ADVANCED CONTROL - BLACK (DARKNESS) LEVEL

Adjusting the contrast and the brightness of the screen using the black level of the screen.
This feature is disable in DTV and RGB-PC mode.

PICTURE	◇ Move ⊙ Enter
▲	
• Contrast	50
• Brightness	50
• Sharpness	50
• Color	50
• Tint	0 R◁IIIIIIIIIIIIII▷G
• Advanced Control	◉
• Reset	
Screen (RGB-PC)	

➡

PICTURE	◇ Move ⊙ Enter
▲	
• Contrast	50
• Brightness	
• Sharpness	
• Color	
• Tint	
• Advanced Co	
• Reset	
Screen (RGB-PC)	

Color Temperature	Medium
Fresh Contrast	Off
Fresh Color	Off
Noise Reduction	Auto
Gamma	Medium
Black Level	◀ Low ▶
Eye Care	Off
Film Mode	Off
Close	
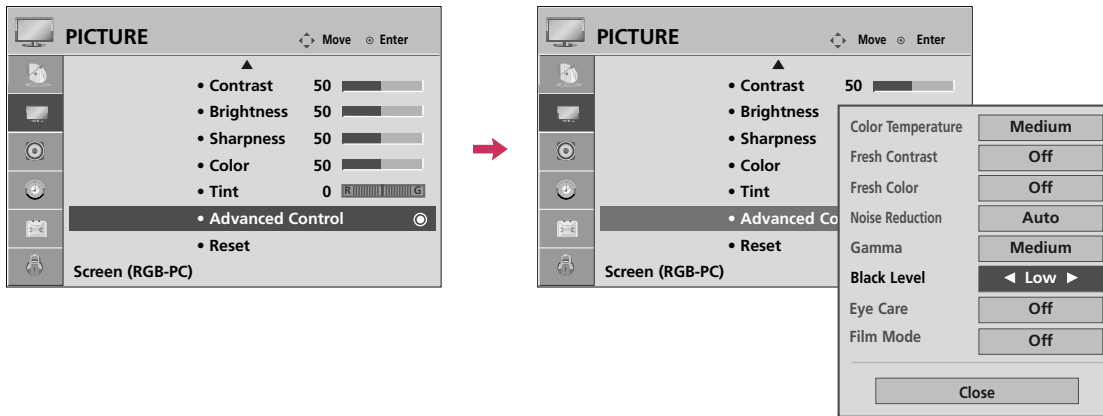
1 MENU / Select **PICTURE**.

2 ENTER / Select **Advanced Control**.

3 ENTER / Select **Black Level**.

4 Select **Low** or **High**.

5 RETURN / Return to the previous menu.

MENU / Return to TV viewing.

- ■ **Low**: The reflection of the screen gets darker.
- ■ **High**: The reflection of the screen gets brighter.
- ■ **Auto**: Realizing the black level of the screen and set it to High or Low automatically.

ADVANCED CONTROL - EYE CARE

Dims extremely bright pictures.
This feature is disabled in "**Picture Mode-Vivid, Cinema**".

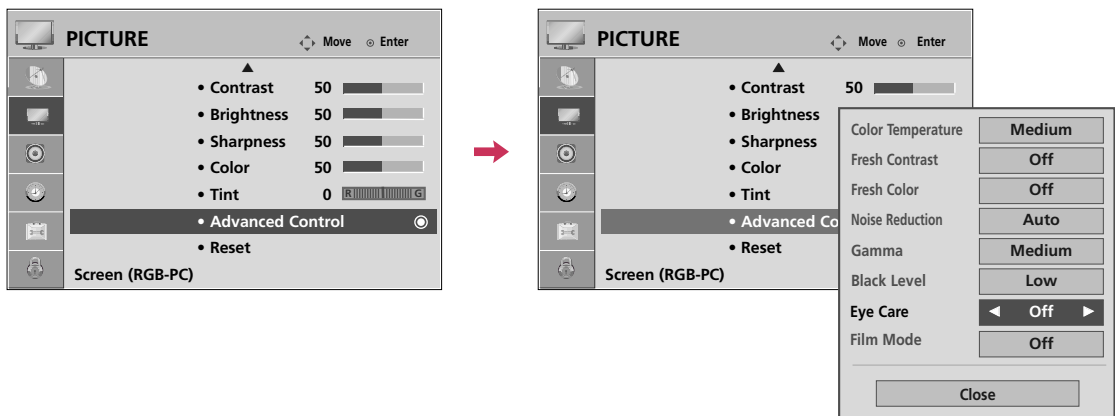| PICTURE	Move ⊙ Enter
• Contrast	50
• Brightness	50
• Sharpness	50
• Color	50
• Tint	0 R‖‖‖‖‖‖‖‖ G
• Advanced Control	◉
• Reset	
Screen (RGB-PC)	

PICTURE	Move ⊙ Enter
• Contrast	50
• Brightness	
• Sharpness	
• Color	
• Tint	
• Advanced Co	
• Reset	
Screen (RGB-PC)	

Color Temperature	Medium
Fresh Contrast	Off
Fresh Color	Off
Noise Reduction	Auto
Gamma	Medium
Black Level	Low
Eye Care	◄ Off ►
Film Mode	Off
Close	

1 MENU · Select **PICTURE**.

2 ENTER · Select **Advanced Control**.

3 ENTER · Select **Eye Care**.

4 · Select **On** or **Off**.

5 RETURN · Return to the previous menu.

MENU · Return to TV viewing.

ADVANCED CONTROL - FILM MODE

Set up the TV for the best picture appearance for viewing movies.

When you operate Film Mode (3:2 Pull-Down Mode or Cinema Correction Mode), the TV will adjust 24 fps video from movies to 30 fps video for display.

This feature operates only in TV (Analog TV, Digital DTV), AV1, AV2, Component 480i/1080i, and HDMI 480i, 1080i mode.

PICTURE		Move ◎ Enter
	• Contrast	50
	• Brightness	50
	• Sharpness	50
	• Color	50
	• Tint	0 R......G
	• Advanced Control	◎
	• Reset	
	Screen (RGB-PC)	

➡

PICTURE		Move ◎ Enter
	• Contrast	50
	• Brightness	
	• Sharpness	
	• Color	
	• Tint	
	• Advanced Co	
	• Reset	
	Screen (RGB-PC)	

Color Temperature	Medium
Fresh Contrast	Off
Fresh Color	Off
Noise Reduction	Auto
Gamma	Medium
Black Level	Low
Eye Care	Off
Film Mode	◀ Off ▶
Close	

1 MENU

Select **PICTURE**.

2 ENTER

Select **Advanced Control**.

3 ENTER
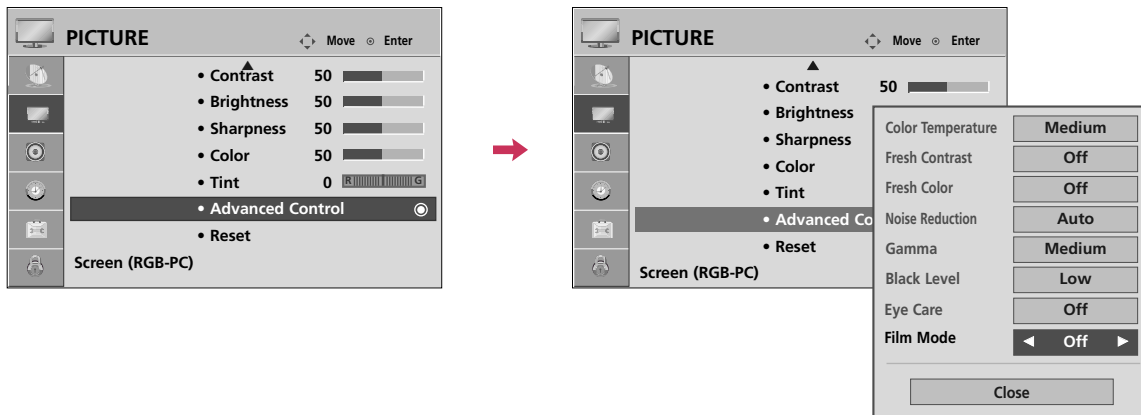
Select **Film Mode**.

4

Select **On** or **Off**.

5 RETURN

Return to the previous menu.

MENU

Return to TV viewing.

PICTURE RESET

Settings of the selected picture modes return to the default factory settings.
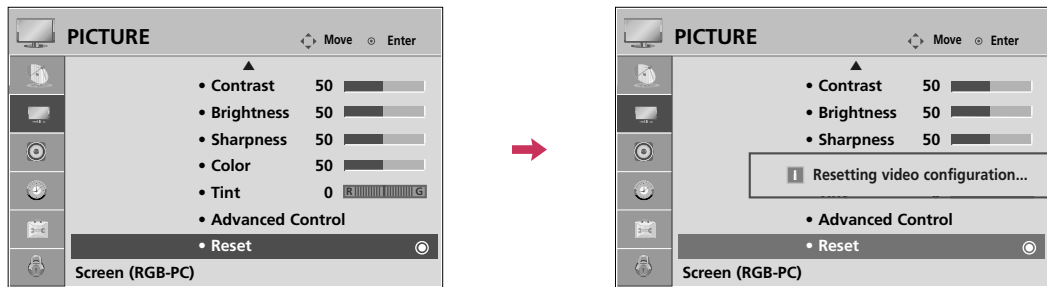
PICTURE Move ⊙ Enter
- Contrast 50
- Brightness 50
- Sharpness 50
- Color 50
- Tint 0 R||||||||||||||G
- Advanced Control
- Reset ◎
Screen (RGB-PC)

PICTURE Move ⊙ Enter
- Contrast 50
- Brightness 50
- Sharpness 50
  Resetting video configuration...
- Advanced Control
- Reset ◎
Screen (RGB-PC)

1 MENU Select **PICTURE**.

2 ENTER Select **Reset**.

3 ENTER Initialize the adjusted value.

MENU Return to TV viewing.

SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELER (AUTO VOLUME)

Auto Volume makes sure that the volume level remains consistent whether you are watching a commercial or a regular TV program.

AUDIO	◄► Move ⊙ Enter
Auto Volume	**: Off** ◉
Clear Voice	: On
Balance	0 L▮▮▮▮▮▮▮R
Sound Mode	: Standard
	• SRS TruSurround XT: Off
	• Treble 50 ▮
	• Bass 50 ▮
	• Reset
	▼

➡

AUDIO	◄► Move ⊙ Enter
Auto Volume	**: Off**	**Off** ◉
Clear Voice	: On	**On**
Balance	0 L▮▮▮▮▮▮▮R
Sound Mode	: Standard
	• SRS TruSurround XT: Off
	• Treble 50 ▮
	• Bass 50 ▮
	• Reset
	▼
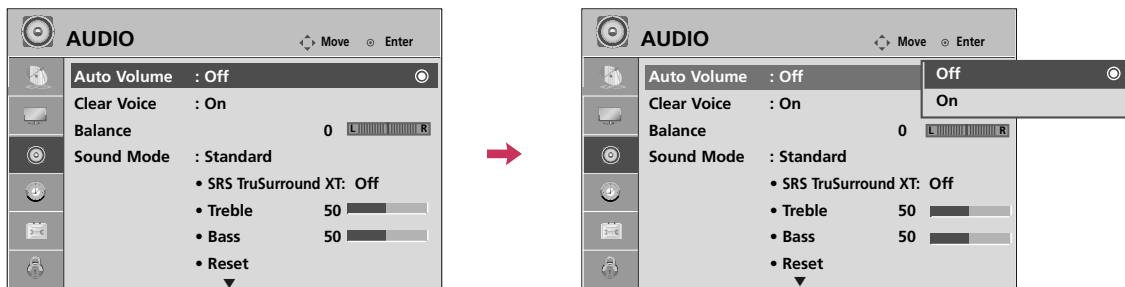
1 MENU ⊙ Select **AUDIO**.

2 ENTER ⌄ Select **Auto Volume**.

3 ENTER ⌄ Select **On** or **Off**.

4 RETURN Return to the previous menu.

MENU Return to TV viewing.

55

PRESET SOUND SETTINGS (SOUND MODE)

Sound Mode lets you enjoy the best sound without any special adjustment as the TV sets the appropriate sound options based on the program content.
Standard, **Music**, **Cinema**, **Sport**, and **Game** are preset for optimum sound quality at the factory and are not adjustable.
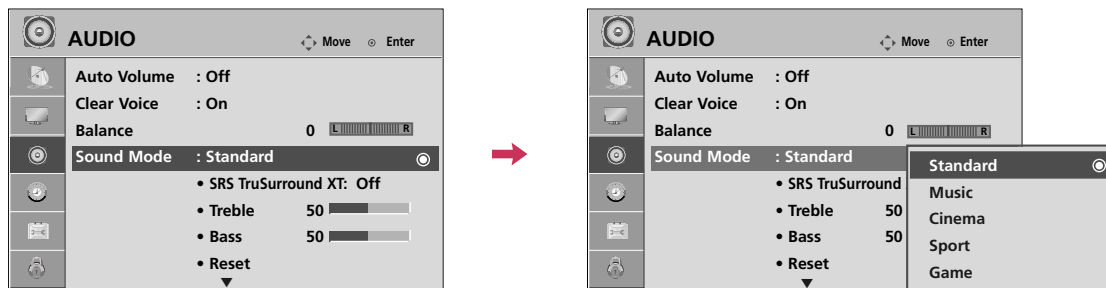
AUDIO ◇ Move ⊙ Enter	**AUDIO** ◇ Move ⊙ Enter
Auto Volume : Off	Auto Volume : Off
Clear Voice : On	Clear Voice : On
Balance 0 L︴R	Balance 0 L︴R
Sound Mode : Standard ◎	Sound Mode : Standard
• SRS TruSurround XT: Off	• SRS TruSurround
• Treble 50	• Treble 50
• Bass 50	• Bass 50
• Reset	• Reset

Standard ◎
Music
Cinema
Sport
Game

1 MENU   Select **AUDIO**.

2 ENTER   Select **Sound Mode**.

3 ENTER   Select **Standard**, **Music**, **Cinema**, **Sport**, or **Game**.

4 RETURN   Return to the previous menu.

MENU   Return to TV viewing.

SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.
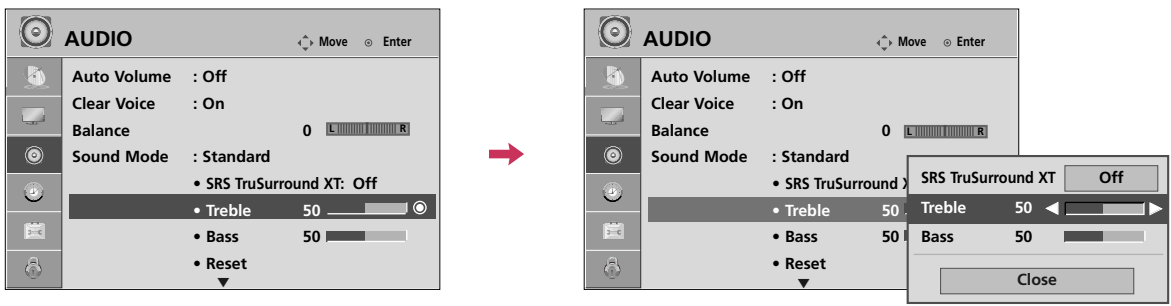
AUDIO		◇ Move ⊙ Enter
Auto Volume	: Off	
Clear Voice	: On	
Balance		0 L▐▌▌▌▌▌▌▌▌▌▌▌R
Sound Mode	: Standard	
	• SRS TruSurround XT: Off	
	• Treble	50 ⊙
	• Bass	50
	• Reset	
	▼	

➡

AUDIO		◇ Move ⊙ Enter
Auto Volume	: Off	
Clear Voice	: On	
Balance		0 L▐▌▌▌▌▌▌▌▌▌▌▌R
Sound Mode	: Standard	
	• SRS TruSurround X	
	• Treble	50
	• Bass	50
	• Reset	
	▼	

SRS TruSurround XT	Off
Treble	50 ◀ ▐▌▌▌ ▶
Bass	50 ▐▌▌▌
Close	

1	MENU	⌄⌃	Select **AUDIO**.
2	ENTER ⊙	⌄⌃	Select **Sound Mode**.
3	ENTER ⊙	⌄⌃	Select **Standard**, **Music**, **Cinema**, **Sport**, or **Game**.
4	ENTER ⊙	⌄⌃	Select **Treble** or **Bass**.
5	ENTER ⊙	‹ ›	Make appropriate adjustments.
6	RETURN		Return to the previous menu.
	MENU		Return to TV viewing.

SOUND &LANGUAGE CONTROL

SRS TRUSURROUND XT

Takes advantage of any multi-channel format without needing to add extra speakers or equipment. Dialog clarity, bass enrichment, and the addition of stereo audio enhancement produces an immersive sound experience from standard stereo material.

