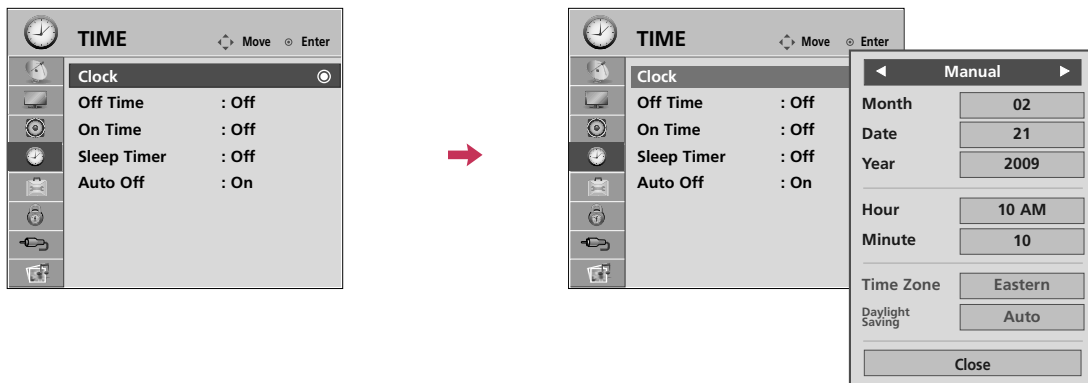

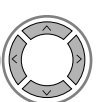

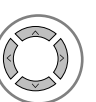

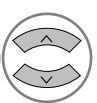









# TIME SETTING

## Manual Clock Setup

If the current time setting is wrong, reset the clock manually.



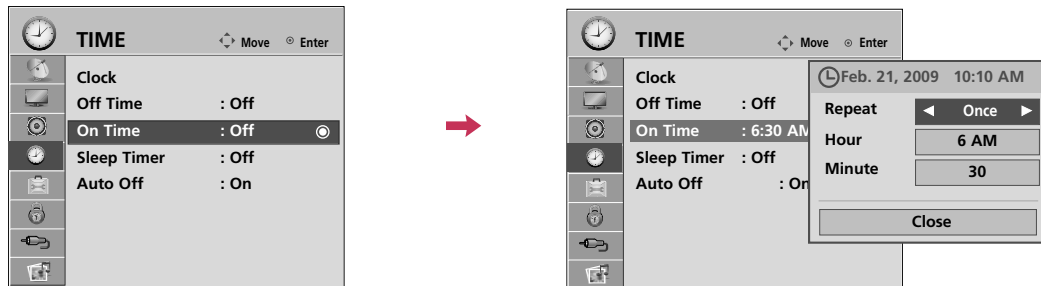
-   or   Select **TIME**.
  -   Select **Clock**.
  -   Select **Manual**.
  -  Select the Year, Month, Date, Hour, or Minutes option.
  -  Set the Year, Month, Date, Hour, or Minutes option.
  -  Return to the previous menu.
-  or  Return to TV viewing.

## AUTO ON/OFF TIME SETTING

This function operates only if the current time has been set.

The **Off Time** function overrides the **On Time** function if they are both set to the same time.

The TV must be in standby mode for the **On Time** to work.



1 MENU or Home Select **TIME**.

2 ENTER Select **Off Time** or **On Time**.

3 ENTER Select **Repeat**.

4 Select **Off, Once, Daily, Mon.~Fri., Mon.~Sat., Sat.~ Sun., or Sun..**

5 Select and set **Hour** or **Minute**.

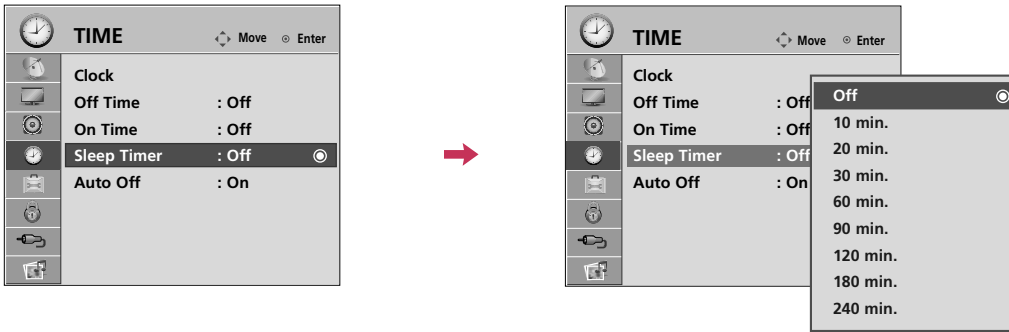
6 RETURN Return to the previous menu.

MENU or Home Return to TV viewing.

# TIME SETTING

## SLEEP TIMER SETTING

The Sleep Timer turns the TV off at the preset time.  
Note that this setting is cleared when the TV is turned off.



1 MENU or Home Select **TIME**.

2 ENTER Select **Sleep Timer**.

3 ENTER Make appropriate adjustments.

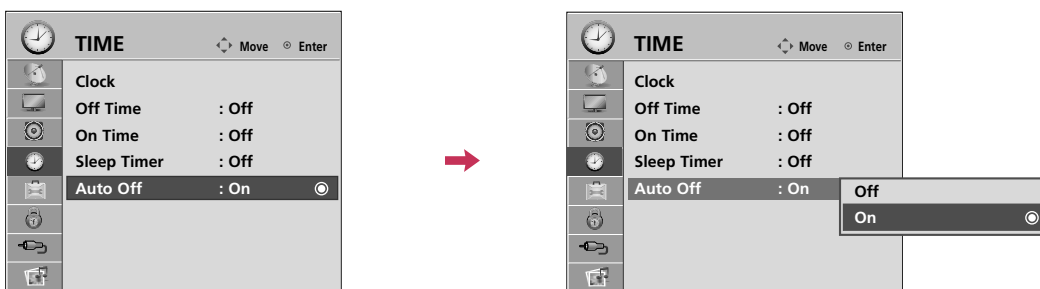
4 RETURN Return to the previous menu.

MENU or Home Return to TV viewing.

- To cancel the **Sleep Timer**, select **Off**.
- Press the **SLEEP** button repeatedly to select the number of minutes.

## AUTO SHUT-OFF SETTING

If set to on and there is no input signal, the TV turns off automatically after 15 minutes.



1 MENU or Home Select **TIME**.

2 ENTER Select **Auto Off**.

3 ENTER Select **On** or **Off**.

4 RETURN Return to the previous menu.

MENU or Home Return to TV viewing.

# PARENTAL CONTROL / RATINGS

Parental Control can be used to block specific channels, ratings and other viewing sources.

The Parental Control Function (V-Chip) is used to block program viewing based on the ratings sent by the broadcasting station. The default setting is to allow all programs to be viewed. Viewing can be blocked by choosing the type of the program and the categories. It is also possible to block all program viewing for a time period. To use this function, the following must be done :

1. Set ratings and categories to be blocked.
2. Specify a password
3. Enable the lock

## V-Chip rating and categories

Rating guidelines are provided by broadcasting stations. Most television programs and television movies can be blocked by TV Rating and/or Individual Categories. Movies that have been shown at the theaters or direct-to-video movies use the Movie Rating System (MPAA) only.

