

Full HD Digital Twin Tuner PVR

# User's Manual

X-9200HD PVR



**User's manual**



# INDEX

<b>INDEX</b> .....	<b>3</b>
<b>Precautions</b> .....	<b>5</b>
1. Important Safety Instructions.....	5
2. Notice .....	5
3. Copyright .....	6
4. Disclaimer.....	6
5. Trademarks .....	6
<b>Before You Begin</b> .....	<b>7</b>
1. Main Features .....	7
2. Accessories .....	8
<b>Hardware Description</b> .....	<b>9</b>
1. Front Panel Configuration .....	9
2. VFD(Vacuum Fluorescent Display) .....	9
3. Rear Panel Configuration .....	10
4. Remote Control Unit.....	13
5. Multi-Brand IR Remote Controller Setting.....	16
<b>Connecting diagram</b> .....	<b>17</b>
1. Receiver to A/C power.....	17
2. Receiver to TV with Digital A/V Output.....	17
3. Receiver to TV with Analog A/V Output.....	18
4. Receiver to TV and VCR .....	19
5. Connecting to Antenna Cable .....	20
5.1 In case of S2 + S2 (Satellite + Satellite) tuners .....	20
5.2 In case of T(T2) + T(T2) (Terrestrial + Terrestrial) tuners .....	21
5.3 In case of C + C (Cable + Cable) tuners .....	21
5.4 In case of S2 + T(T2) (Satellite + Terrestrial) tuners .....	22
5.5 In case of S2 + C (Satellite + Cable) tuners .....	22
5.6 In case of T(T2) + C (Terrestrial + Cable) tuners .....	22
<b>Guide of Functions</b> .....	<b>23</b>
1. Selecting a Service.....	23
1.1 Using CH UP/DOWN buttons.....	23
1.2 Using Service List .....	23
1.3 Using Simple Service List .....	23
1.4 Using Recent Service List.....	24
2. Information Window.....	24
3. Multi-Picture Display.....	24
4. Electronic Program Guide (EPG) .....	24
5. Favorite Group .....	25
6. Volume Control.....	25
7. Pause .....	25
8. Subtitle.....	26
9. Audio Control.....	26
10. Teletext .....	27
11. PIP (Picture in Picture) .....	27

<b>PVR (Personal Video Recorder) Function .....</b>	<b>29</b>
1. Recording .....	29
1.1 Recording methods .....	29
1.2 Recording Edit.....	31
1.3 Long Time recording .....	31
1.4 Pause during recording .....	31
2. Time Shifting.....	33
3. Playback (Play List).....	34
3.1 Recorded Files .....	34
3.2 Imported Files .....	35
3.3 Music.....	35
3.4 Photo.....	35
4. Bookmark .....	36
5. Trick mode.....	37
<b>Menu Map .....</b>	<b>38</b>
<b>Main Menu of Guide.....</b>	<b>39</b>
1. System Tools .....	39
1.1 Storage Manager.....	39
1.2 Timer Settings .....	40
1.3 Service List Manager .....	40
1.4 Data Transfer.....	42
2. Configuration .....	43
2.1 Recording Option .....	43
2.2 Parental Control .....	44
2.3 Display Setting .....	44
2.4 Time Setting .....	46
2.5 Language Setting .....	46
2.6 A/V Output Setting .....	47
3. Installation .....	48
3.1 Dish Setting.....	49
3.2 Positioner Setting .....	50
3.3 Service Search.....	51
3.4 Network Setting.....	55
3.5 System Recovery .....	56
3.6 System Information .....	56
4. Utility.....	57
4.1 Calculator .....	57
4.2 Calendar .....	57
4.3 CAS (Conditional Access System).....	57
4.4 Plugin .....	59
4.5 YouTube .....	60
<b>Troubleshooting.....</b>	<b>62</b>
<b>Specifications.....</b>	<b>63</b>
<b>Code Table for Universal Remote Control Unit.....</b>	<b>66</b>
1. Key Table.....	66
2. TV Brands .....	68
3. VCR Brands .....	75
4. DVD Brands .....	80

# Precautions

## 1. Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.**
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not alter the mains plug in any way. If the provided plug does not fit consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- 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.



- Unplug this apparatus during lightning storms or when unused for long periods of time.
- 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. Notice

- These servicing 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.
- 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.
- 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

### 3. Copyright

This manual is protected by copyright laws.

Copy, use and reproduction of this manual in part or whole without **Manufacturer's** prior written approval are prohibited.

### 4. Disclaimer

The manufacturers, distributors and agents are not liable to any kind of damage caused by the use of the information contained in this manual.

The instruction and descriptions which this manual contains are based on the time of this manual's production.

The manufacturer constantly updates it with new functions and technology.

All the specifications are subject to change without prior notice.

### 5. Trademarks



HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC



Manufactured under license from Dolby Laboratories.

Dolby and the double-D symbol are trademarks of Dolby Laboratories.

# Before You Begin

## 1. Main Features

With DVB-S/S2 Tuner(s) Installed

- ✓ Supports MPEG4 /MPEG2 - HD/SD and Fully DVB-S2 /DVB-S Compliant
- ✓ Intelligent Blind Scan for both SD and HD TV & Multi-Satellite Search
- ✓ Multi-LNB Controlled by DiSEqC Control Version 1.0, 1.1, 1.2 and USALS

With DVB-C Tuner(s) Installed\*

- ✓ Supports MPEG4 /MPEG2 - HD/SD and Fully DVB-C Compliant

With DVB-T Tuner(s) Installed\*

- ✓ Supports MPEG4 /MPEG2 - HD/SD and Fully DVB-T Compliant

With DVB-T2 Tuner(s) Installed\*

- ✓ Supports MPEG4 /MPEG2 - HD/SD and Fully DVB-T2 Compliant

Common features

- ✓ Changeable Twin Tuner Full HDTV PVR Receiver ( DVB-S/S2, DVB-C, DVB-T, DVB-T2 )\*
- ✓ Supports MPEG4 /MPEG2 - HD/SD( H.264/ MPEG4 HD )
- ✓ Powerful compatibility through Embedded Linux OS
- ✓ Time Shifting, Recording & Playback with Internal HDD (SATA) / External HDD (e-SATA or USB 2.0)
- ✓ Simultaneously Records 3 Services and allows Watching of 2 others (PIP)
- ✓ Powerful Extended EPG supported with Event Recording
- ✓ 3 USB 2.0 Host ports (MP3 Player & JPEG Viewer)
- ✓ Xvid file play back supported
- ✓ External SATA connection supported (Separate power is needed for Ext. HDD drive)
- ✓ Ethernet port Supported
- ✓ Intelligent Blind Scan for both SD and HD TV & Multi-Satellite Search
- ✓ Premium Grade White VFD Display (12 Digit Alphanumeric)
- ✓ Premium Grade Universal remote control unit
- ✓ Multi-LNB Controlled by DiSEqC Control Version 1.0, 1.1, 1.2 and USALS
- ✓ Full HD On-Screen Display
- ✓ Favorite Service Groups
- ✓ Powerful Service Control by Favorites, Lock, Skip, Move and Delete
- ✓ Service sorting by Name, Transponder and CAS
- ✓ User Friendly & Multi-language Supported (OSD & Menu)
- ✓ Teletext / Subtitles Supported
- ✓ Supports upto 10,000 Services
- ✓ PIP (Picture-in-Picture)
- ✓ Parental Lock / System Lock / Installation Lock
- ✓ HDMI Video & Audio Output (576i, 576p, 720p, 1080i, 1080p)
- ✓ Supports Y/Pb/Pr(component) Output in HD
- ✓ CVBS(composite) Video & Audio Output via RCA
- ✓ CVBS, RGB, Y/C Video & Audio Output via TV SCART
- ✓ Optical Output for Digital Audio(SPDIF)
- ✓ Software & Service channel Database upgrade via USB & RS-232C port
- ✓ 2 Smart card readers and 2 Common Interface Slots
- ✓ 1W Stand-by Power Consumption

\* Tuner availability is dependent on geographic region.

## 2. Accessories

*User's Manual*



*Remote Control*



*AAA size Batteries X2*



*HDMI Cable (Option)*



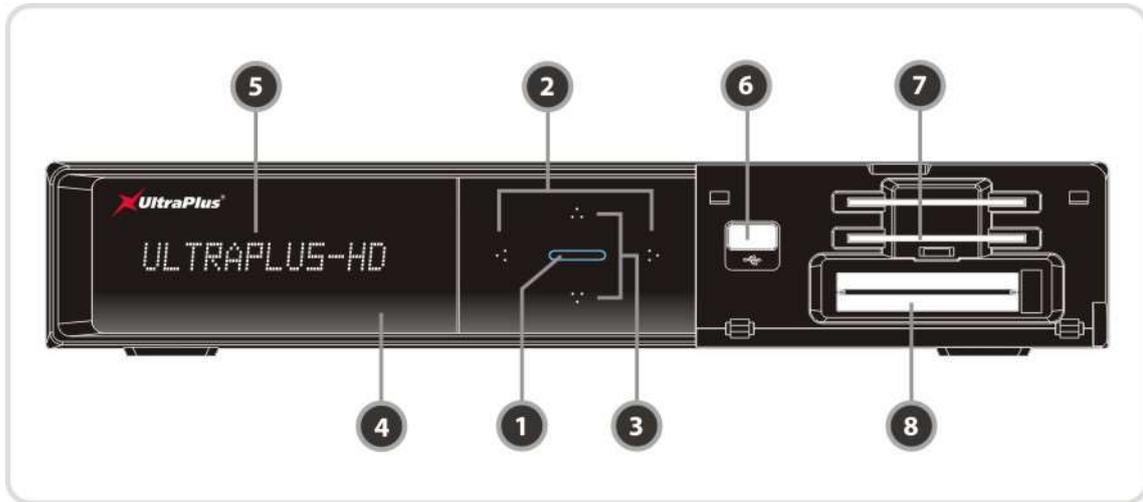
*Loop through Cable (Option)*



*AC Power Cord*



# Hardware Description



## 1. Front Panel Configuration

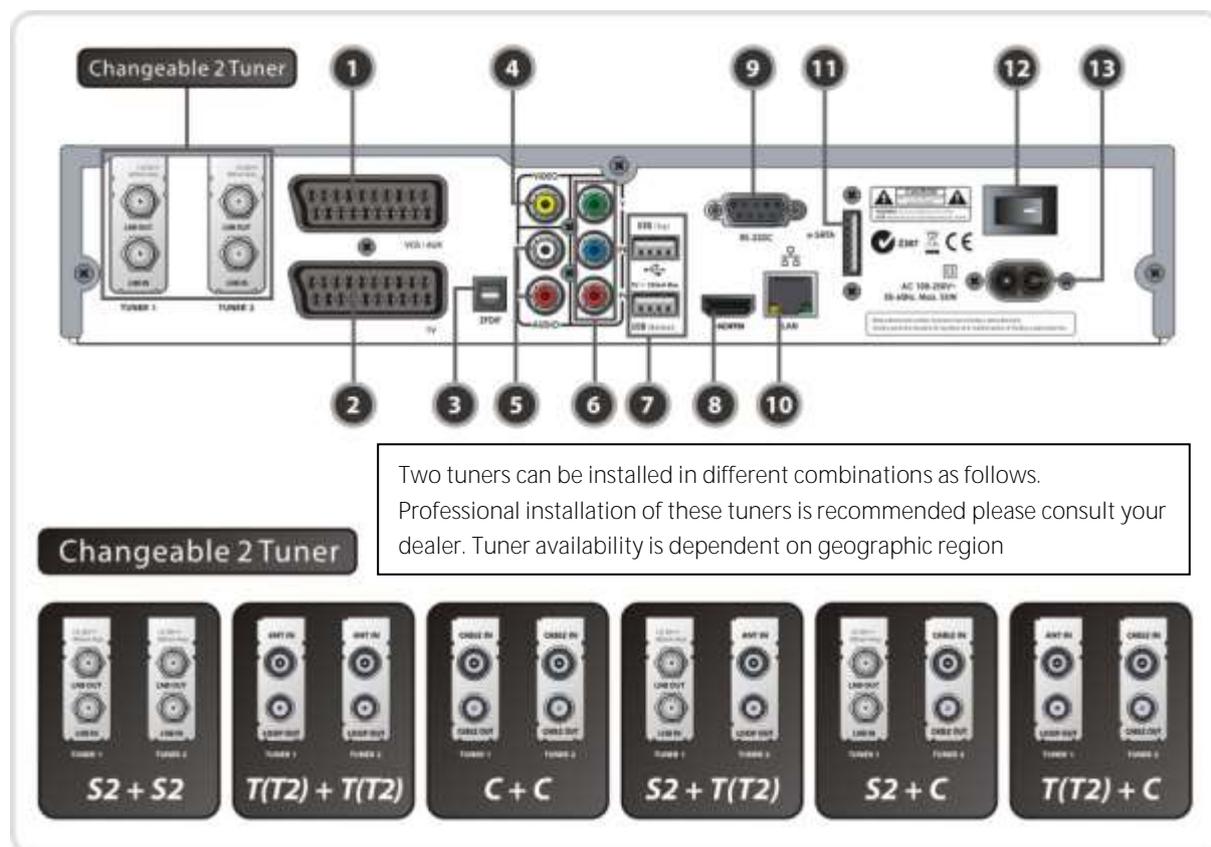
1. *POWER BUTTON* : Press to switch between STANDBY and POWER ON modes.
2. *Vol Up/Down BUTTON* : Press to change audio volume in normal mode or to navigate menu in menu mode.
3. *CH Up/Down BUTTON* : Press to change services in normal mode, or to move highlighted-bar in menu mode.
4. *Remote Sensor* : Receives signal from remote controller.
5. *VFD Display* : The VFD display allows 12 alpha numeric characters to be displayed. These characters are used to display the current status of the receiver e.g. service name, service information and so on.
6. *USB (Front)* : Used to connect external USB storage devices.
7. *SMART CARD READER* : Insert smart card for encrypted service access.
8. *PCMCIA* : To receive other pay-tv services you need a CA-Module (Viaccess, Irdeto, Nagravision, etc.) and a smart card from the service provider.

## 2. VFD(Vacuum Fluorescent Display)

1. *Remote Indication LED* : The LED indicates when a key on the Remote Controller is pressed.
2. *Information* : Display information including service name and other information.



### 3. Rear Panel Configuration



1. *VCR SCART* : Connects to a VCR or DVD recorder using a SCART cable.
2. *TV SCART* : Connects to the TV using a SCART cable.
3. *SPDIF* : Connects to the audio system using a S/PDIF cable. (digital audio)
4. *VIDEO* : Connects to the TV or VCR using a RCA cable. (Composite video output / Yellow)
5. *AUDIO L/R* : Connects to the TV or VCR using a RCA cable. (Stereo audio output / White, Red)
6. *Component* : Connects to the TV or VCR using a component cable. (YPbPr)
7. *USB* : Used to connect to external USB storage devices or WiFi adaptors.
8. *HDMI* : Connects to a TV using an HDMI cable for the best quality picture and audio.
9. *RS-232C* : Serial port for firmware update and data transfer.
10. *Ethernet* : Local area network port for direct computer connection.
11. *e-SATA* : Connects to the external HDD via an e-SATA cable.
12. *A/C Switch* : Power switch
13. *A/C power cable socket* : Connects to A/C power cord.

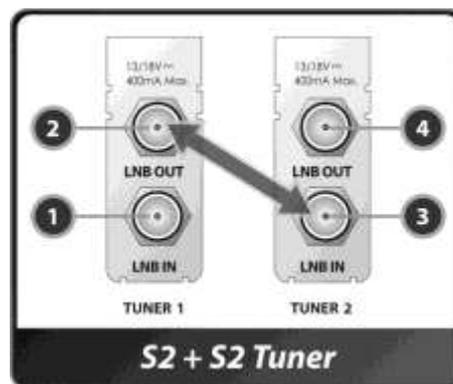
➤ In case of S2 + S2

[ TUNER 1 ]

1. **LNB IN** (Caution : LNB1 in on the left bottom)  
Satellite IF signal input socket of the first tuner (TUNER 1). Connects a satellite antenna LNB cable.
2. **LNB OUT**  
Satellite IF signal output socket of the first tuner (TUNER 1). Connects to a second tuner (TUNER 2) for loop-through.

