

# User's Manual

***Digital Satellite Receiver***  
***SO-5000ND***



**HYUNDAI DIGITAL TECHNOLOGY Co.,LTD.**

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 **HYUNDAI DIGITAL TECHNOLOGY**

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## 1. Introduction

### 1.1 Overview

This satellite receiver is designed for automobile.

Enjoy the wide choice of more 8,000 different channels, broadcasting a large range of culture, sports, cinema, news, events, etc.

### 1.2 Main Features

- Fully compliant with MPEG-2, H.264/AAC.
- User friendly operating Menu and On-screen Graphic Menu
- Easy to use EPG (Electronic Program Guide) on screen.
- Age protection lock function.
- Tele-text encoding
- Supported Bluetooth2.0(Stereo Audio & Serial communication)

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment under FCC rules.

## 2. Safety/Precautions.

### 2.1 Safety

- Be sure to read the user's manual before starting the operation of the unit.
- Do not touch the power cord with wet hands as it may cause electric shock.
- Never open the cover. It is very dangerous to touch the inside of the unit due to possible electric shock.
- Place the unit in a well ventilated and no-heat environment.
- When you do not use this unit for a long time, make sure that power cord is pulled out from the outlet. Also do not use a damaged power cord as it may cause fire or electric shock.
- A professional installation is required. If reception is interrupted, contact your local service center.
- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus

#### WARNING

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

#### • IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use the attachments/accessories specified by the manufacturer.

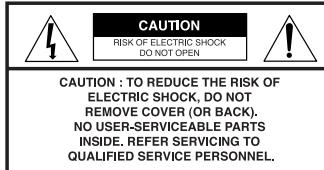
12) Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

#### • Explanation of Safety Related Symbols



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## 2.2 Precautions

### When installing the unit

- Install the unit horizontally. An uneven installation may cause the unit to be damaged.
- Do not put heavy items such as a TV on the unit. That may cause the unit to be damaged.
- Do not leave the unit where the water drops or splashes.
- Do not put water holding items such as vase on the unit.
- Do not install the unit:
  - Where it is subject to vibrations
  - Where it is exposed to direct sunlight
  - Where there is humidity
  - Where the temperature is too high or too low.
  - Where there is no ventilation
- Moving the unit to a hot area from a cold one will cause condensation.
- Do not operate the unit for one or two hours or until it has dried completely

