

LG 3850SER04

DVB-T 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

Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.

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 a DVB-T signal generator.

2.2 Features

- **USB 2.0**

Connect the LG 3850 to a PC through USB to transfer broadcast systems, play back MPEG-2 transport streams, and configure transmission parameters.

- **Still Images**

Output four different still-image patterns seamlessly.

- **Audio Signals**

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

2.3 Specifications

2.3.1 Channel Coding Section

Broadcasting System	Digital terrestrial television broadcasting DVB-T (DVB EN300744) (*1)
Transmission Parameters	
FFT Mode	2K, 8K
Guard Interval	1/4, 1/8, 1/16, 1/32
Carrier Modulation	QPSK, 16QAM, 64QAM
Bandwidth	6 MHz, 7 MHz, 8 MHz
Coding Rate	1/2, 2/3, 3/4, 5/6, 7/8

*1 Hierarchy information is not included.

2.3.2 External TS Input Specifications

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

* 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.

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

2. SPECIFICATIONS

2.3.3 RF Signal Generator

Output Level	10 to 99 dB μ V (75 Ω termination; in 1 dB steps)(*1)
Output Channel	Channels 2 to 69 for Germany, channels 6 to 69 for Australia, channels 21 to 68 for the UK, channels 2 to 83 for Taiwan(*2)

- *1 This is the operating range. The optimal range is 39 to 99 dB μ V (75 Ω termination). If signals in the range of 10 to 38 dB μ V (75 Ω termination) will be generated, we recommend that an external attenuator be connected to the LG 3850.
- *2 When the LG 3850 is being used as a standalone device, it generates signals on the channels of the one country that has been selected through the control application. When the LG 3850 is connected to a PC, the LG 3850 generates signals on all channels.

2.3.4 Internal Signal

Pseudo Random Signal	PN23, PN15 (*1)
Still-Image Pattern	Colorbar (simple animation), ramp, monoscope, natural picture
Format	1920×1080i (HDTV), 720×576i (SDTV), 720×480i (SDTV)(*2)
Frame Rate	25 fps, 30 fps(*2)
Audio (Tone)	1kHz (LR), 400 Hz (LR), 1 kHz (L) + 400 Hz (R)

- * The still-image patterns and formats may be changed.
- *1 This can be generated when the LG 3850 is connected to a PC. (It can also be transmitted when the LG 3850 is being used as a standalone device if the settings have been stored as a preset through the use of the control application.)
- *2 When the LG 3850 is being used as a standalone device, it generates signals in the format and at the frame rate that have been selected through the control application. When the LG 3850 is connected to a PC, the LG 3850 generates signals in all formats and at all frame rates.

2.3.5 PC Operating Environment

OS	Microsoft Windows XP SP3, Vista, Windows 7
CPU	Intel (R) Core™ 2 Duo, 1.6 GHz or more
Memory	1 GB or more
HDD	1 GB or more of free space
USB Port	1 USB 2.0 port

2.3.6 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 DVB-T signal generator.
RF Signal Generator	
Output Level	10 to 99 dB μ V (75 Ω termination; in 1 dB steps)
Output Channel	The channels for one of the following countries that is selected through the control application Channels 2 to 69 for Germany, channels 6 to 69 for Australia, channels 21 to 68 for the UK, channels 2 to 83 for Taiwan

2. SPECIFICATIONS

Internal Signal	
Pseudo Random Signal	PN23, PN15 (*1)
Still-Image Pattern	Colorbar (simple animation), ramp, monoscope, natural picture
Format	One of the following formats that is selected through the control application 1920×1080i (HDTV), 720×576i (SDTV), 720×480i (SDTV)
Frame Rate	One of the following frame rates that is selected through the control application 25 fps, 30 fps
Audio (Tone)	1 kHz (LR), 400 Hz (LR), 1 kHz (L) + 400 Hz (R)
Presets	
Recall/Store	Stores and recalls presets(*2)
Alarm Display	Shown on the 7-segment display

*1 Can be transmitted by saving a preset through the use of the control application, and then loading the preset while using the LG 3850 as a standalone device.

*2 If a preset recall range has been set through the use of the control application, presets from within that range are recalled.

2.3.7 Control Application

Function	Controls the LG 3850 from a PC over a USB connection
Broadcasting System	DVB-T
Country Setting	One of the following countries whose output channels will be used when the LG 3850 is operating as a standalone device Germany, Australia, UK, Taiwan
High-Speed Transfer	High-speed transfer of broadcast systems
RF Signal Generator	
Output Level	10 to 99 dBμV (75 Ω termination; in 1 dB steps)
Output Channel	Channels 2 to 69 for Germany, channels 6 to 69 for Australia, channels 21 to 68 for the UK, channels 2 to 83 for Taiwan
Internal Signal	
Pseudo Random Signal	PN23, PN15
Still-Image Pattern	Colorbar (simple animation), ramp, monoscope, natural picture
Format	1920×1080i (HDTV), 720×576i (SDTV), 720×480i (SDTV)
Frame Rate	25 fps, 30 fps
Audio (Tone)	1 kHz (LR), 400 Hz (LR), 1 kHz (L) + 400 Hz (R)
MPEG-2 TS Operations	Select, playback, stop, etc.

2. SPECIFICATIONS

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.

2.3.8 Licenses

License Activation	When the program is transferred to the LG 3850
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* The license key for this software can only be used on one LG 3850.

2.3.9 General Specifications

Environmental Conditions	Same as the LG 3850
Contents	License key (A4 sheet)1
	CD-ROM1
	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

Install the encoding software on your PC from the CD-ROM.

To update the encoding software, uninstall the old version, and then install the new version.

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**.

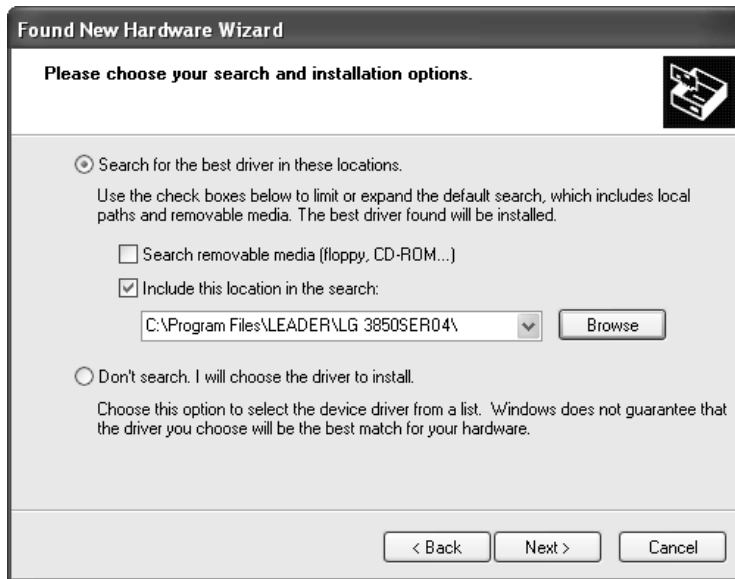


Figure 3-2 Driver search window

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

On 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.