## Ratings for Television programs including made-for-TV movies :

- TV-G (General audience)
- TV-PG (Parental guidance suggested)
- TV-14 (Parents strongly cautioned)
- TV-MA (Mature audience only)
- TV-Y (All children)
- TV-Y7 (Children 7 years older)

# SET PASSWORD & LOCK SYSTEM

## Setting up Your Password

Set up blocking schemes to block specific channels, ratings, and external viewing sources. A password is required to gain access to this menu.



1 MENU → [Up/Down] → ENTER or Home → [Up/Down] → ENTER Select **LOCK**.

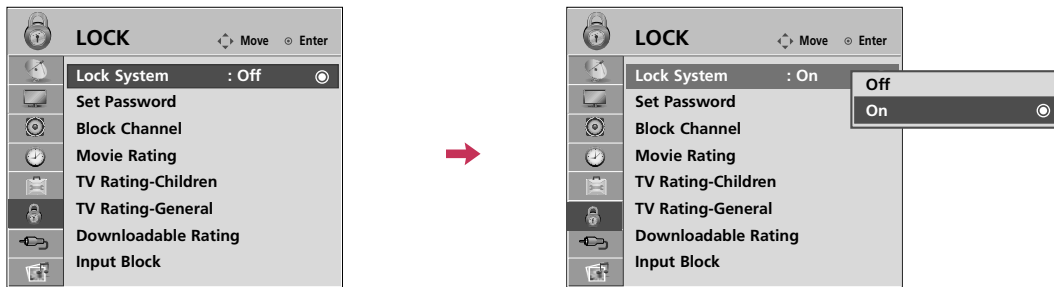
2 [Number Pad] Input the password.

- When you select **On**, the Lock System is enable.
- The TV is set up with the initial password “0-0-0-0”.

# PARENTAL CONTROL / RATINGS

## Lock System

Enables or disables the blocking scheme you set up previously.



1 MENU, [Up/Down], ENTER or Home, [Up/Down], ENTER Select **LOCK**.

2 [Up/Down] Select **Lock System**.

3 ENTER, [Up/Down] Select **On** or **Off**.

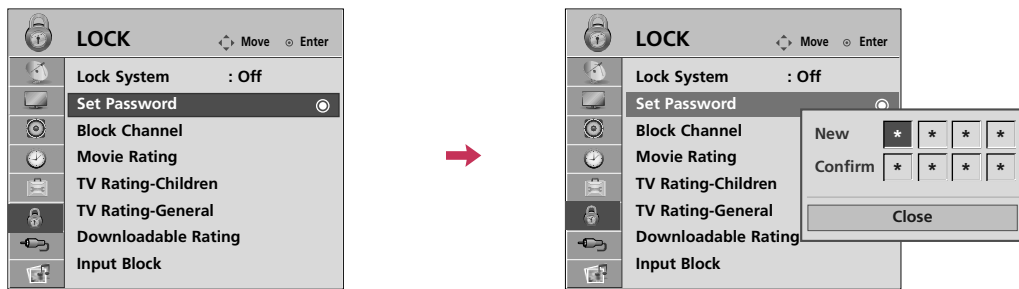
4 RETURN Return to the previous menu.


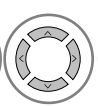

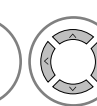
MENU or Home Return to TV viewing.


■ When you select **On**, the Lock System is enable.

## Set Password


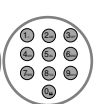
Set up blocking schemes to block specific channels, ratings, and external viewing sources. A password is required to gain access to this menu.




1    or    Select **LOCK**.

2  Input the password.

3  Select **Set Password**.

4   Choose any 4 digits for your new password.  
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.

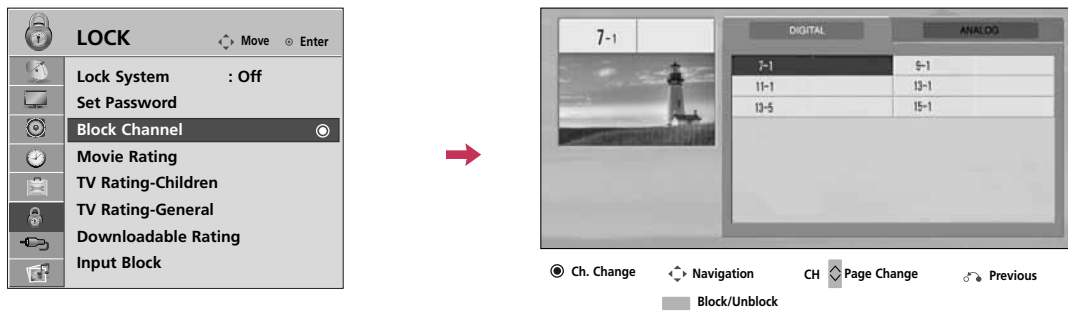
5  Return to the previous menu.

 or  Return to TV viewing.

# PARENTAL CONTROL / RATINGS

## CHANNEL BLOCKING

Blocks any channels that you do not want to watch or that you do not want your children to watch.



1 MENU, [Up/Down/Left/Right], ENTER or Home, [Up/Down/Left/Right], ENTER Select LOCK.

2 [Number Pad] Input the password.

3 [Up/Down] Select **Block Channel**.

4 ENTER, [Up/Down/Left/Right] Select a channel to block or unblock.

5 [Play/Pause] Block or unblock a channel.

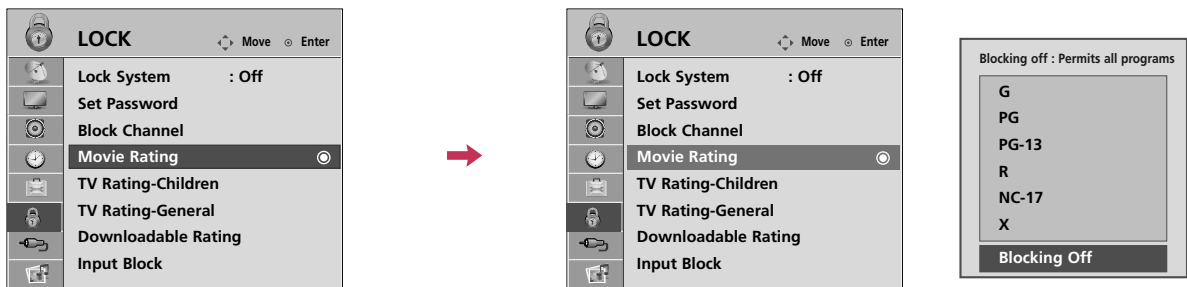
6 RETURN Return to the previous menu.

MENU or Home Return to TV viewing.

# MOVIE & TV RATING

## Movie Rating (MPAA) - For USA

Blocks movies according to the movie ratings limits specified, so children cannot view certain movies. You can set the ratings limit by blocking out all the movies with the ratings above a specified level. Keep in mind that the movie ratings limit only applies to movies shown on TV, not TV programs, such as soap operas.