AUDIO	⬩⬩ Move ⦿ Enter
Auto Volume	: Off
Clear Voice	: On
Balance	0 L|||||||||||||R
Sound Mode	: Standard
• SRS TruSurround XT:	Off ⦿
• Treble	50
• Bass	50
• Reset	

➡

AUDIO	⬩⬩ Move ⦿ Enter
Auto Volume	: Off
Clear Voice	: On
Balance	0 L|||||||||R
Sound Mode	: Standard
• SRS TruSurround X	
• Treble	50
• Bass	50
• Reset	

SRS TruSurround XT	◄ Off ►
Treble	50
Bass	50
Close	
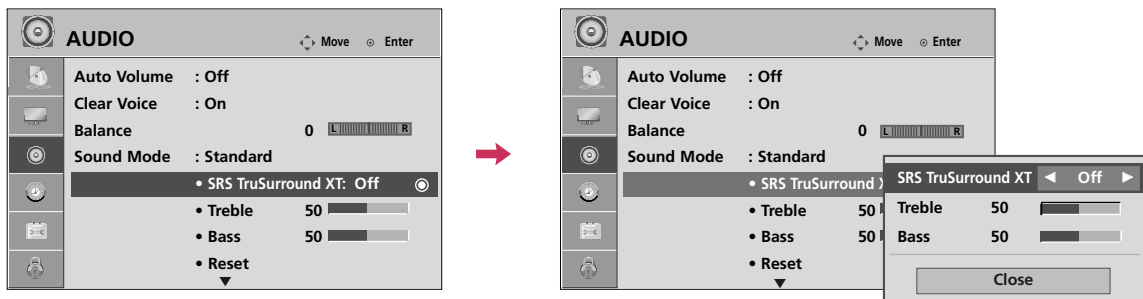
1 MENU   Select **AUDIO**.

2 ENTER   Select **SRS TruSurround XT**.

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

4 RETURN   Return to the previous menu.

MENU   Return to TV viewing.

CLEAR VOICE

By differentiating the human sound range from others, it improves the sound quality of voices.

AUDIO	⟨⟩ Move ⊙ Enter
Auto Volume	: Off
Clear Voice	**: On** ⦿
Balance	0 L▮▮▮▮▮▮▮▮▮▮▮▮ R
Sound Mode	: Standard
	• SRS TruSurround XT: Off
	• Treble 50 ▮
	• Bass 50 ▮
	• Reset
	▼

➡

AUDIO	⟨⟩ Move ⊙ Enter
Auto Volume	: Off
Clear Voice	**: On** **Off**
Balance	**On** ⦿
Sound Mode	: Standard
	• SRS TruSurround XT: Off
	• Treble 50 ▮
	• Bass 50 ▮
	• Reset
	▼
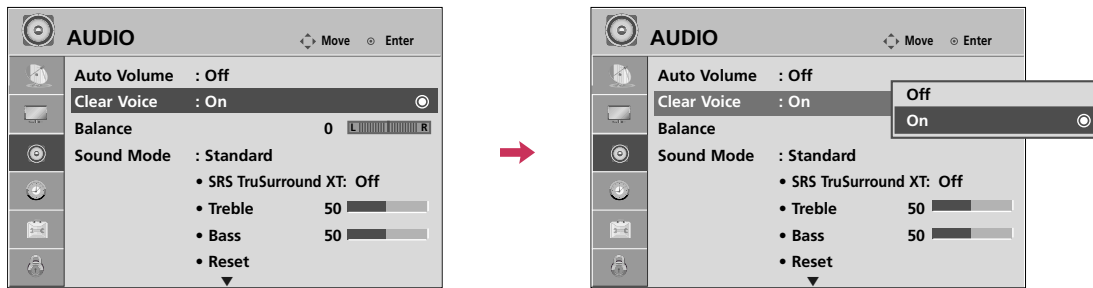
1 MENU Select **AUDIO**.

2 ENTER Select **Clear Voice**.

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

4 RETURN Return to the previous menu.

MENU Return to TV viewing.
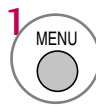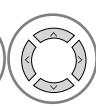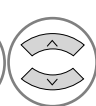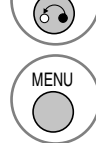
■ If you select "**Clear Voice-On**", **SRS TruSurround XT** feature will not work.

BALANCE

Adjust the left/right sound of speaker to suit your taste and room situations.
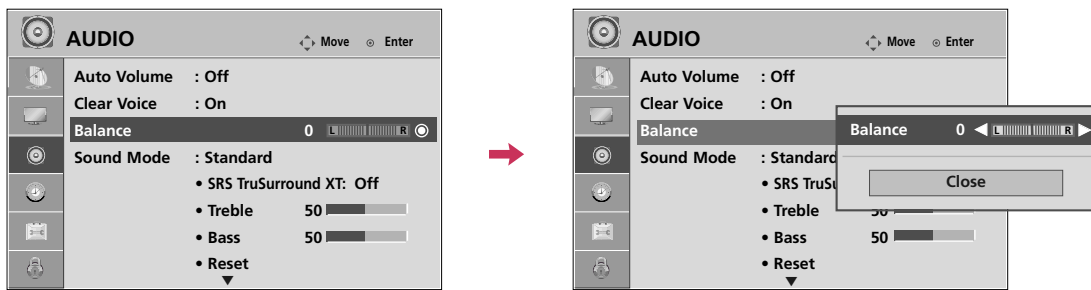
AUDIO	◄♦► Move ⊙ Enter
Auto Volume	: Off
Clear Voice	: On
Balance	0 [L]IIIIIIIIIIIR ⊙
Sound Mode	: Standard
	• SRS TruSurround XT: Off
	• Treble 50
	• Bass 50
	• Reset

➡

AUDIO	◄♦► Move ⊙ Enter
Auto Volume	: Off
Clear Voice	: On
Balance	
Sound Mode	: Standard
	• SRS TruSu
	• Treble
	• Bass 50
	• Reset

Balance   0 ◄ [L]IIIIIIIIIIR ►

Close

---

1 MENU

Select **AUDIO**.

2 ENTER

Select **Balance**.

3 ENTER

Make appropriate adjustments.

4 RETURN

Return to the previous menu.

MENU

Return to TV viewing.

TV SPEAKERS ON/OFF SETUP

Turn the TV speakers off if using external audio equipment.
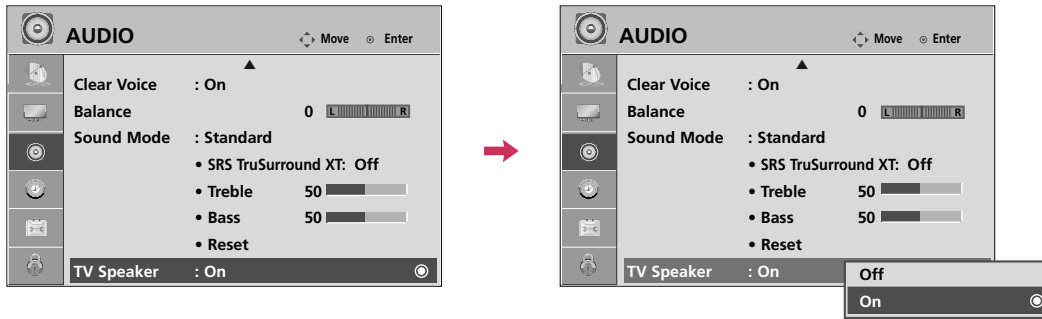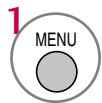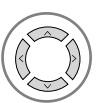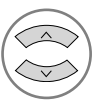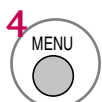
```
┌─────────────────────────────────────────┐     ┌─────────────────────────────────────────┐
│ ⊙  AUDIO            ⬦ Move  ⊙ Enter       │     │ ⊙  AUDIO            ⬦ Move  ⊙ Enter       │
│ ▢                        ▲                │     │ ▢                        ▲                │
│ ▢   Clear Voice    : On                   │     │ ▢   Clear Voice    : On                   │
│ ▢   Balance          0  L▐▐▐▐▐▐▐ R        │     │ ▢   Balance          0  L▐▐▐▐▐▐▐ R        │
│ ◉   Sound Mode     : Standard             │  ➡  │ ◉   Sound Mode     : Standard             │
│ ◔        • SRS TruSurround XT:  Off        │     │ ◔        • SRS TruSurround XT:  Off        │
│ ▣        • Treble       50 ▮              │     │ ▣        • Treble       50 ▮              │
│ ▢        • Bass         50 ▮              │     │ ▢        • Bass         50 ▮              │
│          • Reset                          │     │          • Reset                          │
│ ⊟  TV Speaker    : On             ◎       │     │ ⊟  TV Speaker    : On      ┌──────────┐   │
└─────────────────────────────────────────┘     │                            │ Off      │   │
                                                  │                            │ On    ◎  │   │
                                                  └────────────────────────────└──────────┘───┘
```

1 MENU / ⬦ Select **AUDIO**.

2 ENTER / ⌄^ Select **TV Speaker**.

3 ENTER / ⌄^ Select **On** or **Off**.

4 RETURN Return to the previous menu.

MENU Return to TV viewing.

AUDIO RESET

Settings of the selected Sound Mode return to the default factory settings.

```
┌─────────────────────────────────────────┐
│ ◉  AUDIO              ◄› Move  ◉ Enter   │
│ ┌──┐                                     │
│ │  │ Auto Volume   : Off                 │
│ ├──┤ Clear Voice    : On                 │
│ │  │ Balance               0   L▐▐▐▐▐R   │
│ ├──┤ Sound Mode     : Standard           │
│ │◉ │        • SRS TruSurround XT:  Off   │
│ ├──┤        • Treble        50           │
│ │  │        • Bass          50           │
│ ├──┤        • Reset              ◉        │
│ │  │              ▼                      │
└─────────────────────────────────────────┘
```

➡

```
┌─────────────────────────────────────────┐
│ ◉  AUDIO              ◄› Move  ◉ Enter   │
│ ┌──┐                                     │
│ │  │ Auto Volume   : Off                 │
│ ├──┤ Clear Voice    : On                 │
│ │  │ Balance               0   L▐▐▐▐▐R   │
│ ├──┤ Sound Mode  ┌──────────────────────┐│
│ │◉ │             │ ℹ  Resetting audio   ││
│ ├──┤             │    configuration...  ││
│ │  │        • Treble        50           │
│ ├──┤        • Bass          50           │
│ │  │        • Reset              ◉        │
│ │  │              ▼                      │
└─────────────────────────────────────────┘
```

1 | MENU | Select **AUDIO**.

2 | ENTER | Select **Reset**.
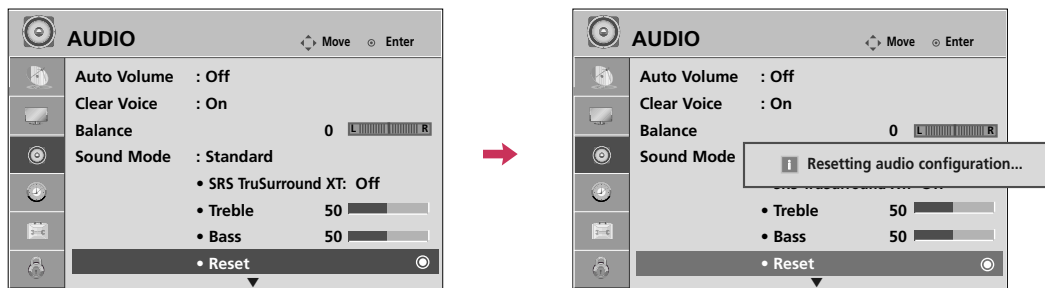
3 | ENTER | Initialize the adjusted value.

4 | MENU | Return to TV viewing.

STEREO/SAP BROADCAST SETUP

For Analog only: This TV can receive MTS stereo programs and any SAP (Secondary Audio Program) that accompanies the stereo program if the station transmits an additional sound signal. Mono sound is automatically used if the broadcast is only in Mono.

MONO	STEREO	SAP

1

SAP

Each time you press the **SAP** button,
Mono, **Stereo**, or **SAP** appear in turn.

2

RETURN

Return to TV viewing.

■If other languages available on the digital signal, select them with the **SAP** button.

AUDIO LANGUAGE

Other languages may be available if a digital signal is provided by the broadcasting station.
This feature operates only in DTV mode.

	OPTION	◄ Move ⊙ Enter
	Language	: English ◉
	Caption	: Off

	OPTION	◄ Move ⊙ Enter
	Language	: English ◉
	Caption	: Off

Menu   English
Audio ◄ English ►
Close
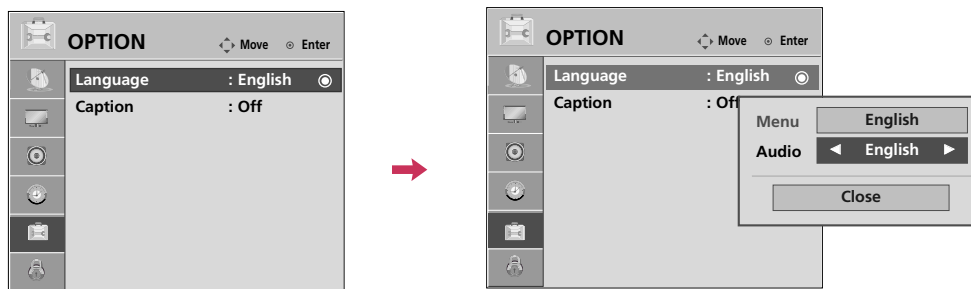
1 MENU — Select **OPTION**.

2 ENTER — Select **Language**.

3 ENTER — Select **Audio**.

4 Select your desired language: **English**, **Spanish**, or **French**

5 RETURN — Return to the previous menu.

MENU — Return to TV viewing.

SOUND & LANGUAGE CONTROL

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ON-SCREEN MENUS LANGUAGE SELECTION

The menus can be shown on the screen in the selected language.

OPTION	⟐ Move ⊙ Enter
Language	**: English** ◉
Caption	: Off

➡

OPTION	⟐ Move ⊙ Enter
Language	**: English** ◉
Caption	: Off

Menu	◄ **English** ►
Audio	**English**
Close	

---

1 MENU Select **OPTION**.

2 ENTER Select **Language**.

3 ENTER Select **Menu**.
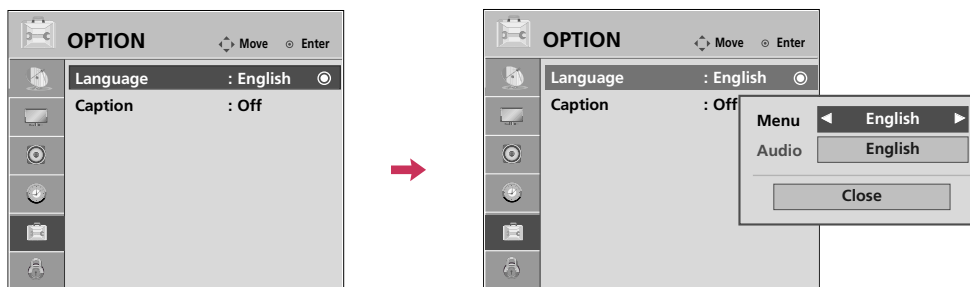
4 Select your desired language.
   From this point on, the on-screen menus will be shown in the selected language.

5 RETURN Return to the previous menu.

   MENU Return to TV viewing.

CAPTION MODE

Caption must be provided to help people with hearing loss watch TV.
This feature operates only in TV, AV1-2 mode.

1

CC Select Caption **On** or **Off**.

■ When selecting **Off**, Sub-menus for Analog, DTV, and Digital Option become disabled.

Analog Broadcasting System Captions

Caption must be provided to help people with hearing loss watch TV. Select a caption mode for displaying captioning information if provided on a program. Analog caption displays information at any position on the screen and is usually the program's dialog. Caption/Text, if provided by the broadcaster, would be available for both digital and analog channels on the Antenna/Cable. This TV is programmed to memorize the caption/text mode which was last set when you turned the power off. This function is only available when **Caption** Mode is set **On**.

OPTION	◇ Move ⊙ Enter
Language	: English
Caption	: Off ◉

OPTION	◇ Move ⊙ Enter
Language	: English
Caption	: CC1

◄ **On** ►
Mode **CC1**
Digital Option
Close

1 MENU Select **OPTION**.

2 ENTER Select **Caption**.

3 ENTER Select **On**.

4 Select **CC1-4** or **Text1-4**.

5 RETURN Return to the previous menu.

MENU Return to TV viewing.

■ **CAPTION**
The term for the words that scroll across the bottom of the TV screen; usually the audio portion of the program provided for the hearing impaired.

■ **TEXT**
The term for the words that appear in a large black frame and almost cover the entire screen; usually messages provided by the broadcaster.

Digital Broadcasting System Captions

Choose the language you want the DTV Captions to appear in.
Other Languages can be chosen for digital sources only if they are included on the program.
This function in only available when **Caption** Mode is set **On.**

OPTION	‹·› Move ◎ Enter
Language	: English
Caption	: Off ◉

➡

OPTION	‹·› Move ◎ Enter
Language	: English
Caption	: CC1

◄	**On**	►
Mode	**CC1**	
Digital Option		
Close		

1 MENU / Select **OPTION**.

2 ENTER / Select **Caption**.

3 ENTER / Select **On**.

4 Select **CC1-4**, **Text1-4**, or **Service1 - 6**.

5 RETURN / Return to the previous menu.

MENU / Return to TV viewing.

SOUND &LANGUAGE CONTROL

Caption Option

Customize the DTV captions that appear on your screen.
This function in only available when Caption Mode is set On.

OPTION ◄‡► Move ⊙ Enter

Language   : English
Caption   : Off ◉

OPTION ◄‡► Move ⊙ Enter

Language   : English
Caption   : CC1

◄   On   ►
Mode   CC1
Digital Option
Close

◄   Custom   ►
Size   [A] Standard
Font   Font 1
Text Color   □ White
Text Opacity Solid
Bg Color   ■ Black
Bg Opacity   Solid

Close

---

1 MENU   Select **OPTION**.

2 ENTER   Select **Caption**.

3 ENTER   Select **On**.

4   Select **Digital Option**.

5 ENTER   Select **Custom**.

6   Customize the **Style**, **Font**, etc., to your preference. A preview icon is provided at the bottom of the screen, use it to see the caption language.

7 RETURN   Return to the previous menu.

MENU   Return to TV viewing.