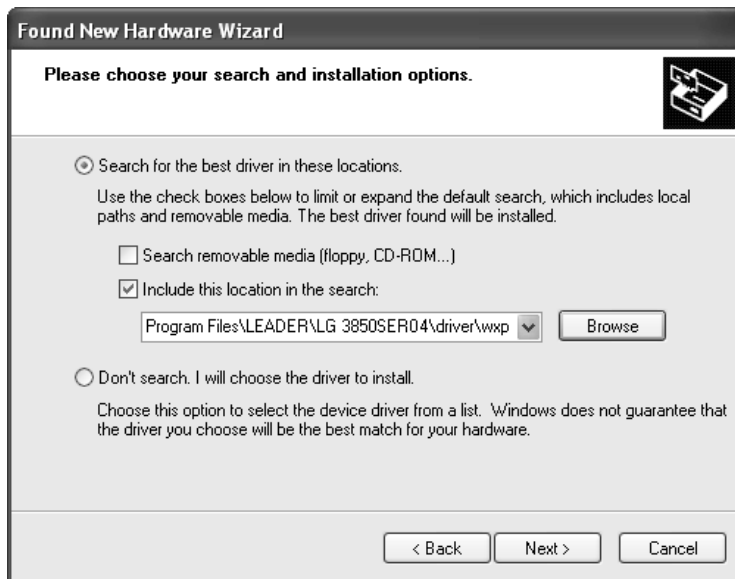


Figure 3-4 Driver folder confirmation window

- 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.**



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 section 5.3.5, "LG 3850."

After the program transfer is complete, you can use the LG 3850 as a standalone DVB-T 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 3850SER04 DVB-T 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 DVB-T 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.

The still-image pattern transmission parameters vary, as shown below, depending on the country and format that you have specified with the control application. If you load a preset that was saved through the control application, these settings take on the values that were in use when the preset was saved.

See section 5.3.5, "LG 3850."

Table 4-1 Format and transmission parameters for each country

Country	Format	Frame	Band Width	FFT Mode	Guard Interval	Modulation	Code Rate
Germany	720×576i	25fps	8 MHz	8 K	1/4	16QAM	2/3
Australia	or		7 MHz	8 K	1/16	64QAM	3/4
UK	1920×1080i		8 MHz	2 K	1/32	16QAM	3/4
Taiwan	720×480i	30fps	6 MHz	8 K	1/4	16QAM	2/3

4.1.2 AUDIO

Each time that you press the front-panel AUDIO key, the output audio switches between the settings listed below.

The audio-display 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 through the control application.

Channels 2 to 69 for Germany, channels 6 to 69 for Australia, channels 21 to 68 for the UK, channels 2 to 83 for Taiwan

When the LG 3850 is connected to a PC, you can select the channels from all four countries.

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

See sections 5.3.5, “LG 3850” and 7.1, “Channel Table.”

Table 4-2 Country codes

Country	Country Code
Germany	DE
Australia	AU
UK	GB
Taiwan	TW

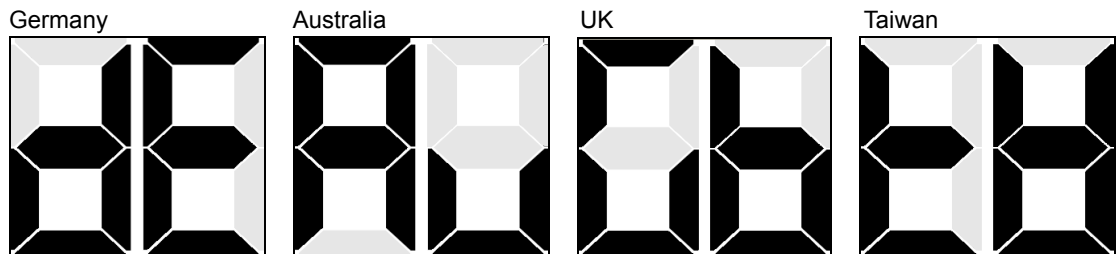


Figure 4-1 7-segment LED display

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 99 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 load 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 settings vary depending on the country that you have specified on the LG 3850.

Table 4-3 Default settings per country

Country	Format (*1)	Frame	Band Width	FFT Mode	Guard Interval	Modulation	Code Rate	Channel
Germany	720×576i or 1920×1080i	25fps	8 MHz	8 K	1/4	16QAM	2/3	21
Australia			7 MHz	8 K	1/16	64QAM	3/4	27
UK			8 MHz	2 K	1/32	16QAM	3/4	21
Taiwan	720×480i	30fps	6 MHz	8 K	1/4	16QAM	2/3	14

*1 The format is set to what is currently set on 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 4-4 Settings of preset address 00

Item	Factory Default
PATTERN	COLOR BAR
AUDIO	L:1kHz R:400Hz
CHANNEL	21 (Germany)
LEVEL	60 dBμV (75 Ω 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 3850SER04 DVB-T 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 DVB-T 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 3850SER04, and then LG 3850SER04 DVB-T 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.

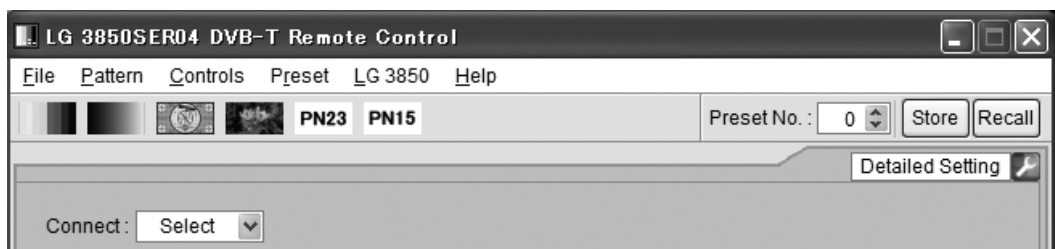


Figure 5-1 Main window

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 19 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.

