

TV Guide On Screen® System continued

• Change Default Options

Change Default Options lets you change default settings in the following categories:

- General Default Options
- Record Defaults
- Remind Defaults

Highlight Change Default Options, and press **ENTER**.



<General Default Options>

General Default Options lets you set defaults for the following:

- The initial Info Box size when the TV guide on screen system is entered.
Choices are No, Small, Large, and Last Used
(Default = Last Used).
- The Info Box size rotation when the Info key is pressed while in the TV guide on screen system.
Choices are No only, Small only, Large only, No & Small, No & Large, Small & Large, All (Default = All)
- Automatic entry into the TV guide on screen system (Auto-Guide) when the TV is powered On.
Choices are On and Off (Default = On).

Highlight General Default Options, and press the Menu key to display the General Default Options menu.

Highlight Go to Service Bar to close the menu, change no information, and return to the Setup Service Bar.

When finished, press **ENTER** to highlight Done. Press **ENTER** again to close the menu and accept the changes.

Highlight Cancel to close the menu, change no information, and return to the highlighted option.



TV Guide On Screen® System continued

< Record Defaults>

Record Default Options lets you set defaults for the following:

- When to start the record event. Choices are 120 minutes early to 120 minutes late, to On time. (Default = On time)
- When to end the record event. Choices are 120 minutes early to 120 minutes late, to On time. (Default = On time)
- Recorder choice: Please choose the HDD only. This TV does not provide other devices with a recording feature.

Highlight Record Defaults, and press the Menu key to display the Record Default Options menu.

Highlight Go to Service Bar to close the menu, change no information, and return to the Setup Service Bar.



< Remind Defaults>

Remind Default Options lets you set defaults for the following:

- Power On the TV, if Off, when a Reminder is scheduled. Choices are Yes and No. (Default = No)
- Automatically tune the TV to the channel (TV must be On), when a Reminder is scheduled. Choices are Yes and No. (Default = No)
- When to display the reminder screen. Choices are 30 seconds to 15 minutes early, to 30 seconds to 15 minutes late, to On time. (Default = 1 min early)

Highlight Remind Defaults, and press the Menu key to display the Remind Default Options menu.

Highlight Go to Service Bar to close the menu, change no information, and return to the Setup Service Bar.

When finished, press **ENTER** to highlight Done. Press **ENTER** again to close the menu and accept the changes.

Highlight Cancel to close the menu, change no information, and return to the highlighted option.



TV Guide On Screen® System continued

Record And Remind Features

< Record >

You can set a show to Record in Listings, Search, and Schedule or change Record settings for a show in Schedule.

There are 3 ways to set a show to Record:

1) Using the Record Button on the Remote

- Press the Record button on the remote to record the show Once with current default settings (Start and End recording On Time). Each time you press the Record button, you change the record frequency (but not the default settings) among Once (default), Regularly, Daily, Weekly and then Cancel.

Note: The proper Record icon appears on the show tile, as the Record button is pressed.

- ◆ **Once**  —records the show one time
- ◆ **Regularly**  —records the show every time the show airs on the same channel and starts at the same time
- ◆ **Weekly**  —records the show each time the show airs on the same day of the week, on the same channel and starts at the same time
- ◆ **Off (not cancel)**  —keeps the show in the list but will not record this show until the frequency is changed
- ◆ **Cancel (no icon displayed)** —does not record

2) From a Panel Menu

- Highlight a show, and press Menu to display the Episode Options menu.
- Highlight Set Recording, and press **ENTER** to display the Record Options menu.
- Highlight the Frequency option, and use the left and right arrows to choose among Once, Regularly, Weekly, and Off, as previously described.
- Recorder choice: Please choose the HDD only. This TV does not provide other devices with a recording feature.

Note: Video Window Lock is operated to on or off using PIP button in Listings mode.



TV Guide On Screen® System continued

When finished, press **ENTER** to highlight Schedule Recording.

Press **ENTER** again to close the menu. You see a Record icon for the selected frequency next to the show title.

Highlight Cancel to close the menu, change no information, and return to the highlighted show.



3) Manual Recording

- Highlight the Schedule Service label, and press Menu to display the Schedule Options menu.
- Use the **▲** / **▼** / **◀** / **▶** buttons to move through the options. Use the number or Use the **▲** / **▼** / **◀** / **▶** buttons to change the information, as necessary.
- Highlight New Manual Recording and press **ENTER** to display the Record Options menu.



- Current information (i.e., date, start and end times, channel, input) is displayed.
- Recorder choice: Please choose the HDD only. This TV does not provide other devices with a recording feature.



TV Guide On Screen® System continued

• Use the left and right arrows to choose between Once, Daily, Weekly, and Off, as follows.

- ◆ Once —records the time, channel, input, recorder combination one time.
- ◆ Daily —records the time, channel, input, recorder combination Monday through Friday.
- ◆ Weekly —records the time, channel, input, recorder combination once a week on this selected day of the week
- ◆ Off (not cancel) —keeps the time, channel, input, recorder combination in the list without recording until the frequency is changed.

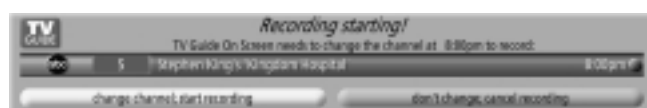


When finished, press **ENTER** to highlight Schedule Recording.

Press **ENTER** again to close the menu. You see a Record icon for the selected frequency next to the show title.

Note: Manual recording is listed by channel number.

Highlight Cancel to close the menu, change no information, and return to the highlighted show.



Before a recording begins, a notification screen appears if you are using a Cable box and your TV is On. At that time, you can choose to start or cancel recording. If the TV is not On, the recording occurs as scheduled. If there is no activity for 3 minutes, the notification screen automatically closes and completes the highlighted item.

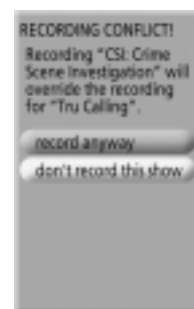
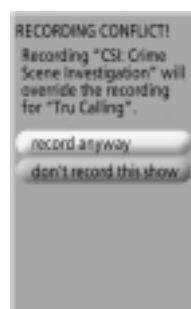
Record Conflict

A conflict message appears for the following reasons:

- a show set to Record overlaps with any part of another show previously set to Record,
- a show set to Record overlaps with a show previously set to auto-tune

Select one of these options:

- ◆ record anyway - this show will override an existing show set to Record or auto-tune
- ◆ don't record this show - cancel the Recording



TV Guide On Screen® System continued

< Remind >

You can set a show Reminder in Listings, Search, and Schedule or change Reminder settings for a show in Schedule. There are 2 ways to set a show Reminder:

1) From a Panel Menu

- Highlight a show, and press Menu to display the Episode Options menu.
- Highlight Set Reminder, and press **ENTER** to display the Remind Options menu.



- Highlight the Frequency option, and use the left and right arrows to choose between:

- ◆ Once —sets a show reminder one time
- ◆ Regularly —sets a show reminder every time the show airs on the same channel and starts at the same time
- ◆ Weekly —sets a show reminder each time the show airs on the same day of the week, on the same channel and starts at the same time
- ◆ Off —keeps the show in the list but will not remind until the frequency is changed



- Power On the TV, if Off, when a Reminder is scheduled. Choices are Yes and No. (Default = No)
- Automatically tune the TV to the channel (TV must be On), when a Reminder is scheduled. Choices are Yes and No. (Default = No)
- When to display the reminder screen. Choices are 30 seconds to 15 minutes early, to 30 seconds to 15 minutes late, to On time. (Default = 1 min early)



When finished, press **ENTER** to highlight Schedule Reminder. Press **ENTER** again to close the menu. You see a Remind icon for the selected frequency next to the show title. Highlight Cancel to close the menu, change no information, and return to the highlighted show.

TV Guide On Screen® System continued

2) Manual Reminder

- Highlight the Schedule Service label, and press the Menu key to display the Schedule Options menu.
- Use the ▲ / ▼ / ◀ / ▶ buttons to move through the options. Use the number or ▲ / ▼ / ◀ / ▶ buttons to change the information, as necessary.
- Highlight New Manual Reminder and press the **ENTER** key to display the Remind Options menu.
- Current information (i.e., date, start and end times, channel, input, frequency, etc.) is displayed.
- Highlight the Frequency option, and use the ◀ / ▶ buttons to choose among Once, Daily, Weekly, and Off, as follows.

- ◆ Once —sets a show reminder for the time, channel, input, recorder combination one time
- ◆ Daily —reminds for the time, channel, input, recorder combination Monday through Friday
- ◆ Weekly —sets a show reminder for the time, channel, input, recorder combination once a week on this selected day of the week
- ◆ Off (not cancel) —keeps the time, channel, input, destination combination in the list without reminding until the frequency is changed

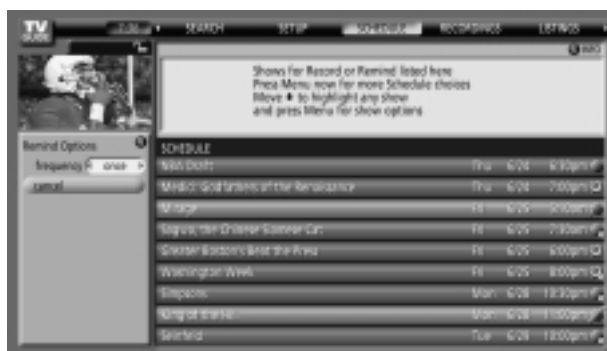
• Power On the TV, if Off, when a Reminder is scheduled. Choices are Yes and No (Default =No).

• Automatically tune the TV to the channel (TV must be On), when a Reminder is scheduled. Choices are Yes and No (Default = No).

When finished, press **ENTER** to highlight Schedule Reminder. Press **ENTER** again to close the menu. You see a Remind icon for the selected frequency next to the show title.

Note: Manual reminder is listed by channel number.

Highlight Cancel to close the menu, change no information, and return to the highlighted show.

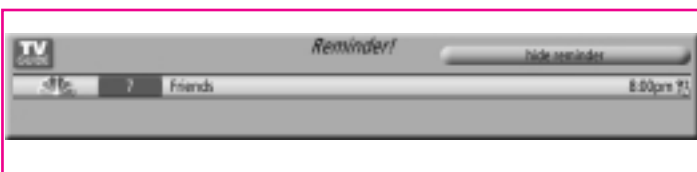


TV Guide On Screen® System continued

Based on your option settings, a notification screen will appear, if your TV is On at the reminder time. You can then choose to hide the reminder, or highlight the show, and press **ENTER** to tune to the show. If there is no activity for 3 minutes, the notification screen automatically closes and completes the highlighted item (hide reminders).



If you choose Hide Reminders, the window closes for the show or shows, but does not affect other Reminders you set.



Note: If more than 2 reminders are set for the same time, arrows appear on the Reminder screen. Use the ▲ / ▼ buttons to view the shows.

