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1 General Information

This digital satellite receiver allows you to view a variety of satellite programs. This user's guide covers the installation of the STB and the necessary steps to operate various features. It also explains special features available only in this STB in detail, and will allow you to take full advantage of these features.

1.1 Main Features

- ❖ Fully MPEG2, DVB compliant
- ❖ Digital Audio with AC-3 support by S/P DIF(Optional)
- ❖ PIG (Picture In Graphic) support
- ❖ DiSEqC1.2 positioner for multi-satellites (63 satellites)
- ❖ C/Ku band control for each antenna
- ❖ User Friendly and easy-to-use menu system
- ❖ Various channel editing functions (favorite, moving, locking, renaming, deleting and sorting)
- ❖ User programmable various satellite & transponder information
- ❖ Automatic search for newly added transponder (Network Auto Search)
- ❖ Stores up to 2000 channels
- ❖ Easy and fast software upgrade through RS-232 port
- ❖ Timer function, automatically turns On/Off by setting function (daily, weekly, monthly, one time)
- ❖ Automatic reserved channel moving system
- ❖ Electronic Program Guide (EPG)
- ❖ OSD Teletext (DVB ETS 300 706) and Subtitle function support
- ❖ VBI Teletext support
- ❖ Antenna positioning help feature
- ❖ Multi video output – CVBS, RGB
- ❖ Provides various switch types, LNB types and NTSC/PAL monitor type
- ❖ SCPC/MCPC receivable from C/Ku band satellite
- ❖ Multi LNB controlled by DiSEqC 1.2 and 22KHz, 0/12 volt switching
- ❖ 256 color On-Screen-Display
- ❖ Automatic PAL/NTSC conversion
- ❖ Automatic last channel saving

1.2 For Your Safety

- ❖ Allow clear space around the STB for sufficient ventilation
- ❖ Do not cover the receiver or place it on a unit that emits heat
- ❖ Use a soft cloth and a mild solution of washing liquid to clean the casing
- ❖ Do not connect or modify cables when the STB is plugged in
- ❖ Do not remove the cover
- ❖ Do not allow the unit to be exposed to extreme heat, cold or humid conditions
- ❖ Never allow liquids, spray or other materials to come into contact with the inside of the model.

1.3 Unpacking

Unpack the receiver and check to make sure that all of the following items are included in the packaging.

- ❖ 1 x Remote Control Unit (RCU)
- ❖ 1 x User's Guide
- ❖ 1 x Digital Satellite Receiver

1.4 General Operation of STB

Throughout this manual you will notice that the everyday operation of your STB is based on a series of user friendly on screen display and menus. These menus will help you get the most from your STB, guiding you through installation, channel organizing, viewing and many other functions.

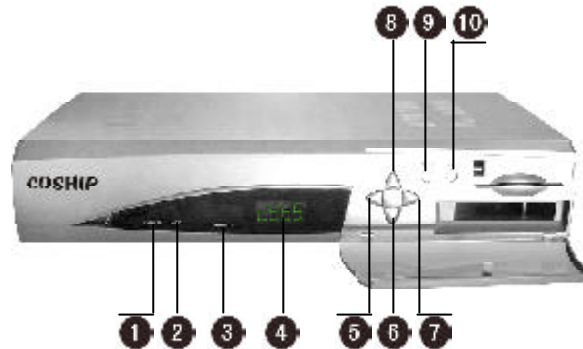
All functions can be carried out using the buttons on the RCU, and some of the functions can also be carried out using the buttons on the front panel.

If at any time when using the menus you want to return to the normal TV mode, press the **TV/AV** button.

Please be aware that new software may change the functionality of the receiver.

Should you experience any difficulties with the operation of your unit, please consult the relevant section of this manual, including the Problem Shooting, or alternatively call your dealer or a customer service adviser.

1.5 Front Panel

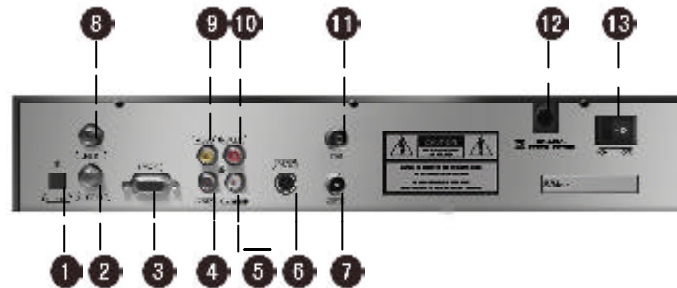


- ① **STANDBY:** Show the STB is under STANDBY mode
- ② **LOCK:** Signal lock lamp
- ③ **INTENSITY**
- ④ **DISPLAY:** Shows channel number, error messages, etc
- ⑤ ⑦ When watching a channel, adjust the volume or move to the left or right item in the menu.
- ⑥ ⑧ When watching, change to the previous or next channel, or move to the next higher or lower item in the menu.
- ⑨ **MENU:** Show the Main Menu and command box on the screen
- ⑩ **OK:** Execute the selected item in the menu

1.6 Front Panel Display

U100 : UP LOAD PROCEDURE	UCr : VCR MODE
d100 : DOWN LOAD PROCEDURE	---- : SYSTEM WAITING
Err3 : ERROR IN DATA TRANSMITTING	Err0 : FLASH ROM ERROR
TV : TV MODE	boot : SYSTEM BOOTING

