B

RJP Input Auto-sensing Hierarchy

Priority	Video	Audio
1st (Highest)	Digital Video In	Audio In (3.5mm)
2nd	PC Video In	Audio In (L/R)
3rd	Video In	Digital Video In

Reference: Restoring Factory Defaults on the TV(s)

This section describes how to restore all factory defaults or just the Installer Menu factory defaults either on a single TV that is currently in Pass-through or FTG Mode or on multiple TVs that are currently in FTG Mode.

Restore All Factory Defaults

This section describes how to restore a single TV, regardless of its mode, to a factory default condition. The following procedure requires that you contact LG technical support to obtain a predefined value/ password for Installer Menu item 117 FACT DEFAULT that enables access to initiate a factory "IN-STOP" process, which restores all factory defaults. This procedure will also reactivate the EZ-Manager Wizard.

1. Use the Installer Remote to access the TV's Installer Menu.

2. Navigate to Installer Menu item 117 FACT DEFAULT, and key in the value provided by technical support. Then, press **OK**.

3. At the prompt for confirmation, key in the password provided by technical support. This will initiate the IN-STOP that restores the factory defaults on the TV.

Installer Menu Item 117 FACT DEFAULT

If the TV is currently in Pass-through Mode, you can set Installer Menu item 117 FACT DEFAULT to 1 to restore the Installer Menu factory defaults and clear the PTC Channel Map, including any assigned channel icons and custom text labels. Note, however, that if a complete restoration of the TV's factory defaults is required, see "Restore All Factory Defaults" above.

Additional FTG Mode via CPU Options

There are two additional options for restoring Pass-through Mode/Installer Menu factory defaults on TVs that are in FTG Mode via the CPU. The first enables you to restore a single TV to Pass-through Mode, while the second enables you to restore multiple TVs to Pass-through Mode at one time. However, both options require that you create a "Zero Mapped Channels" FTG Configuration (.tlx) file, i.e., an FTG Configuration file with no data. Refer to the **Free-To-Guest (FTG) File Manager User Guide** for further information.

• Using a USB memory device, "Teach" a "Zero Mapped Channels" FTG Configuration (.tlx) file to the TV. Refer to "Teaching FTG Configuration to a TV" on page 49 for further information on the Teaching process.

• If your system uses a Pro:Centric server for remote management, use the Pro:Centric server Admin Client to load a "Zero Mapped Channels" FTG Configuration (.tlx) file on the Pro:Centric server. Refer to the **Pro:Centric Server Admin Client User Guide** for further information.

Additional FTG Mode via EBL Options

There are two additional options for restoring Pass-through Mode/factory defaults on TVs that are in FTG Mode via the EBL. The first enables you to restore a single TV to Pass-through Mode, while the second enables you to restore multiple TVs to Pass-through Mode at one time.

⚠ **Note: While the IN-STOP process described above will clear both the PTC and the CPU, both options below only clear the PTC. Thus, the current Channel Map and TV setup menu settings will remain in the CPU after the reset is completed.**

• Using a direct PC-to-TV connection, "Write" an unpopulated Channel Map—that is, a Channel Map with 0 (zero) channels—to the TV. See Reference section, "FTG Mode via EBL (Local Configuration)," and/or the **Free-To-Guest (FTG) Device Configuration Application User Guide** for further information.

• If your system uses an FMA for remote management/broadcast configuration, configure the FMA device with an FMA Configuration (.fma) file that only contains a "0 Mapped Channels" FTG Channel Map to broadcast to the TV EBL(s). Refer to the **Free-To-Guest (FTG) Device Configuration Application User Guide** and/or the Installation & Configuration Guide for the FMA device for further information.

This section describes the TV Zoning and Wi-Fi Zoning features available with the LP870H model TVs. These features are primarily intended for use when the TV is configured for FTG Mode via CPU operation; however, Wi-Fi Zoning, along with selected elements of TV Zoning (Installer Menu and TV Setup Menu profile Zone assignments), may also be used with TV cloning processes using a USB memory device / TLX file. Refer to the appropriate section(s) below for further information on the Zoning features and how to set the TV or Wi-Fi Zone # in a TV that is currently in Pass-through Mode.

TV Zoning Feature

The TV Zoning feature enables you to create localized configurations for TVs in selected locations, or "Zones," within the installation environment, for example, a hotel lobby, fitness center, restaurant, etc.

Using the TV Zoning Feature with FTG Mode via CPU Configuration

The FTG File Manager may be used to create an FTG Configuration (.tlx) file that contains multiple Installer Menu and TV Setup Menu profiles, each with its own Zone assignment. Up to nine unique Zones can be designated for LP870H FTG Installer Menu and/or TV Setup Menu profiles. Zone restrictions can also be placed on individual channels in the FTG Channel Map. Thus, for example, you may create an FTG Installer Menu and/or TV Setup Menu profile to specifically configure a TV in the hotel lobby and also restrict the channels that are available to be tuned on that TV.

The TV Zone # must be set appropriately on each TV in order for the TVs to be configured correctly. See "Set the TV Zone # and/or Wi-Fi Zone # in the TV" on page 79, and set the TV Zone # in all the TVs in a select area, so that the TVs are configured with corresponding FTG Installer Menu and/or TV Setup Menu settings and/or can omit channels that have been restricted in the FTG Channel Map. TV Zone 0 is the default TV Zone #.

