

 **Coolsat**<sup>®</sup>  
Digital Satellite Receiver

Digital Satellite Receiver

# USER'S MANUAL

## 7000 miCro-PVR

Digital Satellite Receiver



 **Coolsat**<sup>®</sup>

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## Safety Precautions

### 1. Important Safety Instructions

- ① Read these instructions.
- ② Keep these instructions.
- ③ Heed all warnings.
- ④ Follow all instructions.
- ⑤ Do not use this apparatus near water.
- ⑥ Clean only with dry cloth.
- ⑦ Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- ⑧ Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- ⑨ Do not reverse the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- ⑩ Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- ⑪ Only use attachments/accessories specified by the manufacturer.
- ⑫ Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- ⑬ Unplug this apparatus during lightning storms or when unused for long periods of time.
- ⑭ Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

#### WARNING

TO PREVENT FIRE OR SHOCK HAZARD DO NOT EXPOSE THE SET TO RAIN OR MOISTURE.

### 2. FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

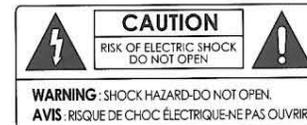
**Caution :** Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE :** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- ▶ Reorient or relocate the receiving antenna.
- ▶ Increase the separation between the equipment and receiver.
- ▶ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ▶ Consult the dealer or an experienced radio/TV technician for help.

### 3. Notice

- ① These serving instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
- ② The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
- ③ The mains plug is used as the disconnect device. The disconnect device shall remain readily operable.



TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER(OR BACK). NO USER-SERVICEABLE PARTS ARE INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The Lightning Flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product

## Before You Begin

### 1. Main Features

- ▶ Time Shifting with Internal Storage Memory (Up to 40~50 min)
- ▶ Recording & Playback with External USB(2.0) Devices
- ▶ Event Recording by EPG
- ▶ Recording and Time Shifting Simultaneously
- ▶ Recording and Playback Simultaneously
- ▶ Support 9-Day EPG
- ▶ USB 2.0 Host Support(MP3 Player & JPEG Viewer)
- ▶ MPEG-II Digital & Fully DVB Compliant
- ▶ Blind Scan
- ▶ Multi-LNB Controlled by DiSEqC Control Version 1.0, 1.2 and USALS
- ▶ Multi-Satellite Search
- ▶ On-Screen Display with 65535 Color Full Resolution
- ▶ Favorite Channel Groups
- ▶ Powerful Channel Control by Favorites, Lock, Skip, Move and Delete
- ▶ Channel Sorting by Alphabet, Transponder and CAS
- ▶ Multi-language Supported (OSD & Menu)
- ▶ Closed Caption Support
- ▶ Maximum 10,000 Channels Programmable
- ▶ Multi-picture Display
- ▶ Parental Lock / Receiver Lock
- ▶ CVBS Video & Audio Output via RCA
- ▶ Component Y/Pb/Pr Output via RCA
- ▶ S-VHS Video Output
- ▶ Optical & Coaxial Output for Digital Audio
- ▶ Software & Channel Database Upgrade via RS-232 & USB
- ▶ Premium Grade Universal Remote Control

### 2. Accessories

User's manual



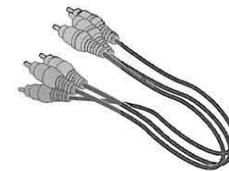
Remote Control



AAA size Batteries X 2



RCA Cable



External USB Memory

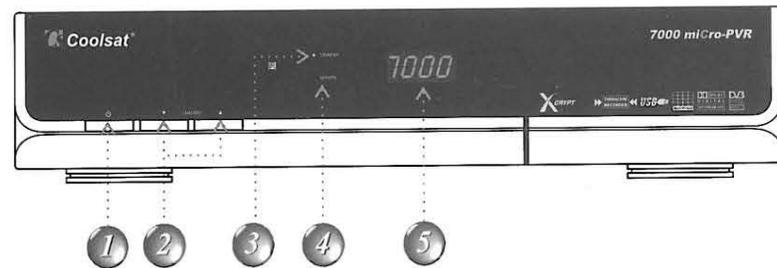


**NOTE**

*If any accessories listed above are missing, contact the sales representative where you purchased this unit*

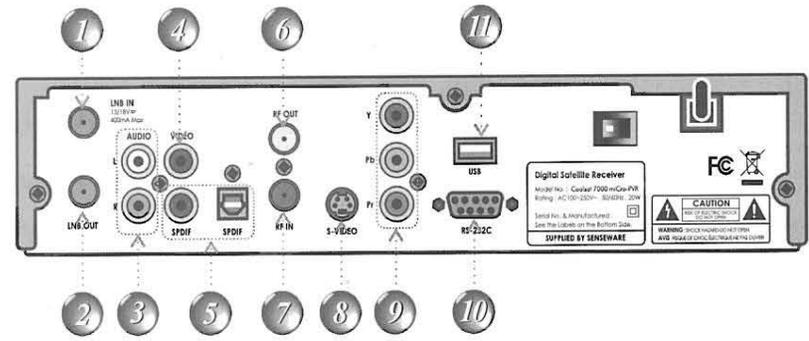
## Hardware Description

### 1. Front Panel Configuration



- 1 POWER Button**  
Press to switch between **STANDBY** and **POWER ON** modes.
- 2 CH Up/Down Button**  
Press to change channels in normal mode, to move the **ARROW** up/down in menu mode.
- 3 STANDBY Indication LED(RED)**  
The LED lights on in standby mode.
- 4 REMOTE Indication LED(GREEN)**  
The LED lights on when a key on the Remote Control is pressed.
- 5 DISPLAY**  
The 4-digit shows channel number or menu state in normal mode, shows local time in standby mode.

### 2. Rear Panel Configuration



- 1 LNB IN** : Use to connect a satellite antenna.
- 2 LNB OUT** : Use it when connecting to another STB for loop-through.
- 3 AUDIO L/R** : Use to connect audio left, right of TV or VCR.
- 4 VIDEO** : Use to connect to video input of TV or VCR.
- 5 SPDIF** : Use to connect SPDIF to digital audio equipment.(Coaxial or Optic)
- 6 RF OUT** : Use to connect to RF(ANT) input jack of TV.
- 7 RF IN** : Use to connect a general Aerial Antenna.
- 8 S-VIDEO** : Use to connect to S-VHS video input on your TV or VCR.
- 9 Y/Pb/Pr** : Use it when connecting component video to TV.
- 10 RS-232C** : Use it when connecting to your PC.
- 11 USB** : Use it when connecting external USB memory device.



3. Remote Control Unit



- 1 **POWER** : Turns the STB On/Off.
- 2 **RECORD** : To start recording.
- 3 **STOP** : To stop time shifting, play back or recording
- 4 **PAUSE** : This key is used to pause the video. Press once more to resume the video.
- 5 **REWIND** : Rewind when the progress bar is displayed. Start reverse playback. Change the speed of reverse playback.
- 6 **PLAY/TIME SHIFT** : Display the progress bar of time shifting or playback when no progress bar is displayed. Start playback with normal speed. Return to normal speed from trick mode.