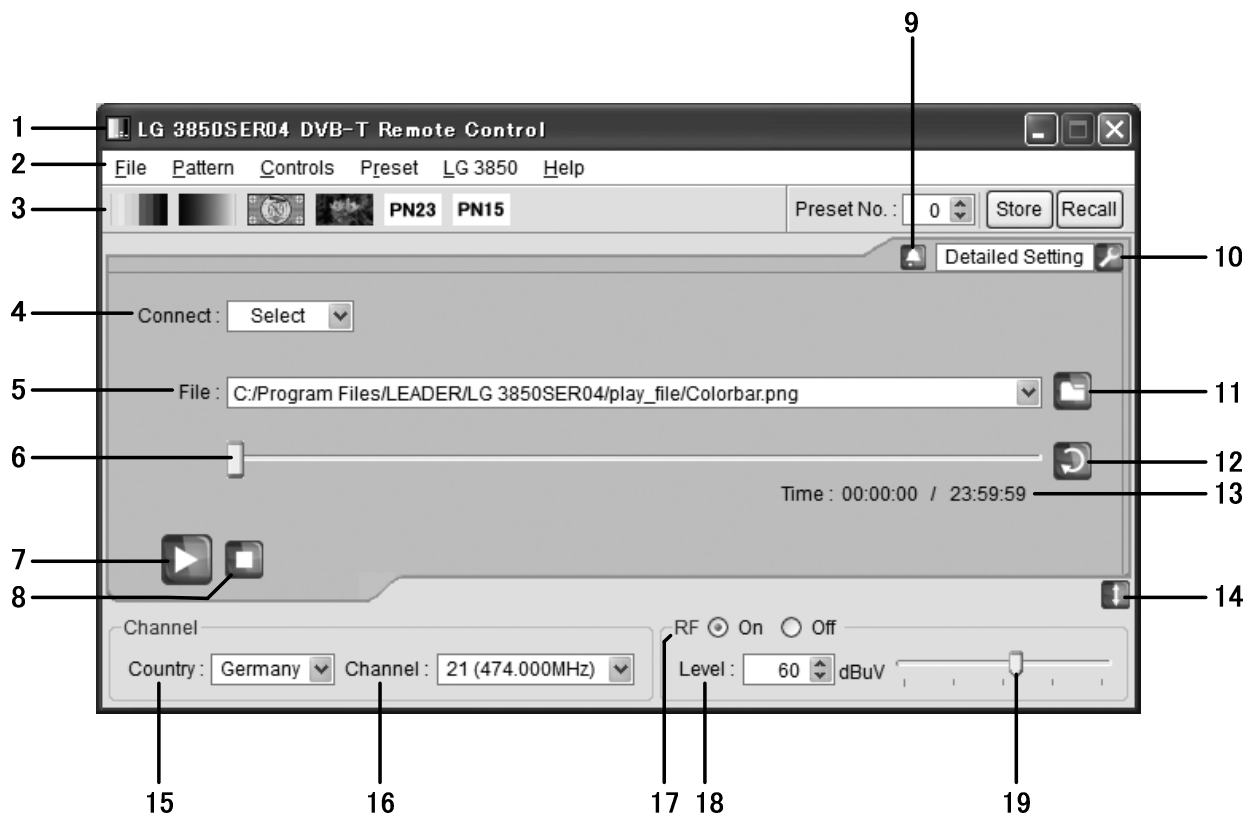


Figure 5-2 Window explanation

1 Title

The title of the control application is displayed here. As shown in the above figure, you can see that this is a DVB-T 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 store and write 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

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 Country

Select which country's output channel will be set, Germany's, Australia's, the UK's, or Taiwan's.

See section 5.6.1, "Country."

16 Channel

Select the output channel.

See section 5.6.2, "Channel."

17 RF

Turn signal output on or off.

See section 5.6.3, "RF."

18 Level

Set the output level.

See section 5.6.4, "Level."

19 Level slider

Move the slider to set the output level.

See section 5.6.4, "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. The selected file is immediately played back.

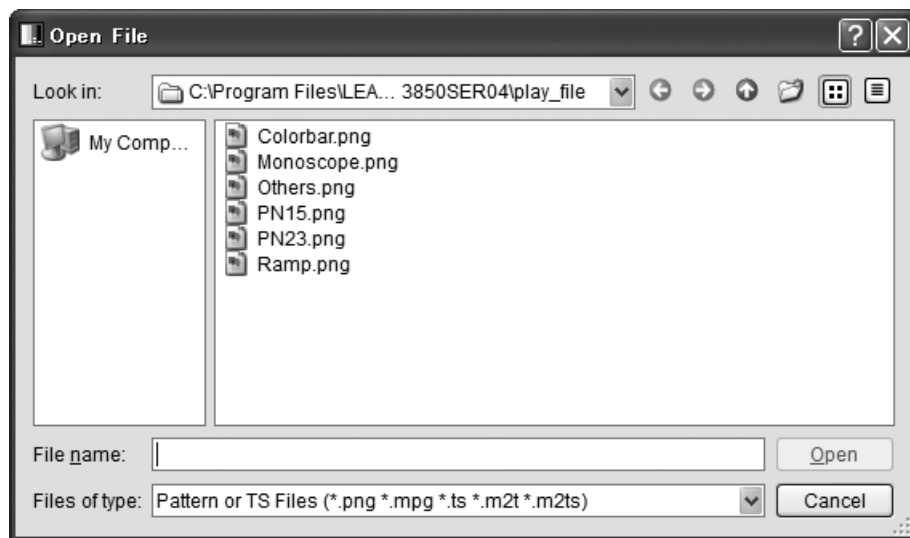


Figure 5-4 Open File dialog box

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."