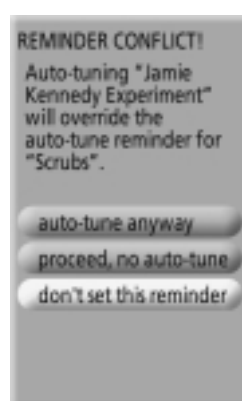
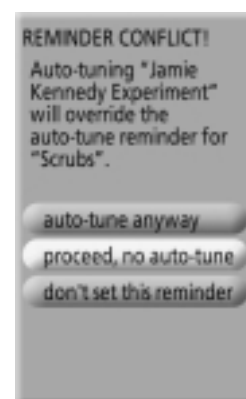
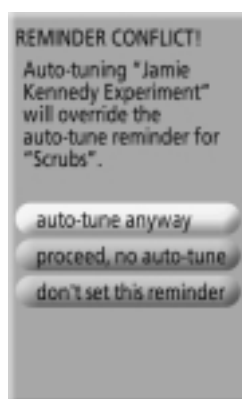
Remind Conflict

A conflict message appears for the following reasons:

- a show set with an Auto-Tune Reminder has the same start time as an existing Auto-Tune Reminder.
- If you are using a cable box, a show set with an Auto-Tune Reminder overlaps with a Recording already scheduled.

Select one of these options:

- ◆ auto-tune anyway - this show will override an existing show set to auto-tune
- ◆ proceed, no auto-tune - set the show as a Reminder but do not auto-tune
- ◆ don't set this reminder - cancel the Reminder



Schedule Functions

Schedule



- Schedule lets you review, edit, or delete Record and Remind events that you set previously.
- With Schedule highlighted, press the **Info** button to display a Help screen. Press the **Info** button again to close the screen.
- An icon identifies the event type:

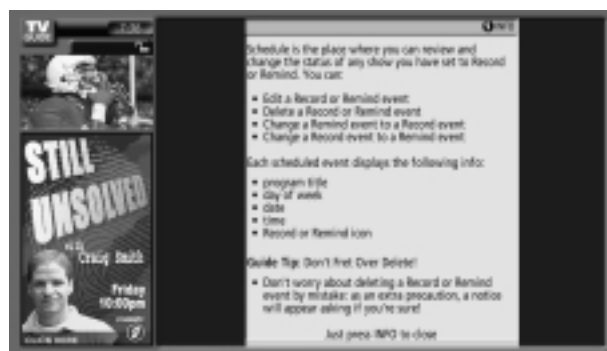
Record

- ◆ Once —records the show one time
- ◆ Regularly , Daily —records the show every time the show airs on the same channel and starts at the same time
- ◆ Weekly —records the show each time the show airs on the same day of the week, on the same channel and starts at the same time
- ◆ Off —keeps the show in the list but will not record this show until the frequency is changed.



Remind

- ◆ Once —sets a show reminder one time
- ◆ Regularly , Daily —sets a show reminder every time the show airs on the same channel and starts at the same time
- ◆ Weekly —sets a show reminder each time the show airs on the same day of the week, on the same channel and starts at the same time
- ◆ Off —keeps the show in the list but will not remind until the frequency is changed



Highlight an event, and press the Menu key for options.

Go to Service Bar - closes the menu, changes no information, and returns to the Schedule Service Bar.

Tune to channel - exits the tv guide on screen system and tunes to the highlighted show.

Delete Recording - removes the recording from the Schedule, after a Confirm screen.

Edit Recording - opens a menu from which you can change existing recording information.

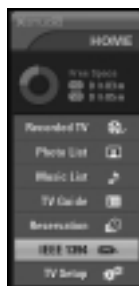
Set Reminder - opens a menu from which you can set a Reminder for the show (Record is not cancelled).

Cancel - closes the menu, changes no information, and returns to the highlighted show.



IEEE 1394 Functions

IEEE 1394



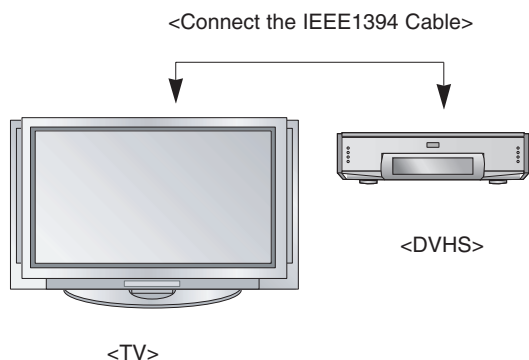
- It's available to communicate to either direction and you can give and take a image, sound, or each control command with one cable.
- Only use the DVHS and MicroMV Camcorder to work the 1394.

How to connect the 1394

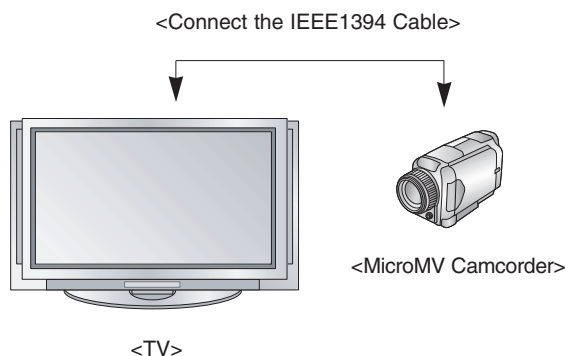
•To work the 1394, this 3 methods can used.

1. When connecting the DVHS or the MicroMV Camcorder, as shown in the (a) or (b) figure, select the **IEEE 1394** in **HOME** menu to show the control panel.

(a) TV ↔ DVHS

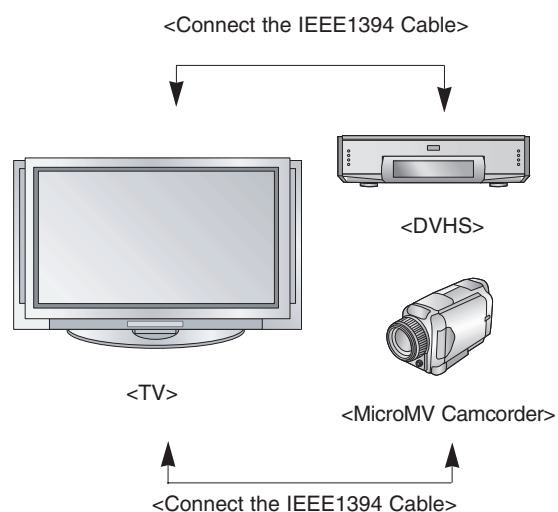


(b) TV ↔ MicroMV Camcorder



2. When connecting the DVHS and the MicroMV Camcorder, as shown in the (c) figure, select the **IEEE 1394** in **HOME** menu to show the contents panel and then select the DVHS or the MicroMV Camcorder to show the control panel.

(c) TV ↔ DVHS + MicroMV Camcorder



When connecting the 1394 and then playing, you must use the original DVHS tape. If not, it may be occurred the errors.

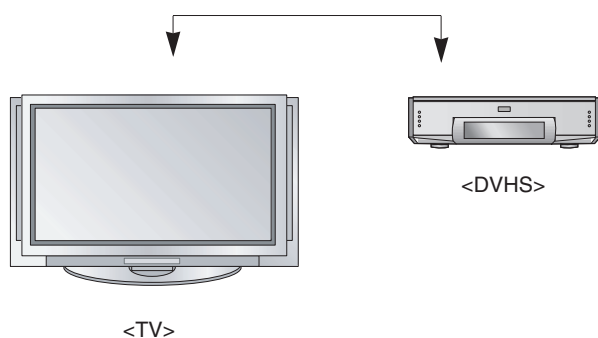
IEEE 1394 functions continued

DVHS

How to play the DVHS

1. Connect the IEEE 1394 jack of the TV to the IEEE 1394 jack of the DVHS with IEEE 1394 Cable.

2. When watching the TV, press the **XSTUDIO** button to move the **IEEE 1394** in **HOME** menu and then **ENTER** button.

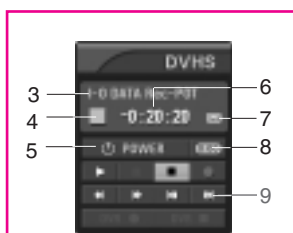


2. Press the **▲** / **▼** buttons to select the **DVHS** and then use the **ENTER** button.

- Show the control panel of DVHS.



- The control panel of DVHS
- Depending on the connected equipment, marked control panel may differ.



* Supported DVHS List

VICTOR(HM-DH35000U)
JVC(HM-DH30000U)
JVC(HM-DH40000U)
MITSUBISHI(HS-HD1100U)
MITSUBISHI(HS-HD2000U)
Hitachi(DT-DR20000)
Hitachi(DT-DRX100)
PANASONIC(NV-DH1)
PANASONIC(NV-DH2)
PANASONIC(NV-DHE20)
TOSHIBA(A-HD2000)

- DVHS Company
 - DVHS Model
 - Connected Equipment to the 1394
 - DVHS Operating Status
 - Power On/Off
 - DVHS Play Time
 - Tape Status
 - Tape shape Icon - Tape in or not
 - Lock shape Icon - Use or not use
 - Initializing Play Time
 - DVHS Play, Pause, Stop, Search or Skip
- (Notes:
- Skip- This function is for a fast search. It searches the program's start point and then plays. On skipping, Search (▶▶, ◀◀), Rec(●) Pause (||) and Play (▶) are displayed on the Control Panel. In some models, it's not available to operate the Skipping (◀◀, ▶▶) function.

IEEE 1394 functions continued

How to play the instant record to the DVHS

1. When watching the TV, press the **Xtreme** button to move the **IEEE 1394** in **HOME** menu and then **ENTER** button.



2. Press the **▲ / ▼** buttons to select the **DVHS** and then use the **ENTER** button.

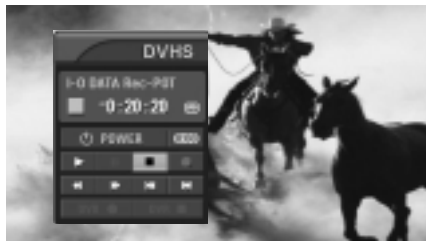
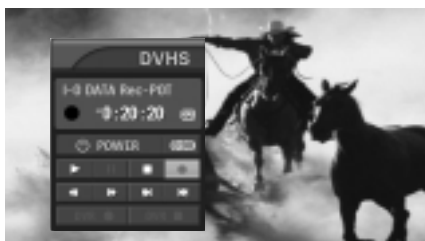
- Show the control panel of DVHS.



3. Press the **▲ / ▼ / ◀ / ▶** buttons to move to **●** and then use the **ENTER** button. You can record the current program to the DVHS.

4. Press the **▲ / ▼ / ◀ / ▶** buttons to move to **■** and then use the **ENTER** button.

- Show the control panel of DVHS.



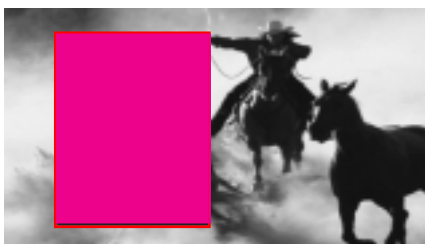
The instant record function couldn't use copy-protected programs.

IEEE 1394 functions continued

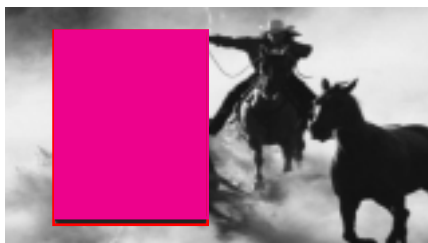
How to save the DVHS to the DVR

1. On playing the DVHS, press the ▲ / ▼ / ◀ / ▶ buttons to move to **DVR ●** and then use the **ENTER** button.

- Save the current screen to the DVR.