- 7 **FAST FORWARD** : Start fast forward or fast motion playback. Change the speed of forward playback.
- 8 **PREV FILE** : To play the previous MP3 file in MP3 play mode.
- 9 **NEXT FILE** : To play the next MP3 file in MP3 play mode.
- 10 **COLOR Keys** : Used for special function in menu. RED key is used to add or delete the current position as a bookmark. GREEN key is used to go to the next bookmark position. BLUE key is used to display multiple pictures
- 11 **ARROW** : Moves the highlight bar for selecting options on the menus. And this key is used to change channels(UP/DOWN) or change audio volume(LEFT/RIGHT).
- 12 **OK** : Shows the channel list in non-menu mode and select an item or confirm in menu mode.
- 13 **EPG(Electronic Program Guide)** : Show the TV/Radio program guide.
- 14 **MUTE** : Turns the sound On/Off.
- 15 **INFO** : Shows the information of the current program. If you press one more, detail information box will be shown.
- 16 **MENU** : To enter the main menu or to move to the previous menu.
- 17 **RECALL** : Moves to previous channel.
- 18 **SAT** : To change the satellite groups.
- 19 **EXIT** : Exit from the menu or pop-up window.
- 20 **PLAY LIST** : To display recorded channel list.
- 21 **FAV** : To change the favorite groups.
- 22 **NUMERIC Keys** : Controls the numerical operation and channel numbers directly.
- 23 **TV/RADIO** : Switches between TV and Radio.
- 24 **TV/SAT** : Toggles the TV output source between the satellite input and UHF/VHF antenna input.
- 25 **C.C** : Turns the closed captions On/Off.
- 26 **AUDIO** : To select audio language.

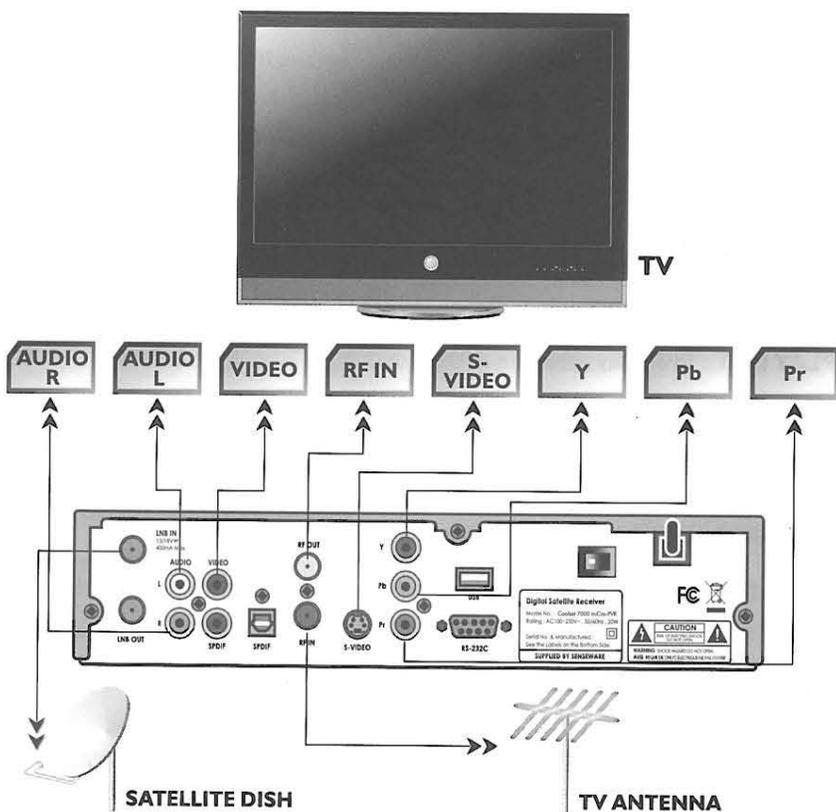
**NOTE** When inserting batteries, make sure that the polarity (+/-) is correct.

- Safety Precautions
- Before You Begin
- Hardware Descriptions
- Connections
- Guide of Functions
- Guide of Main Menu
- Troubleshooting
- Specifications
- Multi-Brand IR Remote Controller

## Connections Diagram

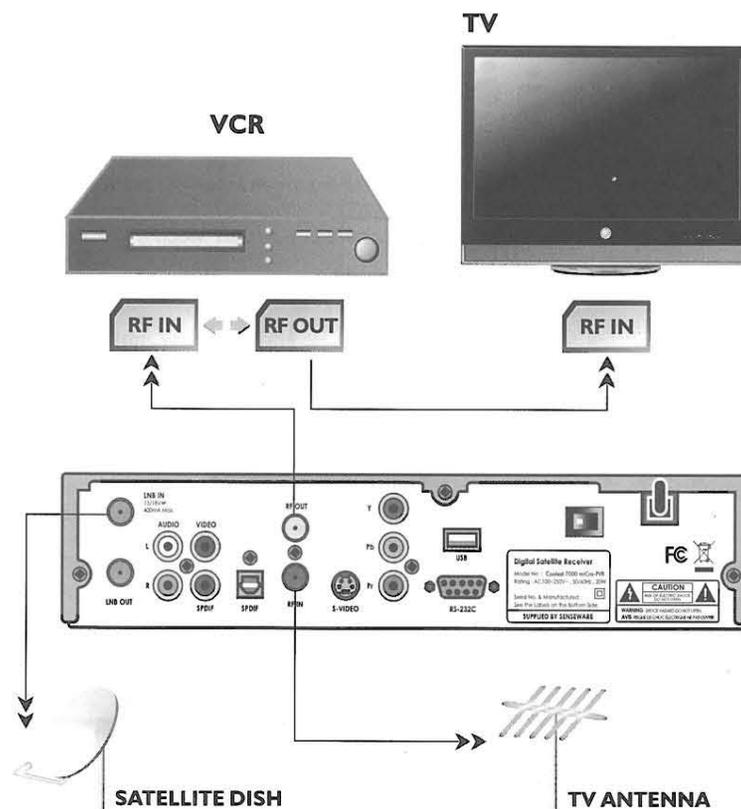
### 1. Receiver to TV with RF

- ① Connect the satellite antenna cable to LNB IN.
- ② Connect the TV antenna to RF IN.
- ③ Connect the RF OUT to RF IN of TV.
- ④ Connect the VIDEO and AUDIO L, R to VIDEO IN and AUDIO L, R IN of TV.
- ⑤ Connect the S-VIDEO to S-VIDEO IN of TV (If necessary).
- ⑥ Connect the Y, Pb, Pr to Component input(Y, Pb, Pr) of TV (If necessary).



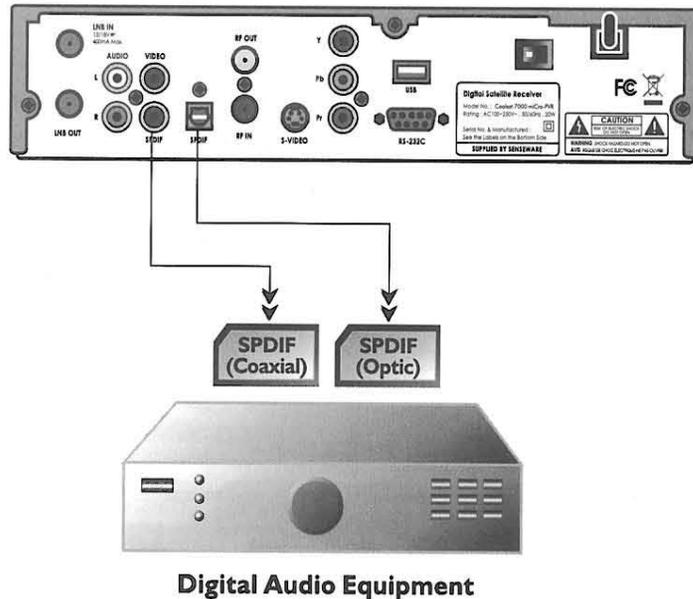
### 2. Receiver to TV and VCR

- ① Connect the satellite antenna cable to LNB IN.
- ② Connect the TV antenna to RF IN.
- ③ Connect the RF OUT to RF IN of VCR.
- ④ Connect RF OUT of VCR to RF IN of TV.
- ⑤ Connect other jacks to the appropriate jacks of TV refer to above section, 1. Receiver to TV with RF



### 3. Receiver to Digital Audio Equipment

- To get better quality audio, you can use digital audio via coaxial or optic cable. If you have a digital audio equipment, connect SPDIF to Digital audio input of the equipment. (Coaxial or Optic)
- Connect other jacks to the appropriate jacks of TV or VCR refers to above section, **1. Receiver to TV with the RF and 2. Receiver to TV and VCR.**



Digital Audio Equipment

## Guide of Functions

### 1. Select Channel

To select the desired channel, you can use below methods.