## 3. Check Point before Use

### Accessories

#### Accessories of the Unit

MANUAL 1EA



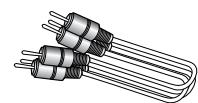
REMOTE CONTROL UNIT 1EA



BATTERY (CR2025) 1EA



COMPOSITE CABLE (3M, 6M) 1EA



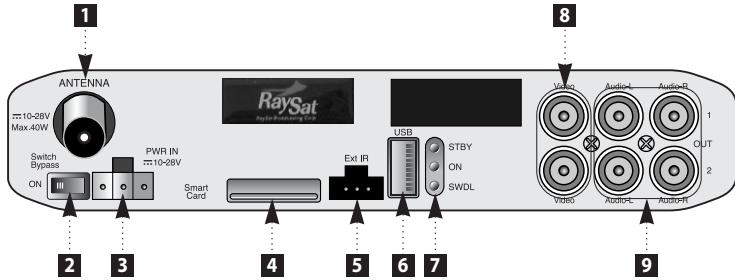
POWER CABLE (6M) 1EA



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

## 4. Controls/Functions

### 4.1 Front Panel

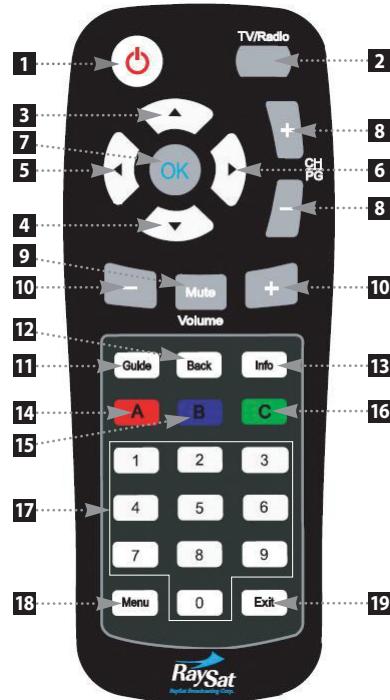


- [1] **Antenna** : Digital cable signal input to digital tuner
- [2] **Switch Bypass** : To switch the receiver in "Car SW mode" or "power on mode".
- [3] **PWR IN** : Input Voltage level (10-28VDC).
- [4] **SIM slot(Smart Card)** : SIM Card slot..
- [5] **Ext IR** : To receive the infrared signal from IR RCU (If want to be use the IR RCU).
- [6] **USB HOST 2.0** : When use the Firmware download
- [7] **LED Light** : Turn on red light while in the "Standby mode".  
Green light while in the "power on mode".  
Flashes yellow when receiving data from RF RCU
- [8] **Video** : Composite video output
- [9] **Audio L/R** : Audio output Left & Right

Connecting your TV directly to the audio/video output of your Set-Top Box will assure a more vivid picture and enhance your viewing enjoyment.

### 4.2 RF Remote Control Unit.

- [1] **POWER** : To switch into 'Standby' or 'Power on' mode
- [2] **TV/R** : To switch between the TV and Radio channels
- [3] - [4] **Up & Down** : To move the cursor position on the application.
- [5] - [6] **Left & Right** : To change the value of an item with preprogrammed values.
- [7] **(OK)** : To select an item or to confirm a menu
- [8] **CHANNEL** : To adjust the channel
- [9] **MUTE** : To turn the sound on/off.
- [10] **VOLUME** : To adjust the volume level.
- [11] **GUIDE** : To watch program information
- [12] **BACK** : Reserved.
- [13] **INFO.** : To display the information of the current channel
- [14] **RED** : To see Favorite channel list. To set up favorite in the Channel list menu
- [15] **BLUE** : Reserved
- [16] **GREEN** : To lock channel in the Channel list menu.
- [17] **Numeric Keys (0-9)** : To select channels and input of channel numbers or characters
- [18] **MENU** : To enter the main menu.
- [19] **EXIT** : To return to previous status or menu.



## 4.2.1. Using the Remote Controller

### Batteries

- How to insert a battery

- 1) Open the cover at the top of the near side of the remote control.
- 2) Insert a CR2025 type battery to be aligned with appropriate +/- polarity.
- 3) Close the cover completely.

- When to replace a battery

If the operational range of remote control is getting smaller, it indicates batteries are almost consumed.

Replace the battery.

- How to replace a battery

- 1) Check +/- polarities and insert a battery to be aligned with appropriate +/- polarity.
- 2) Even if old and a new battery is the same., do not use battery with different characteristics.

- Accident prevention

- 1) Do not recharge, heat or disassemble the battery. Do not cross +/- polarities.
- 2) If remote controller is not going to be used for a long time, take the battery out.

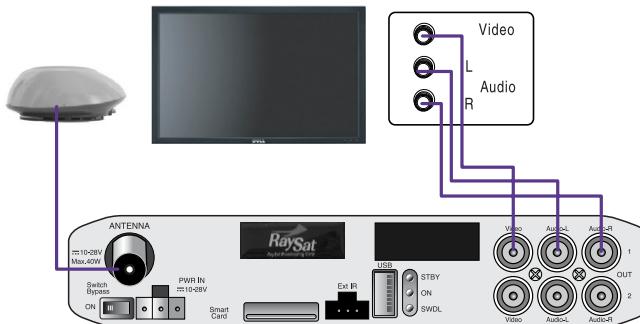
- Paring

Is pressing RCU's power and mute button at the same time while STB become "power on mode"