2. Press the ▲ / ▼ / ◀ / ▶ buttons to move to **DVR ■** and then use the **ENTER** button to end a saving.

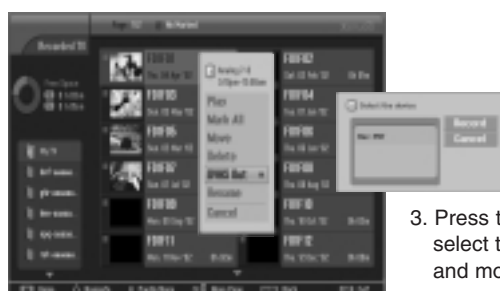


When you save the program which is copy - protected to the PVR, **“This tape is copy-protected”** is display on the screen and don’t save to the PVR.

IEEE 1394 functions continued

How to save the DVR to the DVHS

1. When press the **RECORD** button, record list is displayed. You can select the wanted program by pressing the **▲ / ▼ / ◀ / ▶** buttons. And then press the **ENTER** button.
2. Select the **DVHS Out** by pressing the **▲ / ▼ / ◀ / ▶** buttons and then press the **ENTER** button.



3. Press the **▲ / ▼** buttons to select the wanted device and move to the **Record**

4. Press the **▲ / ▼ / ◀ / ▶** buttons to move to the **START** and then press the **ENTER** button to save to DVHS.
5. Press the **◀ / ▶** buttons to move to the **STOP** and then press the **ENTER** button to stop a saving.



- By pressing the **RESUME** button, you can continuously save the recorded contents from a point of stopping time.



The copy-protected contents couldn't save to the DVHS.

IEEE 1394 functions continued

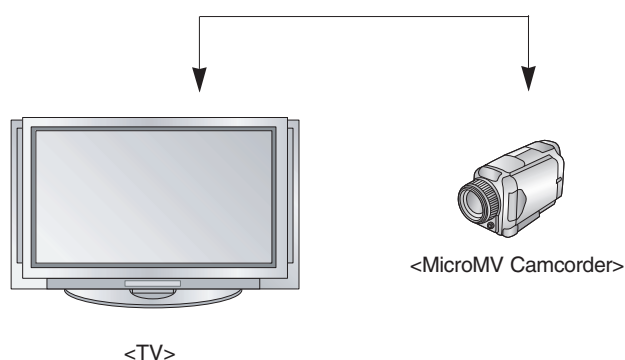
MicroMV Camcorder

How to play the MicroMV Camcorder

E.

1. Connect the IEEE 1394 jack of the TV to the IEEE 1394 jack of the MicroMV Camcorder with IEEE 1394 Cable.

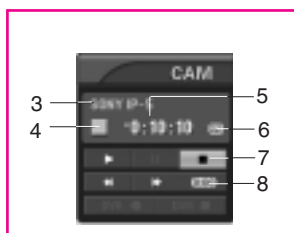
2. When watching the TV, press the **X-Studio** button to move the **IEEE 1394** in **HOME** menu and then **ENTER** button.



2. Press the **▲ / ▼** buttons to select the **Camcorder** and then use the **ENTER** button.

• The control panel of MicroMV Camcorder
- Depending on the connected equipment, marked control panel may differ.

• Show the control panel of DVHS.



1. MicroMV Camcorder Company
2. MicroMV Camcorder Model
3. Connected Equipment to the 1394
4. MicroMV Camcorder Operating Status
5. MicroMV Camcorder Play Time
6. Tape Status
 - Tape shape Icon - Tape in or not
 - Lock shape Icon - Use or not use
7. MicroMV Camcorder Play, Search or Stop
8. Initializing Play Time

* Supported MicroMV Camcorder List

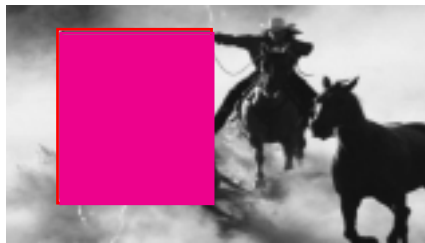
SONY MICORMV IP-5
SONY MICORMV IP-45
SONY MICORMV IP-210
SONY MICORMV IP-7
SONY MICORMV IP-55
SONY MICORMV IP-220

IEEE 1394 functions continued

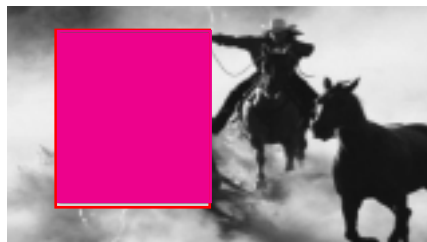
how to save the MicroMV Camcorder to the DVR

1. On playing the MicroMV Camcorder, press the ▲ / ▼ / ◀ / ▶ buttons to move to **DVR ●** and then use the **ENTER** button.

- Save the current screen to the DVR.



2. Press the ▲ / ▼ / ◀ / ▶ buttons to move to **DVR ■** and then use the **ENTER** button to end a saving.



IEEE 1394 functions continued

How to connect the 1394

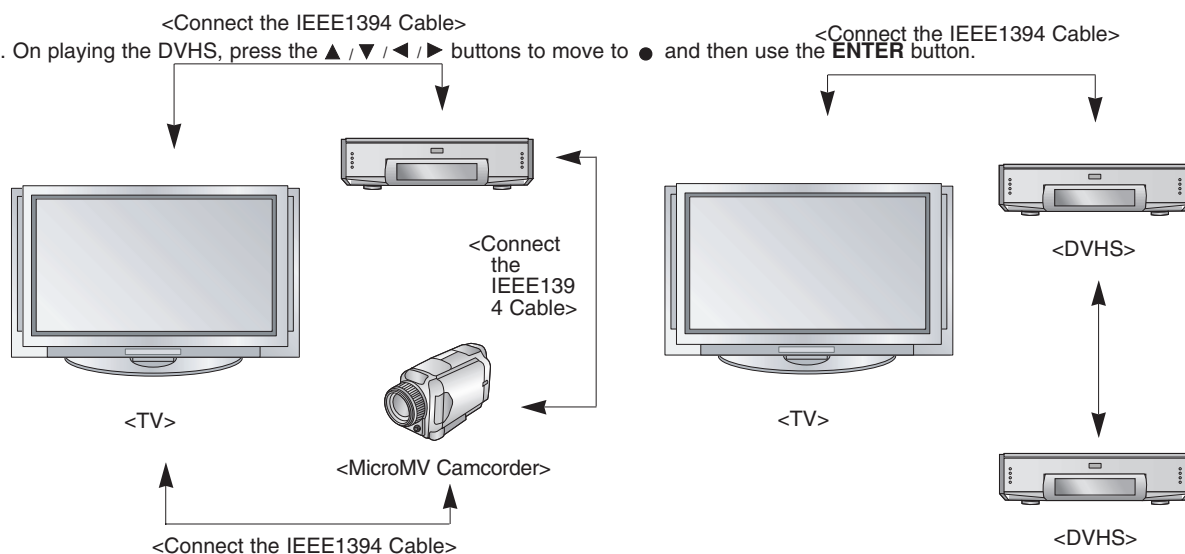
- When connecting these 3 methods, the **1394 will not work properly.**

(a) LOOP Connection

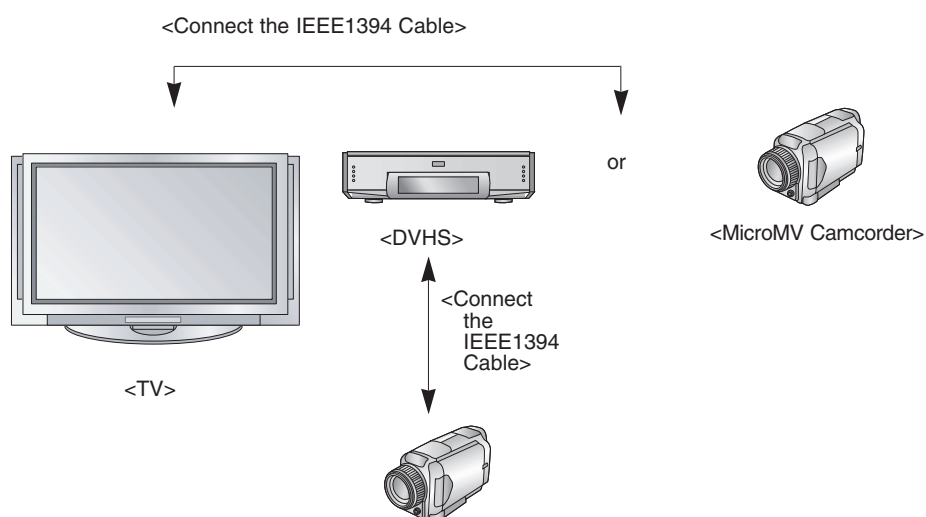
(b) Daisy Chain

How to save the DVHS to the DVR

1. On playing the DVHS, press the $\blacktriangle$ / $\blacktriangledown$ / $\blacktriangleleft$ / $\blacktriangleright$ buttons to move to $\bullet$ and then use the **ENTER** button.



(c) MicroMV Camcorder Daisy Chain



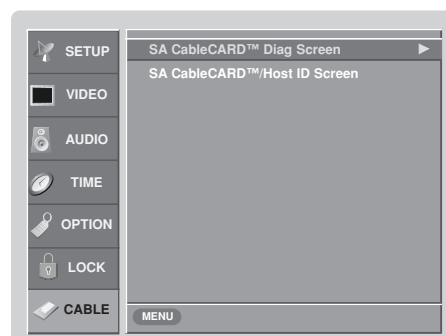
CableCARD™ Function

* In this manual, the OSD (On Screen Display) may be different from your TV's because it is just example to help the TV operation.

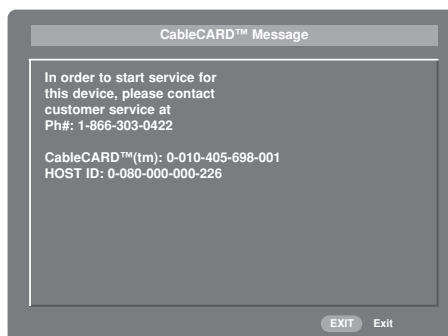
Cable menu options

- The Cable sub menu displays when inserting the CableCARD™ to the TV.
 - The CableCARD™ type is Motorola, Scientific Atlanta (SA), or SCM etc. The OSD (On screen display) is different from your TV according to your CableCARD™ type.
1. Press the **MENU** button and then use ▲ / ▼ button to select the **CABLE** menu.
 2. Press the ► button and then use ▲ / ▼ button to select your desired item.
 3. Press the ► button.
 4. Press **EXIT** button to return to TV viewing.

In case of Scientific Atlanta CableCARD™



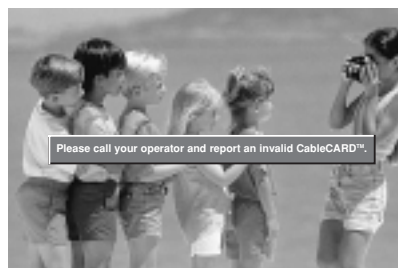
i.e) CableCARD™/ Host ID Screen



- As shown, the pairing number means your TV and CableCARD™ ID. For further information regarding cable TV service, contact your local cable TV service provider(s).

