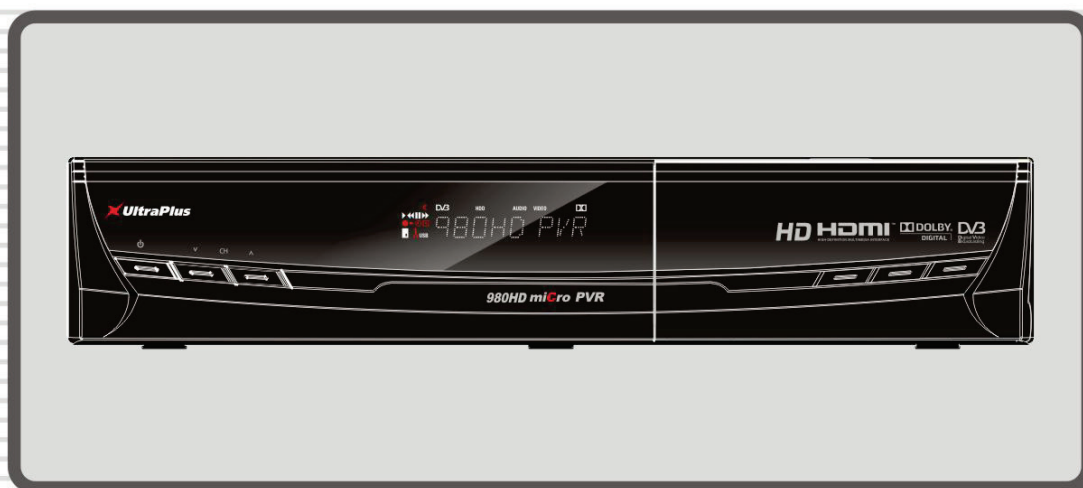


High Definition Digital Satellite PVR

User's Manual

980HD miCRO PVR



 **UltraPlus**

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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 into your outlet, 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

- ✓ Digital Satellite receiver & PVR Ready
- ✓ Supports H.264 / MPEG4 / MPEG2 – HD/SD, DVB-S2/DVB-S
- ✓ Embedded Linux OS
- ✓ Recording & Playback with External USB 2.0 Devices
- ✓ Supports Recording and Time Shifting Simultaneously
- ✓ Supports Recording and Playback Simultaneously
- ✓ Powerful Extended EPG supports Event Recording
- ✓ USB 2.0 Host Support (MP3 Player & JPEG Viewer)
- ✓ Xvid file play back supported
- ✓ Ethernet port Supported
- ✓ True Blind Scan & Multi-Satellite Search
- ✓ Premium Grade White VFD Display (8 Digit Alphanumeric)
- ✓ HDMI Video & Audio Output (576i, 576p, 720p, 1080i)
- ✓ PIP(Picture-in-Picture) & Multi-picture Display (*)
- ✓ Multi-LNB support via DiSEqC 1.0, 1.1, 1.2 and USALS
- ✓ Full HD On-Screen Display
- ✓ Favorite Service Groups
- ✓ Powerful Service with Favorites, Lock, Skip, Move and Delete Functions
- ✓ Service Sorting by Alphabet, Transponder and CAS
- ✓ User Friendly & Multi-language Supported (OSD & Menu)
- ✓ Teletext Support
- ✓ Maximum 10,000 Services Programmable
- ✓ Parental Lock / System Lock / Installation Lock
- ✓ Supports Y/Pb/Pr(component) Output in HD
- ✓ CVBS(composite) Video & Audio Output via RCA
- ✓ Optical Output for Digital Audio(SPDIF)
- ✓ Software & Service channel Database upgrade via USB & RS-232C port
- ✓ 1 Smart card reader and 2 Common Interface Slots
- ✓ 1W Stand-by Power Consumption

NOTE : (*) This feature(PIP) only works with services broadcast on the same TP. This feature(Multi-picture Display) may not be available until a new firmware version is installed. Please refer to your local dealer / distributor for clarification.

2. Accessories

User's Manual



Remote Control



AAA size Batteries X2



HDMI Cable (Option)



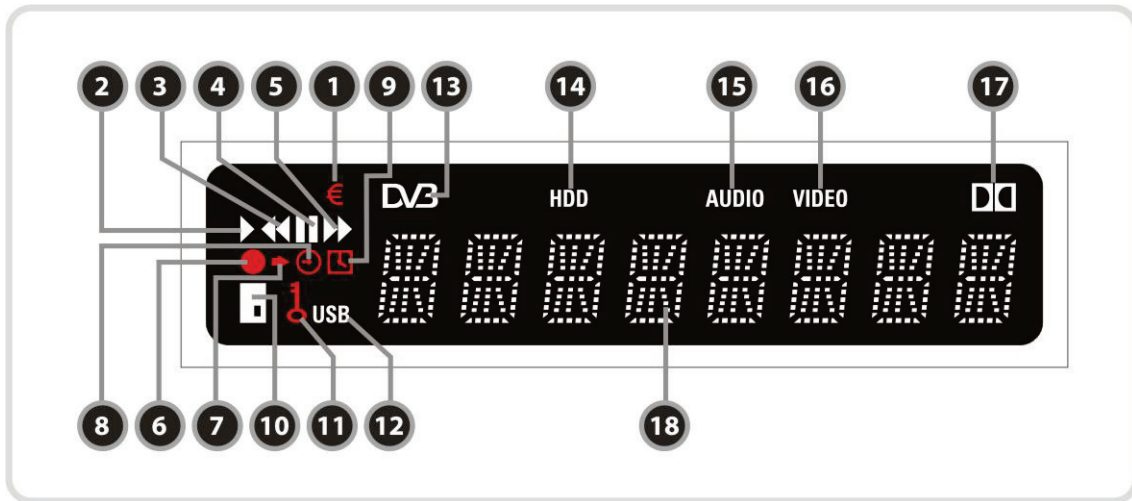
Hardware Description

1. Front Panel Configuration



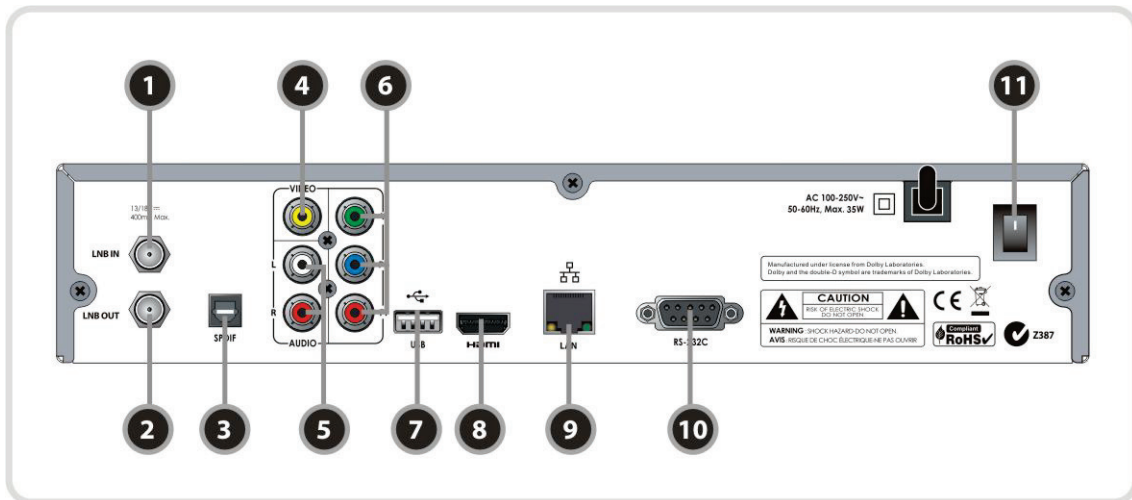
1. **POWER BUTTON** : Press to switch between STANDBY and POWER ON modes.
2. **CH Up/Down button** : Press to change services in normal mode, or to move the highlighted-bar in menu mode.
3. **VFD Display** : The VFD consists of 8-digits and various icons. These letters and icons display the current status of receiver such as the service name, service information and so on.
4. **SMART CARD READER** : Insert a smart card for encrypted service access.
5. **PCMCIA** : To receive pay-tv services you may need to use a CA-Module and a smart card from the service provider.