- **Size**: Set the word size.
- **Font**: Select a typeface for the text.
- **Text Color**: Choose a color for the text.
- **Text Opacity**: Specify the opacity for the text color.
- **Bg (Background) Color**: Select a background color.
- **Bg (Background) Opacity**: Select the opacity for the background color.

TIME SETTING

CLOCK SETTING

Auto Clock Setup

The time is set automatically from a digital channel signal.
The digital channel signal includes information for the current time provided by the broadcasting station.
Set the clock manually if the current time is set incorrectly by the auto clock function.

	TIME	◇ Move ⊙ Enter
	Clock	: Feb/21/2008/ 2:10 AM ⊙
	Off Time	: Off
	On Time	: Off
	Sleep Timer	: Off
	Auto Sleep	: Off

	TIME	◇ Move ⊙ Enter	◄ **Auto** ►
	Clock	: Feb/21/	Year 2008
	Off Time	: Off	Month 2
	On Time	: Off	Date 21
	Sleep Timer	: Off	Hour 2 AM
	Auto Sleep	: Off	Minute 10
			Time Zone **Eastern**
			Daylight Saving **Auto**
			Close

1 MENU Select **TIME**.

2 ENTER Select **Clock**.

3 ENTER Select **Auto**.
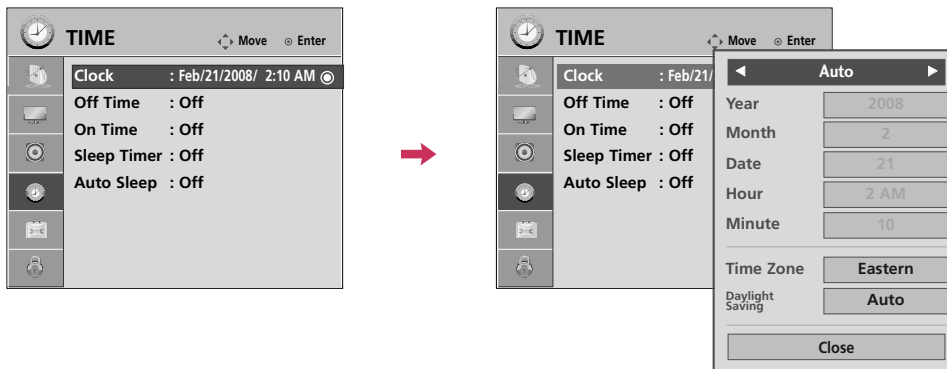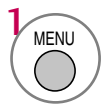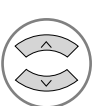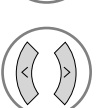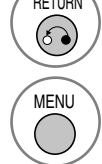
4 Select your viewing area time zone.
: **Eastern**, **Central**, **Mountain**, **Pacific**, **Alaska**, or **Hawaii**.

5 Select **Auto**, **On**, or **Off** (depending on whether or not your viewing area observes Daylight Saving time).

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

Manual Clock Setup

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

🕐 **TIME**	◇ **Move** ◉ **Enter**
Clock	**: Feb/21/2008/ 2:10 AM**◉
Off Time	: Off
On Time	: Off
Sleep Timer	: Off
Auto Sleep	: Off

➡

🕐 **TIME**	◇ **Move** ◉ **Enter**		
Clock	**: Feb/21/2008/ 2:**	◄ **Manual** ►	
Off Time	: Off	Year	2008
On Time	: Off	Month	2
Sleep Timer	: Off	Date	21
Auto Sleep	: Off	Hour	2 AM
		Minute	10
		Time Zone	Eastern
		Daylight Saving	Auto
		Close	

1 MENU ⌄⌃ Select **TIME**.

2 ENTER ⌃⌄ Select **Clock**.
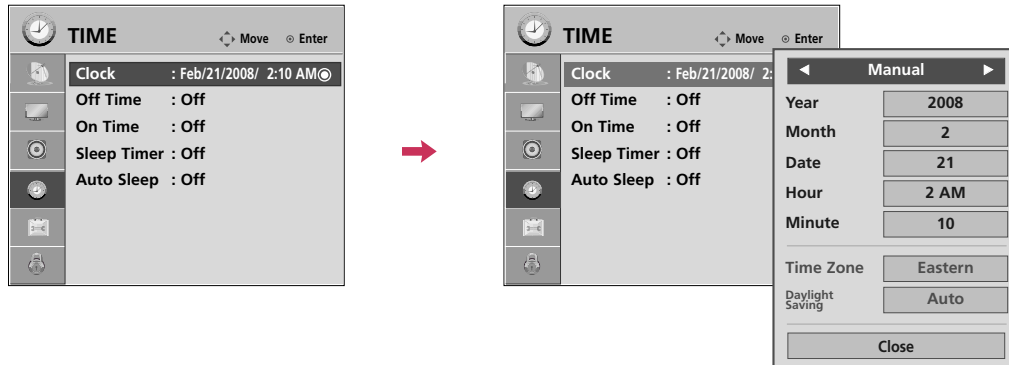
3 ENTER ‹ › Select **Manual**.

4 ⌃⌄ Select the Year, Month, Date, Hour, or Minute option.

5 ‹ › Set the Year, Month, Date, Hour, or Minute option.

6 RETURN Return to the previous menu.

MENU 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.

		Move Enter
TIME		
Clock	: Feb/21/2008/ 2:10 AM	
Off Time	: Off	
On Time	: Off	
Sleep Timer	: Off	
Auto Sleep	: Off	

➡

		Move Enter
TIME		
Clock	: Feb/21/2008/ 2:10 AM	
Off Time	: Off	**Repeat** ◄ Once ►
On Time	: 6:30 AM	**Hour** 6 AM
Sleep Timer	: Off	**Minute** 30
Auto Sleep	: Off	**Close**
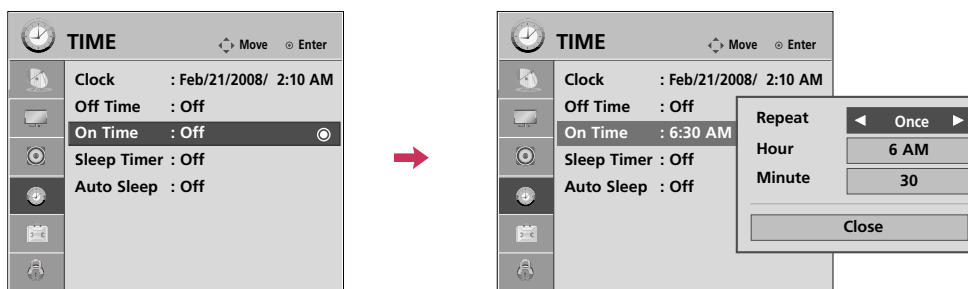
1 MENU   Select **TIME**.

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

3 ENTER   Select **Repeat**.

4   Select **Off**, **Once**, **Everyday**, **Mon~Fri**, **Mon~Sat**, **Weekend**, or **Sunday**.

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

6 RETURN   Return to the previous menu.

   MENU   Return to TV viewing.

SLEEP TIMER SETTING

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

10min

1
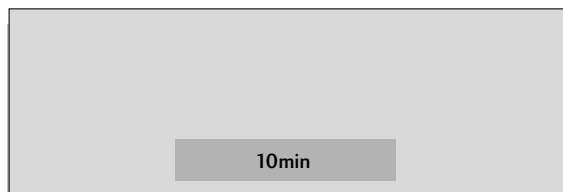
TIMER

Press the **TIMER** button repeatedly to select the number of minutes.
Sleep timer options: Off, 10, 20, 30, 60, 90, 120, 180, and 240 minutes.

2

RETURN

Return to TV viewing.

■ You can also adjust **Sleep Timer** in the **TIME** menu.

AUTO SHUT-OFF SETTING

TV will be automatically turned off, in case of no signal for 15 minutes.

TIME	◄› Move ⊙ Enter
Clock	: Feb/21/2008/ 2:10 AM
Off Time	: Off
On Time	: Off
Sleep Timer	: Off
Auto Sleep	**: Off** ◉

➡

TIME	◄› Move ⊙ Enter
Clock	: Feb/21/2008/ 2:10 AM
Off Time	: Off
On Time	: Off
Sleep Timer	: Off
Auto Sleep	**: On**

Off

On ◉

TV will be automatically turned off, in case of No Signal for 15 minutes.
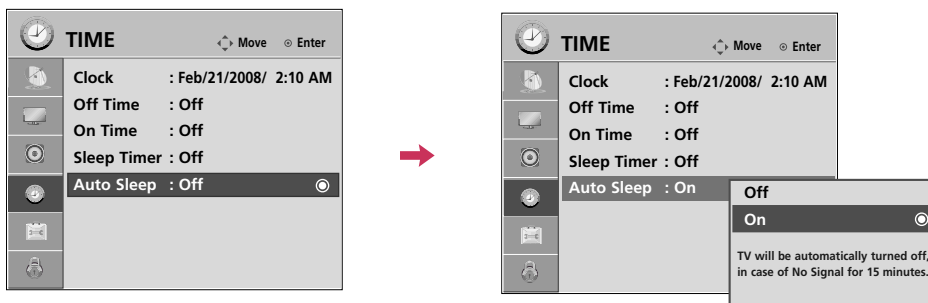
1 MENU   Select **TIME**.

2 ENTER   Select **Auto Sleep**.

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

4 RETURN   Return to the previous menu.

MENU   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.

LOCK	⬍ Move ◉ Enter
Lock System	: Off
Set Password	
Block Channel	
Movie Rating	
TV Rating-Children	
TV Rating-General	
Downloadable Rating	
Input Block	

Enter Password

*	*	*	*

Close

1 MENU ⬭ ENTER Select **LOCK**.
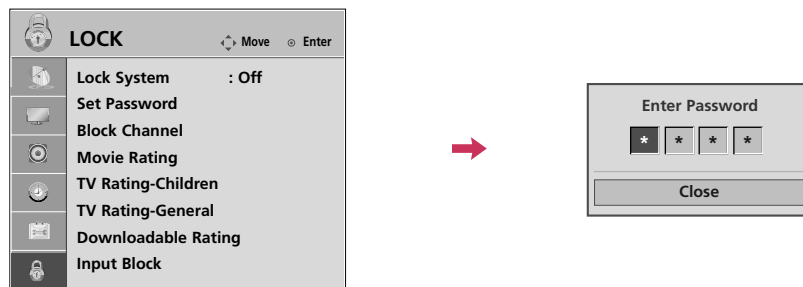
2 [keypad] Input the password.

- Enter the password as requested.
- The TV is set up with the initial password "0-0-0-0".

Lock System

Enables or disables the blocking scheme you set up previously.

	LOCK	◇ Move ◉ Enter			LOCK	◇ Move ◉ Enter
	Lock System	**: Off** ◉			**Lock System**	**: On**
	Set Password				Set Password	**Off**
	Block Channel				Block Channel	**On** ◉
	Movie Rating				Movie Rating	
	TV Rating-Children				TV Rating-Children	
	TV Rating-General				TV Rating-General	
	Downloadable Rating				Downloadable Rating	
	Input Block				Input Block	

1 MENU / ENTER   Select **LOCK**.
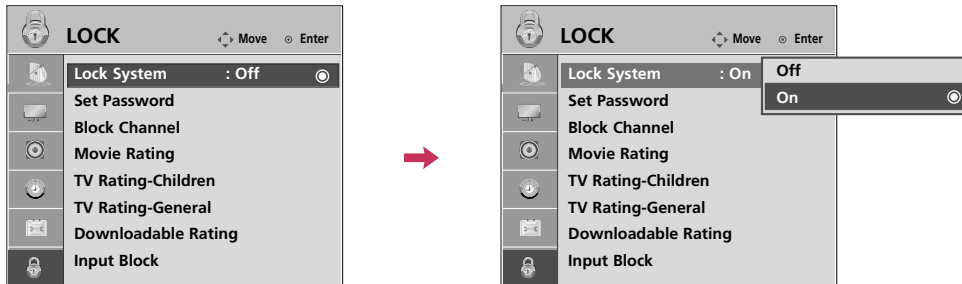
2   Input the password.

3   Select **Lock System**.

4 ENTER   Select **On** or **Off**.

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

5 RETURN   Return to the previous menu.

MENU   Return to TV viewing.

Set Password

Change the password by inputting a new password twice.

LOCK	◊ Move ◉ Enter
Lock System	: Off
Set Password	◉
Block Channel	
Movie Rating	
TV Rating-Children	
TV Rating-General	
Downloadable Rating	
Input Block	

➡

LOCK	◊ Move ◉ Enter
Lock System	: Off
Set Password	
Block Channel	
Movie Rating	
TV Rating-Children	
TV Rating-General	
Downloadable Rating	
Input Block	

New   * * * *
Confirm   * * * *
Close
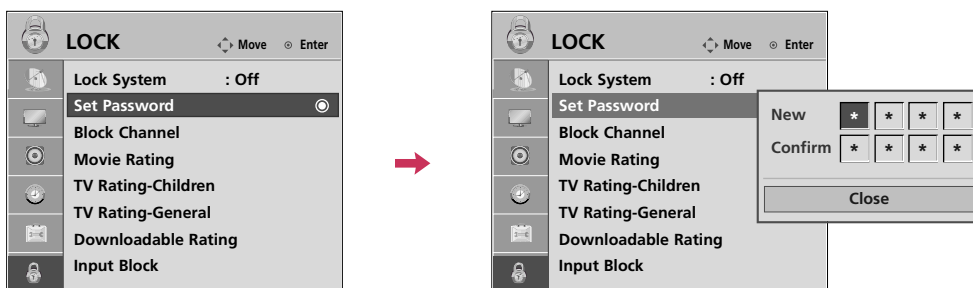
1 MENU   ENTER   Select **LOCK**.

2   Input the password.

3   Select **Set password**.

4 ENTER   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   Return to the previous menu.

MENU   Return to TV viewing.

PARENTAL CONTROL / RATING

CHANNEL BLOCKING

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

LOCK	◇ Move ◉ Enter
Lock System	: Off
Set Password	
Block Channel	◉
Movie Rating	
TV Rating-Children	
TV Rating-General	
Downloadable Rating	
Input Block	

7-1

	DIGITAL		ANALOG	
7-1	9-1	9-5	11-1
13-1	13-2	13-3	13-4
13-5	15-1	15-2	15-3
15-4	80-2	100-156	100-167
120-112	120-123	130-134	130-145
131-11			

◉ Block/Unblock ◇ Move   CH + Move Page   MENU Previous   RETURN EXIT

1 MENU / ENTER — Select **LOCK**.
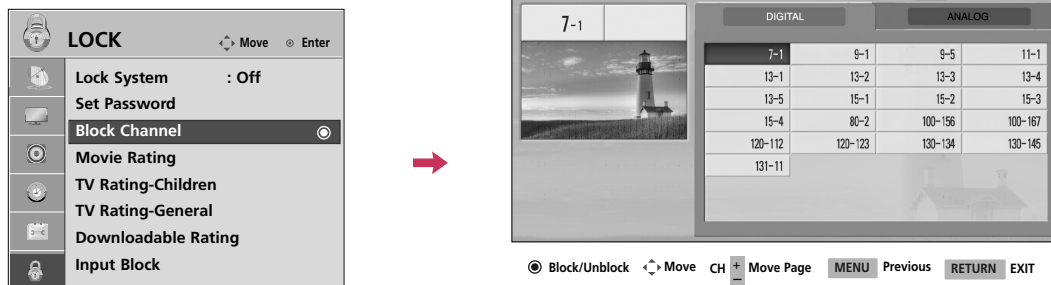
2 — Input the password.

3 — Select **Block Channel**.

4 ENTER — Select a channel to block or unblock.

5 ENTER — Block or unblock a channel.

6 MENU — Return to the previous menu.

RETURN — Return to TV viewing.

PARENTAL CONTROL / RATING

77

MOVIE & TV RATING

Movie Rating (MPAA)

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.

LOCK	‹› Move	⊙ Enter
Lock System	: Off	
Set Password		
Block Channel		
Movie Rating		◉
TV Rating-Children		
TV Rating-General		
Downloadable Rating		
Input Block		

LOCK	‹› Move	Enter
Lock System	: Off	
Set Password		
Block Channel		
Movie Rating		
TV Rating-Children		
TV Rating-General		
Downloadable Rating		
Input Block		

Blocking Off : Permits all programs

G
PG
PG-13
R
NC-17
X
Blocking Off
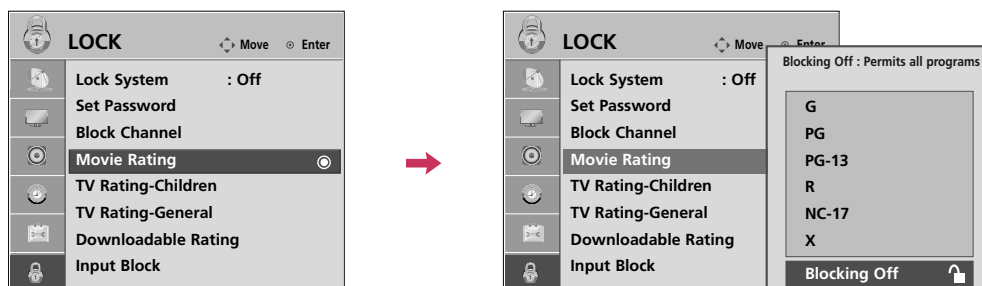
1 MENU / ENTER — Select **LOCK**.

2 Input the password.

3 Select **Movie Rating**.

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

5 RETURN — Return to the previous menu.

MENU — 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.

TV Rating Children

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.