Scrambled channel

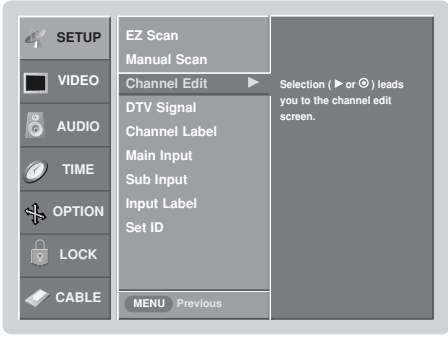
- Insert the CableCARD™. If you do it at first, it takes about 1 minute to exchange the data between the TV and the CableCARD™. Then, TV screen displays as shown right.
- Let your cable TV service provider know CableCARD™ ID and Host ID.
- If your cable TV service provider is registered CableCARD™ ID and Host ID, you can watch the premium or high value channel.
- If you ever registered to the cable TV service provider, you can watch the premium or high value channel without a message.



- If the certificate don't match between the TV and the CableCARD™, the OSD (On screen display) displays as shown left.



Cable Channel List

1. 
2. 
3. 
4. 

1. If you enter the **Channel Edit** after running the EZ Scan, you can see the cable channel list.
2. Inserting the CableCARD™. Then, the TV receive a new cable channel list. At this time, it takes about 2~3 minutes. (Occasionally more than that time).

Note:

- As data gathering of CableCARD™, it may make a noise by fan in standby mode.

Emergency Alert Message

- If an emergency situation occur during watching the TV, you can receive a message from cable TV service provider(s).
- When receiving an emergency message, the message is displayed on the screen as shown below or the channel is changed automatically to a channel that maintains the emergency message. The message automatically disappeared.



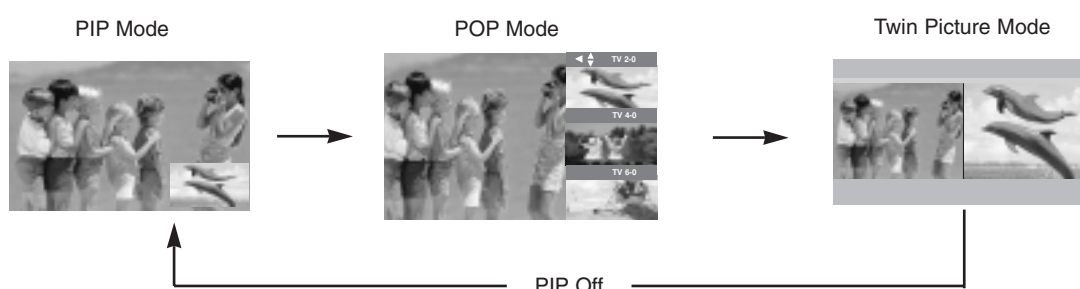
Remote Control

PIP (Picture-In-Picture) / POP / Twin Picture

- PIP lets you view 2 different inputs (sources) on your TV screen at the same time. One source will be large, and the other source will show a smaller inset image.
- Twin Picture mode splits the screen into 2, allowing 2 picture sources to be shown on the TV screen at the same time. Each source is given half the screen.
- If you set the block/rating for Lock menu options in PIP/Twin Picture mode, "**Rating Blocked**" doesn't display on screen.

◆ Watching PIP/POP/Twin Picture

Press the PIP button to access the sub picture. Each press of PIP changes the PIP options as shown below.



◆ Selecting an Input Signal Source for PIP/Twin Picture

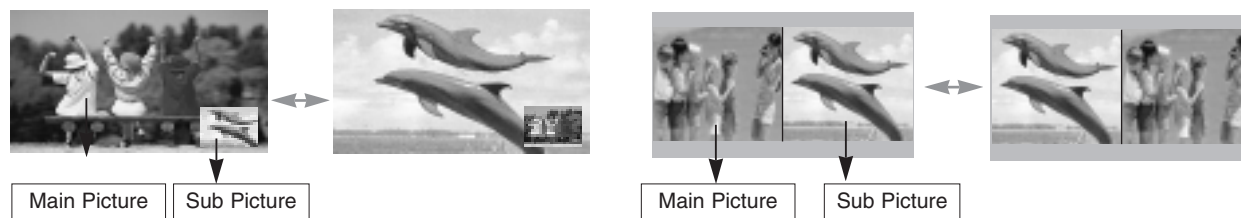
Use the **PIP INPUT** button to select the input source for the sub picture. Each press of **PIP INPUT** button changes the PIP source. You can also select sources for the **Sub Input** in the **SETUP** menu.

Main Picture Source	Available Sub Picture Sources
DTV	Analog, Video, and Front Video
Analog	DTV, Analog, Video, and Front Video

◆ Swapping the PIP/Twin Picture

Repeatedly, use the **SWAP** button to switch the main and sub pictures.

- Component 1, Component 2, RGB-PC (or RGB-DTV), HDMI1/DVI, HDMI2 input sources for the main picture can't be used to swap the main and sub pictures.



◆ TV Program selection for PIP

1. Press the **PIP** button.
2. Select the Antenna or Cable option on the Sub input menu or with the PIP INPUT button. Use the **PIPCH+** / **PIPCH-** button to select a channel for the sub picture.
(You can't select DTV for main and sub picture simultaneously).

◆ Moving the PIP sub picture

In PIP mode, press the ▲ / ▼ / ◀ / ▶ button to move the sub picture to a different location on the screen.



◆ Adjusting Main and Sub Picture Sizes for Twin Picture

Use the ▲ / ▼ / ◀ / ▶ button to change main and sub picture sizes in Twin Picture mode.

i.e)



If screen is adjusted to the maximal size, the large screen is filled with entire screen vertically as shown.

◆ POP (Picture-out-of-Picture: Channel Scan)

- Use POP to search the programs of all the memorized channels one-by-one on the 3 PIP screen display, (while the main picture source remains the current channel). The pictures of all the programmed channels are searched with the 3 POP screen.
- *Notes:*
 - Run EZ Scan channel search before using POP mode.
 - When Sub pictures are changed from the TV/DTV to CATV/CADTV in POP mode, it may make a noise from the Tuner switch.

1. Press the **PIP** button to activate the POP mode while in PIP mode.

- **Channel selection:** Use ◀ button to enlarge the selected channel being searched on the PIP screen to shift it for viewing on the Main screen.
- **PIP selection:** Use ▲ / ▼ button to select one of 3 PIP screen pictures in POP mode.
- When watching TV/CATV on Main picture, TV/CATV or DTV/CADTV on Sub pictures are in channel scanning. However, when watching DTV/CADTV on Main picture, only TV/CATV on Sub picture is in channel scanning.



2. Press the **EXIT** button to cancel POP mode.

Information

Operation:

- Watching TV/DTV/CATV/CADTV
- Watching Video, Front Video
- Watching IEEE 1394
- In Component1, Component2, RGB, HDMI1/DVI, HDMI2 modes, **INFO** button is not working.

Function:

- Show the present screen information.
- On Watching with the upper Input signal, press the **INFO** button.
- Press the **INFO** button or **EXIT** button to exit.

A: Banner information, Refer to the <Channel Banner>.

B: Program title

C: Day, Month, Year

D: Program start time

E: Program finish time

F: Show the processing rate

G: Present time

H: Added information. Refer to the icon explanation.

I: Gemster information

4:3 Screen Ratio of Input Signal 4:3

16:9 Screen Ratio of Input Signal 16:9

480i Resolution of Input Signal 720x480i

480p Resolution of Input Signal 720x480p

720p Resolution of Input Signal 1280x720p

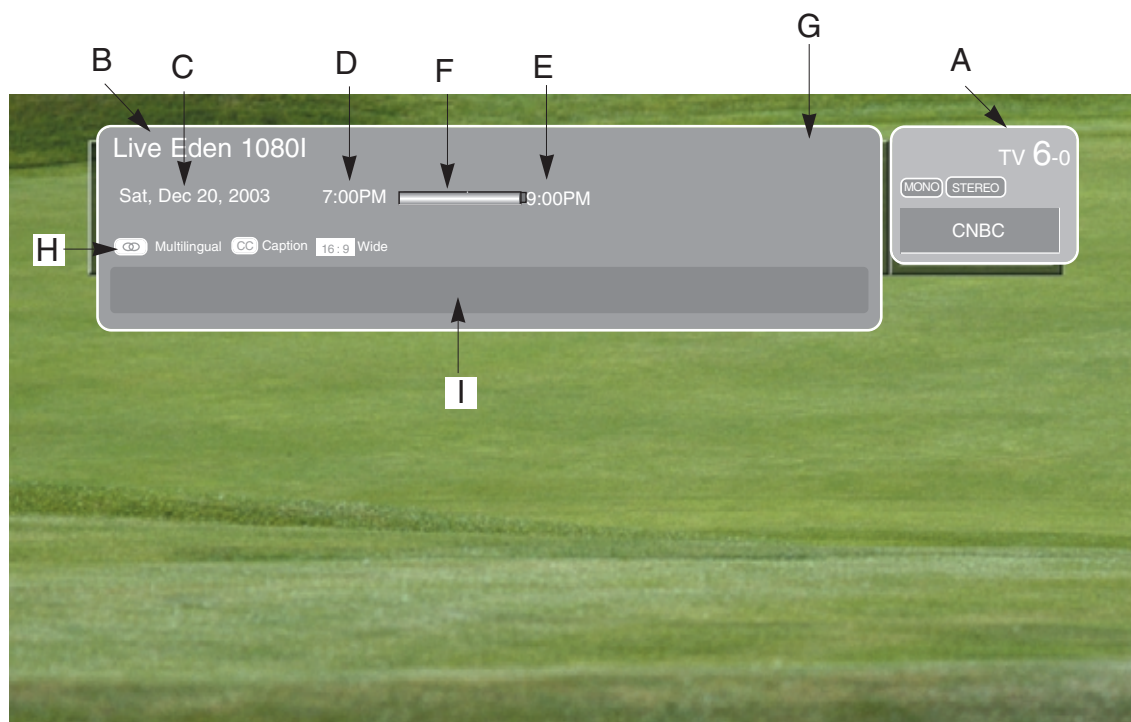
1080i Resolution of Input Signal 1920x1080i

 Multilingual : Input Signal have over two Audio information. Press the **SAP** button to select wanted Audio.

 Caption: Input Signal have over one Close service. Press the **CC** button to select wanted Closed caption.

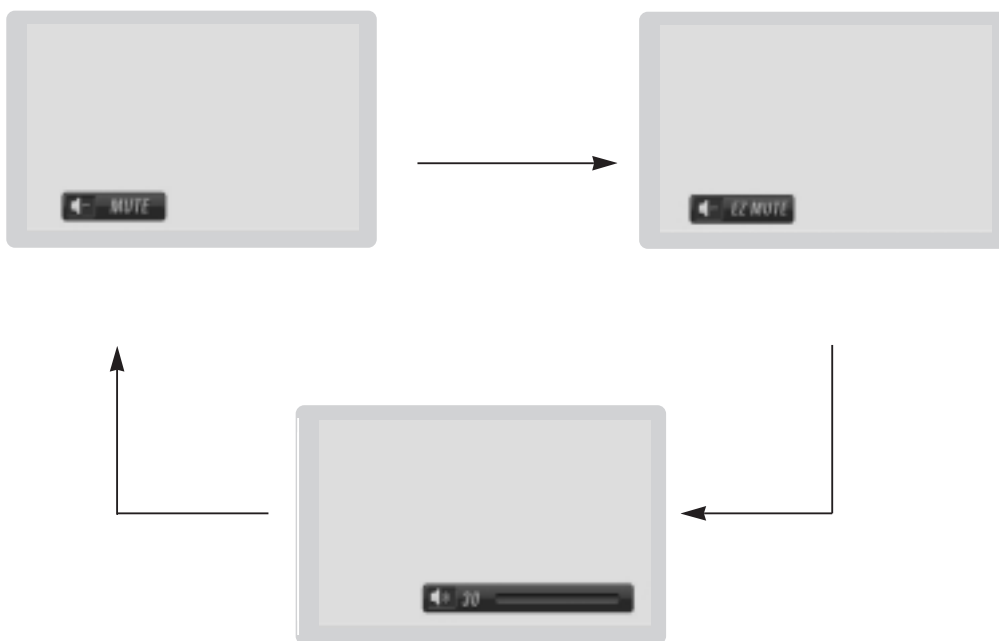
 Input Signal have rating information . Refer to the <Lock Menu>.

