

**LEADER**

# **LG 3850SER03**

ATSC SOFTWARE

INSTRUCTION MANUAL

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## 1. INTRODUCTION

Thank you for purchasing this LEADER instrument. To use this instrument safely, read this instruction manual thoroughly, and make sure that you know how to use the instrument properly.

If some point about the operation of this instrument is still unclear after you have read this instruction manual, refer to the contact information on the back cover of the manual to contact LEADER, or contact your local LEADER agent.

After you have finished reading this manual, keep it in a convenient place so that you can refer to it when necessary.

### 1.1 About Licenses

This software can only be used after its license key has been activated. After you have installed this software on a PC, connect the PC to an LG 3850, and then enter the license key from the PC. For details on installing the software and entering the license key, see the LG 3850 instruction manual.

The license key for this software can only be used on one LG 3850. You cannot install this software on multiple LG 3850s.

### 1.2 Operating Precautions

#### 1.2.1 About Turning the Power Off

When a PC and an LG 3850 are connected by a USB cable and you want to turn the devices off, be sure to turn the LG 3850 off before you turn the PC off.

#### 1.2.2 About the PC Setting

When you are controlling the LG 3850 from a PC, do not set the PC to power saving mode.

#### 1.2.3 About MPEG-2 TS Playback

If you play back an MPEG-2 TS from a PC that is handling an excessive load, the video or audio may be interrupted.

#### 1.2.4 About the USB Connection

While the program is being transferred from the PC to the LG 3850, do not disconnect the USB connection between the PC and the LG 3850. If a disconnection of the USB cable or other problem causes the program transfer to be interrupted, use the initialization application to initialize the LG 3850 to its factory default settings, and then transfer the program to the LG 3850 again.

See chapter 6, "INITIALIZATION APPLICATION."

If, while the LG 3850 is being controlled from a PC, the USB connection is mistakenly disconnected, an error message is displayed on the PC screen. If this happens, re-connect the USB connection, and then click the play button on the control application to begin transmitting the signal again.

### 1.3 Trademarks

The company and product names in this document are trademarks or registered trademarks of their respective holders.

## 2. SPECIFICATIONS

### 2.1 General

This product is a software application that can be used to transfer broadcast systems to the LG 3850 and control the LG 3850 from a PC. After a broadcast system has been transferred to the LG 3850, the LG 3850 can be used as an ATSC signal generator.

### 2.2 Features

- **USB connection**

Connect the LG 3850 to a PC through USB to transfer broadcast systems, play back MPEG-2 transport streams, and configure detailed settings such as selecting the country and output channel.

- **Still-image output**

Output four different still-image patterns seamlessly.

- **Audio signal output**

Output audio signals with separate frequencies of 400 Hz or 1 kHz to the left and right channels.

### 2.3 PC Operating Environment

OS	Microsoft Windows XP SP3, Vista, Windows 7
CPU	Intel® Celeron® M, 1.4 GHz or higher
Memory	512 MB or more
HDD	1 GB or more of free space
USB Port	USB 2.0 (1 port)

### 2.4 Specifications

#### 2.4.1 Broadcast System

Digital Terrestrial Television Broadcasting

ATSC (A/53B)

Mobile Broadcasting

ATSC-M/H (A/153) (\*1)

\*1 Files that contain digital terrestrial television broadcasting (ATSC) MPEG-2 transport streams in which mobile broadcasting (ATSC-M/H) IP data is multiplexed can be played back.

#### 2.4.2 Transmission Parameters

Carrier Modulation 8VSB

#### 2.4.3 External TS Input Specifications

Input Packet Format	188, 204 bytes
Supported Stream	MPEG-2 TS (ISO/IEC13818-1)
Input Data Rate	0.2 to 40 Mbps

## 2. SPECIFICATIONS

### 2.4.4 Standalone Operation of the LG 3850

Function	By transferring a broadcast system to the LG 3850, the LG 3850 can be used as a standalone ATSC signal generator.
RF Signal Generator (*1)	
Frequency	
Channel	Channels 2 to 83 for USA, channels 2 to 12 and 21 to 70 for Korea; selected using the control application
Output	
Range	10 to 89 dBμV (*2)
Resolution	1 dB
Impedance	75 Ω
Internal Signal	
Pseudo Random Signal	PN23, PN15 (*3)
Still Image Pattern (*4)	Colorbar (simple animation), ramp, monoscope, natural picture
Format (*4)	One of the following formats that is selected through the control application 1920×1080i (HDTV), 1280×720p (16:9), 704×480p (16:9), 704×480i (16:9), 704×480i (4:3)
Audio (Tone)	1 kHz (LR), 400 Hz (LR), 1 kHz (L) + 400 Hz (R)
Presets	
Recall/Store	Stores and recalls presets (*5)
Alarm Display	Shown on the 7-segment display

- \*1 Image waves are generated for all waves other than the fundamental wave. Therefore, it is desirable to use the LG 3850 signals separately. If you want to mix LG 3850 RF signals with cable television RF signals, you must use a separate filter to delete the image interference waves.
- \*2 This is the operating range. The optimal range is 39 to 89 dBμV (75 Ω termination). If signals in the range of 10 to 38 dBμV (75 Ω termination) will be generated, we recommend that an external attenuator be connected to the LG 3850.
- \*3 The pseudo random signal can be transmitted when the LG 3850 is connected to a PC. (It can also be transmitted when the LG 3850 is not connected to a PC if presets have been stored through the use of the control application.)
- \*4 The still-image patterns and formats may be changed.
- \*5 If a preset recall range has been set through the use of the control application, presets from within that range are recalled.

### 2.4.5 Control Application Operations

Function	Controls the LG 3850 from a PC over a USB connection
Country Setting	One of the following countries whose output channels will be used when the LG 3850 is operating as a standalone device USA, Korea
System Switching	LG 3850s that are configured to use different broadcast systems can be immediately switched to ATSC.

## 2. SPECIFICATIONS

### RF Signal Generator (\*1)

Frequency	
Channel	Channels 2 to 83 for USA, channels 2 to 12 and 21 to 70 for Korea
Output	
Range	10 to 89 dBμV (*2)
Resolution	1 dB
Impedance	75 Ω
Output Control	Output can be turned on and off
Internal Signal	
Pseudo Random Signal	PN23, PN15
Still Image Pattern (*3)	Colorbar (simple animation), ramp, monoscope, natural picture
Format (*3)	1920×1080i (HDTV), 1280×720p (16:9), 704×480p (16:9), 704×480i (16:9), 704×480i (4:3)
Audio (Tone)	1 kHz (LR), 400 Hz (LR), 1 kHz (L) + 400 Hz (R)
MPEG-2 TS Operations	Select, playback, stop, etc. ATSC MPEG-2 transport streams in which ATSC-M/H IP data is multiplexed can be played back.
Presets	
Recall/Store	Stores and recalls presets
Begin/End	Sets the beginning and ending preset numbers on the LG 3850
Load/Save	Collectively saves and writes 99 presets
Alarm Display	Can't connect to USB device, etc.

- \* Use the application software LG 3850SER03 ATSC Remote Control to control the LG 3850. In this manual, this software is referred to as the "control application."
- \*1 Image waves are generated for all waves other than the fundamental wave. Therefore, it is desirable to use the LG 3850 signals separately. If you want to mix LG 3850 RF signals with cable television RF signals, you must use a separate filter to delete the image interference waves.
- \*2 This is the operating range. The optimal range is 39 to 89 dBμV (75 Ω termination). If signals in the range of 10 to 38 dBμV (75 Ω termination) will be generated, we recommend that an external attenuator be connected to the LG 3850.
- \*3 The still-image patterns and formats may be changed.

### 2.4.6 Licenses

This product can only be used on one LG 3850.  
It cannot be installed on multiple LG 3850s.

### 2.4.7 General Specifications

Environmental Conditions	Same as the LG 3850
Contents	License key (A4 sheet) .....1 CD-ROM .....1 Instruction manual.....1



### 3. INSTALLATION

To use this software, follow the procedure below. For details, see the LG 3850 instruction manual.

**1. Install the encoding software and initialization application.**

Install the encoding software, LG3850SER03Installer Package, and the initialization application, LG3850InitializeToolInstallerPackage, on your PC from the CD-ROM.

To update the encoding software and the initialization application, uninstall the old versions, and then install the new versions.

**2. Install the USB Driver.**

Install the USB driver on your PC.

This software supports Microsoft Windows XP SP3, Windows Vista, and Windows 7.

Follow the procedure below to install the USB driver on these operating systems.

The installation procedure explained here is for Windows XP SP3. Depending on your PC, your screens may differ slightly from the screen captures shown in this procedure, but the procedure remains the same.

**a) Turn on the LG 3850.**

**b) Use a USB cable to connect the LG 3850 rear-panel USB port to a USB port on your PC.**

Do not connect devices other than the LG 3850 to the other USB ports on your PC.

**c) When the installation window appears, select "Install from a list or specific location," and click Next.**



Figure 3-1 Found New Hardware Wizard

- d) When the following screen appears, select “Search for the best driver in these locations,” and click **Browse**.