The following subsections briefly describe how to assign Zone designations in the FTG File Manager. Refer to the ***Free-To-Guest (FTG) File Manager User Guide*** for further information.

FTG Installer Menu Profile Zone Assignments

The FTG File Manager main screen enables you to change the Zone assignment (default = Zone 0) for each Installer Menu profile to be included in an FTG Configuration (.tlx) file. For example, you may wish to create one LP870H Installer Menu profile for the hotel lobby and another LP870H Installer Menu profile for the fitness center, both of which are different from the Installer Menu profile used for standard guest rooms. The TV Zoning feature enables you to save multiple LP870H FTG Installer Menu profiles, each with its own Zone assignment, in one FTG Configuration file. If each TV in the aforementioned locations (Zones) has had its TV Zone # set appropriately, as described in the procedure on page 79 or via the EZ-Manager Wizard, the TV(s) will only be configured by the Installer Menu profile that matches its(their) Zone setting.

In the FTG File Manager main screen, you can also edit the Zone assignment for each Installer Menu profile and/or TV Setup Menu profile already present in the FTG Configuration List and TV Setup Menu List windows.

Note: See also the FTG File Manager main screen overview on page 54. In addition, note that TV Setup Menu profiles cannot be created in the FTG File Manager; they must be "Learned" from a TV.

FTG Channel Map Zone Restrictions

The FTG Channel Map Editor in the FTG File Manager's FTG Channel Map Configuration Utility enables you to place Zone restrictions on individual channels that may be prohibited or deemed unsuitable for certain locations. In the FTG Channel Map Editor, one or more Zone restrictions (1–8) may be placed on each channel that is to be restricted. For example, if you wish to restrict a channel from Zones 2 and 4, select both "Zone 2" and "Zone 4" in the Zone Restriction section of the FTG Channel Map Editor screen when defining or editing that channel.

Reference: Using the TV's Zoning Features (Cont.)

Note: While a channel can be restricted from up to eight Zones, a TV can only ever be in (set for) one Zone. See also the FTG Channel Map Editor overview on page 56.

At the same time, keep in mind that the TV Zone designations are not mutually exclusive. That is, you may opt to place Zone restrictions on selected channels in the FTG Channel Map, but at the same time, you can choose to configure all TVs at the site with the same Installer Menu and/or TV Setup Menu settings. For example, an FTG Configuration (.tlx) file being used to configure the TVs at a site may contain multiple Installer Menu and TV Setup Menu profiles with different Zone assignments, as well as an FTG Channel Map with Zone restrictions on several channels. Each TV that still has the default TV Zone 0 setting will *only* be configured by the Installer Menu and/or TV Setup Menu profile(s) with a Zone 0 designation. If, on the other hand, the TV Zone # is set to 1, the TV will first look in the file for the LP870H Installer Menu and/or TV Setup Menu profile(s) with a Zone 1 designation. If none of the LP870H Installer Menu and/or TV Setup Menu profiles has a Zone 1 designation, the TV will then look for the LP870H profile(s) with a Zone 0 designation. For the FTG Channel Map configuration, when the TV Zone # is set to 0, the TV will ignore any Zone restrictions (1–8) that may be placed on channels in the FTG Channel Map. However, when the TV Zone # is set to 1, the TV will omit any channels that have been restricted from Zone 1 in the FTG Channel Map.

Using the TV Zoning Feature with Cloning Configuration

A location-specific configuration / TLX file may be saved (Learned) from an individual TV as part of a Master TV Setup and then be used during Teaching. For example, if the TV Zone # in the Master TV is set to 3 before Learning is initiated, the Master TV's Installer Menu and TV Setup Menu profiles will be saved with the TV Zone 3 assignment when Learning is completed. In order to configure the Target TVs with the Zone 3 Installer Menu and TV Setup Menu profiles Learned from the Master TV, you must set the TV Zone # accordingly in the Target TVs before transferring (Teaching) the Master TV Setup. See "Set the TV Zone # and/or Wi-Fi Zone # in the TV" on the following page. Also, see "Learning / Teaching a Master TV Setup using a TLX File" on pages 37 to 38 for additional information on the cloning processes. TV Zone 0 is the default TV Zone #.

Wi-Fi Zoning Feature

The Wi-Fi Zoning feature enables you to use a TLX file to configure an individual TV or group of TVs with a particular Wi-Fi access point's login data to create "Wi-Fi Zones" within the installation environment.

Using the Wi-Fi Zoning Feature with FTG Mode via CPU Configuration

The FTG File Manager may be used to create an FTG Configuration (.tlx) file with an FTG Installer Menu profile that contains login data for multiple Wi-Fi access points, each assigned a Wi-Fi Zone #. Up to 99 Wi-Fi Zones can be designated within each FTG Installer Menu profile, thus allowing for distribution of the Wi-Fi network load. For example, if a site has 50 LP870H TVs within close proximity, you may wish to create 10 Wi-Fi Zones, each with its own access point that has unique login data, so that no more than five of the TVs are connected to one access point at any given time.