D (Dialogue), L (Language), S (Sex), V (Violence), FV (Fantasy Violence)



EZ Mute

- Nothing to do with Caption on/Off using **Mute** button, the mode selected Caption/Text is to be displayed.
- When you repeatedly press the **Mute** button, the screen is displayed in turn. (Refer to the lower picture)



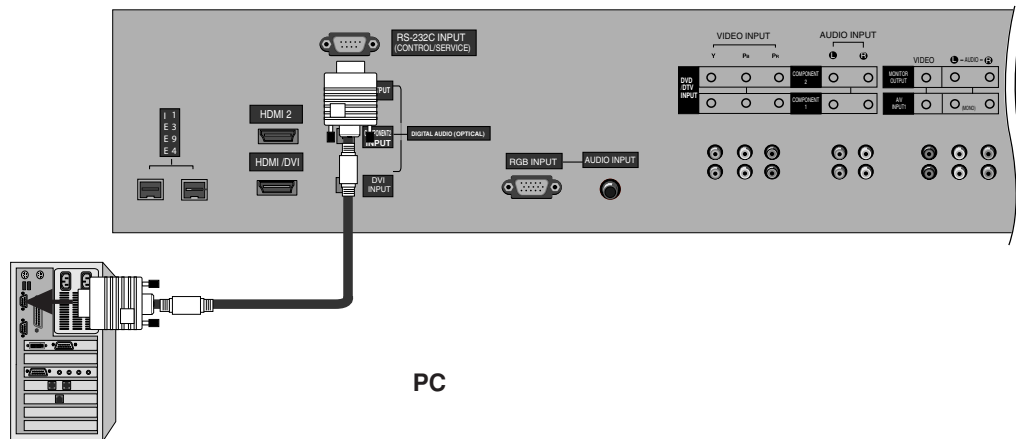
Note:

- EZ Mute only operates in DTV/Analog/Video/Front Video/IEEE1394.

External Control Device Setup

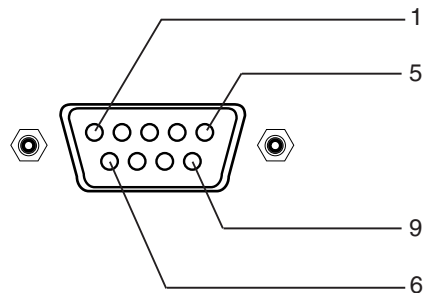
- Connect the RS-232C input jack to an external control device (such as a computer or an A/V control system) and control the Monitor's functions externally.
- Connect the serial port of the control device to the RS-232C jack on the Monitor back panel.
- RS-232C connection cables are not supplied with the Monitor.

RS-232C Setup



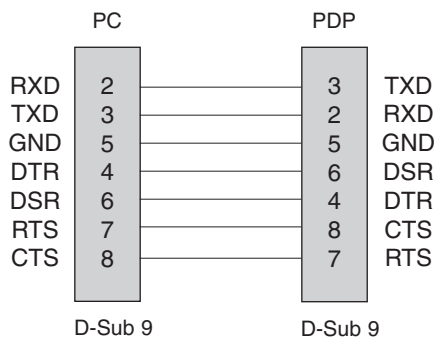
Type of Connector; D-Sub 9-Pin Male

No.	Pin Name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection

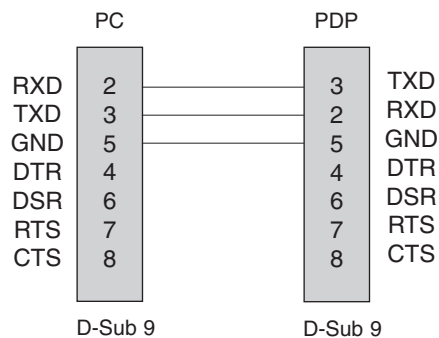


RS-232C Configurations

7-Wire Configurations (Standard RS-232C cable)



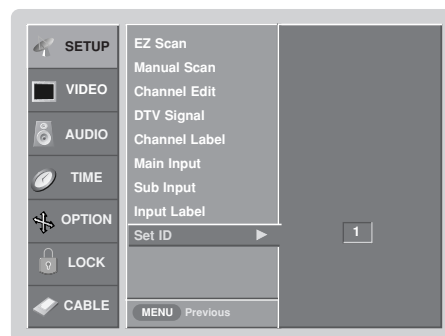
3-Wire Configurations (Not standard)



Set ID

Use this function to specify a monitor ID number.
Refer to 'Real Data Mapping'. See page 82.

1. Press the **MENU** button and then use **▲ / ▼** button to select the **SETUP** menu.
2. Press the **▶** button and then use **▲ / ▼** button to select **SET ID**.
3. Press the **▶** button and then use **▲ / ▼** button to adjust **SET ID** to choose the desired monitor ID number. The adjustment range of **SET ID** is 1 ~ 99.
4. Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



Communication Parameters

- Baud rate : 9600 bps (UART)
- Data length : 8 bits
- Parity : None
- Stop bit : 1 bit
- Communication code : ASCII code

* Use a crossed (reverse) cable.

Command Reference List

	COMMAND 1	COMMAND 2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1
02. Input Select	k	b	0 ~ 9
03. Aspect Ratio	k	c	*
04. Screen Mute	k	d	0 ~ 1
05. Volume Mute	k	e	0 ~ 2
06. Volume Control	k	f	0 ~ 64
07. Contrast	k	g	0 ~ 64
08. Brightness	k	h	0 ~ 64
09. Color	k	i	0 ~ 64
10. Tint	k	j	0 ~ 64
11. Sharpness	k	k	0 ~ 64
12. OSD Select	k	l	0 ~ 1
13. Remote Control Lock Mode	k	m	0 ~ 1
14. PIP/Twin	k	n	0,1,2,5
15. PIP Position	k	q	0 ~ 3
16. Treble	k	r	0 ~ 64
17. Bass	k	s	0 ~ 64
18. Balance	k	t	0 ~ 64
19. Color Temperature	k	u	0 ~ 2
20. PIP Input Source	k	y	0 ~ 3
21. ISM Method	j	p	*
22. Low Power	j	q	0 ~ 1
23. Orbiter Time Setting	j	r	1 ~ FE
24. Orbiter Pixel Setting	j	s	1 ~ 3

	COM- MAND 1	COM- MAND 2	DATA 0 (Hexadecimal)	DATA 1 (Hexadecimal)	DATA 2 (Hexadecimal)	DATA 3 (Hexadecimal)	DATA 4 (Hexadecimal)	DATA 5 (Hexadecimal)
25. Channel Tuning	m	a	01 ~ 87	01 ~ 87	00 ~ FE	00 ~ FF	00 ~ FF	00 ~ FF
26. Channel Add/Del	m	b	00 ~ 01					
27. Key	m	c	*					
28. Input Select	x	b	*					
29. PIP Input Select	x	y	*					

Transmission / Receiving Protocol

Transmission

[Command1][Command2][][Set ID][][Data][Cr]

- * [Command 1]: First command to control the set. (j or k)
- * [Command 2]: Second command to control the set.
- * [Set ID]: You can adjust the set ID to choose desired monitor ID number in Setup menu. Adjustment range is 1 ~ 99. When selecting Set ID '0', every connected the TV is controlled. Set ID is indicated as decimal (1~99) on menu and as Hexa decimal (0x0~0x63) on transmission/receiving protocol.
- * [DATA]: To transmit command data.
Transmit 'FF' data to read status of command.
- * [Cr]: Carriage Return
ASCII code '0x0D'
- * []: ASCII code 'space (0x20)'

OK Acknowledgement

[Command2][][Set ID][][OK][Data][x]

- * The Monitor transmits ACK (acknowledgement) based on this format when receiving normal data. At this time, if the data is data read mode, it indicates present status data. If the data is data write mode, it returns the data of the PC computer.

Error Acknowledgement

[Command2][][Set ID][][NG][Data][x]

- * The Monitor transmits ACK (acknowledgement) based on this format when receiving abnormal data from non-viable functions or communication errors.

Data 1: Illegal Code
2: Not supported function
3: Wait more time

01. Power (Command2:a)

- To control Power On/Off of the Monitor.

Transmission

[k][a][][Set ID][][Data][Cr]

Data 0 : Power Off 1 : Power On

Acknowledgement

[a][][Set ID][][OK][Data][x]

* In a like manner, if other functions transmit 'FF' data based on this format, Acknowledgement data feedback presents status about each function.

02. Input Select (Command2:b) (Main Picture Input)

- To select input source for the Monitor.

Transmission

[k][b][][Set ID][][Data][Cr]

Data 0: DTV 5: Component 2
1: Analog 6: RGB-DTV
2: Video1 7: RGB-PC
3: Video2 8: HDMI1/DVI
4: Component 1 9: HDMI2

Acknowledgement

[b][][Set ID][][OK][Data][x]

03. Aspect Ratio (Command2:c) (Main picture format)

- To adjust the screen format.
You can also adjust the screen format using the RATIO button on remote control or in the Option menu.

Transmission

[k][c][][Set ID][][Data][Cr]

Date 1: 4:3 6: Set by program
2: 16:9 10: Cinema Zoom (1)
3: Horizon
4: Zoom 1
5: Zoom 2 1F: Cinema Zoom (16)

Acknowledgement

[c][][Set ID][][OK][Data][x]

04. Screen Mute (Command2:d)

- To select screen mute on/off.

Transmission

[k][d][][Set ID][][Data][Cr]

Data 0 : Screen mute off (Picture on)
1 : Screen mute on (Picture off)

Acknowledgement

[d][][Set ID][][OK][Data][x]

05. Volume Mute (Command2:e)

- To control volume mute on/off.
You can also adjust mute using the MUTE button on remote control.

Transmission

[k][e][][Set ID][][Data][Cr]

Data 0 : Volume mute off (Volume on)
1 : Volume mute on (Volume off)

Acknowledgement

[e][][Set ID][][OK][Data][x]

06. Volume Control (Command2:f)

- To adjust volume.
You can also adjust volume with the volume buttons on remote control.

Transmission

[k][f][][Set ID][][Data][Cr]

Data Min : 0 ~ Max : 64

- Refer to 'Real data mapping' as shown below.

Acknowledgement

[f][][Set ID][][OK][Data][x]

07. Contrast (Command2:g)

- To adjust screen contrast.
You can also adjust contrast in the Video menu.

Transmission

[k][g][][Set ID][][Data][Cr]

Data Min : 0 ~ Max : 64

- Refer to 'Real data mapping' as shown below.

Acknowledgement

[g][][Set ID][][OK][Data][x]

08. Brightness (Command2:h)

- To adjust screen brightness.
You can also adjust brightness in the Video menu.

Transmission

[k][h][][Set ID][][Data][Cr]

Data Min : 0 ~ Max : 64

- Refer to 'Real data mapping' as shown below.