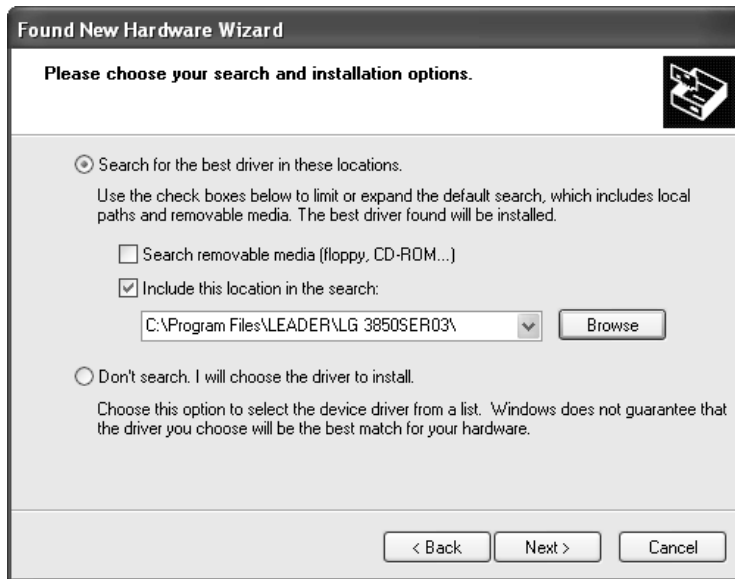


Figure 3-2 Driver search window

- e) Select the **wxp** folder of the encoding software that was installed during step 1, “Install the encoding software and initialization application,” and then click **OK**.

On Windows Vista or Windows 7, select the **wlh** folder.



Figure 3-3 Browse For Folder dialog box

- f) **Check that the full path displayed here is the folder that you selected in step e, and then click Next.**

When you click Next, the PC searches for and installs the driver. This process may take some time.



Figure 3-4 Driver folder confirmation window

- g) **If any warnings that are related to the hardware installation appear, click Continue Anyway.**

This dialog box may not appear.



Figure 3-5 Hardware installation warning dialog box

**h) When the following window appears, the installation is complete. Click Finish.**

If the USB driver is not installed correctly, see the next section.

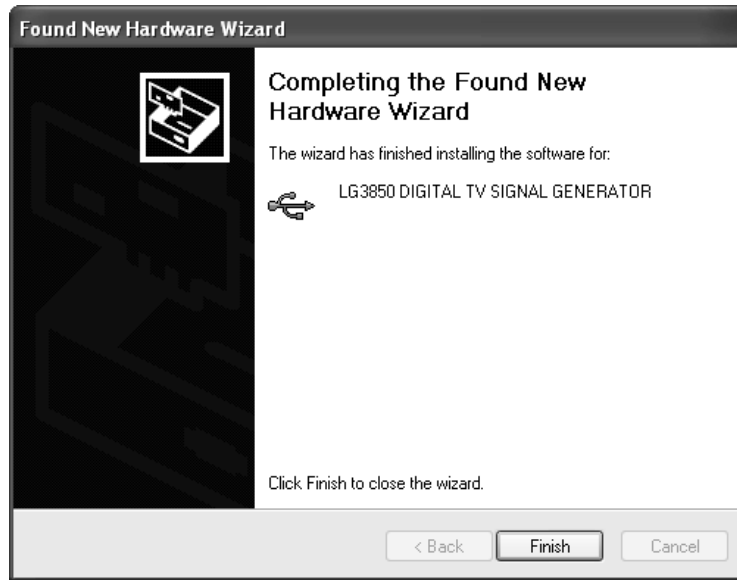


Figure 3-6 Installation complete window

**3. Activate the license and transfer the program to the LG 3850.**

Connect the LG 3850 to your PC, activate the license, and transfer the program from your PC to the LG 3850.

See • License and • Transfer Program in section 5.3.5, “LG 3850.”

After the program transfer is complete, you can use the LG 3850 as a stand-alone ATSC signal generator.

See chapter 4, “STANDALONE OPERATION OF THE LG 3850.”

You can also control the LG 3850 from a PC. By controlling the LG 3850 from a PC, you can play back external TS files and configure a variety of detailed settings, such as the country whose channels the LG 3850 transmits on during standalone operation.

Use the application software LG 3850SER03 ATSC Remote Control to control the LG 3850. In this manual, this software is referred to as the “control application.”

See chapter 5, “CONTROL APPLICATION.”

## 4. STANDALONE OPERATION OF THE LG 3850

This chapter will explain how to operate the LG 3850 as a standalone device. To operate the LG 3850 in this manner, you must first connect the PC to the LG 3850 and transfer the ATSC signal generator program to the LG 3850.

See chapter 3, "INSTALLATION."

### 4.1 Panel Settings

#### 4.1.1 PATTERN

Press each of the front-panel PATTERN keys to play back the internal still-image patterns.

See section 5.3.2, "Pattern."

---

COLOR BAR:	A colorbar (simple animation) signal is transmitted.
RAMP:	A ramp signal is transmitted.
MONOSCOPE:	A monoscope signal is transmitted.
OTHERS:	A natural picture or pseudo random signal is transmitted (PN23/PN15).
	To transmit a pseudo random signal, store it to a preset using the control application, and then recall the preset.

---

Use the control application to specify the country and format of the still-image pattern.

See • Config in section 5.3.5, "LG 3850."

Table 4-1 Country and format

Country	Format
USA	1920×1080i
	1280×720p (16:9)
	704×480p (16:9)
Korea	704×480i (16:9)
	704×480i (4:3)

#### 4.1.2 AUDIO

Each time that you press the front-panel AUDIO key, the output audio switches between the settings listed below. The LED that corresponds to the selected audio lights.

---

L:1kHz R:400Hz:	A tone signal (left: 1 kHz and right: 400 Hz) is generated.
L/R:1kHz:	A tone signal (left and right both 1 kHz) is generated.
L/R:400Hz:	A tone signal (left and right both 400 Hz) is generated.

---

### 4.1.3 CHANNEL

Press the front-panel CHANNEL key to select the output channel. When the channel is being selected, “CH” lights, and the output channel is displayed on the 7-segment LED.

Press the ▼ and ▲ keys to select the output channel. Hold down the ▼ or ▲ key to switch the setting quickly.

The channels that you can select are those of the country that has been specified for use during standalone operation through the control application.

USA: Channels 2 to 83

Korea: Channels 2 to 12 and 21 to 70

When the LG 3850 is connected to the control application, you can select the channels from both countries.

See • Config in section 5.3.5, “LG 3850” and section 7.1, “Channel Table.”

If you hold down the CHANNEL key for 3 seconds or more, the code of the country that you have specified is displayed on the 7-segment LED.

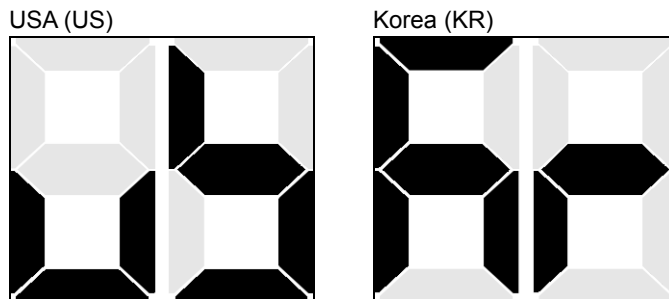


Figure 4-1 Country codes as shown on the 7-segment LED

### 4.1.4 LEVEL

Press the front-panel LEVEL key to set the output level. When the level is being set, “dBμV” lights, and the output level is displayed on the 7-segment LED.

Press the ▼ and ▲ keys to select the output level. Hold down the ▼ or ▲ key to switch the setting quickly. You can set the output level to a value that is in the range of 10 to 89 dBμV (75 Ω termination) in steps of 1 dB.

### 4.1.5 STORE/RECALL

You can save and recall 99 preset configurations (stored in preset addresses 01 to 99). For details, see the LG 3850 instruction manual.

If you use the control application to set the range of presets that can be recalled, you can only recall the presets within the range that you set.

After you recall a preset, you can reset the settings to their default values by pressing the PATTERN keys, the AUDIO key, the CHANNEL key followed by the ▼ key, or the CHANNEL key followed by the ▲ key. The default values vary depending on the specified country, as shown below.

Table 4-2 Default settings per country

Country	CHANNEL	Format (*1)
USA	14	1920×1080i 1280×720p (16:9) 704×480p (16:9)
Korea	21	704×480i (16:9) 704×480i (4:3)

\*1 The format is set to what is currently specified for the standalone operation of the LG 3850.

## 4.2 Panel Settings at Power On

When the LG 3850 turns on, it uses the settings that are stored in preset address 00. It also uses these settings if the connection with the PC is disconnected while you are using the control application. Immediately after the program transfer is complete, the settings of preset address 00 are as follows.

Table 4-3 Settings of preset address 00

Item	Factory Default Setting
PATTERN	COLOR BAR
AUDIO	L:1kHz R:400Hz
CHANNEL	14 (USA)
LEVEL	60 dB $\mu$ V (75 $\Omega$ termination)

You can also change the settings in preset address 00. For details, see the LG 3850 instruction manual.