[ TUNER 2 ]

3. **LNB IN** (Caution : LNB2 in on the right bottom)  
Satellite IF signal input socket of the second tuner (TUNER 2). In the case of a loop-through configuration a short cable connects LNB Out from the first tuner (TUNER 1) to this connector.
4. **LNB OUT**  
Satellite IF signal output socket of the second tuner (TUNER 2). Can be used to connect to another STB.



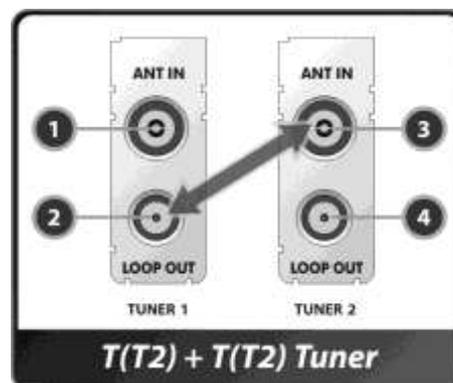
➤ In case of T(T2) + T(T2)

[ TUNER 1 ]

1. **ANT IN**  
Terrestrial signal input socket of the first tuner (TUNER 1). Connects to a UHF aerial.
2. **LOOP OUT**  
Terrestrial signal output socket of the first tuner (TUNER 1). Connects to a second tuner (TUNER 2) for loop-through.

[ TUNER 2 ]

3. **ANT IN**  
Terrestrial signal input socket of the second tuner (TUNER 2). In the case of a loop-through configuration a short cable connects Loop Out from the first tuner (TUNER 1) to this connector.
4. **LOOP OUT**  
Terrestrial signal output socket of the second tuner (TUNER 2). Can be used to connect to another STB.



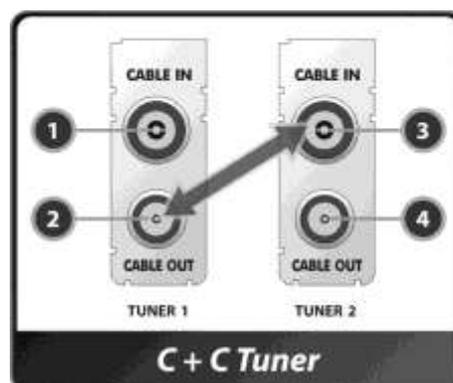
➤ In case of C + C

[ TUNER 1 ]

1. **CABLE IN**  
Cable signal input socket of the first tuner (TUNER 1). Connects to a cable TV network.
2. **CABLE OUT**  
Cable signal output socket of the first tuner (TUNER 1). Connects to a second tuner (TUNER 2) for loop-through.

[ TUNER 2 ]

3. **CABLE IN**  
Cable signal input socket for the second tuner (TUNER 2). In the case of a loop-through configuration a short cable connects Cable Out from the first tuner (TUNER 1) to this connector.
4. **CABLE OUT**  
Cable signal output socket of the second tuner (TUNER 2). Connects to another STB or Cablemodem.



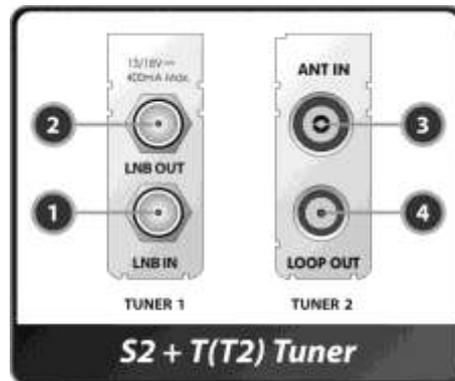
➤ In case of S2 + T(T2)

[ TUNER 1 ]

1. **LNB IN** (Caution : LNB1 in on the left bottom)  
Satellite IF signal input socket of the first tuner (TUNER 1). Connects a satellite antenna LNB cable.
2. **LNB OUT**  
Satellite IF signal output socket of the first tuner (TUNER 1). Connects to another STB for loop-through.

[ TUNER 2 ]

1. **ANT IN**  
Terrestrial signal input socket of the second tuner (TUNER 2). Connects to a UHF aerial.
2. **LOOP OUT**  
Terrestrial signal output socket of the second tuner (TUNER 2). Can be used to connect to another STB.



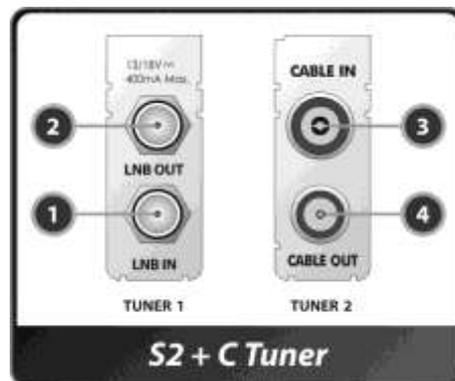
➤ In case of S2 + C

[ TUNER 1 ]

1. **LNB IN** (Caution : Socket on the left bottom)  
Satellite IF signal input socket of the first tuner (TUNER 1). Connects a satellite antenna LNB cable.
2. **LNB OUT**  
Satellite IF signal output socket of the first tuner (TUNER 1). Connects to another STB for loop-through.

[ TUNER 2 ]

3. **CABLE IN**  
Cable signal input socket of the second tuner (TUNER 2). Connects to a cable TV network.
4. **CABLE OUT**  
Cable signal output socket of the second tuner (TUNER 2). Connects to another STB or Cablemodem.



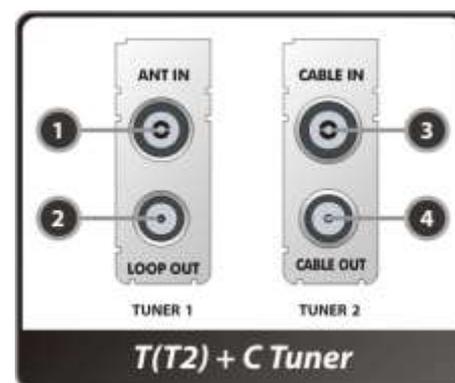
➤ In case of T(T2) + C

[ TUNER 1 ]

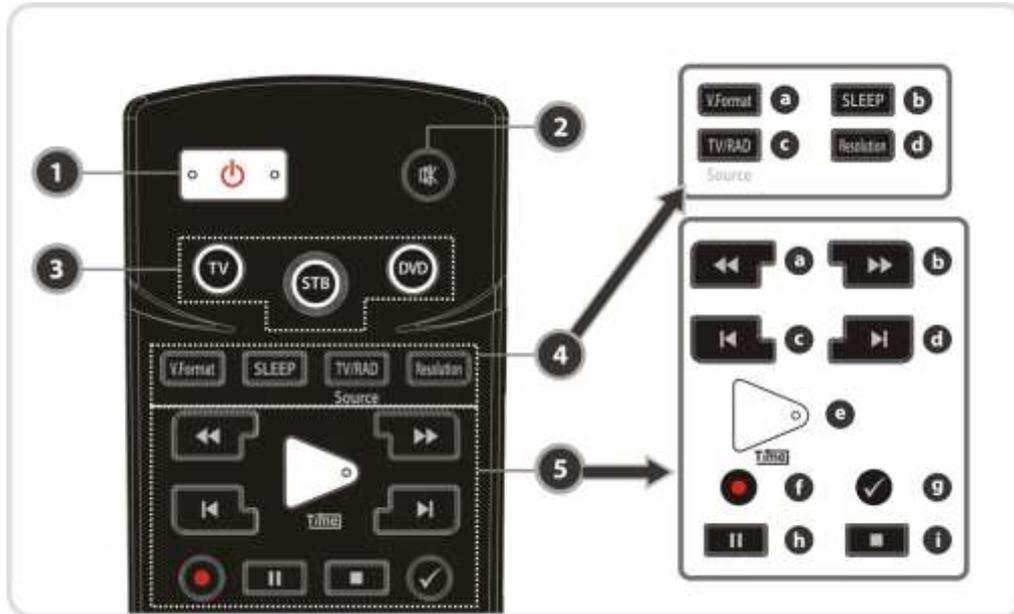
1. **ANT IN**  
Terrestrial signal input socket of the first tuner (TUNER 1). Connects to a UHF aerial.
2. **LOOP OUT**  
Terrestrial signal output socket of the first tuner (TUNER 1). Can be used to connect to another STB

[ TUNER 2 ]

3. **CABLE IN**  
Cable signal input socket of the second tuner (TUNER 2). Connects to a cable TV network.
4. **CABLE OUT**  
Cable signal output socket of the second tuner (TUNER 2). Connects to another STB or Cablemodem.

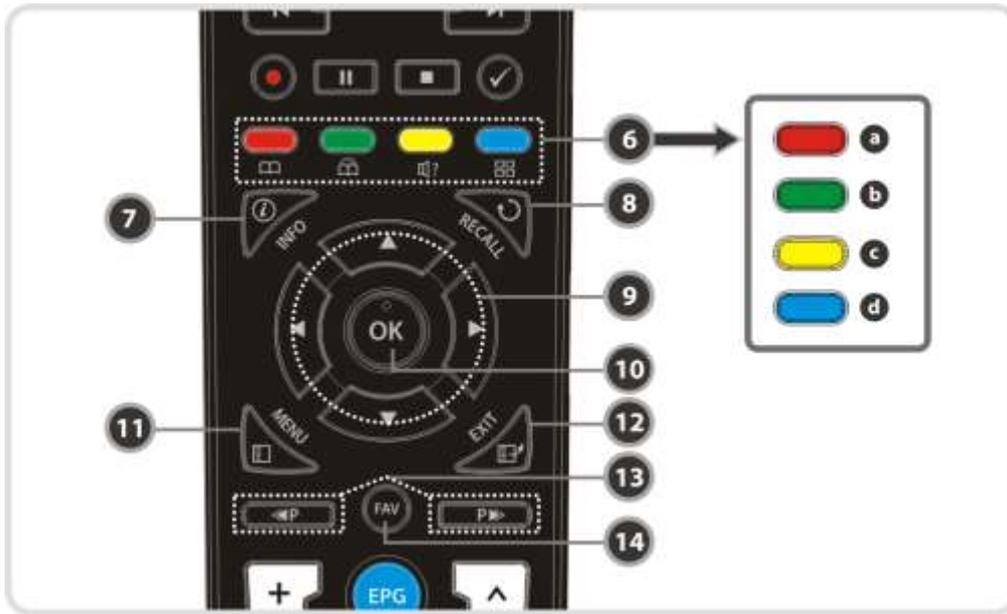


## 4. Remote Control Unit



1. **POWER** : Turns the STB On/Off.
2. **MUTE** : Turns the sound On/Off.
3. **Universal Buttons**
  - a. **TV** : Change the mode of the Remote Controller to TV Mode.
  - b. **STB** : Change the mode of the Remote Controller to STB Mode.
  - c. **DVD** : Change the mode of the Remote Controller to DVD Mode.
4. **MODE**
  - a. **V.Format** : You can switch the Display Format (4:3 / 16:9)
  - b. **Sleep** : To adjust the sleep timer.
  - c. **TV/RADIO** : Switches between TV and Radio.
  - d. **Resolution** : To select the resolution format. Each time you press the Resolution button, the resolution changes in the following sequence: 576i > 576p > 720p > 1080i > 1080p
5. **Playback Control Buttons**
  - a. **Rewind** : Rewinds at high speed. Each time you press this button the rewind speed is increased.
  - b. **Fast Forward** : Fast forwards at high speed. Each time you press this button the speed is increased.
  - c. **Previous File** : To play the previous MP3 file in MP3 play mode. This button is also used to jump back to beginning of recording during a playback.
  - d. **Next File** : To play the next file. This button is also used to jump to end of recording during a playback.
  - e. **Play / Time shift** : Display the progress bar during playback when no progress bar is displayed. It starts playback at normal speed. It also returns to normal speed from trick mode.
  - f. **Recording** : To start Recording.
  - g. **Repetition (\*)** : This key is used to play back a recording repeatedly.
  - h. **Pause** : This key is used to pause the video. Press once more to resume the video.
  - i. **STOP** : To stop time shifting, play back or recording.

**NOTE : (\*) This Repetition may not be available until a new firmware version is installed.**



6. *Color Buttons*

- a. *RED* : Used for special functions in the menu. The RED key is used to sort lists in the service list or go to previous day search in the EPG or make/delete the current position as a bookmark.
- b. *GREEN* : Used for special functions in the menu. The GREEN key is used to set the favorites setting in the service list or go to the next bookmark position.
- c. *YELLOW* : Used for special functions in the menu. Yellow key is used to find services in the service list or change the audio track..
- d. *BLUE* : Used for special functions in the menu. The Blue key is used to set service list options in the service list or display *Multi-Picture*.

7. *Information* : Shows the information about the current program. If you press it twice, the detailed information box will be shown.

8. *Recall* : Moves to previous service.

9. *ARROW Buttons*

- a. *Up & Down Key* : To change the value of a selected item with preprogrammed values in the menu.
- b. *Left & Right Buttons* : To move the cursor left and right in the menu.

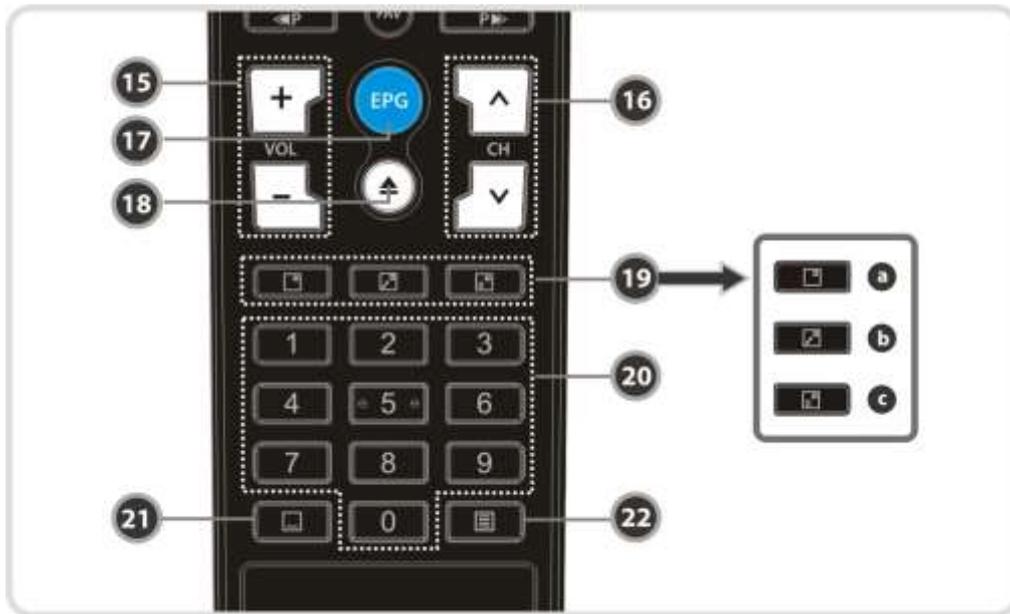
10. *OK or Service List* : Show the service list in non-menu mode and select an item or confirm in menu mode.

11. *Menu* : To enter the main menu or to move to the previous menu.

12. *EXIT* : Exit from the menu or pop-up window.

13. *Page Up & Down* : Move to the next or previous page if more than one page are available. This button is also used to change the location of the sub picture in PIP.

14. *Favorite* : To display the satellites programmed into the receiver and the favorite groups.



15. *Volume Up & Down* : To change the Volume.

16. *Channel Up & Down*: To change the TV or Radio channel.

17. *EPG(Electronic Program Guide)* : Show the TV/Radio program guide.

18. *Play List* : To show the file list for the SATA HDD or USB Storage Device.

19. *PIP Buttons*

a. *PIP(Picture in Picture)* : To activate the PIP window.

b. *PIP Swap* : Switching between main-picture and sub-picture

c. *PIP(Picture in Picture) Service List* : To show the sub-picture service list.

20. *Numeric* : Allows numerical data entry and changing of services directly.

21. *Subtitle*: To show subtitles.