1 MENU or HOME Select LOCK.

2 Input the password.

3 Select **Movie Rating**.

4 Select **G, PG, PG-13, R, NC-17, X, or Blocking Off**.

5 RETURN Return to the previous menu.

MENU or HOME Return to TV viewing.

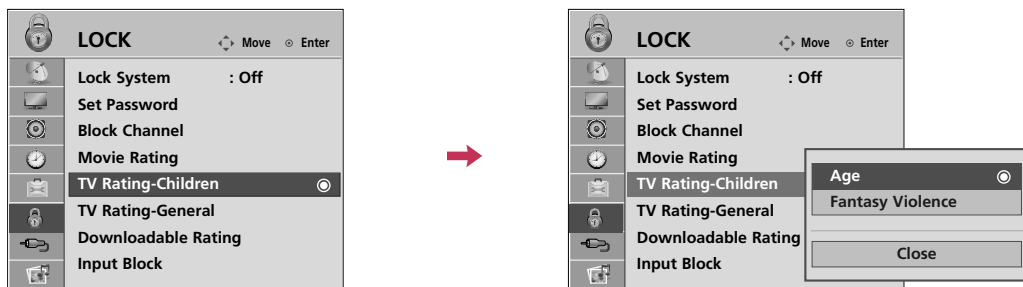
- G (General audience)
- PG (Parental guidance suggested)
- PG-13 (Parents strongly cautioned)
- R (Restricted)
- NC-17 (No one 17 and under admitted)
- X (Adult only)
- Blocking Off (Permits all programs)
- ▶ If you set PG-13: G and PG movies will be available, PG-13, R, NC-17 and X will be blocked.



# PARENTAL CONTROL / RATINGS

## TV Rating Children - For USA

Prevents children from watching certain children's TV programs, according to the ratings limit set. The children rating does not apply to other TV programs. Unless you block certain TV programs intended for mature audiences in the TV Rating - sub menu, your children can view those programs.



1 MENU or Select **LOCK**.

2 Input the password.

3 Select **TV Rating-Children**.

4 Select **Age** or **Fantasy Violence**.

5 Select block options.

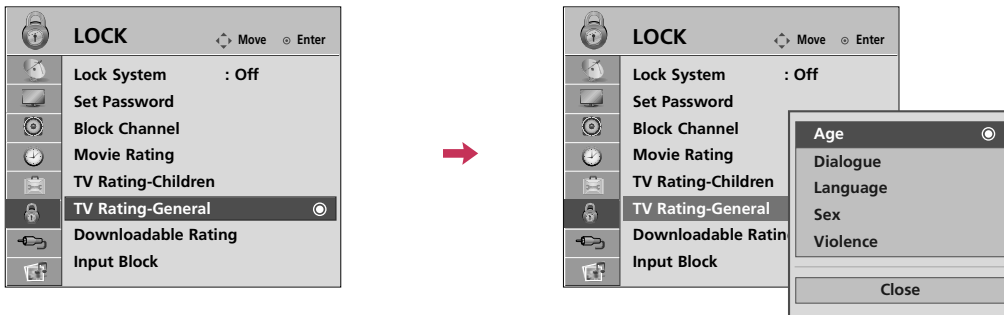
6 Return to the previous menu.

or Return to TV viewing.

- Age (applies to TV-Y, TV-Y7)
- Fantasy Violence (applies to TV-Y7)

## TV Rating General - For USA

Based on the ratings, blocks certain TV programs that you and your family do not want to view.



1 MENU ENTER or ENTER Select **LOCK**.

2 Input the password.

3 Select **TV Rating-General**.

4 Select **Age, Dialogue, Language, Sex or Violence**.

5 Select block options.

6 Return to the previous menu.

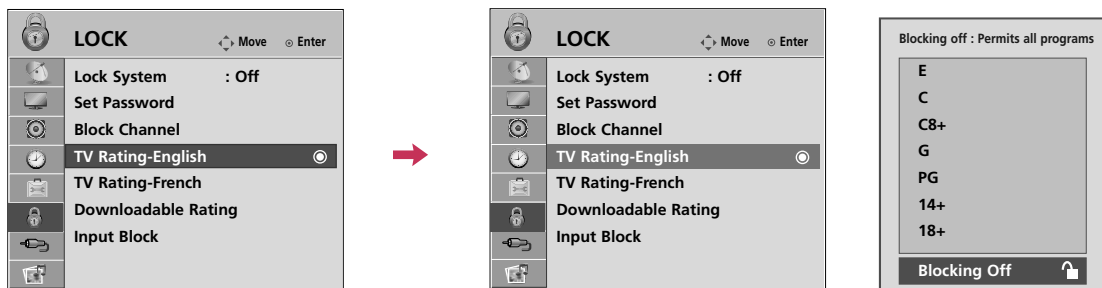
or Return to TV viewing.

- Age (applies to TV-G,TV-PG,TV-14,TV-MA).
- Dialogue-sexual dialogue (applies to TV-PG,TV-14).
- Language-adult language (applies to TV-PG, TV-14, TV-MA).
- Sex-sexual situations (applies to TV-PG, TV-14, TV-MA).
- Violence (applies to TV-PG, TV-14, TV-MA).

# PARENTAL CONTROL / RATINGS

## TV Rating English - For CANADA

Selecting Canadian English rating system.



1 MENU or Select **LOCK**.

2 Input the password.

3 Select **TV Rating-English**.

4 Select **E, C, C8+, G, PG, 14+, 18+, or Blocking Off**.

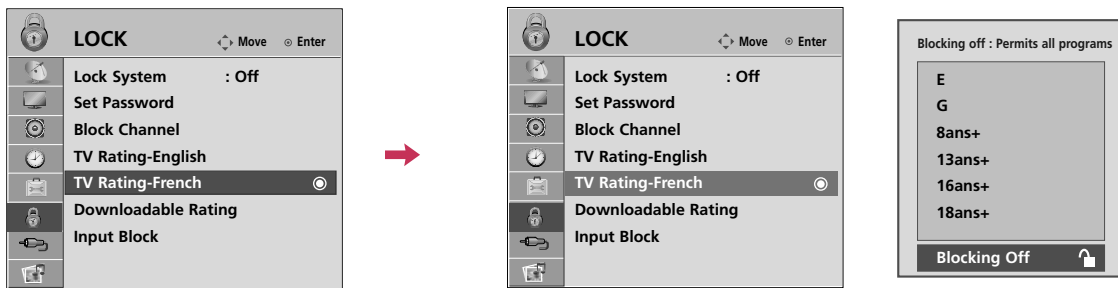
5 Return to the previous menu.

or Return to TV viewing.

- If **TV Rating-English** or **TV Rating-French** is locked, enter the password to unlock it temporarily.
- E (Exempt)
- C (Children)
- C8+ (Children eight years and older)
- G (General programming, suitable for all audiences)
- PG (Parental Guidance)
- 14+ (Viewers 14 years and older)
- 18+ (Adult programming)
- Blocking Off (Permits all programs)

## TV Rating French - For CANADA

Selecting Canadian French rating system.