## 5. CONTROL APPLICATION

This chapter will explain the control application LG 3850SER03 ATSC Remote Control that you use to control the LG 3850 from a PC. To control the LG 3850 from a PC, you must first transfer the ATSC signal generator program to the LG 3850 from a PC.

See chapter 3, "INSTALLATION."

### 5.1 Starting and Ending Remote Control

- **Starting the control application**

Use a USB cable to connect the PC and LG 3850, and then follow the procedure below to start the control application.

On the taskbar, click Start, All Programs, LEADER, LG 3850SER03, and then click LG 3850SER03 ATSC Remote Control.

- **Starting remote control**

When one LG 3850 is connected to the PC, the LG 3850 is automatically detected by the control application when the application starts, and you can immediately control this LG 3850.

When more than one LG 3850 is connected to the PC, carry out the procedure below to select the LG 3850 to control. To control multiple LG 3850s from a single PC, run multiple control applications.

#### Controlling the first LG 3850

- If you have previously controlled one of the connected LG 3850s, that LG 3850 will be automatically detected.
- If you have not previously controlled one of the connected LG 3850s, the Connect list in the main window displays "Select." Remote control does not start until you select an LG 3850. Select the serial number of the LG 3850 that you want to control from the list.

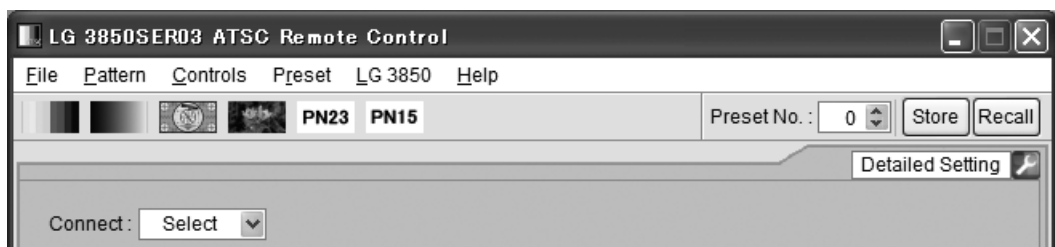


Figure 5-1 Main window

#### Controlling the other LG 3850s

For the other LG 3850s, the Connect list in the Main window will display Select again, and the serial numbers of LG 3850s that are not controlled will be displayed. Select the serial number of the LG 3850 that you want to control from the list.

If all the LG 3850s are being controlled and you start another control application, the following error message appears: "No Connection." If this happens, exit the control application.



You cannot play back MPEG-2 transport streams with the same file name on multiple control applications.

- **During remote control**

During remote control, The LG 3850 7-segment LED displays “PC.” When the LG 3850 is in this state, you cannot perform panel operations.


- **Ending remote control**

Exit the control application on the PC to enable panel operations on the LG 3850.

After the LG 3850 is disconnected from the control application, the LG 3850 uses the settings that are stored in preset address 00.

## 5.2 Window Explanation

The control application window is explained below.

The part containing the elements labeled 1 to 13 is referred to as the Main window. The part containing the elements labeled 15 to 20 is referred to as the Sub window. The Sub window is not displayed when you start the control application. To display the Sub window, click  (No. 14) in the lower right of the screen.

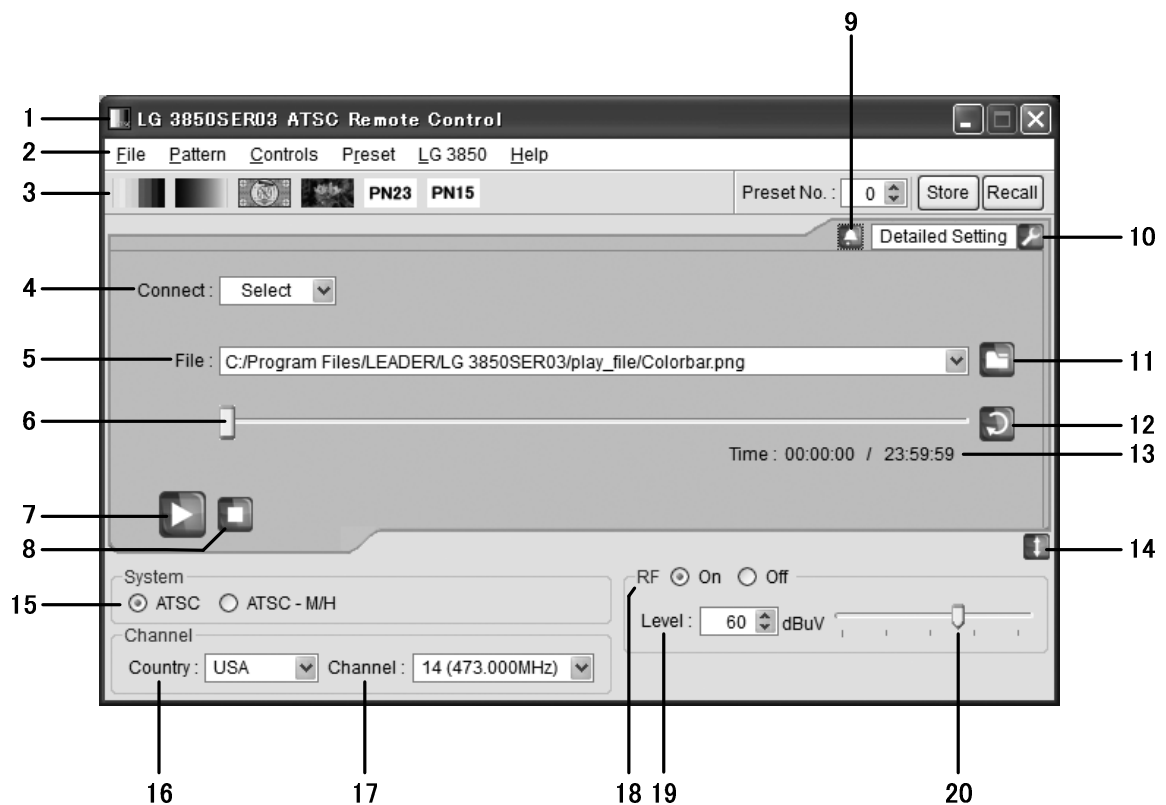


Figure 5-2 Window explanation

**1 Title**

The title of the control application is displayed here. As shown in the above figure, you can see that this is an ATSC application.

**2 Menu bar**

The menus that are used to configure various settings are displayed here.

See section 5.3, "Menu Bar."

Table 5-1 List of menus

Menu	Description
File	Click to select the playback file or to exit the application.
Pattern	Click to select the output pattern.
Controls	Click to select the LG 3850 that you want to control or to configure file playback settings.
Preset	Click to collectively save and load presets.
LG 3850	Click to perform license activation, program transfer, preset-recall range configuration, country and format configuration for standalone operation, and to display information about the controlled LG 3850.
Help	Click to display information about the application.

**3 Toolbar**

Use the controls displayed here to select the output pattern, and store and recall presets.

See section 5.4, "Toolbar."

**4 Connect**

Select the serial number of the LG 3850 that you want to control. If no LG 3850 is selected, "Select" is displayed.

See section 5.5.1, "Connect."

**5 File**

The selected file is displayed here. You can also enter the full path directly.

See section 5.5.2, "File."

**6 Playback slider**

The playback status of the selected file is displayed here. You can skip parts of the file by moving the slider.

See section 5.5.3, "Loop/Slider/Time."

**7 Play button**

Starts the playback of the selected file. During file playback, this button switches to the pause button. You can operate the play button when an MPEG-2 TS file has been selected.

See section 5.5.4, "Play/Pause/Stop."

**8 Stop button**

Stops the playback of the selected file. You can operate the stop button when an MPEG-2 TS file has been selected.

See section 5.5.4, "Play/Pause/Stop."

**9 Alarm button**

This is displayed when any problem, such as an improper USB disconnection, occurs. Click this button to display a message. When you solve the problem, this button disappears.

**10 Detailed Setting**

Click to configure various settings for the selected file. The settings that you can configure differ depending on the selected file.

See section 5.5.5, "Detailed Setting."

**11 File button**

Click to select the playback file. You can also enter the full path in the text box directly or drag the file to the control application window.

See section 5.5.2, "File."

**12 Loop button**

Click to set the loop mode (repeat or only once) for the selected file.

You can operate the loop button when an MPEG-2 TS file has been selected.

See section 5.5.3, "Loop/Slider/Time."

**13 Time**

The selected file's playback time and total playback time are displayed here.

See section 5.5.3, "Loop/Slider/Time."

**14 Sub-window show/hide button**

Shows or hides the sub window.

**15 System**

Set the broadcast system for external TS file playback to ATSC or ATSC-M/H.

See section 5.6.1, "System."

**16 Country**

Select which country's output channel will be set, USA's or Korea's.

See section 5.6.2, "Country."

**17 Channel**

Select the output channel.

See section 5.6.3, "Channel."

**18 RF**

Turn signal output on or off.

See section 5.6.4, "RF."

**19 Level**

Set the output level.

See section 5.6.5, "Level."

**20 Level slider**

Move the slider to set the output level.

See section 5.6.5, "Level."

## 5.3 Menu Bar

### 5.3.1 File

Click the File menu to select the playback file or to exit the application.