LOCK	‹›Move ⊙ Enter
Lock System	: Off
Set Password	
Block Channel	
Movie Rating	
TV Rating-Children	◉
TV Rating-General	
Downloadable Rating	
Input Block	

➡

LOCK	‹›Move ⊙ Enter
Lock System	: Off
Set Password	
Block Channel	
Movie Rating	
TV Rating-Children	⊙
TV Rating-General	
Downloadable Rating	
Input Block	

Age
Fantasy Violence
Close

1 MENU ⌃⌄‹› ENTER   Select **LOCK**.
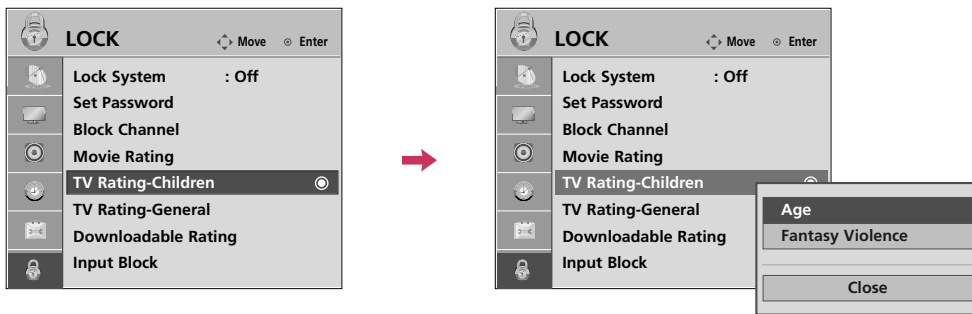
2 🔢 Input the password.

3 ⌃⌄ Select **TV Rating-Children**.

4 ENTER ⌃⌄ Select **Age** or **Fantasy Violence**.

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

5 › ⌃⌄ Select block options.

TV Rating General

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

LOCK	◇ Move ⊙ Enter
Lock System	: Off
Set Password	
Block Channel	
Movie Rating	
TV Rating-Children	
TV Rating-General	◉
Downloadable Rating	
Input Block	

➡

LOCK	◇ Move ⊙ Enter
Lock System	: Off
Set Password	
Block Channel	
Movie Rating	
TV Rating-Children	
TV Rating-General	
Downloadable Rating	
Input Block	

Age	▶
Dialogue	
Language	
Sex	
Violence	
Close	
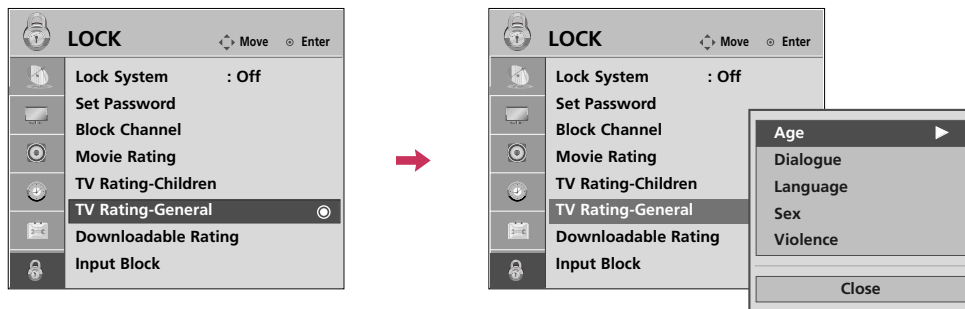
1	MENU ⌃⌄ ENTER	Select **LOCK**.
2	(number pad)	Input the password.
3	⌃⌄	Select **TV Rating-General**.
4	ENTER ⌃⌄	Select **Age**, **Dialogue**, **Language**, **Sex** or **Violence**.
5	❯ ⌃⌄	Select block options.
6	RETURN	Return to the previous menu.
	MENU	Return to TV viewing.

■ 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).

DOWNLOADABLE RATING

This function may become available in the future and will be available only for digital channels.
This function operates only when TV has received Region5 Rating data.

LOCK	⬦ Move ⊙ Enter
🔒	Lock System : Off
📺	Set Password
	Block Channel
◎	Movie Rating
🕐	TV Rating-Children
	TV Rating-General
📋	**Downloadable Rating** ◉
🔒	Input Block

➡

LOCK	⬦ Move ⊙ Enter
🔒	Lock System : Off
📺	Set Password
	Block Channel
◎	Movie Rating
🕐	TV Rating-Children
	TV Rating-General
📋	**Downloadable Rating**
🔒	Input Block

```
          ▲
Humor
Sport
Cruelty
Language
Sadness
Genre
Age
          ▼
        Close
```
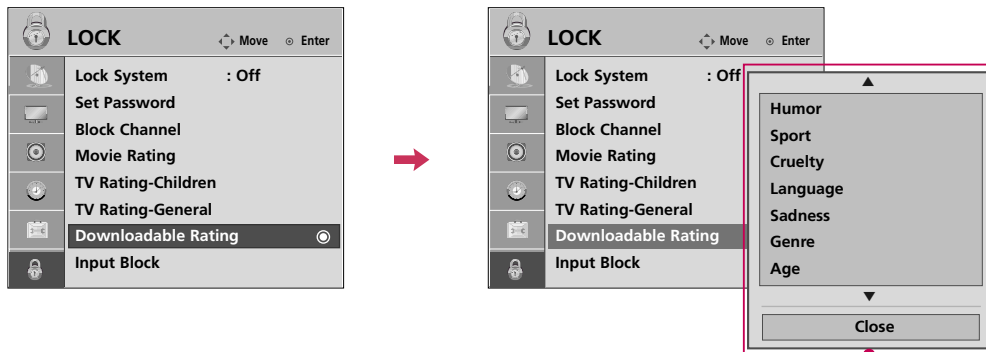
■ Based on rating table, your TV's OSD
(On Screen Display) may differ slightly
from what is shown in this manual.

1 MENU / ENTER Select **LOCK**.
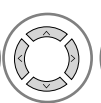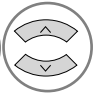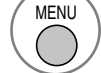
2 Input the password.

3 Select **Downloadable Rating**.

4 ENTER Select desired **Downloadable Rating** option.

5 ENTER Select desired option and block it.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

EXTERNAL INPUT BLOCKING

Enables you to block an input.

LOCK	◁ Move	⊙ Enter
Lock System	: Off	
Set Password		
Block Channel		
Movie Rating		
TV Rating-Children		
TV Rating-General		
Downloadable Rating		
Input Block		◎

LOCK	◁ Move	⊙ Enter
Lock System	: Off	
Set Password		
Block Channel		
Movie Rating		
TV Rating-Children		
TV Rating-General		
Downloadable Rating		
Input Block		

AV1	◄ Off ►
AV2	Off
Component	Off
RGB-PC	Off
HDMI1	Off
HDMI2	Off
Close	

1 MENU ⊙ ENTER   Select **LOCK**.
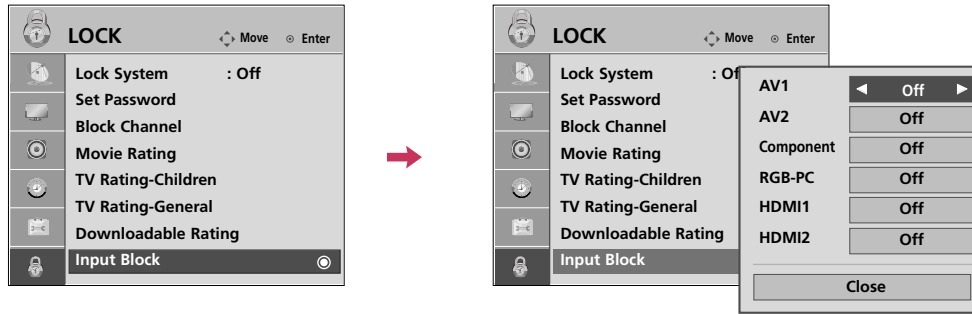
2   Input the password.

3   Select **Input Block**.

4 ENTER   Select input source.

5   Select **On** or **Off**.

6 RETURN   Return to the previous menu.

MENU   Return to TV viewing.

EXAMPLE ELECTRONIC PROGRAM GUIDE

This is an example of a typical TV electronic program guide showing available programming.

CHANNEL INDICATOR
Currently tuned channel and program.

TV PROGRAM
Current program on selected channel.

PROGRAMMING GRID
Program listings arranged in time slots.

DATE/TIME OSD
Shows current Date/Time.

K&M   Kids Movies

Mon. 29 May 2009 11:07

Channel	01:30 AM		2:30 AM	2:45 AM	3:00 AM	
17 XYZ	On The Political Scene					
18 K&M	Kids Movies		Kids ...		Kids ...	**New Release**
19 PQX	Top Fashions					Greatest Hits
20 WBD	World Events Today					

CHANNEL LIST
Shows available channels in numerical order.

PROGRAM TITLES
Highlight a title and press Enter to display additional program information.

FEATURED ATTRACTION
Highlight and click to get expanded information.

INTERACTIVE TV SETUP

Set up the TV for Gem PPV or Gem Operation without a PPV card

```
        ▲

┌─────────────────────┐
│   ( Channel Guide )  │
│   Hotel Information  │
│        Help          │
│        Exit          │
└─────────────────────┘

        ▼
```
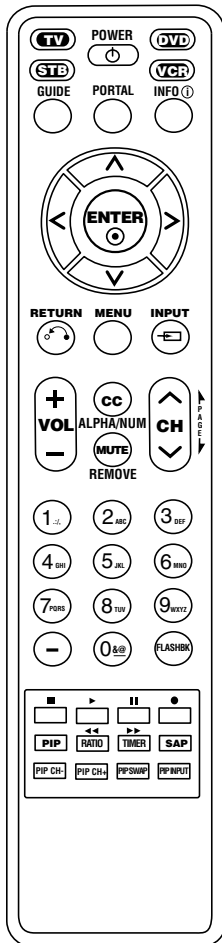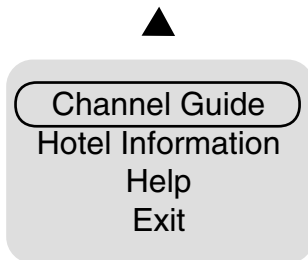
PPV GEM-TV Setup
1. Make all connections as required of PPV system.
2. Make LAN connection to lodge internal server.
3. Set TV to default condition.
4. Configure all relevant installer menu items and TV features.
5. Install PPV card. In most cases the PPV card is preprogrammed with the PPV provider master TV setup.

GEM-TV Setup Without PPV Card
Refer to Commercial Mode Setup on page 87.
1. See installer menu pages and make settings as required for Gem operation.
2. Specify a Gem Start Channel for item 118 that will tell the TV which channel to tune in for Gem operation.
3. Set TV features on TV Channel, Picture, Audio etc. menus as indicated on page 89.

Gem Operation Interactive Menu Features
Use the Gem remote provided in the room to operate both interactive menu and the regular TV features.

Channel Guide
Shows available TV programs. Indicates channel, program start and finish time and identifies the TV network.

Hotel Information
Shows typical hotel information. Such as photos of Guestroom, Dining, Business Center, Fitness, Pool, and Facility. And any contributing Partners such as local schools in co-operation programs with the lodge.

Help
Offers explanation for interactive menu operation with provided IR remote.

Exit
Removes the interactive menu from the screen.
Note: TV clock must be set before Gem data can be downloaded.

PIP (PICTURE-IN-PICTURE)

PIP enables the end user to view two sources on the screen at the same time. The end user can switch between the Main and Sub picture sizes.
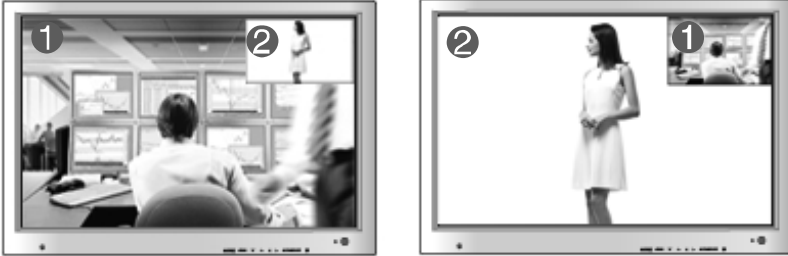
■ Note: Actual size of Main screen and PIP inset may be different than shown above.

PIP Operation
1. Connect auxiliary source(s) to TV connections panel.
2. Enter Installer menu to be sure source(s) is enabled.
3. Use the interactive remote provided in the room to operate PIP.
4. Press PIP on remote.
Use the PIP function keys to operate the available PIP features.
5. To exit PIP mode, simply press PIP.

PIP
Turns PIP mode on and off.

PIP CH+
Selects next higher channel for PIP window.

PIP CH-
Selects next lower channel for PIP window.

PIP INPUT
Selects viewing source for PIP window.
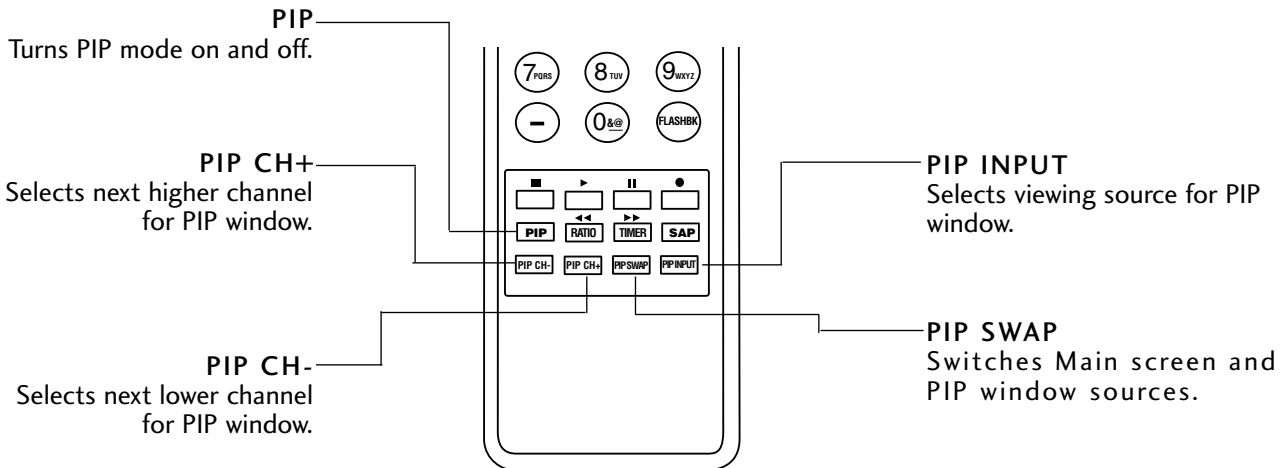
PIP SWAP
Switches Main screen and PIP window sources.

PIP Operation
Use the PIP function keys to operate the available PIP features.

■ Press PIP on remote to place PIP screen inset on the TV screen. See above.
  1. With PIP active, press Swap to switch the PIP inset with the TV picture. See above.
  Once the PIP inset shows the TV tuner picture, you can select TV channels with PIP Ch+ for channel up
  and PIP Ch- for channel down.
   2. Press PIP Input to choose from available Aux sources that can be used for the PIP inset.
   Note: Not all Aux sources can be used with PIP function.
■ To exit PIP mode press PIP to return to normal one source viewing.

COMMERCIAL MODE SETUP

INSTALLER OVERVIEW

This is the commercial mode setup guide only.

Operating Installer Menu
To set up the controls for the TV you will need to know how to enter the TV Installer menu and make changes to the default values as required. If necessary, familiarize yourself with the TV Installer menu and how to make and save changes in the menu.

LG Installer Remote
You will need an **LG Installer remote** control similar to the one shown to the right. The installer remote must have a "Source" button or its equivalent. The remote shown in this manual has "INPUT" -- this button serves the purpose of a Source button.

The TV's clonable features need to be set up. This is a critical step. If the Master TV display panel's clonable features like adding channel icons or channel labels are not done correctly, then the cloned TVs will all have problems. Refer to the Owner's Manual for other TV features: Video, Audio, Closed captions, V-Chip, etc.

TLL-1100A Clone Programmer
The TLL is a very simple cloner to use. It can be set up to clone a master TV setup and transfer it into a target TV. Cloning is accomplished using the TV/Cloner MPI ports for communication. Be sure the Master TV is set up completely. Cloning is only possible when the TV is tuned to an Analog channel, not a digital channel.

GEM PTC INSTALLER MENU

000   INSTALLER SEQ   000

UPN 000-000-000-000   FPGA E0F1
PTC V1.00.000   CPU V3.06.00
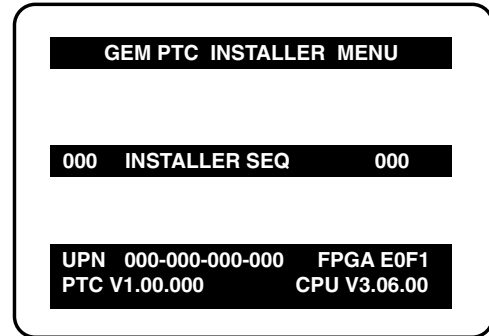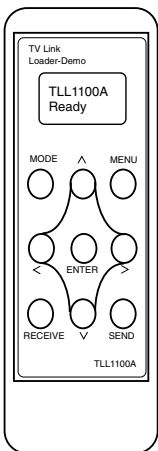
Typical Installer Menu

COMMERCIAL MODE SETUP

INTERACTIVE TV OVERVIEW

▲

```
┌─────────────────────────┐
│     Channel Guide        │
│     Hotel Information     │
│          Help            │
│          Exit            │
└─────────────────────────┘
```

▼
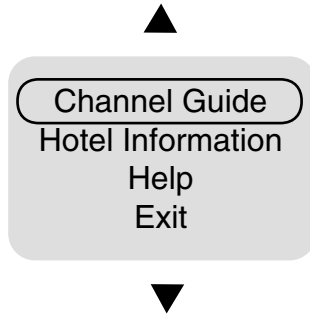
Gem Interactive TV Notes
GEM-TV Setup for PPV (Pay-per-view) Operation
A PPV card usually has a channel lineup included with the master TV setup. If this is the case, reset TV to default condition, set any TV features and installer menu items as required and then insert the PPV pre-programmed card into the MPI slot.