#### 1.1 Using UP/DOWN buttons

You can navigate between channels using UP/DOWN buttons. Whenever you press the UP(DOWN) button, current channel will be changed to next(previous) channel. You have to press UP or DOWN button until find the channel you want.

#### 1.2 Using NUMERIC buttons

If you know the channel number, enter the number directly using NUMERIC buttons.

#### 1.3 Using Channel List

To select the desired channel in the channel list, you should firstly display the channel list using OK button. Use ARROW buttons to select a desired channel and press OK button.

In the Channel List window, you can also use additional functions with COLOR buttons. Press RED button, you can sort the channels by Alphabet, Transponder, Group and CAS. Press GREEN button, you can add the channel to one of 10 favorites.



### 2. Information Window

If, you want to view the current channel information window press INFO button. Then the Information window will appear. This Information window is automatically displayed when changing channels. This window contains many items such as channel number, channel name, scrambled channel, Teletext, subtitle, Dolby Digital symbol, duration time and so on. Press INFO button once more, you can get more detailed information.



### 3. Multi-Picture Display

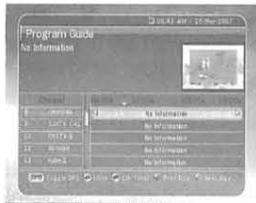
Press the BLUE button to display multiple pictures and RED button display 9 or 12 multiple pictures option.



#### 4. Electronic Program Guide(EPG)

Electronic Program Guide (EPG) helps you navigate through all the possible viewing options.

The EPG supplies information such as program listings, start/end times and detailed information about the program listings for all available channels. The availability and amount of these program details will vary, depending on the particular broadcaster.



- ① If you press EPG button, EPG menu will be displayed.
- ② Press the ARROW buttons to move to other channel or to see previous/next guide.
- ③ Press EPG button once to view full EPG (Entertainment Program Guide) and press button twice to view only selected EPG. Press button consecutively to go back and forth.
- ④ Press GREEN button to view next day EPG and RED button to view EPG for previous day.
- ⑤ Select the program by using the ARROW buttons then set the timer by pressing OK.
- ⑥ You can make a reservation for recording on EPG menu.
  - Press RECORD button to reserve the event. This reservation can be checked under the Timer Manager Menu.
  - To cancel the reservation for recording by RECORD button at the appointed event.

#### 5. Satellite List

Select the SAT (satellite) button to view all satellite listings. Scroll through the various satellites using the ARROW buttons, and select the appropriate satellite by pressing OK.

#### 6. Favorite Group

Select the FAV (favorite) button to view all favorite groups. Scroll through the various favorite group using the ARROW buttons, and select the appropriate satellite by pressing OK.

#### 7. Volume Control

- ① To control audio volume while you are watching a channel, press LEFT/RIGHT button to control volume.
- ② Volume control bar will be appeared in top of the screen.
- ③ When necessary, press MUTE button to turn audio sound on/off.

#### 8. PAUSE

The PAUSE button is used to freeze the video. Press PAUSE button once more to resume the video.

#### 9. Closed Caption

To display of Close Captioning press C.C on your remote control. Close Captioning is based on the transmitted data.

#### 10. Audio Track

You can select the audio language list by pressing the AUDIO button. Use the ARROW buttons to choose the audio track from the list than press OK to change.

#### 11. Time shifting, Recording and Playback

##### 11.1 Record

You can record on-watching channel at external memory.

- ① Start recording.  
When it is connected to external memory through USB port, Press the RECORD button to start the recording. In this case, you can see the pop-up window indicating the recording.



- ② Move the watching position.  
Press the PLAY button to display Recording progress bar.  
To go to the desired playback position, press left arrow, REWIND button or right arrow, FAST FORWARD button.  
This function is valid while the Time shifting progress bar is displayed.

- ③ Stop recording.  
Press the STOP button to stop recording during the live mode. You can also be confirmed it by the pop-up window message. If the user press the STOP button during time-shifting mode, then watching position get back to the live mode.

##### 11.2 Bookmark

You can jump to a position directly by bookmark function in playback and time-shifted playback. To search position very quickly and easily, use bookmarks.

- ① Add a bookmark  
To add a bookmark, press BOOKMARK (RED) button at the position you want to add it. You can make the bookmark at maximum 64 positions.



② Go to a bookmark

Press GO TO BOOKMARK (GREEN) button to jump to the next bookmark. Then, the PVR plays from the book marked position.

③ Delete a bookmark

To remove a bookmark, you have to display the progress bar by pressing PLAY button. Select the bookmarked position by GO TO BOOKMARK (GREEN) button and press BOOKMARK (RED) button. vation for recording by record button at the appointed event.

11.3 Time-shift bar

The user can watch the passed video and audio by the Time shift function.

- ① Press PLAY button to display Time Shifting progress bar. You have to press PLAY button once more to display Time shifting progress bar during Trick mode. (Such as fast forward, Reverse Playback)
- ② To go to the desired playback position, press left arrow, REWIND button or right arrow, FAST FORWARD button. This function is valid while the Time shifting progress bar is displayed.
- ③ To remove the Time shifting progress bar at once, press OK, EXIT, PLAY button.
- ④ To go to the live video, press STOP button.
- ⑤ Press the RED button to check the bookmark.
- ⑥ Press the GREEN button to go to the checked bookmark position.



11.4 Play List

The user can watch the recorded channels at external memory. Press PLAY LIST button to display the recorded channel list under normal status.

You can use several useful editing functions at play list menu as followings.

- ① New folder: Press GREEN button to make a new folder.
- ② Delete File: Press YELLOW button to delete a folder or file.
- ③ Select / unselect: Press RED button to select and cancel several files.
- ④ Start playback: Press the PLAY button to playback.
- ⑤ Move to folder: Press BLUE button to move the selected file to a folder



11.5 Trick Mode

11.5.1 Fast Motion Playback

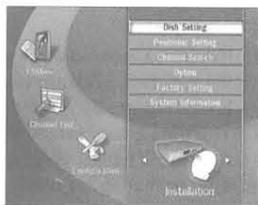
- ① If there is a time shifting or playback progress bar, remove the progress bar by pressing PLAY button.
- ② Press FORWARD button for fast motion playback. To change the playback speed, press FORWARD button repeatedly.
- ③ There are 2 steps in fast motion playback.
- ④ Press PLAY button to resume playback with normal speed.
- ⑤ The fast motion function is available for the playback and the time-shifted playback.

11.5.2 Reverse Playback

- ① If there is a time shifting or playback progress bar, remove the progress bar by pressing PLAY button.
- ② Press REWIND button for reverse playback. To change the playback speed, press REWIND button repeatedly.
- ③ There is one step in reverse playback.
- ④ Press PLAY button to resume playback with normal speed.
- ⑤ The fast motion function is available for the playback and the time-shifted playback.

## Guide of Main Menu

To display the menu, press MENU button at any time. You can select the sub menu using ARROW buttons. The selected sub menu becomes highlighted. When you have selected the sub menu you want, press the OK button. If you want to return to the previous menu, press the MENU button. And if you want to exit from the menu, press the EXIT button.



### 1. Configuration

#### 1.1 Time Setting

- ① Time Setting : To set the current time, you can use two modes; Auto and Manual.