1.7 Rear Panel

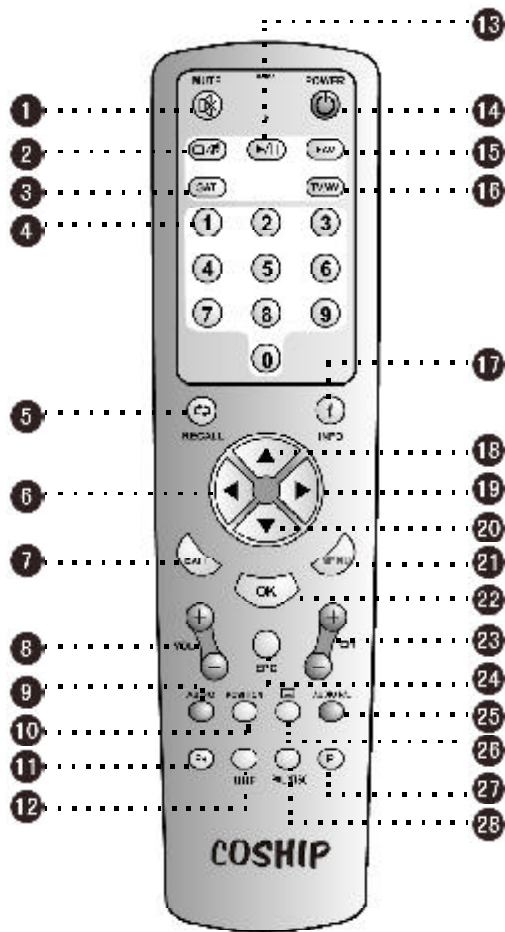


- 1 **DIGITAL AUDIO:** Connect to TV for digital audio output
- 2 **LOOP OUT:** Connect to another receiver (IF loop through output from digital tuner)
- 3 **RS232:** Connect to a PC for software upgrade
- 4 **0/12V:** Connect to an external 0/12V switch
- 5 **10 L-AUDIO/R-AUDIO:** Connect to TV or audio tuner
- 6 **S-VIDEO:** Connect to the S-VHS jack of the TV or VCR
- 11 **TV:** UHF RF output to TV set's antenna in
- 8 **LNB IN:** Connect to satellite antenna (IF input from LNB to digital tuner)
- 9 **VIDEO:** Connect to the TV using RCA jack (CVBS output to TV)
- 7 **ANT IN:** Signal input from local CATV network or outdoor TV antenna
- 12 **100-240V~:** Power supply
- 13 **ON /OFF:** Main power switch

NOTE:

The above picture of rear panel is referenced, please operate real one.

1.8 Remote Control Unit



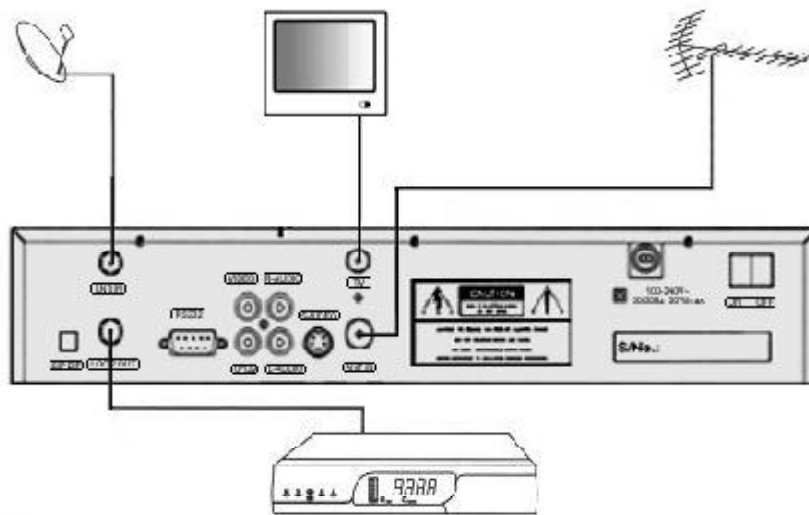
1.9 Keys specification

- 1 Press to temporarily cut off the sound
- 2 Switch between TV and Radio mode
- 3 Display the satellite list of searched channels
- 4 Enter number of the required menu item or select a channel number to watch
- 5 Switch back to previous channel
- 6 18 19 20 Move cursor up/down/left/right
- 7 Return to the previous menu on the menu screen or escape from the item
- 8 When watching a channel, adjust the volume
- 9 When watching a channel, switches the audio languages
- 10 Display position bar on the screen to adjust the antenna or for manual search
- 11 27 Moves up/down a page in the channel list
- 12 Switches to UHF tuning mode
- 13 Pause/Play AV
- 14 Turns power ON/OFF of the DSR
- 15 Display the favorite channel list
- 16 Switch between TV or AV mode, only applicable when the STB has the SCART socket.
- 17 Shows information of the current channel
- 21 Press to display the Main Menu on the screen
- 22 Executes the selected item in the menu screen, or enters the desired value in any input mode
- 23 When watching a channel, change channels
- 24 Calls up the EPG (Electronic Program Guide)
- 25 Switches among left audio/right audio/stereo
- 26 Switches to teletext or subtitle mode
- 28 Switches between PAL and NTSC