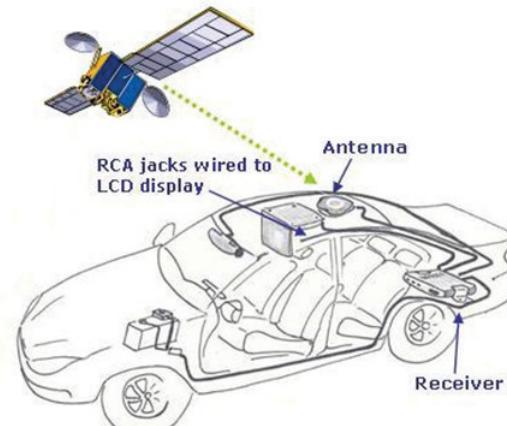
Then RCU's power button is lighting ( End paring )

## 5. How to Connect

### 5.1. When connecting IRD to Car TV with AV connectors



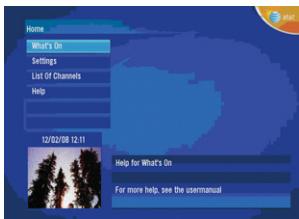
### 5.2. When connecting Car to STB with power cable



## 6. Operation

The STB has the following EPG Menu Structure:

**Add in the Correct Menu Structure from The Storybaod when the Updated Storyboard is Released.**



When the STB is powered ON the STB will automatically tune to the last viewed Channel. When the user presses the "TV" button on the Remote Control Unit the "Home" Screen is displayed.

The Home Screen is the highest level menu screen.

The Home Screen will display the currently tuned to event in the bottom left hand corner.

### 6.1 Whats On

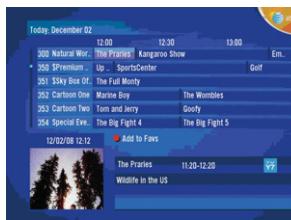
The user uses this menu to see which Video or Radio events are currently being broadcast and what events will be broadcast in the Future, up to 7 hours ahead of the current time.



In Addition to being able to see what the Current and Future events are on the Video & Radio Channels the user is able to see which events have been booked for viewing (not Pay Per View) as well as to see which Current and Future events are being shown on the users Favourite Channels (see page xx for information on using Favourite Channels).

#### 6.1.1 Video Channels

To see which video events are currently being broadcast and which events will be broadcast in the next 7 hours the user follows the menu structure, **Home-What's On-Video Channels**.



The user is able to scroll up and down through the Channel listings to view Current and Next events that are to be broadcast. The user can scroll Right on any channel to view Future broadcast events (up to 7 hours ahead of current time) using the Remote Control Unit.

#### Notes:

1. The Date format displayed above the video in the bottom left is MM/DD/YY.
2. The "Add to Favs" feature is used by pressing the Red button on the Remote Control Unit. The feature allows the user to add Channels to their list of Favourite Channels.
3. The Program Synopsis window for the highlighted event displays the:
  - a. Event Name = The Prairies.
  - b. Event Start Time = 11:20.
  - c. Event Finish Time = 12:20.
  - d. US TV Rating or MPAA Rating = TV Y7.
  - e. Short Description of the highlighted Event = "Wildlife in the US".
4. The video of the currently tuned to event is displayed in the bottom left hand corner.

When the user finds a current event they wish to view the user will press the "OK" button on the Remote Control Unit and the STB will display Full Video of the selected event as well as display a Program Banner over the video.

The Program Banner displays the following information:

- a. Date-MM/DD/YY Format.
- b. Current Time = 10:17
- c. Channel Number = 300
- d. Channel Name = Natural World
- e. Current Event Name = Hunter
- f. Current Event Start Time = 09:20
- g. Current Event Finish Time = 10:20
- h. Next Event Name = The Fox.
- i. Next Event Start Time = 10:20.
- j. Next Event Finish Time = 11:20.
- k. US TV Rating or MPAA Rating = TV Y7.
- l. Received Signal Strength Indicator = 140.

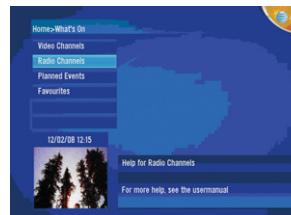


**Notes:**

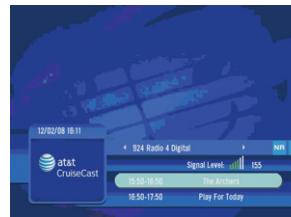
The duration that the Program Banner is displayed is configurable. Please see the User Setup-Notifications section on page xx.