22. *Teletext* : To show the digital teletext.

## 5. Multi-Brand IR Remote Controller Setting

***NOTE : If there is no input for 10 seconds after selecting set mode, set mode is canceled.***

### 1. Direct Code Entry

*Step 1 :* Turn on the DEVICE what you want to set up (TV / DVD / VCR)

*Step 2 :* Press the DEVICE and OK buttons at the same time for about 2 seconds.

✓ *DEVICE LED will blink twice.*

*Step 3 :* Input the 3 digit code number applicable to you device.

(Refer to *'Code Table for Universal Remote Control Unit'* in the rear section of this manual)

✓ *DEVICE LED will blink twice and the DEVICE turns off.*

✓ *If you enter a wrong DEVICE code, DEVICE will blink once*

*Step 4 :* If your DEVICE turns off, press OK button.

✓ *DEVICE LED will blink twice.*

### 2. Auto Code Search

*Step 1 :* Turn on the DEVICE what you want to set up (TV / DVD / VCR)

*Step 2 :* Press the DEVICE and OK buttons at the same time for about 2 seconds.

✓ *DEVICE LED will blink twice.*

*Step 3 :* Press the UP or Down buttons within 10 seconds to enter the Search mode.

*Step 4 :* Press the UP or Down buttons until the DEVICE turns off.

*Step 5 :* If your DEVICE turns off, press OK button.

✓ *DEVICE LED will blink twice.*

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

*Step 1 :* Press the DEVICE and OK buttons at the same time for about 2 seconds.

✓ *DEVICE LED will blink twice.*

*Step 2 :* Press the INFO button within 3 seconds.

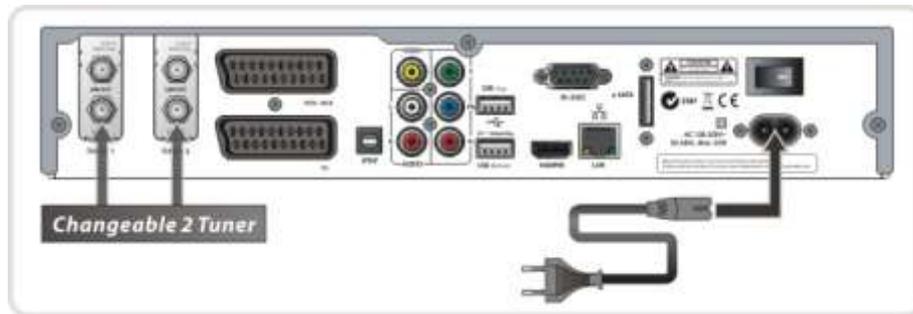
✓ *LED will blink according to the code number of the device.*

*(Case of digit '0', it blinks 10 times.)*

## Connections diagram

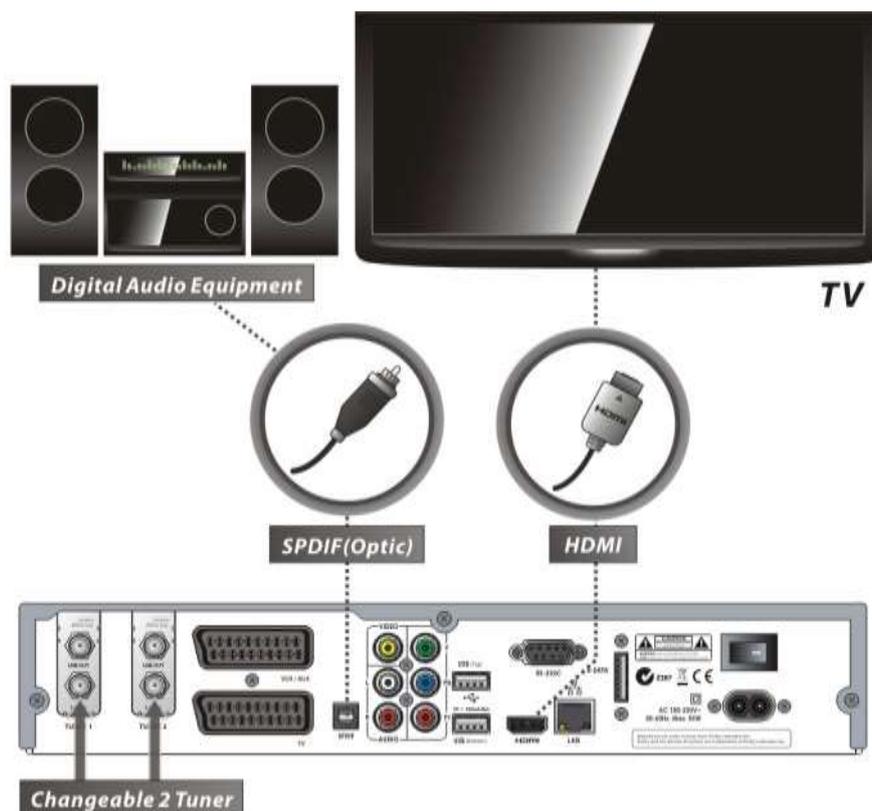
### 1. Receiver to AC power

- Connect the power cord between the AC power cord socket of receiver and the AC outlet.



### 2. Receiver to TV with Digital A/V Output

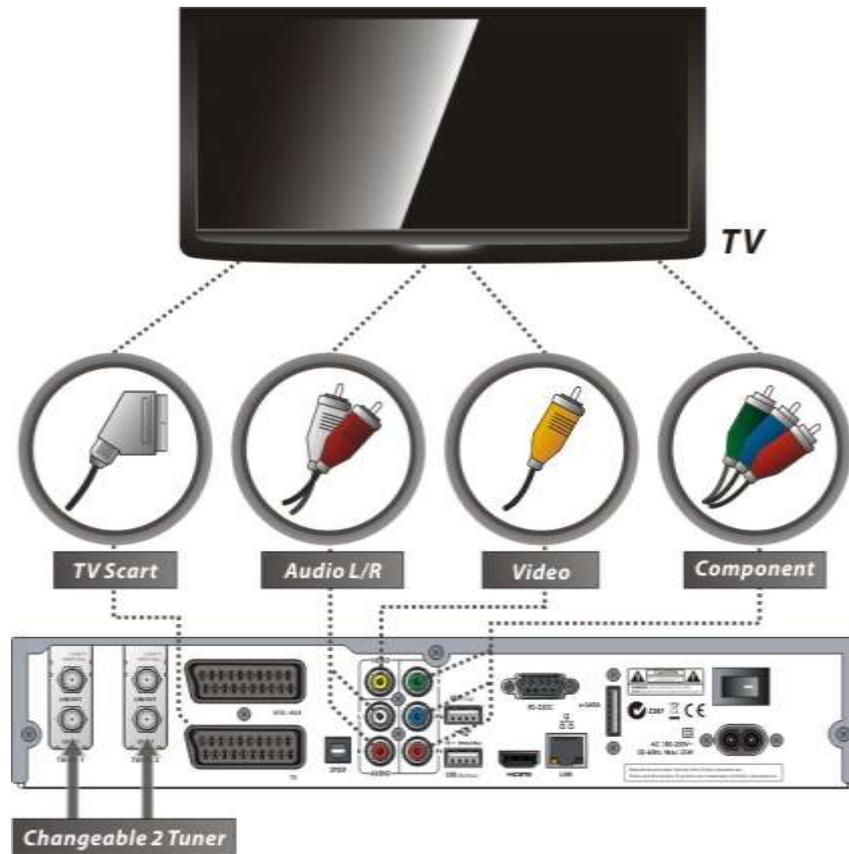
- Connect the HDMI Cable to the HDMI Connector of the TV.
- Connect the SPDIF Cable to the Digital audio input of the Digital Audio Equipment.



**NOTE :** Depending on the A/V equipment you own, there are various ways you can connect the STB. To choose the best connection option, please refer to the manual of the equipment you would like to connect to. To get High Definition playback of High Definition content, we recommend that you connect your high definition display with a HDMI cable. HDMI supports standard, enhanced or high-definition video and multichannel audio in a single cable.

### 3. Receiver to TV with Analog A/V Output

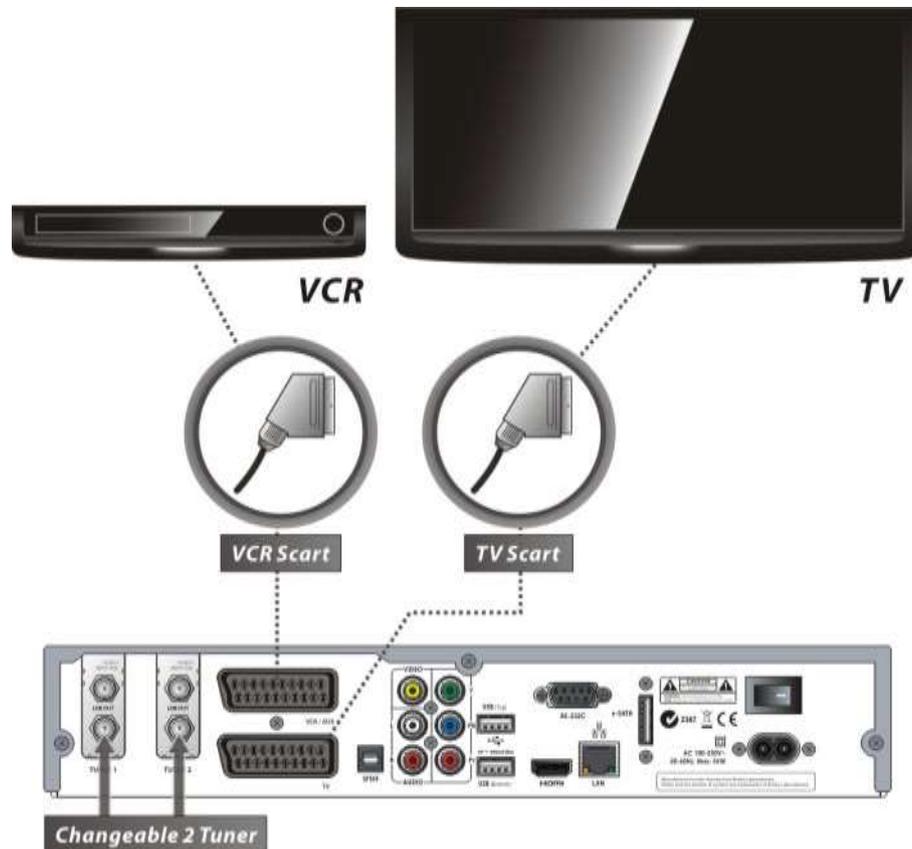
- Connect the TV SCART to the SCART input of the TV.
- Connect the Component to the Component input of the TV.
- Connect the Composite to the Composite input of the TV.



**NOTE :** *HDMI or component (YPbPr) is recommended for Digital TVs.  
The SCART cable connection is recommended for analogue TVs or VCRs  
The composite connection(RCA cable) is recommended for analogue TVs  
You cannot view high definition video with the SCART and the composite video connector.*

#### 4. Receiver to TV and VCR

- Connect the TV SCART to the SCART input of the TV.
- Connect the VCR SCART to the SCART input of the VCR.



## 5. Connecting to Antenna Cable

### 5.1 In case of S2 + S2 (Satellite + Satellite) tuners

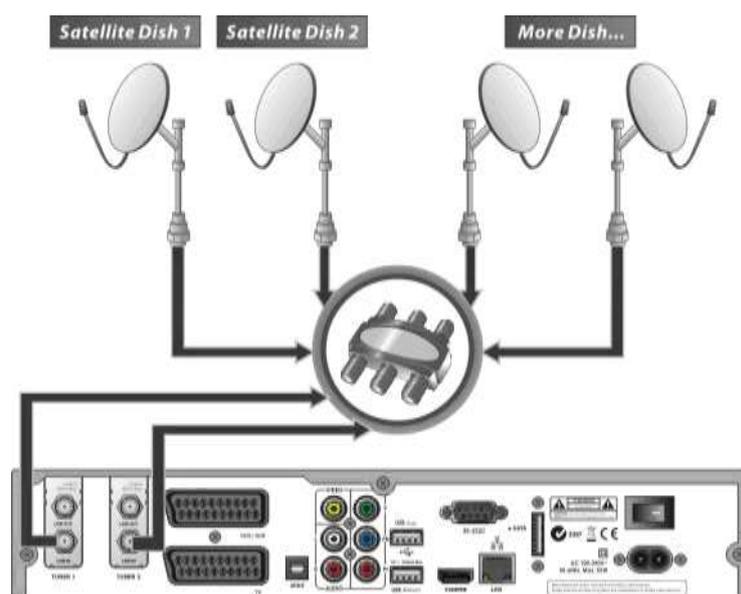
- Connecting one dish to both tuners by Loop through



- Connecting each Dish to each Tuner



- Connecting multiple dishes to each Tuner via a Multi-switch



5.2 In case of T(T2) + T(T2) (Terrestrial + Terrestrial) tuners

- Connecting one aerial to both tuners by Loop through



- Connecting two aerials to each Tuner



5.3 In case of C + C (Cable + Cable) tuners

- Connecting one cable network to both tuners by Loop through



- Connecting one cable to each Tuner



#### 5.4 In case of S2 + T(T2) (Satellite + Terrestrial) tuners

- Connecting a dish to LNB IN
- Connecting an aerial to ANT IN



#### 5.5 In case of S2 + C (Satellite + Cable) tuners

- Connecting a dish to LNB IN
- Connecting a cable network to CABLE IN



#### 5.6 In case of T(T2) + C (Terrestrial + Cable) tuners

- Connecting an aerial to ANT IN
- Connecting a cable network to CABLE IN





## 1.4 Using Recent Service List

- To display recent service list, press the RECALL button for a short time.
- To return to the previous service that you were watching, press RECALL button twice or for a longer time.
- Choose the service from the recent service list, use the ARROW button to select, and then press the OK button.
- Press EXIT button to exit from the recent service list.



## 2. Information Window

If you want to display information about the current service that you are watching, press the INFO button. Then the Information window will be displayed.

This Information window is automatically displayed when changing between the services.

This window contains much useful information such as service number, service name, encryption type, teletext, subtitle, Audio indication for Dolby Digital, duration of the service and so on.

By pressing the INFO button once again, you can get more detailed information about the service.



## 3. Multi-Picture Display.

Press the BLUE button to display multiple pictures and use the RED button to select the display options for 9 or 12 multiple pictures.



## 4. Electronic Program Guide (EPG)

The Electronic Program Guide (EPG) helps you to navigate through all the possible viewing options. And the EPG supplies additional information about each channel, such as program listings, start/end times and detailed information about the program listings for all available services. The availability and size of information of these program details can vary, depending on the particular broadcasters, individual services. E.g. Freeview provides a full 7 day EPG, with full descriptions of programs broadcast.



- Press the EPG button, the EPG menu will be displayed.
- Use the ARROW buttons to move to other services or to see previous/next guide.
- Press the EPG button once to view full EPG with multi service list, and press it twice to view the additional EPG information of a specific channel service. Keep pressing the EPG button to toggle between the full and detailed menus of EPG.
- Press the GREEN button to view next day EPG and the RED button to view EPG for a previous day.
- Select the program by using the ARROW buttons then set the event timer by pressing OK.
- You can schedule a recording with the EPG menu as follows.
  - Press RECORD button to schedule the event. This schedule can be checked in the Timer Settings, in the System tool menu.
  - To cancel the schedule of the recording, press the OK button with the desired event selected.
  - To edit the schedule of the recording, press the RECORD button with the desired event selected.

## 5. Favorite Group

Press the FAV(Favorite) button to view all favorite groups such as sports, movie, drama, satellite group and so on. Scroll through the various favorite groups using the UP/DOWN ARROW buttons, and select the desired favorite group by pressing OK button.



## 6. Volume Control

- To adjust the audio volume, press the VOL UP/DOWN buttons.
- The Audio volume control bar will be displayed at the top of the screen and will disappear after 4 seconds.
- If necessary, press the MUTE button to turn on/off the audio.



**NOTE : The mute function remains set while you change services.**

## 7. Pause

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



## 8. Subtitle

You can select the language for a Subtitle, if the program provides subtitle information.