2 Installation of STB

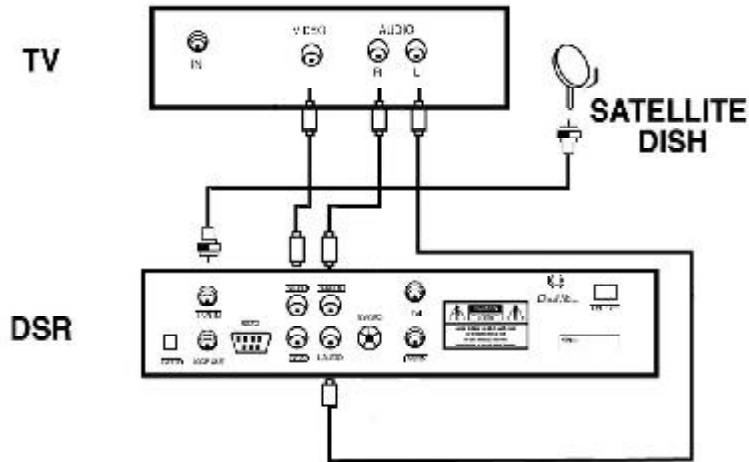
This section explains the installation of the receiver. Refer to the manuals supplied with the equipment for the installation of outdoor equipment such as the dish antenna. When adding new equipment, be sure to refer to the related parts of the manual for the installation.

2.1 Connecting to Antenna and TV

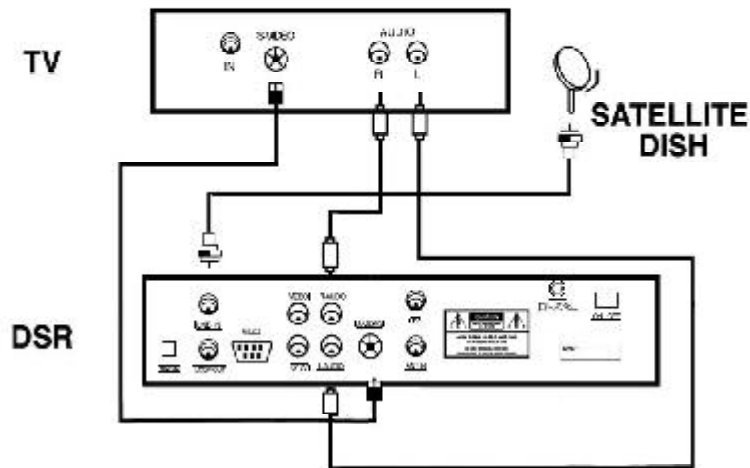




2.2 Connecting to TV using RCA Support



2.3 Connecting to TV using S-VIDEO Support





3 Menu Information

Once you have installed and connected the cables of the receiver, the menu will be displayed.

This menu consists of 5 menu options as shown below.

- ❖ Channel Manager
- ❖ Program Guide
- ❖ Timer
- ❖ User Installation
- ❖ Receiver Information

During the installation the **OK** key confirms a selection and **▲▼** key shows the Drop Down List Box. You can also use the numeric keys on the RCU to enter a numeric value for watching TV.

Use the **◀▶** keys to move left or right from one line to another line. Use the **▲▼** keys to move the cursor up or down in the sub-menu.

To escape the menu system at anytime, press **EXIT** key on the RCU.



4 User Installation

This menu consists of 5 sub-menus as shown below.

- ❖ Antenna Setup
- ❖ Channel Search
- ❖ System Setting
- ❖ Parental Lock
- ❖ Factory Default

4.1 Antenna Setup – 1) DiSEqC 1.2

- 1. Antenna** : You can select a maximum of 16 antennas with the combination switches.
- 2. Type** : Select your antenna type to be DiSEqC1.2.
- 3. Satellite** : Select first satellite you want.
- 4. LNB Type** : Select your LNB type. If you have universal LNB, select Univ.
- 5. LNB Freq.** : Enter the proper LNB frequency referring to your LNB using the numeric keys on the RCU or use the KEY PAD displayed by pressing **OK** key.
If you have a dual LNB, enter the proper value in the value box.
- 6. Switches (0/12 Volt, 22KHz Tone, DiSEqC)** : You can select the switches with which you want to configure the antenna.
- 7. C/Ku band control** : You can select C/Ku band control by selecting the switch type.

4.1.1 East West Limit

On selecting **Limit Setup** button, the **Limit Setup** menu will pop up. Pressing the **Limit Setup** key on the RCU continuously will take you to the easternmost point. Press the **OK** key on the RCU. The message "**Would you like to set East limit of DiSEqC motor?**" will be displayed for your confirmation. Place cursor on the **OK** button on the screen and press **OK** key on the RCU to confirm the East limit.

To set West limit, follow the same steps as East limit.





4.1.2 Reset DiSEqC limit

If you want to reset the East limit or West limit, place the cursor on **Reset DiSEqC Limit** button and then press **OK** key on the RCU. The message **“Would you like to reset limit for DiSEqC positioner?”** will be displayed for your confirmation. Select **OK** button by pressing **OK** key on the RCU. The cursor will move to the **East limit** button so that you can reset the limit. To reset West limits follow the same steps as East limits.



Select **EXIT** to finish antenna setup. The message **“Are you sure to change the configuration of Antenna setup?”** will be displayed. Select **OK** button on the screen and then wait for the data to be saved.