## 6.1.2 Radio Channels

To view which Radio events are currently being broadcast the user follows the menu structure, **Home-What's On-Radio Channels**.



The user is able to scroll up and down through the Radio Channel listings.



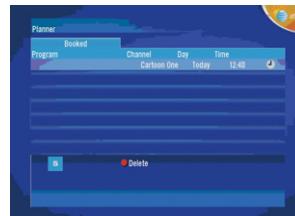
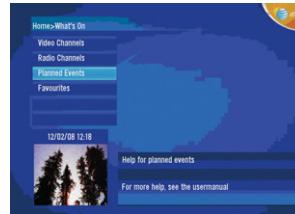
The user can see the Current and Next event that are to be broadcast once the user has tuned to that Radio channel.

**Notes;**

1. When the Radio Channel is tuned to the Blue background screen is displayed with the Program Banner . The program banner contains the following information:
  - a. Date-MM/DD/YY Format.
  - b. Current Time = 16:11.
  - c. Channel Number = 924.
  - d. Channel Name = Radio 4 Digital.
  - e. US TV Rating or MPAA Rating = NR.
  - f. Sub Rating = D.
  - g. Received Signal Strength Indicator ? shown as vertical bars with numeric value = 155.
  - h. Current Event Name = The Archers.
  - i. Current Event Start Time = 15:50.
  - j. Current Event Finish Time = 16:50.
  - k. Next Event Name = Play For Today.
  - l. Next Event Start Time = 16:50.
  - m. Next Event Finish Time = 17.50.
2. When the Program Banner disappears then the Blue background screen will display the following:
  - a. Song Title.
  - b. Artists Name.
  - c. Record Label.
  - d. Album Title.

### 6.1.3 Planned Events

To view which Events the user has “booked” to view the user follows the menu structure, **Home-What's On-Planned Events**.



When the user presses “OK” on the Remote Control Unit while Planned Events is highlighted the user is presented with a list of booked events in the Planner screen. The Planner screen shows all of the events that have been booked for viewing.

**Notes;**

1. The Planner screen shows the:
  - a. Channel Name.
  - b. Day when the event is to be broadcast.
  - c. The Start Time.
  - d. Reminder Notification.
  - e. The Sub category Rating.
2. The user can delete a booked event from the planner by highlighting the event and pressing the red button on the Remote Control Unit.

## 6.1.4 Favourites

To view which Channels the user has added to their favourites list and to see what Current and Future Events are being broadcast on the favourite channels the user follows the menu structure, **Home-What's On-Favourites**.

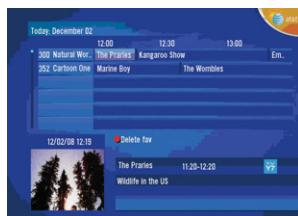


The Favourites allows the user to collate their favourite Video and Radio channels into one easy access list. This allows the user to view the Current and Future Events that are being broadcast on favourite channels without the need for the user to scroll through the main channel listings.

To Favourites displays up to 7 hours of future events for a channel that has been added to the Favourites.

The information that is displayed for a highlighted event in the Favourites is the same information that is displayed for Video Channels:

- Date-MM/DD/YY Format.
- Current Time = 12:19.
- Channel Number = 300.
- Channel Name = Natural World.
- Event Name = The Prairies.
- Event Start Time = 11:20.
- Event Finish Time = 12:20.
- US TV Rating or MPAA Rating = TV Y7.
- Short Description of the highlighted Event = "Wildlife in the US".



### Notes:

1. To delete a Channel from the Favourite the user can press the Red button on the Remote Control Unit.

If the user wishes to add a Channel in to their Favourites then the user must go to the Video Channel guide or the Radio Channel guide and select an Event in the Channel the user wishes to add to their Favourites.

The user then presses the Red button on the Remote Control Unit to add the channel to their Favourites.



Once the Channel has been added to the users Favourites the Red "Add to Favs" icon disappears from the EPG as shown below.