##### Auto Time Setting

- Local Offset : Enter the offset value using the standardized information of current channel area.

##### Manual Time Setting

- Date : Enter the calendar date by using ARROW up/down button than press OK to finish.  
- Time : Enter the time by using the NUMERIC buttons.



- ② Wake Up Mode : Enter the time for the receiver to automatically power ON.

- Wake Up Time : Enter the turn-on time of STB using NUMERIC buttons.  
- Wake Up Channel : Select the channel when STB is turn on. Press OK button to display channel list.

- ③ Sleep Mode : the time for the receiver to automatically switch OFF and go to standby mode.

- Sleep Time : Enter the turn-off time of STB using NUMERIC buttons.

#### 1.2 Timer Manager

Current time is based on the TDT (Time Description Table) in the satellite signal for the current program. Press GREEN button to set the current time, Press RED button to cancel out the set time. To change set time from current program, press OK button to make change. The time setting will be add automatically from the standardized time on EPG.



#### 1.3 UI Setting

- ① OSD Transparency : Set the OSD transparent type.
- ② Info Box Position : Set the information window position.
- ③ Info Box Display Time : Set the display duration of information window displayed on the screen after changing channels.
- ④ Volume Bar Display Time : Set the display duration of volume bar displayed on the screen after changing volume.



#### 1.4 Parental Control

Access to channels and programs is controlled by a 4-digit secret code that is defined by the user. Whenever you attempt to access parental control menu, the pop-up window will instruct you to input a PIN code. (If necessary, you can change it.)

**NOTE** The default PIN code is '0000'

- ① Censorship : Set the parental guidance rating of highlighted censorship classification. The parental level is given as age-based numbers.
- ② Change Pin code : To change your PIN code, input the new PIN code using NUMERIC buttons. To verify the new PIN code, input the new PIN code again.
- ③ Installation : Set the accessibility of Installation menu.
- ④ Configuration : Set the accessibility of Configuration menu.
- ⑤ Edit Channel : Set the accessibility of Edit Channel menu.



#### 1.5 Language Setting

- ① Menu Language : Select the desired menu language by using the ARROW buttons.

**NOTE** The Kind of languages can be changed depending on the country. Languages are subject to change without prior notice.

- ② Audio Language : Select the default language for audio when changing channels. If no language is provided, then the default language of current channel will be automatically selected.
- ③ Subtitle Language : Select the default language for subtitle when changing channels.

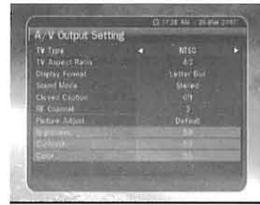


#### 1.6 A/V Output Setting

- ① TV Type : Select the TV types. (PAL/NTSC/Auto) In Auto mode, the STB is automatically selected as NTSC or PAL according to the channel played.



- ② TV Aspect Ratio : Select the aspect ratio of TV which is connected to STB.(4:3/16:9)
- ③ Display Format : Select the format which the video is to be displayed on screen.(Letter Box/Pan Scan) In case of 16:9 mode, this option is not available.
- ④ Sound Mode : Set the audio mode which is output from the RCA jack.(Stereo/Mono/Left/Right)
- ⑤ Closed Caption : Turns the closed captions On/Off.
- ⑥ RF Channel : Select a RF channel.(3/4)
- ⑦ Picture Adjust : Adjust brightness, contrast and color of screen.



## 2. Installation

### 2.1 Dish Setting

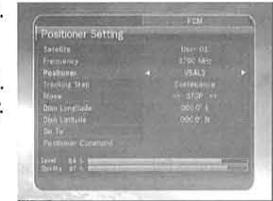
Select the antenna and LNB settings for channel search. The values that are set in this menu will be available for selection in other channel searching menus.



- ① Satellite : Select the satellite what you want to search the channel.
  - Press the LEFT/RIGHT button to select the satellite.
  - Select the wanted satellite name.
  - If the desired satellite name is not listed then select User Defined.
  - The keyboard will appear and you can type the satellite name directly.
- ② Frequency : Select frequency what you want to check the signal.
- ③ LNB Power : Select the LNB power.
- ④ LNB Type : Select the LNB type.
- ⑤ LNB Frequency : Select the L.O. frequency that is set to antenna.
  - Use the LEFT/RIGHT buttons to select the LNB frequency.
  - If the required LNB frequency is not available, then select '0' and enter the frequency manually using the NUMERIC buttons.
  - When you select Universal in LNB type, both 9750 and 10600 are supported at the same time. And LNB 22KHz setting is disabled.
- ⑥ LNB 22KHz: When you use a dual LNB or two antennas connected to a 22KHz tone switch box, make 22KHz tone switch enable or disable to select LNB or antenna.
- ⑦ DiSEqC 1.0 : If you use a DiSEqC 1.0 switch, select one of the DiSEqC inputs.
- ⑧ DiSEqC 1.1 : If you use a DiSEqC 1.1 switch, select one of the DiSEqC inputs.
- ⑨ Legacy SW : If you use a Legacy Switch, select one of the switch inputs.
- ⑩ Channel Search : Press OK button to move to Channel Search menu directly.

### 2.2 Positioner Setting

- ① Satellite : Select the satellite what you want to search the channel.
  - Press the LEFT/RIGHT button to select the satellite.
  - Select the wanted satellite name.
  - If the desired satellite name is not listed then select User Defined.
  - The keyboard will appear and you can type the satellite name directly.
- ② Frequency : Select frequency what you want to check the signal.
- ③ Positioner : Select the positioner.
  - Tracking Step : Select the tracking step.(Continuance/Step 1/Step 2/Step 3/Step 4)
  - Move : To move the dish, press LEFT/RIGHT button.
  - Go to Stored Position : Press OK button to move the dish to stored position.
  - Positioner Command : To use various positioner command, press OK button. Then, available positioner commands will appear.
- ④ Dish Setting : Press OK button to move to Dish Setting menu directly.
- ⑤ Channel Search : Press OK button to move to Channel Search menu directly.



### 2.3 Channel Search

- ① Satellite : Select the target satellite for search.
- ② Search Mode : Select the following search mode.

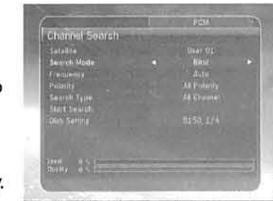
#### Auto Search Mode

- Search Type : Select the search type.
- Network Search : You can select Off or On. When you select 'On', you can find more transponders using the home network. As it refers to NIT during searching, if there is the frequency information of other transponder, it searches the other transponder besides the transponder that the user inputs.
- Start Search : Press OK button to start search.
- Dish Setting : Press OK button to move to Dish Setting menu directly.



#### Blind Search Mode

- Frequency : Set Auto to search whole frequency, Set Manual to search only desired frequency.
- Polarity : Select the Horizontal or vertical polarization you wish to search.
- Search Type : Select the search type.
- Start Search : Press OK button to start search.
- Dish Setting : Press OK button to move to Dish Setting menu directly.



#### Manual Search Mode

- Frequency : Select the frequency from the list to search.
- Symbol rate : Enter the symbol rate using the NUMERIC buttons.
- Polarity : Select the polarity.
- Search Type : Select the search type.
- Network Search : You can select Off or On. When you select 'On', you can find more transponders using the home network. As it refers to NIT during searching, if there is the frequency information of other transponder, it searches the other transponder besides the transponder that the user inputs.



- Start Search : Press OK button to start search.
- Dish Setting : Press OK button to move to Dish Setting menu directly.