- Press the SUBTITLE button on your remote control unit.
- Select the desired subtitle language then press the OK button.
- The subtitles will be displayed in the selected language at the bottom of the screen.
- To turn OFF the subtitles from the screen, Select '**Off**' from the subtitle language list.

**NOTE : If a program does not provide subtitle information, the SUBTITLE button will not be active.**



## 9. Audio Control

Press the YELLOW button while watching live TV to display the Audio Control menu. You can set the **Audio Track / Sound Mode / Sound Level**.

- Audio Track :  
You can see all the audio tracks of the service you are watching. Use the ARROW buttons to choose the preferred audio track. If you select Auto, the audio track will be selected according to the audio language setting in the language setting menu.



- Sound Mode :  
To set sound mode, **Stereo / Mono / Left / Right**.



- Sound Level :  
To set sound level, **Low(-30%) / Normal / High(+30%) / Off**.



## 10. Teletext

When the **TELETEXT icon** on the INFO Banner is displayed, press the TELETEXT button to view the teletext.



## 11. PIP (Picture in Picture)

- When you press the PIP button, a sub picture screen will appear on the main screen view. If you press the PIP button one more time, the primary picture and the sub picture will appear together side-by-side with the same size. The picture of the left side is the primary and the picture on the right side is sub. If you press the PIP button one more time, the sub picture will disappear.



- In the PIP mode, you can change primary and sub with the PIP SWAP button.



- If you press the PAGE UP/DOWN button, the location of the sub picture is changed.



- If you press the PIP SERVICE LIST button, you will see the list of services available for the sub picture. You can change the service of the sub picture from the service list shown.

***NOTE : Changing services of sub the picture could be limited the tuner connection or a recording event.***



# PVR (Personal Video Recorder) Function

## 1. Recording

You can select a recording storage device with the following sequence :  
**Menu > Configuration > Recording Option > Record Device.**  
Default is set to **'Hard Disk'**.

### 1.1 Recording methods

There are 3 recording methods.

**(Instant Recording / Time Scheduled Recording / Event Scheduled Recording).**

- Instant Recording :

You may press the RECORD button to start your recording instantly at anytime.



- Time Scheduled Recording :

- In Timer Settings menu, you may set the time & program to record your desired channel.

**(Go to Main Menu > System Tools > Timer Settings)**



- Press the GREEN button to activate a new timer edit screen.

- In the Timer Edit screen, you may choose start date/time, duration, service, mode, type (Recording/Play), Tuner (Auto/1/2) then simply press the **Yes** button to schedule your recording event. Please note that a minimum of 3 minutes is required from the current time to the Start time for the recording process to take place.



- Event Scheduled Recording via EPG :
  - In the EPG menu screen, you can choose the event you wish to schedule or record.
  - While watching the LIVE TV screen, press the EPG button to access the EPG menu screen.



- Go to the event which you wish to view at the time indicated on the EPG schedule, then press OK. The event has been scheduled as indicated by the **BLUE play icon**. This BLUE play icon means that you want to just watch the event at the scheduled time.



- Press the OK button one more time, then the event will be scheduled to be recorded as indicated by the **RED dot icon**. This RED dot icon means that you want to record the event at the scheduled time.



When you set an event for scheduled recording via the EPG menu. It automatically sets a Timer Event in the **Main Menu > System Tools > Timer Settings**.



## 1.2 Recording Edit

Press the REC button while recording to see the recording message window.

- Pause : Select **Pause Recording** then press OK to pause the current recording process.
- Duration : Set recording duration. Press LEFT/RIGHT ARROW button to change recording duration.
- Stop Position :  
Set the finishing time of recording.
  - *End of current event* : finish recording at the end of current event
  - *End of next event* : finish recording at the end of next event.
  - *Not Available* : EPG is not available.



- Record Slot : When you are recording 3 services, you can select Primary / Secondary / Tertiary by pressing Left/Right Arrow button, then go to Change Service and press OK button to show that recording service.



## 1.3 Long Time recording

If filesystem limitations exist during very long recording processes of 4GB(Giga Byte) or more, additional files may be created every 4GB. (**For example; aaa.ts, aaa.ts1, aaa.ts2... and so on**).

You must remember not to delete any of duplicated files. These files are only able to be viewed with your PC not with the receiver (STB).

## 1.4 Pause during recording

When the PAUSE button is pressed during recording, only the live video is paused, and recording continues.



- Press PAUSE button once again and event will resume from the pause time.
- During recording, press the PLAY/TIMESHIFT button to show the Play bar screen.



- While the Play bar is shown on your screen, you may use the LEFT/RIGHT Arrow button to move (forward & backward) freely within recorded time.
- If you press YELLOW button in the Play bar, you can set the Position Jump time at **Auto / 10sec / 30sec / 1min / 2min / 4min / 10min**. Then press LEFT/RIGHT Arrow button to jump as you set the time.
- If you press the STOP button, it will go to LIVE and you may press the PREV FILE button to view the recorded file from the beginning.



- STB can record up to 3 different services simultaneously.
- When recording 3 services at the same time, you can press the STOP button to see a message window of current recording status / information.

If you select one of the 3 or 2 recordings and press the OK button, that recording service will be stopped.

If you press the STOP button during recording 1 service, a recording stop message window will appear. Then select **YES** to stop recording.



**NOTE :** *If you want to record up to 3 services, please format the storage device with 'Journaled(JFS)' file system.*

**Menu > Storage Manager > Format > File System > select 'Journaled(JFS)'.**

## 2. Time Shifting

You can select a storage device to host the temporary file for the Time shift with the following sequence:

**Menu > Configuration > Recording Option > TimeShift Device.**

Default storage device is set to **'Hard Disk( internal SATA)'**



- If you press the PAUSE button during Time shift, the live video is paused but the time shift buffer will continue to record.



- Press the PAUSE button once again, then the event will resume from the paused time.
- While watching live TV, press the PLAY/TIMESHIFT button to show the play bar on your screen.



- When the play bar is displayed on your screen, you may use the LEFT/RIGHT Arrow buttons to move freely through the recorded times bar.
- If you press YELLOW button in the Play bar, you can set the Position Jump time at **Auto / 10sec / 30sec / 1min / 2min / 4min / 10min**. Then press LEFT/RIGHT Arrow button to jump by the skip size you have set.
- If you press the STOP button while time-shifting, you will be returned to live TV. You can also use PREV FILE button to move to a start location of the Time-shifted file.



### 3. Playback (Play List)

You can playback many files with the Playlist which you access by the PLAYLIST button.

In the Playlist, you can check and playback **recorded files, multimedia movie files, MP3 music files, and image files.** With the LEFT/RIGHT ARROW button, go to the **Recorded Files, Imported Files, Music** and **Photo** category and check & for playback files in each category.

If press the PLAYLIST button, you can see all playable files. In this mode, the Green button is not used. You

can press the LEFT/RIGHT Arrow button to move to from **Recorded Files / Imported Files / Music / Photo / Play List menu**



#### 3.1 Recorded Files

- If you press RIGHT Arrow button in Play List, you can go to Recorded Files menu.
- Locate the recorded file(s) you wish to play with the UP/DOWN button and press the OK button to playback the recorded file(s).
- To choose a particular selection of files, select the desired files by pressing the RED button. Press the OK button to begin to play the selected files.



- Select Device : Press PLAYLIST button one more time in the Playlist mode to see **“Select Device”** window, and select the device which has the file you want to play.

**NOTE : “Select Device” window shows devices which are currently connected to the STB.**



- Sorting : If you press the YELLOW button, you can sort the files by **Time / Name / Size / Type.**



- File Option :

If you press the BLUE button, you can select **Delete, New Folder, Move to Folder, Copy to Device, Rename, Lock/Unlock**. You can select multiple files together and delete or move all of them at once.

- **Delete** : To delete file(s)
- **New Folder** : To make a new folder. The default name of the folder is **“Group#”**.
- **Move to Folder** : To move the selected file(s) to a folder you want. This option is available if there is no folder.
- **Copy to Device** : To copy the file(s) to other storage device. This option is not available if only one storage device is connected.
- **Rename** : To rename the folder or file.
- **Lock / Unlock** : To lock and/or unlock the file with your PIN Code. You must select a file to do this option.



### 3.2 Imported Files

- If you press RIGHT ARROW button in Recorded Files, you can go to Imported File menu.
- Locate the file(s) you wish to play with the UP/DOWN button and press the OK button to enjoy the movie.
- To choose a particular selection of files, select a desired file and press the RED button. Press the OK button to begin the selected files.
- You can use the same 'Select Device', 'Sorting' and 'File Option' features as in the Recorded Files.



### 3.3 Music

- If you press the RIGHT ARROW button in Imported Files, you can go to Music menu.
  - If you press the RECALL button, you can enjoy music with Shuffle playback and repeat.
- You can use the same **'Select Device', 'Sorting' and 'File Option'** features as in the Recorded Files.



### 3.4 Photo

- If you press the RIGHT ARROW button in Music, you can go to the Image Photo menu.
- If you press the RED button or OK button, you can start the slide show of image files. Press the EXIT button to stop slide show.
  - **RED button** : Auto Slide show
  - **OK button** : Manual Slide show
- If you press the GREEN button, you can adjust the Slide Time, Repetition, Title, Down-scale.
- You can use the same **'Select Device', 'Sorting' and 'File Option'** features as in the Recorded Files.



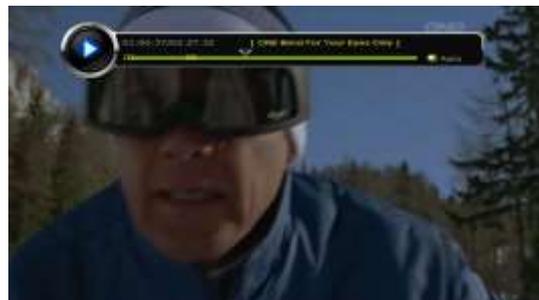
## 4. Bookmark

- When the Play bar is displayed, you may move to desired time and book mark it by pressing the RED button. Bookmark(s) are indicated with a **Green line** on the play bar. Also, you may press the RED button to activate the play bar to mark your bookmark(s).
- When the play bar is on, user can move / jump between the bookmarks by pressing the GREEN



button.

- If you wish to delete any Bookmarks, go to that bookmark by pressing the GREEN button, then press the RED button to delete the current bookmarks.



## 5. Trick mode

- The user can change the speed of a fast forward play with FF(Fast Forward) button. Press FF button to change the speed to **x2, x4, x6, and x8**. If you once again press FF button in its **x8** mode, it returns to normal(x1) speed play.
- You can also change rewind speed with the REWIND button. Press REWIND button to change the speed to **x2, x4, x6, and x8**. If you press the REWIND button again in it is at the **x8** mode, it returns to normal speed.
- You may press the PAUSE button at any time to pause a pre-recorded event. Press the PAUSE button once again to resume play of the recorded event.



# Menu Map

<i>Main Menu</i>	
 <p><i>System Tools</i></p>	<ol style="list-style-type: none"><li>1. Storage Manager</li><li>2. Timer Settings</li><li>3. Service List Manager</li><li>4. Data Transfer</li></ol>
 <p><i>Configuration</i></p>	<ol style="list-style-type: none"><li>1. Recording Option</li><li>2. Parental Control</li><li>3. Display Setting</li><li>4. Time Setting</li><li>5. Language Setting</li><li>6. A/V Output Setting</li></ol>
 <p><i>Installation</i></p>	<ol style="list-style-type: none"><li>1. Dish Setting</li><li>2. Service Search</li><li>3. Terrestrial Search</li><li>4. Cable Search</li><li>5. Network Setting</li><li>6. System Recovery</li><li>7. System Information</li></ol>
 <p><i>Utilities</i></p>	<ol style="list-style-type: none"><li>1. Calculator</li><li>2. Calendar</li><li>3. CAS</li><li>4. Plugin</li><li>5. YouTube</li></ol>

# Main Menu of Guide

To display the menu, press the MENU button at any time. You can select the sub menus by using the ARROW buttons.

The selected sub menu becomes highlighted. After selecting (highlighting) the sub menu you want to access, 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. System Tools

### 1.1 Storage Manager

The items in this menu allow you to access and control the storage devices that you want.

- Current Device : Select the storage device you want to access with the ARROW/OK buttons.
- Status : You can see the information of current connected devices, such as **'Mounted', 'Not Available'**
- File System : It shows the file system of the current device. You can also select desired file system that you want when you format the device.

**NOTE : You must select FAT32 file system, if you want to access the USB storage devices in Windows**

- Total : Displays total size of current device.
- Free : Displays free size of current device.
- Format : If you press the OK button to format current device, the device will be formatted with above file system.

**NOTE : When file system is 'Unknown', the device will be formatted with 'Journaled'.**

- Storage Check : Check the current connected device.
- Play List : Press OK button to move to **'Play List'** menu directly.



## 1.2 Timer Settings

Insert a new timer entry or modify an existing timer entry.

- To add new timer entry : Press the GREEN button. Timer Edit window will popup. You can set the specific start date, time, duration and service for its reservation. And you can choose one of Timer Modes as '**Once**' or '**Daily**' or '**Weekly**'. You can choose timer operation type as '**Recording**' or just to '**Play**'.
  - If you choose '**Recording**', it will start recording at that time.
  - If you choose '**Play**', it will change and tune to the service that you wish to watch.
  - If you set Alarm Confirm Message to '**On**', alarm message will activate. Or choose '**Off**' to disable.
- To modify existing timer entry : Choose the timer entry which you wish to modify and press the OK button.
- To delete an existing timer entry : Choose the timer entry that you want to delete and press the RED button.
- Press YELLOW button to enter to Calendar.
- Press BLUE button if you want to delete all the event(s).



**NOTE : If you reserve one or more event through the EPG menu, the reserved event(s) will be added to Timer Settings automatically.**



## 1.3 Service List Manager

Service List Manager menu will appear when you press the OK button.

You can select Edit Mode by pressing the YELLOW button.

- Lock Services : All service lists will be shown on the left side of the window, the middle will show the list of service to be locked. By using the ARROW and OK buttons, you may move the chosen service to the middle window to lock that service. Services can also be moved back from the middle to the left side to un-lock them.
- Move Services : All service lists will be shown on left side of the window, services to be moved will be shown on the middle window. Move the service to the middle window by using the ARROW and OK buttons, then the middle window service will be moved to a specified location when the desired location is selected from the left window.



- Delete Services : All service lists will be shown on left side of the window. By using the ARROW and OK buttons you may select services to be deleted by placing them in the middle window. The press the GREEN button to delete the selected services.



- Skip Services : All services will be shown on left side of the window, the middle window will only show the services that are chosen to be skipped. By using the ARROW and OK buttons you may move the selected services from the left to middle window to skip them.



- Set Favorite Services : Use the ARROW and OK buttons to select your desired favorite group. Once, favorite group is chosen, the left side window will show all service lists and the middle window will only show the selected services of the favorite group selected. By using the ARROW and OK buttons, you may ADD the desired services to a favorite group or DELETE any from the favorite group. The name of the favorite group can be edited by pressing the GREEN button.



- You can go to Select Favorite Group by pressing GREEN button. In this mode, you can select **Lock Group / Edit Group Name / Add Group / Delete Group**.

- Edit Services : All services name will be shown on the left side of the window. Move the highlighted bar to the service where you want to edit its name and press the OK button for Edit Service menu. Then move the highlighted bar which you want to edit. You can edit **Service Name, Video Stream Type, Video PID, Audio Stream Type, Audio PID, PCR PID**.



## 1.4 Data Transfer

When the data transfer task is in process, the Front USB slot is set to a default device slot. But, if no USB device is connected on a front USB slot, then the Rear USB slot is set as a device to be used for the data transfer process.

***NOTE : If no USB device is connected on either two (Front & Rear) USB slots, then the Menu item will not be available.***

- Transfer all System data to USB storage : If you want to transfer and use BOTH of the current system parameters and service data in the future, this menu will allow you to store all data to your USB device. Press OK button to store all current data to an external USB storage.
- Transfer Service data to USB storage : If you want to transfer and use ONLY the service data in the future, this menu allows you to store current service data. Press the OK button to store the current service data to your external USB storage. The service data can also be viewed and edited on a PC with an appropriate editor.
- Data download from USB storage device : This menu allows you to download the saved data from the external USB storage to your STB. Press OK button to download data.