■ After TV setup, remove the AC power cord for 15 seconds.

Important!
■ The TV will take a few minutes to load electronic program information. If enough time has not elapsed for the TV to acquire EPG data, the TV may operate erratically; menus may not work or TV will not respond to IR remote key presses.
■ If Pseudo Power Off is active, actual TV power cycle will not occur until pseudo power off has timed out.

Through the interactive TV, the lodging guest is offered a more complete venue of lodge services and amenities. Using the TV in the comfort of the hotel room, the guest can browse the lodge resources available and make selections quickly. Charges for these offerings are billed at the time of reservation. The Gem TV is connected to the lodge's billing computer.
After the interactive TV is installed, the following hotel and other resources may be available to the hotel guest, assuming that they are provided by the lodge.

Interactive Amenities may include the following
■ Hotel Information, News and Events.
■ Directory Services, (Tourist attractions, Restaurants, etc.)
■ Reservation Service (Business Meetings, Fitness, SPA, etc.)
■ Weather, Traffic Information.
■ Shopping Services (Delivery to Guest Room)
■ Room Service (Menu Ordering, Memo Service, Morning Wake Up Call, Laundry, etc.)
■ Ticketing Services.
■ Check Out Service (in the Guest Room).
■ Gaming Services.
■ Email resources, guest can access an email account, etc.
■ Other offerings as they become available.....

COMMERCIAL MODE SETUP FOR MASTER TV

This page provides an overview of a Master TV configuration.

Note 1: Disconnect all Aux inputs. Under certain conditions, Auto Tuning (Channel search) is disabled if there is an Aux input active.

Commercial Mode Setup Procedure

1. Set Installer Menu Items
(Enter TV Installer Menu, see Installer menus for detailed instructions.)

a. Set Installer menu item **117 FACT DEFAULT**, to **001** and press **ENTER** on Installer remote. (This clears all installer menu custom settings, channel labels / icons etc. and reloads the factory default settings.)

b. Set Item **003 BAND/AFC**.
   - **Broadcast**: set to **000**.   - **HRC**: set to **002**
   - **CATV**: set to **001**.   - **IRC**: set to **003**

c. Set item **028 CH OVERIDE** to **001**. This allows access to channel search, Auto Tuning and Channel List/Edit options in the Channel Menu.

d. Set other particular installer items that affect your TV programming network. Enable/Disable Aux sources, set a **Gem Start Channel** etc.

e. After all required installer menu item settings have been adjusted, press ENTER on the remote to remove Installer Menu.

2. Set Up TV Features
(Channel, Picture, Audio, Lock, Time, Option, Digital Captions etc. See TV Clonable options list and TV menus pages.)

3. Run Auto Tuning (Channel Search)
(Search for all available channels.) Go to the Channel menu and access the Auto Tuning option, follow onscreen instructions.
a. Edit Channel Scan. In the Channel Menu, access Channel Edit option.

- Add/Delete channels per your system requirements.
  Note: Physical channel numbers are used to identify Virtual channels.

- Add familiar channel trademarks/logos like ABC, CBS, NBC etc. to the Channel-Time onscreen display. In the Channel menu, select the Channel Label option. Add identifiable labels (logos) for the end user to readily know what common networks are available.

4. Transfer TV Setup to Internal TV Controller: 2-5-5 + Menu Mode
After the TV channel scan has been edited and channel label icons added, enter the Installer menu. Once in the Installer menu, press 2-5-5 and MENU on the remote. This transfers the TV setup to the internal controller box.

5. Add Custom Channel Labels for Analog Channels: 2-5-4 + Menu Mode
Enter Installer menu, press 2-5-4 and MENU. Add your own custom text labels to channel onscreen displays. Note: Digital Channels often have a broadcaster generated label. (See 2-5-4+Menu pages.) When finished, to exit 2-5-4+Menu mode, press **MENU**.

Verify TV Setup
At this point, verify that the channel lineup, channel icons and custom labels are correct. Make sure the TV features are set per your requirements. Set item **028 Ch Overide** to **000** to lock the channel scan. After the preceding has been completed, the Master TV setup is ready to be copied to a Clone Programmer, see cloning options pages.

```
         GEM PTC  INSTALLER  MENU


 000    INSTALLER SEQ            000



 UPN  000-000-000-000      FPGA E0F1
 PTC V1.00.000             CPU V3.06.00
```
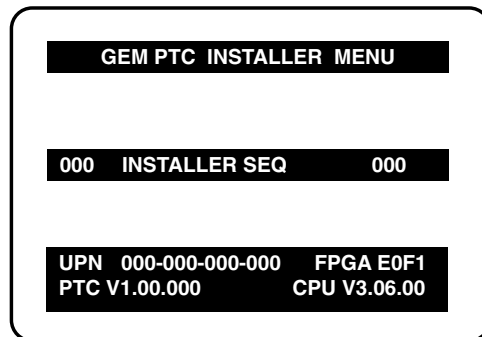
Typical TV Installer Menu

```
 117    FACT DEFAULT           00X

 003    BAND/AFC               00X

 028    CH. OVERIDE            001
```
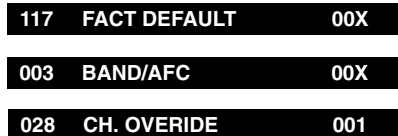
Adjust the settings for these Installer Menu Items

```
 DIGITAL 19-3
 MONO  STEREO  SAP



             WXYZ
```
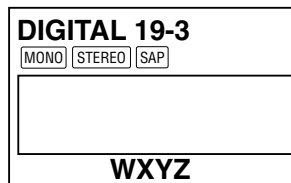
Custom Text Label 'WXYZ' created in 2-5-4 + Menu (Add Channel Label) Mode

---

```
 093    RJP AVAILABLE          001
```

Set 093 RJP Available to 001 if using a remote jack pack

```
 028    CH. OVERIDE            000
```

After Master TV setup has been completed, set item 028 Ch Overide to 000.

TLL-1100A CLONING CONNECTIONS/LEARNING SETUP

Connections for the TLL-1100A Clone Programmer to Learn the TV Master TV Setup

On Master TV
Set up all Master TV features on the menus and do a Channel Search. Add Channel and Aux labels etc. See previous page. Insert MPI cable into TV MPI port.

On TLL-1100A
1. Turn On the TLL-1100A.
2. Use the Mode button to select Clone Mode.
3. Use the Left/Right arrow to select the CBank (1 - 8) to store the master setup in.
4. Plug the other end of the MPI cable into the MPI port on the bottom of the TLL.
5. With the Installer remote control, select item 1 on TLL menu.
6. Press Enter, to transfer the Master setup into CBankX on the TLL. The TLL will copy the master setup.
7. When learning is done, disconnect MPI cable from Master TV.

On Target TV
1. Connect MPI cable from the TLL to the MPI port on the Target TV. Assure that the correct CBank(X) is selected on TLL..
2. With the Installer remote control select item 2, to Teach the target TV the master TV setup.
3. Press Enter to begin teaching.
4. When Teaching is done, disconnect MPI cable and power the TV Off. Unplug TV power cord.
5. Reconnect TV power cord. Power the TV On and the master setup should be resident on the TV.

M.P.I. Learning Setup

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

CLONE CLOCK = 00:00
TV   CLOCK = 00:00
THE CLONE IS VERSION V2.2.2
-To change menu items, Press
 channel keys or digits.
-To execute item, Press ENTER.

Antenna
(or CATV)

TV Link
Loader Demo
TLL1100A
Ready
MODE   ▲   MENU
ENTER
RECEIVE   ▼   SEND
TLL1100A

M.P.I. Teaching Setup

TV Link
Loader Demo
TLL1100A
Ready
MODE   ▲   MENU
ENTER
RECEIVE   ▼   SEND
TLL1100A

Antenna
(or CATV)

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

CLONE CLOCK = 00:00
TV   CLOCK = 00:00
THE CLONE IS VERSION V2.2.2
-To change menu items, Press
 channel keys or digits.
-To execute item, Press ENTER.
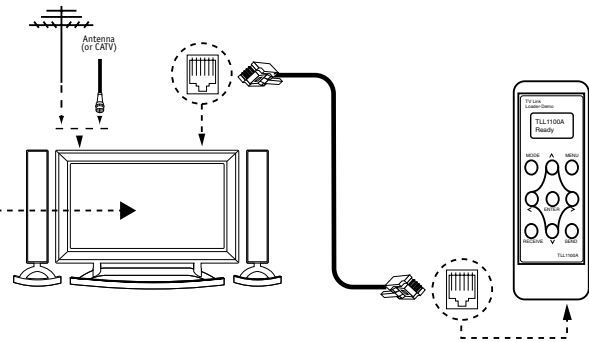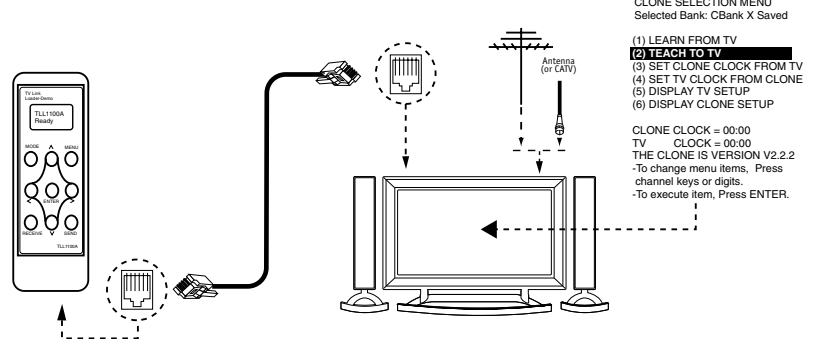
⚠ Warning

▶ Do not use the TLL-1100A while any PPV card is installed in TV or clone programmer device will be damaged.

ⓘ NOTE

▶ It is assumed that the TV is connected to a signal source, the TV source selected is Antenna (RF) In, the signal is from an Analog channel, not a digital channel, all equipment is connected to power and turned on and the TLL Cloner main menu is displayed on the TV screen, see above.

LT2002 CLONING CONNECTIONS/LEARNING SETUP

Connections for the LT2002 Clone Programmer to Learn the TV Master TV Setup

Antenna or CATV

Ferrite Core (TDK, ZCAT 2035-0930)

THE CLONE HAS CONTROL OF THE TV

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

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

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

Master TV

MPI

Status Indicator

Color
• green   battery ok
• red   battery low

Blink pattern
• slow   power on
           no communications
• heartbeat power on
           communications ok

QuickSet II Programmer
LT2002

Clone Programmer

⚠ Warning

▶ Do not use LT2002 while any PPV card is installed in TV or clone programmer device will be damaged.

❶ NOTE

▶ It is assumed that the TV is connected to a signal source, the source selected is Antenna (RF) In, the signal is from an Analog channel, not a digital channel, all equipment is connected to power and turned on and the LT2002 Clone Programmer main menu (THE CLONE HAS CONTROL OF THE TV) menu is displayed on the TV screen, see above and next page.

Before you begin cloning...

- The Master TV should be connected to a good, stable signal from an over-the-air antenna or cable service Analog channel and connected to power. (See above.)
- Teaching and Learning is only possible between identical model devices. (However, the LT2002 Clone programmer can store up to 3 different 'master' setups.) WARNING: Copying a blank or incorrect memory into a TV, STB or other device will cause the TV, STB or other device to operate erratically or become inoperable.
- Use an Installer's remote to operate Learning and Teaching menus.
- Make sure that the batteries in the Clone programmer are fresh.

- If batteries are removed, the Clone Clock time will be lost.
- Decide if you want to set the time from the Clone programmer or copy the time to the Clone programmer; from a compatible TV which has the clock set to the current time.
- Setting the time and transferring it to the Clone or other device is a separate procedure.
- Follow the connection diagram above to connect the Clone to a Master TV TV display panel. After learning is complete, to another identical TV TV display panel to "teach" it the master setup.
- See the Clone Troubleshooting section to resolve problems.

Turn to the next page to continue Cloning Setup.

LT2002 CLONING LEARNING SETUP

Learning the Master TV Setup
Instructions for the Clone Programmer to Learn the Master TV Setup

Use MPI Cable to Connect LT2002 Clone Programmer to Master TV MPI Port
If there is a good connection, "THE CLONE HAS CONTROL OF TV"
message will appear. Press any key on the Installer remote.

Learn Setup from Master TV
Press 1 to select the "LEARN FROM TV" option, then press ON/OFF, POWER, or ENTER to go to the Memory Bank Selection Menu. Pick the Memory "Bank" you want to store the master TV's setup in by pressing either Channel key repeatedly to choose Memory 1, 2 or 3. (If you choose a Memory "Bank" that has a master device's setup programmed into it, that setup will be overwritten by the new master TV's setup.) Once the Clone memory bank is selected, press ON/OFF, POWER, or ENTER. The Clone memory bank you have selected will be shown. Press ON/OFF or POWER to begin copying the master TV's setup.

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

Since the Clone Programmer's time cannot be set directly, the current time needs to be copied from a Zenith/LG TV equipped with M.P.I. input capability.

After the time is copied to the Clone programmer, the current time can then be transferred to another TV. (This can be a master TV, or another TV which has already had the features set up.)
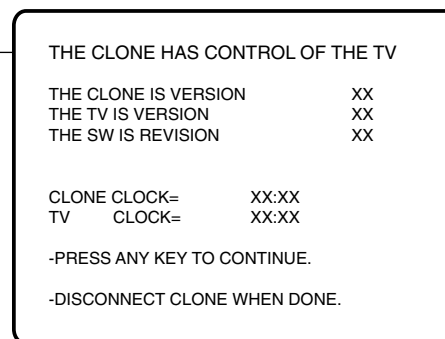
```
THE CLONE HAS CONTROL OF THE TV

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


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

-PRESS ANY KEY TO CONTINUE.

-DISCONNECT CLONE WHEN DONE.
```
This menu should appear by itself after the LT2002 is connected to the TV MPI port.
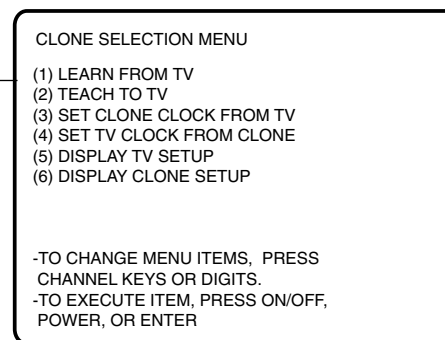
```
CLONE SELECTION MENU

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



-TO CHANGE MENU ITEMS,  PRESS
 CHANNEL KEYS OR DIGITS.
-TO EXECUTE ITEM, PRESS ON/OFF,
 POWER, OR ENTER
```
This menu should appear after any key is pressed on the Installer remote.

LT2002 Clone Programmer Communication Problems
- A slow flashing green light indicates there are communication problems between the TV and the LT2002 clone programmer. If this is the case, check for a damaged cable, poor contacts, or other connection troubles.
- If the status indicator is red, the programmer batteries are low and should be replaced. Install 4 high-quality alkaline AA batteries.

CLONING CONNECTIONS/TEACHING SETUP

Teaching the Master Setup to Another TV

Connections for the LT2002 to Teach another TV the Master Setup

Antenna
or CATV

Ferrite Core
(TDK, ZCAT
2035-0930)

```
THE CLONE HAS CONTROL OF THE TV

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

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

-PRESS ANY KEY TO CONTINUE.

-DISCONNECT CLONE WHEN DONE.
```

Connect cable to
TV MPI Jack and
follow on screen
instructions

Status
Indicator

MPI   Reset

Color
• green: battery ok
• red: battery low

Blink pattern
• slow   power on
              no communications
• heartbeat   power on
              communications ok

QuickSet II Programmer
LT2002

Target TV   **Clone Programmer**

Teach Master TV's Setup to
the target TV

After learning is complete, remove the M.P.I. cable from the master TV and connect it to the target TV that you want to copy the master TV's setup into. With "THE CLONE HAS CONTROL OF TV" message displayed, press 2 or use either Channel key to go to the "TEACH TO TV" option, press ON/OFF, POWER, or ENTER. Select the LT2002 memory that the new setup is in. Press On/Off to transfer the new setup and other information to the new TV. Teaching usually takes 2-3 minutes.
After the "TEACHING COMPLETE" message is displayed, press any key to return to the Clone menu, then press ON/OFF, POWER, or ENTER. If finished, detach M.P.I. cable from the target, newly-cloned TV.

Disconnect TV Power for 15 Seconds

Unplug the AC power cord of the newly-cloned TV from the power outlet for about 15 seconds to activate the newly-copied setup.

```
CLONE SELECTION MENU

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


-TO CHANGE MENU ITEMS,  PRESS
 CHANNEL KEYS OR DIGITS.
-TO EXECUTE ITEM, PRESS ON/OFF,
 POWER, OR ENTER
```

This menu should appear after any key is pressed on the Installer remote.

```
TEACHING IN PROGRESS,



PLEASE WAIT
```

This display will appear during Teaching function.

```
TEACHING COMPLETE
```

This display will appear after Teaching is complete.

COMMERCIAL MODE SETUP

INSTALLER MENU

Use the Installer's Menu to set up or change operational settings.

See more detailed descriptions of the Installer menu items on the following pages...