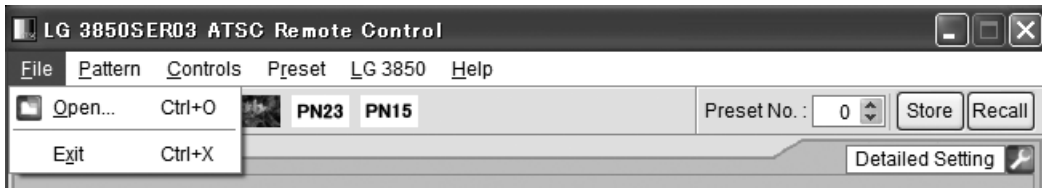


Figure 5-3 File menu

- **Open**

Displays the Open File dialog box. Select the playback file in this dialog box. After you select the file, click Open to start playback.

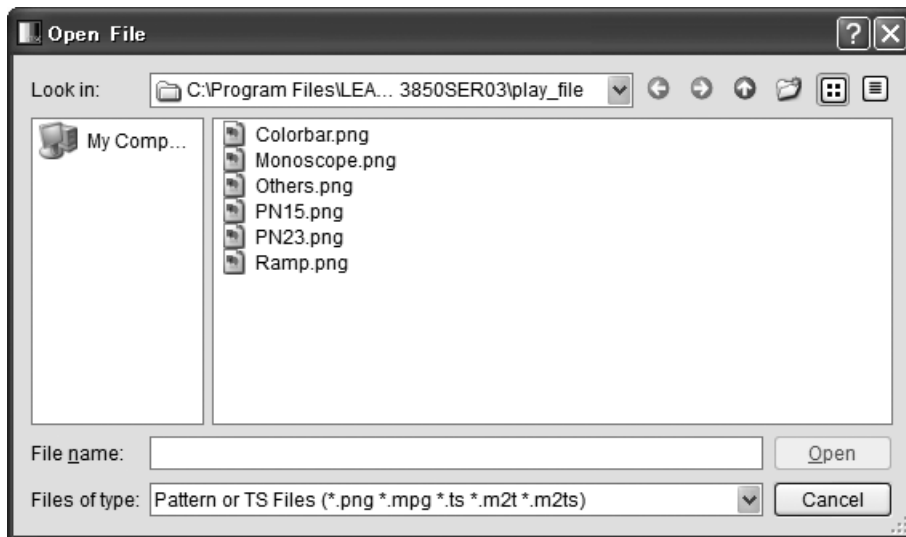


Figure 5-4 Open File dialog box

You can select an MPEG-2 TS file or pattern file in the Open File dialog box. The six available pattern files are shown in the figure above. You cannot play back pattern files that you create.

You can also enter the full path in the File text box on the Main window to select a file. See section 5.5.2, "File."

- **Exit**

Exits the application. You can also exit the application by clicking the Close button in the upper right of the window.

## 5.3.2 Pattern

Click the Pattern menu to select the output pattern. The selected pattern is immediately played back.

You can also select the output pattern from the toolbar.

See section 5.4.1, "Pattern Buttons."

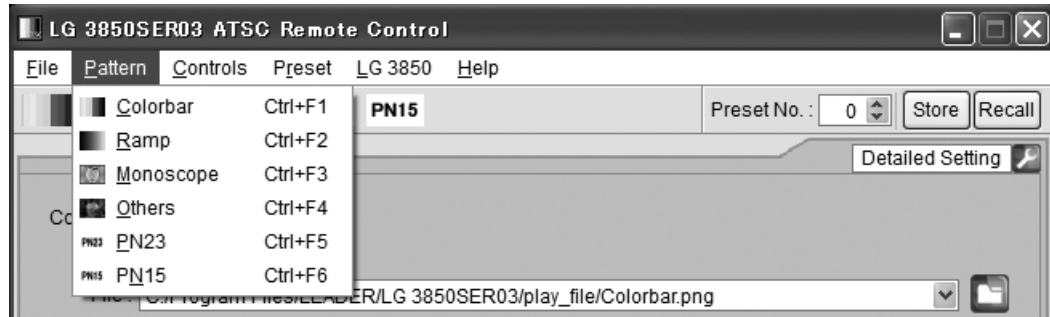


Figure 5-5 Pattern menu

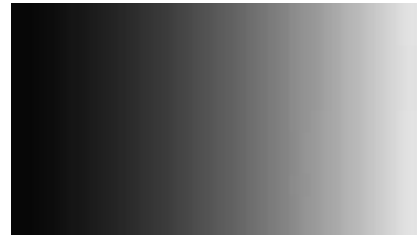
- **Colorbar**

A colorbar (simple animation) signal is played back.



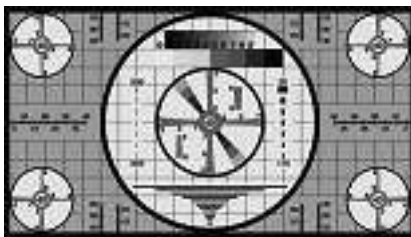
- **Ramp**

A ramp signal is played back.



- **Monoscope**

A monoscope signal is played back.



- **Others**

A natural-picture signal is played back.



- **PN23**

A pseudo random signal (PN23) is played back.

- **PN15**

A pseudo random signal (PN15) is played back.

### 5.3.3 Controls

Click the Controls menu to select the LG 3850 that you want to control or to configure file playback settings.

You can select the file playback commands when an MPEG-2 TS file has been selected.

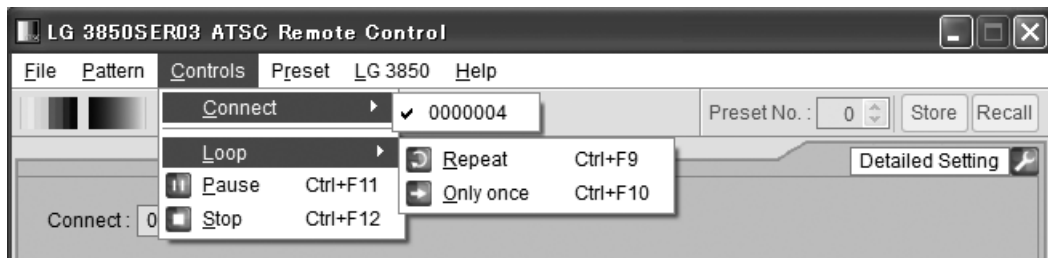


Figure 5-6 Controls menu

- **Connect**

Select the serial number of the LG 3850 that you want to control. A check mark is displayed next to the selected LG 3850.

You can also select the LG 3850 to connect to from the Connect list on the Main window.

See section 5.5.1, "Connect."

- **Loop**

Click to set the loop mode to Repeat or Only once for the selected file. You cannot set the loop mode during file playback. Stop playback, and then set the loop mode.

You can also click the loop button on the Main window to set the loop mode.

See section 5.5.3, "Loop/Slider/Time."

- **Play**

Starts the playback of the selected file. During playback, this command does not appear.

You can also click the play button on the Main window to play back the selected file.

See section 5.5.4, "Play/Pause/Stop."

- **Pause**

Pauses the playback of the selected file. While the playback is paused, this command does not appear.

You can also click the pause button on the Main window to pause the playback of the selected file.

See section 5.5.4, "Play/Pause/Stop."

- **Stop**

Stops the playback of the selected file.

You can also click the stop button on the Main window to stop the playback of the selected file.

See section 5.5.4, "Play/Pause/Stop."

### 5.3.4 Preset

Click the Preset menu to collectively save and load presets.

While an MPEG-2 TS file is being played back, you cannot select these commands.

For an explanation of presets, see the LG 3850 instruction manual.

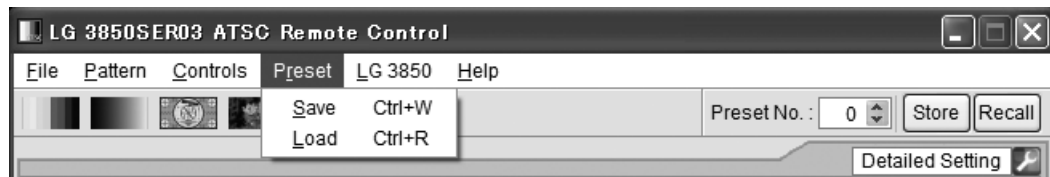


Figure 5-7 Preset menu

- **Save**

You can save presets 01 to 99 together in a single file. Set the filename and save location in the Save File dialog box, and then click Save.