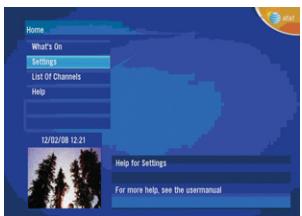
## 6.2 Settings

The Settings screen is the second level in the Home screen. There are 3 sub menu screens of Settings. These are:

- a. Parental Control.
- b. User Setup.
- c. System Setup.

The Parental Control and System Setup screen are each protected by a 4 digit PIN. The PIN's associated with these screens are:

- Parental Control = 0000
- System Setup = 9871

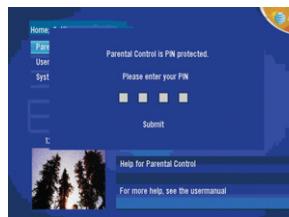


### 6.2.1 Parental Control

Parental Control allows Parents to control the content that can be viewed and the content that can be blocked. A Parent can control what content can be viewed and what content can be blocked by 3 methods:

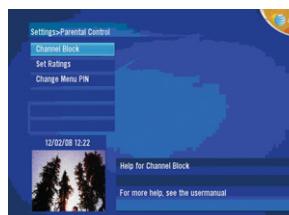


1. Channel Blocking Only.
2. TV Rating/MPAA Content Rating Only.
3. Both Channel Blocking & TV Rating/MPAA Content Rating.



When Parents choose to set Parental Controls they will be need to enter a PIN number to access the Parental Control Menu. The default PIN number for Parental Control access is 0000. It is recommended that the PIN be changed to prevent unauthorized access to the Parental Control Menu.

Once the PIN has been accepted then Parents can select one of the 3 Parental Control sub menus.



**Channel Block** allows parents to select particular channels that they wish to block access to. All events on blocked channels will subsequently be blocked.

**Set Ratings** allows parents to block content on any channel that exceeds one of the TV Ratings/MPAA Ratings.

**Change Menu PIN** allows parents to change the default 4 digit PIN to a PIN of their choosing.

### 6.2.1.1 Channel Block



The Channel Block screen lists all Video and Radio channels that are available to the user.

To block channels the user scrolls through the channels. When the user highlights a channel that they wish to block they press the "OK" button on the Remote Control Unit.

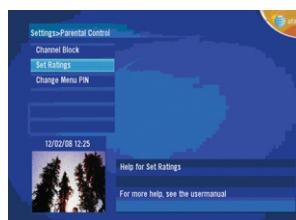
A X will appear next to the channel. This channel is now blocked. The user is not limited to the number of channels that they block.

To unblock a channel the user simply highlights the channel they wish to unblock and presses the "OK" button on the Remote Control Unit.

To save changes the user must press the Blue button on the Remote Control Unit.



### 6.2.1.2 Set Ratings



The user may choose to block events that can be viewed based upon the Rating that the event has been given.



When the user selects the Set Ratings sub menu the user will be presented with the US TV Ratings and the MPAA TV Ratings which are displayed in order of rating value.

An event that has a rating that is allowed to be viewed is represented by a Green V  
An event that has a rating that is not allowed to be viewed is represented by a Red X



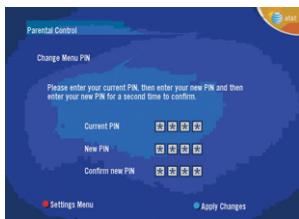
To select a rating that the user wished to block or unblock the user must scroll through the ratings and select a highlighted rating by pressing the "OK" button on the Remote Control Unit.

To save changed the user must press the Blue button on the Remote Control Unit.

### 6.2.1.3 Change Menu PIN



To change the 4 digit PIN that is used to access the Parental Control screen the user can select the Change Menu PIN sub menu.



Once the user has selected the Change Menu PIN option the user will need to enter the current PIN, the new PIN and then will need to confirm the New PIN. The user can then press the Blue button on the Remote Control Unit to save the changes.

### 6.2.2 User Setup

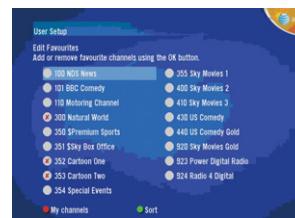


The user set up menu allows the user to modify the settings for the Set Top Box.