2. VFD(Vacuum Fluorescent Display)



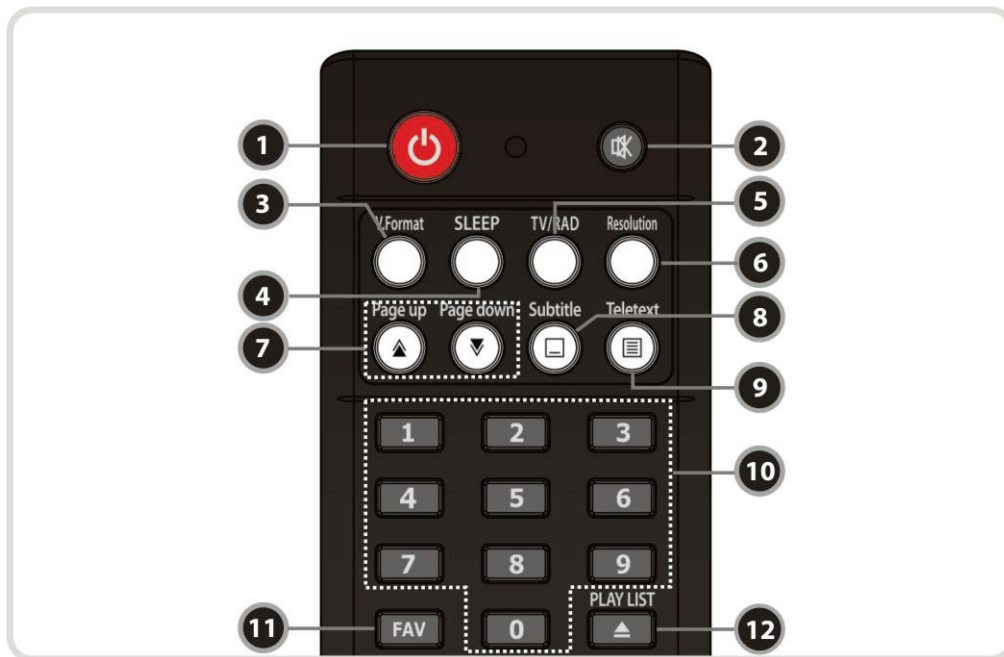
1. **(EURO)** : Indicates that current channel is an encrypted channel.
2. **(PLAY)** : Turned on during playback.
3. **(REWIND)** : Turned on during rewind in playback mode.
4. **(PAUSE)** : Indicates that current channel is paused.
5. **(F.F)** : Turned on during fast forward in playback mode.
6. **(REC)** : Turned on during recording.
7. **(Small Arrow)** : Turned on when you press a button on the remote controller.
8. **(Clock1)** : Indicates that the sleep timer is set up.
9. **(Clock2)** : Indicates a timer has been activated.
10. **(CARD)** : Indicates that a smart card is inserted.
11. **(KEY)** : Indicates that current channel is locked.
12. **(USB)** : Indicates that an external USB device is connected.
13. **(DVB)** : Turned on during live mode.
14. **(HDD)** : Indicates that the set-top box is accessing files on the external USB device.
15. **(AUDIO)** : Indicates that current channel is a radio channel.
16. **(VIDEO)** : Indicates that current channel is a TV channel.
17. **(DOLBY)** : Indicates that current channel supports Dolby digital audio.
18. **(DIGIT)** : Display channel name, time and other information.

3. Rear Panel Configuration

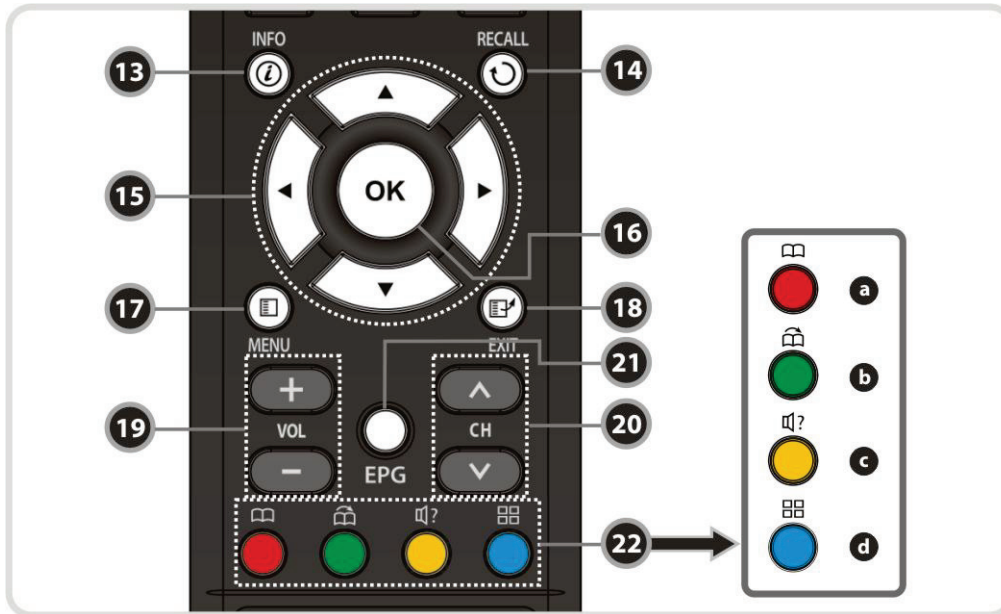


- 1. LNB IN**
Connects to a satellite antenna cable.
- 2. LNB OUT**
Connects to another STB for loop-through.
- 3. SPDIF** : Connects to an audio system using an S/PDIF cable. (digital audio)
- 4. VIDEO** : Connects to the TV or VCR using an RCA cable. (Composite video output / Yellow)
- 5. AUDIO L/R** : Connects to the TV or VCR using an RCA cable. (Stereo audio output / White, Red)
- 6. Component** : Connects to the TV or VCR using a component cable. (YPbPr)
- 7. USB** : Connects to an external USB storage device.
- 8. HDMI** : Connects to the TV using an HDMI cable, use this connection to obtain the best quality picture and audio possible.
- 9. Ethernet** : Local area network port for direct computer connection.
- 10. RS-232C** : Serial port for firmware update and data transfer.
- 11. A/C Switch** : Power switch

4. Remote Control Unit



1. **POWER** : Turns the STB On/Off.
2. **MUTE** : Turns the sound On/Off.
3. **V.Format** : You can switch the Display Format (4:3 / 16:9)
4. **Sleep** : To adjust the sleep timer.
5. **TV/RADIO** : Switches between TV and Radio.
6. **Resolution** : To select the resolution format. Each time you press the **Resolution** button, the resolution changes in the following sequence: **576i > 576p > 720p > 1080i**
7. **Page Up& Down** : Move to the next or previous page if more than one page are available. This button also is change the location of sub picture in PIP.
8. **Subtitle** : To show subtitles.
9. **Teletext** : To show the digital teletext.
10. **Numeric** : Allows numerical data entry and changing of services directly.
11. **Favorite** : To display the satellite and favorite groups.
12. **Play List** : To show the file for the external HDD or USB Storage Device.



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

14. Recall : Moves to previous service.

15. ARROW Buttons

- a. Up & Down Buttons** : 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 menu.