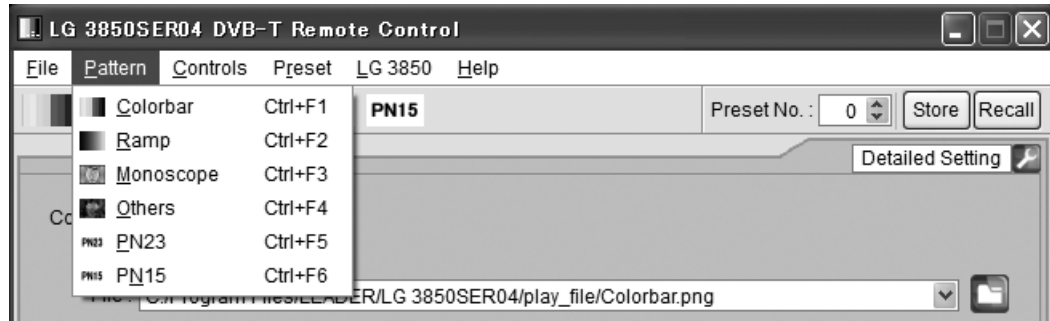


Figure 5-5 Pattern menu

- **Colorbar**

A colorbar (simple animation) signal is played back.



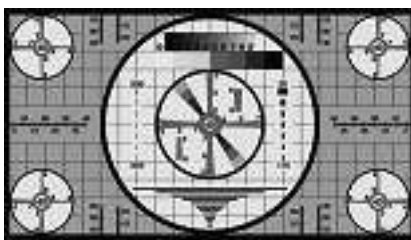
- **Ramp**

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.

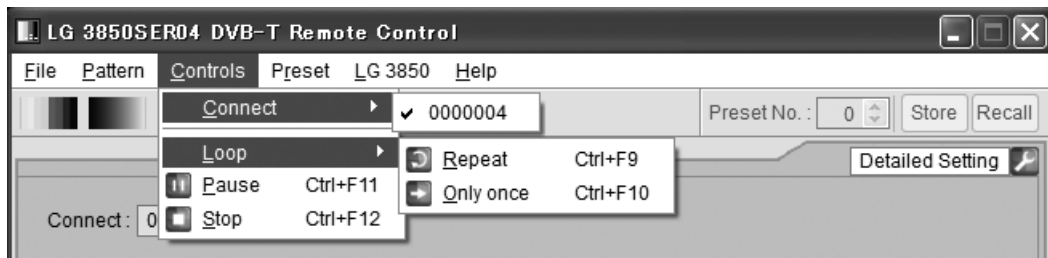


Figure 5-6 Controls menu

- **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 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 store and write 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.

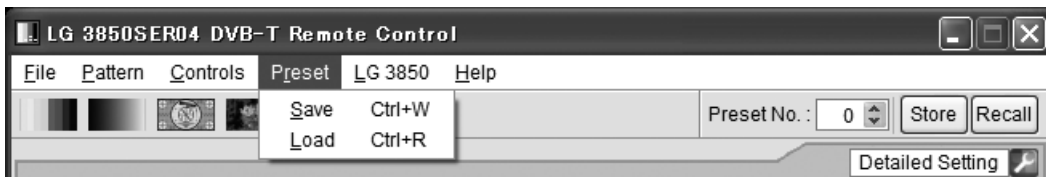


Figure 5-7 Preset menu

- **Save**

You can store 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.

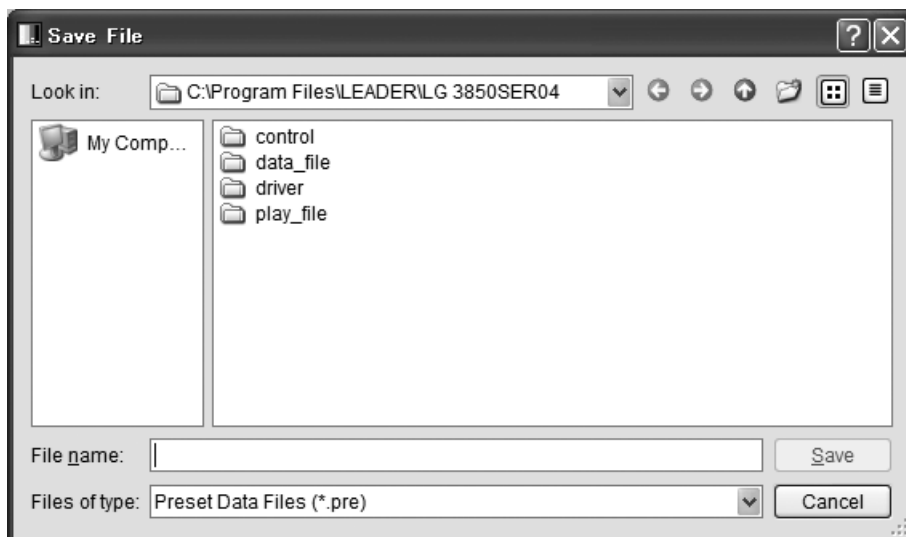


Figure 5-8 Save File dialog box

- **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 on 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.

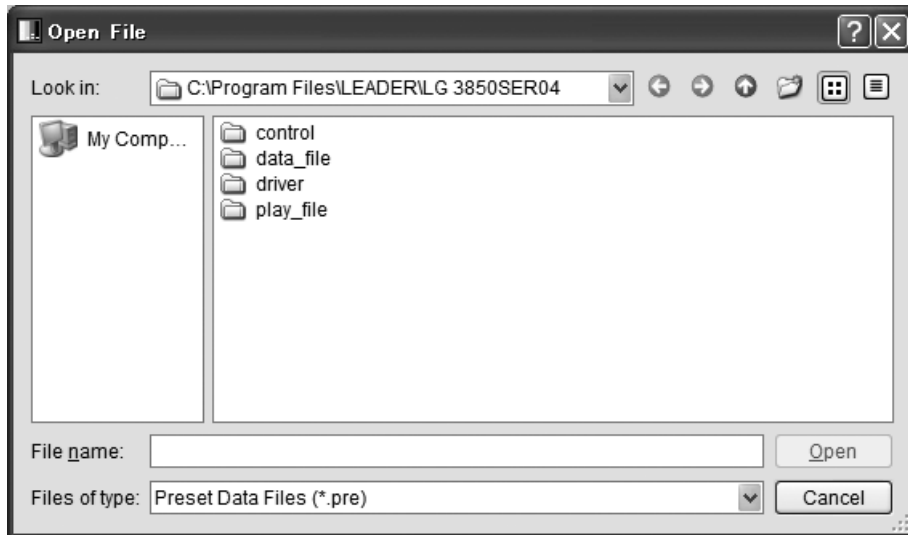


Figure 5-9 Open File dialog box

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.