1 MENU, [Up/Down], ENTER or HOME, [Up/Down], ENTER Select LOCK.

2 [Number keys] Input the password.

3 [Up/Down] Select TV Rating-French.

4 ENTER, [Up/Down] Select E, G, 8ans+, 13ans+, 16ans+, 18ans+, or Blocking off.

5 RETURN Return to the previous menu.

MENU or HOME Return to TV viewing.

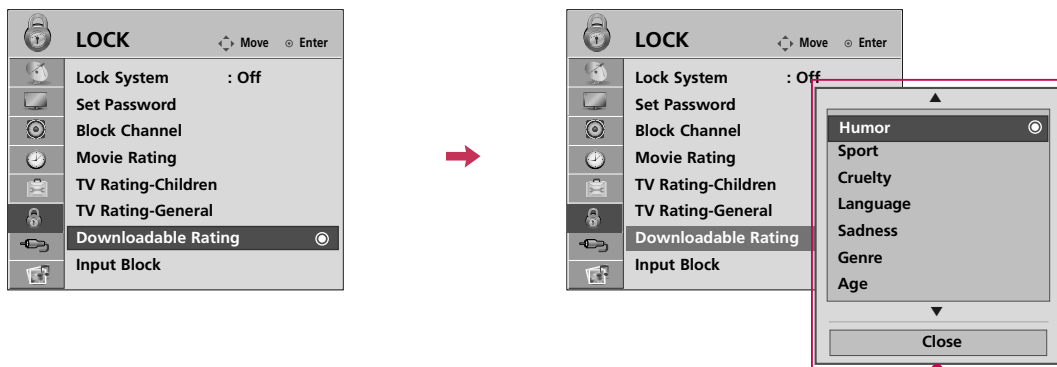
- E (Exempt)
- G (General)
- 8ans+ (General-Not convenient for little children)
- 13ans+ (Not convenient for children of 13 years and younger)
- 16ans+ (Not convenient for children of 16 years and younger)
- 18ans+ (This programs is only for adults)
- Blocking off (Permits all programs)

# PARENTAL CONTROL / RATINGS


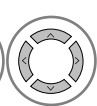


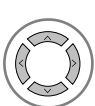

## DOWNLOADABLE RATING


This function is available only for digital channels.

This function operates only when TV has received Region5 Rating data.


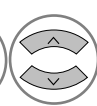



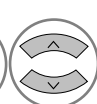
■ Based on rating table, your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.


1    or    Select **LOCK**.

2  Input the password.

3  Select **Downloadable Rating**.

4   Select desired **Downloadable Rating** option.

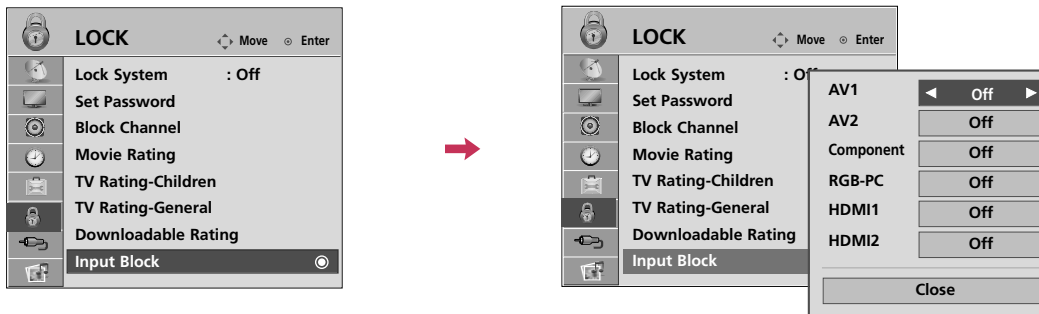
5   Select desired option and block it.

6  Return to the previous menu.

 or  Return to TV viewing.

# EXTERNAL INPUT BLOCKING

Enables you to block an input.



1 MENU, [Up/Down], ENTER or Home, [Up/Down], ENTER Select **LOCK**.

2 [Number Pad] Input the password.

3 [Up/Down] Select **Input Block**.

4 ENTER, [Up/Down] Select input source.

5 [Left/Right] Select **On** or **Off**.

6 RETURN Return to the previous menu.

MENU or Home Return to TV viewing.

# APPENDIX

## TROUBLESHOOTING

Abnormal Operation	
The remote control doesn't work	<ul style="list-style-type: none"><li>■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV.</li><li>■ Ensure that the batteries are installed with correct polarity (+ to +, - to -).</li><li>■ Ensure that the correct remote operating mode is set: TV, VCR etc.</li><li>■ Install new batteries.</li></ul>
Power is suddenly turned off	<ul style="list-style-type: none"><li>■ Is the sleep timer set?</li><li>■ Check the power control settings. Power interrupted.</li></ul>

Video Problems	
No picture & No sound	<ul style="list-style-type: none"><li>■ Check whether the product is turned on.</li><li>■ Try another channel. The problem may be with the broadcast.</li><li>■ Is the power cord inserted into wall power outlet?</li><li>■ Check your antenna direction and/or location.</li><li>■ Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.</li></ul>
Picture appears slowly after switching on	<ul style="list-style-type: none"><li>■ This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.</li></ul>
No or poor color or poor picture	<ul style="list-style-type: none"><li>■ Adjust Color in menu option.</li><li>■ Try unplugging any others electronics that are near by to see if interference is causing the problem.</li><li>■ Try another channel. The problem may be with the broadcast.</li><li>■ Are the video cables installed properly?</li><li>■ Activate any function to restore the brightness of the picture.</li></ul>
Horizontal/vertical bars or picture shaking	<ul style="list-style-type: none"><li>■ Check for local interference such as an electrical appliance or power tool.</li></ul>
Poor reception on some channels	<ul style="list-style-type: none"><li>■ Station or cable product experiencing problems, tune to another station.</li><li>■ Station signal is weak, reorient antenna.</li><li>■ Check for sources of possible interference.</li></ul>
Lines or streaks in pictures	<ul style="list-style-type: none"><li>■ Check antenna (Change the direction of the antenna).</li></ul>
No picture when connecting HDMI	<ul style="list-style-type: none"><li>■ If the HDMI cables don't support High Speed HDMI, it can cause flickers or no screen display. In this case use the latest cables that support High Speed HDMI.</li></ul>

Audio Problems	
Picture OK but No sound	<ul style="list-style-type: none"> <li>■ Press the VOL or VOLUME button.</li> <li>■ Sound muted? Press the MUTE button.</li> <li>■ Try another channel. The problem may be with the broadcast.</li> <li>■ Are the audio cables installed properly?</li> </ul>
No output from one of the speakers	<ul style="list-style-type: none"> <li>■ Adjust Balance in menu option.</li> </ul>
Unusual sound from inside the product	<ul style="list-style-type: none"> <li>■ A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a fault with the product.</li> </ul>
No sound when connecting HDMI or USB	<ul style="list-style-type: none"> <li>■ Check High Speed HDMI cable.</li> <li>■ Check USB cable over version 2.0.</li> <li>■ Use normal MP3 file.</li> </ul> <p style="text-align: right;">*This feature is not available for all models.</p>

PC Mode Problems	
The signal is out of range	<ul style="list-style-type: none"> <li>■ Adjust resolution, horizontal frequency, or vertical frequency.</li> <li>■ Check the input source.</li> </ul>
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	<ul style="list-style-type: none"> <li>■ Work the Auto configure or adjust clock, phase, or H/V position. (Option)</li> </ul>
Screen color is unstable or single color	<ul style="list-style-type: none"> <li>■ Check the signal cable.</li> <li>■ Update video card drivers.</li> </ul>



# APPENDIX

## MAINTENANCE

Early malfunctions can be prevented. Careful and regular cleaning can extend the amount of time you can enjoy your new TV.