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

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

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

19. Volume Up & Down : To change the Volume.

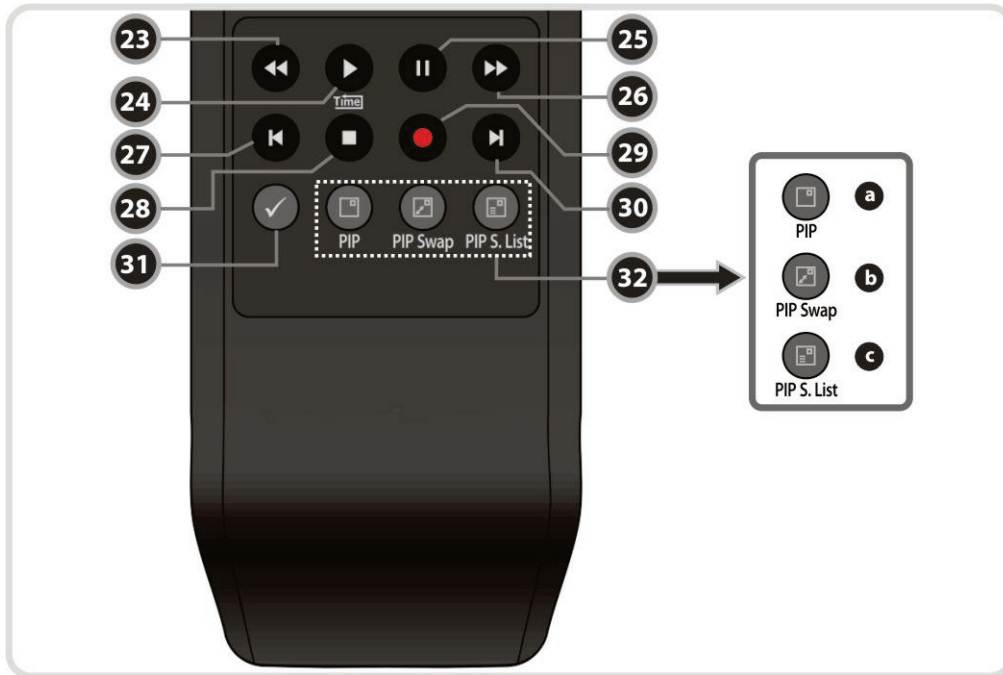
20. Channel Up & Down: To change the channel.

21. EPG(Electronic Program Guide) : Shows the TV/Radio program guide.

22. 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 the 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. The 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**.(*)

NOTE : (*) *This Feature(Multi-Picture) may not be available until a new firmware version is installed. Please refer to your local dealer / distributor for clarification.*



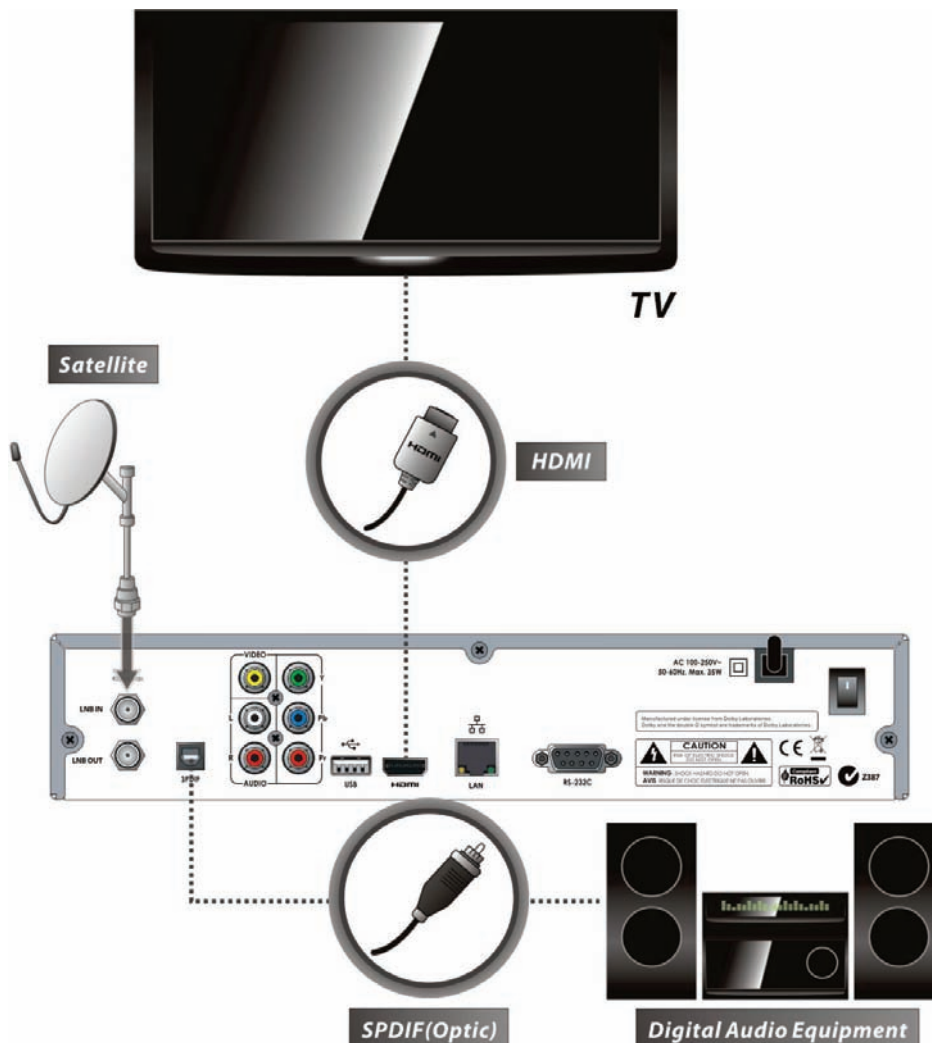
- 23. Rewind** : Rewinds at high speed. Each time you press this button the rewind speed is increased.
- 24. Play / Time shift** : Displays the progress bar during playback when no progress bar is displayed it starts playback at normal speed. It also returns to normal speed from trick mode.
- 25. Pause** : This key is used to pause the video. Press once more to resume the video.
- 26. Fast Forward** : Fast forwards at high speed. Each time you press this button the speed is increased.
- 27. Previous File** : Used to play the previous MP3 file in MP3 play mode. This button is also used to jump back to the beginning of a recording during a playback.
- 28. STOP** : To stop time shifting, play back or recording.
- 29. Recording** : To start Recording.
- 30. Next File** : To play the next file. This button is also used to jump to end of recording during playback.
- 31. Repetition (*)**: This key is used to play back a recording repeatedly.
- 32. PIP Buttons**
 - a. PIP(Picture in Picture)** : To activate the PIP window.
 - b. PIP Swap** : Switches between main-picture and sub-picture
 - c. PIP(Picture in Picture) Service List** : To shown the sub-picture service list.