In order for a TV to be configured by the proper Installer Menu profile with the desired Wi-Fi access point login data for wireless networking (i.e., SSID, security type, and security key), you must set both the TV Zone # and the Wi-Fi Zone # in the TV (see "Set the TV Zone # and/or Wi-Fi Zone # in the TV" on the following page for further information). If the Wi-Fi Zone # in the TV is set to 0 (default), the TV will not obtain access point login data from the Installer Menu profile with which it is configured

Refer to the *Free-To-Guest (FTG) File Manager User Guide* for further information on defining Wi-Fi Zones in the FTG File Manager.

Using the Wi-Fi Zoning Feature with Cloning Configuration

A location-specific Wi-Fi configuration / TLX file may be saved (Learned) from an individual TV as part of a Master TV Setup and then be used during Teaching. First, the wireless network (i.e., the access point login data) must be configured in the Master TV's IP Environment Menu (see Wireless Network Connection" on page 58). Then, a Wi-Fi Zone # must be set in the Master TV (see "Set the TV Zone # and/or Wi-Fi Zone # in the TV" below). If desired, a TV Zone # may also be set in the Master TV.

For example, if the Wi-Fi Zone # is set to 4 and the TV Zone # is set to 5 before Learning is initiated, after Learning is completed, the Master TV's Installer Menu profile will be saved with the Zone 5 assignment, and within that Installer Menu profile, the access point login data for wireless networking (i.e., SSID, security type, and security key) will be saved with a Wi-Fi Zone 4 assignment. In order to configure the Target TVs with the proper Installer Menu profile and access point login data, you must set both the TV Zone # and the Wi-Fi Zone # in the Target TVs accordingly before transferring (Teaching) the Master TV Setup. See "Set the TV Zone # and/or Wi-Fi Zone # in the TV" below. Also, see "Learning / Teaching a Master TV Setup using a TLX File" on pages 37 to 38 for additional information on the cloning processes. If the Wi-Fi Zone # in the TV is set to 0 (default), the TV will not obtain access point login data from the Installer Menu profile with which it is configured.

Set the TV Zone # and/or Wi-Fi Zone # in the TV

You can set the TV Zone # and/or the Wi-Fi Zone # in the EZ-Manager Wizard (see "EZ-Manager Wizard" on pages 11 to 18) or, if the TV is in Pass-through Mode, via the TV's setup menus as described below. Note that the following procedure can only be performed while the TV is in Pass-through Mode. You will also be able to specify a Label (North, South, East, West) and Room Number for this TV, if desired.

1. Turn ON the TV.

2. Press **MENU SETTINGS** on the Installer Remote, and use the arrow navigation keys to select/highlight the **OPTION** menu option. Then, press **OK**.

3. Use the Up/Down arrows to select **Zones & Room Number**, and then press **OK**.

4. In the Zones, Label, and Room Number pop-up window, complete the appropriate fields as described below. Use the Left/Right arrow keys on the Installer Remote to navigate between each of the fields.

   • Wi-Fi Zone: Enables you to set a Wi-Fi Zone # so that the TV can be configured with a particular access point's login data for wireless networking. Login data (i.e., SSID, security type, and security key) may be provided in a TLX file to be used for configuration. If the Wi-Fi Zone # is set to 0, the TV will not be configured with login data from a TLX file.

   To assign a Wi-Fi Zone, navigate to the Wi-Fi Zone field at the far left of the screen, and use the Up/Down arrow keys to specify the desired Wi-Fi Zone # (1–99).

   • TV Zone: Enables you to set a TV Zone # so that the TV can be configured with Installer Menu and/or TV Setup Menu settings intended only for the assigned Zone. The Installer Menu and/or TV Setup Menu settings may be provided in a TLX file to be used for configuration. If the TV is being configured for FTG Mode via CPU, the TV Zone # setting also allows the TV to omit channels that have been restricted in the FTG Channel Map (see "FTG Channel Map Zone Restrictions" on page 77).

   To change the TV Zone, navigate to the TV Zone field, and use the Up/Down arrow keys to specify the desired TV Zone # (0–8).

Reference: Using the TV's Zoning Features (Cont.)

(Continued from previous page)

- • Label: Allows you to select a North, South, East, or West text label for this TV. Use the Up/Down arrow keys to select the applicable label.

- • Room Number: Allows you to specify the number of the room in which the TV is located. You can use the number keys on the Installer Remote to direct enter a room number. Use the Dash key on the Installer Remote as necessary to toggle between number and letter characters in the Room Number field. Also, you can use the Flashback key on the Installer Remote to delete characters in this field.

5. When you have completed the fields as necessary, select **OK**, and then press **OK** on the Installer Remote to close the window and return to the Option Menu.