**Caution:** Be sure to turn the power off and unplug the power cord before you begin any cleaning.

### Cleaning the Screen

- 1 Here's a great way to keep the dust off your screen for a while. Wet a soft cloth in a mixture of lukewarm water and a little fabric softener or dish washing detergent. Wring the cloth until it's almost dry, and then use it to wipe the screen.
- 2 Make sure the excess water is off the screen, and then let it air-dry before you turn on your TV.

#### ⚠ WARNING

- ▶ Do not use window/glass cleaner or anything with ammonia to clean the screen.

### Cleaning the Cabinet

- To remove dirt or dust, wipe the cabinet with a soft, dry, lint-free cloth.
- Please be sure not to use a wet cloth.

### Extended Absence

#### ⚠ CAUTION

- ▶ If you expect to leave your TV dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

## PRODUCT SPECIFICATIONS

MODELS		32LG710H (32LG710H-UA)	37LG710H (37LG710H-UA)	42LG710H (42LG710H-UA)
Dimensions (Width x Height x Depth)	With stand	797 x 597 x 232.5 mm 31.3 x 23.5 x 9.15 inch	918.6 x 684.8 x 293.4 mm 36.1 x 26.9 x 11.5 inch	1026.2 x 734.1 x 293.4 mm 40.4 x 28.9 x 11.5 inch
	Without stand	797 x 558.7 x 109.3 mm 31.3 x 21.9 x 4.3 inch	918.6 x 635.8 x 111.7 mm 36.1 x 25.0 x 4.39 inch	1026.2 x 687.9 x 111.8 mm 40.4 x 27.0 x 4.4 inch
Weight	With stand	12.89 kg / 28.41 lbs	17.97 kg / 39.61 lbs	21.10 kg / 46.51 lbs
	Without stand	11.41 kg / 25.15 lbs	15.41 kg / 33.97 lbs	18.48 kg / 40.74 lbs
Cable Card	MPI card (Width x Height x Depth)	3.1 x 0.9 x 6.3 inch 80.0(+0.6/-0.2) x less than 23.0(including pcb thickness) x less than 162.0(excluding cover thickness) mm		
	Card Bracket Cover (Width x Height)	3.7 x 1.1 inch 94.7(±0.5) x 28.3(±0.5) mm		
Power requirement		AC100-240V ~ 50/60Hz		
Television System		NTSC-M, ATSC, 64 & 256 QAM		
Program Coverage		VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135		
External Antenna Impedance		75 Ω		
Environment condition	Operating Temperature	32 ~ 104°F (0 ~ 40°C)		
	Operating Humidity	Less than 80%		
	Storage Temperature	-4 ~ 140°F (-20 ~ 60°C)		
	Storage Humidity	Less than 85%		

- The specifications shown above may be changed without prior notice for quality improvement.

# APPENDIX

MODELS		32LD650H (32LD650H-UA) 32LD655H (32LD655H-UA) 32LD660H (32LD660H-UA) 32LD665H (32LD665H-UA)	37LD650H (37LD650H-UA) 37LD655H (37LD655H-UA) 37LD660H (37LD660H-UA) 37LD665H (37LD665H-UA)
Dimensions (Width x Height x Depth)	With stand	797.0 mm x 557.7 mm x 207.0 mm (31.3 inch x 21.9 inch x 8.1 inch)	916.0 mm x 626.0 mm x 261.0 mm (36.0 inch x 24.6 inch x 10.2 inch)
	Without stand	797.0 x 495.0 x 97.1 mm (31.3 inch x 19.4 inch x 3.8 inch)	916.0 mm x 560.0 mm x 88.9 mm (36.0 inch x 22.0 inch x 3.5 inch)
Weight	With stand	11.1 kg (24.4 lbs)	14.6 kg (32.1 lbs)
	Without stand	9.4 kg (20.7 lbs)	12.0 kg (26.4 lbs)
MODELS		42LD650H (42LD650H-UA) 42LD655H (42LD655H-UA) 42LD660H (42LD660H-UA) 42LD665H (42LD665H-UA)	47LD650H (47LD650H-UA)
Dimensions (Width x Height x Depth)	With stand	1024.0 mm x 686.6 mm x 261.0 mm (40.3 inch x 27.0 inch x 10.2 inch)	1137.0 mm x 758.0 mm x 270.0 mm (44.7 inch x 29.8 inch x 10.6 inch)
	Without stand	1024.0 mm x 621.0 mm x 87.1 mm (40.3 inch x 24.4 inch x 3.4 inch)	1137.0 mm x 685.0 mm x 76.8 mm (44.7 inch x 26.9 inch x 3.0 inch)
Weight	With stand	17.7 kg (39.0 lbs)	20.3 kg (44.7 lbs)
	Without stand	15.1 kg (33.2 lbs)	18.3 kg (40.3 lbs)
MODELS		55LD650H (55LD650H-UA)	
Dimensions (Width x Height x Depth)	With stand	1329.0 mm x 872.0 mm x 330.0 mm (52.3 inch x 34.3 inch x 12.9 inch)	
	Without stand	1329.0 mm x 796.0 mm x 96.5 mm (52.3 inch x 31.3 inch x 3.7 inch)	
Weight	With stand	33.0 kg (72.7 lbs)	
	Without stand	29.8 kg (65.6 lbs)	
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 Ω	
Environment condition	Operating Temperature Operating Humidity	32 ~ 104°F (0 ~ 40°C) Less than 80%	
	Storage Temperature Storage Humidity	-4 ~ 140°F (-20 ~ 60°C) Less than 85%	

■ The specifications shown above may be changed without prior notice for quality improvement.