NOTE : (*) *Repetition may not be available until a new firmware version is installed. Please refer to your local dealer / distributor for clarification.*

Connections Diagram

1. Receiver to TV with Digital A/V Output

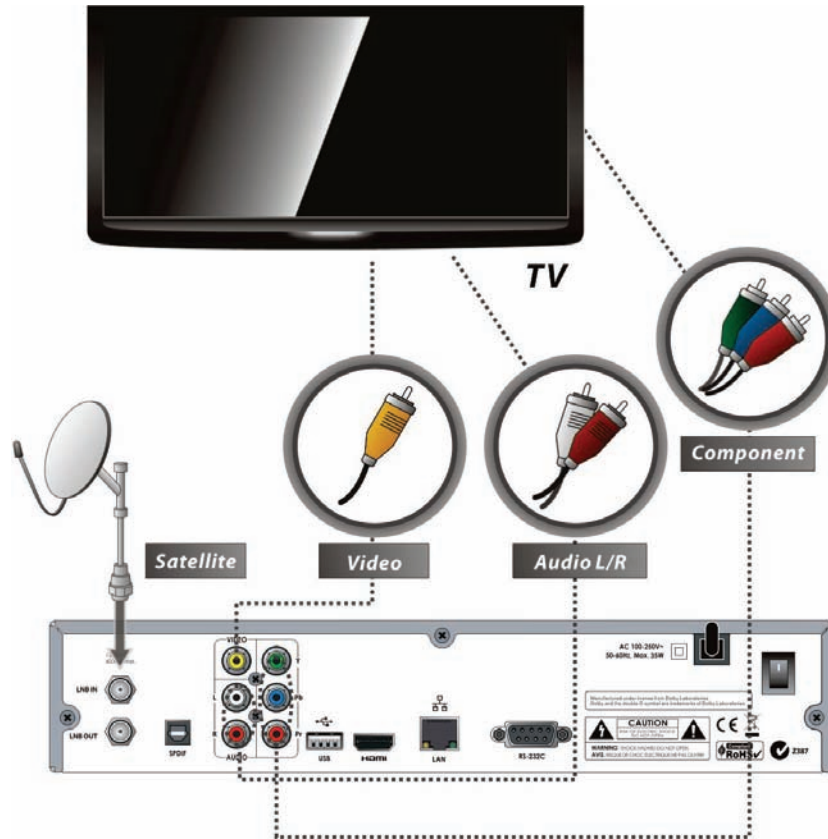
- Connect the satellite antenna cable to LNB IN.
- Connect the HDMI Cable to the HDMI Connector of the TV.
- Connect SPDIF to the Digital audio input of the equipment(Digital Audio)



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.

2. Receiver to TV With Analog A/V Output

- Connect the satellite antenna cable to LNB IN.
- Connect the Component to the Component input of the TV.
- Connect the RCA to the RCA input of the TV.

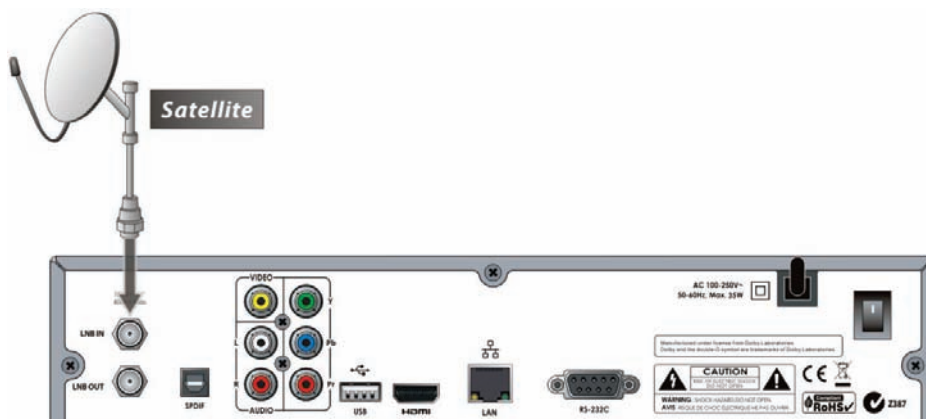


*NOTE : The component connection(YPbPr) is recommended for Digital TV.
The composite connection(RCA cable) is recommended for analogue TV*

3. Connecting to Dish

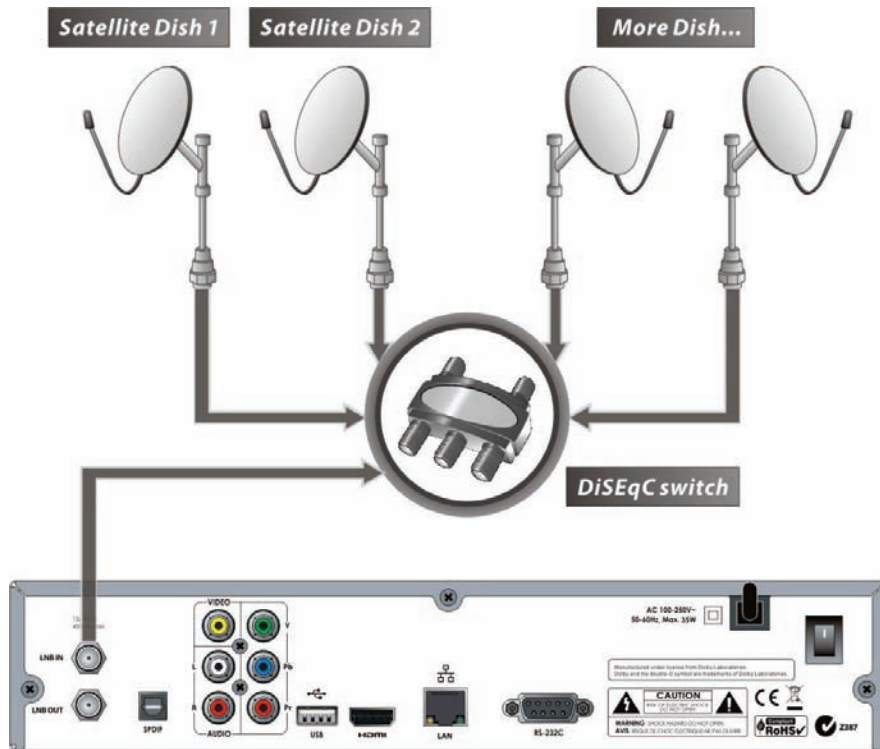
3.1 Using Single DISH

Connect the Satellite Antenna cable to LNB IN.



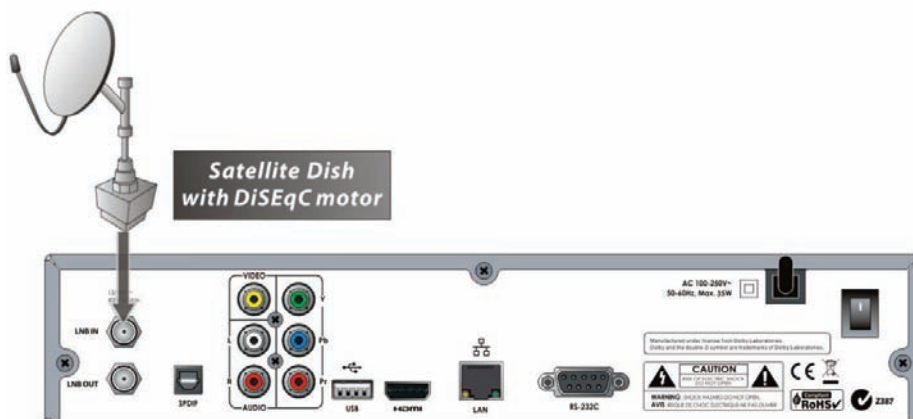
3.2 Using DiSEqC switch

Connect the cable from the DiSEqC switch to LNB IN.



3.3 Using DiSEqC motor

Connect the cable of the DiSEqC motor to LNB IN.



Guide of Functions

1. Selecting a Service

To select the desired service (channel), please refer to the instructions below.

1.1 Using CH UP/DOWN buttons

You can navigate between services by pressing **CH UP/DOWN** buttons. Whenever you press the **CH UP(DOWN)** button, current service will be changed to next/previous service. Please press **CH UP** or **CH DOWN** button until you find the service you want to watch.

1.2 Using Service List

To select the desired service in the service list, you should firstly display the service list by pressing the **OK** button.

Use the **ARROW** buttons to select a desired service and press the **OK** button.

You can see that the service is changed in the small screen on the top-right.

To watch that service, press the **OK** button once more.

To watch the previous service, press the **EXIT** button.

In the Service List window, you can also select additional functions with the **COLOR** buttons.