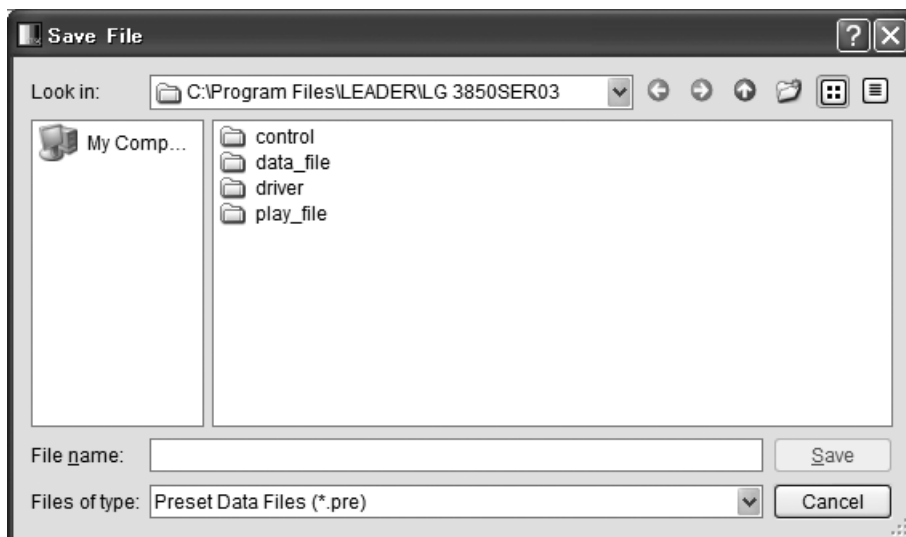


Figure 5-8 Save File dialog box

- **Load**

Click to load a preset data file (presets 01 to 99) that was previously saved through the Save command to the LG 3850 that you are controlling. Select the file in the Open File dialog box, and then click Open.

Note that any existing presets on the LG 3850 that you are controlling will be overwritten.

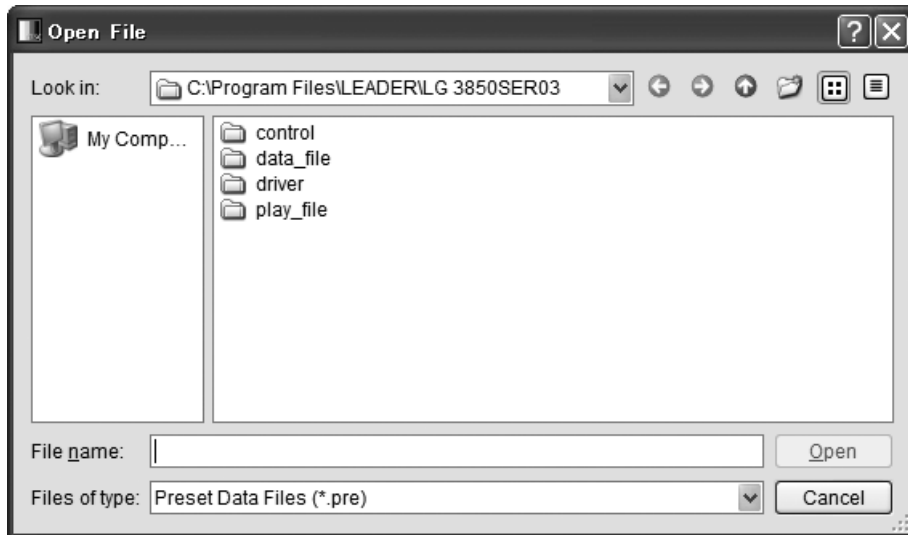


Figure 5-9 Open File dialog box

### 5.3.5 LG 3850

Click to perform license activation, program transfer, preset-recall range configuration, country and format configuration for standalone operation, and to display information about the controlled LG 3850.

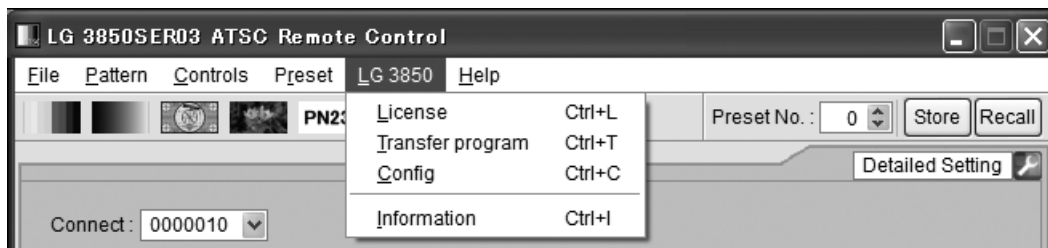


Figure 5-10 LG 3850 menu

- **License**

Click to activate your license key. To use the features of this product, you must first activate the license key. For details, see the LG 3850 instruction manual.

If the license key has already been activated on the LG 3850 that you are controlling, you cannot select this command.

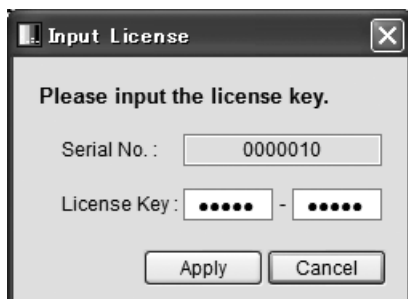


Figure 5-11 Input License dialog box



- **Transfer Program**

Click to transfer the program to the LG 3850 that you are controlling. After the program transfer is complete, you can use the LG 3850 as an ATSC signal generator.

To begin transferring the program, click Execute in the Transfer Program dialog box. If your PC is connected to multiple LG 3850s, be sure that you have selected the LG 3850 that you want to transfer the program to from the Connect list on the Main window before you begin the program transfer.

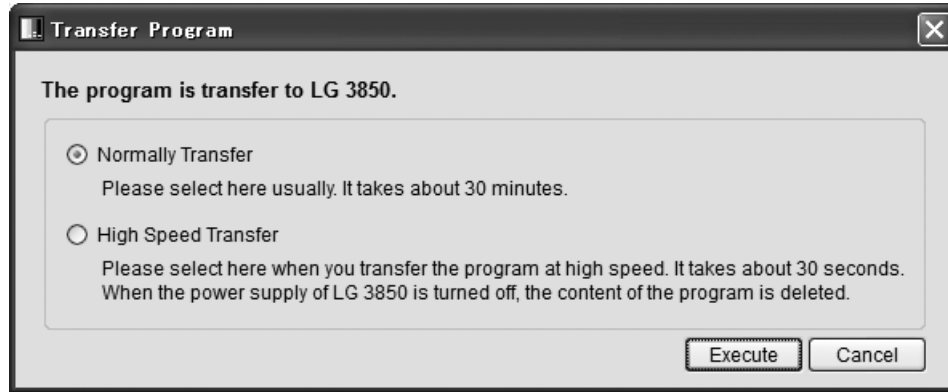


Figure 5-12 Transfer Program dialog box

### Transfer Program

---

Normally Transfer:	<p>The program is transferred normally. After the transfer has completed, the transferred program remains on the LG 3850 even if you turn it off.</p> <p>If the program has already been transferred to the LG 3850 that you are controlling, you cannot select this mode. It takes about 30 minutes to transfer the program.</p>
High Speed Transfer:	<p>The program is transferred at a high speed. After the transfer has completed, leave the control application and the LG 3850 connected to use the program. If the connection is disconnected or the LG 3850 is turned off, the transferred program is deleted from the LG 3850.</p> <p>You can perform the high-speed transfer an unlimited number of times.</p> <p>It takes about 30 seconds to transfer the program.</p>

---

During the program transfer, do not turn the LG 3850 off or disconnect the USB cable. If a disconnection of the USB cable or other problem causes the program transfer to be interrupted, use the initialization application to initialize the LG 3850 to its factory default settings, and then transfer the program to the LG 3850 again.

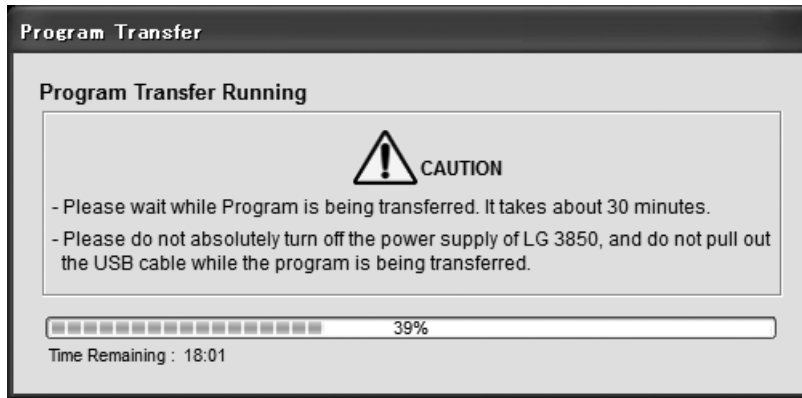


Figure 5-13 Dialog box while the program is being transferred

When you are finished using a program that you transferred to the LG 3850 at a high speed, exit the control application, and then restart the LG 3850.

- **Config**

Click to set the preset recall range, country, and format for when you operate the LG 3850 as a standalone device.

To specify the preset recall range, enter the beginning and ending preset numbers in the Config dialog box, and then click OK. During standalone operation, you can recall the presets whose numbers are within this specified range. The factory default beginning and ending preset numbers are 0 and 99 respectively.

Specify an End No. value that is larger than the specified Begin No. value. If you specify a preset number that is outside of the range, the following error message appears: "Preset Begin/End Input Error." Enter an appropriate number.

The settings made here are invalid when you use the control application to recall presets. You can use the control application to recall all presets (preset numbers 0 to 99).

To specify the country and format, select a value from the Country list and Format list in the Config dialog box, and then click OK. During standalone operation, the signal in the format you selected is generated on a channel of the specified country.