## 2. Configuration

### 2.1 Recording Option

- Alarm Confirm Message : Turn **'ON'** this Alarm message to indicate and show the alert pop-up message when a reserved recording event is about to start. The alert message will show 3 minutes before the start time of the reserved recording event.
- Recording Stop Message :
  - Set *'On'* : When you press the STOP button while recording, then a confirmation window is displayed.
  - Set *'Off'* : When you press the STOP button while recording, the STB will stop the recording process immediately / instantly without asking the additional confirmation from the user.
- Extra Recording Time Before(Start) & After(Finish) :
  - You can add an extra recording time before start / after finish (**1min /2min /3min /4min /5min/ 10min/ 15min/ off**) to scheduled recording events. If you set an extra recording time by using the ARROW and OK buttons, the scheduled recording event will have a **'Start'** / **'Finish'** time of additional recording time added to the basic event. This option only works for events scheduled from the EPG. If you schedule a service recording in the Timer Settings menu, this option has no affect.
- TimeShift Start : You can choose the method of TimeShift function.
  - *Auto* : TimeShift function is automatically activated.
  - *Off* : TimeShift function will be disabled.
  - *Manual* : TimeShift will be activated when the Pause key is pressed.
- TimeShift Duration : You can adjust TimeShift duration in 30 minute intervals. (**Off /30min /60min /90min /120min**). This duration defines the maximum time length of the TimeShift as long as the storage device has enough memory space left.
- Playback Position Jump : When you use LEFT/RIGHT ARROW button to move back/forward through the recorded time bar, You can select the time intervals. (**10 Sec / 30 Sec / 1Min / 2 Min / 4 Min / 10 Min / Auto**).
- Playback Numeric Function : This selection of function defines the operation type of the NUMERIC buttons of your remote control unit (RCU) while the **'Playbar'** is displayed on the screen.
  - *Commercial Skip* : When the NUMERIC buttons (1 to 9) are pressed the video will move forward according to the NUMERIC buttons pressed. For example ; when **'1'** is pressed, 1min move forward, **'5'** is pressed, 5min move forward from current position. When **'0'** is pressed, it will move back for 1minute.
  - *Percentage Move* : When the NUMERIC buttons are pressed, the video will move to the location of that % percentage of numbers pressed. For example ; if you press **'10'**, you will move to the 10% location of the total video length. If you press **'99'**, you will move to the end of the video clip recorded.
- TimeShift Device : You can select the TimeShift Device you wish to use.
  - Hard Disk, USB1(Front), USB2(Rear Top), USB3(Rear Bottom), Network Drive.
- Record Device : You can select the Recording device you wish to use.
  - Hard Disk, USB1(Front), USB2(Rear Top), USB3(Rear Bottom), Network Drive.
- SATA Disk Select : You can choose between Internal, or External SATA HDDs.



## 2.2 Parental Control

User's access rights to a service and programs are controlled by a 4-digit secret code that is defined by the user. Whenever you attempt to access the parental control menu, a pop-up window will ask you to input a **PIN code**. (If necessary, you can change it.)

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

- Censorship : Set the parental guidance rating of highlighted censorship classification. The parental level is given as an age-based number.
- Change Pin code : To change your PIN code, input the new PIN code using the NUMERIC buttons. To verify the new PIN code, input the new PIN code again.
- System : Set the access rights to the System menu.
- Installation : Set the access rights to the Installation menu.
- Configuration : Set the access rights to the Configuration menu.
- Edit Service : Set the access rights to the Edit menu.
- Plugin : Plugin Set the access rights to the Plugin menu.



## 2.3 Display Setting

- Info Box position : Set a position of the information window.
- Info Box Display Time : Set the time duration of the information window being displayed on the screen after changing services.
- Info Box Event Type: Set the event type that display in left bottom part of the information window.
  - *Present Event with Time* : Display the present event name with time. (Default)
  - *Present and Follow Event* : Display the present and following event name.
- Volume Bar Display Time : Set the time duration of the volume bar being displayed on the screen after changing volume.
- EPG Time scale : You can set the time scale in hours which is displayed for a program in the EPG window.
- Zapping Mode : You can set the zapping mode as follows (zapping mode is when changing services).
  - *Black screen* : Display a black screen when changing between services.
  - *Freeze* : Display the last still picture when changing services.
- Simple Service List : To set the simple service list '**On**' to display or '**Off**' :
  - *On* : Press UP/DOWN ARROW button to display the simple service list while watching live TV.
  - *Off* : If you set Off, channel Up/Down when you press UP/DOWN ARROW button.
- Front Display Scroll : You can set how the VFD Display Scrolls.
  - *Once* : Scroll the service name only once.
  - *Continuous* : Continually scroll the service name, if the letters of the service name is over 12 characters.



- *Off*: Scroll off.
- Front LED Lighting Time : You can adjust the lighting time of the front LED.
- Front LED Brightness : You can adjust brightness of the front LED with 4 steps. By setting '*off*' this option, will turn off the front LED lighting.

## 2.4 Time Setting

- Time Setting : To set the current time, you can use two modes; **Auto** or **Manual**.
- Local Offset : Enter the offset value by using the standardized information of current service area.
- Daylight Saving : If you want to apply daylight saving, select the counter by using the ARROW buttons.
- Clock Mode : Select the type of clock display(12 Hours or 24 Hours) using ARROW buttons.
- Wake Up Mode : Enter the time for the receiver to automatically power **ON**. And you can choose one of Wake Up Mode as '**off**' or '**Once**' or '**Daily**' or '**Weekly**'.
  - *Wake Up Date* : Select the date when the STB is turn on. Press the OK button to display calendar.
  - *Wake Up Days* : Select a day of the week when the STB is turn on.
  - *Wake Up Time* : Enter the wake up time of the STB using the NUMERIC buttons.
  - *Wake Up Service* : Select the service when the STB is turn on. Press the OK button to display the service list.
- Sleep Mode : Enter the time for the receiver to automatically switch **OFF** and go to standby mode. And you can choose one of the Wake Up Mode as '**off**' or '**Once**' or '**Daily**' or '**Weekly**'.
  - *Sleep Date* : Select the date when the STB is turn off. Press the OK button to display the calendar.
  - *Sleep Days* : Select a day of the week when STB is turn off.
  - *Sleep Time* : Enter the turn-off time of the STB using the NUMERIC buttons.



## 2.5 Language Setting

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

**NOTE : The menu and operation languages can differ depending on the country sold. Available languages are subject to change without prior notice.**

- Audio Language : Select the default language for the audio when changing services. If no other language is provided, then the default language will be automatically selected.
- Subtitle Language : Select the default language for subtitles when changing service.
- Teletext Language : Select the default language for Teletext.
- User Font file : Select a font you want to use.



**NOTE : To show and use the User Font, please install a desired font file(\*.tff) to the /Var/Font directory(folder) of your receiver(STB) by using the network. Then press LEFT/RIGHT button to select a font and press OK button.**

## 2.6 A/V Output Setting

- TV Type : Select the TV types.(**PAL/NTSC/Auto**) In Auto mode, the STB is automatically selects NTSC or PAL according to the format the of the broadcast.
- TV Aspect Ratio Select the aspect ratio of the TV which is connected to the STB (**4:3/16:9**). This menu must be set prior to selecting the Display Format function.
- Display Resolution : Select the Display Resolution of the screen by using ARROW or OK button. You can also change the resolution with Resolution button in the remote. Each time you press the Resolution button, the resolution changes in the following sequence: 576i > 576p > 720p > 1080i > 1080p.



**NOTE :** Please note that your TV may not show a picture depending on the Display Resolution set by your STB as well as if set to PAL when NTSC is required or vice versa. If you set the Display Resolution as SD(576i), your TV cannot display anything when the TV is connected to the Component Video(YPbPr). If you set the Display Resolution as HD(more than 576p), your TV cannot display anything when the TV is connected to the SCART or Composite Video output of the STB. In case of HDMI, your TV can display a picture for all of the resolution settings of the STB. It is possible that your TV may not display a picture with 576i, or 1080p because some HDTV's do not support 576i or 1080p.

- Display Format : In case of a 4:3 ratio TV set, you can select **Letter Box** or **Pan&Scan**. In case of a 16:9 ratio TV set, you can select **Pillar Box** or **Full Screen**.
  - 16:9 Display format on 4:3 TV set
    - Letter Box** : You can see the full screen of 16:9, but top and bottom edges of your TV screen display black horizontal Pillars.
    - Pan&Scan** : The picture is displayed in full on your 4:3 TV screen, but left and right sides of the original picture cannot be displayed.
  - 4:3 Display format on 16:9 TV set
    - Pillar Box** : You can see the full screen of 4:3, but left and right sides of your TV screen display black vertical Pillars. 4:3
    - Full Screen** : The picture is displayed in full on your 16:9 TV screen, but left and right sides of the original picture is displayed with widening of the screen from left and right. Because of the artificial widening, the TV picture will be distorted.
- Video Output Mode : According to Display Resolution, you can select the **Video Output Mode**.
  - In case of More than 576p(HD) : The **'RGB'** output will be disabled automatically. You can select Video Output Mode (**CVBS, YPbPr, YC**).
  - In case of 576i(SD) : The **'YPbPr'** output will be disabled automatically. You can select Video Output Mode (CVBS, RGB, YC).
- HDMI Dolby Digital : Set the Dolby Digital mode **'On'** or **'Off'** in status of HDMI output.
- Dolby Digital Default : Set the Dolby Digital Default mode **'On'** or **'Off'**. If you set **'On'**, Dolby Audio will play on the service that support Dolby Audio.
- Sound Mode : Set the audio mode output among the RCA jack, optical SPDIF and HDMI (**Stereo/Mono/Left/Right**).
- Standby Power : You can select the standby power.
  - **'On'** : Front window displays clock besides standby red LED in case of standby mode.
  - **'Off'** : Front red window only displays standby LED in case of standby mode.
- Audio Sync Delay : To adjust Audio Sync. You can adjust from 0ms to 400ms.

### 3. Installation

The installation menu of your receiver will reflect the type of tuner(s) (Satellite, Terrestrial, Cable) you have installed.

**NOTE : If only one tuner is installed, it must be installed in the outer position (TUNER 1) .**

➤ Different types of Installation Menus based on the tuner settings

<b>S+S(S)</b>	<b>T+T(T)</b>	<b>C+C(C)</b>	<b>S+T</b>	<b>S+C</b>	<b>T+C</b>
Dish Setting	Terrestrial Search	Cable Search	Dish Setting	Dish Setting	Terrestrial Search
Satellite Search			Satellite Search	Satellite Search	Cable Search
			Terrestrial Search	Cable Search	
Network Setting					
System Recovery					
System Information					

### 3.1 Dish Setting

- Select the satellite/antenna and LNB settings for service search. The values that are set in this menu will be available for selection in other service searching menus.
- Satellite :  
Select the satellite which you want to do a search for.
  - Press the LEFT/RIGHT ARROW button to select the satellite.
  - If you press the OK button, the entire satellite list will be displayed.
  - Select the desired satellite name to search.
  - If the desired satellite name is not listed then select User Defined.
- Tuner Connection : You can set connection type, Separate or Loop-Through.



**NOTE : Tuner Connection menu is disabled if receiver is not configured with twin satellite tuners.**

- *Separate* : Set the connection type option to **'Separate'**, if each of the tuners are connected to different LNBs (TUNER 1 / TUNER 2) individually / independently, or when the tuners are connected through a multiswitch. Due to the independent & separate connections between the two Tuners & LNBs, the user can watch all the services scanned by one **TUNER 1**, while the other **TUNER 2** is recording.
- *Loop-Through* : Set the connection type option to **'Loop-Through'**, if you have connected the LNB OUT (TUNER 1) and LNB IN (TUNER 2) with a loop-through cable. In this case, you would have some limitations in using some features such as dual recording. This configuration allows both tuners to use a single LNB or a number of LNBs connected with a 22KHz or DiSEqC switch. However, this will limit the possible tuning range (Satellite & Polarization) of the 2nd tuner, while the 1st tuner is recording because the input signal of 2nd tuner is dependent of the signal which the 1st tuner is using.

**NOTE : User should make the appropriate connection by choosing the right tuner connections. Misconfiguration of these settings may cause the loss of signal reception. We strongly recommend you seek professional advice if your knowledge is limited.**

- Tuner : Select the tuner which you want to set (Tuner 1/ Tuner 2). If you set **'Loop-Through'** on the menu(**Installation-Dish Setting-Tuner Connection**), this menu(Tuner) will be disabled automatically.
- Frequency : Select the satellite frequency which you want to use to check the signal.
- LNB Power : Select the LNB power on or off.
- LNB Type : Select the LNB type.
- LNB Frequency : Select the local oscillator (L.O.). frequency that is specified for the LNB used.
  - Use the LEFT/RIGHT ARROW buttons to select the LNB frequency.
  - If the required LNB frequency is not listed, then enter the frequency manually using the NUMERIC buttons.
  - When you select Universal LNB type, both 9750 and 10600 are supported at the same time. And then the LNB 22KHz setting is disabled (as this is used for L.O. switching).
- LNB 22KHz : : If you use a separate 22KHz tone switch box, enable the 22KHz tone if you are connecting to the 22KHz side of the switch, and disable it if you are connection to the 0KHz side of the switch.
- DiSEqC Switch : If you use DiSEqC 1.0 or DiSEqC 1.1 switch, select one of the DiSEqC inputs.

### 3.2 Positioner Setting

- Satellite : Select the satellite which you want to search for the Service.
  - Press the LEFT/RIGHT ARROW button to select the satellite.
  - If you press the OK button, a complete satellite list will be displayed.
  - Select the wanted satellite name.
  - If the desired satellite name is not listed then select User Defined.



- Tuner : Select tuner that you want to set (**Tuner 1/ Tuner 2**). If you have set '**Loop-Through**' in the menu(**Installation-Dish Setting-Tuner Connection**), this menu(Tuner) will be automatically disabled.
- Frequency : Select the satellite frequency you want to use to check for a signal.

- Positioner : Select the positioner.
  - None : (No Positioner)
  - Using DiSEqC 1.2 :
    - Move* : To move the dish, press LEFT/RIGHT button.
    - Fine Move* : To move the dish in smaller steps, press the LEFT/RIGHT ARROW button.
    - Step* : Set to positioner moving steps as 1, 2, 3, 4
    - Positioner Command* : To use various positioner commands, press the OK button. Then, available positioner commands will appear.



- Using USALS :
  - Move* : To move the dish, press the LEFT/RIGHT button.
  - Fine Move* : To move the dish in smaller steps,, press the LEFT/RIGHT ARROW button.
  - Step* : Set to positioner moving steps as 1, 2, 3, 4
  - Dish Longitude* : Enter the longitude position of the antenna using the NUMERIC buttons.
  - Dish Latitude* : Enter the latitude using the NUMERIC buttons.
  - Go To* : Press the OK button to rotate the dish to the selected antenna position.



- Dish Setting : Press the OK button to move to **Dish Setting** menu directly.
- Service Search : Press the OK button to move to **Service Search** menu directly.

### 3.3 Service Search

You can select the following search mode.

#### 3.3.1 Satellite Search

- Auto Search Mode :

- *Satellite* : Press the OK button to select the target satellite to be searched.
- *Tuner* : Select tuner what you want to set (**Tuner 1/ Tuner 2**). If you set '**Loop-Through**' on the menu (**Installation-Dish Setting-Tuner Connection**), this menu (Tuner) will be automatically disabled.
- *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.
- *Time Calibration* : You can select '**Simple**', '**Full**' and '**Off**' to get TDT(Time Data Table) from each TP
- *Dish Setting* : Press the OK button to move to Dish Setting menu directly.
- *Positioner Setting* : Press the OK button to move to the Positioner Setting menu directly.
- *Start Search* : Press the OK button to start search.



- Manual Search Mode :

- *Satellite* : Press the OK button to select the target satellite for search.
- *Tuner* : Select tuner what you want to set (**Tuner 1/ Tuner 2**). If you set '**Loop-Through**' on the menu (**Installation-Dish Setting-Tuner Connection**), this menu (Tuner) will be automatically disabled.
- *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**)
- *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.
- *Dish Setting* : Press the OK button to move to Dish Setting menu directly.
- *Transmission* : You can select '**DVB**' and '**DVB-S2**'.
- *Start Search* : Press the OK button to start search.