Accessing the Installer's Menu
Make sure TV is on. Installer's menu items can be accessed by using an installer's remote control. Just press MENU repeatedly until the TV seems to stop responding, then press 9, 8, 7, 6, then ENTER to access the Installer's menu. To remove the Installer's menu, press ENTER again. *Any changes you make will be stored in nonvolatile memory. (The menu also disappears automatically.)*

The Installer's menu opens with item 000 INSTALLER SEQ 000. Use the Up/Down arrow keys to sequence through the available menu items. Or, access an item directly by keying in the line number, then pressing MENU. For example, to access the Sleep Timer option which is item 015, press 0-1-5, then MENU. To change a setting, use the Left/Right arrow keys. Or, enter a value directly.

```
  GEM PTC  INSTALLER  MENU


  000   INSTALLER SEQ        000


  UPN  000-000-000-000    FPGA E0F1
  PTC V1.00.000           CPU V3.06.00
```
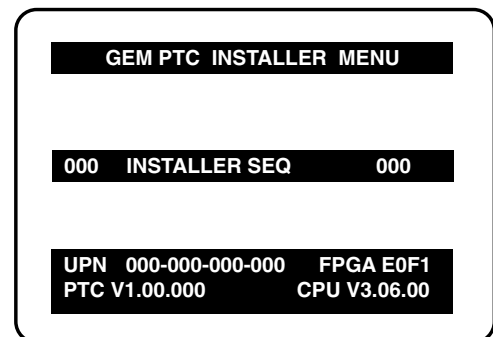
Typical Installer Menu

Using the Installer's Menu
Items 000 ~ 117 are immediately accessible only upon entering the Installer's Menu. Their numbers, descriptions, ranges, factory default settings, and a place for listing any changes made on-site are given below and on the following pages.

Installer Menu Items 000 through 117

Menu Item	Function	Value Range	Default Value	Brief Description of Function and Comments
000	INSTALLER SEQ	0 ~ 3	0	Leave default set to 0.
001	POWER MANAGE	0 ~ 7	0	Sets number of hours of no activity before auto shut Off.
002	AC ON	0 / 1	0	Set to 1 to enable auto turn On at power up.
003	BAND/AFC	0 ~ 3	1	Selects Tuning Band: 0=Broadcast, 1=CATV, 2=HRC, 3=IRC
004	STRT CHANNEL	0 ~ 127, 255	255	Channel at turn-on (Set to 255 to tune in last channel before power Off).
005	CHAN LOCK	0 / 1	0	If set to 1, cannot tune from current channel.
007	STRT VOLUME	0 ~ 63, 255	255	Sets Volume level at TV turn-on (Set 255 to retain last volume level).
008	MIN VOLUME	0 ~ 63	0	Sets minimum allowable volume setting.
009	MAX VOLUME	0 ~ 63	63	Sets maximum allowable volume setting.
010	MUTE DISABLE	0 / 1	0	Set to 1 to disable mute function.
011	KEY DEFEAT	0 / 1	0	Set to 1 to disable menu navigation keys on display panel.
015	SLEEP TIMER	0 / 1	1	Set to 1 to enable Sleep Timer.
016	EN TIMER	0 / 1	0	Set to 1 to enable On/Off Timers.
017	ALARM	0 / 1	1	Set to 1 to enable Alarm.
021	V-CHIP	0 / 1	1	Set to 1 to enable V-Chip functions.
022	MAX BLK HRS	0 ~ 99	12	Sets number of V-Chip (Parental Control) blocking hours.
023	CAPTION LOCK	0 / 1	0	Set to 1 to retain caption setting at power Off.
028	CH. OVERIDE	0 / 1	1	If set to 0, limits direct access to favorite channels.
029	OLD OCV	0 / 1	0	Set to 1 to change M.P.I. operation to OCV.
030	ACK MASK	0 / 1	0	If set to 1, changes M.P.I. for some OCV boxes.
031	POLL RATE	20 ~ 169	94	Selects poll rate for M.P.I.
032	TIMING PULSE	186 ~ 227	207	Sets baud rate for M.P.I.
034	CAMPORT EN	0 / 1	1	Set to 1 to enable Video 2 input.

Installer Menu Items 035 through 120

Menu Item	Function	Value Range	Default Value	Brief Description of Function and Comments
035	COMPPORT EN.	0 / 2	1 PC.	Note 1. Set to 0 to disable HDMI 1. Set to 1 for DTV, set to 2 for
038	YPrPb EN.	0 / 1	1	Set to 1 to enable display panel Component Video 1 input jacks.
039	REAR AUX EN	0 / 1	1	Set to 1 to enable display panel Video 1 input jack.
040	AUTO CAMPORT	0 / 1	1	Set to 1 to automatically switch to Camport. If set to 1, STRT AUX SRCE cannot be set to 2.
046	STRT AUX SRCE	0 ~ 7	6	Sets the starting AUX source.
047	AUX STATUS	0 / 1	0	Set to 1 for M.P.I. AUX source to be reported as a channel number instead of Channel 0.
053	DIS. CH-TIME M.	0 / 1	0	Set to 1 to disable Channel-Time display.
069	EN. CH-T COL.	0 / 1	1	Set to 1 to enable custom color for the Channel-Time display.
070	FOR. CH-TIME	0 ~ 7	2	Chooses custom foreground color for the Channel-Time display.
071	BCK. CH-TIME	0 ~ 7	2	Chooses custom background color for the Channel-Time display.
073	CH NOT AVBLE	0 / 1	0	If set to 1 and channel override is 0, "NOT AVAILABLE" message is displayed when directly accessing a channel not in the favorite channel list.
075	REVERT CH	0 / 1	0	If set to 1 and loss of M.P.I. communication occurs, TV tunes to Start Channel.
078	UPN MSB	0 ~ 255	0	User programmable number, most significant byte.
079	UPN MSB-1	0 ~ 255	0	User programmable number, most significant byte - 1.
080	UPN MSB-2	0 ~ 255	0	User programmable number, most significant byte - 2.
081	UPN LSB	0 ~ 255	0	User programmable number, least significant byte.
082	CHKSM ERROR	0 / 1	1	Enforces rigid M.P.I. checksum.
083	HANDSHK TIME	0 ~ 5	5	Relaxes M.P.I. timing to be compatible with PC based Windows-controlled systems.
084	PERMANENT BLK	0 / 1	0	Removes block hours setting for Parental Control and makes block permanent.
087	REAR RGB EN.	0 / 2	2	Note 1. Set to 0 to disable RGB1. Set to 1 for DTV, set to 2 for PC.
088	EN NOISE MUTE	0 / 1	1	If set to 1, mutes audio if no signal is present.
090	KEY LOCK	0 / 1	0	If set to 1, keyboard is locked out, IR is still functional.
092	RGB2 EN	0 / 2	0	Set to 1 to enable RGB 2 input.
093	RJP AVAILABLE	0 / 1	0	Set to 1 to enable. Leave set to 0 if not used.
094	SAP MENU EN	0 / 1	1	Set to 0 to disable feature on Function menu. Set to 1 to enable feature on Function menu.
096	DEF. ASP. RATIO	0 ~ 5	2	Sets default aspect ratio at power up. See detailed descriptions and item 106.
098	START GEM CH	0 ~ 135, 255	255	Sets the stating Gem channel, 255=last channel at power Off.
099	BACK LIGHTING	1 ~ 100 101 ~ 200	200	Sets the brilliance of the TV picture backlighting. Settings above 101 control dynamic back lighting and disable power saving mode.
102	ATSC BAND	0 ~ 4	4	Selects ATSC band.
103	ATSC TUNE MODE	0 / 1	1	Default 01 for physical channel scan. Set to 0 for Virtual Channel scan.
104	START MINOR CH	0 ~ 255	0	Selects Minor start channel. Set 0 for NTSC. Not 0, sets Minor channel number.
106	ASP RATIO LOCK	0 / 1	0	To retain set aspect ratio on power cycle, set to 1. Set to 0 for default ratio on power cycle.
116	VIDEO MUTE EN	0 / 1	0	Set to 0 for normal, set to 1 for Blank.
117	FACT DEFAULT	0 / 1	0	0=Normal. 1=Loads presets of all above settings.
118	POWER SAVING	0 / 1	1	Set to 0 to disable power saving mode.
119	GEM STRT CH	0 ~127	255	Sets the GEM Start Channel.
120	PSEUDO PWR OFF	0 ~ 255	000	Set from 001 - 255 for faster TV turn on time. Set to 0 to disable, normal TV turn on time.

COMMERCIAL MODE SETUP

Detailed Descriptions of Installer Menu Items

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

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

001 - POWER MANAGE (Power Management)
Determines hours of no activity before automatic shutoff. The POWER MANAGE function is for saving energy. If set to 0, Power Manage is Off. Settings range from 0 ~ 7, with 1 ~ 7 representing the hours that the unit will remain On, unless there has been activity from either the control panel or remote control.

002 - AC ON (AC Power Switchable)
If set to 1, allows the TV to turn On just by applying AC power. Pressing the On button is not necessary. This is desirable if the TV is plugged into a cable box or a power outlet controlled by a wall switch. Use ADJ Left/Right arrow to choose 0 or 1 where 0 is the default is Off, and 1 is On.
NOTE: If set to 1 (On), the TV does not respond to On/Off commands from either the remote or the display control panel, and the SLEEP TIMER is also non-functional.

003 - BAND/AFC (Band/Automatic Frequency Control)
There are 4 possible settings for this option:

0 = Broadcast	1 = CATV
2 = HRC	3 = IRC

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

004 - STRT CHANNEL (Start Channel)
If active, this function allows you to determine the initial channel number when the TV is turned On. This feature is useful for an in-house information channel, since the TV would always select that channel when it is turned On. Setting this to 255 causes the last channel viewed when the TV was turned Off, to be the tuned to channel when the TV is turned On again. Note: For a digital Start Channel, always remember to set item 104 to the Minor Start Channel number.

255 = Last channel	1 ~ 125 = Ch X	0 = Aux
126 Map to Channel 3.	127 Map to Channel 4.	

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

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

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

To translate a TV volume level to the installer menu value, use the following formula:

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

Enter only the whole number (disregard fractions).

---

007 - STRT VOLUME (Start Volume)
This function allows the Installer to determine the initial volume level setting when the TV is turned On. This feature is useful for an in-house information channel, since the TV would always select that volume level when it is turned On. The range of values are 0 - 63, 255. If 255 is selected, the current volume level will be retained in memory when the TV is turned Off; at turn On, the volume level will be automatically set at the previous or last level.

008 - MIN VOLUME (Minimum Volume)
This function determines the minimum volume level allowable with the VOLUME (VOL) Up/Down control. In this way, for example, someone cannot set the volume too low to hear. The value range is from 0 to 63 — change values with ADJ Left/Right arrow. The factory default is 0, which provides the full range of volume control, if item 009 MAX VOLUME is also set to 63. It may be best to set the same value on every TV.
NOTE: The minimum volume level cannot have a value setting higher than the MAX VOLUME level (described below).

009 - MAX VOLUME (Maximum Volume)
This function determines the maximum volume level allowable with the VOLUME (VOL) Up/Down controls. In this way, for example, someone can not set the volume level high enough to disturb others. The value range is 0 to 63, with 63 as the default, which gives the user the full range of volume control, if item 008 MIN VOLUME is also set at 0. Change values with ADJ Left/Right arrow keys. It may be best to set the same value on every TV.
NOTE: The maximum volume level cannot have a value setting lower than the MIN VOLUME level (described previously).

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

011 - KEY DEFEAT (Keyboard Defeat)
If set to 1, key defeat prevents the end user from accessing the on-screen menus with the display front panel—MENU, SELECT, and Left / Right arrow keys do not function. If set to 0, those keys do function.
NOTE: The menus can always be accessed by pressing MENU on the remote.

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

016 - EN TIMER (Enable On/Off Timers) *
If set to 1, Timer function is available to user and enabled continuously. Set to 0 to disable On/Off Timers. (Clock must be set in order to use Timers.)

017 - ALARM *
Gives the installer the option of making the Alarm function available to the end user. If set to 1, Alarm function is available to end user. Set to 0 to disable the Alarm function.
NOTE: Clock must be set before the Alarm function will work.

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

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

023 - CAPTION LOCK
Set to 1 to restore previous caption On/Off state after turn Off. If set to 0, captions are always Off at turn On.

028 - CH. OVERIDE (Channel Override)
If set to 1, the user can select channels with either Channel up/down or by direct keypad entry. If set to 0, only those channels that are entered for scanning can be selected.

029 - OLD OCV (On Command Video™)
Set to 1 for operation with systems from On Command Corporation.

030 - ACK MASK
M.P.I. Communication Parameter. Leave at default setting unless changed by Pay-Per-View provider. When set to 1, changes M.P.I. for some OCV boxes.

■ **Only affects Function Menu if enabled by some PPV providers.**
031 - POLL RATE
M.P.I. Communication Parameter. Selects Poll Rate for M.P.I. Leave at default setting unless changed by Pay-Per-View provider. Step size of 16 ms.

032 - TIMING PULSE
M.P.I. Communication Parameter. Leave at default setting unless changed by Pay-Per-View provider. Sets baud rate. Step size of 4.3 uS.

034 - CAMPORT EN. (Camera Port Enable)
Set to 1 to enable Video 2 input on display panel. If set to 0, Video 2 input on display panel is not functional.
NOTE: S-Video overrides Video jack.

035 - COMPPORT EN. (Computer Port Enable)
Enable/disables display panel HDMI1 input jack. Set to 0 to disable, set to 1 to enable DTV mode, set to 2 for PC mode.
NOTE: The setting above is ignored if Installer item 093 RJP AVAILABLE, is set to 1.

038 - YPrPb EN. (Rear Component Video Enable)
Set to 1 to enable display panel rear Component Video input jacks.
Set to 0 to disable display panel rear Component Video input jacks.

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

040 - AUTO CAMPORT
Set to 1 to automatically switch to Camport when equipment is connected to front Video input.
Set to 0 to disable front Video automatic source selection.
NOTE: If set to 1, 093 RJP Available is automatically set to 0.

046 - STRT AUX SRCE (Start Aux Source)
Sets the starting AUX source. At power up, TV will tune to starting Aux source if item 004 Start Channel is set to 0.
If item 093 RJP Available is set to 0 and item 040 Auto Camport is set to 0:
1 = Video 1   4 = RGB   255 = Last Aux
2 = Video 2   5 = HDMI 2
3 = HDMI 1   6 = Component

If item 093 RJP Available is set at 1:
2 = Video 2   5 = HDMI 2   6 = Component

If item 040 Auto Camport is set to 1:
1 = Video 1   5 = HDMI 2
3 = HDMI 1   6 = Component
4 = RGB

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

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

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

070 - FOR. CH-TIME (Channel-Time Display Foreground Color)
Set according to Color Chart.
0 = Black   3 = Yellow   6 = Cyan
1 = Red   4 = Blue   7 = White
2 = Green   5 = Violet
NOTE: If foreground and background color are the same, menu background is transparent.

071 - BCK. CH-TIME (Channel-Time Display Background Color)
Set according to Color Chart.

0 = Black   3 = Yellow   6 = Cyan
1 = Red   4 = Blue   7 = White
2 = Green   5 = Violet
NOTE: If foreground and background color are the same, menu background is transparent.

073 - CH NOT AVBLE (Channel Not Available)
If set to 1 and item 028 CHANNEL OVERRIDE is set to 0, "NOT AVAILABLE" message is displayed when directly accessing a channel not in the channel scan list available in memory.

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

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

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

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

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

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

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

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

087 - REAR RGB EN. (Rear RGB Enable)
Controls access to rear RGB input on TV.
Set to 0 to disable RGB input.
Set to 1 to enable for PC RGB input.
Set to 2 for DTV for STB RGB input.
Set to 17 for Auto Configure always enabled. Detects input format change and configures.
Set to 18 for Auto Configure one time only with power cord removal and reinsertion.

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

090 - KEY LOCK
If set to 1, display panel keyboard is locked out, not available to end user. IR receiver remains functional.

091 - YPrPb2 EN. (HDMI2 Enable)
Set to 0 to disable display panel HDMI2 input.
Set to 1 to enable DTV mode. Set to 2 to enable PC mode.

092 - RGB2 EN. (RGB2 Enable)
Set to 0 to disable display panel RGB2 input.
Set to 1 to enable DTV mode. Set to 2 to enable PC mode.

093 - RJP AVAILABLE
Set to 1, remote jack pack is available.
Set to 0, remote jack pack is not available.
NOTE: If set to 1, item 040 Auto Camport is automatically set to 0.

094 - SAP MENU EN (2nd Audio Program)
Set to 1 to enable SAP feature on Function menu, if Function menu is available.
Set to 0 to disable SAP feature on Function menu, if Function menu is available.

096 - DEF. ASP. RATIO (Default Aspect Ratio)
Selects default aspect ratio at power up, see settings below.

Set to 0 "Set By System".
Set to 1 for 4:3.
Set to 2 for 16:9 (Factory Default).
Set to 3 for Horizon
Set to 4 for Zoom 1
Set to 5 for Zoom 2

099 - BACK LIGHTING
Sets the TV screen brightness at power up, see settings below.
Default setting is 200.
1 - 100 Static Backlighting.
(1 = Dimmest picture, 100 = Brightest picture.)
101 - 200 Dynamic Backlighting.

(101 = Dimmest picture, 200 = Brightest picture.) If settings are above 101, the TV automatically controls backlighting depending upon the picture level of the current program.

102 - ATSC BAND
Sets up TV to receive different types of incoming signals: 0=Broadcast, 1=CATV, 2=HRC, 3=IRC, 4=Same as NTSC.

103 - ATSC TUNE MODE
Sets ATSC tuning mode: Default set to 1 for Physical channel scan.
Set to 0 for Virtual Channel scan.