Press the **RED** button lets you sort the services alphabetically, or by Transponder(TP), Group, Tuner and CAS (Conditional Access System).

Press the **GREEN** button, and you can add the services to one of 10 Favorite List.

Press the **YELLOW** button, and you can search & find the service via a virtual keyboard.

Press the **BLUE** button, and you can adjust service list option.



1.3 Using Instant Service List

- If you press **NUMERIC** buttons or **UP/DOWN ARROW** button, instant service list will be displayed.
- Select the desired service by using the **ARROW** button, and press **OK** button to watch.
- You can also enter the service number directly by using the **NUMERIC** button.



1.4 Using Recent Service List

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

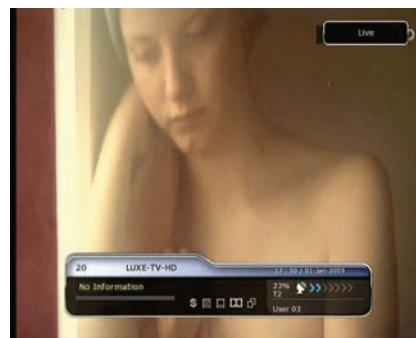


2. Information Window

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

This Information window is automatically displayed when changing between the services. This window contains a lot of useful information such as service number, service name, scrambled types of service, teletext, subtitle, Audio indication for Dolby Digital, Time 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.

NOTE : ()This feature may not be available until a new firmware version is installed. Please refer to your local dealer / distributor for clarification.*



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, then 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 reservation can be checked in the Timer Manager, which is accessible from the System tool menu.
 - To cancel the schedule of the recording, press the **OK** button for the appointed event.
 - To edit the schedule of the recording, press the **RECORD** button for the appointed event.

5. Favorite Group

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



6. Volume Control

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

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 **OK** button.

- The subtitle will be displayed in the selected language at the bottom of the screen.
- To turn OFF the subtitle from the screen, Select '**Off**' from the subtitle language list.

NOTE : When program does not provide subtitle information, SUBTITLE button is not active.

9. Audio Track

User can select the audio language list by pressing the **AUDIO(YELLOW)** button. Use the **ARROW** buttons to choose the preferred audio track from the list, then press **OK** to change. Multiple use of the **YELLOW** button toggles between additional menus



10. Teletext

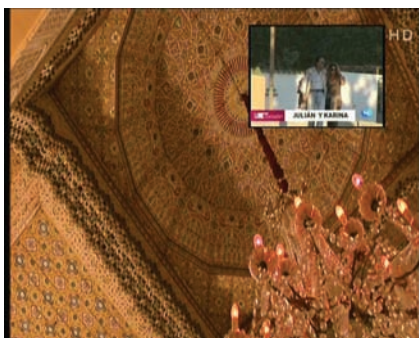
When the **TELETEXT icon** on INFO Banner is appeared (Activated), Press the **TELETEXT** button to view the teletext information.



11. PIP (Picture in Picture)

NOTE : This feature(PIP) only works between services in the same TP.

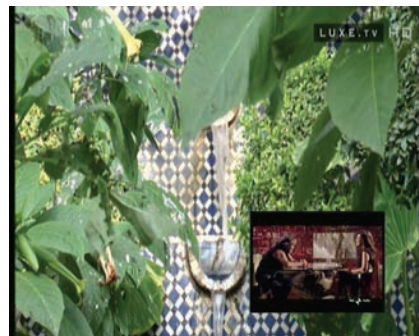
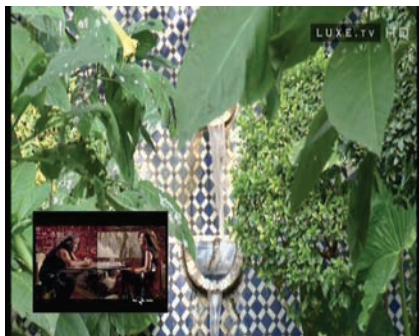
- When you press the **PIP** button, a sub picture screen will appear on the main screen view. If you press the **PIP** button one more time, the primary picture and the sub picture will appear together side-by-side with the same size. The picture of the left side is the primary and the picture on the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

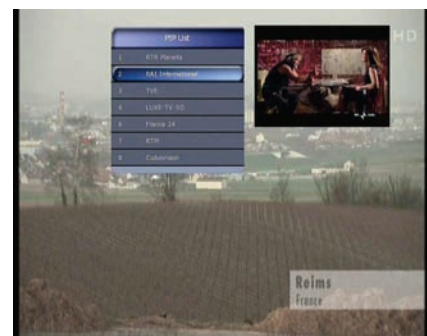


- If you press the **PAGE UP/DOWN** button, the location of the sub picture is changed.



- If you press the **PIP SERVICE LIST** button, you can see the list of services of 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 by the tuner.



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 'USB'.

1.1 Recording methods

There are 3 type recording methods.

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

- **Instant Recording :**

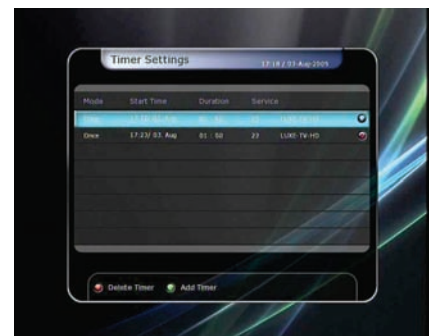
At anytime, you may press the **RECORD** button to start your recording instantly.



- **Time Scheduled Recording :**

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

(Main Menu > System Tools > Timer Settings)



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

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



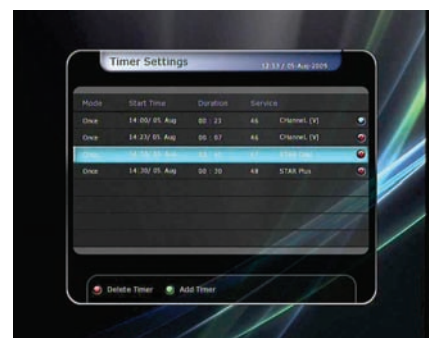
- Go to the event which you wish to view at the time indicated on the EPG schedule, then press **OK**. The event will be scheduled with the **BLUE play icon**. This BLUE play icon means that you want to just watch the event at the scheduled time.



- Press the **OK** button one more time, then the event will be scheduled with 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**.



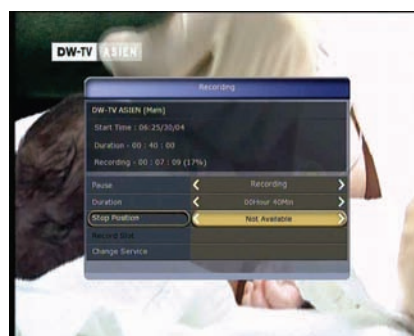
1.2 Recording Edit

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 2 services, you can set Primary / Secondary with **Left/Right ARROW** button. Press **OK** button to go to the recording service.

NOTE : STB can record up to two different services only from the same TP.



1.3 Long Time recording

During lengthy time recording processes of 4GB(Giga Byte) or more, additional files may be created per every 4GB. (For example; aaa.ts, aaa.ts1, aaa.ts2... and so on).

You must remember not to erase any of these files.

1.4 Pause during recording

- When the **PAUSE** button is pressed during recording, only the live video is paused, but recording will continue.
(Menu > Configuration > Recording Option > Record Device)
- 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.

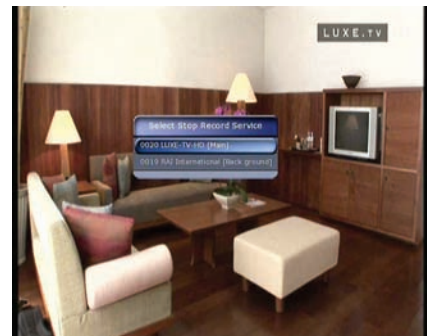


- If you press the **STOP** button, it will go to LIVE and you may press **PREV FILE** button to view the recorded file from the beginning.