MODELS		32LV555H (32LV555H-UA)
Dimensions (Width x Height x Depth)	With stand	776.0 mm x 545.59 mm x 260.8 mm (30.5 inch x 21.4 inch x 10.2 inch)
	Without stand	776.0 mm x 485.0 mm x 34.9 mm (30.5 inch x 19.0 inch x 1.3 inch)
Weight	With stand	11.7 kg (25.7 lbs)
	Without stand	8.8 kg (19.4 lbs)
MODELS		37LV555H (37LV555H-UA)
Dimensions (Width x Height x Depth)	With stand	896 mm x 610.9 mm x 260.8 mm (35.7 inch x 24.0 inch x 10.2 inch)
	Without stand	896 mm x 553 mm x 34.9 mm (35.2 inch x 21.7 inch x 1.3 inch)
Weight	With stand	13.5 kg (29.7 lbs)
	Without stand	10.8 kg (23.8 lbs)
MODELS		42LV555H (42LV555H-UA)
Dimensions (Width x Height x Depth)	With stand	1012.0 mm x 671.0 mm x 260.8 mm (39.8 inch x 26.4 inch x 10.2 inch)
	Without stand	1012.0 mm x 617.0 mm x 29.9 mm (39.8 inch x 24.2 inch x 1.1 inch)
Weight	With stand	15.9 kg (35.0 lbs)
	Without stand	13.2 kg (29.1 lbs)
MODELS		47LV555H (47LV555H-UA)
Dimensions (Width x Height x Depth)	With stand	1121.0 mm x 746.0 mm x 256.0 mm (44.1 inch x 29.3 inch x 10.0 inch)
	Without stand	1121.0 mm x 678.0 mm x 29.9 mm (44.1 inch x 26.6 inch x 1.1 inch)
Weight	With stand	20.7 kg (45.6 lbs)
	Without stand	18.4 kg (40.5 lbs)
MODELS		55LV555H (55LV555H-UA)
Dimensions (Width x Height x Depth)	With stand	1298.0 mm x 849.0 mm x 338.0 mm (51.1 inch x 33.4 inch x 13.3 inch)
	Without stand	1298.0 mm x 778.0 mm x 29.9 mm (51.1 inch x 30.6 inch x 1.1 inch)
Weight	With stand	25.8 kg (56.8 lbs)
	Without stand	21.7 kg (47.8 lbs)
Power requirement Television System Program Coverage External Antenna Impedance		AC100-120V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 Ω
Environment condition	Operating Temperature Operating Humidity	32 ~ 104°F (0 ~ 40°C) Less than 80%
	Storage Temperature Storage Humidity	-4 ~ 140°F (-20 ~ 60°C) Less than 85%

■ The specifications shown above may be changed without prior notice for quality improvement.

# APPENDIX

## PROGRAMMING THE REMOTE CONTROL

The provided universal remote control can be programmed to operate most remote-controllable devices. Note that the remote may not control all models of other brands.

### Programming a code into a remote mode

- 1** Testing your remote control.  
To find out whether your remote control can operate other components without programming, turn on a component such as a STB(Set-Top Box) and press the corresponding mode button (such as a **STB**) on the remote control, while pointing at the component. Test the **POWER** and **CH**  $\wedge$   $\vee$  buttons to see if the component responds correctly. If the component does not operate correctly, the remote control requires programming to operate the device.
- 2** Turn on the component to be programmed, then press the corresponding mode button (such as **STB**) on the remote control. The remote control button of the desired device is illuminated.
- 3** Press the **MENU** and **MUTE** buttons simultaneously, and the remote control is ready to be programmed with the code.
- 4** Enter a code number using the number buttons on the remote control. Programming code numbers for the corresponding component can be found on the following pages. If the code is correct, the device will turn off.
- 5** Press the **MENU** button to store the code.
- 6** Test the remote control functions to see if the component responds correctly. If not, repeat from step 2.

## Remote Control Code

### VCR

Brand	Codes	Brand	Codes	Brand	Codes
AIWA	034	MAGNAVOX	031 033 034 041	SAMSUNG	032 040 102 104
AKAI	016 043 046 124 125 146		067 068		105 107 109 112
AMPRO	072	MARANTZ	012 031 033 067 069		113 115 120 122 125
ANAM	031 033 103	MARTA	101	SANSUI	022 043 048 135
AUDIO DYNAMICS	012 023 039 043	MATSUI	027 030	SANYO	003 007 010 014
BROKSONIC	035 037 129	MEI	031 033		102 134
CANON	028 031 033	MEMOREX	003 010 014 031 033 034 053 072	SCOTT	017 037 112 129 131
CAPEHART	108		101 102 134 139	SEARS	003 008 009 010 013 014 017 020
CRAIG	003 040 135	MGA	045 046 059		031 042 073 081 101
CURTIS MATHES	031 033 041	MINOLTA	013 020	SHARP	031 054 149
DAEWOO	005 007 010 064 065 108 110 111 112 116 117 119	MITSUBISHI	013 020 045 046 049 051 059 061 151	SHINTOM	024
DAYTRON	108	MTC	034 040	SONY	003 009 031 052 056 057 058 076 077 078 149
DBX	012 023 039 043	MULTITECH	024 034		
DYNATECH	034 053	NEC	012 023 039 043 048	SOUNDESIGN	034
ELECTROHOME	059		043	STS	013
EMERSON	006 017 025 027 029 031 034 035 036 037 046 101 129 131 138 153	NORDMENDE	053 054	SYLVANIA	031 033 034 059 067
FISHER	003 008 009 010	OPTONICA	066 070 074 083 133 140 145	SYMPHONIC	034
FUNAI	034	PANASONIC		TANDY	010 034
GE	031 033 063 072 107 109 144 147	PENTAX	013 020 031 033 063	TATUNG	039 043
GO VIDEO	132 136	PHILCO	031 034 067	TEAC	034 039 043
HARMAN KARDON	012 045	PHILIPS	031 033 034 054 067 071 101	TECHNICS	031 033 070
HITACHI	004 018 026 034 043 063 137 150	PILOT	101	TEKNIKA	019 031 033 034 101
INSTANTREPLAY	031 033	PIONEER	013 021 048	THOMAS	034
JCL	031 033	PORTLAND	108	TMK	006
JCPENNY	012 013 015 033 040 066 101	PULSAR	072	TOSHIBA	008 013 042 047 059 082 112 131
JENSEN	043	QUARTZ	011 014	TOTEVISION	040 101
JVC	012 031 033 043 048 050 055 060 130 150 152	QUASAR	033 066 075 145	UNITECH	040
KENWOOD	014 034 039 043 047 048	RCA	013 020 033 034 040 041 062 063 107 109 140 144 145 147	VECTOR RESEARCH	012
LG (GOLDSTAR)	001 012 013 020 101 106 114 123	REALISTIC	003 008 010 014 031 033 034 040 053 054 101	VICTOR	048
LLOYD	034	RICO	058	VIDEO CONCEPTS	012 034 046
LXI	003 009 013 014 017 034 101 106	RUNCO	148	VIDEOSONIC	040
MAGIN	040	SALORA	014	WARDS	003 013 017 024 031 033 034 040 053 054 131
				YAMAHA	012 034 039 043
				ZENITH	034 048 056 058 072 080 101