- Blind Search Mode :

- *Satellite* : Press the OK button to select multiple satellites.
- *Tuner* : Select tuner what you want to set (**Tuner 1/ Tuner 2**). If you set '**Loop-Through**' on the menu (**Installation-Dish Setting-Tuner Connection**), this menu (Tuner) will be automatically disabled.
- *Frequency* : Set Auto to search whole frequency, Set Manual to search only desired frequency.
- *Polarity* :  
Select the polarity. (**All Polarity/Vertical/Horizontal**)
- *Search Type* : Select the search type.
- *Dish Setting* : Press the OK button to move to the Dish Setting menu directly.
- *Start Search* : Press the OK button to start a search.



- Advanced Search Mode :

- *Satellite* : Press the OK button to select the target satellite for search.
- *Tuner* : Select tuner what you want to set (**Tuner 1/ Tuner 2**). If you set '**Loop-Through**' on the menu (**Installation-Dish Setting-Tuner Connection**), this menu (Tuner) will be automatically disabled.
- *Frequency* : Select the frequency from the list to search.
- *Symbol rate* : Enter the symbol rate by 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.
- *Transmission* : You can select '**DVB**' and '**DVB-S2**'
- *Start Search* : Press the OK button to start a search.



### 3.3.2 Terrestrial Search

- Auto Search Mode

- *Search Type* :  
Select the search type. (**All Service/FTA Only/TV Only**)
- *Antenna 5V* : If you want to out the power of antenna, select the power on.
- *Start Search* : Press OK button to start search.



- Manual Search Mode

- *Channel* : Select the channel what you want to search
- *Frequency* : Information of channel frequency.
- *Bandwidth* : Information of channel bandwidth.
- *Search Type* :  
Select the search type. (**All Service/FTA Only/TV Only**)
- *Start Search* : Press OK button to start search.



### 3.3.3 Cable Search

- Auto Search Mode

- *Search Type* :  
Select the search type. (**All Service/FTA Only/TV Only**).
- *Start Search* : Press OK button to start search.



- Manual Search Mode

- *Frequency* : Select the frequency what you want to search. Or enter the frequency manually using NUMERIC buttons.
- *Symbol rate* : Enter the symbol rate using NUMERIC buttons.
- *QAM Mode* : Select the constellation using ARROW buttons. (**AUTO / QAM16 / QAM32 / QAM64 / QAM128 / QAM256**)
- *Search Type* :  
Select the search type. (**All Service/FTA Only/TV Only**)



- *Start Search* : Press OK button to start search.

### 3.4 Network Setting

To use a Network connected to the STB Ethernet port, you have to prepare the STB Network settings. When the STB and a PC are connected via a network, you can access the files of the STB storage device such as the SATA Hard Disk Drive (HDD) or USB storage device.



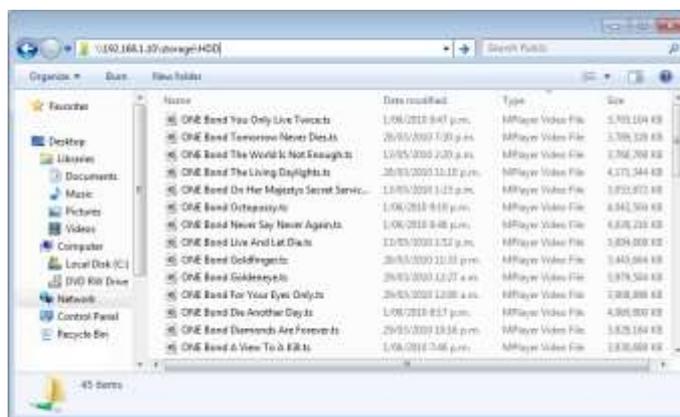
**NOTE : If you use DHCP function of router, you can set easily network configuration.**

- DHCP : You can select **On/Off** for the Dynamic Host Configuration Protocol (DHCP) to get the all configuration from the router.
  - **If you select 'On'** : You will obtain the configuration from network and be set up automatically. In this case, the remaining item (**IP Address, Subnet Mask, Gateway, First DNS, Second DNS**) are automatically set and **you don't have to** configure them manually.
  - **If you select 'Off'** : You have to input the IP address manually together with the following data.
  - **IP Address, Subnet Mask, Gateway, First DNS, Second DNS** : You can input the address with the OK button, NUMERIC buttons and the LEFT/RIGHT buttons. You can move to the next item of Subnet Mast with the DOWN button and you can configure the following items in the same way.
- Firmware Upgrade Server : To upgrade the firmware by downloading from a internet server.

**NOTE : Server installation and settings must be controlled by expert server manager. A storage device must be connected with your receiver(STB) when firmware upgrade from server.**

- MAC Address : This will display the MAC address of the STB Ethernet interface and is a fixed assignment unique to each STB.
- Control of the files via the network and your PC :

- Check the IP Address of the STB on the Network Setting menu.
- Press Enter button on your PC, after writing IP Address on the web browser address line.  
e.g. \\192.168.1.10\storage
- You can see the folder name of HDD, USB1, USB2 and USB3 in the Storage folder.
- **HDD** : SATA HDD (internal HDD or external-SATA)



- **USB1** : Front USB Storage Device
- **USB2** : Rear Top USB Storage Device
- **USB3** : Rear Bottom USB Storage Device
- You may be able to load and retrieve data between the PC and the STB via the browser

- Dynamic settings (RED key)
  - You can make your DDNS setting in this menu by pressing the RED colored button.
  - For more details about your DDNS settings, please ask your local DDNS service provider.



- Wireless LAN can be supported by using the 'USB to Wi-Fi' module connected (\*Option)
  - By pressing the BLUE colored button, you can automatically find and apply the settings for your AP.
  - For the information on the Wireless Wi-Fi settings, please refer to the AP manual.



**NOTE : The speed and latency of the Wireless LAN function is slower than the Wired LAN. So, it may take much longer to copy files.**

**NOTE : Only a limited range of Wireless LAN adaptors are supported. So, you MUST check that they are supported types BEFORE you purchase.**

### 3.5 System Recovery

- System restore to factory default : Restore the factory set values in case the user has encountered some problems after changing parameters in error. Press the OK button to erase all services and restore default setting.
- Reset Configuration data : Maintain the service data and reset the configuration data.
- Reset Service data : Maintain configuration data and reset the service data.
- System restore to stored position : Restore the stored values including service data and system parameters. Press the OK button to restore all data.
- Store system data : If you want to use system parameters and service data in the future, this menu allows you to store current state. Press the OK button to store current state.
- Delete store position : Delete stored system data.



### 3.6 System Information

This menu displays general information about the hardware and software version of your receiver.

## 4. Utility

### 4.1 Calculator

To use the calculator, highlight the calculator and press the OK button.



### 4.2 Calendar

To display the calendar, highlight the calendar and press the OK button. Utilize the ARROW buttons to choose the date. If you press PAGE UP/DOWN button, you can see the past/next month of the calendar.



### 4.3 CAS (Conditional Access System)

- Smart Card Slot

- *Conax smart card menu :*

- To watch scrambled services, you need to have an appropriate Conax smart card from the service provider. Insert a valid smart card into smart card slot. The message '**Smart card Initializing...**' will appear on the screen. After the message disappears, you can watch the service you want.

- *Smart card information :*

- You can view the current status of the smart card. Select the slot which you want to view using the ARROW buttons. And press the OK button.



- CAM Initializing

- To watch scrambled services, you need to have a Common Interface Conditional Access Module(CAM) and an appropriate smart card from the provider. Insert the CAM together with a valid smart card into CI slot (two slots available). The message of '**CI Initializing...**' will appear on the screen. After the message disappears, you can watch the service you want.



- CAM information

- You can view the current status of the CAM. Select the slot which you want to view using the ARROW buttons, and press the OK button. If the CAM is available, you can view information about each slot.

**NOTE : The displayed information of each CAMs may be different depending on the CAM used.**

- CI message

- *On :* To display the CI message on live TV service.

- *Off*: To disable the CI message on live TV service.

## 4.4 Plugin

If you have the program file for **Plugin**, you can download the file(s) to **Plugin** then enjoy the program.

- Download Plugin File
  - In the USB storage, please create a new folder name '**plugin**' and in this '**plugin**' folder, create a folder name '**bin**'. (**plugin > bin**)
  - Store(Copy) the **plugin** file in the '**bin**' folder.
  - Connect the USB storage to the receiver. When Software Download menu is appeared, then press LEFT/RIGHT ARROW buttons to move to User Data Download mode.
  - Press RED button to start download the **plugin** file that you want.



**NOTE : You can also download by Menu > System Tools > Data Transfer > Data download from USB storage.**

- Plugin Menu
  - **RED button** : To set the plugin Start Type. You can select Auto or Manual.
  - **GREEN button** : To Start the plugin. You will see '**Started**' in State if the plugin is started.
  - **BLUE button** : Press BLUE button if you want to delete the plugin file.



- We provide a special feature called **WebZeal** which is for Web-Browsing. You can simply enjoy the WebZeal when you want web surfing.
- **WebZeal** Plugin File Download. [64MB Model]
  - Stored the **WebZeal** file to the USB storage device.  
File name : '**WebZeal-201xxxx.tar.bz**'.
  - Connect the USB storage device to your receiver.
  - When USB storage device is connected, Software Download window menu will appear. Or you may go to **Data Transfer menu > Data download** from USB storage.
  - In this menu, press LEFT/RIGHT ARROW buttons to move to Uncompress File mode then you will see the file name '**WebZeal-201xxxx.tar.bz**'.
  - Press RED button to download the **WebZeal**.



**NOTE : Upgrading time takes approximately 10 minutes.**

- Executing **WebZeal** with USB Storage device
  - Stored the WebZeal file to the USB storage device.  
File name : '**WebZeal-201xxxx.tar.bz**'.
  - Connect the USB storage device to your receiver then go to **Menu > System Tools > Storage Manager**.
    - Set the Current Device to File Mount Drive.



- Set the Mount File Name to WebZeal-201xxxxx.mnt
- Press Connect then go to **Menu > Utilities > Plugin** to start the WebZeal.

**NOTE : If you are using WebZeal by File Mount Drive, current USB storage device will not allow to use PVR functions such as recording and time-shift. But it can be use when WebZeal is not in use.**

- **WebZeal** Option

- RED button : Press to set the current web page as home.
- GREEN button : Press to add the current web page to favorite.
- YELLOW/BLUE button : Press to adjust the page Zoom In and Zoom Out as you want.
- MENU button : Press MENU button to show simple internet menu.



#### 4.5 YouTube

- Required settings : Before you can enjoy the **YouTube** feature with your STB, please make sure of the following conditions.
  - Set-top-box should be connected with Ethernet cable, with proper network settings. (Please refer to the **“Network setting”** section of the manual).
  - Sufficient capacity for buffering is required via a USB memory stick or HDD.

**NOTE : a) The size of the required USB memory device for buffering depends on the size of the contents that you wish to watch from the YouTube service. So it is recommended to use a sufficiently large sized USB device for buffering.**

**b) Problems can be caused due to the network environment : Problems such as flickering and freezing of the screen can occur while you are watching the YouTube service. These kind of problems can often occur due to the latency and slow speed of the network. This may also cause the STB to be halted, it may be necessary to reset the STB.**

- About YouTube feature

- YouTube menu is located in the **‘Menu > Utilities > YouTube’**.
- On the right side of the screen, you can see the list of thumbnails of the contents.
- Press the PAGE UP/DOWN buttons to navigate quickly in the service list on the right.
- On the left side of the screen, the detailed information of the selected thumbnail is being displayed.-
- Use the ARROW buttons to navigate through the menu
- And press the OK / Play buttons to start viewing the selected content.
- While playing, use the PAUSE / STOP buttons to pause, or stop playing the service.
- Trick play modes (FAST FORWARD / REWIND) are not support in the STB’s YouTube menu.
- Use the VOLUME UP / DOWN / MUTE buttons to adjust the audio sound.
- Press the MENU / EXIT buttons to exit from the service, or to the menu while you are watching the service.



- Using the Hot (colored) buttons in the YouTube menu :
  - RED (Full screen) : Press this button to view the service in full screen size. This button only functions while the service content is being played.
  - Yellow (Search) : Press this button and input the name of the content that you wish to search in YouTube. When the virtual keyboard is displayed, you can also use the dedicated hot colored buttons for each functions.
  - Green (Location) : Press and choose your location from the list of world-wide, and many country names in this list. Based on your selected location, corresponding contents list will be provided.
  - Blue (Category) : Press this blue button to view the list of categories, then choose the one you prefer to view the list of contents in the selected category.

## 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>✓ <b>Check the STB main power switch 'ON' at the rear of the STB.</b></li> </ul>
No Picture	<ul style="list-style-type: none"> <li>✓ See '<b>Does not display any message on the front panel</b>' above.</li> <li>✓ To match the STB system with your TV system (PAL/NTSC), press <i>V.Format</i> button until a picture is displayed.</li> <li>✓ Check the video output port is firmly connected to the TV or VCR.</li> <li>✓ Check that you have selected the Video Input on your TV.</li> <li>✓ Press the STB button on the remote to assure you are controlling the STB and no other device with the remote.</li> <li>✓ Check the brightness level of the TV.</li> <li>✓ Check the resolution that your TV supports, and set the proper resolution with the remote <i>Resolution</i> button to obtain a picture.</li> </ul>
Poor picture quality	<ul style="list-style-type: none"> <li>✓ See '<b>No Picture</b>' above.</li> <li>✓ Check the signal level, if this is low then tries adjusting the alignment of your dish.</li> </ul>
No Sound	<ul style="list-style-type: none"> <li>✓ See '<b>No Picture</b>' 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 that the STB button lights up when you press any button</li> <li>✓ Check and replace batteries.</li> </ul>
No or Bad Signal	<p>[ For DVB-S2 tuner model only ]</p> <ul style="list-style-type: none"> <li>✓ Check the LNB ; Replace the 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 and programmed the STB to match the connections to the switch.</li> </ul> <p>[ For DVB-T(T2) tuner model only ]</p> <ul style="list-style-type: none"> <li>✓ Check the connection of Aerial cable.</li> </ul> <p>[ For DVB-C tuner model only ]</p> <ul style="list-style-type: none"> <li>✓ Check the Cable connection.</li> </ul> <p><b>[Common features for all types of DVB receivers ]</b></p> <ul style="list-style-type: none"> <li>✓ Check the 'Signal Level' and the 'Signal Quality'.</li> </ul>

# Specifications

Tuner & Channel Decoder [S2 tuner]	
Input Connector	F-type, IEC 169-24, Female
Loop through out	F-type, IEC 169-24, Female
Frequency Range	950MHz ~ 2150MHz
Input Impedance	<b>75Ω, unbalanced</b>
Signal Level	-65 to -25dBm
LNB Power	13/18VDC, max.400mA
22KHz Tone	(22±2)KHz, (0.6±0.2)V
DiSEqC Control	V1.0/1.2/USALS Compatible
Demodulation	QPSK / 8PSK
Input Symbol Rate	2 ~ 45 Ms/s(QPSK of DVB-S) 2 ~ 45 Ms/s(QPSK of DVB-S2) 2 ~ 37 Ms/s(8PSK of DVB-S2)
FEC Decoder	1/2, 2/3, 3/4, 5/6 and 7/8 with Constraint Length K=7(DVB-S) 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9 and 9/10 (DVB-S2)

Tuner & Channel Decoder [T tuner]	
Input Connector	IEC 169-2, Female
Loop through out	IEC 169-2, Male
Frequency Range	VHF III : 174~230 MHz UHF IV : 470~606 MHz UHF V : 606~862 MHz
Demodulation	OFDM
Channel Bandwidth	6, 7, 8 MHz
FET mode	2K, 8K
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32