- When recording 2 services at the same time, Press the **STOP** button to see a message window of current recording status / information.

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

If you press the **STOP** button during recording 1 service, the recording will be stopped.



NOTE : Dual Recording

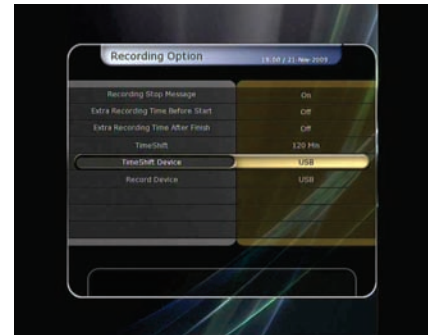
STB can record up to two different services simultaneously from the same TP. Time shifting is also a recording, so Time shifting will be possible on one of the two recordings during dual recording.

2. Time Shifting

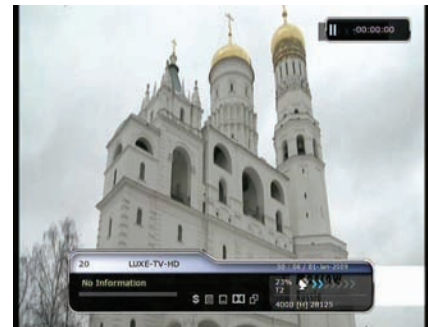
You can select a storage device for a temporary file of the Time shifting with the following sequence:

Menu > Configuration > Recording Option > TimeShift Device.

Default storage device is set to '**USB**'



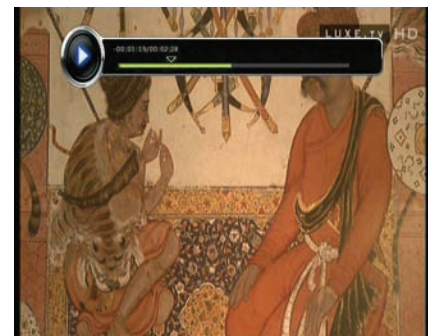
- Pressing the **PAUSE** button during Time shift will pause the live video but recording for time shift will continue.



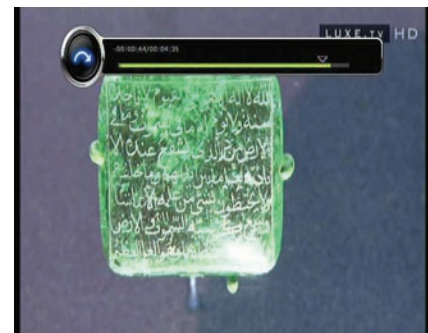
- Pressing the **PAUSE** button once again will resume playback from the paused time.



- 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 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 of the Time-shift 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. Press the **RIGHT ARROW** button once to go to Imported Files, press the **RIGHT ARROW** button one more time to go to the Music menu and press the **RIGHT ARROW** button one more time to go to the Photo menu.

3.1 Recorded Files

- To enter Recorded Files menu, press the **PLAY LIST** button.
- 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 a desired file and press the **RED** button. Press the **OK** button to begin the selected files.



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

NOTE : The "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.

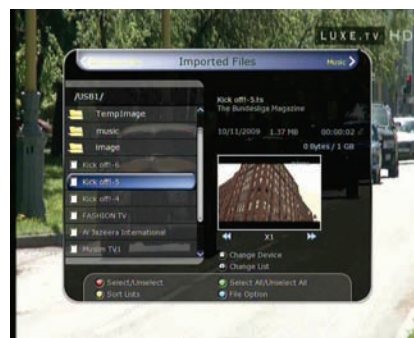


- **File Option** : If you press the **BLUE** button, you can delete or move files, make a folder, or rename files. You can select multiple files together and delete or move all of them at once.



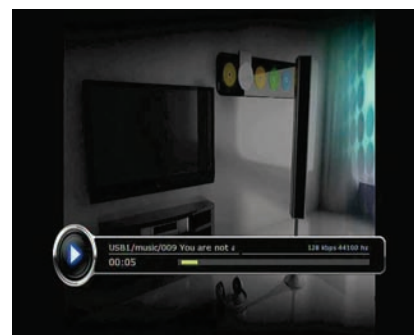
3.2 Imported Files

- If you press **RIGHT ARROW** button in Recorded Files, you can go to the Imported File menu.
- Locate the file(s) you wish to play with the **UP/DOWN** button and press the **OK** button to play the file.
- To choose a particular selection of files, select a desired file and press the **RED** button. Press the **OK** button to begin playing 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 Viewer menu.
- If you press the **RED** button or **OK** button, you can start a slide show of image files. Press the **EXIT** button to stop the 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 fast forward with the **FF**(Fast Forward) button. Press the **FF** button to change the speed to x2, x3, x4, and x5. If you once again press the **FF** button in its x5 mode, it returns to normal(x1) speed play.
- You can also change the rewind speed with the **REWIND** button. Press the **REWIND** button to change the speed to x2, x3, x4, and x5. If you press the **REWIND** button again in it is at the x5 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

Main Menu	
 System Tools	<ol style="list-style-type: none">1. Storage Manager2. Timer Settings3. Service List Manager4. Data Transfer
 Configuration	<ol style="list-style-type: none">1. Recording Option2. Parental Control3. Display Setting4. Time Setting5. Language Setting6. A/V Output Setting
 Installation	<ol style="list-style-type: none">1. Dish Setting2. Positioner Setting3. Service Search4. Network Setting5. System Recovery6. System Information
 Utilities	<ol style="list-style-type: none">1. Calculator2. Calendar3. CAS

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'.

- **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. The 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 '*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 to the service that you wish to watch at the time you specified.
- **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.



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

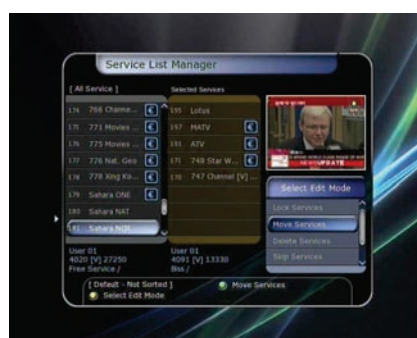
1.3 Service List Manager

The 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 a 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.



- **Edit Services** : All service names 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. Then you will see the virtual keyboard. Using the **ARROW** and **OK** buttons, you can edit the name of the service with the keyboard.



1.4 Data Transfer

- **Transfer all System data to USB storage** : If you want to transfer BOTH the current system parameters and service data to a USB device for future use, 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 ONLY the service data to a USB device for future use, 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 such as DrEdit.
- **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

- **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 with no extra confirmation message.

- **Extra Recording Time Before Start (After Finish):**

You can add an extra recording time before start/after finish (**1 Min/2 Min/3 Min/4 Min/5 Min/10 Min/15 Min/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 additional recording time added to the basic event..

This option only works for real time events. But, when you schedule a service recording in the Timer Settings menu, this option has no affect.

- **Time-Shift :**

You can adjust the time-shift in 30 minute intervals. (**Off/30 Min/60 Min/90 Min/120 Min**)

When selected, time shifting function works automatically up to the limit of time that you set, as long as the Time-Shift storage device has enough free space.

If you set this option to 'OFF' the time shifting function is deactivated.

- **Commercial Skip :**

You can adjust skip time in 5 second intervals. (10 Sec/15 Sec/20 Sec/25 Sec/30 Sec) for when you use **LEFT/RIGHT ARROW button** to jump through recordings

- **Time-Shift Device :**

You can select the Time-Shift Device you want, such as USB / Network Drive.