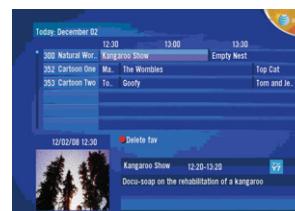


The user can modify the settings that are shown below.

#### 6.2.2.1 Edit Favourites



The user can add or remove Video or Radio channels from their favourites list.



By pressing the Red button on the Remote Control Unit the user is able to view a list of their favourite channels. When the user is viewing their favourites list the operation and information presented to the user is the same as described in section 1.1.4.

## 6.2.2.2 Language Setup



The user can change the EPG Text Language, the Audio Language and the Closed Captioning language from English to Spanish. To do this the user selects the **Language Setup** sub menu.

The user can then scroll through the fields and change the setting by pressing the Right/Left arrow key on the Remote Control Unit.



**THIS SCREEN BELOW IS NOT CORRECT. AN UPDATES SCREEN IS PENDING.**

Once the user has made the changes they require then user presses the Blue button on the Remote Control Unit.



**THIS SCREEN BELOW IS NOT CORRECT. AN UPDATES SCREEN IS PENDING.**

## 6.2.2.3 Audio

The user can change audio settings of the Set Top Box by selecting the Audio sub menu.



Preferred Audio allows the user to select.....

**Need to confirm what the options will be.**

Audio Delay allows the user to extend the audio delay. This is particularly useful when using a surround sound system.



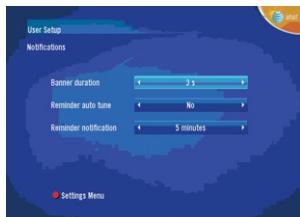
This needs to be removed from the EPG. Need confirmation as to how this screen will look with regard to available options or whether or not the screen will be removed from the EPG.



Need confirmation as to how this screen will look with regard to available options or whether or not the screen will be removed from the EPG.

## 6.2.2.4 Notifications

The user can configure the notifications that appear on the screen as well as the duration of how long the notifications are displayed for by choosing the **Notifications** sub menu.



**Banner Duration** is the duration that the Program Banner will be displayed on the screen when the user tunes to a new event. The range is from 0-60 seconds.

**Reminder Auto Tune** allows the user to enable the Set Top Box to automatically tune to a booked event even if the user is actually tuned to a different channel and is watching a different event.

**Reminder Notification** is the time before a booked event is due to start that the user will be reminded that a booked event is going to start. The range is from 1-15 minutes.

To save any changes the user presses the Blue button on the Remote Control Unit.



## 6.2.2.5 Screensaver Setup

The user can configure the Screensaver setup by selecting the Screensaver setup sub menu.

The user can configure the period of time before a screen saver is displayed. A screensaver will only be displayed when the user is in then Menu and sub menu's and no interaction has occurred between the user and the EPG.



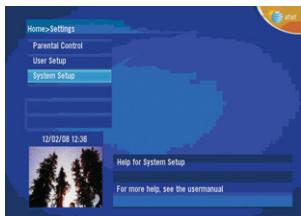
The range is from 1-5 minutes.



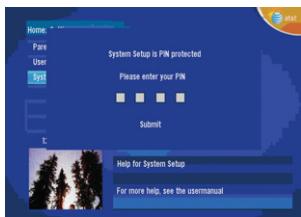
To save any changes the user presses the Blue button on the Remote Control Unit.

## 6.2.3 System Setup

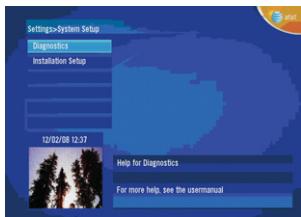
The System Setup menu is PIN protected and allows the user to change the tuning parameters of the Set Top Box if the Set Top Box is not able to achieve Signal Lock and the TV Setup.



To access the System Setup menu the user must first enter a 4 digit PIN number, 9871.



The user can then access the Installation Setup sub menu.



Once the user has accessed the Installation Setup sub menu the user can then change the Satellite Setup parameters of the TV Setup parameters.