Tuner & Channel Decoder [T2 tuner]	
Input Connector	IEC 169-2, Female
Loop through out	IEC 169-2, Male
Frequency Range	VHF III : 174~230 MHz UHF IV : 470~606 MHz UHF V : 606~862 MHz
Demodulation	OFDM
Channel Bandwidth	6, 7, 8 MHz
FET mode	1K, 2K, 4K, 8K, 16K, 32K
Code Rate	1/2, 2/3, 3/4, 3/5, 4/5, 5/6
Guard Interval	1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128

---

## Tuner & Channel Decoder [C tuner]

---

Input Connector	IEC 169-2, Female
Loop through out	IEC 169-2, Male
Frequency Range	50MHz ~ 1GHz
Demodulation	16, 32, 64, 128, 256 QAM(for Annex A/C) 64, 256 QAM(for Annex B)
IF Bandwidth	8 MHz(-3dB) TYP(for Annex A/C) 6 MHz(-3dB) TYP(for Annex B)
Symbol rate	1 Msps ~ 7 Msps(for Annex A/C) 5.057 Msps(for 64QAM, Annex B) 5.361 Msps(for 256QAM, Annex B)

---

## MPEG Transport Stream A/V Decoding

---

Transport Stream	H.264(MPEG-4 part 10, MPEG-4/AVC and H26L) MPEG-II ISO/IEC 13818-2/11172-2
Profile Level	MPEG-4/AVC MP@L4, MPEG-II MP@HL
Input Rate	Max. 80Mbit/s
Video Formats	4:3 Letter Box, 4:3 PanScan, 16 : 9
Video Resolution	720 x 576i, 720 x 576p, 720 x 480i, 720 x 480p 1280 x 720p, 1920 x 1080i, 1920 x 1080p (only available on HDMI)
Audio Decoding	Dolby Digital, MPEG-1 Layer 1,2 and 3
Audio Mode	Stereo/Joint stereo/Mono, Dolby Digital bitstream
Sampling Rate	32KHz, 44.1KHz and 48KHz(According to input)

---

## Main System

---

Main Processor	STi chipset
Memory	Flash-ROM : 64 Mbyte SDRAM : 256 Mbytes EEPROM : 256 bytes

---

#### Audio / Video & Data IN/OUT

---

TV SCART	RGB, Y/C, CVBS Video, Audio L, R Output
VCR SCART	CVBS Video, Audio L, R Output
	RGB Video input, CVBS Video, Audio L, R Input
RCA	CVBS Video Output, Audio L, R Output
Component	YPbPr Video Output
HDMI	Video & Audio Output
OPTICAL	Dolby Digital (SPDIF)
RS-232C	9 pin D-SUB (Male) type, Transfer rate 115Kbps
USB	USB 2.0 Host Front & Rear Support. (5V DC 500 mA Max.)
Ethernet	RJ45 connector, 100 Mbps
e-SATA	External SATA

---

#### Front Panel

---

Slot	1 USB 2.0 Host port 2 Common interface PCMCIA slot 2 Smart Card Slots
Display	VFD(Vacuum Fluorescent Display) - 12Digit
Buttons	5 Buttons (Standby, CH UP/DOWN, Volume UP/DOWN)

---

#### Power Supply

---

Input Voltage	AC 100 ~ 250V, 50/60Hz
Type	SMPS
Power Consumption	Max. 55W
Standby Power	Max. 1W
Protection	Separate Internal Fuse & Lighting protection

---

#### Physical Specification

---

Size (W x H x D)	340mm X 60mm X 230mm
Weight (Net)	2.0 Kg (Excluding HDD)
Operating Temp.	0°C ~ +45°C
Storage Temp.	-10°C ~ +70°C

# Code Table for Universal Remote Control Unit

## 1. Key Table

No	KEYNAME	TV	DVD	VCR
1				
2		V		
3			V	V
4		V	V	V
5		V		
6	V.Format			
7	SLEEP			
8	TV/RAD, Source	V		
9	Resolution			
10			V	V
11			V	V
12			V	V
13			V	
14			V	
15			V	V
16			V	V
17			V	V
18				
19		V		
20		V		
21		V		
22		V		
23	INFO			
24	RECALL			
25	MENU	V	V	
26	EXIT	V	V	
27		V	V	
28		V	V	
29		V	V	
30		V	V	
31	OK	V	V	
32				
33	FAV			
34				

No	KEYNAME	TV	DVD	VCR
35	VOL +	V		
36	VOL -	V		
37	CH +	V		V
38	CH -	V		V
39	EPG			
40				
41				
42				
43				
44	0	V	V	V
45	1	V	V	V
46	2	V	V	V
47	3	V	V	V
48	4	V	V	V
49	5	V	V	V
50	6	V	V	V
51	7	V	V	V
52	8	V	V	V
53	9	V	V	V
54				
55				

## 2. TV Brands

Refer to '5. Multi-Brand IR Remote Controller Setting' in the 16 page of this manual

TV Brands	Code				
ADMIRAL	050	134			
AKAI	093	049	123		
ALBA	068				
ALBIRAL	116				
ALCATEL	022				
AMSTRAD	158	021			
ANAM	155	156	157		
ARC EN CIEL	028	039	043	145	081
ARISTONA	099	049	050	019	142
	149	078			
ARTHUR MARTIN	053	139	117	120	122
	123	125	128		
ASA	050	055	057	113	134
ATLANTIC	099	111			
AUDIOSONIC	054				
AUSIND	053				
AUTOVOX	099	144	055	019	057
	069				
BAIRD	083				
BASICLINE	006				
BAUR	011				
BEKO	023	049			
BLAUPUNKT	094	100	102	111	114
BRANDT	028	039	040	043	145
	081				
BRION VEGA	050				
BRUNS	048	050			
BSR	059	110	132		
BUSH	033	068	124	074	
CENTURY	098	101	050	079	136
CGE	016	101	124	079	132
	136				
CIHAN	065				
CLARIVOX	048	116			
CONDOR	099	111			
CONTEC	087				
CONTINENTAL EDITION	028	039	040	043	145
	081				
CROSLEY	101	050	109		
CROWN	147				
CTC CLATRONIC	046				

<i>TV Brands</i>	<i>Code</i>				
DAEWOO	089				
DECCA	099	060	063	115	118
DEGRAAF	036				
DIXI	049	090			
DRYNATRON	049				
DUAL	099	141			
DUAL-TEC	096	099	132		
DUMONT	046	050	057	073	
ELBE		016	116		
ELBIT	065				
ELCIT	046	097	103	050	109
	127	132			
ELMAN	046	132			
ELTA	090				
EMERSON	158	098	050		
ERRES	049	142			
EUROPHON	098	046	097	099	051
	115	132			
FERGUSON	146	040	041	150	057
	061	116	149		
FIDELITY	099	149			
FINLUX	034	046	053	055	057
	109	113	073	074	079
FISHER	015	048	050	052	109
	136				
FORGESTONE	149				
FORMENTI	099	053	109	111	125
FORTRESS	137				
FRABA	075				
FRONTECH	054				
FUJITSU	025				
FUNAI	054	059			
GBC	109	132			
GEC	099	060	109	115	134
	088				
GELOSO	103	109	132	134	090
GOLDSTAR	092	003	017	099	049
	075	076	077	090	152
GOODMANS	033	049	060	077	
GORENJE	066	136			
GREATZ	001	058	109	122	123
	128	129	130	134	

<i>TV Brands</i>	<i>Code</i>				
GRANADA	033	099	049	058	060
	142	115	125	134	
GRUNDIG	094	100	057	058	108
	112	114	082		
HANSEATIC	033	047	099	049	109
	139	111			
HANTAREX	097				
HEMMERMANN	127				
HIFIVOX	028	039	043	145	081
HINARI	158	033	045	143	090
HITACHI	014	033	034	036	099
	145	056	109	139	110
	067	117	132	134	084
	091	081	088		
HYPER	093	099			
IMPERIAL	016	101	124	079	132
	133				
INGELEN	001	058	109	122	128
	129	130	134		
INKEL	000				
INNO HIT	093	098	097	099	143
	077	090			
INTERFUNK	047	049	050	145	058
	109	142	123	128	129
	091				
IRRADIO	093	143	053	077	090
ITT	001	140	058	105	109
	122	123	128	148	129
	130	134	135	083	089
JVC	033	154			
KTV	099				
KAISUI	006				
KARCHER	006				
KENDO	098				
KENNEDY	144	019	109		
KORTING	050	059	111		
KRIESLER	099	049	050	019	142
	149	078			
LENOIR	099				
LOEWE OPTA	008	097	047	049	050
	115	072			
LOGIK	118	149			

<i>TV Brands</i>	<i>Code</i>				
LUMA	049	120	134		
LUXOR	058	139	117	120	123
	129	135	083		
McMICHAEL	088				
MEMOREX	090				
MAGNAFON	046	097	099	051	053
	115				
MARANTZ	049				
MATSUI	158	099	106	060	118
	068	134	090		
MAGNADYNE	046	097	103	050	109
	115	127	132		
METZ	094	050	114	133	
MINERVA	094	100	057	058	114
MISTRAL	149				
MITSUBISHI	033	035	047	049	050
	062	118	119	148	080
	138				
MIVAR	097	099	115	077	
MULTITECH	046	099	115	136	
MURPHY	134				
MAONIS	096	144	019	110	134
NATIONAL	042	104	109		
NEC	033	085			
NECKERMANN	099	050	139	120	136
NEI	049				
NIKKAI	060				
NOBLEX	015				
NOBLIKO	098	046	099	053	057
NOGAMATIC	028	039	043	145	081
NOKIA	001	140	058	105	109
	122	123	128	148	129
	130	134	135	083	089
NORDMENDE	028	032	039	043	145
	131	091	081		
OCEANIC	109	064	123		
ONCEAS	099				
OPTONICA	137				
ORION	158	059	118	068	127
	090				
OSAKI	060				
OSIO	077				

<i>TV Brands</i>	<i>Code</i>				
<i>OSUME</i>	<i>087</i>				
<i>OTTO VERSAND</i>	<i>033</i>	<i>047</i>	<i>049</i>	<i>109</i>	<i>139</i>
<i>P.TACTTRON</i>	<i>065</i>				
<i>PAEL</i>	<i>099</i>	<i>053</i>			
<i>PANASONIC</i>	<i>030</i>	<i>042</i>	<i>095</i>	<i>104</i>	<i>107</i>
	<i>109</i>	<i>121</i>	<i>126</i>		
<i>PATHE CINEMA</i>	<i>099</i>	<i>111</i>	<i>116</i>	<i>132</i>	
<i>PERDIO</i>	<i>060</i>				
<i>PHILCO</i>	<i>016</i>	<i>030</i>	<i>101</i>	<i>050</i>	<i>109</i>
	<i>124</i>	<i>079</i>	<i>132</i>	<i>136</i>	
<i>PHILIPS</i>	<i>009</i>	<i>010</i>	<i>013</i>	<i>018</i>	<i>024</i>
	<i>099</i>	<i>049</i>	<i>050</i>	<i>019</i>	<i>142</i>
	<i>148</i>	<i>149</i>	<i>078</i>	<i>088</i>	
<i>PHOENIX</i>	<i>099</i>	<i>053</i>	<i>109</i>	<i>111</i>	<i>125</i>
<i>PHONOLA</i>	<i>099</i>	<i>049</i>	<i>050</i>	<i>019</i>	<i>142</i>
	<i>149</i>	<i>078</i>			
<i>PIONEER</i>	<i>020</i>	<i>049</i>	<i>145</i>	<i>091</i>	
<i>PRANDONI-PRINCE</i>	<i>098</i>	<i>097</i>	<i>053</i>	<i>115</i>	<i>134</i>
<i>PREMIER</i>	<i>124</i>				
<i>PRINCE</i>	<i>098</i>	<i>097</i>	<i>053</i>	<i>134</i>	
<i>PROTECH</i>	<i>049</i>	<i>054</i>			
<i>PYE</i>	<i>099</i>	<i>049</i>	<i>050</i>	<i>019</i>	<i>142</i>
	<i>148</i>	<i>149</i>	<i>078</i>		
<i>QUASAR</i>	<i>046</i>	<i>097</i>	<i>051</i>	<i>053</i>	<i>077</i>
<i>QUELLE</i>	<i>047</i>	<i>099</i>	<i>100</i>	<i>049</i>	<i>053</i>
	<i>055</i>	<i>057</i>	<i>058</i>	<i>111</i>	<i>112</i>
	<i>113</i>	<i>114</i>	<i>118</i>	<i>123</i>	<i>073</i>
	<i>074</i>	<i>128</i>			
<i>RADIOLA</i>	<i>099</i>	<i>049</i>	<i>050</i>	<i>019</i>	<i>142</i>
	<i>149</i>	<i>078</i>			
<i>RADIOMARELLI</i>	<i>046</i>	<i>097</i>	<i>103</i>	<i>050</i>	<i>109</i>
	<i>062</i>	<i>127</i>	<i>132</i>		
<i>RANK</i>	<i>074</i>				
<i>RBM</i>	<i>074</i>				
<i>REDIFFUSION</i>	<i>062</i>	<i>123</i>	<i>134</i>		
<i>REX</i>	<i>096</i>	<i>144</i>	<i>019</i>	<i>141</i>	<i>110</i>
	<i>069</i>	<i>134</i>			
<i>ROBOTRON</i>	<i>048</i>	<i>050</i>			
<i>RTF</i>	<i>048</i>	<i>050</i>			
<i>SABA</i>	<i>028</i>	<i>031</i>	<i>032</i>	<i>037</i>	<i>039</i>
	<i>040</i>	<i>043</i>	<i>097</i>	<i>050</i>	<i>145</i>
	<i>115</i>	<i>120</i>	<i>086</i>	<i>091</i>	<i>081</i>

<i>TV Brands</i>	<i>Code</i>				
SAISHO	158	099	118	119	068
	090				
SALORA	053	139	117	120	122
	123	125	128	135	083
SAMBERS	046	097	051	053	115
	077				
SAMPO	121				
SEG	046				
SEI	158	059			
SAMSUNG	015	026	099	054	077
	136	090	151	153	
SANYO	001	002	005	033	044
	048	060	113	118	071
	054		136		
SBR	049	142	148	149	088
SCHAUB LORENZ	001	058	109	122	123
	128	129	130	134	
SCHNEIDER	096	099	049	050	052
	019	141	109	142	125
	149	078	132		
SELECO	016	096	144	019	141
	110	069	134		
SHARP	033	087	137		
SIAREM	046	097	050	109	115
SICATEL	116				
SIEMENS	005	094	036	100	111
	114	087			
SIERA	099	049	050	019	142
	149	078			
SILVER	054				
SINGER	016	046	050	109	
SINUDYNE	158	046	050	059	109
	127				
SONOKO	049	090			
SONY	146	007	027	033	038
	118				
STERN	096	144	019	110	069
	134				
TANDBERG	133				
TANDY	099	060	137		
TASHIKO	002	033			

<i>TV Brands</i>	<i>Code</i>				
TATUNG	099	060	063	065	115
	118				
TEC	096	099	132		
TELEAVIA	028	039	040	043	145
	091	081			
TELEFUNKEN	028	041	145	150	086
	091				
TELETECH	090				
TELEVIDEON	099	053	109	111	125
TENSAI	049				
TOSHIBA	004	016	033	070	074
TRANS CONTINENTS	098	097	053	134	
THOMSON	012	028	032	039	040
	043	145	091	081	
THORN-FERGUSON	014	040	041	054	150
	057	061	116	149	086
TOCOM	029				
TRIUMPH	158				
UHER	052	111	125		
ULTRA VOX	098	046	099	050	109
	120				
UNIVERSUM	092	034	054	077	
UNIVOX	116				
VEGAVOX	079				
VOXSON	050	134			
WATSON	111				
WATT RADIO	046	099	051	109	116
	127				
WEGA	033				
WHITE WESTINGHOUSE	099	111			
YOKO	099				
ZANUSSI	096	144	019	110	069
	134				
ZOPPAS	096	144	019	110	134