4.2 Antenna Setup – 2) Fixed

- 1. Antenna** : You can select a maximum of 16 antennas with the combination switches.
- 2. Type** : Select your antenna type to be fixed.
- 3. Satellite** : Select satellite you want.
- 4. LNB Type** : Select your LNB type. If you have universal LNB, select **Univ**.
- 5. LNB Freq.** : Enter the proper LNB frequency referring to your LNB by using numeric key on the RCU. If you have a dual LNB, enter the proper value in the value box.
- 6. Switches (0/12 Volt, 22KHz Tone, DiSEqC)** : You can select the switches with which you want to configure the antenna.
- 7. C/Ku band control** : You can select C/Ku band control by selecting the switch type.

Select **EXIT** to finish antenna setup. The message “**Are you sure to change the configuration of Antenna setup?**” will be displayed. Please select the **ok** button on the screen and then wait for the data to be saved.

4.3 Channel Search – 1) DiSEqC 1.2

- 1. Antenna** : Select your antenna number.
- 2. Satellite** : Select desired satellite using **◀▶** keys. Pressing the **ok** key will also display a list of satellites. You can see the information of the selected satellite on the right side.

Edit Mode: If you want to edit certain preprogrammed data such as Transponder, Frequency, Symbol Rate, Polarization and 22 KHz, press **Edit Mode** key (**Red** color key) on the RCU.





3. Position : After selecting a satellite, please select **Position** button and then keep pressing ◀ or ▶ key on the RCU until the selected satellite is locked. If the satellite is locked correctly, the color of the signal label bar will change to yellow. When you press **ok** key on the RCU, the message “**Would you like to set the value of current positioner?**” will be displayed.

4. Transponder : Select desired transponder using ◀▶ keys. Pressing the **ok** key will display a Down List Box which also lets you select the desired transponder.

5. Frequency & Symbol Rate : Edit the Frequency and Symbol Rate.

6. Polarization : Select Hor or Ver.

7. 22KHz : Select ON or OFF.



8. Allows you to search channels by using the arrow keys.

- **Search 1 Sat:** Search channels for one satellite, which has been selected from the Satellite column.
- **Search TP:** Search channels in one TP, which has been selected from the TP column.
- **Search Network:** Search channels for the network related to the TP.

The STB will automatically search channels for TV and Radio. During this procedure you can see a list of the previously searched channels in the Searched List Box on the screen. The divergence of displayed satellite frequency $\pm 2\text{MHz}$ has no effect for use, the receiver automatically tunes the best signal. On completion of searching channels, the cursor will be placed on **View CH** automatically. Now press **ok** button to view the last searched channel.

9. Set PID: If you want to set PID (Packet Identifier) manually, select TP in the “Channel Search Page” and press **MENU** key on the RCU to display the command box. Then select **SET PID** command and press **ok**. The set PID menu will be displayed. Enter the correct value and select **ok**.

10. Sat name edit: If you want to change the satellite name, select the satellite and press **Sat Name Edit** key (Yellow color key) on the RCU to display the command box. The keypad dialog will appear. Using the arrow keys on the RCU, you can edit the satellite name.

11. Delete TP : If you want to delete a Transponder, please select the Transponder which you want to delete and then press **MENU** key on the RCU to display the command box. Then select **Delete TP** command. A confirm message box will be displayed.

12. Re-Sync : When all the locations of searched satellites are shifted for any reason, you can realign all of them once you adjusted one satellite location.

13. Go to 0” for DiSEqC 1.2 : When you install the motor of DiSEqC 1.2 antenna, you can select this function to move the center of the antenna to 0 .

14. Search Option : The STB allows you to search channels with convenient options as shown below.

- ❖ FTA Only
- ❖ Not searched TP only
- ❖ Sort by Scramble



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If you select **Sort by Scramble**, The STB sorts the scrambled channels automatically.

If you select **Not searched TP only**, the STB searches channels in the TP which were not searched.

If you select **FTA Only**, The STB only searches free to air channels under this satellite.

4.4 Channel Search – 2) Fixed



1. Antenna : Select your antenna number.

2. Satellite : Select desired satellite using arrows keys.

Pressing the **ok** key will also display a list of satellites.

You can see the information of the selected satellite on the right side.

Edit Mode: If you want to edit preprogrammed data such as Transponder, Frequency, Symbol Rate, Polarization and 22 KHz, please press **EDIT** mode key (**Red** color key) on the RCU to display the command box. You can then move into those columns to change the value.

3. Please refer to Section 20, List 4 to 14 for the remaining options.

4.5 System Setting



The **System Setting** menu allows you to set items depending on your environment.

1. OSD Language : Lets you select the desired language.

2. Audio Language: Select the desired audio language to be in top priority under the condition that this language is supported by the channel.

3. LNB power: If your STB is connected to the LNB, select YES. But if your STB is connected to another receiver through **Loop Through** support, you should check which receiver is connected directly to the LNB. In case the other receiver is directly connected to the LNB, then select **OFF**.

4. Screen Format: If your TV supports 16:9 screen format and selected channel provides 16:9 format program, select 16:9.

5. Video output: If your SCART supports RGB control, select RGB. Otherwise select CVBS.

6. TV type: Select the type according to your TV type.

7. Start On Channel: If you press **ok** key, then the channel list is displayed. You can select one channel from the list. The selected channel starts whenever you turn on the receiver.