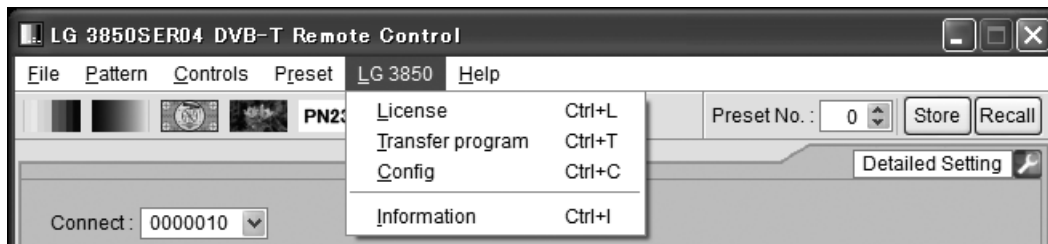


Figure 5-10 LG 3850 menu

- **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 a DVB-T signal generator.

To begin transferring the program, click Execute on 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.

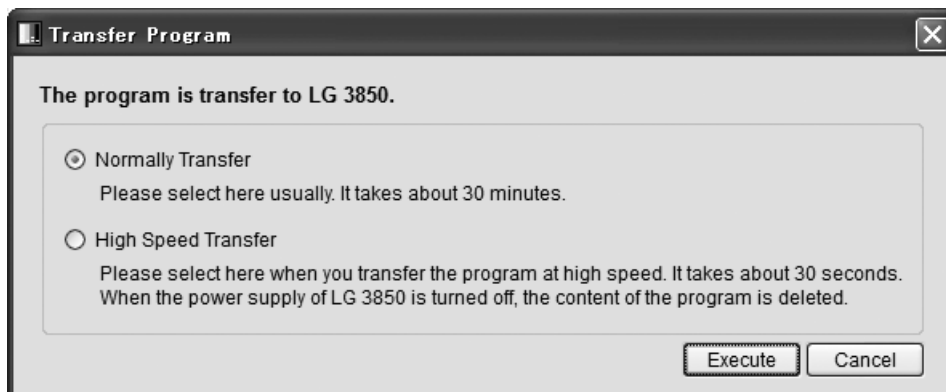


Figure 5-12 Transfer Program dialog box

The program transfer modes are explained below.

Normally Transfer:	<p>The program is transferred normally.</p> <p>After the transfer has completed, the transferred program remains on the LG 3850 even if you turn it off. 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.</p> <p>After the transfer has completed, leave the LG 3850 and the PC connected to use the program. The program is deleted from the LG 3850 when the PC and the LG 3850 are disconnected or when the LG 3850 is turned off. It takes about 30 seconds to transfer the program.</p> <p>You can perform the high-speed transfer an unlimited number of times. If you transfer the program in this mode, you cannot play back MPEG-2 transport streams.</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.

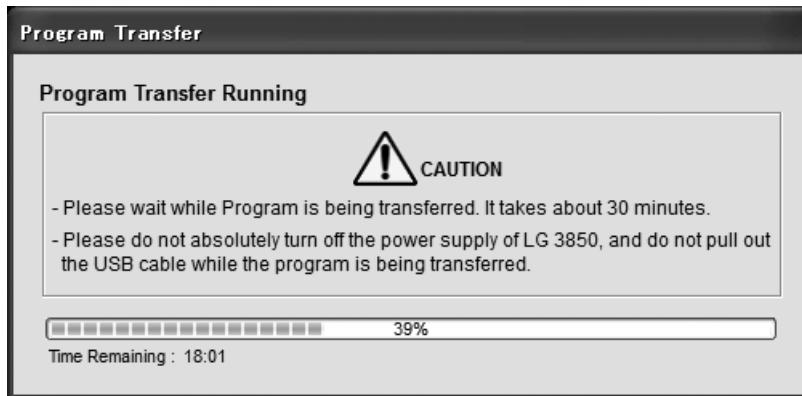


Figure 5-13 Dialog box while the program is being transferred

To exit a program that you have transferred to the LG 3850 through the high-speed transfer feature, exit the control application. After you have exited the control application, 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. After you configure the settings in the Config dialog box, click OK.

Preset recall range

Set the preset recall range that will be used when the LG 3850 is operating as a standalone device. 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).

Country and format

Select the country and format that will be used in standalone operation. For information on the country and format combinations that are available, see Table 4-1.

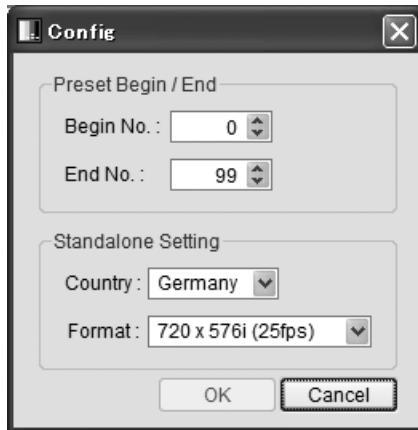


Figure 5-14 Config dialog box

- 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.

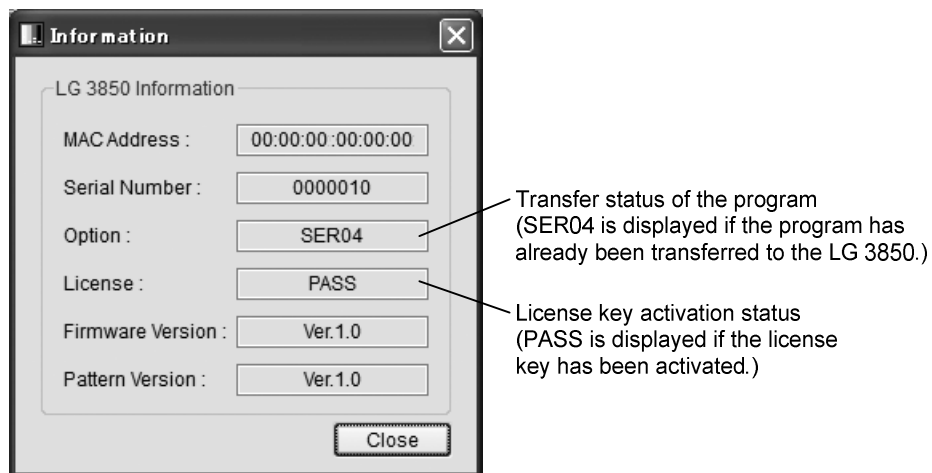


Figure 5-15 Information dialog box

5.3.6 Help

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

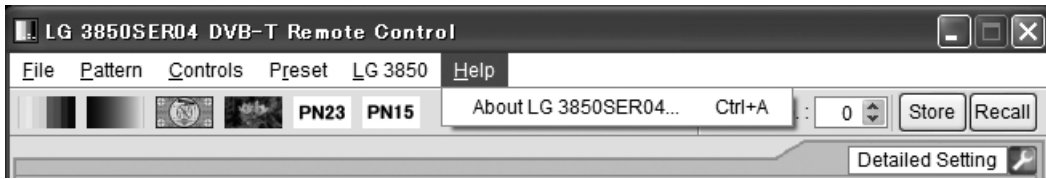


Figure 5-16 Help menu

- **About LG 3850SER04**

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



Figure 5-17 About LG 38SER04 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. Click Yes when the following confirmation message appears. The preset will be stored on the LG 3850.