Acknowledgement

[h][][Set ID][][OK][Data][x]

* Real data mapping

0 : Step 0
:
A : Step 10 (SET ID 10)
:
F : Step 15 (SET ID 15)
10 : Step 16 (SET ID 16)
:
63 : Step 99 (SET ID 99)
64 : Step 100

09. Color (Command2:i)

- To adjust the screen color.
You can also adjust color in the Video menu.

Transmission

[k][i][][Set ID][][Data][Cr]

Data Min : 0 ~ Max : 64

- Refer to 'Real data mapping'. See page 82.

Acknowledgement

[i][][Set ID][][OK][Data][x]

10. Tint (Command2:j)

- To adjust the screen tint.
You can also adjust tint in the Video menu.

Transmission

[k][j][][Set ID][][Data][Cr]

Data Red : 0 ~ Green : 64

- Refer to 'Real data mapping'. See page 82.

Acknowledgement

[j][][Set ID][][OK][Data][x]

11. Sharpness (Command2:k)

- To adjust the screen sharpness.
You can also adjust sharpness in the Video menu.

Transmission

[k][k][][Set ID][][Data][Cr]

Data Min: 0 ~ Max: 64

- Refer to 'Real data mapping'. See page 82.

Acknowledgement

[k][][Set ID][][OK][Data][x]

12. OSD Select (Command2:l)

- To select OSD (On Screen Display) on/off.

Transmission

[k][l][][Set ID][][Data][Cr]

Data 0: OSD off 1: OSD on

Acknowledgement

[l][][Set ID][][OK][Data][x]

13. Remote Control Lock Mode (Command2:m)

- To lock the remote control and the front panel controls on the set.

Transmission

[k][m][][Set ID][][Data][Cr]

Data 0: Lock off 1: Lock on

Acknowledgement

[m][][Set ID][][OK][Data][x]

14. PIP / POP / Twin Picture (Command2:n)

- To control the PIP (Picture-in-Picture)/POP/Twin picture.
You can also control the PIP/POP/Twin picture using the PIP button on the remote control.

Transmission

[k][n][][Set ID][][Data][Cr]

Data 0: PIP off 2: POP
1: PIP 3: Twin PictureAcknowledgement

[n][][Set ID][][OK][Data][x]

15. PIP Position (Command2:q)

- To select sub picture position for PIP.

Transmission

[k][q][][Set ID][][Data][Cr]

Data 0: Right down on screen
1: Left down on screen
2: Left up on screen
3: Right up on screenAcknowledgement

[q][][Set ID][][OK][Data][x]

16. Treble (Command2:r)

- To adjust treble.
You can also adjust treble in the Audio menu.

Transmission

[k][r][][Set ID][][Data][Cr]

Data Min: 0 ~ Max: 64

- Refer to 'Real data mapping'. See page 82.

Acknowledgement

[r][][Set ID][][OK][Data][x]

17. Bass (Command2:s)

- To adjust bass.
You can also adjust bass in the Audio menu.

Transmission

[k][s][][Set ID][][Data][Cr]

Data Min: 0 ~ Max: 64

- Refer to 'Real data mapping'. See page 82.

Acknowledgement

[s][][Set ID][][OK][Data][x]

18. Balance (Command2:t)

- To adjust balance.
You can also adjust balance in the Audio menu.

Transmission

[k][t][][Set ID][][Data][Cr]

Data Min: 0 ~ Max: 64

- Refer to 'Real data mapping'. See page 82.

Acknowledgement

[t][][Set ID][][OK][Data][x]

19. Color Temperature (Command2:u)

- To adjust color temperature.
You can also adjust color temperature in the Video menu.

Transmission

[k][u][][Set ID][][Data][Cr]

Data 0: Cool 1: Medium 2: Warm

Acknowledgement

[u][][Set ID][][OK][Data][x]

20. PIP Input Select (Command2:y)

- To select input source for sub picture in PIP/Twin picture mode.

Transmission

[k][y][][Set ID][][Data][Cr]

Data 0: DTV
1: Analog
2: Video1
3: Video2

Acknowledgement

[y][][Set ID][][OK][Data][x]

21. ISM Method (Command2:p)

- To avoid having a fixed image remain on screen.

Transmission

[j][p][][Set ID][][Data][Cr]

Data 1: Inversion
2: Orbiter
4: White Wash
8: Normal

Acknowledgement

[p][][Set ID][][OK][Data][x]

22. Low Power (Command2:q)

- To control the low power function on/off.

Transmission

[j][q][][Set ID][][Data][Cr]

Data 0: low power off
1: low power on

Acknowledgement

[q][][Set ID][][OK][Data][x]

23. Orbiter Time Setting (Command2:r)

- To adjust orbiter operation time term.

Transmission

[j][r][][Set ID][][Data][Cr]

Data Min: 1 ~ Max: FE

Acknowledgement

[r][][Set ID][][OK][Data][x]

24. Orbiter Pixel Setting (Command2:s)

- To adjust pixel number in orbiter function.

Transmission

[j][s][][Set ID][][Data][Cr]

Data Min: 1 ~ Max: 3

Acknowledgement

[s][][Set ID][][OK][Data][x]

25. Tune Command (Command: m a)

- To tune channel to following physical/major/minor number

Transmission

[m][a][][Set ID][][Data0][][Data1][][Data2][][Data3][][Data4][][Data5][Cr]

Data 0: Physical channel number Min: 1~ Max: 0x87

Data 1, Data 2: Major Channel Number (two part)/ Channel

Number (One part) (Data 1: High, Data 2: Low)

Data 3, Data 4: Minor Channel Number (Data3: High, Data4: Low)

Data 5:

7	Main/Sub Picture	6	Two/One Part Channel	5	Using Physical Channel	4 Reserved	3	2	1	0	Step
0	Main	0	Two	0	Use	x	0	0	0	0	NTSC Air
1	Sub	1	One	1	No Use	x	0	0	0	1	NTSC Cable
						x	0	0	1	0	ATSC Air
						x	0	0	1	1	ATSC Cable_std
						x	0	1	0	0	ATSC Cable_hrc
						x	0	1	0	1	ATSC Cable_irc
						x	0	1	1	0	ATSC cable_auto
						x	0	1	1	1	Reserved
						x	x	x	x	x	...
						x	1	1	1	1	Reserved

* All data are transmitted by Hexadecimal code

***Two/One part Channel: 6th bit**

This bit is used in a cable-ready system.

***Using physical channel: 5th bit**

If the channel band is NTSC air or NTSC cable, channel tuning can be done by only physical channel. In this case, using physical channel bit must be low(0).

But if the channel band is ATSC air or ATSC cable, there are two cases that physical channel enable or disable.

If the physical channel sending is meaningful, you should set this bit low(0). If the physical channel sending is meaningless, you should set this bit high(1).

Example)

1. Analog channel: NTSC cable, channel number(35), main picture Command: ma 00 23 xx xx xx 01 attribute(0x01): main picture, two part(it's not mandatory), using physical channel, NTSC cable 'xx' data: don't care major and minor channel number in case analog channel tuning.

2. Digital channel: ATSC air, channel number(don't know physical channel, major(30), minor(3)), sub picture Command: ma 00 xx 00 1E 00 03 A2 attribute(0xA2): sub picture, two part, not using physical channel, ATSC air 'xx' data: don't care analog channel number in case digital channel tuning.

3. Digital channel: ATSC air, channel number(physical(20),major(20), minor(3)), sub picture Command: ma 00 14 00 14 00 03 82 attribute(0x82): sub picture, two part, using physical channel, ATSC air.

Acknowledgement

[a][][Set ID][][OK][Data0][Data1][Data2][Data3][Data4][x]
[a][][Set ID][][NG][Data0][x]

26. Channel Add/Del (Command: m b)

► To add and delete the channels

Transmission

[m][b][][Set ID][][Data][Cr]

Data 0: Channel Delete
1: Channel Add

Acknowledgement

[b][][Set ID][][OK][Data][x]
[b][][Set ID][][NG][Data][x]

27. Key (Command: m c)

► To send IR remote key code

Transmission

[m][c][][Set ID][][Data][][Cr]

Data Key code: Refer to page 86.

Acknowledgement

[c][][Set ID][][OK][Data][x]

28. Input select(Command: x b) (Main Picture Input)

► To select input source for TV.

Transmission

[x][b][][Set ID][][Data][Cr]

Data Structure

MSB								LSB
0	0	0	0	0	0	0	0	0

External Input Input Number

External Input	Data
0 0 0 0	DTV
0 0 0 1	Analog
0 0 1 0	AV
0 0 1 1	Reserved
0 1 0 0	Component
0 1 0 1	RGB_DTV
0 1 1 0	RGB_PC
0 1 1 1	Reserved
1 0 0 0	Reserved
1 0 0 1	HDMI1
1 0 1 1	Reserved
1 1 0 0	Reserved
1 1 0 1	Reserved
1 1 1 0	Reserved
1 1 1 1	Reserved

Input Number	Data
0 0 0 0	Input1
0 0 0 1	Input2
0 0 1 0	Input3
0 0 1 1	Input4
0 1 0 0	Input5
0 1 0 1	Input6
0 1 1 0	Input7
0 1 1 1	Input8
1 0 0 0	Input9
1 0 0 1	Input10
1 0 1 0	Input11
1 0 1 1	Input12
1 1 0 0	Input13
1 1 0 1	Input14
1 1 1 0	Input15
1 1 1 1	Input16

Acknowledgement

[b][][Set ID][][OK/NG][Data][x]

29. PIP Input Select(Command: x y)

► To adjust input source for sub picture in PIP mode

Transmission

[x][y][][Set ID][][Data][Cr]

Data Structure

MSB								LSB
0	0	0	0	0	0	0	0	0

External Input Input Number

External Input	Data	Input Number	Data
0 0 0 0	DTV	0 0 0 0	Input1
0 0 0 1	Analog	0 0 0 1	Input2
0 0 1 0	AV	0 0 1 0	Input3
0 0 1 1	Reserved	0 0 1 1	Input4
0 1 0 0	Reserved	0 1 0 0	Input5
0 1 0 1	Reserved	0 1 0 1	Input6
0 1 1 0	Reserved	0 1 1 0	Input7
0 1 1 1	Reserved	0 1 1 1	Input8
1 0 0 0	Reserved	1 0 0 0	Input9
1 0 0 1	Reserved	1 0 0 1	Input10
1 0 1 0	Reserved	1 0 1 0	Input11
1 0 1 1	Reserved	1 0 1 1	Input12
1 1 0 0	Reserved	1 1 0 0	Input13
1 1 0 1	Reserved	1 1 0 1	Input14
1 1 1 0	Reserved	1 1 1 0	Input15
1 1 1 1	Reserved	1 1 1 1	Input16

Acknowledgement

[y][][Set ID][][OK/NG][Data][x]

Note:

- In case Video/S-Video is selected automatically by TV, use only single Video input.
- In case Video/S-Video is selected by user manually, use separate Video/S-Video inputs.