8. UHF Standard: Select UHF type.

9. UHF Channel: Select your desired UHF channel for satellite mode.

Note: In countries where UHF is not used, options in List 8 and 9 will be deleted.

4.6 Parental Lock

This function allows you to lock the channel with a password in order to prevent children from accessing the channel.

You can also protect your installed data and information using the Install Lock.





How to change the Password


1. Enter the current password.
2. Select **ON** of Parental Lock.
3. Enter new password.
4. Confirm your new password entering new password again.

Note: Default password is **0000**.

Warning: Once you change the password, please keep it safely.

How to use Parent Lock

1. To activate parent lock function, go to the TV channel Manager Page.
2. Press **Lock** key (Blue color key) on the RCU.
3. Select the channel which you want to Lock.

Press **ok** then  symbol is displayed.



How to use Install Lock

1. Enter the current password.
2. Select ON of Install Lock
3. Enter new password
4. Confirm your new password entering new password again
5. Exit this menu.
6. Select any menu and press OK on the RCU .
7. Then the Enter Password box will be displayed.
8. Unless you enter the correct password, you can not run any menu.

Note: Default password is 0000

Warning: Do not forget your password.



4.7 Factory Default

If you want to bring the STB back to the factory default condition, select Factory Default and press the **ok** key.

Then a warning message will be displayed. To confirm, select **ok**.

Warning: On selecting factory default you will lose all of data and information, which was previously installed.



5 General Viewing Function

The following describes the basic functions of your STB while watching satellite TV or listening to satellite radio.

While watching, the current channel information will be shown on the bottom of the screen if you press the **INFO** button on the RCU.

5.1 Select Channel

If you want to select channel, use **CH** key on the front panel or **CH+**, **CH-** key on the RCU or numeric keys.

In addition to the above normal function, the STB provides more convenient channel change function.

While watching, press **ok** key on the RCU. A channel list will be displayed on the right side of the screen. If you press **EXIT** key, the channel list will disappear.

To select a channel, go up or down this channel list and place the cursor on a desired channel. Then, press **ok** key to watch the selected channel.


If you press **▲▼** key on the RCU, the channel list will scroll page by page.



5.2 Previous Channel Recall

Press **RECALL** key on the RCU to move to the previous channel you watched.

5.3 TV & Radio Mode

While viewing a TV channel, press the  key on the RCU to toggle between TV and Radio modes.

5.4 TV & VCR Mode

The TV/AV key on the RCU lets you change the mode from satellite to TV or VCR.

Press once to move to the TV mode.

Press twice to move to VCR mode.

Press three times to move back to satellite mode.

Note: This function is only applicable when the receiver has the scart socket.

5.5 Channel Information

Every time you change channels, you will receive program information for a few seconds.

While watching the channel you can see the current channel information at anytime by pressing the **INFO** key on the RCU.




5.6 Volume & Audio Control

1. Volume Control

To increase or decrease volume, use **VOL+/-** Key on the RCU or ◀▶ on the front panel.

Note: The STB has 18 volume levels and this can be controlled from the volume level of your TV.

2. Mute

To mute the sound, press  button on the RCU. To bring back the normal sound, press this key once again.

3. Audio Control

Press the **AUDIO R/L** key repeatedly to select one of three possible Audio settings (Left, Right and Stereo)

The current audio setting will be displayed in the channel information

4. Language Selection

Press the **AUDIO** key on the RCU repeatedly to select audio-language. This is dependent on the transmission of audio signal.

5.7 Position

If you need to adjust the antenna more accurately, press **POSITION** key on the RCU and the position bar will be displayed. Press ◀ or ▶ key on the RCU to adjust.

You can also use this function for manual search instead of Auto tracking.

5.8 Sat

If you searched channels from more than one satellite and want to have a channel list for each satellite, press **SAT** key on the RCU, a satellite list will be displayed.





Select one satellite you want, press **OK** key on the RCU then you will have a channel list of your choice.

5.9 Favourite List

To create a favorite group list press **FAV** key on the RCU. You can access the next favorite group when you press **FAV** key again.

The method to group favorite channels is explained in the Favorite Channel (page 25).

6 Channel Manager

The STB provides one of the most powerful channel managing functions in the world. This function not only allows you to watch channels but also do a lot of interesting and useful things.

6.1 Channel Manager

Channel manager consists of TV channel and Radio channel.

Note: Since the usage of Radio Channel is same as that of TV channel, in this manual only TV Channel manager is explained.

On the left side of the TV channel menu, you can see the channel list. On the right side, you can watch the current channel in small Picture in Graphic (PIG) mode (1/9 size of the normal mode). You can also see channel information under the PIG screen.

When you move the cursor from one channel to another, the PIG will change accordingly.

You can use those color keys on the RCU as below.



6.2 Favorite Channel

When you select channel manager, default favorite list will be shown on screen as Favorite 1.

Select your favorite channel and then press **OK** key.

Then **F** will be marked next to your selected channel name.

If you want to remove the channel name from the favorite channel list, press **OK** key once again, then the **F** mark will disappear.

After the selection of favorite channels press **EXIT** key twice to save data and press **FAV** key repeatedly to see if each of the favorite groups are properly selected.

S represents scrambled channel.