6. Press **MENU SETTINGS** to return to program viewing.
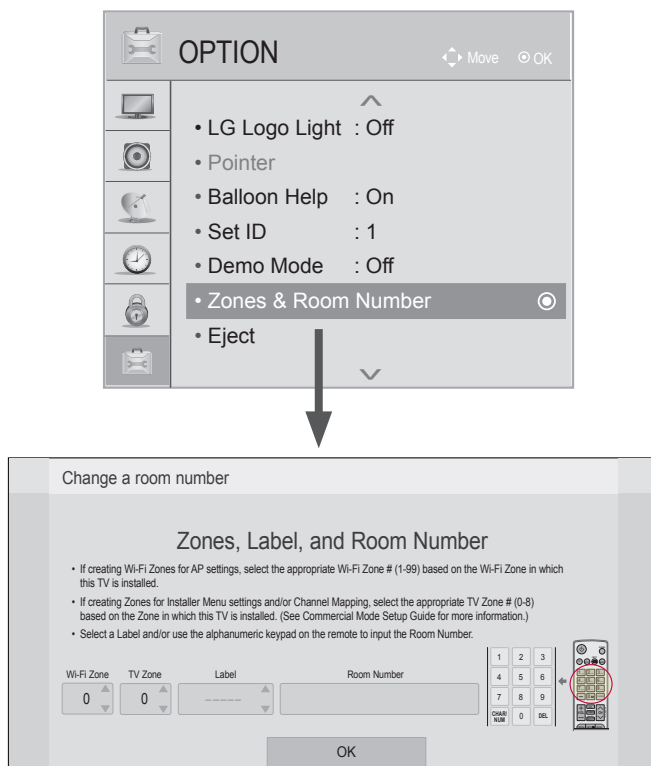
When the TV's Smart Share, Wi-Fi Screen Share, and DMR options are enabled in the IP Environment / Media Share Menu (see "Accessing the IP Environment Menu" and "Media Share Setup" on pages 58 and 64, as necessary), guests have the ability to use the following Media Share features:

• Smart Share: Allows guests to use the TV to access and view media files (photos, videos, music, etc.) shared either by wired DLNA Certified devices (the devices must be connected to the same LAN as the TV) or by wireless LG devices using LG's Smart Share application with Wi-Fi Direct.

• Wi-Fi Screen Share: Allows guests to select a Smart Mirroring or WiDi capable device, whose screen can be displayed on the TV.

This section provides an overview of the Smart Share and Wi-Fi Screen Share functionality.

Accessing Media Share Features

Once the Media Share items are enabled, users can turn ON the Wi-Fi Direct and Smart Mirroring / WiDi features at any time from the TV menus—either the Option or the SmartShare Menu depending on whether the TV is or is not in Pass-through Mode.

When the Pro:Centric application is disabled on the TV, Wi-Fi Direct, Smart Mirroring, and WiDi features may also be accessible from the Application Launch bar that is activated via the PORTAL button on the remote. However, this requires that the pre-loaded application icons for each of these features has been selected in the IP Environment / Pre-loaded Apps Menu. See also "Pre-loaded Applications" on page 65.

The following subsections describe how to access and use the Wi-Fi Direct and Smart Mirroring / WiDi features.

TV Menus

Note: When Smart Share is enabled in the IP Environment Menu, regardless of whether Wi-Fi Screen Share is also enabled, the TV Name will be displayed in the Option and SmartShare TV menus described below (see also examples at right). However, the TV Name is not editable outside of the IP Environment Menu.

1. Turn ON the TV, and press **MENU SETTINGS** on the Installer Remote to display the TV setup menus (TV is in Pass-through Mode) or the Function Menu (TV is not in Pass-through Mode).

2. Use the arrow navigation keys to select/highlight either the **Option** menu icon from the TV setup menus or the **SmartShare** menu icon from the Function Menu. Then, press **OK**.

3. Use the Up/Down arrows to select either **Wi-Fi Direct** or **Smart Mirroring / WiDi**, and then press **OK**.

Depending on your selection in step 3, a Wi-Fi Direct or Smart Mirroring / WiDi pop-up window will be displayed.
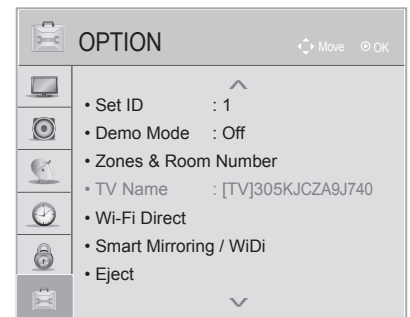
(TV in Pass-through Mode)

or
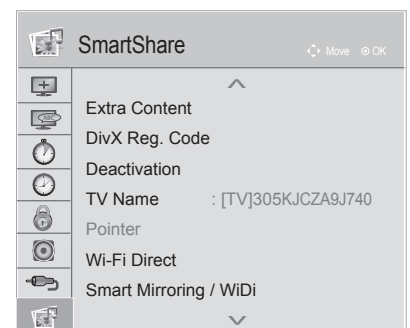
(TV not in Pass-through Mode)

Reference: Using Media Share Features (Cont.)

Application Launch Bar

Note: The Application Launch bar is only available when pre-loaded application icons are selected and when the Pro:Centric application is disabled on the TV. If the Pro:Centric application is loaded on the TV, you must access the Media Share options from the TV menus as described on the previous page.

1. Press **PORTAL** on the remote to display the Application Launch bar. All available application icons will be displayed along the bottom of the screen.

2. Use the Left/Right arrow keys on the remote to highlight the desired application to launch, and then press **OK** to select it.

Depending on your selection in step 2, a Wi-Fi Direct, Smart Mirroring, or WiDi pop-up window will be displayed.

Smart Share (Wi-Fi Direct)

With the Wi-Fi Direct pop-up window on display, use the following procedure to turn ON Wi-Fi Direct and select a device to which to make a connection.