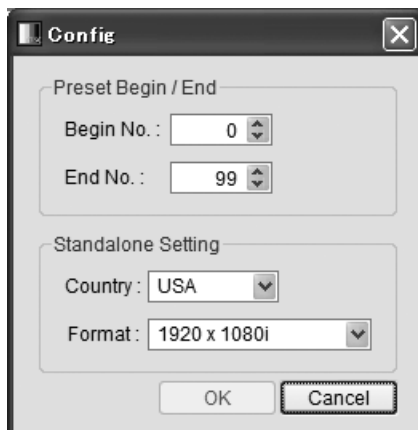


Figure 5-14 Config dialog box

- **Information**

Click to display the information of the LG 3850 that you are controlling.

While an MPEG-2 TS file is being played back, you cannot select this command.

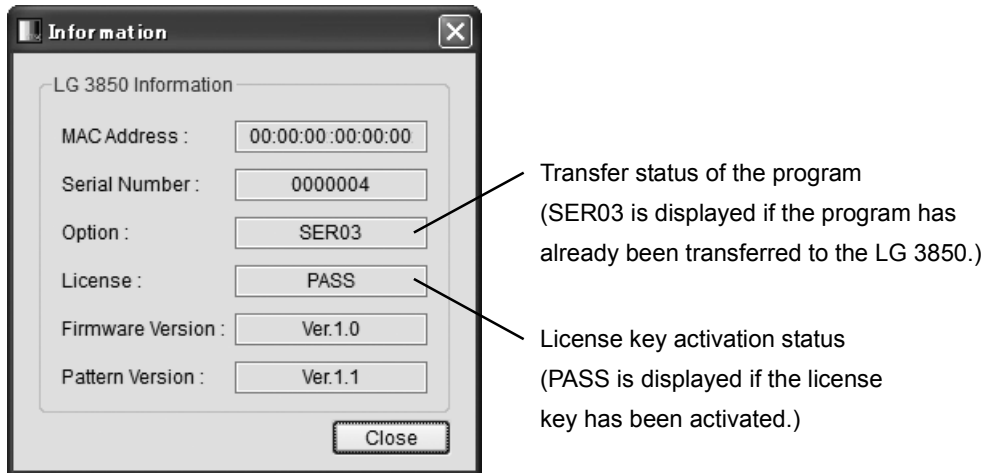


Figure 5-15 Information dialog box

### 5.3.6 Help

Click the Help menu to display the information about the application.

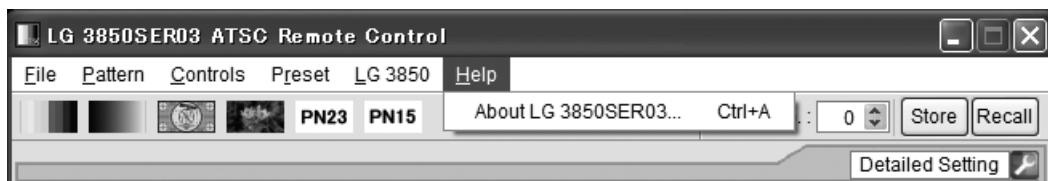


Figure 5-16 Help menu

- **About LG 3850SER03**

Click this to display a dialog box that contains information about the application, such as its version.



Figure 5-17 About LG 3850SER03 dialog box

## 5.4 Toolbar

### 5.4.1 Pattern Buttons

Click the button that corresponds to the output pattern that you want to select. The selected pattern is immediately played back.

You can also select the output pattern from the Pattern menu.

See section 5.3.2, "Pattern."



Figure 5-18 Pattern buttons

### 5.4.2 Preset No./Store/Recall

You can use the preset toolbar to store and recall presets.

The settings that are stored and recalled are the Pattern, Fixed Setting, PN Setting, Parameters, Channel, and Level settings.



Figure 5-19 Preset toolbar

- **Storing presets**

To store a preset, on the toolbar, enter a preset number next to Preset No., and then click Store. When the following confirmation message appears, click Yes to store the preset on the LG 3850.

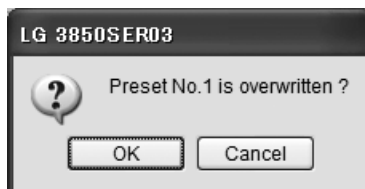


Figure 5-20 Confirmation dialog box

#### Notes

- You cannot store presets when you have selected an MPEG-2 TS file.
- Preset contents that are stored in the manner outlined above are retained even after the LG 3850 is turned off.

- **Recalling presets**

To recall a preset, on the toolbar, enter a preset number next to Preset No., and then click Recall. The preset that has been stored on the LG 3850 is recalled, and the settings of the selected preset are displayed in the control application.

## 5.5 Main Window

### 5.5.1 Connect

Select the serial number of the LG 3850 that you want to control. The serial numbers of the LG 3850s that are connected to the PC are displayed in the list.

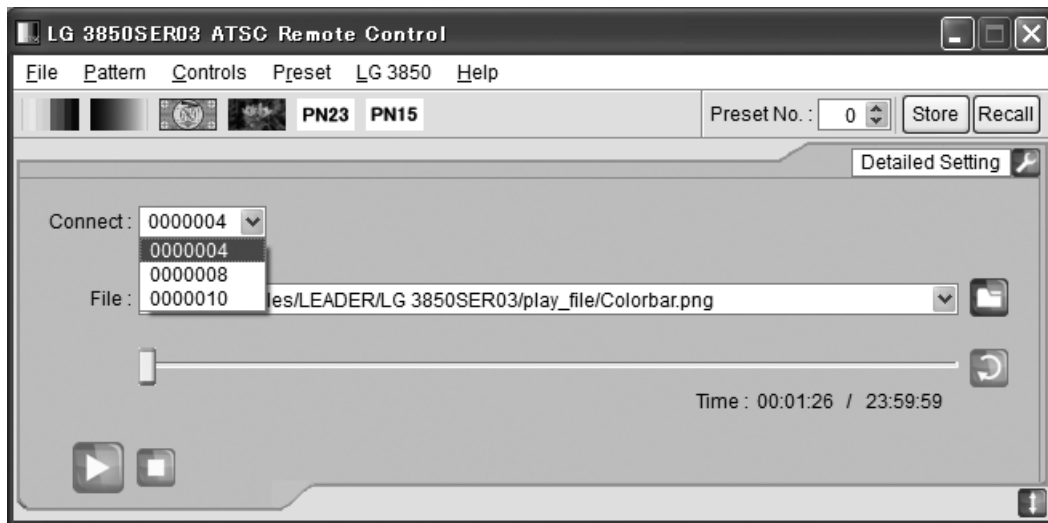


Figure 5-21 Displaying the list of LG 3850s that you can control

### 5.5.2 File

Select the file to play back. Use one of the following three methods to select the file. In addition to the methods listed here, you can also click the File menu to select the file. See section 5.3.1, "File."

- **Click the file button**



Click the file button, and then select the file from the Open File dialog box that appears. The selected file is immediately played back.

You can select an MPEG-2 TS file or pattern file in the Open File dialog box. The six available pattern files are shown below. You cannot play back pattern files that you create.

Colorbar, Ramp, Monoscope, Others, PN23, PN15

- **Enter the full path directly into the text box**

You can directly enter the full path to the file in the text box in the Main window. If the file specified by the full path that you entered can be played back, it is played back immediately.

- **Drag a file to the application**

You can play back a file by dragging it to the control application window. However, you cannot drag files from the Open File dialog box.

### 5.5.3 Loop/Slider/Time

Use these elements to configure file playback settings.

- **Loop**

Click to set the loop mode (repeat or only once) for the selected file.

You cannot set the loop mode during file playback. Stop playback, and then set the loop mode.

You can operate the following loop buttons when an MPEG-2 TS file has been selected.



Repeat



Only once

- **Slider**

The playback status of the selected file is displayed here. You can skip parts of the file by moving the slider.

- **Time**

The selected file's playback time and total playback time are displayed here.

### 5.5.4 Play/Pause/Stop

When an MPEG-2 TS file has been selected, click these buttons to play back the file and pause and stop the playback.

- **Play**

Click the play button to start the playback of the selected file.

During file playback, this button switches to the pause button.



Play button

- **Pause**

Click the pause button to pause the playback of the selected file.

While file playback is paused, this button switches to the play button.



Pause button


- **Stop**

Click the stop button to stop the playback of the selected file.



Stop button

### 5.5.5 Detailed Setting

Click to configure various settings for the selected file. To display the dialog box for the selected settings, click the  button in the upper right of the window. The settings that you can configure differ depending on the selected file.