How to make a favorite group

1. When you enter channel manager, the default favorite group will be shown once on the screen as Favorite 1.
2. If you press **favorite** key (**Green** color key) on the RCU, a new favorite group will be created as Favorite 2.

How to edit the name of a Favorite group

1. In the favorite mode, press **MENU** key on the RCU then the command box will be displayed on the screen.
2. Select "**Rename Favorite group**" in the command box.
3. You can edit the name by using the keypad.

6.3 Move Channel

In the TV channel manager page, press **Move** key (**Yellow** color key) on the RCU.






Select a channel by pressing **OK** key and move the cursor to the location where you want to move the selected channel and press **OK** key. Then, you will find that the selected channel has moved to the desired location and channel the number has changed accordingly.

Check whether the channel number has changed on the channel list.



6.4 Lock Channel

In the TV channel manager page, press **Lock** key (**blue** color key) on the RCU.

This **Lock** command allows you to lock the channel. First select the channel, which you want to lock, and press **OK** key. Then this  will be marked beside the selected channel name.

Note: To perform this function, you should set up the Parental Lock in advance.



6.5 Rename Channel

In the Main Page, press **MENU** key on the RCU, and then select Rename on the command menu.

This Rename command allows you to rename the channel. First select the channel to be renamed and press **OK** key, then a Keypad dialog box will be displayed. Enter the desired name. Check whether the channel name is changed on the channel list.

6.6 Delete Channel

In the Channel manager, you can enter Delete CH mode, if you press **Delete** key (**Red** color key) on the RCU. Then, if you press Delete key (Red color key) repeatedly, the mode will cycle through Delete TP -> Delete Satellite -> DeleteAll -> Delete CH.

This Delete command allows you to delete the channel permanently. First select the channels, which you want to delete; the selected channel number will be marked to "X". If you cancel the selection, press **OK** key again, then the marked number will be back.

If you decide to delete, press **EXIT** key and then press **OK** to delete.

Check whether the channel number is deleted on channel list.

Warning: The deleted channel cannot be recovered unless you search again.

6.7 Sort Channel

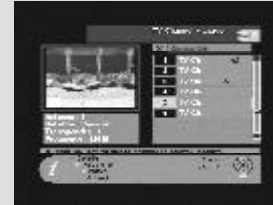
In the Main Page, press **MENU** key on the RCU, and select **Sort** on the command menu.

This Sort menu has a sub command and it allows you to sort the channels, as you like.

You can sort the channels by Favorite, Lock, Scramble, SAT name and CH name. Place the cursor on the desired line, and then press **OK** key.

Check whether the channels are sorted properly on the channel list.

Note: Radio Channel Manager has the same operation as TV channel Manager.





7 Receiver Information

In the Main Page, select **Receiver Information** and press **OK** key on the RCU to enter the sub menu, In this menu you can view the following receiver information, including **product** , **SW version**, **HW version**.



8 EPG (Electronic Program Guide)

STB provides EPG function for you to get access to the TV Guide (or Radio Guide if you are listening to radio channels) that will show the titles and other information of the current and next programs on different channels. The information is only available from the network to which the channel you are watching.

To see the EPG data, press **EPG** key on your RCU when watching a channel or select Program Guide in the Main Page.

The **EPG** box will be displayed.

You can see the channel in the screen; channel list on the left side and Program schedule for selected channel will be displayed on the right side. The time related to the program schedule is also displayed.



Select one channel and placing the ▼ mark on the time of Program name which detail information you want to know. Then you can see blue button, if there is detail information of the channel. Press **Detail (Blue color key)** key on the RCU, for the detail information box to be displayed.

If you want to check the previous or next information of the channel, please press **+6:00** key (**Yellow color key**) or **-6:00** key (**Green color key**) on the RCU.

Note: A " **No data available**" message will be shown if the selected channel does not provide EPG data.

9 Timer

You can adjust the real time as well as you can program the timer in various ways. This function is one of the strong points of the unit.

9.1 Time Adjust

Usually you get the information real time from the satellite automatically but sometimes they transmit wrong information. In that case, you can adjust the real time using this function.

9.2 Time Reservation

Timer can be activated by the “Turn On” and/or “Turn Off” option.

Timer allows you to program the various timer functions. You can set the timer daily, weekly, monthly or once.

10 Antenna Direction Help

Although you have entered correct values in Antenna Set up menu, if your antenna is positioned incorrectly, you will not receive signal from the Satellite.

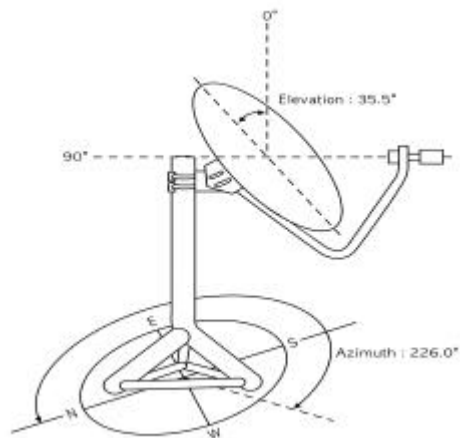
So the STB provides Antenna Direction Help in order to let you have exact information to direct your antenna toward a satellite. First select your desired Satellite name and then the location of selected satellite will be displayed. In case the location of the satellite is changed, you can re-set to the new location. Second, enter the value of Longitude and Latitude.