104 - START MINOR CHANNEL
Sets XX-XX minor start channel number at power up: 0=NTSC. If not 0, number selected is the Minor start channel number.

106 - ASP RATIO LOCK (Aspect Ratio Lock)
Set to 1 to retain previous aspect ratio with power Off.
Set to 0 to retain default aspect ratio with power Off.
See item 96 Default Aspect Ratio above.

116 - VIDEO MUTE EN (Video Mute Enable)
Set to 0 for normal.
Set to 1 for blank.

117 - FACT DEFAULT (Factory Default)
Set to 0 for normal.
Set to 1 to load presets to all of the previous item settings.

⚠️ WARNING: Setting this to 1 will reload the factory defaults and clear the channel list including erasing any assigned Channel Icons and custom channel Labels.

118 - GEM STRT CH (Gem Start Channel)
Sets the Gem start channel. Set the channel number that will provide Gem data to the TV at turn on. Initially the TV may take several minutes to load program data from AC power off state.

120 - PSEUDO PWR OFF (Pseudo Power Off)
Set to 0 to disable. If disabled, TV will take normal time to turn On.
If enabled, simulates TV power off state for user (black screen) and speeds up the apparent TV turn on time (restores picture and sound). Set from 001 - 255 to specify time TV will remain on but show a black screen when power is pressed to turn TV off. In pseudo power off state with TV on, pressing power turns backlight off thus showing a black screen. TV is still active and can be turned on quickly from pseudo power off state if Power is pressed. Maximum time Pseudo Power Off can be enabled is 4 minutes and 15 seconds.

REFERENCE: DETAILED INSTRUCTIONS FOR MAKING A MASTER TV

IMPORTANT INSTALLER SETUP INFORMATION! PLEASE READ THE FOLLOWING...

To set up a master TV you will need to know how to enter the TV Installer menu and make changes to the default values as required. If necessary, familiarize yourself with the TV Installer menu and how to make and save changes in the menu, before attempting to clone the TV Master TV setup.

You will also need an **LG Installer remote control** similar to the one shown in the front of this manual. The installer remote must have a "Source" button or its equivalent. The remote shown in this manual has a "INPUT" button -- this button serves the purpose of a Source button.

Finally, the TV's clonable features need to be set up. This is a critical step. If the Master TV display panel's clonable features like adding channel icons or channel labels, digital font options etc., are not correctly added, then the cloned TVs will all have problems.

As the cloning procedure is being performed, specific steps need to be done at the indicated times to achieve the desired result. Be sure to do each task as indicated. If a procedure or step is left out or not performed completely, cloning may not work. At each step, pay attention to assure the TV screen shows the proper message when cloning. If the message indicated does not appear, there is a problem with that step and cloning may not be successful. Cloning is only possible when the signal source is an Analog channel, not a digital channel.

Making a Master TV

Detailed Instructions
The following describes the procedure for preparing a Master TV for cloning and the procedure for adding Channel Icons and/or Labels.

Note 1: Disconnect all Aux inputs. Under certain conditions, Auto Tuning Channel Search is disabled if there is an Aux input active.

Note 2: Under certain conditions, changes to the input mode of the RGB inputs will not take effect until the power is cycled (TV is turned Off and On). To avoid confusion, disconnect all RGB inputs before entering the Installer menu.

1. Enter the TV installer menu.

    a. Reset the internal controller to factory default by accessing installer menu item 117 FACT DEFAULT, set it to 1 and press "ENTER". The value will change back to 0 after the TV's internal controller has been restored to factory default condition. This step will ensure that the TV channel memory will be the active channel list. Check the Status LED. If it is blinking rapidly then the TV channel map is in use.

    b. Within the Installer menu, set the Installer menu items to the configuration required of your institution.

    c. It is important to set the tuning band at this time, see Installer menu item 03 BAND/AFC.

    d. Set Installer menu item 28 – CH OVERIDE to 001 to allow access to the Auto Tuning and Ch. Edit features in the Channel Menu. Exit the Installer menu.

2. Access the Master TV menus and set the clonable options on the menus to the desired configuration. Refer to the **Clonable Menu Features** Chart in this manual.

3. Run Auto Tuning to find analog and digital channels.

4. Enter the Channel Edit menu and edit the channel lineup to include the Free-To-Guest Channels only.

5. Assign ICONs to the channels using the Channel Label Menu.
    Note: You can add Channel ICONS typically network logos like ABC, NBC, PBS etc. in this step. Or, in Step 7, add Channel ICONS or labels for channels without Icons.

6. Transfer the TV setup: Enter the TV installer menu. Press '2', '5', '5', 'MENU' to start the transfer of the TV's setup to the internal controller. Once the transfer is complete, the system will exit the Installer menu. Check the Status LED inside the TV. It should be blinking slowly (1 blink per second).

7. Edit/Add Channel ICONs and Channel Labels as needed. Enter Installer menu. With menu displayed, press 2-5-4 + MENU. See next page for detailed instructions:
    - **Editing/Adding Channel ICON and Labels on Master TV**
    - **Changing a Channel's ICON on Master TV**
    - **Changing/Adding Channel Labels on Master TV**
    - **Changing Source Labels on Master TV**

8. Verify Master TV setup and feature configuration:
    ■ Did you add Channel ICONS?
    ■ Did you add Channel Labels?
    ■ Did you add Source Labels?
    ■ Did you adjust all TV menu options as required?
    After verifying master setup, enter the TV Installer menu and set Installer menu item 28 CH OVERIDE to 000. Press ENTER to remove and exit the Installer menu.

REFERENCE: PROCEDURES FOR ADDING CHANNEL LABEL ICONS/CUSTOM CHANNEL LABELS (2-5-4 + MENU MODE)

Adding Channel Icons and Labels in the 2-5-4 + Menu Mode

Editing/Adding Channel ICONs and/or Labels

If there is no pre-assigned ICON, you can make a custom channel label of up to 7 characters to help in identifying the channel or network. At your option, channel labels can also be added in addition to a pre-assigned ICON. You may also add labels for the Aux input sources to clearly identify the devices that are connected to the Aux inputs.

(Icon)

NETWORK
(Label)

1 2 3 4 5 6 7

Editing and adding the labels can only be done if there are channels entered into the TV's channel map either by using the method described in item 6 (page 18), by cloning or by the use of the master remote control from the PPV provider.

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

To Do Channel Editing/Labeling, Proceed as Follows

1. Enter TV Installer menu.
2. Once the installer menu appears, press '2', '5', '4', 'MENU'. This enters the channel label editing mode. Add your channel icons and channel labels in this menu, see below. (You can do this more than once.)
3. To exit the menu when done press "MENU".
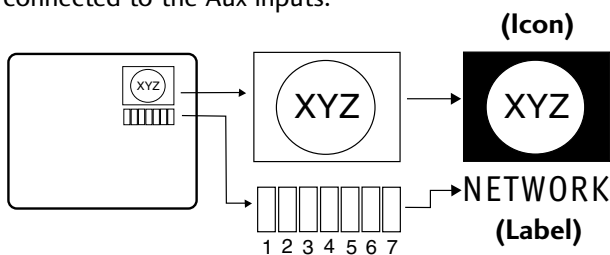
Changing a Channel's ICON on Master TV

1. With Channel Up/Down, select the channel you want to change the Icon for.
2. With the Right or Left ADJ arrow, select the thin letter 'I' on the channel ID display.
3. With the Up or Down arrow, select the desired ICON you want to appear to identify the channel. (If you know the ICON number, enter the number followed by Enter / Select.)
4. Proceed with Changing/Adding Labels or go to the next channel.

Changing/Adding Channel Labels on Master TV

1. Channel Up/Down to select the desired channel.
2. Press the Right or Left ADJ arrow repeatedly until the numbers 1 to 7 show up. The number shows the position of the character that can be changed. Number 1 is the first character, number 2 the second character and so on.
3. With the Up or Down arrow, select the desired character.
4. Proceed to the next number position or use Channel Up/Down to go to the next channel.

Changing Source Labels on Master TV

1. Press "INPUT" to select the desired Aux input source; A/V 1, A/V 2, HDMI Component, RGB etc.
2. Press the Right or Left arrow repeatedly until the numbers 0 to 9 shows up. The number shows the position of the character that can be changed.
3. Use the Up or Down arrows to select the desired character.
4. Press "INPUT" for the next Aux source or proceed with Changing Icon or Changing/Adding Labels. Press Ch Up/Down to return to channels.

Installer Remote Control Key Functions for Master TV Channel Editing/Labeling Menu

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

- **0 – 9** - Use to enter the index number of the ICON, if known.
- **ENTER/SELECT** - Changes the ICON after the number has been entered.
- **INPUT** - Changes the Aux input label. ("Source" on the remote shown in this manual is INPUT.)
- **MENU** - Exits the editing process.

REFERENCE: CLONABLE MENU FEATURES

Clonable Menu Features

Menu /Sub Menu Features

Installer Menu
Installer Item settings

Channel
Auto Tuning (Channel Lineup)
Channel Edit
Channel label

Picture
Aspect Ratio
Picture Mode
Advanced Control

Audio
Auto Volume
Clear Voice
Sound Mode
Balance

Audio Contd.
Treble
Bass
SRS TruSoundXT
TV Speaker

Option
Language
Caption
Caption Mode
DTV Captions Style - Style
DTV Captions Style - Size
DTV Captions Style - Font
DTV Captions Style - Text Color
DTV Captions Style - Text Opacity
DTV Captions Style - BG Color
DTV Captions Style - BG Opacity
DTV Captions Style - Edge Type
DTV Captions Style - Edge Color

Lock
Movie Rating
TV Rating – Children Age
TV Rating – Children Fantasy
　　　　　　　　Violence
TV Rating – General Age
Input Block

Time
Auto Clock
Manual Clock
Off Time
On Time
Auto Off

🛈 NOTE

▶ Picture Menu and other menu settings shown above are not clonable on all TVs.

　End user has access to Picture, Sound and Ratio on user remote control.

▶ Menu options vary between Analog / Digital channels and Aux Sources.

Procedure for Checking Software Version

The software version of the TV may be checked by accessing the INSTALLER MENU.
To do this, press the MENU button repeatedly until the menu display ceases to respond to MENU key presses.
Then, press "9", "8", "7", "6", "ENTER/SELECT". Press ENTER/SELECT again to remove installer menu from screen.

```
     GEM PTC  INSTALLER  MENU


  000    INSTALLER SEQ          000


  UPN  000-000-000-000      FPGA E0F1
  PTC V1.00.000             CPU V3.06.00
```
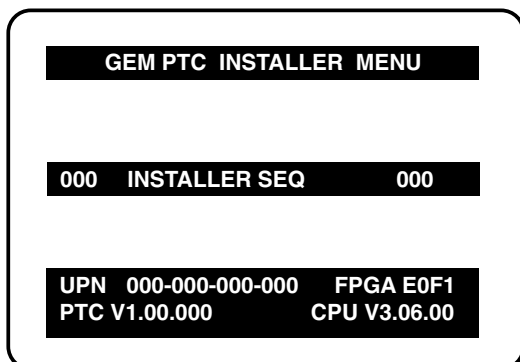
Typical Installer Menu

REFERENCE: POWER SAVING SETUP

Power Savings Setup

Installer Item 118 Power Saving: set to 001, enabled (Default).
Installer Item 099 Backlighting: value set as shown below. (Default value is 200)

Item 099 Backlighting (Static)	Picture Lumin.	Power Consumption (Watts)	Power Savings Rating	Item 099 Backlighting (Dynamic)	Picture Lumin.	Power Consumption (Watts)	Power Savings Rating
100	217	122	0 %	200	130	86	30 %
90	202	114	7 %	190	123	83	32 %
80	188	109	11 %	180	117	80	34 %
70	172	102	76 %	170	109	76	38 %
60	157	95	22 %	160	101	74	39 %
50	128	89	27 %	150	94	70	43 %
40	124	82	33 %	140	86	67	45 %
30	109	75	39 %	130	79	64	48 %
20	95	69	43 %	120	72	61	50 %
10	78	62	49 %	110	63	58	52 %
1	64	56	54 %	101	57	56	54 %

Note: Values are results of controlled experiments under laboratory conditions.

TV AUX INPUT CONFIGURATION

DIRECT ACCESS Tuning		TV		ENABLE				MPI DATA			START AUX SOURCE ASSIGNMENT
				Installer Menu			MPI DATA STATUS TYPE 0x41 SOURCES ENABLED (R/W)	DATA STATUS TYPE 0xD2 CURRENT AV SOURCE (R)		DATA STATUS TYPE 0X0D AUX SOURCE (R)	
OLD_OCV =0	OLD_OCV= 1	Source Input	Source Mode	Number	Labeling	Value	Labeling	Value	Labeling		
130	90	Video2 (Side)	CV/SVIDEO	34	CAMPORT_EN	0x01	Video Front (Camport)	0	Video Front (Camport)	0 (VIDE0)	2
131	91	Video1 (Rear)	CV/SVIDEO	39	REAR_AUX_EN	0x02	Rear Video (Aux)	1	Rear Video (Aux)	0 (VIDE0)	1
132	92	HDMI2	DTV	91	YPrPb2 EN = 1	0x04	S-Video Rear	2	S-Video Rear	0 (VIDE0)	5
			PC	91	YPrPb2 EN = 2	0x04	S-Video Rear	2	S-Video Rear	2 (COMPUTER)	5
133	93	HDMI1/DVI	DTV	35	COMPPORT EN = 1	0x08	Front Computer	3	Front Computer	0 (VIDE0)	3
			PC	35	COMPPORT EN = 2	0x08	Front Computer	3	Front Computer	2 (COMPUTER)	3
134	94	RGB	DTV	87	REAR RGB EN = 1	0x10	SVGA Rear Computer	4	SVGA Rear Computer	0 (VIDE0)	4
			PC	87	REAR RGB EN = 2	0x10	SVGA Rear Computer	4	SVGA Rear Computer	2 (COMPUTER)	4
136	96	Component		38	YPrPb EN	0x40	Y/UV Component	6	Rear Y/PrPb Component video	0 (VIDE0)	6

TV CAMPORT AUTO SENSE OPERATION

The CAMPORT Auto Sense function is enabled when:
1. Installer Menu Item 34, CAMPORT EN is set to 1 AND
2. Installer Menu Item 40, AUTO CAMPORT is enabled (1).

Selectable= Can be accessed with INPUT key, direct access, etc.
Auto Sense= Switches to this input when connector is inserted.
The camport (Side Video) has the highest priority and will override any commands including tuning to the Start Channel.

CAMPORT (Front Video) Functionality Control

Item 34 CAMPORT EN	Item 40 AUTO CAMPORT	Front Video Operation
0	0	Disabled
0	1	Disabled
1	0	Selectable
1	1	Auto Sense

CAMPORT Operation (Stand-Alone)

When Camport Auto Sense is enabled as above, the TV's source will switch to the side video aux source whenever a plug is inserted into any of the side video panel inputs (either composite Video or S-Video).

When the plug is removed, the TV will switch back to the previous channel or input source that the TV was using before the plug was inserted. However, if any direct access to an RF channel or Aux channel is requested while the camport is active, then, when the camport plug is removed, the TV will switch to the last requested channel. Source changes using any Source Keys (INPUT) are ignored. Channel Up/Channel Down and Flashback Commands are not direct access tuning commands and they are also ignored.

Previous State Before Inserting CAMPORT	Operation While CAMPORT Is Active	State Upon Removal Of CAMPORT
Aux or RF Channel	None	Previous Aux or RF Channel
Aux or RF Channel	Direct Access	Last Requested RF or Aux Channel
Aux or RF Channel	Ch Up/Down, Flashback and TV/AV Keys	Previous Aux or RF Channel

CAMPORT Operation (PPV)

The operation will be similar to that of the Stand-Alone mode. However, the PPV providers may send different commands to the TV for the same user commands. For instance, some providers will always send a direct tune command when it receives a channel up/down or a flashback command while other PPV providers will just send a key command.

Previous State Before Inserting CAMPORT	Operation While CAMPORT Is Active	State Upon Removal Of CAMPORT
Aux or RF Channel	None	Previous Aux or RF Channel
Aux or RF Channel	Direct Access	Last Requested RF or Aux Channel
Aux or RF Channel	Ch Up/Down, Flashback and TV/AV Keys	Last Requested Channel if PPV translates it to direct access tuning command. Otherwise, goes to Previous Aux or RF Channel

APPENDIX

TROUBLESHOOTING

The operation does not work normally.

The remote control doesn't work	■ 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. ■ Ensure that the batteries are installed with correct polarity (+ to +, - to -). ■ Ensure that the correct remote operating mode is set: TV, VCR etc. ■ Install new batteries.
Power is suddenly turned off	■ Is the sleep timer set? ■ Check the power control settings. Power interrupted.

The video function does not work.

No picture &No sound	■ Check whether the product is turned on. ■ Try another channel. The problem may be with the broadcast. ■ Is the power cord inserted into wall power outlet? ■ Check your antenna direction and/or location. ■ Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.
Picture appears slowly after switching on	■ 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.
No or poor color or poor picture	■ Adjust Color in menu option. ■ Try unplugging any others electronics that are near by to see if interference is causing the problem. ■ Try another channel. The problem may be with the broadcast. ■ Are the video cables installed properly? ■ Activate any function to restore the brightness of the picture.
Horizontal/vertical bars or picture shaking	■ Check for local interference such as an electrical appliance or power tool.
Poor reception on some channels	■ Station or cable product experiencing problems, tune to another station. ■ Station signal is weak, reorient antenna. ■ Check for sources of possible interference.
Lines or streaks in pictures	■ Check antenna (Change the direction of the antenna).
No picture when connecting HDMI	■ Check HDMI cable over version 1.3. If the HDMI cables don't support HDMI version 1.3, it can cause flickers or no screen display. In this case use the latest cables that support HDMI version 1.3.