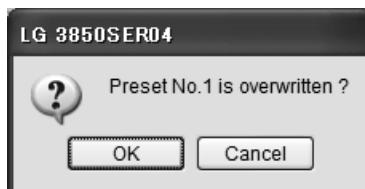


Figure 5-20 Confirmation screen

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.

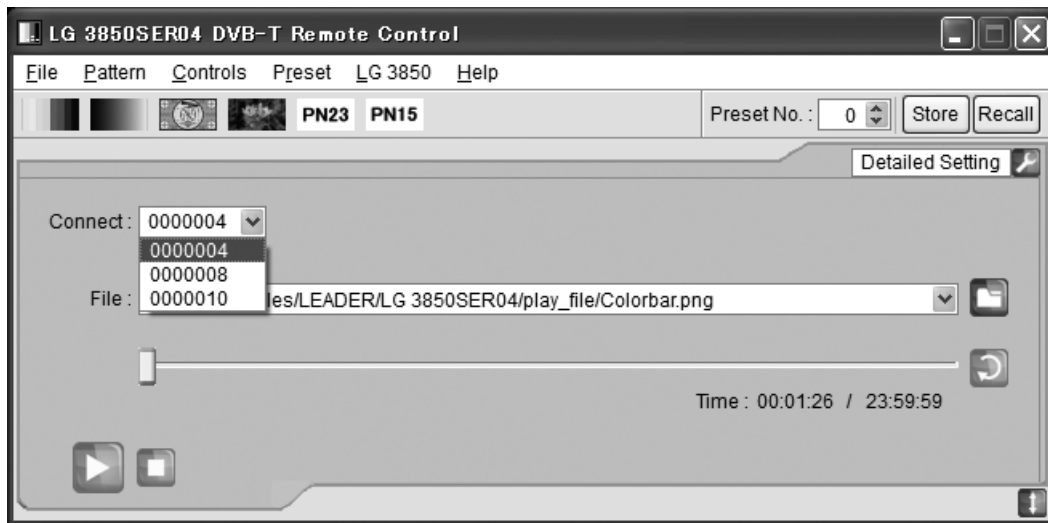


Figure 5-21 Displaying the list of LG 3850s that you can control

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, and 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 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.

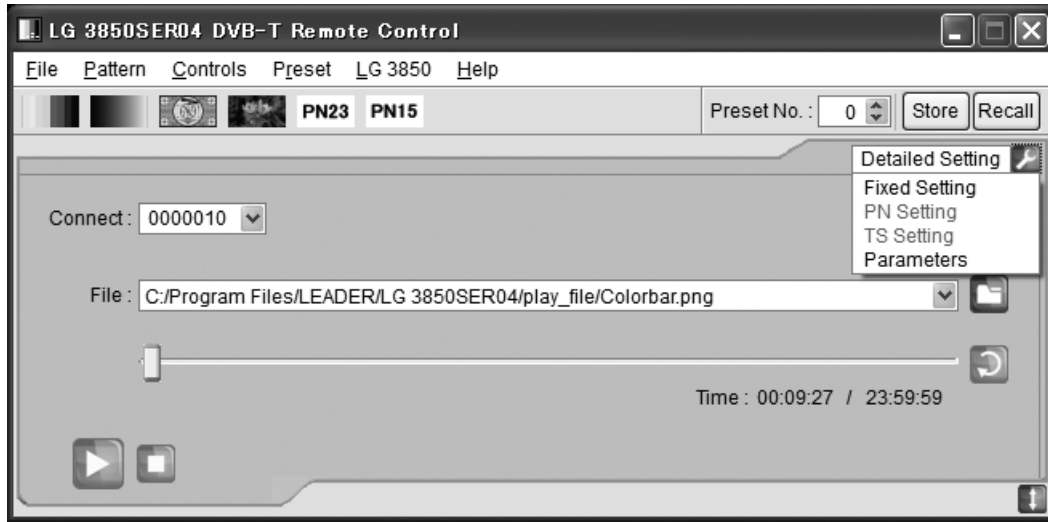


Figure 5-22 Detailed Setting list

- **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.

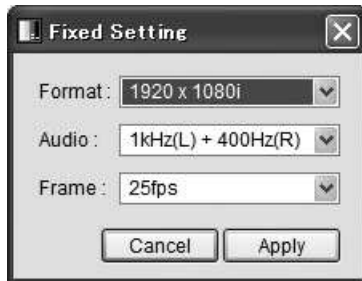


Figure 5-23 Fixed Setting dialog box

Format

1920×1080i:	A 1920×1080i still-image pattern is generated.
720×576i:	A 720×576i still-image pattern is generated.
720×480i:	A 720×480i still-image pattern is generated. This cannot be selected when Frame is set to 25fps.

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.

Frame

25fps:	The still-image pattern is generated at 25 frames per second.
30fps:	The still-image pattern is generated at 30 frames per second.

- **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.

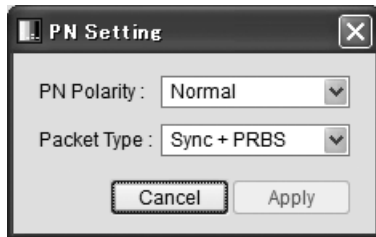


Figure 5-24 PN Setting dialog box

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.