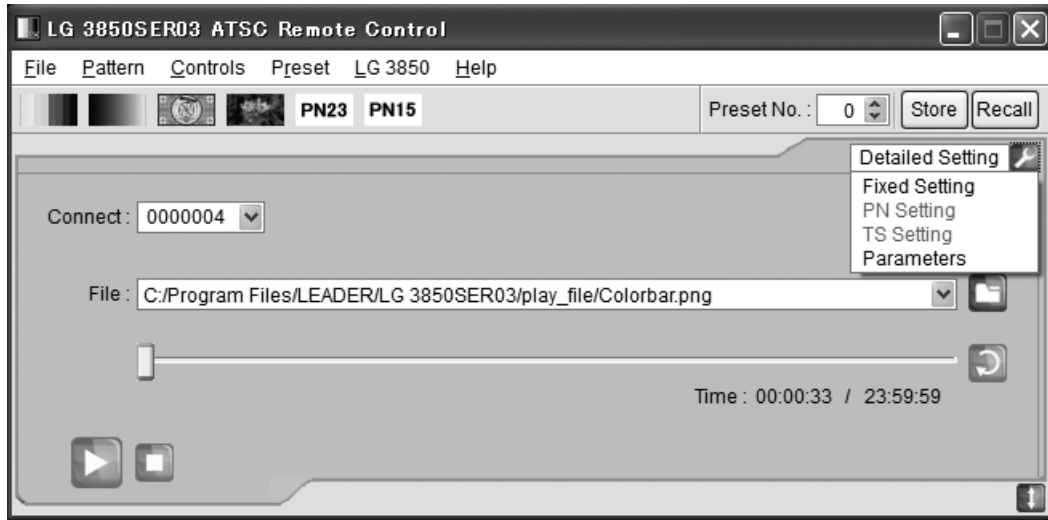


Figure 5-22 Detailed Setting list

- **Fixed Setting**

When an internal still-image pattern (excluding pseudo random signals) has been selected, use this dialog box to select the still-image pattern's format and frame rate and the output audio. Click Apply to apply the settings.

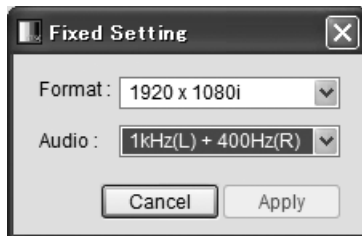


Figure 5-23 Fixed Setting dialog box

#### Format

1920×1080i:	A 1920×1080i still-image pattern is generated.
1280×720p:	A 1280×720p still-image pattern is generated.
704×480i (16:9):	A 704×480i (16:9) still-image pattern is generated.
704×480i (4:3):	A 704×480i (4:3) still-image pattern is generated.
704×480p(16:9):	A 704×480p (16:9) still-image pattern is generated.

#### Audio

1kHz(L)+400Hz(R):	A tone signal (left: 1 kHz and right: 400 Hz) is generated.
1kHz(L,R):	A tone signal (left and right both 1 kHz) is generated.
400Hz(L,R):	A tone signal (left and right both 400 Hz) is generated.

- **PN Setting**

When an internal pseudo random signal has been selected, use this dialog box to select its polarity and its packet type.

Click Apply to apply the settings.

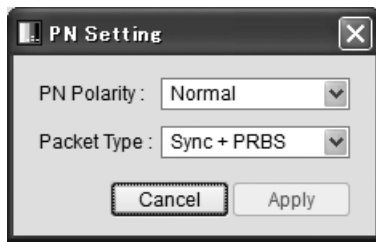


Figure 5-24 PN Setting dialog box

#### PN Polarity

Normal: A polarity that enables error measurement on generic BER measuring instruments is used.

Inverted: The inverse of the Normal polarity is used.

#### Packet Type

Sync + PRBS: Sync (47hex) + 187-byte PN

Header + PRBS: Sync (47 hex) + 1FFF (hex) + 10 (hex) + 184-byte PN

- **TS Setting**

When an MPEG-2 TS file has been selected, use this dialog box to set its bit rate and its playback range.

Click Apply to apply the settings.

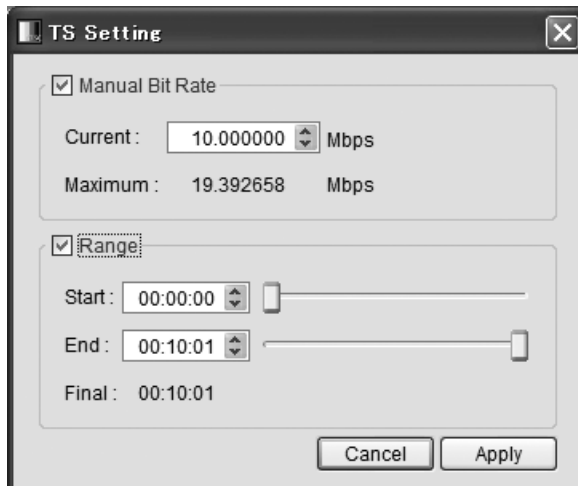


Figure 5-25 TS Setting dialog box



**Manual Bit Rate**


---

On:	<p>The TS file is played back at the bit rate specified by Current. Enter the value of Current in the Current box. You can specify a value from 0.2 to 40 Mbps.</p> <p>Current indicates the playback bit rate of the currently selected TS file.</p> <p>Maximum displays the maximum bit rate for the currently selected modulation method.</p>
Off:	<p>The bit rate is calculated from the TS file and it is played back at this bit rate.</p> <p>If the bit rate cannot be calculated from the TS file, the TS file is played back at the maximum bit rate. In this situation, Current displays the maximum value in yellow.</p>

---

**Range (\*1)**


---

On:	<p>Select this check box to specify the playback range.</p> <p>Enter the start and end times in the Start and End boxes respectively. You can also use the sliders to change these values.</p> <p>If you set the range, and then select a different TS, the Range check box will be cleared.</p>
Off:	<p>Clear this check box to play the TS file from its start to end.</p>

---

\*1 Note the following regarding the TS playback range.

- The displayed time is calculated from the detected bit rate and the file size. Depending on the data, there may be a small degree of error in this calculation.
- The minimum time unit that you can use to specify the time is 1 second. The time setting is automatically calculated for packets.
- If an incomplete data byte exists at the start or end of the data, the LG 3850 ignores this data fraction and plays data back in units of packets.
- The number of packets that are played back is an integer multiple of the number of frame packets.
- When you specify a playback range, if the specified number of packets is not a multiple of the number of frame packets, the LG 3850 automatically rounds down the number of packets to play back to a number of packets that is a multiple of the number of frame packets.
- To play back a TS, set the TS playback range so that 16 MB or more of the TS are played back.

The following equation can be used to make a rough calculation of the playback time.

$$t = 16 \times 8 / n \text{ (t: minimum playback time in seconds, n: TS file bit rate in Mbps)}$$

- **Parameters**

This dialog box displays the broadcast parameter (the carrier modulation). It is fixed to 8VSB.

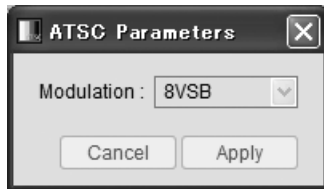


Figure 5-26 ATSC Parameters dialog box

## 5.6 Sub Window

To display the Sub window, click  in the lower right of the screen.

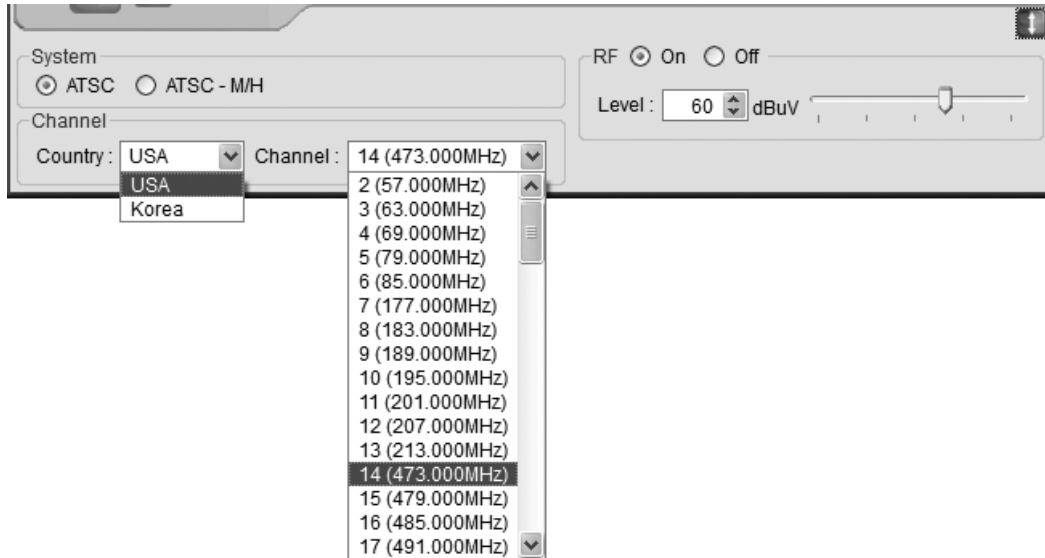


Figure 5-27 Sub window

### 5.6.1 System

Set the broadcast system for external TS file playback to ATSC or ATSC-M/H. Select a broadcast system that matches the external TS file that you want to play back. (The software does not convert the broadcast system of the TS file that you play back.)

This setting is only valid when you play back an external TS file. When you have selected a different type of file (still-image pattern or pseudo random signal), the broadcast system is set to ATSC, regardless of the value that you specify here.