IR Codes

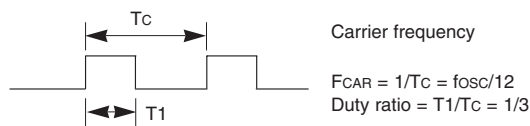
How to Connect

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

Remote Control IR Codes

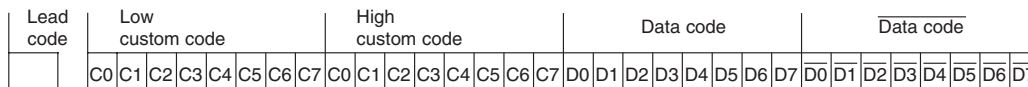
▶ Output waveform

Single pulse, modulated with 37.917KHz signal at 455KHz

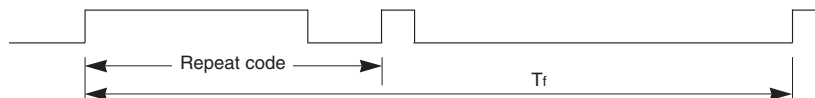


▶ Configuration of frame

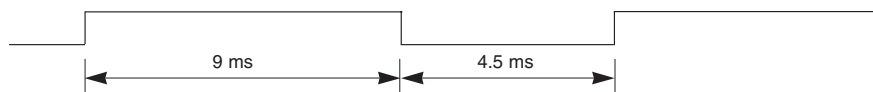
- 1st frame



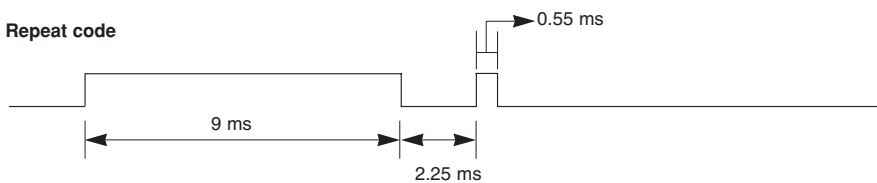
- Repeat frame



▶ Lead code

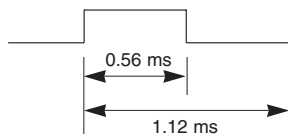


▶ Repeat code

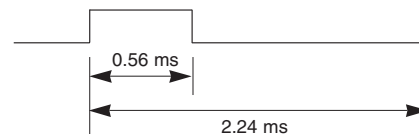


▶ Bit description

- Bit "0"

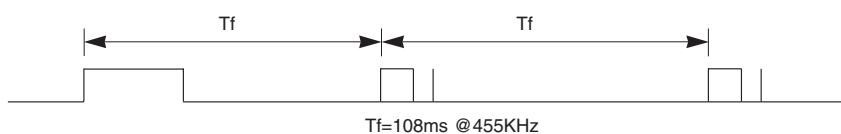


- Bit "1"



▶ Frame interval : Tf

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



Code (Hexa)	Function	Note
0B	TV/VIDEO	R/C Button
08	POWER	R/C Button (Power On/Off)
C4	POWER ON	Discrete IR Code (Only Power On)
C5	POWER OFF	Discrete IR Code (Only Power Off)
79	RATIO	R/C Button
0E	TIMER	R/C Button
10 ~ 19	Number Key 0~ 9	R/C Button
4C	- (Dash)	R/C Button
1A	FLASHBK	R/C Button
09	MUTE	R/C Button
02	VOL ▲	R/C Button
03	VOL ▼	R/C Button
00	CH ▲	R/C Button
01	CH ▼	R/C Button
1E	FAV	R/C Button
AA	INFO	R/C Button
39	CC	R/C Button
40	▲	R/C Button
41	▼	R/C Button
07	◀	R/C Button
06	▶	R/C Button
44	ENTER	R/C Button
43	MENU	R/C Button
52	EZ SOUND	R/C Button
4D	EZ PIC	R/C Button
5B	EXIT	R/C Button
60	PIP	R/C Button
72	PIPCH -	R/C Button
71	PIPCH +	R/C Button
61	PIP INPUT	R/C Button
63	SWAP	R/C Button
65	FREEZE	R/C Button
0A	SAP	R/C Button
CB	ADJUST	R/C Button
D6	TV	Discrete IR Code (TV Input Selection)
5A	VIDEO	Discrete IR Code (Video Input Selection)
D0	Front Video	Discrete IR Code (Front Video Input Selection)
BF	COMPONENT 1	Discrete IR Code (Component1 Input Selection)
D4	COMPONENT 2	Discrete IR Code (Component2 Input Selection)
D5	RGB-PC	Discrete IR Code (RGB-PC Input Selection)
D7	RGB-DTV	Discrete IR Code (RGB-DTV Input Selection)
C6	HDMI1/DVI	Discrete IR Code (HDMI1/DVI Input Selection)
CC	HDMI2	Discrete IR Code (Only 4:3 Mode)
76	Ratio 4:3	Discrete IR Code (Only 16:9 Mode)
77	Ratio 16:9	Discrete IR Code (Only Zoom1 Mode)
AF	Ratio Zoom	Discrete IR Code (Channel Search)
70	POP	R/C Button
87	1394	R/C Button
B0	PLAY	R/C Button
BA	PAUSE	R/C Button
B1	STOP	R/C Button
BD	REC	R/C Button
8F	REW	R/C Button
8E	FF	R/C Button
B2	GOTOPREV	R/C Button
B3	GOTONEXT	R/C Button
A9	TV GUIDE	R/C Button
92	APM	R/C Button
C4	MC EJECT	R/C Button
80	AUTO DEMO	R/C Button
C8	X STUDIO	R/C Button
7D	MARK	R/C Button

Programming the Remote

- The remote control is a multi-brand or universal remote control. It can be programmed to operate most remote-controllable devices of other manufacturers.
Note that the remote control may not control all models of other brands.

Programming a code into a remote mode

1. Test your remote control.
To find out whether your remote control can operate the component without programming, turn on the component such as a VCR and press the corresponding the desired component button on the remote control, while illuminating at the selected component. Test the **POWER** and **CH ▲/▼** buttons to see if the component responds properly. If not, the remote requires programming to operate the device.
2. Turn on the component to be programmed, then press the corresponding the desired component button on the remote control.
3. Press the **MENU** and **MUTE** buttons simultaneously, the remote control is ready to be programmed for the code.
4. There are two ways to find the right code for the component.
 - A. If you press the **CH ▲/▼** buttons repeatedly, the codes will change one at-a-time. Press the **POWER** button after each code change. If the right code is found, the device will turn off.
 - B. Enter a code number using the number buttons on the remote. Programming code numbers for the corresponding component can be found on the following pages. Again, 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 properly. If not, repeat from step 2.

Programming Codes

VCRs

Brand	Codes	Brand	Codes	Brand	Codes	Brand	Codes
AIWA	034	KENWOOD	014 034 039 043	PORTLAND	108	TATUNG	039 043
AKAI	016 043 046 124		047 048	PULSAR	072	TEAC	034 039 043
AMPRO	072	LG (GOLDSTAR)	001 012 013 020	QUARTZ	011 014	TECHNICS	031 033 070
ANAM	031 033 103		101 106 114 123	QUASAR	033 066 075 145	TEKNIKA	019 031 033 034
AUDIO DYNAMICS	012 023 039 043	LLOYD	034	RCA	013 020 033 034	THOMAS	034
BROKSONIC	035 037 129	LXI	003 009 013 014		040 041 062 063	TMK	006
CANON	028 031 033		017 034 101 106		107 109 140 144	TOSHIBA	008 013 042 047
CAPEHART	108	MAGIN	040	REALISTIC	003 008 010 014		059 082 112 131
CRAIG	003 040 135	MAGNAVOX	031 033 034 041		031 033 034 040	TOTEVISION	040 101
CURTIS MATHES	031 033 041		067 068		053 054 101	UNITECH	040
DAEWOO	005 007 010 064	MARANTZ	012 031 033 067	RICO	058	VECTOR RESEARCH	012
	065 108 110 111		069	RUNCO	148	VICTOR	048
	112 116 117 119	MARTA	101	SALORA	014	VIDEO CONCEPTS	012 034 046
DAYTRON	108	MATSUI	027 030	SAMSUNG	032 040 102 104	VIDEOSONIC	040
DBX	012 023 039 043	MEI	031 033		105 107 109 112	WARDS	003 013 017 024
DYNATECH	034 053	MEMOREX	003 010 014 031		113 115 120 122		031 033 034 040
ELECTROHOME	059		033 034 053 072		125		053 054 131
EMERSON	006 017 025 027		101 102 134 139	SANSUI	022 043 048 135	YAMAHA	012 034 039 043
	029 031 034 035	MGA	045 046 059	SANYO	003 007 010 014	ZENITH	034 048 056
	036 037 046 101	MINOLTA	013 020		102 134		058 072 080 101
	129 131 138 153	MITSUBISHI	013 020 045 046	SCOTT	017 037 112 129		
FISHER	003 008 009 010		049 051 059 061		131		
FUNAI	034	MTC	034 040	SEARS	003 00 009		
GE	031 033 063 072	MULTITECH	024 034	010	013 014 017 020		
	107 109 144 147	NEC	012 023 039 043		031 042 073 081		
GO VIDEO	132 136		048		101		
HARMAN KARDON	012 045	NORDMENDE	043	SHARP	031 054 149		
HITACHI	004 018 026 034	OPTONICA	053 054	SHINTOM	024		
	043 063 137 150	PANASONIC	066 070 074 083	SONY	003 009 031 052		
INSTANTREPLAY	031 033		133 140 145		056 057 058 076		
JCL	031 033	PENTAX	013 020 031 033		077 078 149		
JCPENNY	012 013 015 033		063	SOUNDESIGN	034		
	040 066 101	PHILCO	031 034 067	STS	013		
JENSEN	043	PHILIPS	031 033 034 054	SYLVANIA	031 033 034 059		
JVC	012 031 033 043		067 071 101		067		
	048 050 055 060	PILOT	101	SYMPHONIC	034		
	130 150 152	PIONEER	013 021 048	TANDY	010 034		

CATV

Brand	Codes	Brand	Codes	Brand	Codes	Brand	Codes
ABC	003 004 039 042	GOLDEN CHANNEL	030		065 085 090	SL MARX	030
	046 052 053	HAMLIN	049 050 055	PIONEER	034 051 052 063	SPRUCER	047 078
AJIN	112	HITACHI	052 055		076	STARCOM	002 004 008 009
ANTRONIK	014	HOSPITALITY	070 077	POST NEWS WEEK	016	STARGATE	008 030
ARCHER	005 007 014 024	JERROLD	002 003 004 008	PRUCER	059	SYLVANIA	067
CABLE STAR	026		009 010 052 069	PTS	011 048 071 072	TADIRAN	030
CENTURION	092		074		073 074	TAEKWANG	110
CENTURY	007	LG (GOLDSTAR)	001 106 101 005	PULSAR	100	TAIHAN	105
CITIZEN	007	M-NET	037	RCA	047	TANDY	017
COLOUR VOICE	065 090	MACOM	033	REGAL	049 050	TEXSCAN	029 067
COMBANO	080 081	MAGNAVOX	010 012 064 079	REGENCY	057	TOCOM	039 040 056
COMTRONICS	019 030	MEMOREX	100	REMBRANT	025	TOSHIBA	100
DIAMOND	023	MOVIE TIME	028 032	RK	091	UNIKA	007 014 024
EAGLE	020 030 040	NSC	015 028 038 071	SAMSUNG	102 107 030 068	UNITED CABLE	004 053
EASTERN	057 062 066		073	SCIENTIFIC ATLANTA	003 011 041 042	UNIVERSAL	005 007 014 024
ELECTRICORD	032	OAK	016 031 037 053		043 045 046		026 027 032 035
GE	072	PANASONIC	044 047	SHERITECH	022	VIEWSTAR	012 015 018 086
GEMINI	008 022 025 054	PARAGON	100	SIGNAL	030		087 088 089
GI	052 074	PHILIPS	006 012 013 020	SIGNATURE	052	ZENITH	100 114 060 093