1. In the Wi-Fi Direct pop-up window, use the Left/Right arrow keys to select **On** in the Wi-Fi Direct field. This will prompt the TV to search for all available Wi-Fi Direct enabled wireless devices, including mobile devices, laptops, etc. Devices found will be listed in the lower half of the screen.

   Note: If the search does not initially locate any devices, you can select **Rescan** and press **OK**.

2. Use the Up/Down arrow keys to select/highlight the device with which you wish to share, and then press **OK**.

3. A new pop-up window will prompt you to confirm your connection request. Select **Yes** and press **OK** to continue.

   The share request will be sent to the targeted device. The user of that device may choose to allow or not allow the share connection. Similarly, once Wi-Fi Direct is turned ON, other devices may request share connections with this TV (pop-up share requests typically appear in the bottom right of the TV screen).

4. If the share request is accepted, media files may now be shared between the device and the TV using Wi-Fi Direct. Select **Close** and press **OK** to exit the Wi-Fi Direct window.

5. To access media files/folders on the TV, either press **MENU SETTINGS** and select the **SmartShare** or **Input** menu icon, or press the **Input** key on the Installer Remote to select the Smart Share device. Then, select the desired media category to view files.

Wi-Fi Direct pop-up window display is the same whether the TV is or is not in Pass-through Mode.

Wi-Fi Screen Share (Smart Mirroring / WiDi)

With the Smart Mirroring / WiDi pop-up window on display, use the following procedure to turn ON Smart Mirroring / WiDi and establish a connection.

Note: If you are accessing the Smart Mirroring or WiDi features from the Application Launch bar, each feature will have its own pop-up window. The example shown here illustrates the pop-up window that displays when the "Smart Mirroring / WiDi" option is selected from the TV menus.

1. In the Smart Mirroring / WiDi pop-up window, use the Left/Right arrow keys to select **On** in the Smart Mirroring / WiDi field.

2. Initiate the Smart Mirroring / WiDi connection from your Smart Mirroring / WiDi device. Note that you may be prompted to enter a PIN number that appears on the TV screen into your Smart Mirroring / WiDi connection window to complete the connection.

Once the connection is established, the TV display may be used as a second screen for the Smart Mirroring / WiDi device.

Smart Mirroring / WiDi

A device which supports Smart Mirroring or WiDi technology can connect and have its display shown on this TV.

• Smart Mirroring / WiDi   ‹   On   ›

ⓘ

Smart Mirroring / WiDi is ON.

Close
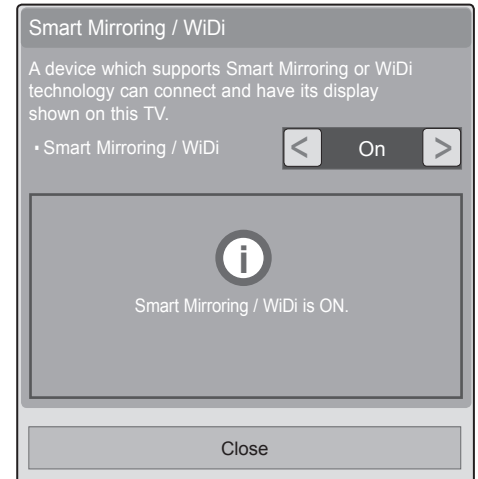
Smart Mirroring / WiDi pop-up window display is the same whether the TV is or is not in Pass-through Mode.

Reference: LP870H Rear and Side Jack Panels

RS-232C (SERVICE & EXT POWER)*
Typically used for downloading software updates, etc.

HDMI/DVI IN
Connection for HDMI/DVI output from external device.

RGB IN (PC)
Connection for RGB output from PC.

AUDIO/VIDEO IN
(3.5 mm jack) Connect audio/video output from external device.

AUDIO IN (RGB/DVI)
(3.5 mm jack) Connect audio for RGB or DVI device.

RJP
Connection for Remote Jack Pack (RJP) Control cable.

AUX LAN & LAN
Use for video IP and/or network connections.

ANTENNA/CABLE IN
Connect to Antenna/ CATV.

UPDATE
Restricted to software updates.

RESET
Initiates a hardware reset and turns the TV OFF.

SPEAKER OUT / LINE OUT
(3.5 mm jack) Connect external audio (fixed speaker, variable speaker, or fixed line level [amplifier]) equipment. See Reference section, "External Stereo Speaker Specifications," for further information.

GAME CONTROL/MPI
When the TV/EBL is in Pass-through Mode, the MPI function enables an external MPI control device (i.e., clone programmer, VOD/PPV STB, etc.) to control the TV. Game Control—EBL in SONIFI PPV Mode only.

OPTICAL AUDIO OUT
Use for amps and home theater systems. Note: When the TV is OFF, this port is not enabled.

TV-LINK CFG
(3.5 mm jack) Use to connect PC to TV (EBL) for local FTG Mode via EBL configuration.

SERVICE ONLY
Restricted to service updates.

⚠ **Caution: Do NOT connect a standard Ethernet cable to the RJP port, as this may damage the TV and network equipment.**

* For specific applications, the RS-232 (DB9) port may be used to provide +12v/1A external power (for example, to an external MPI control device). In this case, Installer Menu item 118 POWER SAVINGS must be set to 9—both the *b*-LAN module and the GAME CONTROL/MPI port circuitry are always powered, and the external power is provided on pin 9 of the RS-232 port.