### Advanced Search Mode

- Frequency : Select the frequency from the list to search.
- Symbol rate : Enter the symbol rate using the NUMERIC buttons.
- Polarity : Select the polarity.(Vertical/Horizontal)
- Video PID : Enter the video PID using the NUMERIC buttons.
- Audio PID : Enter the audio PID using the NUMERIC buttons.
- PCR PID : Enter the PCR PID using the NUMERIC buttons.
- Start Search : Press OK button to start search.



### 2.4 Option

- ① Use default CH name : Proper channel name will be automatically marked in most channel. However, default CH name should be given in some channel.
- ② Beep with the signal : When turn ON, signal strength can be check with continuous beep sound.
- ③ Unlock lock CH after PIN : When set 'ON', all locked CH will be temporary unlocked, when input PIN code in locked CH. This setting will be continued until STB power is off. When set 'OFF', input PIN code when move to the locked CHs.
- ④ Auto CH/TP Upgrade : When turn ON, channel or TP will automatically update the receivers database.

### 2.5 Factory Setting

This menu allows you to restore the factory set values in case the user has encountered some problems after changing any new values of channel data and others which may be in error. Press OK button to erase all channels and restore default setting. The STB will return to factory default parameters.



### 2.6 System Information

This displays general information about what hardware and software version your receiver is running on.

## 3. Utilities

### 3.1 MP3 Player

Stick the external USB memory into the provided USB port on front panel. Once inserted, press OK button to read external USB memory stick and choose the MP3 file from the window you want to play.



### 3.2 Image Viewer

You can display the image file that is in the external USB memory stick on the screen. Select the image file(jpeg format) and press OK button to display the image.



### 3.3 Format(USB)

Before you use your USB external device, we recommend for you to format it by Format(USB) menu in this machine. Since this machine supports FAT32 and FAT I 6 file systems, USB device with FAT32 and FAT I 6 file systems be able to make it work proper way. For the reference, if your USB device has bigger than 32GB capacity and format them in your Computer, it would be formatted until 32 GB by FAT32 file system and the rest part of capacity by other file systems. Consequently, if you connect it to this machine, it could be recognized it has only 32GB capacity device. In order to prevent it, we recommend for you to format by our Format(USB) menu in advance, so that you can us full capacity of your USB device without any limitation cased by any discordance of files systems.

### 3.4 Calendar

To display calendar, press OK button. Utilize ARROW buttons to choose the date, button UP/DOWN will switch from past/next month.



### 3.5 Calculator

To use a calculator, press OK button.



## 4. Edit Channels

### 4.1 Channel List Manager

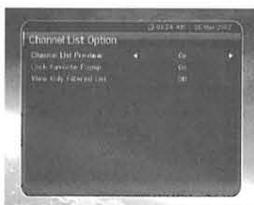
Channel List Manager menu will be appeared when press OK button. Select the below menu by press YELLOW Button.

- ① Lock Channels : All channel lists will be shown on left side of window, right side will show make channel to be lock. By using ARROW and OK button you may move the chosen channel to right side window to lock channel.
- ② Move Channels : All Channel Lists will be shown on left window, Channel Lists for moving will be shown on right Window. Move the Channel to Right window by using ARROW and OK button, then right window channels will be moved to related location when select desired location from the left window.
- ③ Delete Channels : All channel lists will be shown on left side of window. By using ARROW and OK button you may select channels to be delete. And press GREEN button to delete the selected channels.
- ④ Skip Channels : All channel lists will be shown on left side of window, right side will show make channel to be skip. By using ARROW and OK button you may move the chosen channel to right side window to skip channel.
- ⑤ Set Favorites : Press FAV button to mark the favorite group list. Once, favorite group is chosen, left side window will show all channel list marked and right side window will show only the marked channel list. Using ARROW and OK buttons you may add any channel to the favorite group or delete any channel from the favorite group.
- ⑥ Edit Channel Name : All channel lists will be shown on left side of window. Move the highlighted bar to the channel what you want to edit its name and press OK button. Then you can see the virtual keyboard. Using ARROW and OK buttons, you can edit the channel name.



#### 4.2 Channel List Option

- ① Channel List Preview :  
 Setting 'ON': Channel will be played when press 'OK' by moving from the Channel List to other channel. To erase Channel List on screen, press 'OK' one more time.  
 Setting 'OFF': Channel will be played when press 'OK' by selecting channel. Channel List will be disappeared.
- ② Lock Favorite Popup : When set ON, press GREEN button to open set favorite menu and enter PIN code. When set OFF PIN code is not require.
- ③ View Only Filtered List : When set ON, only filtered list will be shown on the channel list. When Turn OFF, all list will be shown on the channel list.



## Troubleshooting

| Problem  | Solution   |
|--|--|
| Does not display any message on the front panel. | <ul style="list-style-type: none"> <li>- Check the main power cable and check that it is plugged into a suitable power outlet.</li> <li>- Check you have switch the STB main power switch ON at the rear of the STB.</li> </ul>  |
| No Picture                                       | <ul style="list-style-type: none"> <li>- See 'Does not display any message on the front panel' above.</li> <li>- Check the video output port is firmly connected to the TV or VCR.</li> <li>- If you are using the RF output, check that the RF lead is connected firmly to the STB and TV/VCR.</li> <li>- Check that you have selected the correct channel or Video Output on your TV.</li> <li>- If you are using the RF Output, check that you have correctly tuned the UHF channel of the STB or TV.</li> <li>- Check the brightness level of the TV.</li> </ul> |
| Poor picture quality                             | <ul style="list-style-type: none"> <li>- See 'No Picture' above.</li> <li>- Check the signal level, if this is low then try adjusting the alignment of your dish.</li> </ul>   |
| No Sound   | <ul style="list-style-type: none"> <li>- See 'No Picture' above.</li> <li>- Check the volume level of the TV and STB.</li> <li>- Check the Mute status of the TV and STB.</li> </ul>   |
| Remote Control does not operate                  | <ul style="list-style-type: none"> <li>- Point remote control directly towards the STB.</li> <li>- Check and replace batteries.</li> </ul>   |
| No or Bad Signal                                 | <ul style="list-style-type: none"> <li>- Check the LNB ; Replace LNB if necessary.</li> <li>- Check the cable from the LNB.</li> <li>- Check the position of the dish; realign dish if necessary.</li> <li>- If you are using a DiSeqC 1.0 switch, check that you have connected the LNBs to the correct connections on the switch.</li> <li>- Check the 'Signal Level' and the 'Signal Quality'.</li> </ul>   |

## Specifications

### Tuner & Channel Decoder

|                          |   |
|--------------------------|---|
| <b>Input Connector</b>   | F-type, IEC 169-24, Female                            |
| <b>Loop through out</b>  | F-type, IEC 169-24, Female                            |
| <b>Frequency Range</b>   | 950MHz ~ 2150MHz                                      |
| <b>Input Impedance</b>   | 75Ω, unbalanced                                       |
| <b>Signal Level</b>      | -65 to -25dBm   |
| <b>LNB Power</b>         | 13/18VDC, max.400mA                                   |
| <b>22KHz Tone</b>        | (22 ± 2)KHz, (0.6 ± 0.2)V                             |
| <b>DISEqC Control</b>    | VI.0/1.2/USALS Compatible                             |
| <b>Demodulation</b>      | QPSK  |
| <b>Input Symbol Rate</b> | 2 ~ 45 Ms/s   |
| <b>FEC Decoder</b>       | 1/2, 2/3, 3/4, 5/6 and 7/8 with Constraint Length K=7 |

### MPEG Transport Stream A/V Decoding

|                         |                                  |
|-------------------------|----------------------------------|
| <b>Transport Stream</b> | MPEG-II ISO/IEC 13818            |
| <b>Profile Level</b>    | MPEG-II MP@ML                    |
| <b>Input Rate</b>       | Max. 15Mbit/s                    |
| <b>Video Formats</b>    | 4:3 LetterBox, 4:3 PanScan, 16:9 |
| <b>Video Resolution</b> | 720 x 576, 720 x 480             |
| <b>Audio Decoding</b>   | MPEG/MusiCam Layer I & II        |
| <b>Audio Mode</b>       | Stereo/Joint stereo/Mono         |
| <b>Sampling Rate</b>    | 32KHz, 44.1KHz and 48KHz         |