### 3. VCR Brands

<i>VCR Brands</i>	<i>Code</i>				
AKAI	122	133	142	152	132
ALBA	108	120			
AMSTRAD	111				
ANITSCH	109				
ARC EN CIEL	142	156	152		
ARISTONA	145	131			
ASA	118				
AWIA	111	142			
BAIRD	142	133			
BAUER. BOSCH	114	143			
BRIONVEGA	141				
BUSH	108	120			
BLAUPUNKT	114	143	155	131	154
	140				
BRANDT ELECTRONIQUE	142	156	152		
C. EDISON	141				
CANON	114				
CAPEHART	120				
CGE	111	142	152		
CONTINENTAL EDISON	142	156	152		
CRAIG	100	113			
CURTIS MATHES	119				
DAEWOO	101	120	121		
DAYTRON	120				
DECCA	111	142			
DEGRAAF	103	106	111	145	118
DUAL	142	152			
DUMONT	103	111	118		
DYNATECH	111				
EMERSON	102	110	111	119	125
FERGUSON	142	159	130	152	134
	136				
FIDELITY	111				
FINLANDIA	103	118			
FINLUX	103	106	111	118	
FISHER	100	103	105		

<i>VCR Brands</i>	<i>Code</i>				
<i>FUNAI</i>	111				
<i>GE</i>	119				
<i>GENERAL</i>	114				
<i>GOLDSTAR</i>	104	162			
<i>GOODMANS</i>	108	111	146		
<i>GRAETZ</i>	141	142	156	150	152
	138				
<i>GRANADA</i>	103	105	118		
<i>GRUNDIG</i>	114	143	118	155	131
	153	154			
<i>HANSEATIC</i>	143				
<i>HARMAN-KARDON</i>	104				
<i>HIFIVOX</i>	142	156	152		
<i>HINARI</i>	102	108	124	127	
<i>HITACHI</i>	106	107	111	142	157
<i>IMPERIAL</i>	111				
<i>INGELEN</i>	142	156	152	138	
<i>INGERSOL</i>	127				
<i>ITT</i>	105	141	142	156	150
	152	133	138		
<i>JENSEN</i>	142				
<i>JVC</i>	142	156	160	130	152
	163				
<i>KENWOOD</i>	105	142	160		
<i>KRIESLER</i>	145	131			
<i>KUBA</i>	143				
<i>LLOYD</i>	111				
<i>LOEWE OPTA</i>	114	118	129	131	
<i>LOGIK</i>	108	127			
<i>LUXOR</i>	133	138			
<i>MAGNADYNE</i>	141				
<i>MAGNASONIC</i>	138				
<i>MAGNAVOX</i>	119				
<i>MARANTZ</i>	104	114	146	118	131
<i>MATUI</i>	110	125	127		
<i>MEMOREX</i>	100	103	105	111	145
<i>METZ</i>	114	143	131	154	137

<i>VCR Brands</i>	<i>Code</i>				
MGA	117				
MINERVA	155	154			
MINOLTA	106	107			
MITSUBISHI	160	117	149		
MTC	111	113			
MULTITECH	108	111			
MURPHY	111				
NAONIS	142	156	152		
NATIONAL	140				
NEC	104	142	160	152	
NECKERMANN	102	141	114	142	152
NOGAMATIC	142	156	152		
NOKIA	103	105	141	142	156
	150	152	133	138	
NORDMENDE	139	142	156	152	153
	135				
OPTONICA	145	146			
ORION	102	110	125	127	
OSAKI	111				
OTTO VERAND	143				
P. CINEMA	114				
PALLADIUM	141	114			
PANASONIC	123	151	140		
PATHE MARCONI	142	156	152		
PENTAX	106	107			
PERDIO	111				
PHILIPS	112	114	145	146	118
	129	131			
PHONOLA	114	145	118	129	131
PIONEER	160				
PORTLAND	120				
PROLINE	111				
PYE	114	145	118	129	131
QUARTZ	105				
QUELLE	102	144	154		
RADIOLA	145	131			
RADIOMARELLI	141				

<i>VCR Brands</i>	<i>Code</i>				
RCA	119				
REALISTIC	100	103	105	111	113
	145	146			
REX	142	156	152		
SABA	139	142	156	152	135
SAISHO	102	110	125	127	
SALORA	105	117			
SAMSUNG	113	119	132	161	
SANSUI	142	160			
SANYO	100	103	105	125	138
SBR	118	129			
SCHAUB LORENZ	141	142	156	150	152
	138				
SCHNEIDER	108	111	145	131	
SEI-SINUDYNE	127				
SELECO	142	156	152		
SENTRA	120				
SHARP	145	146	1105	148	
SHINTOM	108				
SIEMENS	114	143	155	131	154
	138				
SIERA	145	131			
SINUDYNE	127				
SONY	144	115	116	126	128
STERN	142	156	152		
STS	106				
SUNKAI	125				
SYLVANIA	111	117			
SYMPHONIC	111	117			
TASHIKO	111				
TATUNG	111	142			
TEAC	111	142			
TEKNIKA	111				
TELEAVIA	142	156	152		
TELEFUNKEN	142	156	152		
TENOSAL	108				
THOMSON	142	156	152		

<i>VCR Brands</i>	<i>Code</i>				
<i>THORN-FERGUSON</i>	<i>139</i>	<i>142</i>	<i>159</i>	<i>130</i>	<i>152</i>
	<i>134</i>	<i>136</i>			
<i>TOSHIBA</i>	<i>101</i>	<i>142</i>	<i>156</i>	<i>117</i>	<i>158</i>
	<i>152</i>				
<i>TOTELEVISION</i>	<i>113</i>				
<i>UHER</i>	<i>142</i>				
<i>ULTRA VOX</i>	<i>141</i>				
<i>UNITECH</i>	<i>113</i>				
<i>UNIVERSUM</i>	<i>141</i>	<i>114</i>	<i>143</i>		
<i>URANYA</i>	<i>141</i>				
<i>VECTOR</i>	<i>104</i>				
<i>VICTOR</i>	<i>142</i>	<i>160</i>			
<i>VIDITAL</i>	<i>141</i>				
<i>WESTING HOUSE</i>	<i>141</i>				
<i>WARDS</i>	<i>119</i>				
<i>YAMAHA</i>	<i>104</i>	<i>142</i>			
<i>ZANUSSI</i>	<i>142</i>	<i>156</i>	<i>152</i>		
<i>ZENDER</i>	<i>152</i>				
<i>ZOPPAS</i>	<i>142</i>	<i>156</i>			

#### 4. DVD Brands

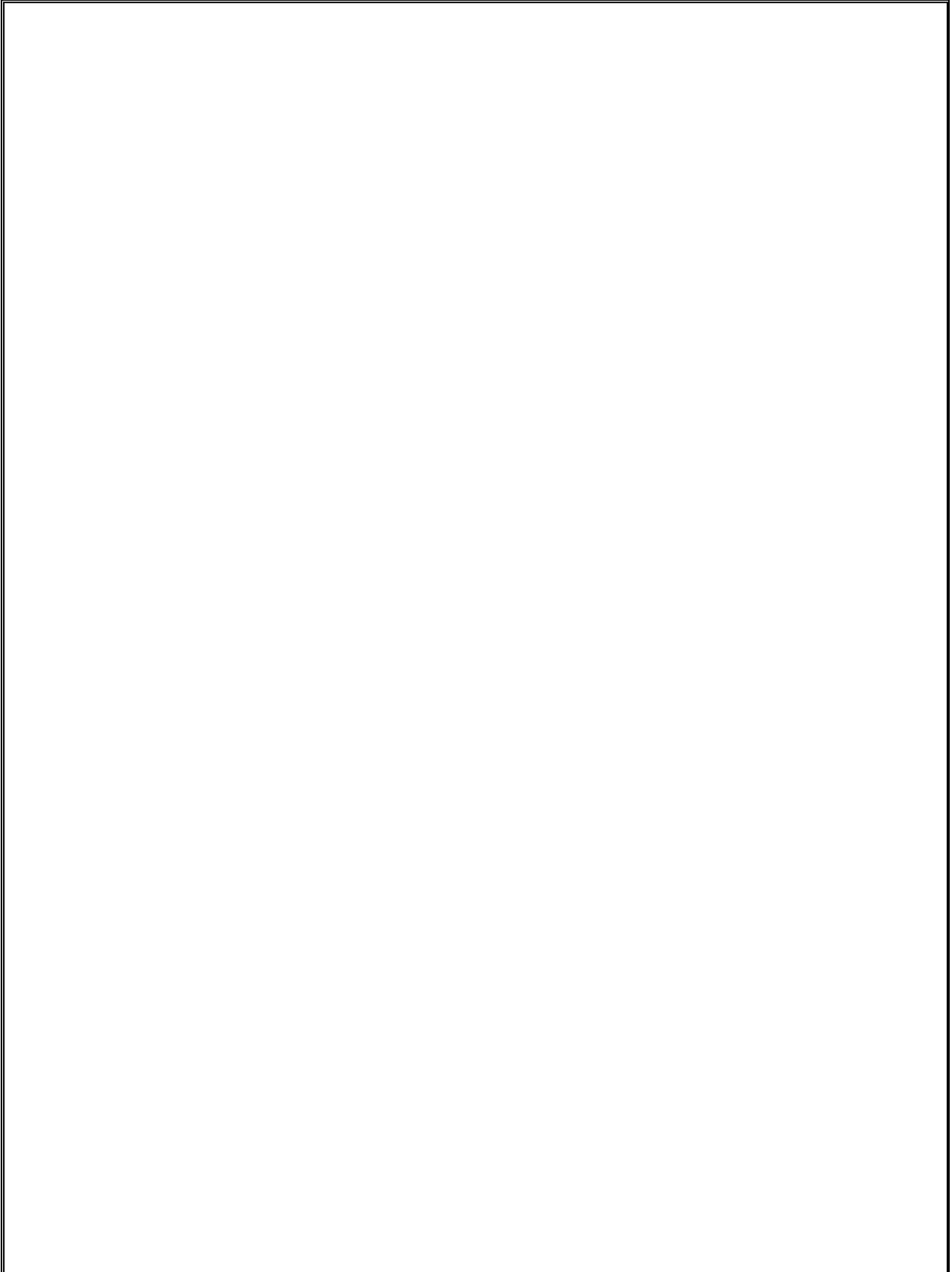
<i>DVD Brands</i>	<i>Code</i>				
AIWA	002				
AKAI	007	044			
ALBA	036				
ANAM	074				
ANSONIC	152				
AMES	051				
APEX	003	011	025	037	039
	044	047	048	054	040
AUDIOSONIC	044				
A-TREMD	061				
BROKSONIC	000				
BULE SKY	158	036			
BUSH	067	044	000	152	
CAT	036				
CLASSIC	051				
CELESTIAL	158				
CENTREX	158				
CINEULTRA	036				
CONIA	158				
COMBRIDGE AUDIO	088				
CROWN	044				
CYBERCOM	152				
CYBERRHOME	061				
DAEWOO	005	045	052		
DAEWOO INTERNATIONAL	036				
DEC	036				
DENON	041	050			
DENVER	036				
DENZEL	083				
DIGITREX	011	158			
DIK	152				
DK DIGITAL	152				
DRAGON	152				
DUAL	083	152			
ELTA	004	010	044		
ENZER	083				
EMERSON	013	019	032	067	
FISHER	015				
FUNAI	019	032			
GE	044	062			
GOLDSTAR	013	067			
GOLEMANS	044				
GO-VIDEO	012	016	021		

<i>DVD Brands</i>	<i>Code</i>				
GRADIENTE	008				
HARMAN/KARDON	023				
HITEKER	011	158			
HOHER	152				
HITACHI	001	035	004	070	067
	083				
INTEGRA	057				
JEKEN	036				
JVC	014	028	067		
KENWOOD	036	041			
KENDO	036				
KISS	083				
KLH	044				
KONKA	042	049	056	063	
KOSS	008				
LASONIC	006				
LECSON	088				
LENCO	036	152			
LENOXX	044				
NEXIA	036				
LIFETEC	152				
LG	013	072	067	059	
LUXMAN	004	070			
MAGNAVOX	026	027			
MARANTZ	013	026	027		
MDS	036				
MEDION	152				
MEMOREX	018				
MICROSOFT	020				
MICROSTAR	152				
MINTEK	044				
MITAUBISHI	055				
MONYKA	083				
MUSTEK	051				
NAD	013	065			
NAKAMICHI	058				
NORDMENDE	152				
MBO	044				
NEUFUNK	083				
ONKYO	056				
OMNI	044	036			
OPTIMUS	001				
ORITRON	008				
PALSONIC	158	067			
PANASONIC	041	068			

<i>DVD Brands</i>	<i>Code</i>				
<i>PACIFIC</i>	<i>018</i>	<i>152</i>			
<i>PHILIPS</i>	<i>026</i>	<i>027</i>	<i>064</i>	<i>045</i>	
<i>PHONOTREND</i>	<i>036</i>				
<i>PIONEER</i>	<i>001</i>				
<i>PROLINE</i>	<i>008</i>	<i>158</i>	<i>085</i>		
<i>PROSCAN</i>	<i>062</i>				
<i>PROSONIC</i>	<i>036</i>				
<i>RADIOSHACK</i>	<i>038</i>	<i>066</i>	<i>067</i>		
<i>RAITE</i>	<i>083</i>				
<i>REC</i>	<i>067</i>				
<i>REOC</i>	<i>053</i>				
<i>REVOY</i>	<i>036</i>				
<i>RCA</i>	<i>038</i>	<i>044</i>	<i>062</i>	<i>066</i>	<i>067</i>
<i>ROADSTAR</i>	<i>067</i>	<i>044</i>	<i>036</i>		
<i>ROTEL</i>	<i>067</i>				
<i>SAMSUNG</i>	<i>012</i>	<i>021</i>	<i>070</i>	<i>071</i>	
<i>SAMPO</i>	<i>022</i>				
<i>SANSUI</i>	<i>000</i>				
<i>SANYO</i>	<i>015</i>				
<i>SCOTT</i>	<i>158</i>				
<i>SEG</i>	<i>029</i>	<i>083</i>			
<i>SILVASCHNEIDER</i>	<i>152</i>				
<i>SHARP</i>	<i>020</i>	<i>067</i>			
<i>SHANGHAI</i>	<i>158</i>				
<i>SHERWOOD</i>	<i>009</i>	<i>073</i>			
<i>SHINCO</i>	<i>044</i>				
<i>SINGER</i>	<i>044</i>				
<i>SMELECTRONIC</i>	<i>044</i>				
<i>SONY</i>	<i>033</i>	<i>034</i>	<i>004</i>	<i>070</i>	
<i>SOUNDWORKS</i>	<i>088</i>				
<i>SYLVANIA</i>	<i>019</i>	<i>032</i>			
<i>SYLMPHONIC</i>	<i>019</i>	<i>032</i>			
<i>SVA</i>	<i>158</i>				
<i>TEAC</i>	<i>001</i>	<i>067</i>			
<i>TECHNICS</i>	<i>041</i>	<i>068</i>			
<i>TEASAI</i>	<i>044</i>				
<i>TEVION</i>	<i>018</i>	<i>031</i>	<i>046</i>	<i>053</i>	<i>060</i>
<i>THETA DIGITAL</i>	<i>001</i>				
<i>TOSHIBA</i>	<i>000</i>	<i>017</i>	<i>024</i>	<i>026</i>	
<i>TOKAI</i>	<i>083</i>				
<i>UMAX</i>	<i>044</i>				
<i>UNITED</i>	<i>035</i>				
<i>UNIVERSUM</i>	<i>067</i>				
<i>VOXSON</i>	<i>152</i>				
<i>WELKIN</i>	<i>152</i>				

<i>DVD Brands</i>	<i>Code</i>				
<i>WESDER</i>	<i>036</i>				
<i>WHARFEDALE</i>	<i>059</i>	<i>085</i>	<i>088</i>		
<i>WINDYSAM</i>	<i>040</i>	<i>070</i>			
<i>XMS</i>	<i>067</i>				
<i>YAMAHA</i>	<i>041</i>	<i>043</i>			
<i>YAMAKAWA</i>	<i>030</i>	<i>083</i>			
<i>ZENITH</i>	<i>068</i>	<i>013</i>	<i>069</i>	<i>067</i>	

# Memo

A large, empty rectangular box with a thin black border, intended for writing the content of a memo. It occupies the majority of the page's vertical space.





Full HD Digital Twin Tuner PVR  
*X-9200HD PVR*