- **Record Device :**

You can also set a Recording Device which you want to use, such as USB / Network Drive. Recorded files are stored in the device you set.



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 **NUMERICAL** 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.



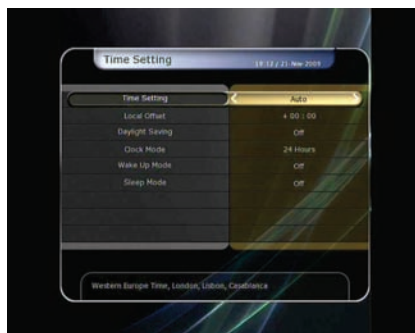
2.3 Display Setting

- **Info Box position** : Set the position of the information window.
- **Info Box Display Time** : Set the time the information window will be displayed on the screen after changing services.
- **Volume Bar Display Time** : Set the time the volume bar will be displayed on the screen after changing audio volumes.
- **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.
- **Front Display Scroll** : You can set how the VFD Display Scrolls.
 - **On** : Continually scroll the service name, if the service name is over 8 characters.
 - **Off** : Scroll service name once, if the service name is over 8 characters.
- **Front LED Lighting Time** : You can adjust the lighting time of the front panel LED.
- **Front LED Brightness** : You can adjust brightness of the front panel LED in 4 steps. Setting this option to '**off**', will turn off the front panel LED lighting.



2.4 Time Setting

- **Time Setting** : To set the current time, you can use two modes; **Auto** or **Manual**.
 - **Auto Time Setting**
 - 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.
 - **Manual Time Setting**
 - Date** : Enter the calendar date by using **ARROW** buttons then press the **OK** button to finish.
 - Time** : Enter the time by using the **NUMERIC** 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 to turn on. Press the **OK** button to display calendar.
 - **Wake Up Days** : Select a day of the week when the STB is to turn on.
 - **Wake Up Time** : Enter the wake up time of the STB using the **NUMERIC** buttons.
 - **Wake Up Service** : Select the service to display when the STB is turned 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 to turn off. Press the **OK** button to display the calendar.
 - **Sleep Days** : Select a day of the week when the STB is to 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 be changed 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 of current will be automatically selected.
- **Subtitle Language** : Select the default language for subtitle when changing service.



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 channels broadcast format.
- **TV Aspect Ratio** : Select the aspect ratio of 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**



***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. But it is also possible that your TV may not display a picture with 576i, because some HDTV's do not support 576i.*

- **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.
- **HDMI Dolby Digital** : Set the Dolby Digital mode 'On' or 'Off' in status of HDMI output.
- **Sound Mode** : Set the audio mode output.(**Stereo/Mono/Left/Right**).
- **Standby Power** : You can select the standby power
 - **'On'** : Front window displays a clock and red standby LED when in standby mode.
 - **'Off'** : Front window only displays a red standby LED when in standby mode.

3. Installation

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.
- **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 a 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** : When you use a separate 22 KHz tone switch box, set the 22 KHz tone switch enabled or disabled to select the input you desire of the tone switch.
- **DiSEqC Switch** : If you use *DiSEqC 1.0* or *DiSEqC 1.1* switch, select one of the DiSEqC inputs.
- **Service Search** : Press the **OK** button to move to the Search Menu



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 desired satellite name.
 - If the desired satellite name is not listed then select User Defined.
- **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 :**

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.

Positioner Command : To use various positioner commands, press the **OK** button. Then, available positioner commands will appear.



- **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.

- **Auto Search Mode :**

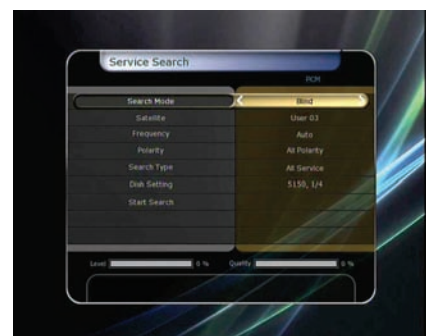
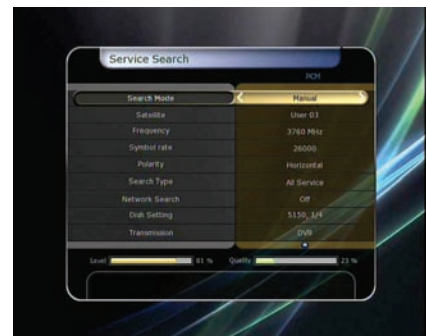
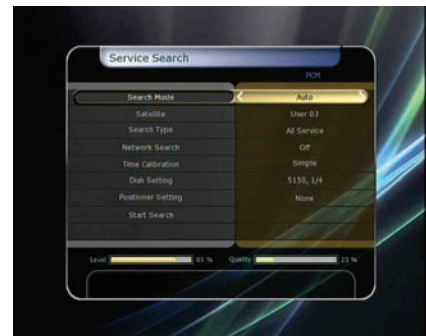
- **Satellite :** Press the **OK** button to select the target satellite to be searched.
- **Search Type :** Select the search type.
- **Network Search :** You can select Off or On. When you select 'On', you can find more transponders using the home network. As it refers to NIT during searching, if there is frequency information for other transponders, it searches the other transponder as well as 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.
- **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 for other transponders, it searches the other transponder as well as the transponder that the user inputs.
- **Dish Setting :** Press the **OK** button to move to the Dish Setting menu directly.
- **Transmission :** You can select 'DVB' and 'DVB-S2'
- **Start Search :** Press the **OK** button to start a search

- **Blind Search Mode :**

- **Satellite :** Press the **OK** button to select multiple satellites.
- **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.
- **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.



3.4 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 USB storage device.

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

- **DHCP :** You can select **On/Off** for the Dynamic Host Configuration Protocol (DHCP) to get all configuration information from the router.

- **If you select 'On' :** You will obtain the configuration from the network and be set up automatically. In this case, the remaining items (**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 configuration manually.

- **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 with the **DOWN** button and you can configure the following items in the same way.

- **Firmware Upgrade Server :** This feature is not currently supported It may be available in the future.

- **MAC Address :** This will display the MAC address of the STB Ethernet interface and unique to each STB.

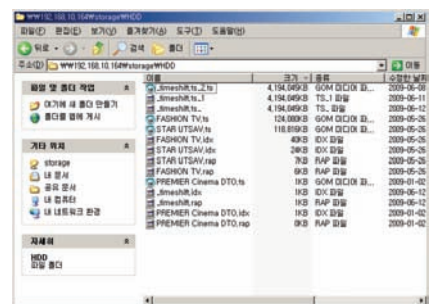
- **Control of the files via the network and your PC.**

- Check the IP Address of the STB on the Network Setting menu.

- Press Enter button on your PC, after entering the IP Address in the web browser address line.

Ex.) //168.158.10.146/storage

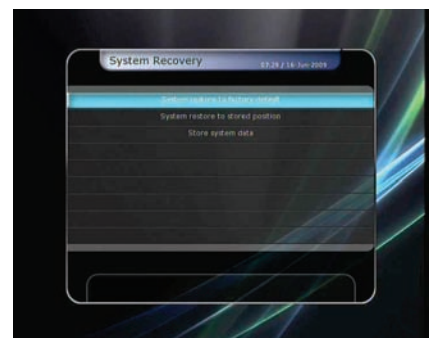
- You can see the USB folder in the Storage folder.
- You may be able to load and retrieve data between the PC and the STB via the browser.



3.5 System Recovery

- **System restore to factory default :** This menu allows you to 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.

- **System restore to stored position :** This menu allows you to 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.