### Main System

|                       |   |
|-----------------------|---|
| <b>Main Processor</b> | Conexant Virgo                            |
| <b>Memory</b>         | Flash-ROM : 2 MBytes<br>SDRAM : 32 MBytes |

### Audio / Video & Data IN/OUT

|                  |  |
|------------------|--|
| <b>Video</b>     | CVBS Video Output (RCA)<br>S-VHS Video Output (Mini-DIN)<br>Y/Pb/Pr Video Output (RCA) |
| <b>Audio L/R</b> | RCA(Volume and Mute Control)<br>AC-3 Dolby Digital (RCA & Optical)                     |
| <b>RS-232C</b>   | 9 pin D-SUB (Male) type, Transfer rate 115Kbps   |
| <b>USB</b>       | USB 2.0 Host Support   |

### RF Modulator

|                       |  |
|-----------------------|--|
| <b>RF Connector</b>   | IEC 169-24, Female                           |
| <b>Frequency</b>      | CH 3 : 61.25MHz<br>CH 4 : 67.25MHz           |
| <b>Output Channel</b> | CH 3 / CH 4                                  |
| <b>TV Standard</b>    | NTSC-M                                       |
| <b>Preset Channel</b> | CH 3 (or TBD)<br>Software changeable by Menu |

### Front Panel

|                   |                                 |
|-------------------|---------------------------------|
| <b>Slot</b>       | 1 USB Host Slot                 |
| <b>Buttons</b>    | 3 Buttons (CH UP/DOWN, STANDBY) |
| <b>Display</b>    | 7-Segment (Channel No. or Time) |
| <b>Indicators</b> | 2 LEDs (STANDBY, REMOTE)        |

### Power Supply

|                          |  |
|--------------------------|--|
| <b>Input Voltage</b>     | AC 100 ~ 250V, 50/60Hz                       |
| <b>Type</b>              | SMPS   |
| <b>Power Consumption</b> | Max. 20W                                     |
| <b>Standby Power</b>     | Max. 8W                                      |
| <b>Protection</b>        | Separate Internal Fuse & Lighting protection |

### Physical Specification

|                         |                      |
|-------------------------|----------------------|
| <b>Size (W x H x D)</b> | 280mm X 55mm X 220mm |
| <b>Weight (Net)</b>     | 1.8 Kg               |
| <b>Operating Temp.</b>  | 0°C ~ +45°C          |
| <b>Storage Temp.</b>    | -10°C ~ +70°C        |



## Multi-Brand IR Remote Controller

### 1. Initial Setting

#### 1.1 DEVICE DEFAULT : STB

#### 1.2 MODEL DEFAULT

STB ----- #001 (COOLSAT ONLY)  
 TV ----- #001  
 DVD ----- #001  
 VCR ----- #001

### 2. Device Keys

Device Keys are used for device changing.

Case of the model which POWER button comes to share with power on and power off, the DEVICE button operates with power on, the POWER button operates with power off(LED ON).

### 3. Code No. Checking(Number Call)

- Step 1. Press the DEVICE and OK button during about 2.5 seconds at the same time.  
 DEVICE LED on.(Set mode)  
 Step 2. Press the INFO button.  
 LED will blink according to inputted mode number on the device.  
 Case of digit 0, it blinks 10 times.

### 4. Setting Guide

When there is no input during about 20 seconds from set mode, LED is turn off and set mode is canceled.

#### 4.1 Using Device Code Number

- Step 1. Press DEVICE and OK button during about 2.5 seconds at the same time.  
 DEVICE LED on.(Set mode)  
 Step 2. Input three digit code numbers.  
 DEVICE LED will blinks.  
 Step 3. Press DEVICE button.  
 DEVICE LED will blinks twice.

#### 4.2 Using UP and DOWN buttons

- Step 1. Press DEVICE and OK button during about 2.5 seconds at the same time.  
 DEVICE LED on.(Set mode)  
 Step 2. Press UP or DOWN button until DEVICE turns off, one and one.  
 Step 3. If your DEVICE is turn off  
 Press DEVICE button.  
 DEVICE LED will blink twice.

### 5. Key Table

| NO | STB          | TV                  | VCR                 | DVD                 |
|----|--------------|---------------------|---------------------|---------------------|
| 1  | DEVICE       | DEVICE<br>/POWER ON | DEVICE<br>/POWER ON | DEVICE<br>/POWER ON |
| 2  | POWER        |                     | POWER               | POWER               |
| 3  | RECORD       |                     | REC                 | OPEN/CLOSE          |
| 4  | STOP         |                     | STOP                | STOP                |
| 5  | PAUSE        |                     | PAUSE               | PAUSE               |
| 6  | REWIND       |                     | REW                 | REW                 |
| 7  | PLAY         |                     | PLAY                | PLAY                |
| 8  | FAST FORWARD |                     | FF                  | FF                  |
| 9  | PREV FILE    |                     |                     | SKIP -              |
| 10 | NEXT FILE    |                     |                     | SKIP +              |
| 11 | RED          | UP                  |                     |                     |
| 12 | GREEN        | DOWN                |                     |                     |
| 13 | YELLOW       | LEFT                |                     | VOL-                |
| 14 | BLUE         | RIGHT               |                     | VOL+                |
| 15 | UP           | CH+                 | CH+/TRK+            | UP                  |
| 16 | LEFT         | VOL-                | VOL-                | LEFT                |
| 17 | OK           | SEL/OK              |                     | SEL/OK              |
| 18 | RIGHT        | VOL+                | VOL+                | RIGHT               |
| 19 | DOWN         | CH-                 | CH-/TRK-            | DOWN                |
| 20 | EPG          |                     |                     |                     |
| 21 | MUTE         | MUTE                | MUTE                | MUTE                |
| 22 | INFO         | INFO                |                     |                     |
| 23 | MENU         | MENU                |                     | MENU                |
| 24 | RECALL       | LAST                |                     |                     |
| 25 | SAT          |                     |                     |                     |
| 26 | EXIT         | EXIT                |                     |                     |
| 27 | PLAY LIST    |                     |                     |                     |
| 28 | FAV          |                     |                     |                     |
| 29 | 1            | 1                   | 1                   |                     |
| 30 | 2            | 2                   | 2                   |                     |
| 31 | 3            | 3                   | 3                   |                     |
| 32 | 4            | 4                   | 4                   |                     |
| 33 | 5            | 5                   | 5                   |                     |
| 34 | 6            | 6                   | 6                   |                     |
| 35 | 7            | 7                   | 7                   |                     |
| 36 | 8            | 8                   | 8                   |                     |
| 37 | 9            | 9                   | 9                   |                     |
| 38 | TV/RAD       |                     |                     |                     |
| 39 | 0            | 0                   | 0                   |                     |
| 40 | TV/SAT       | TV/VCR              | TV/VCR              |                     |
| 41 | C.C          |                     |                     |                     |
| 42 | AUDIO        |                     |                     |                     |