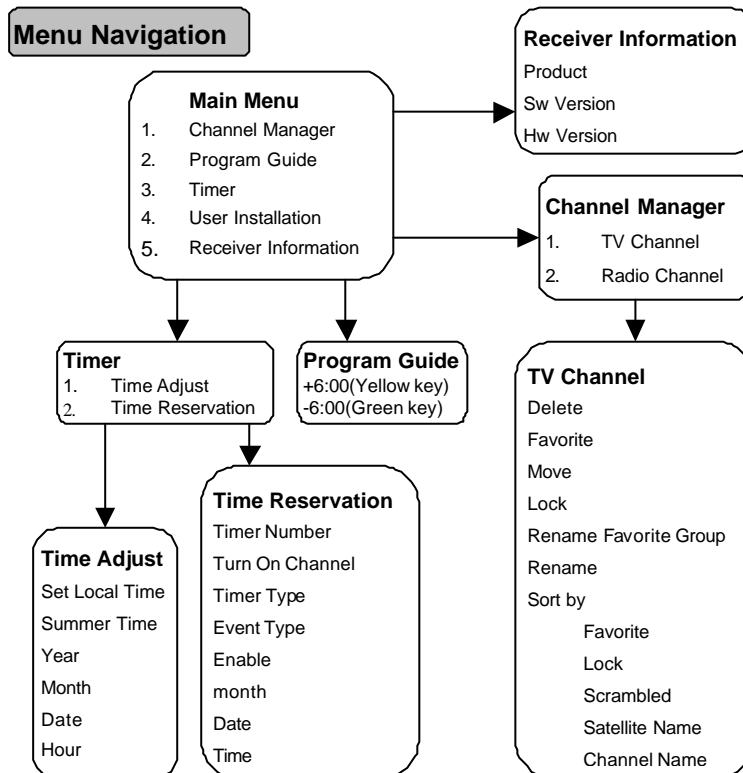
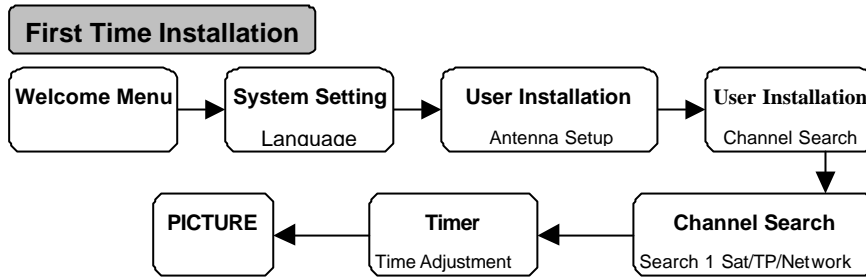
USER'S MANUAL