The audio function does not work.	
Picture OK but No sound	■ Press the VOL or VOLUME button. ■ Sound muted? Press the MUTE button. ■ Try another channel. The problem may be with the broadcast. ■ Are the audio cables installed properly?
No output from one of the speakers	■ Adjust Balance in menu option.
Unusual sound from inside the product	■ 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.
No sound when connecting HDMI or USB	■ Check HDMI cable over version 1.3. ■ Check USB cable over version 2.0. *This feature is not available for all models.

There is a problem in PC mode. (Only PC mode applied)	
The signal is out of range	■ Adjust resolution, horizontal frequency, or vertical frequency. ■ Check the input source.
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	■ Run the Auto configure or adjust clock, phase, or H/V position. (Option)
Screen color is unstable or single color	■ Check the signal cable. ■ Update video card drivers.

Power	
No Power	■ See troubleshooting flow chart.

Erratic Operation	
Installer menu setup	■ Adjust Installer menu settings as required.

Software Problems	
Cannot direct enter channel number or "No Signal" appears	■ After 2-5-5 + MENU, only channels included in TV controller will appear. If channel is available it can be added to channel scan, rescan channels. If it is not available, the 'No Signal' message appears on the TV screen.

❗ NOTE

► For other problems not caused by the TV, refer to other devices' operating guides.

REFERENCE: LT2002 CLONING PROCEDURE TROUBLESHOOTING

⚠ Warning: Do not use LT2002 while any PPV card is installed in TV or clone programmer will be damaged.

Reset Clone After Static Shock

After replacing exhausted batteries, or if the programmer behaves strangely after a static shock, use a paper clip or similar instrument inserted through the small hole marked "RESET" to activate the internal reset switch and restore normal operation. After a reset, check the real-time clock setting. It may be necessary to reset the Clone Programmer clock from a TV containing the correct time.

Note

The LT2002 programmer is designed to be used with TVs containing the 221-01006 and later processors. Use with earlier TV sets may give unpredictable results. Processors used before the 221-01006-04 have a limited screen display capability. They cannot display entire screens as shown in the quick setup instructions accompanying the LT2002 clone programmer. Use the printed menu illustrations on the quick setup sheet supplied with the Clone as an aid to making your programming choices. (Although the menus are not all displayed, the clone functions all operate normally.)

Clone Programmer Troubleshooting

Clone Programmer	
Clone copies Setup in less than 30 seconds	■ Press Reset on clone programmer, redo teach/learn. (Teach/Learn should take a minimum of 1 minute.)
Remote does not operate clone	■ Only use an LG Installer remote to operate clone programmer with TV.
LED does not blink	■ Connect M.P.I. cord properly, assure good connection. ■ TV must be powered On for clone to work. ■ Install 4 fresh AA high-quality alkaline batteries.
Clone menu hard to read	■ Connect TV to a reliable Analog channel signal source.
No time set	■ Set time on a TV, copy time to Clone Programmer.
Clone not working	■ Try a different LT2002 Clone programmer. ■ Reset Clone Programmer.
Clone Scans Channels more than once	■ Retry cloning again.

Master and Other TVs	
Cloning did not work	■ Wait until procedure complete message is displayed. ■ Cloning is only possible with identical model TVs. ■ Reread cloning pages to be sure all tasks were performed.
Clone time disappeared	■ Batteries must remain installed to retain time settings.
New Setup not present	■ Disconnect newly-cloned TV from power for 5 seconds.

■ After cloning operations are complete, just unplug the LT2002 from the TV.
■ If the TV does not display a picture on the TV (blank screen) after a few seconds, just change channels.

APPENDIX

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APPENDIX

TROUBLESHOOTING FLOW CHART

```
                    ┌─────────────┐
                    │ Controller  │
                    │   Quick     │
                    │   Check     │
                    └─────────────┘
                           │
        ┌──────────┐       │       ┌──────────┐
        │   Is     │  No   │  No   │   Is     │           ┌─────────────┐
        │ 'STATUS' │◄──────┴──────►│   TV     │──────────►│    Plug     │
        │ LED on   │               │Connected │           │  into AC    │
        │ Analog   │               │ to AC    │           │Power Outlet │
        │ Board    │               │ Power ?  │           └─────────────┘
        │ Blinking?│               └──────────┘
        └──────────┘                    │
            │ Yes                        │ Yes
            │                       ┌─────────┐
            │                       │  Bad    │
            │                       │  TV     │
            │                       └─────────┘
        ┌──────────┐  No    1. Bad Analog Board.
        │   Is     │───────►2. Bad Digital Board.
        │ Red LED  │
        │ on TV    │
        │  Lit ?   │
        └──────────┘
            │ Yes
   ┌────────────────────┐
   │ Cycle the power by │
   │ removing and re-   │
   │ connecting the AC  │
   │ power cord. Observe│
   │ the 'POWER' LED and│
   │ TV screen as soon  │
   │ as AC power is     │
   │ re-applied.        │
   └────────────────────┘
            │
        ┌──────────┐  No    ┌─────────┐
        │   Did    │───────►│  Bad    │
        │ Analog   │        │  TV     │
        │ Board    │        └─────────┘
        │ 'POWER'  │
        │ LED Turn │
        │ On       │
        │Momentarily?│
        └──────────┘
            │ Yes
        ┌──────────┐  No    Check to see if TV
        │ Did TV   │───────►is in Commercial Mode.
        │ Turn On  │        See Commercial Mode
        │Momentarily?│       Check chart.
        └──────────┘
            │ Yes
```

```
        ┌─────────────────┐
        │ Press 'POWER' or │
        │ 'ON/OFF' key on  │
        │       TV         │
        └─────────────────┘
               │
        ┌──────────┐  No
        │   Did    │───────► 1. Bad TV
        │ TV Turn  │
        │  On ?    │
        └──────────┘
            │ Yes
   ┌──────────────────┐
   │ Press 'POWER' or │
   │ 'ON/OFF' or      │
   │ 'VOLUME UP/DOWN' │
   │ or 'MUTE' key on │
   │ Installer Remote │
   └──────────────────┘
            │
        ┌──────────┐  No    1. Bad TV
        │   Did    │───────►2. Go to Remote
        │   TV     │          Control Checklist page 5
        │ Respond? │
        └──────────┘
            │ Yes
   ┌──────────────────┐
   │ Press 'POWER' or │
   │ 'ON/OFF' or      │
   │ 'VOLUME UP/DOWN' │
   │ or 'MUTE' key on │
   │ User-Supplied    │
   │ Remote           │
   └──────────────────┘
            │
        ┌──────────┐  No    1. Bad PPV Card
        │   Did    │───────►2. Go to Remote
        │   TV     │          Control Checklist page 5
        │ Respond? │
        └──────────┘
            │ Yes
        ┌─────────┐
        │   End   │
        └─────────┘
```

COMMERCIAL MODE CHECK

```
┌─────────────────────────────────────┐
│       Press the "On/Off" key        │
│        on the front panel.          │
│  The On/Off key is always operational. │
└─────────────────────────────────────┘
                  │
                  │
               ╱  Did  ╲
              ╱ you get ╲      No
             ╱ a response ╲ ────────── Bad TV
              ╲     ?    ╱
               ╲       ╱
                  │
                 Yes
                  │
           ┌──────────────┐
           │    Leave     │
           │     the      │
           │   TV set On  │
           └──────────────┘
                  │
    ┌─────────────────────────────────┐
    │        Go to Installer menu     │
    │  by pressing "MENU" until       │
    │   the TV stops responding.      │
    └─────────────────────────────────┘
                  │
               ╱  Did  ╲
              ╱ TV stop ╲                  ┌──────────────┐
             ╱ responding ╲  Stopped       │   TV is in   │
             ╲ or continue ╱  responding   │  Commercial  │
             ╲ to respond ╱ ────────────── │    Mode.     │
              ╲    ?    ╱                   └──────────────┘
                  │
              Continued
                 to
              respond
                  │
    ┌─────────────────────────────────┐
    │   TV is not in Commercial Mode  │
    │   Call Technical Support for    │
    │          Assistance             │
    └─────────────────────────────────┘
```

APPENDIX

GLOSSARY OF TERMS

A list of definitions for some of the words found in this guide

75 OHM RF CABLE
The wire that comes from an off-air antenna or cable service provider. The end looks like a hex-shaped nut with a wire sticking through the middle. It screws onto the Antenna/Cable threaded jack on the back of the TV.

300 TO 75 OHM ADAPTER
A small device that connects a two-wire 300 ohm antenna to a 75 ohm RF jack. They are usually about an inch long with two screws on one end and a round opening with a wire sticking out on the other end.

ANALOG TELEVISION
Standard television broadcasting format in 4:3 picture aspect ratio.

A/V CABLES
Audio/Video cables. Three cables bunched together—right audio (red), left audio (white), and video (yellow). A/V cables are used for stereo playback of videocassettes and for higher quality picture and sound from other A/V devices.

A/V DEVICE
Any device that produces video or sound (VCR, DVD, cable box, or television).

AMPLIFIER
An electronic device that amplifies sound from a television, CD player, VCR, DVD, or other Audio/Video device.

ANTENNA
The physical receiver of television signals sent over the air. A large metal piece of equipment does not always have to be visible to be using an antenna.

CABLE
Cable service box. Refers to the descrambler box cable subscribers use to receive cable programming signals.

CATV
Programming provided by a cable service.

DIGITAL TELEVISION
High-resolution, cinema-quality television signals transmitted digitally.

DVI
Digital Video Interface
Accommodates analog and digital interfaces with a single connector.

COMPOSITE VIDEO
Typical video jack, uses one wire for transporting three-color video signals.

COMPONENT VIDEO
Uses three wires for transporting three-color video signals. The end result is usually better video quality.

DELETED
Lets you remove channels from the list that the end user can scroll through using CH (Channel) Up/Down.

HDMI
High-definition multi-media interface.

HDTV
High-definition television. Refers to television signals that have higher resolution than ordinary analog TV signals.

HDSTB
High-definition set top box. Refers to a tuner device that receives high-definition television signals which have higher resolution than ordinary analog TV signals.

INPUT
Refers to the input jack that receives a signal from a TV, VCR, DVD Player or other Audio/Video device.

JACK
An input or output connector on the back of a TV, VCR, DVD Player or other Audio/Video device.

MONO SOUND
Mono (monaural) sound is one channel of sound. On more than one speaker, all the speakers play the same audio.

OUTPUT
Refers to the output jack that sends a signal out of a VCR, DVD, or other A/V device.

PHYSICAL CHANNEL NUMBER
See Note 1.

RGB (Red, Green, Blue)
Connection input or output port available for producing a video image using three separate colors: Red, Green, and Blue.

RS-232
Serial communication port through which firmware is downloaded.

2ND AUDIO PROGRAMMING/SAP
Second Audio Programming (SAP) is another, separate audio channel available with some programming. Choosing SAP often refers to listening to audio in another language, such as Spanish or French.

SIGNAL
Picture and sound traveling through a cable, or over the air, to the TV.

STEREO SOUND
Stereo (Stereophonic) sound refers to audio that's divided into right and left sides.

TUNER
Device that picks up the broadcast signal and turns it into picture and sound.

VIRTUAL CHANNEL NUMBER
See Note 1.

XDS
Extended Data Service: Additional program information included on the signal provided at the discretion of the broadcaster.

■ **Note 1**
Refer to www.atsc.org for further information.

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

MODEL		32LG700H (32LG700H-UA)	37LG700H (37LG700H-UA)	42LG700H (42LG700H-UA)
Dimensions (Width x Height x Depth)	With stand	36.1 x 26.9 x 11.5 inches 918.6 x 684.8 x 293.8 mm	36.1 x 26.9 x 11.5 inches 918.6 x 684.8 x 293.8 mm	40.4 x 28.8 x 11.5 inches 1026.2 x 734.0 x 293.4 mm
	Without stand	36.1 x 24.9 x 3.4 inches 918.6 x 632.8 x 88 mm	36.1 x 24.9 x 3.4 inches 918.6 x 632.8 x 88 mm	40.4 x 27.0 x 4.4 inches 1026.2 x 687.9 x 111.8 mm
Weight	With stand Without stand	41.6 pounds / 18.8 kg 35.2 pounds / 15.9 kg	41.6 pounds / 18.8 kg 35.2 pounds / 15.9 kg	49.1 pounds / 22.3 kg 43.2 pounds / 19.6 kg
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 ohm		
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.

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

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.

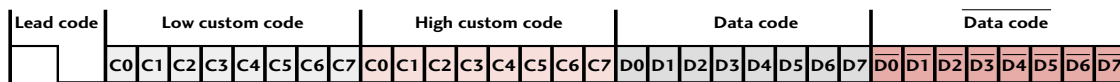## 2. Remote Control IR Codes

■ **Output waveform**

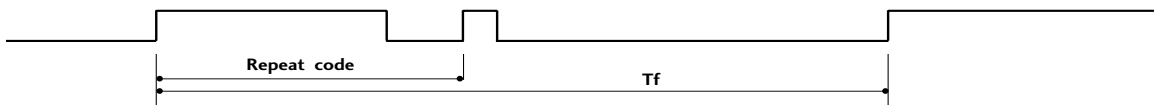Single pulse, modulated with 37.917KHz signal at 455KHz

Tc

T1
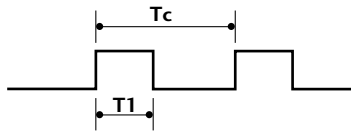
Carrier frequency

FCAR = 1/TC = fOSC/12
Duty ratio = T1/TC = 1/3
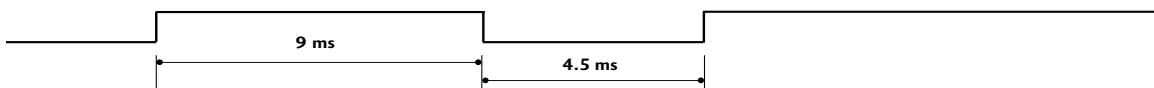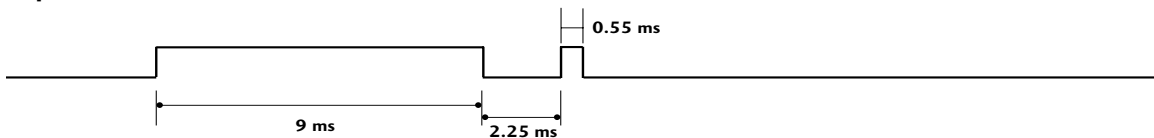
■ **Configuration of frame**

1st frame

Lead code	Low custom code	High custom code	Data code	Data code
	C0 C1 C2 C3 C4 C5 C6 C7	C0 C1 C2 C3 C4 C5 C6 C7	D0 D1 D2 D3 D4 D5 D6 D7	D0 D1 D2 D3 D4 D5 D6 D7

Repeat frame

Repeat code

Tf

■ **Lead code**

9 ms

4.5 ms

■ **Repeat code**

0.55 ms

9 ms

2.25 ms

■ **Bit description**

Bit "0"

0.56 ms

1.12 ms

Bit "1"

0.56 ms

2.24 ms
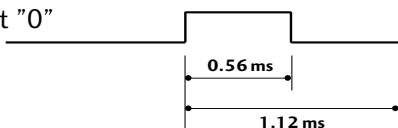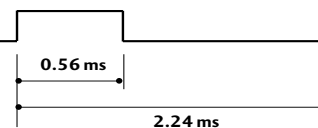
■ **Frame interval: Tf**

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

Tf

Tf

Tf=108ms @455KHz
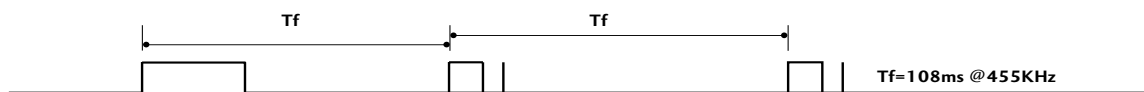
Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
08	POWER	Remote control Button (Power On/Off)	D6	TV	Discrete IR Code (TV Input Selection)
0F	TV	Remote control Button	5A	AV1	Discrete IR Code (AV1 Input Selection)
0B	INPUT	Remote control Button	D0	AV2	Discrete IR Code (AV2 Input Selection)
0A	SAP	Remote control Button			
79	RATIO	Remote control Button			
A9	GUIDE	Remote control Button	BF	COMPONENT	Discrete IR Code (COMPONENT Input Selection)
OC	PORTAL	Remote control Button			
AA	INFO	Remote control Button	D5	RGB-PC	Discrete IR Code (RGB Input Selection)
10-19	Number Key 0-9	Remote control Button			
4C	- (Dash)	Remote control Button	CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
1A	FLASHBK	Remote control Button			
02	VOL +	Remote control Button	CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
03	VOL -	Remote control Button			
00	CH ∧	Remote control Button	76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
01	CH ∨	Remote control Button	77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
0E	TIMER	Remote control Button			
39	CC	Remote control Button	AF	Ratio Zoom	Discrete IR Code (Only Zoom1 Mode)
09	MUTE	Remote control Button			
43	MENU	Remote control Button	C4	POWER ON	Discrete IR Code (Only Power On)
5B	RETURN	Remote control Button			
40	∧	Remote control Button	C5	POWER OFF	Discrete IR Code (Only Power Off)
41	∨	Remote control Button			
07	‹	Remote control Button			
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			
B1	■ Stop	Remote control Button			
B0	► Play	Remote control Button			
BA	‖ Pause	Remote control Button			
8F	◄◄ Rew	Remote control Button			
8E	►► FF	Remote control Button			
BD	●(Record)	Remote control Button			

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