## 6. Code Table : TV

| Manufacturer/Brand | Set-Up Code Number                             |
|--------------------|--|
| ADMIRAL            | 072 081 160 161 096                            |
| ADVENT             | 247  |
| AIKO               | 103  |
| AKAI               | 006 146 248 150 157 167                        |
| ALARON             | 028  |
| AMARK              | 112 143  |
| AMERICA ACTION     | 043  |
| AMPRO              | 073  |
| ANAM               | 043 054 055 056 080 112                        |
| AOC                | 058 006 004 112                                |
| APEX DIGITAL       | 015 226 037                                    |
| AUDIOVOX           | 076 103 043 035                                |
| BAYSONIC           | 043  |
| BELL&HOWELL        | 072  |
| BRADFORD           | 043  |
| BROKSONIC          | 096  |
| CANDLE             | 006 002 003 004                                |
| CAPEHART           | 058  |
| CARVER             | 164  |
| CELEBRITY          | 001  |
| CETRONIC           | 043  |
| CINERAL            | 103 120  |
| CITIZEN            | 006 002 003 004 101 103 143                    |
| CLASSIC            | 043  |
| CONCERTO           | 004  |
| CONTEC             | 043 051  |
| CORONADO           | 143  |
| CRAIG              | 043 054 028                                    |
| CROSLEY            | 164  |
| CROWN              | 043 143  |
| CURTIS MATHES      | 006 004 101 143<br>011 072 081 120 164         |
| CXC                | 043  |
| DAEWOO             | 076 103 055 004 127 143<br>016 043 044 125 120 |
| DAYTRON            | 004 143  |
| DELL               | 041  |
| DENON              | 011  |
| DUMONT             | 004 073  |
| DWIN               | 102 104 161                                    |
| DYNASTY            | 043  |
| DYNATECH           | 062  |
| ELECTROBAND        | 001  |
| ELECTROHOME        | 024 076 143                                    |

| Manufacturer/Brand | Set-Up Code Number   |
|--------------------|--|
| EMERSON            | 005 028 043 048 076 096<br>155 004 051 143 151 153 154         |
| ESA                | 078  |
| FISHER             | 007 057  |
| FUJITSU            | 164 028 198 246 066 138  |
| FUNAI              | 028 043 052 249  |
| FUTURETECH         | 043  |
| GATEWAY            | 242 078  |
| GE                 | 006 073 144 160 161 004 008<br>009 034 056 074 091 155 081 120 |
| GEM                | 078  |
| GIBRALTER          | 004 073  |
| GOLDSTAR           | 004 106 119 110 112 113 127 143                                |
| GRUNPY             | 028 043  |
| HALL MARK          | 004  |
| HARLEY DAVIDSON    | 028  |
| HARMAN KARDON      | 164  |
| HARVARD            | 043  |
| HISENSE            | 170  |
| HITACHI            | 163 004 007 009 011 072<br>010 012 023 075 143 158 166         |
| HP                 | 027 039  |
| HYUNDAI            | 049 067  |
| INFINITY           | 164  |
| INSIGNIA           | 024 142 147 148 149  |
| INKEL              | 129  |
| INTEQ              | 073  |
| JBL                | 164  |
| JCB                | 001  |
| JCPENNEY           | 004 006 008 024 030<br>065 101 143 156 160                     |
| JENSEN             | 013  |
| JVC                | 038 001 034 083 206 159  |
| KENWOOD            | 006 001  |
| KLOSS              | 002 059  |
| KTV                | 006 043 143 154  |
| LG                 | 004 106 119 110 112 113 127 143 084                            |
| LODGENET           | 072  |
| LOEWE              | 207 164  |
| LOGIK              | 072  |
| LUXMAN             | 004  |
| LXI                | 007 015 052 081 160 164  |
| MAGNAVOX           | 006 003 004 022 059 060 061<br>063 064 127 164 094 160 028 035 |

| Manufacturer/Brand | Set-Up Code Number                                     |
|--------------------|--|
| MAGNAVOX           | 124  |
| MAJESTIC           | 072  |
| MARANTZ            | 164 006  |
| MATSUI             | 164  |
| MATSUSHITA         | 080  |
| MEGATRON           | 004  |
| MINTEK             | 108 168  |
| MITSUBISHI         | 109 024 042 004<br>040 146 028 081 225                 |
| MOTOROLA           | 081  |
| MTC                | 006 004 062 101  |
| MULTITECH          | 043  |
| NAD                | 015 025  |
| OPTIMUS            | 080  |
| OPTOMA             | 029 032  |
| PHILCO             | 006 003 004 024 056 059<br>060 063 064 127 143 164     |
| PHILIPS            | 164 005 038 093 127<br>006 003 004 059 210             |
| PIONEER            | 023 025 135 176 004 018<br>006 209 234 118 131 140     |
| POLAROID           | 015 077 078 079  |
| PORTLAND           | 004 143 103  |
| PRISM              | 034  |
| PROSCAN            | 144 160 161  |
| PROTON             | 004 058 143 171 173 112                                |
| PROTRON            | 130 141  |
| QUASAR             | 034 056  |
| RADIO SHACK        | 004 019 127 143 043                                    |
| RCA                | 160 161 144 156 065 006<br>004 023 024 056 074 152 081 |
| REALISTIC          | 007 019  |
| RUNCO              | 072 073 050 137 169                                    |
| SAMPO              | 006 004 058 242  |
| SAMSUNG            | 004 101 127 133 143<br>160 089 105 211 228 229         |
| SANSEI             | 120  |
| SANSUI             | 096  |
| SANYO              | 007 053 057 082 020                                    |
| SCEPTRE            | 036  |
| SCOTCH             | 004  |
| SCOTT              | 004 005 028 043 048 143                                |
| SEARS              | 004 007 015 028 030 057<br>082 094 143 160 052 164     |
| SEMIVOX            | 043  |

| Manufacturer/Brand | Set-Up Code Number                                     |
|--------------------|--|
| SEMP               | 015  |
| SHARP              | 081 014 019 028<br>004 022 143 175                     |
| SIGNATURE          | 072  |
| SONY               | 001 126 139  |
| SOUNDESIGN         | 003 004 028 043  |
| SPECTRICON         | 112  |
| SQUAREVIEW         | 052  |
| SSS                | 004 043  |
| STARLITE           | 043  |
| SUPREMACY          | 002  |
| SUPREME            | 001  |
| SVA                | 079  |
| SYLVANIA           | 006 003 059 060 063<br>064 127 160 164 044 249         |
| SYMPHONIC          | 052 249  |
| SYNTAX OLEVIA      | 084  |
| SYNTAX OLEVIA      | 132  |
| TANDY              | 081  |
| TATUNG             | 056 062  |
| TECHNICS           | 034 080  |
| TECHNOL ACE        | 028  |
| TECHWOOD           | 004  |
| TEKNIKA            | 002 003 004 024 028<br>043 072 101 143 103 164         |
| TELERENT           | 072  |
| TERA               | 172  |
| TMK                | 004  |
| TNCI               | 073  |
| TOSHIBA            | 015 030 007 040 062 101 045                            |
| TOTEVISION         | 143  |
| UNIVERSAL          | 008 009  |
| VIDEO CONCEPTS     | 146  |
| VIDIKRON           | 174 188 164 050  |
| VIDTECH            | 004  |
| VIEWSONIC          | 122  |
| VIZIO              | 078  |
| WARDS              | 004 064 164 008 009 019<br>028 060 061 063 072 074 143 |
| WESTING HOUSE      | 076 036  |
| YAMAHA             | 004 006 115 116  |
| YORK               | 004  |
| YUPITERU           | 043  |
| ZENITH             | 072 073 095 103 011 096                                |
| ZONDA              | 112  |