### 6.2.3.1 Satellite Setup

In the unlikely event that the Set Top Box can not receive a satellite signal the user can call Technical Support on **1-866-800-9030** can go to the AT&T website:

<http://www.cruisecast.com>



If the user is instructed by Technical Support to change the Set Top Box tuning parameters then the user will select the Satellite Setup screen and press "OK" on the Remote Control Unit.

There are 7 fields that can be configured by the user to re-tune the Set Top Box are:

1. Frequency.
2. Polarisation.
3. Chip Rate.
4. Spectral Inversion.
5. Spreading Factor.
6. Orbital Position.
7. East / West Flag.

**IMPORTANT: Do not change any of the 7 parameters unless asked to do so by a Technical support representative.**

THIS SCREEN IS NOT UP TO DATE.



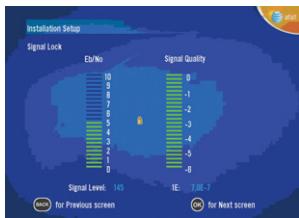
When the user has made the changes that the technical support representative has asked for then the user presses the "OK" button on the Remote Control Unit.

After pressing the "OK" button on the Remote Control Unit the user will be presented with a Signal Lock screen.

THIS SCREEN IS NOT UP TO DATE.

When the Set Top Box has re-tuned and acquires Signal Lock the Signal Level and 1E indicators will be green. Once the indicators are Green the user can press "OK" button on the Remote Control Unit and the Set Top Box tune to the parameters entered by the user.

If the Signal Lock and 1E indicators are Red then the user needs to consult with the technical support representative.



### 6.2.3.2 TV Setup

The user can change the TV display by selecting the TV Setup sub menu by highlighting the TV Setup sub menu and pressing "OK" on the Remote Control Unit.



The user will be able to choose which TV format aspect ratio size they prefer to watch video in:

- 4:3.
- 16:9.

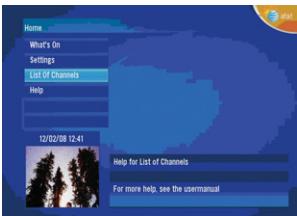
THIS SCREEN IS NOT UP TO DATE.



## 6.3 List Of Channels

The List Of Channels is the third level menu in the Home Screen. In this menu all Video and Radio channels are listed together. There is no:

- a. Date.
- b. Current Time.
- c. Channel Number.
- d. Channel Name.
- e. Event Name.
- f. Event Start Time.
- g. Event Finish Time.
- h. US TV Rating or MPAA Rating-In this case TV Y7.
- i. Short Description of the highlighted Event.
- j. Received Signal Strength Indicator.



Information displayed in the List Of Channels menu.

The user can view the list of channels by highlighting the **List Of Channels** menu and pressing "OK" on the Remote Control Unit.

The user will see the list of Video and Radio channels that are available.



The user can select a channel and preview the current event on the channel, by pressing "OK" on the Remote Control Unit.

The current event of the selected channel will be displayed in the right hand side of the List Of Channels Menu.

If the user wishes to tune to the previewed channel then the user can press "OK" on the Remote Control Unit and the Set Top Box will display full video and the program banner containing the relevant information for that event, such as:

- a. Date MM/DD/YY format.
- b. Current Time = 13:52.
- c. Channel Number = 440.
- d. Channel Name = US Comedy Gold.
- e. Current Event Name = Bilko.
- f. Current Event Start Time = 13:40.
- g. Current Event Finish Time = 14:40.
- h. Next Event Name = Cheers.
- i. Next Event Start Time = 14:40.
- j. Next Event Finish Time = 15:40.
- k. US TV Rating or MPAA Rating = TV Y7.
- l. Received Signal Strength Indicator = 145.



Once the Program Banner duration has expired then full video will be displayed.