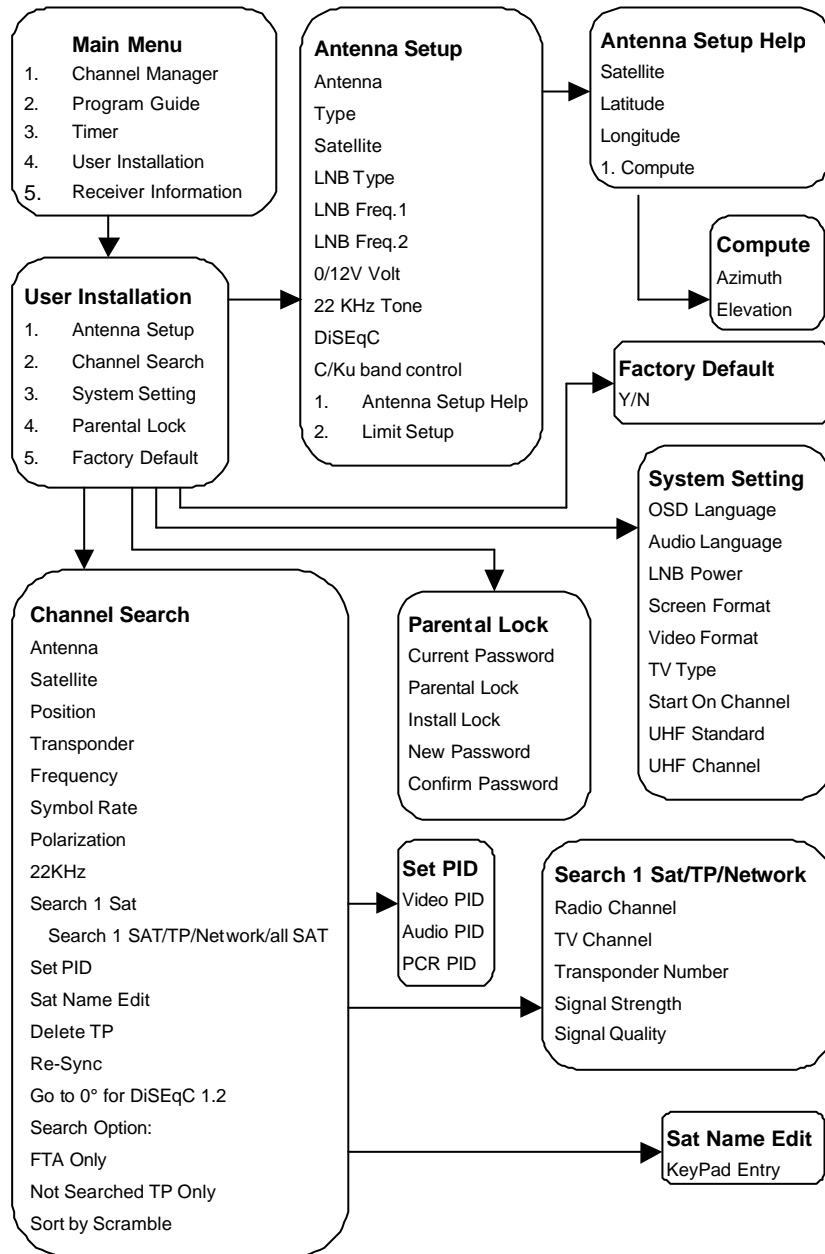


After entering the correct value of your position, place your cursor on Compute and press the **OK** key. The STB shows the exact information of antenna.



11 Menu Tree of STB





12 Technical Specification

TRANSMISSION STANDARDS	
DVB, MPEG-2	
INPUT/ DEMODULATION	
Connector Type	2X F Type, 3/8-32UNEF-2A (1 input/1 loop through)
Input Frequency	950 to 2150 MHz
Signal Input level	-65 to – 25 dBm
Band Switch control	22 KHz
LNB Supply	13.0 + 0.5 V / 18V + 0.7 V, max 400 mA
Demodulation Type	QPSK / FEC Coding (DVB prETS 300 421)
Symbol Rate	$2 < R_s < 45$ Mbaud (SCPC/MCPC)
DIGITAL AUDIO (reserved)	
Connector Type	1 X RCA
Output	S/PDIF encoded with AC-3 (Optional)
Sampling Frequency	32, 44.1 or 48 KHz
AUDIO/ VIDEO PROCESSING	
Audio Decompression	MPEG-1 layer I and II / Musicam
Audio Outputs	Stereo Channel/Dual Mono/Joint Stereo/ Mono
Video Decompression	MPEG-2 Main Profile @ Main Levels With Letter
Video buffer	64 Mbits of SDRAM is provided
Data rate	up to 15Mbits/s (Max. burst rate: 228 Mbits/s)
Video output	PAL-25 frame @720 x 576 NTSC-30 frame @720 x 480
Video format	4:3, 16:9

USER'S MANUAL

DATA SERVICE PORT	
Connector	9-pin D-sub female
Data protocol	RS232C interface. The DVB-DSR is seen as the Data Communication Equipment (DCE) and the PC (or other terminal) is seen as the Data Terminal Equipment (DTE).
Data rate	Maximum of 625K bits/s
POWER SUPPLY	
Type	Switching mode
Main input voltage	100 - 240V AC @ 50Hz/60Hz± 5%
Nominal power consumption	30W
SAFETY	
Insulation resistance	more than 10M at 500Vdc Ambient conditions of 28± 2% & 70%RH
Withstand Voltage (Hi-Pot)	l/p to O/p:3kV(1 min)
Temperature Rise	< 75 on winding & core; < 50 on casting At 264Vac @ 50Hz
Safety Standard	Designed to meet IEC 9
MICROPROCESSOR	
Microprocessor	STMicroelectronics STi5518
Clock frequency	81MHz
SDRAM Memory	8Mbyte
Flash memory	2Mbyte



PHYSICAL CHARACTERISTICS	
Front Panel	
Keys	6 Keys
Indicators	Power on/off
Remote control input	Infra-red receiver
Display	4Digit (7Segment)
Rear Panel	
Connectors	1 LNB Input / 1 Loop through output (2F-type) 1 x S/P DIF 1 x 0/12 Volt (RCA) 2 x Audio L/R (RCA) 1 x Video SIGNAL (RCA) 1 x RS-232 (9-pin D-sub female) 1 x RF Modulator (IEC169-2) 1 x S-VHS (4-pin Mini-Din)

13 Trouble Shooting

Problem	Possible Causes	What To Do
The display on the front panel does not light up.	Main cable is not connected.	Check that the main cable is plugged into power socket.
No sound or picture, but the front panel red light is ON.	The unit is in standby mode.	Press the standby button.
No sound or picture.	The satellite dish is not pointing at the satellite.	Adjust the dish. Check the Signal Level in the Antenna Setup menu.
	No signal or weak signal.	Check the cable connections, LNB and other equipment connected between the LNB and the receiver, and/or adjust the dish.
Bad picture/ Blocking error.	The satellite dish is not pointing at the satellite	Adjust the dish.
	Signal is too strong.	Connect a signal attenuator to the LNB input.
	Satellite dish is too small.	Change to a larger dish.
	LNB noise factor too high.	Change to an LNB with lower noise factor.
	The LNB is faulty.	Change the LNB.
No picture appears on the TV screen.	The system is connected by SCART leads and TV is not in AV/EXT mode.	Check the UHF channel fixed in your system and tune the UHF channel properly.



Problem	Possible Causes	What to do
There is interference on your digital satellite channel.	The system is connected using RF leads and the output channel of the receiver interferes with an existing terrestrial channel or Video signal.	Change the receiver output channel to a more suitable channel, or connect the system using SCART leads.
The RCU is not working.	Battery exhausted.	Change the battery.
	RCU is incorrectly aimed.	Aim the RCU at the unit, or check that nothing blocks the front panel.

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