# APPENDIX

## HDSTB

Brand	Codes	Brand	Codes	Brand	Codes
ALPHASTAR DSR	123	HUGHES	068	SATELLITE SERVICE CO	028 035 047 057
AMPLICA	050	HUMAX(SL)	158		085
ASTRO PHILIPS(ML)	159	JANIEL	060 147	SCIENTIFIC ATLANTA	032 138
ASTRO THOMPSON(ML)	160	JERROLD	061	SKY LIFE	150
ASTRO NOKIA(ML)	161	KATHREIN	108	SONY	103
BIRDVIEW	051 126 129	LEGEND	057	STARCAST	041
CHANNEL MASTER	013 014 015 018	LG	001	SUPER GUIDE	020 124 125
	036 055	LUTRON	132	SAMART (TH)	156
CHAPARRAL	008 009 012 077	LUXOR	062 144	TEECOM	023 026 075 087
CITOH	054	MACOM	010 059 063 064		088 090 107 130
CURTIS MATHES	050 145		065		137
DRAKE	005 006 007 010	MEMOREX	057	TOSHIBA	002 127
	011 052 112 116	NEXTWAVE	028 124 125	TRUE VISION(TH)	155
	141	NORSAT	069 070	UNIDEN	016 025 042 043
DX ANTENNA	024 046 056 076	PACE SKY SATELLITE	143		044 045 048 049
ECHOSTAR	038 040 057 058	PANASONIC	060 142		078 079 080 086
	093 094 095 096	PANSAT	121		101 135 136
	097 098 099 100	PERSONAL CABLE	117	UBC(TH)	153
	122	PHILIPS	071	UBC/SAMART(TH)	154
ELECTRO HOME	089	PICO	105	VIEWSTAR	115
EUROPLUS	114	PRESIDENT	019 102	VTC(VN)	162
FUJITSU	017 021 022 027	PRIMESTAR	030 110 111	WINEGARD	128 146
	133 134	PROSAT	072	ZENITH	081 082 083 084
GENERAL INSTRUMENT	003 004 016 029	PSI(TH)	157		091 120
	031 059 101	RCA	066 106		
HITACHI	139 140	REALISTIC	043 074		
HOUSTON TRACKER	033 037 039 051	SAMSUNG	123		
	057 104				

## DVD

Brand	Codes	Brand	Codes	Brand	Codes
APEX DIGITAL	022	MITSUBISHI	002	RCA	005 006
DENON	020 014	NAD	023	SAMSUNG	011 015
GE	005 006	ONKYO	008 017	SONY	007
HARMAN KARDON	027	PANASONIC	003 009	THOMPSON	005 006
JVC	012	PHILIPS	013	TOSHIBA	019 008
LG	001 010 016 025	PIONEER	004 026	YAMAHA	009 018
MAGNAVOX	013	PROCEED	021	ZENITH	010 016 025
MARANTZ	024	PROSCAN	005 006		

# IR CODES

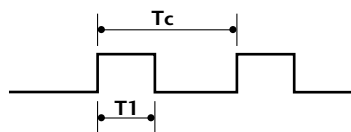
## 1. How to Connect

- Connect your wired remote control to the Remote Control port on the TV.

## 2. Remote Control IR Codes

### ■ Output waveform

Single pulse, modulated with 37.917KHz signal at 455KHz



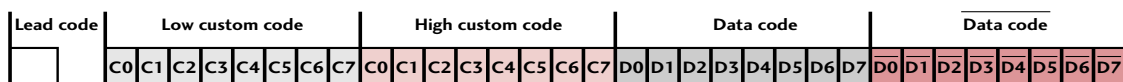
Carrier frequency

$$FCAR = 1/T_C = f_{OSC}/12$$

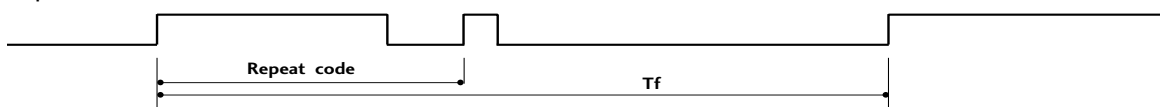
$$\text{Duty ratio} = T_1/T_C = 1/3$$

### ■ Configuration of frame

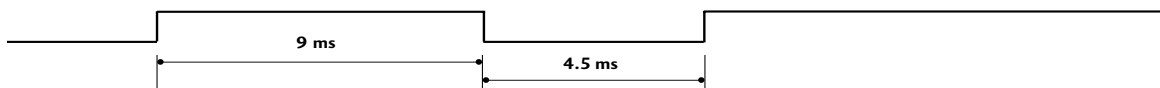
1st frame



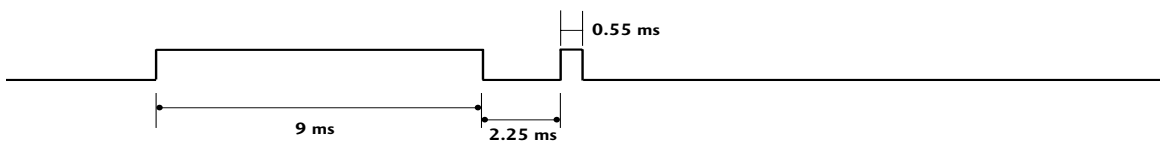
Repeat frame



### ■ Lead code

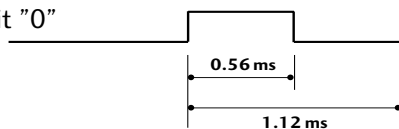


### ■ Repeat code

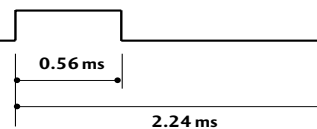


### ■ Bit description

Bit "0"

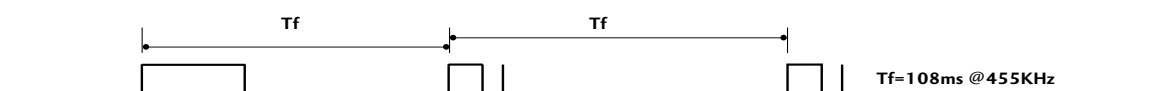


Bit "1"



### ■ Frame interval: $T_f$

The waveform is transmitted as long as a key is depressed.