## 7. Trouble Shooting

This information will help you quickly solve the problem. If you are unable to solve the problem, contact your service provider. (Therefore, if the unit does not work properly, check it according to the procedures shown in the table below)

Problem	Possible causes	Remedy
LED on front panel does not light and display	DC power disconnected.	Check the power cable and bypass switch.
No Picture or sound.	Wrong connection of the video/audio output to TV input terminal.	Connect two terminals correctly with RCA cable.
Black-and-white screen or V-Hold.	Wrong connection of satellite antenna cable.	Connect the antenna cable correctly.
	No signal or weak signal.	Check the cable connections, LNB and other equipment connected between the LNB and the receiver or adjust the antenna.
	Wrong setting of channel information in MENU screen.	Type the setting value correctly.
	Your TV mode is different from satellite broadcasting mode.	Use TV of same mode. Use the NTSC/PAL converter connected to the receiver and TV.
The remote control is not working.	Remote controller is incorrectly operated.	Check the remote controller's battery and then, if does not become try paring between RCU and STB once again.
	Battery exhausted.	Change the batteries.
The SIM card is not working.	The SIM card is not installed properly.	Check that the SIM card has been correctly inserted.

## 8. Specifications

Category	Specification
Flash Memory	32Mbyte
DDR Memory	128Mbyte
EEPROM	256Kbit (32Kbyte )
Front End	IMLM
Power Supply	
Input Voltage	Nominal 12VDC (10 to 28VDC range)
Switch	On/Off Control
Cable	Detachable. three wires black / red/ yellow, 6m long, fuse protected
Mode	Operating / Standby Modes Standby = Video/Audio Off and iMLM power off via FET control
Video	
CODEC	MPEG-4 AVC/H.264 - Baseline, main and extended profile, up to level 2 at least(Main only)
Transport stream	MPEG2-TS
Aspect Ratio	4:3, 16:9; pan & scan; letterbox
Output	2 x CVBS (S-Video is not used)
Audio	
CODEC	MPEG-4 (AAC-HE), MPEG-1 layers 1, 2 and 3 (MP3)
Output	Stereo Connector RCA jack - Female (two sets)
with Bluetooth	Stereo audio transmission over Bluetooth
Remote Control	
Type	2.4GHz ISM band (Nordic, nRF24L01) STB is receive only Actually, used frequency is 2.402~2.473GHz
Coverage	Current coverage = 13M
Key	30Key
Battery	CR2025 (3V)
Code	Address coded and support multi Mobile STB installation (pairing)

Category	Specification
<b>USB</b>	
Functional	USB2.0 Host
Speed	Hi-Speed rate of 480Mbps
Port	2-Port (1-port is at front panel, 1-port is for IMLM interface)
<b>Smart Card</b>	
	locking mechanism to resist vibration - push/push SIM Socket with cover
<b>Front Panel Interface</b>	
RF connector	x 1 : SMA Female(mounted on IMLM)
LED	x 3 : standby/power-on (red/green), SW Download (Blinking Yellow), remote control (blinking red)
USB connector	X 1 : USB 2.0 HOST Only firmware usage to do download be. Firmware download can't do by computer and must use the device(USB memory) only
Power Switch	x 1
Power connector	x 1
RCA connector	x 2 : Female
S-Video connector	x 1 : Female
Smartcard Slot	x 1 : SIM Socket
IR Mouse	x 1 : 3P Male
<b>Bluetooth</b>	
Module	CSR solution(2.4GHz)
Version	Version 2.0
Class	Class 2
Profile	A2DP AVRCP SPP (upto 250kbps) DUN
<b>Mechanical Specification</b>	
W x D x H	Less than 8" x6" x2" (195 * 151.8 * 46 mm)
Weight	Less than 5lbs

Category	Specification
<b>Operational and storage environment</b>	
Operation	0°C ~ 50°C
Storage	-35°C ~ 80°C
Humidity	0 ~ 90%
<b>RF Front End</b>	
Input Frequency	950MHz ~ 1750MHz
RF Input Connector	SMA-Female 50ohm(Input Impedance 50ohm)
Input Level	-65dBm ~ -25dBm
Modulation Data rate	15MCPS / 22.5MCPS / 30MCPS
Channel Bandwidth	18MHz / 27MHz / 36MHz
<b>Antenna Controller Output</b>	
RF Output	315MHz or 333MHz
RF out level	-40dBm