ATSC:	A digital terrestrial television broadcasting (ATSC) MPEG-2 TS is played back. This is the default setting.
ATSC-M/H:	A file that contains a digital terrestrial television broadcasting (ATSC) MPEG-2 transport stream in which mobile broadcasting (ATSC-M/H) IP data is multiplexed is played back.

### 5.6.2 Country

Select which country's output channel will be set, USA's or Korea's.

5.6.3 Channel

Select the output channel. For the channels that you can select, see section 7.1, “Channel Table.”

5.6.4 RF

Turn signal output on or off.

5.6.5 Level

Set the level of the output signal.

Enter the value in the text box, or use the slider to set the frequency.

## 6. INITIALIZATION APPLICATION

This chapter will explain the initialization application, LG 3850 Initialize Tool, which is used to initialize the LG 3850 to its factory default settings (with no installed options) from a PC.

To use the LG 3850 Initialize Tool, you must first install the Initialization Application, LG3850InitializeToolInstallerPackage, on your PC from the CD-ROM.

See chapter 3, "INSTALLATION."

Use the initialization application in the following situations:

- If the program transfer is interrupted due to a reason such as the USB cable being pulled out while the program is being transferred to the LG 3850.
- If the control application does not operate correctly when the LG 3850 and the PC are connected.

- **Start the initialization application**

Use a USB cable to connect the PC and LG 3850, and then follow the procedure below to start the initialization application.

On the taskbar, click Start, All Programs, LEADER, LG 3850 Tools, and then LG 3850 Initialize Tool.

If a message asking you to install a USB driver is displayed when you start the initialization application, install the USB driver.

See chapter 3, "INSTALLATION."

- \* You cannot use the initialization application to initialize multiple LG 3850s simultaneously. Be sure to connect only one LG 3850 to your PC.

- **Check the device**

When the initialization application starts, it automatically detects the connected device and displays the serial number of the device on the Initialization window.

Check that the connected device is the LG 3850 that you want to initialize.

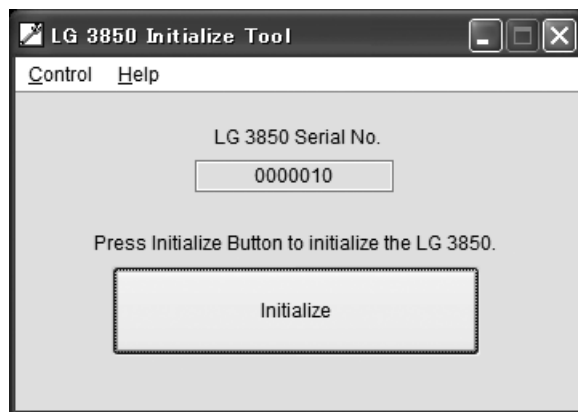


Figure 6-1 Initialization window

- **Start the initialization**

Click Initialize in the Initialization window. The initialization confirmation dialog box appears. Click OK.

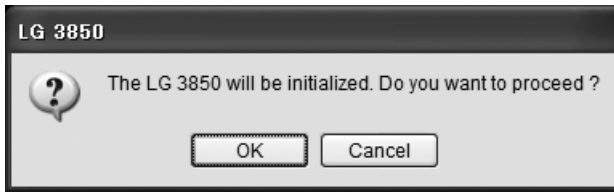


Figure 6-2 Initialization confirmation dialog box

- **During initialization**

When you click OK in the initialization confirmation dialog box, the initialization begins.

During the initialization, the LG 3850's 7-segment LED displays '8.8'. When the LG 3850 is in this state, you cannot perform panel operations.

During the initialization, do not turn the LG 3850 off or disconnect the USB cable.

The initialization takes approximately 15 minutes.

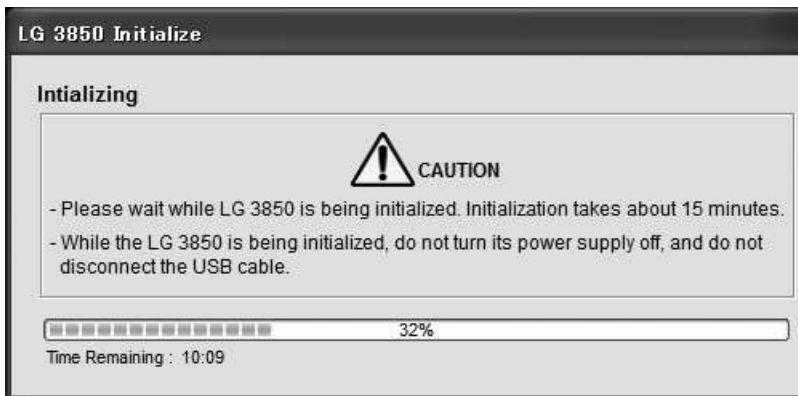


Figure 6-3 During initialization

- **When initialization is complete**

When the initialization is complete, the initialization complete dialog box appears. Click OK to exit the initialization application.

After the initialization has been completed, be sure to restart the LG 3850.

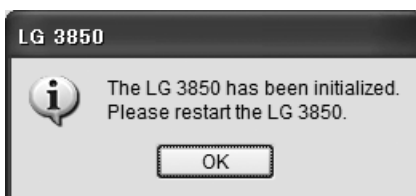


Figure 6-4 Initialization complete dialog box

After an LG 3850 is initialized to its factory default settings, the encoding software will no longer be installed, so the LG 3850 will not function as a signal generator.

Use the control application to transfer the program to the LG 3850.

See • Transfer Program in section 5.3.5, "LG 3850."

## 7. APPENDIX

### 7.1 Channel Table

The channel table for the USA and Korea is shown below.

Table 7-1 Channel table

USA						Korea			
CH	Frequency	CH	Frequency	CH	Frequency	CH	Frequency	CH	Frequency
2	57.000	33	587.000	64	773.000	2	50.000	41	633.000
3	63.000	34	593.000	65	779.000	3	57.000	42	641.000
4	69.000	35	599.000	66	785.000	4	64.000	43	649.000
5	79.000	36	605.000	67	791.000	5	177.000	44	657.000
6	85.000	37	611.000	68	797.000	6	184.000	45	665.000
7	177.000	38	617.000	69	803.000	7	191.000	46	673.000
8	183.000	39	623.000	70	809.000	8	198.000	47	681.000
9	189.000	40	629.000	71	815.000	9	205.000	48	689.000
10	195.000	41	635.000	72	821.000	10	212.000	49	697.000
11	201.000	42	641.000	73	827.000	11	219.000	50	705.000
12	207.000	43	647.000	74	833.000	12	226.000	51	713.000
13	213.000	44	653.000	75	839.000	21	473.000	52	721.000
14	473.000	45	659.000	76	845.000	22	481.000	53	729.000
15	479.000	46	665.000	77	851.000	23	489.000	54	737.000
16	485.000	47	671.000	78	857.000	24	497.000	55	745.000
17	491.000	48	677.000	79	863.000	25	505.000	56	753.000
18	497.000	49	683.000	80	869.000	26	513.000	57	761.000
19	503.000	50	689.000	81	875.000	27	521.000	58	769.000
20	509.000	51	695.000	82	881.000	28	529.000	59	777.000
21	515.000	52	701.000	83	887.000	29	537.000	60	785.000
22	521.000	53	707.000			30	545.000	61	793.000
23	527.000	54	713.000			31	553.000	62	801.000
24	533.000	55	719.000			32	561.000	63	809.000
25	539.000	56	725.000			33	569.000	64	817.000
26	545.000	57	731.000			34	577.000	65	825.000
27	551.000	58	737.000			35	585.000	66	833.000
28	557.000	59	743.000			36	593.000	67	841.000
29	563.000	60	749.000			37	601.000	68	849.000
30	569.000	61	755.000			38	609.000	69	857.000
31	575.000	62	761.000			39	617.000	70	865.000
32	581.000	63	767.000			40	625.000		

## 7.2 Software Revision History

This manual was written for software version 1.1.

To check the software version number, click About LG 3850SER03 on the control application's Help menu.

- **Ver 1.1**

- Support has been added for playing back files that contain digital terrestrial television broadcasting (ATSC) MPEG-2 transport streams in which mobile broadcasting (ATSC-M/H) IP data is multiplexed.

# 所含有毒有害物质信息

部件号码: LG 3850SER03



此标志适用于在中国销售的电子信息产品, 依据2006年2月28日公布的《电子信息产品污染控制管理办法》以及SJ/T11364-2006《电子信息产品污染控制标识要求》，表示该产品在使用完结后可再利用。数字表示的是环境保护使用期限，只要遵守与本产品有关的安全和使用上的注意事项，从制造日算起在数字所表示的年限内，产品不会产生环境污染和对人体、财产的影响。产品适当使用后报废的方法请遵从电子信息产品的回收、再利用相关法令。详细请咨询各级政府主管部门。

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素      Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
本体部	×	○	○	○	○	○
<b>备注)</b> ○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 规定的限量要求以下。 ×：表示该有毒有害物质或元素至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。						



**LEADER**

**LEADER ELECTRONICS CORP.**

2-6-33 Tsunashima-Higashi, Kohoku-ku, Yokohama 223-8505, Japan

PHONE:81-45-541-2123 FAX:81-45-541-2823 <http://www.leader.co.jp>