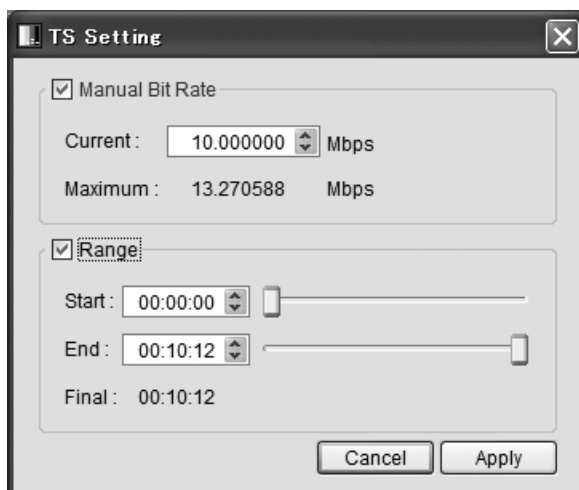


Figure 5-25 TS Setting dialog box

Manual Bit Rate(*1)

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 displays the currently specified playback bit rate of the TS file.</p> <p>Maximum displays the maximum bit rate of the modulation format that has been selected in the DVB-T Parameters dialog box.</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, Current displays the maximum bit rate, and the TS file is played back at the maximum bit rate.</p>

Range(*2)

On:	<p>Select this check box to specify the playback range.</p> <p>Use the numeric keypad or the sliders to set the Start and End times.</p> <p>If you set the range, and then select a different TS, the Range check box is cleared.</p>
Off:	<p>Clear this check box to play the TS file from its start to end.</p>

*1 If the bit rate cannot be calculated from the TS file, the number displayed next to Current is displayed in yellow.

*2 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.

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

- **Parameters**

Use this dialog box to configure transmission parameter settings.
Click Apply to apply the settings.

If the transmission rate that is based on the transmission parameters that you specify here will cause the selected file's rate to overflow, the parameter values will all be displayed in red. In this situation, the selected file will not be generated correctly, so change the values until they are all displayed normally (in black).

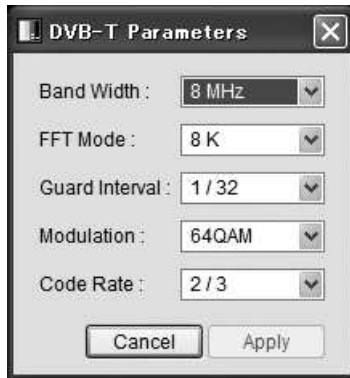


Figure 5-26 DVB-T Parameters dialog box

Band Width

Select the bandwidth. [8 MHz / 7 MHz / 6 MHz]

FFT Mode

Select the FFT mode. [2 K / 8 K]

Guard Interval

Select the guard interval. [1/4 / 1/8 / 1/16 / 1/32]

Modulation

Select the carrier modulation method. [QPSK / 16QAM / 64QAM]

Code Rate

Select the code rate. [1/2 / 2/3 / 3/4 / 5/6 / 7/8]

5.6 Sub Window

5.6.1 Country

Select which country's output channel will be set, Germany's, Australia's, the UK's, or Taiwan's.

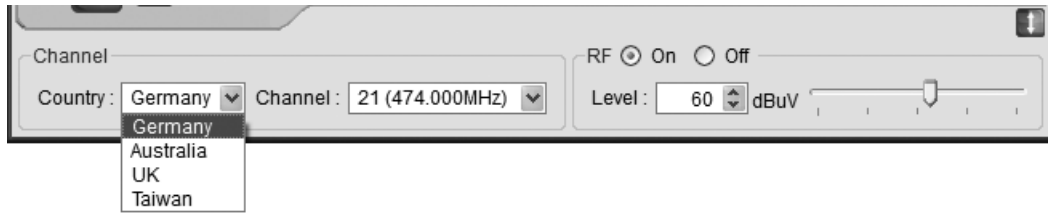


Figure 5-27 List of the countries for setting the channel

5.6.2 Channel

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

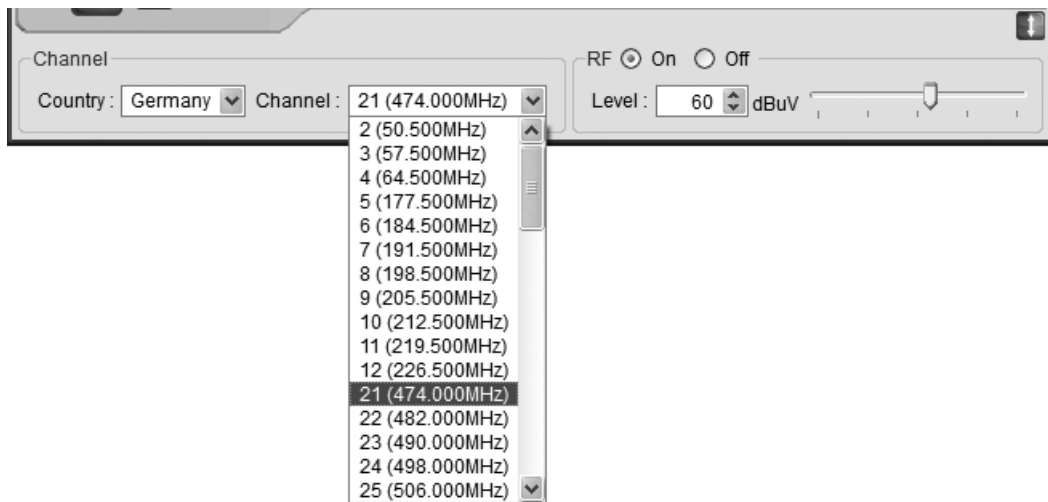


Figure 5-28 List of the Germany channels

5.6.3 RF

Turn signal output on or off.

5.6.4 Level

Set the level of the output signal.

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

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 this software on your PC.

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, and then LG 3850 Initialize Tool.

If, when you start the initialization application, a message appears that prompts you to install a USB driver, refer to step 2, "Install the USB driver" in chapter 3, "INSTALLATION" to 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.

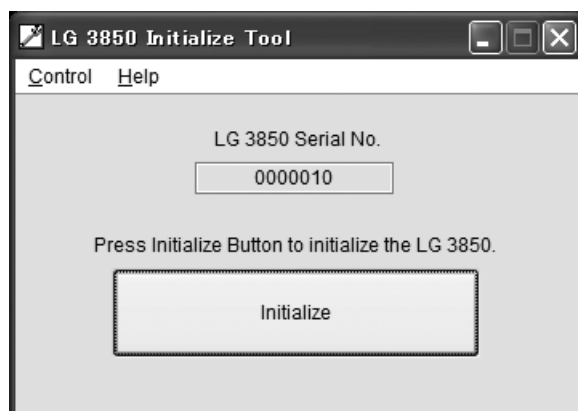


Figure 6-1 Initialization window

- **Start the initialization**

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

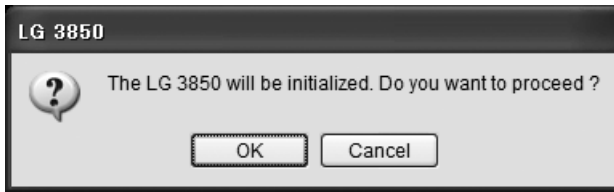


Figure 6-2 Initialization confirmation dialog box

Click OK to start the initialization of the LG 3850 from your PC.