Side Jack Panel
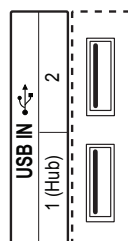
USB IN 1 & 2
Insert USB memory device for software updates, cloning purposes, FTG Mode via CPU configuration, picture/ music entertainment, etc., as applicable.

The SPEAKER OUT / LINE OUT 3.5 mm stereo jack on the LP870H rear panel provides stereo speaker signal outputs (fixed speaker, variable speaker, or fixed line level [amplifier]) for external audio equipment. Set Installer Menu item 097 AUDIO OUTPUT as required in accordance with external audio equipment connected to the TV. Also, refer to the following diagram for pinout details.

⚠ **Caution: Do NOT plug in a mono connector, as this may damage the TV.**
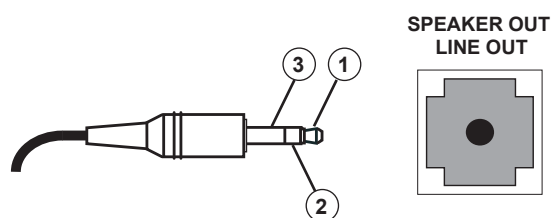
1	LEFT (Tip)
2	RIGHT (Ring)
3	GROUND (Sleeve)

Reference: Installer Remote Control Typical Key Functions

The LG Installer Remote is supplied with and dedicated to operate the TV. The LG Installer Remote illustrated below shows typical remote control functions and is provided for reference only. This Installer Remote may vary from the Installer Remote supplied with the TV.

⏻ (POWER)
Turns the TV ON or OFF

Numbers (0 - 9) & DASH
Use to enter a channel or program number. Dash is used for sub-channel numbers such as 2-1, 2-2, etc.

FLASHBK (FLASHBACK)
Returns to the previously tuned channel or input.

VOLUME UP/DOWN
Increases/decreases sound level.

CC
Activates subtitles.

TIMER
Sets the amount of time before the TV automatically turns itself OFF.

MUTE
Switches sound ON or OFF.

CHANNEL/PAGE UP/DOWN
Changes channels based on channels in the channel lineup. Moves to previous or next screen in Pro:Centric channel guide.

PIP
Toggles On/Off split screen mode.

PIP CH +/-
Changes the channel in sub-window.

PIP INPUT
Select the input source for the sub-window.

SWAP
Exchanges main/sub-window images in split screen mode.

SAP
Analog Mode: Selects MTS sound (Mono, Stereo, or SAP). DTV Mode: Changes audio program language, if additional languages are available. *

TV/DVD
Select the remote's operating mode: TV or DVD.

INPUT
Displays available Aux inputs.

(Q. MENU/MARK options N/A for these TV models)

Arrows (Up/Down/Left/Right) & OK
Use to navigate on-screen menus, direct tune channels, and adjust TV settings.

MENU SETTINGS
Displays and removes the TV setup menus (or, if applicable, the Function Menu).

PORTAL
Displays and removes the Pro:Centric interactive menu.

INFO
Displays channel information.

GUIDE
Displays and removes the Pro:Centric channel guide/EPG.

↩ (RETURN)
Returns one level to the previous menu/ display.

EXIT
Clears all on-screen displays and returns to program viewing.

Color buttons access special functions in some menus.

DVD/USB buttons
Use to control DVD player or view USB memory device content.

ⓢIMPLINK
Accesses the AV devices connected to the HDMI ports of the TV. Opens the SIMPLINK Menu (when Installer Menu item 041 SIMPLINK EN is set to 2 or 3).

* SAP notes:
- If SAP is selected and no SAP is provided, sound may not be heard on channel.
- Each channel may have its own SAP setting.
- Each time digital channels are tuned, the TV attempts to locate the default audio program language. If the default audio program language is not available, the TV will use the first available audio program.

Some Quick and Easy Tips for Resolving Problems

Installation

Symptom	Possible Cause(s)	Possible Solution(s)
Cannot direct enter channel number.	(TV in Pass-through Mode) Installer Menu item 028 CH. OVERIDE is set to 0, i.e., disabled (recommended setting).	If Installer Menu item 028 CH. OVERIDE is set to 0, only channels that are active in the TV's channel lineup can be selected. Set CH. OVERIDE to 1 to allow access for direct keypad entry to all channels.
	(TV in FTG Mode) The channel entered is not included in the FTG Channel Map.	Channel access is restricted to channels included in the FTG Channel Map. If necessary, make changes to the FTG Channel Map using the FTG File Manager or the FTG Device Configuration Application, as appropriate.

Picture Reception and Sound

Symptom	Possible Cause(s)	Possible Solution(s)
No picture.	TV is turned OFF.	• Turn TV ON. • Power failure?
	Antenna/cable not connected.	Connect antenna/cable signal to TV.
	Connections incorrect.	Check connections on TV.
	MPI not connected.	If applicable, connect MPI cable to MPI device.
	Encrypted program.	Try another channel.
	Wrong tuning band.	Adjust Installer Menu settings.
Normal picture, poor or no sound.	Audio muted.	Press MUTE or use Volume Up key to increase sound level.
	Broadcast problem.	Try a different channel.

Erratic Operation

Symptom	Possible Cause(s)	Possible Solution(s)
Installer Menu setup.	Wrong Installer Menu settings.	Adjust Installer Menu settings as required.