HDSTB

Brand	Codes	Brand	Codes	Brand	Codes	Brand	Codes
ALPHASTAR DSR	123	EUROPLUS	114	MEMOREX	057	STARCAST	041
AMPLICA	050	FUJITSU	017 021 022 027	NEXTWAVE	028 124 125	SUPER GUIDE	020 124 125
BIRDVIEW	051 126 129		133 134	NORSAT	069 070	TEECOM	023 026 075 087
BSR	053	GENERAL INSTRUMENT	003 004 016 029	PACE SKY SATELLITE	143		088 090 107 130
CAPETRONICS	053		031 059 101	PANASONIC	060 142		137
CHANNEL MASTER	013 014 015 018	HITACHI	139 140	PANSAT	121	TOSHIBA	002 127
	036 055	HOUSTON TRACKER	033 037 039 051	PERSONAL CABLE	117	UNIDEN	016 025 042 043
CHAPARRAL	008 009 012 077		057 104	PHILIPS	071		044 045 048 049
CITOH	054	HUGHES	068	PICO	105		078 079 080 086
CURTIS MATHES	050 145	HYTEK	053	PRESIDENT	019 102		101
DRAKE	005 006 007 010	JANIEL	060 147	PRIMESTAR	030 110 111	UNIDEN	135 136
	011 052 112 116	JERROLD	061	PROSAT	072	VIEWSTAR	115
	141	KATHREIN	108	RCA	066 106	WINEGARD	128 146
DX ANTENNA	024 046 056 076	LEGEND	057	REALISTIC	043 074	ZENITH	081 082 083 084
ECHOSTAR	038 040 057 058	LG	001	SAMSUNG	123		091 120
	093 094 095 096	LUTRON	132	SATELLITE SERVICE CO	028 035 047 057		
	097 098 099 100	LUXOR	062 144		085		
	122	MACOM	010 059 063 064	SCIENTIFIC ATLANTA	032 138		
ELECTRO HOME	089		065	SONY	103		

Audio

Brand	Codes	Brand	Codes	Brand	Codes	Brand	Codes
AIWA	014 028 070 096	JVC	004 013 141	PHILIPS	026 112 143 253		147 218
	125 129 139 229	KEC	185 186 187	PIONEER	039 042 043 063	TOSHIBA	137
	230	KENWOOD	038 050 067 089		065 091 093 094	THE	061
AKAI	163		170 171 197 206	QUASAR	115 123 127 250	VICTOR	088 131
ANAM	003 014 017 023		215 222	RCA	113	WARDS	089
	059 106 189 216	KOHEL	030	RCX	080	YAMAHA	054 055 066 092
	217 235 236	NAD	045 046	REALISTIC	092		199
BURMECTER	252	LOTTE	014 016 036 098	SAMSUNG	103 106		
CARVER	086		100 172 173 174		124 145 146 182		
CLARION	199		175 176 177 178		193 194 195 203		
DAEWOO	027 053 060 084		179 180 181 183		204 244 245 246		
	102 148 198 221		201 202 208 213	SANSUI	011 135 138 144		
DENON	015 075 130 143		214 219 223 232	SANYO	019 083 234		
FANTASIA	071		238 240	SCOTT	106 186		
FINEARTS	022	LXI	103	SHARP	031 032 051 052		
FISHER	089 099	MAGNAVOX	111		072 082 117 119		
LG(GOLDSTAR)	001 021 024 029	MARANTZ	002 018 020 025		156 184 199 200		
	087 107 108 110		034 041 081 090		206 209		
	190 191 192 210		097 112	SHERWOOD	005 006 158		
HAITAI	211 212 239	MCINTOSH	049	SONY	044 045 109 114		
HARMAN/KARDON	034 035 188 222	MCS	104		118 126 248 249		
INKEL	068	MEMOREX	107	TAEKWANG	012 020 073 074		
	037 058 062 069	NAD	046		076 077 105 161		
	078 079 095 121	ONKYO	013 040 041 047		162 163 164 165		
	122 149 150 151		048 056 057 132		166 167 168 169		
	152 153 154 155		133 140		205 231 233 242		
	157 158 159 160	OPTIMUS	158		254		
	189 207 222 224	PANASONIC	007 033 064 113	TEAC	010 085 106 136		
	225 226 227 243		142 220 241 251		185 187 237		
	247	PENNEY	104	TECHNICS	101 113 128 134		

DVD

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

Troubleshooting Checklist

No picture & No sound	• Check whether the TV is turned on. • Is the power cord inserted into wall power outlet? • Test the wall power outlet, plug another product's power cord into the outlet where the TV's power cord was plugged in.
Picture OK & No sound	• Press the VOLUME (▶) button. • Sound muted? Press MUTE button.
The remote control doesn't work	• Check to see if there is any object between the TV and the remote control causing obstruction. • Are batteries installed with correct polarity (+ to +, - to -)? (Refer to p.10) • Correct remote operating mode set: TV, VCR etc.? • Install new batteries. (Refer to p.10)
Picture appears slowly after switching on	• This is normal, the image is muted during the TV startup process. Please contact your service center, if the picture has not appeared after five minutes.
No or poor color or poor picture	• Select Color in the Video menu and press the VOLUME (▶) button. (Refer to p.61) • Keep a sufficient distance between the TV and the VCR. • Activate any function to restore the brightness of the picture. (If still picture is on the screen for more than 5 minutes, the screen gets dark.)
Horizontal/vertical bars or picture shaking	• Check for local interference such as an electrical appliance or power tool.
No output from one of the speakers	• Adjust Balance in the AUDIO menu. (Refer to p.63)
Unusual sound from inside the TV	• A change in ambient humidity or temperature may result in an unusual noise when the plasma display is turned on or off and does not indicate a fault with the TV.

Maintenance

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

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



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

Product Specifications

MODELS	TU-50PY22/TU-50PY2DR-UA	TU-60PY22/TU-60PY2DR-UA
Width (inches / mm)	55.2 / 1402	67.24 / 1708
Height (inches / mm)	31.4 / 798.5	36.6 / 931
Depth (inches / mm)	11.9 / 302.5	12.6 / 320.7
Weight (pounds / kg)	122 / 55.3	189.2 / 85.8
Resolution	1366 x 768 (Dot)	
Power requirement	AC100-240V ~ 60Hz	
Television System	NTSC-M, ATSC	
Program Coverage	VHF 2 ~ 13, UHF 14 ~ 69, CATV 1 ~ 135, CADTV 1 ~ 135. DTV 2 ~ 69	
External Antenna Impedance	75 Ω	
Color	16,770,000 (256 steps of each R, G and B)	
Operating Temperature Range	32 ~ 104°F (0 ~ 40°C)	
Operating Humidity Range	Less than 80%	
Maximum Elevation	6561 feet (2000m)	

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



LG ELECTRONICS, INC.
PLASMA TV — U.S. LIMITED WARRANTY

Your LG Plasma TV will be repaired or replaced in accordance with the terms of this warranty, at LGE's option, if it proves to be defective in material or workmanship under normal use, during the warranty period ("Warranty Period") listed below, effective from the date ("Date of Purchase") of original consumer purchase of the product. This warranty is good only to the original purchaser of the product and effective only when used in the United States, including Alaska, Hawaii, and U.S. Territories.

WARRANTY PERIOD:

LABOR and PARTS: 2 YEARS from the Date of Purchase. Your unit will be repaired or replaced with a new, substitute model or factory reconditioned unit, at LGE's option. If repaired, parts used in the repair may be new or remanufactured.

Replacement Units and Repair Parts are warranted for the remaining portion of the original unit's warranty period.

EFFECTIVE DATE OF WARRANTY: Your warranty period begins on the date of sale to the original consumer/end user. KEEP THE DEALER'S DATED BILL OF SALE OR PROOF OF DELIVERY as evidence of the purchase date. You will be required to submit a legible copy of your bill of sale or proof of delivery when requesting warranty service.

HOW SERVICE IS HANDLED:

In-Home Service: Please retain dealer's dated bill of sale or delivery ticket as evidence of the Date of Purchase for proof of warranty, and submit a copy of the bill of sale to the service person at the time warranty service is provided.

Please call 1-201-816-2000 to locate your nearest LGE Authorized Service Center.

Visit our website at:
<http://www.lgservice.com>

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ANY IMPLIED WARRANTY IS REQUIRED BY LAW, IT IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD ABOVE. NEITHER THE MANUFACTURER NOR ITS U.S. DISTRIBUTOR SHALL BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION, LOST PROFITS, LOST OR CORRUPTED PROGRAMMING OR DATA, OR ANY OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

CONCERNING PIXEL FUNCTIONALITY: Your Plasma TV contains about one million individual pixels. Plasma TV typically contain a small number of pixels that do not function normally. Your display has been inspected and is in compliance with manufacturer's specifications, indicating that any pixel defects do not effect the operation or use of your display.

IMPORTANT: Please fill out and mail in your Product Registration Card or go to www.lgservice.com to register your product online. This information will allow us to reach you promptly should we discover a safety or reliability problem that could affect you.

THIS LIMITED WARRANTY DOES NOT APPLY TO:

● damage caused in shipping or transit ● service required as a result of improper installation, including incorrect or insufficient AC supply (please consult the owner's manual for power supply requirements) ● installation or repair of antenna systems, cable converters, cable company supplied equipment, or other components in a video system ● set-up or adjustment on consumer controls, or damage caused by improper adjustments ● damage caused by other system components ● any panel that has been modified or incorporated into any other product ● replacement of batteries on the remote control. ● damage (including cosmetic damage), failure, loss or personal injury due to misuse, abuse, negli-	gence, improper maintenance or storage, or to acts of nature or other causes beyond our control. (Causes beyond our control include but are not limited to lightning strike, power surges, power outages and water damage.) ● image burn-in ● repair or replacement of warranted parts by other than LGE authorized service centers. ● units purchased or serviced outside of the coverage area. ● product where the original factory serial numbers have been removed, defaced or changed in any way. ● product sold and labeled as "as is, where is" or similar disclaimer.
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The cost of repair or replacement under these excluded circumstances shall be borne by the consumer.

CUSTOMER INTERACTIVE CENTER NUMBERS:

To obtain customer assistance, product information or Dealer or Service locations	Call 1-201-816-2000 24 hours a day, 365 days per year
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FOR SERVICE:

Before you call for warranty service, check your operating guide – you may avoid a service call.

For warranty service information, please contact the LGE Customer Interactive Center telephone number.

When calling for service, **please have your product model number, serial number and the date of purchase or the date of original installation available.**

If a replacement unit is required, under some circumstances you may be asked to provide a reserve deposit to the LGE Service Center against a credit card number as surety for advanced shipment. Your credit card will not be charged if you return the defective unit within 10 working days.

If a replacement unit is received, please use the carton and packaging from that unit in returning the defective unit to the LG®Brand Service Center.

Parts and service in accordance with the LGE warranty are LGE's responsibility and will be provided without charge. Other service requirements will be at the owner's expense. If you have problems in obtaining satisfactory warranty service, write or call the LGE Customer Interactive Center. Service may be provided by independently owned and operated service organizations.

To assure proper credit and avoid unnecessary charges, you must obtain an LGE Return Authorization before returning any product to the LGE Service Center. Contact the Customer Interactive Center for details.

TO CONTACT THE LGE CUSTOMER SERVICE CENTER BY MAIL:

LGE Customer Interactive Center
P.O. Box 240007
201 James Record Road
Huntsville, Alabama 35824
<http://www.lgservice.com>

P/NO : 3828VA0528A