3.6 System Information

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

4. Utilities

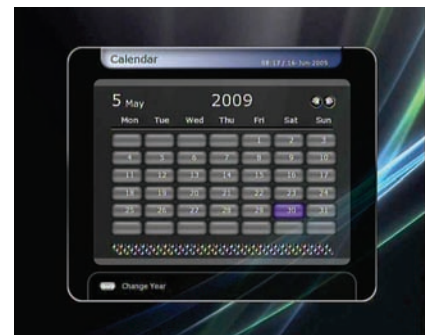
4.1 Calculator

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 of '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 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 may 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 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.

Troubleshooting

Problem	Solution
Does not display any message on the front panel.	<ul style="list-style-type: none"> ✓ Check the main power cable and check that it is plugged into a suitable power outlet. ✓ Check the STB main power switch 'ON' at the rear of the STB.
No Picture	<ul style="list-style-type: none"> ✓ See 'Does not display any message on the front panel' above. ✓ To match the STB system with your TV system (PAL/NTSC), press <i>V.Format</i> button until a picture is displayed. ✓ Check the video output port is firmly connected to the TV or VCR. ✓ If you are using the RF output, check that the RF lead is connected firmly to the STB and TV/VCR. ✓ Check that you have selected the Video Input on your TV. ✓ Press the STB button on the remote to assure you are controlling the STB and no other device with the remote. ✓ Check the brightness level of the TV. ✓ Check the resolutions that your TV supports, and set the proper resolution with the remote <i>Resolution</i> button to obtain a picture.
Poor picture quality	<ul style="list-style-type: none"> ✓ See 'No Picture' above. ✓ Check the signal level, if this is low then try adjusting the alignment of your dish.
No Sound	<ul style="list-style-type: none"> ✓ See 'No Picture' above. ✓ Check the volume level of the TV and STB. ✓ Check the Mute status of the TV and STB.
Remote Control does not operate	<ul style="list-style-type: none"> ✓ Point remote control directly towards the STB. ✓ Check and replace batteries.
No or Bad Signal	<ul style="list-style-type: none"> ✓ Check the LNB ; Replace the LNB if necessary. ✓ Check the cable from the LNB. ✓ Check the position of the dish; realign dish if necessary. ✓ If you are using a DiSEqC 1.0 switch, check that you have connected and configured it correctly correct connections on the switch to match the Dish Settings. ✓ Check the 'Signal Level' and the 'Signal Quality'.

Specifications

Tuner & Channel Decoder

Input Connector	F-type, IEC 169-24, Female
Loop through out	F-type, IEC 169-24, Female
Frequency Range	950MHz ~ 2150MHz
Input Impedance	75Ω, unbalanced
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	1 ~ 45 Ms/s(QPSK of DVB-S) 1 ~ 45 Ms/s(QPSK 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)

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. 15Mbit/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
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 : 32 Mbyte SDRAM : 192 Mbytes EEPROM : 128 bytes

Audio / Video & Data IN/OUT

RCA	CVBS Video Output, Audio L, R Output
Component	YPbPr Video Output
HDMI	Video & Audio Output
OPTIC	Dolby Digital (SPDIF)
RS-232C	9 pin D-SUB (Male) type, Transfer rate 115Kbps
USB	USB 2.0 Host Support. (5 Vdc 500 mA max.)
Ethernet	RJ45 connector, 100 Mbps

Front Panel

Slot	2 Common interface PCMCIA slot 1 Smart Card Slot
Display	VFD(Vacuum Fluorescent Display) - 8Digit
Buttons	3 Buttons (Standby, CH UP/DOWN)

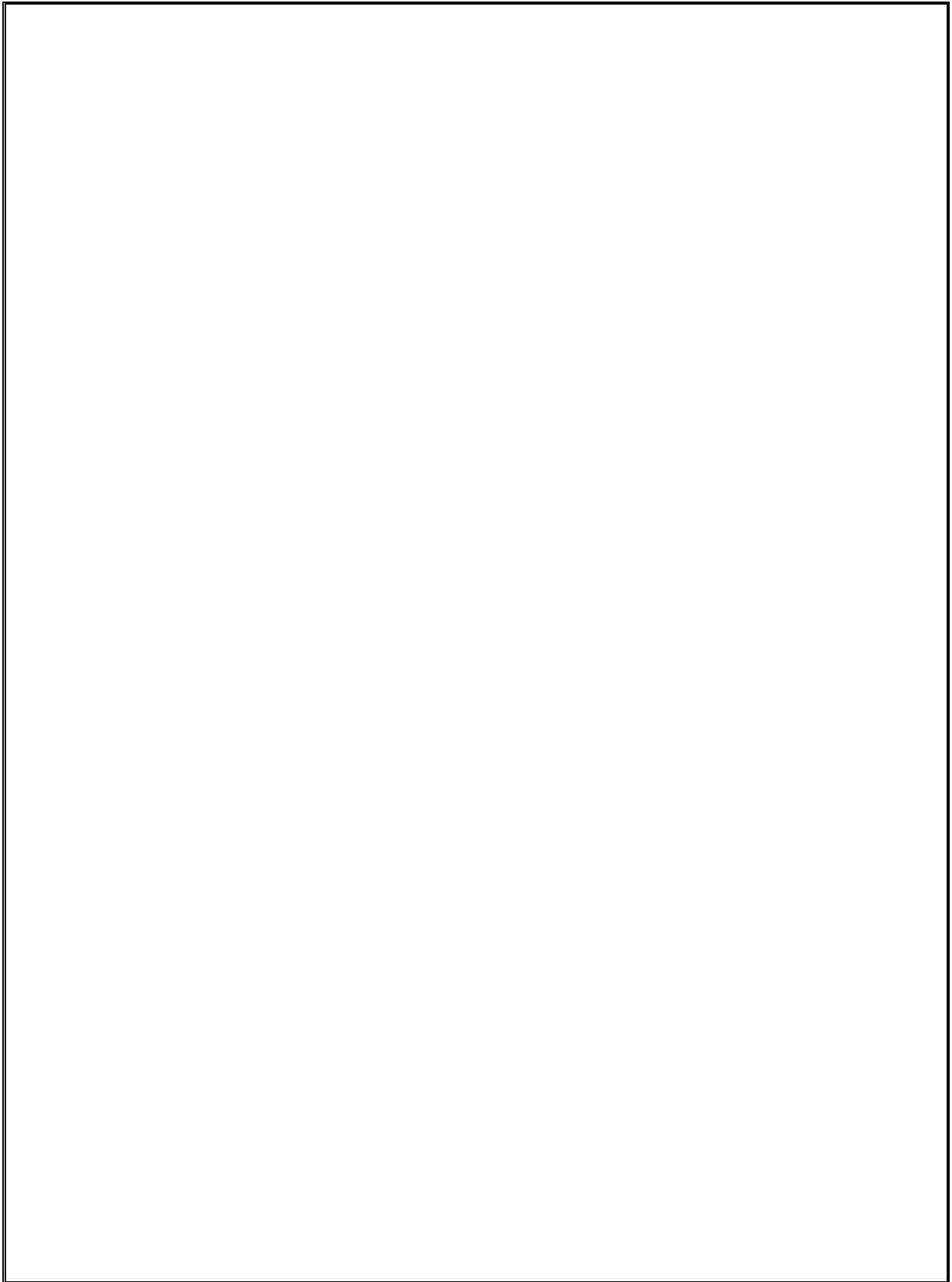
Power Supply

Input Voltage	AC 100 ~ 250V, 50/60Hz
Type	SMPS
Power Consumption	Max. 30W
Protection	Separate Internal Fuse & Lighting protection

Physical Specification

Size (W x H x D)	300mm X 58mm X 220mm
Weight (Net)	1.6 Kg
Operating Temp.	0°C ~ +45°C
Storage Temp.	-10°C ~ +70°C

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.



High Definition Digital Satellite Receiver

980HD miCro PVR