## 7. Code Table : VCR

| Manufacturer/Brand | Set-Up Code Number  |
|--------------------|---|
| ADMIRAL            | 025 053   |
| AIKO               | 117   |
| AIWA               | 034 161 101   |
| AKAI               | 043 046 124 146   |
| AMERICA ACTION     | 117   |
| AMERICAN HIGH      | 031   |
| AMPRO              | 072   |
| ANAM               | 031 103   |
| ASHA               | 040   |
| AUDIO DYNAMICS     | 012 023 043   |
| AUDIOVOX           | 101   |
| BEAUMARK           | 040   |
| BROKSONIC          | 035 037 129 025   |
| CALIX              | 101   |
| CANON              | 028 031   |
| CAPEHART           | 108   |
| CCE                | 024 117   |
| CINERAL            | 117   |
| CITIZEN            | 101 117   |
| COLT               | 148   |
| CRAIG              | 003 040 135 024 101   |
| CUIRTIS MATHES     | 031 041   |
| CYBERNEX           | 040   |
| DAEWOO             | 005 108 117 017 065 007 010   |
| DAYTRON            | 108   |
| DBX                | 012 023 043   |
| DYNATECH           | 034 053   |
| ELECTROHOME        | 059 101   |
| ELECTROPHONIC      | 101   |
| EMERSON            | 006 029 035 037 129<br>153 017 025 027 031<br>034 036 046 101 131 138 117 |
| FISHER             | 003 010 008 009   |
| FUJI               | 031   |
| FUNAI              | 034   |
| GARRARD            | 034   |
| GE                 | 031 072 144 147<br>063 107 109 040 053                                    |
| GO VIDEO           | 132 155 040 136   |
| GOLDSTAR           | 101 004 012 020   |
| HARLEY DAVIDSON    | 034   |
| HARMAN KARDON      | 012 045   |
| HARWOOD            | 024   |
| HITACHI            | 004 026 034 043 063 137 150   |

| Manufacturer/Brand | Set-Up Code Number                             |
|--------------------|--|
| HQ                 | 034  |
| HUGHES             | 004  |
| INSTANTREPLAY      | 031  |
| JCL                | 031  |
| JCPENNEY           | 004 012 031 040 101                            |
| JENSEN             | 043  |
| JVC                | 048 043 055 060<br>130 150 152 012 031         |
| KEC                | 101 117  |
| KENWOOD            | 034 150 014 048                                |
| KLH                | 024  |
| KODAK              | 031 101  |
| LG                 | 101 004 012 020                                |
| LLOYD              | 034  |
| LOGIK              | 024  |
| LXI                | 003 009 017 034 101 004 106                    |
| MAGIN              | 040  |
| MAGNASONIC         | 117  |
| MAGNAVOX           | 067 031 034 068 041 170                        |
| MARANTZ            | 067 069 012 031                                |
| MARTA              | 101  |
| MATSUI             | 027 030  |
| MATSUSHITA         | 031  |
| MEI                | 031  |
| MEMOREX            | 040 101 003 014 031<br>034 053 072 134 139 025 |
| MGA                | 045 046 059                                    |
| MGN TECHNOLOGY     | 040  |
| MINOLTA            | 004 020  |
| MITSUBISHI         | 059 061 051 004<br>046 020 045 053             |
| MOTOROLA           | 031 053  |
| MTC                | 034 040  |
| MULTITECH          | 024 034  |
| NEC                | 012 023 043 048                                |
| NIKKO              | 101  |
| NOBLEX             | 040  |
| NORDMENDE          | 043  |
| OLYMPUS            | 031  |
| OPTIMUS            | 053 101  |
| PILOT              | 101  |
| PIONEER            | 021 004 048                                    |
| PORTLAND           | 108  |
| PROFITRONIC        | 040  |

| Manufacturer/Brand | Set-Up Code Number                                     |
|--------------------|--|
| PROTEC             | 024  |
| RCA                | 107 109 144 041 031 004 020<br>034 040 140 147 158 053 |
| SALORA             | 014  |
| SAMSUNG            | 040 017 107 109<br>113 115 124 122                     |
| SANKY              | 053  |
| SANSUI             | 043 135 048 025 034                                    |
| SANYO              | 003 014 040 134  |
| SCOTT              | 017 037 129 131  |
| SEARS              | 003 004 008 014 017<br>081 101 010 031 034             |
| SHARP              | 053 031 054 159  |
| SHINTOM            | 024  |
| SHOGUN             | 040  |
| SINGER             | 024  |
| SONY               | 001 057 058 003 052<br>053 031 154 171 009 034         |
| SOUNDESIGN         | 034  |
| STS                | 004  |
| SYLVANIA           | 031 034 059 067  |

| Manufacturer/Brand | Set-Up Code Number                         |
|--------------------|--|
| SYMPHONIC          | 034  |
| TANDY              | 034 010                                    |
| TATUNG             | 043  |
| TEAC               | 034 043                                    |
| TECHNICS           | 031 070                                    |
| TEKNIKA            | 031 034 101                                |
| THOMAS             | 034  |
| TMK                | 006 040                                    |
| TOSHIBA            | 017 131 004 008 059 082 150                |
| TOTEVISION         | 040 101                                    |
| UNITECH            | 040  |
| VECTOR RESEARCH    | 012  |
| VIDEO CONCEPTS     | 012 034 046                                |
| VIDEOSONIC         | 040  |
| WARDS              | 003 004 017 024 031<br>034 040 053 054 131 |
| WESTINGHOUSE       | 024 025                                    |
| XR-1000            | 024 031 034                                |
| YAMAHA             | 012 034 043                                |
| ZENITH             | 072 034 001 058<br>080 101 153 048 025     |

**8. Code Table : DVD**

| Manufacturer/Brand | Set-Up Code Number  |
|--------------------|---------------------|
| AIWA               | 202                 |
| AKAI               | 199                 |
| ALPINE             | 221                 |
| APEX DIGITAL       | 251 246 182 183     |
| ARCAM              | 215                 |
| CARY AUDIO DESIGN  | 184                 |
| CLASSE             | 193                 |
| COBY               | 212                 |
| CYBERHOME          | 220 213             |
| DAEWOO             | 220                 |
| DENON              | 226 241             |
| FUNAI              | 208 211             |
| GE                 | 230 231             |
| GOLDSTAR           | 235 239             |
| GO VIDEO           | 201 187 188 189 194 |
| HARMAN KARDON      | 243                 |
| HITACHI            | 223                 |
| HITEKER            | 246                 |
| INTEGRA            | 198                 |
| JVC                | 238                 |
| KENWOOD            | 216                 |
| KISS               | 197                 |
| KLH                | 210                 |
| LG                 | 148                 |
| MAGNAVOX           | 254 237 211         |
| MARANTZ            | 253 242             |
| MCINTOSH           | 217                 |
| MEMOREX            | 207                 |
| MINTEK             | 200                 |

| Manufacturer/Brand | Set-Up Code Number      |
|--------------------|-------------------------|
| MITSUBISHI         | 227                     |
| MYRYAD             | 224                     |
| NAD                | 247 239                 |
| NAKAMICHI          | 225                     |
| ONKYO              | 240                     |
| OPTIMUS            | 229                     |
| PANASONIC          | 228 206 226             |
| PHILIPS            | 253 237 214 242         |
| PIONEER            | 255 222 229             |
| POLAROID           | 195                     |
| PRIMARE            | 185 186                 |
| PROCEED            | 245                     |
| PROSCAN            | 230 231                 |
| RCA                | 230 231                 |
| SAMSUNG            | 236 248 201 191         |
| SANSUI             | 205                     |
| SANYO              | 204                     |
| SENSORY SCIENCE    | 189 190                 |
| SHARP              | 252                     |
| SONY               | 001 232 218 203         |
| SYLVANIA           | 208 211                 |
| SYMPHONIC          | 208 211                 |
| TATUNG             | 224                     |
| TECHNICS           | 228                     |
| THETA DIGITAL      | 229                     |
| TOSHIBA            | 233 244 219 205 192 196 |
| VENTURER           | 209                     |
| YAMAHA             | 249 226 181             |
| ZENITH             | 239 226 235 239         |