Installer Remote

Symptom	Possible Cause(s)	Possible Solution(s)
Remote doesn't work.	Remote not in TV Mode.	Use MODE key to select "TV"; puts remote into TV Mode.
	Not aimed at IR receiver.	Point remote at IR receiver on TV.
	Remote too far from IR receiver or IR path is obstructed.	Move remote closer to IR receiver on TV, darken room, and/or remove obstructions.
	MPI not connected.	If applicable, connect MPI cable to MPI device.
	Weak batteries.	Replace batteries.
	Wrong battery polarity.	Check that "+" and "-" match in battery compartment.
	Too much light in room.	Dim room light.
	Wrong Installer Remote.	Requires compatible LG Installer Remote. Contact your LG representative.

Troubleshooting (Cont.)

Commercial Mode Check / FTG Operation Troubleshooting

Commercial Mode Check

Use this flowchart to determine whether the TV is currently in Commercial Mode.

```
        ┌─────────────────────┐
        │  Press POWER on     │
        │  Installer Remote.  │
        └─────────────────────┘
                  │
                  ▼
            ╱ TV turned ╲   No    ╱ TV connected ╲   No   ┌──────────────────┐
           ◇   ON?       ◇──────◇  to AC Power?  ◇──────│ Plug into AC     │
            ╲           ╱         ╲              ╱        │ Power outlet.    │
                  │                     │                 └──────────────────┘
                 Yes                   Yes
                  │                     ▼
                  │              ┌──────────────┐
                  │              │  Bad TV      │
                  │              └──────────────┘
                  ▼
        ┌─────────────────────┐
        │ Leave the TV set ON,│
        │ and press MENU      │
        │ SETTINGS on the     │
        │ Installer Remote.   │
        └─────────────────────┘
                  │
                  ▼
            ╱ Function ╲   No   ┌──────────────────┐       ╱ On-screen ╲   No   ┌────────────────────────┐
           ◇  Menu      ◇─────│ Press MENU       │      ◇ menu display ◇─────│ TV is not in Commercial│
            ╲ on display?╱     │ SETTINGS         │       ╲ no longer  ╱       │ Mode. Call Technical   │
                  │            │ repeatedly as if │        ╲ toggles? ╱        │ Support for assistance.│
                 Yes           │ to access the    │             │             └────────────────────────┘
                  │            │ Installer Menu.  │            Yes
                  ▼            └──────────────────┘             │
        ┌──────────────┐                                        ▼
        │ TV is in     │                               ┌──────────────┐
        │ Commercial   │                               │ TV is in     │
        │ Mode.        │                               │ Commercial   │
        └──────────────┘                               │ Mode.        │
                                                        └──────────────┘
```

FTG Operation Troubleshooting

The following table provides troubleshooting information for when the EBL is configured for FTG Mode operation.

Symptom	Possible Cause(s)	Solution(s)
Communication Error ("Communications Timeout")	Cable(s) not connected.	Check and connect communication cables.
	TV not powered.	Check/connect the TV power cord.
	TV not turned ON.	TV needs to be turned ON (default setting of Installer Menu item 118 POWER SAVINGS).
	Wrong COM (communication) port.	In the FTG Device Configuration Application, select the correct COM port for the cable being used.

⚠ **Caution: If the TV is in SONIFI PPV Mode or FTG Mode via EBL (check with the site administrator if you are not certain), do not connect a clone programmer to the GAME CONTROL/MPI port, as this will damage the clone programmer.**

Reset Clone Programmer After Static Shock

After replacing exhausted batteries (LT2002 only), or if the clone programmer behaves strangely after a static shock:

• TLL-1100A: Turn the TLL-1100A OFF and then ON.

• LT2002: Use a paper clip or similar instrument inserted through the small hole marked RESET to activate the internal reset switch and restore normal operation.

After a reset, check the real-time clock setting. It may be necessary to set the clone programmer clock from a TV containing the correct time.

Note: Both the Master and Target TVs must be in Pass-through Mode for cloning purposes. See also IMPORTANT CLONING INFORMATION on page 36.

Clone Programmer

Symptom	Possible Cause(s)	Possible Solution(s)
Clone copies setup in less than 30 seconds.	Not enough time to copy entire TV setup.	TLL-1100A: Turn the TLL-1100A OFF and then ON. LT2002: Press RESET on clone programmer. Then redo Learn/Teach. (Learning usually takes about 90 seconds; Teaching usually takes 3 to 4 minutes.)
Remote does not operate clone programmer.	Wrong Installer Remote.	Only use an LG Installer Remote to operate clone programmer with TV.
Clone menu does not display on TV screen, TLL-1100A shows error message, or LT2002 LED does not blink.	MPI cable not connected.	Connect MPI cable properly, and ensure good connection.
	TV not turned ON.	TV must be turned ON for clone programmer to work.
	(LT2002 only) Weak batteries.	Install four (4) fresh AA high-quality alkaline batteries.
	(TLL-1100A only) No charge.	Ensure the TLL-1100A is fully charged or connected to AC power.
Clone menu hard to read.	Weak signal.	Connect TV to a reliable analog channel signal source.
No time set.	Time not available.	Set time on a TV, and copy time to clone programmer.
Clone not working.	Clone programmer problem.	• Try a different clone programmer. • Reset the clone programmer.
Clone scans channels more than once.	Clone should only scan channels once.	Ensure TV is set up correctly, and try cloning again.