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

The initialization takes approximately 15 minutes.

- **During initialization**

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.

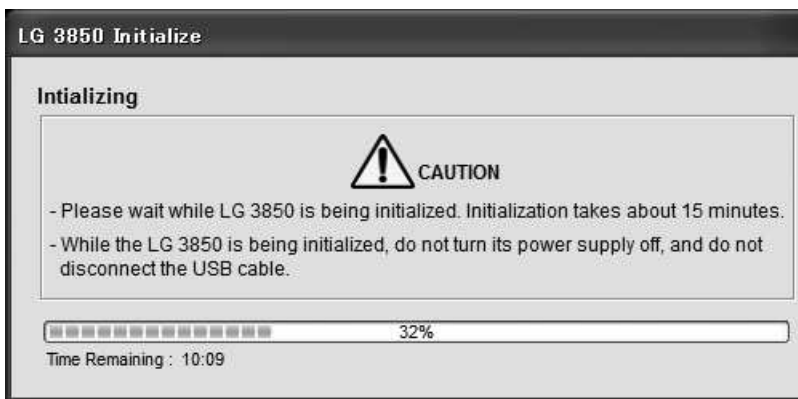


Figure 6-3 Initialization dialog box

- **Finish the initialization**

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.

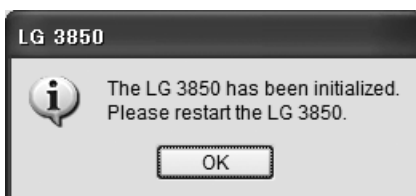


Figure 6-4 Initialization complete dialog box

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 chapter 3, "INSTALLATION."

7. APPENDIX

7.1 Channel Table

The channel table for Germany, Australia, the UK, and Taiwan is shown below.

Table 7-1 Channel table

Germany				Australia				UK			
CH	Frequency	CH	Frequency	CH	Frequency	CH	Frequency	CH	Frequency	CH	Frequency
2	50.500	40	626.000	6	177.500	50	683.500	21	474.000	51	714.000
3	57.500	41	634.000	7	184.500	51	690.500	22	482.000	52	722.000
4	64.500	42	642.000	8	191.500	52	697.500	23	490.000	53	730.000
5	177.500	43	650.000	9	205.500	53	704.500	24	498.000	54	738.000
6	184.500	44	658.000	10	212.500	54	711.500	25	506.000	55	746.000
7	191.500	45	666.000	11	219.500	55	718.500	26	514.000	56	754.000
8	198.500	46	674.000	12	226.500	56	725.500	27	522.000	57	762.000
9	205.500	47	682.000	27	522.500	57	732.500	28	530.000	58	770.000
10	212.500	48	690.000	28	529.500	58	739.500	29	538.000	59	778.000
11	219.500	49	698.000	29	536.500	59	746.500	30	546.000	60	786.000
12	226.500	50	706.000	30	543.500	60	753.500	31	554.000	61	794.000
21	474.000	51	714.000	31	550.500	61	760.500	32	562.000	62	802.000
22	482.000	52	722.000	32	557.500	62	767.500	33	570.000	63	810.000
23	490.000	53	730.000	33	564.500	63	774.500	34	578.000	64	818.000
24	498.000	54	738.000	34	571.500	64	781.500	35	586.000	65	826.000
25	506.000	55	746.000	35	578.500	65	788.500	36	594.000	66	834.000
26	514.000	56	754.000	36	585.500	66	795.500	37	602.000	67	842.000
27	522.000	57	762.000	37	592.500	67	802.500	38	610.000	68	850.000
28	530.000	58	770.000	38	599.500	68	809.500	39	618.000		
29	538.000	59	778.000	39	606.500	69	816.500	40	626.000		
30	546.000	60	786.000	40	613.500			41	634.000		
31	554.000	61	794.000	41	620.500			42	642.000		
32	562.000	62	802.000	42	627.500			43	650.000		
33	570.000	63	810.000	43	634.500			44	658.000		
34	578.000	64	818.000	44	641.500			45	666.000		
35	586.000	65	826.000	45	648.500			46	674.000		
36	594.000	66	834.000	46	655.500			47	682.000		
37	602.000	67	842.000	47	662.500			48	690.000		
38	610.000	68	850.000	48	669.500			49	698.000		
39	618.000	69	858.000	49	676.500			50	706.000		

7. APPENDIX

Taiwan			
CH	Frequency	CH	Frequency
2	57.000	43	647.000
3	63.000	44	653.000
4	69.000	45	659.000
5	75.000	46	665.000
6	81.000	47	671.000
7	177.000	48	677.000
8	183.000	49	683.000
9	189.000	50	689.000
10	195.000	51	695.000
11	201.000	52	701.000
12	207.000	53	707.000
13	213.000	54	713.000
14	473.000	55	719.000
15	479.000	56	725.000
16	485.000	57	731.000
17	491.000	58	737.000
18	497.000	59	743.000
19	503.000	60	749.000
20	509.000	61	755.000
21	515.000	62	761.000
22	521.000	63	767.000
23	527.000	64	773.000
24	533.000	65	779.000
25	539.000	66	785.000
26	545.000	67	791.000
27	551.000	68	797.000
28	557.000	69	803.000
29	563.000	70	809.000
30	569.000	71	815.000
31	575.000	72	821.000
32	581.000	73	827.000
33	587.000	74	833.000
34	593.000	75	839.000
35	599.000	76	845.000
36	605.000	77	851.000
37	611.000	78	857.000
38	617.000	79	863.000
39	623.000	80	869.000
40	629.000	81	875.000
41	635.000	82	881.000
42	641.000	83	887.000

所含有毒有害物质信息

部件号码: LG 3850SER04



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	×	○	○	○	○	○
备注) ○：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。						

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