# APPENDIX

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
08	POWER	Remote control Button (Power On/Off)	D6	TV	Discrete IR Code (TV Input Selection)
0F	TV	Remote control Button			
0B	INPUT	Remote control Button	5A	AV1	Discrete IR Code (AV1 Input Selection)
0A	SAP	Remote control Button			
79	◀◀ RATIO	Remote control Button	D0	AV2	Discrete IR Code (AV2 Input Selection)
AB	GUIDE	Remote control Button			
OC	PORTAL	Remote control Button	BF	COMPONENT	Discrete IR Code (COMPONENT Input Selection)
AA	INFO	Remote control Button			
10-19	Number Key 0-9	Remote control Button	D5	RGB-PC	Discrete IR Code (RGB Input Selection)
4C	- (Dash)	Remote control Button			
1A	FLASHBK	Remote control Button	CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
02	VOL +	Remote control Button			
03	VOL -	Remote control Button	CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
00	CH ^	Remote control Button			
01	CH v	Remote control Button	76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
0E	▶▶ TIMER	Remote control Button			
39	CC	Remote control Button	77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
09	MUTE	Remote control Button			
43	MENU or Home	Remote control Button	AF	Ratio Zoom	Discrete IR Code (Only Zoom Mode)
5B	RETURN	Remote control Button			
40	^	Remote control Button	C4	POWER ON	Discrete IR Code (Only Power On)
41	v	Remote control Button			
07	<	Remote control Button	C5	POWER OFF	Discrete IR Code (Only Power Off)
06	>	Remote control Button			
44	ENTER	Remote control Button			
60	PIP	Remote control Button			
71	PIP CH +	Remote control Button			
72	PIP CH-	Remote control Button			
63	PIP SWAP	Remote control Button			
61	PIP INPUT	Remote control Button			
C1	■ Stop	Remote control Button			
C0	▶ Play	Remote control Button			
C2	Pause	Remote control Button			
C3	● (Record)	Remote control Button			

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Version 2, June 1991

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This license, the Lesser General Public License, applies to some specially designated software packages - typically libraries - of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

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Although the Lesser General Public License is less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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0. This license agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this license"). Each license is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this license; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the library does and what the program that uses the library does.

1. You may copy and distribute verbatim copies of the library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on

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You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this license.
  - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the library, and can be reasonably considered independent and separate works in themselves, then this license, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the library, the distribution of the whole must be on the terms of this license, whose permissions for other licenses extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the library.

In addition, mere aggregation of another work not based on the library with the library (or with a work based on the library) on a volume of a storage or distribution medium does not bring the other work under the scope of this license.



3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the library into a program that is not a library.

4. You may copy and distribute the library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this license.

However, linking a “work that uses the library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the library), rather than a “work that uses the library”. The executable is therefore covered by this license. Section 6 states terms for distribution of such executable.

When a “work that uses the library” uses material from a header file that is part of the library, the object code for the work may be a derivative work of the library even though the source code is not.

Whether this is true is especially significant if the work can be linked without the library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessories, and small macros and small inline functions (ten lines or less in length), then the use of

the object file is unrestricted, regardless of whether it is legally a derivative work. (Executable containing this object code plus portions of the library will still fall under Section 6.)

Otherwise, if the work is a derivative of the library, you may distribute the object code for the work under the terms of Section 6. Any executable containing that work also fall under Section 6, whether or not they are linked directly with the library itself.

6. As an exception to the sections above, you may also combine or link a “work that uses the library” with the library to produce a work containing portions of the library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer’s own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the library is used in it and that the Library and its use are covered by this license. You must supply a copy of this license. If the work during execution displays copyright notices, you must include the copyright notice for the library among them, as well as a reference directing the user to the copy of this license. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the library and then relink to produce a modified executable containing the modified library. (It is understood that the user who changes the contents of definitions files in the library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user’s computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.



# APPENDIX

For an executable, the required form of the “work that uses the library” must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the library together in an executable that you distribute.

7. You may place library facilities that are a work based on the library side-by-side in a single library together with other library facilities not covered by this license, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the library, and explaining where to find the accompanying uncombined form of the same work.
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This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this license.

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

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Version 1.1

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### 1. Definitions.

1.0.1. "Commercial use" means distribution or otherwise making the covered code available to a third party.

1.1. "Contributor" means each entity that creates or contributes to the creation of modifications.

1.2. "Contributor version" means the combination of the original code, prior modifications used by a contributor, and the modifications made by that particular contributor.

1.3. "Covered code" means the original code or modifications or the combination of the original code and modifications, in each case including portions thereof.

1.4. "Electronic distribution mechanism" means a mechanism generally accepted in the software development community for the electronic transfer of data.

1.5. "Executable" means covered code in any form other than source code.

1.6. "Initial developer" means the individual or entity identified as the initial Developer in the Source Code notice required by exhibit A.

1.7. "Larger work" means a work which combines covered code or portions thereof with code not governed by the terms of this License.

1.8. "License" means this document.

1.8.1. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

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A. Any addition to or deletion from the contents of a file containing original code or previous modifications.

B. Any new file that contains any part of the original code or previous modifications.

1.10. "Original code" means source code of computer software

code which is described in the source code notice required by exhibit as original code, and which, at the time of its release under this license is not already covered code governed by this license.

1.10.1. "Patent claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent licensable by grantor.

1.11. "Source code" means the preferred form of the covered code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an executable, or source code differential comparisons against either the original code or another well known, available covered code of the contributor's choice. The source code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

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You may not offer or impose any terms on any source code version that alters or restricts the applicable version of this license or the recipients' rights hereunder. However, you may include an additional document offering the additional rights described in section 3.5.

### 3.2. Availability of source code.

Any modification which you create or to which you contribute must be made available in source code form under the terms of this license either on the same media as an executable version or via an accepted electronic distribution mechanism to anyone to whom you made an executable version available; and if made available via electronic distribution mechanism, must remain available for at least twelve (12) months after the date it initially became available, or at least six (6) months after a subsequent version of that particular modification has been made available to such recipients. You are responsible for ensuring that the source code version remains available even if the electronic distribution mechanism is maintained by a third party.

### 3.3. Description of modifications.

You must cause all covered code to which you contribute to contain a file documenting the changes You made to create that covered code and the date of any change. You must include a prominent statement that the modification is derived, directly or indirectly, from original code provided by the initial developer and including the name of the initial developer in (a) the source code, and (b) in any notice in an executable version or related documentation in which you describe the origin or ownership of the covered code.

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#### (a) Third party claims.

If contributor has knowledge that a license under a third party's intellectual property rights is required to exercise the rights granted by such contributor under sections 2.1 or 2.2, contributor must include a text file with the source code distribution titled "LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If contributor obtains such knowledge after the modification is made available as described in section 3.2, contributor shall promptly modify the LEGAL file in all copies contributor makes available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the covered code that new knowledge has been obtained.

#### (b) Contributor APIs.

If contributor's modifications include an application programming interface and contributor has knowledge of patent licenses which are reasonably necessary to implement that API, contributor must also include this information in the LEGAL file.

# APPENDIX

## (c) Representations.

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### 3.5. Required notices.

You must duplicate the notice in exhibit A in each file of the source code. If it is not possible to put such notice in a particular source code file due to its structure, then You must include such notice in a location (such as a relevant directory) where a user would be likely to look for such a notice. If You created one or more modification(s), you may add your name as a contributor to the notice described in exhibit A. you must also duplicate this license in any documentation for the source code where You describe recipients' rights or ownership rights relating to covered code. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of covered code. However, you may do so only on your own behalf, and not on behalf of the Initial developer or any contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by you alone, and You hereby agree to indemnify the Initial developer and every contributor for any liability incurred by the Initial developer or such contributor as a result of warranty, support, indemnity or liability terms you offer.

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# APPENDIX

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The model and serial number of the TV is located on the back and/or on one side of the TV. Record these numbers below should you ever need service.

MODEL \_\_\_\_\_

SERIAL \_\_\_\_\_

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**1-888-542-2623** CANADA

**LG Customer Information Center**