Master and Target TVs

Symptom	Possible Cause(s)	Possible Solution(s)
Cloning did not work.	Procedure interrupted.	Wait until procedure complete message is displayed.
	Different TV models.	Cloning is only possible with identical model TVs.
	Step(s) omitted or not performed.	Refer to the applicable cloning procedure(s), and make sure all tasks were performed.
(LT2002 only) Clone time disappeared.	Batteries were removed.	Batteries must remain installed to retain time settings.
New setup not present.	Target TV not reset.	Disconnect Target TV from AC power for 15 seconds.

• After cloning operations are complete, unplug the TLL-1100A/LT2002 from the TV.
• If the TV does not display a picture (blank screen) after a few seconds, just change channels.

Glossary of Terms

b-LAN
SONIFI Solutions, Inc. proprietary RF communication system used to configure/control TV via RF distribution system.

Channel Lineup
Channels set in the TV memory, via Auto Tuning/manual editing.

Cloning
The process of capturing a Master TV Setup and transferring it to a Target TV using either a USB memory device or clone programmer.

Clone Programmer
An accessory device (sold separately), such as the TLL-1100A or LT2002, used to transfer the Master TV Setup from the Master TV to the Target TV.

Commercial Mode
A mode of operation that provides a broad range of commercial TV features based on control (settings) provided by the PTC and/or an MPI control device.

CPU
The TV's Central Processing Unit. Responsible for the presentation of video and audio from content received via the TV's tuner or Aux inputs.

EBL
Embedded *b*-LAN module. See also *b*-LAN.

E-Z Installation
Enables splash screen image, TV configuration, and software/firmware file downloads to selected TV models from a Pro:Centric server. Managed and administered via the Pro:Centric Admin Client.

EZ-Manager Wizard
Lodging model TV configuration wizard that provides configuration options for Pro:Centric operation as well as an option for using a USB memory device to configure a TV.

FTG Channel Map
Typically refers to a logical channel mapping of physical RF channels. This allows digital channels, like analog channels, to be tuned without requiring the dash key. Also, channels (analog or digital) can be arranged in any order that seems logical for customer tuning/viewing.

FTG Mode
LG commercial TV mode that enables decryption of Pro:Idiom encrypted channels and uses logical channel mapping. Implementation and TV operation is based on the "owner" of the FTG Logical Channel Map—the CPU or the EBL. LG's proprietary PC software is required for configuration.

Function Menu
Available via Installer Remote "MENU" key. Indicates the TV is not in Pass-through Mode. Restricts menu options to a subset of the TV setup menus, allowing users to retain functional control, while disabling setup options.

Installer Menu
Defines commercial TV functionality based on the parameters set.

LG Free-To-Guest (FTG)
Refers to a particular commercial mode of operation within an LG TV. See also FTG Mode.

Logical Channel Number
A number assigned to either a physical or virtual channel number in a Logical Channel Map.

Major Channel Number
Typically, the RF channel number assigned to a digital video stream.

Master TV
A TV whose Channel Map and Installer Menu and TV setup menu settings have been configured as a Master TV Setup for cloning purposes.

Minor Channel Number
A sub-channel or program number assigned to the content embedded in the digital video stream.

MPI
Multiple Protocol Interface. An MPI port or, for some TV models, an MPI card slot provides external control options for solution providers.

Pass-through Mode
The TV's factory default mode of operation. TVs can be configured for stand-alone use or as Master TVs for cloning purposes, and/or TVs may be controlled externally in this mode.

Physical Channel Number
The major channel number assigned to represent a specific 6 MHz RF band as specified by either the broadcast or CATV channel plan. See CEA (formerly EIA) or NCTA specifications for further information.

Pro:Centric Application
LG content delivery and communication interface that provides interactive entertainment, weather, amenities, etc. information for end users. (Powered by Pro:Centric server.)

Pro:Centric Admin Client
Web editor/content wizard provided for service provider and customer configuration of Pro:Centric application elements.

Pro:Idiom
Zenith proprietary security software that unlocks access to premium content to help assure rapid, broad deployment of HDTV and other high-value digital content.

PTC
Protocol Translator Card. The commercial controller (microprocessor) of the commercial TV.

Target TV
A TV to which a Master TV Setup will be transferred.

TV Setup Menus
Available via Installer Remote "MENU" key in Pass-through Mode only. Menus provide access to setup and functional features of the TV.

USB Memory Device
A USB flash drive or USB storage device, etc. that can be used for TV configuration purposes (typically cloning or FTG Mode via CPU configuration) or for updating TV software.

Virtual Channel Number
An alias (virtual) channel number provided in the data stream, by the broadcaster, of a digital broadcast channel to be displayed by consumer TVs in place of the physical channel number. The major number is the same as the original analog channel number and the minor number is the nth program available in that digital video stream.

Document Revision History

Date	Description
July 2013	Revision A: New document
November 2013	Revision B: Installer Menu, Zoning, Wi-Fi Screen Share updates
March 2015	Revision C: Installer Menu/software and Media Share updates
June 2015	Revision D: Wi-Fi Zoning update

Product documentation is available online at: **www.LGsolutions.com**.

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