

# Digital Set-Top Box with Viaccess embedded

[ VA-ACE ]

User's Manual



**HUMAX**  
your prime time

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# Safety

This STB has been manufactured to satisfy the international safety standards. Please read the following safety precautions carefully.

**MAINS SUPPLY** : 90 - 250 V AC 50/60 Hz

**OVERLOADING** : Do not overload a wall outlet, extension cord or adapter as this may result in fire electric shock.

**LIQUIDS** : The STB shall not be exposed to dripping or splashing and that no objects filled with liquids, such as base, shall be placed on the apparatus.

**CLEANING** : Disconnect the STB from the wall outlet before cleaning.  
Use a light damp cloth(no solvents) to dust the STB.

**VENTILATION** : The slots on top of the STB must be left uncovered to allow proper airflow to the unit. Do not stand the STB on soft furnishings or carpets.  
Do not expose the STB to direct sunlight or do not place it near a heater.  
Do not stack electronic equipments on top of the STB.

**ATTACHMENTS** : Do not use any unrecommended attachments as these may cause hazard or damage the STB.

## CONNECTION TO THE SATELLITE DISH LNB




: Disconnect the STB from the mains before connecting or disconnecting the cable from the satellite dish.  
FAILURE TO DO SO CAN DAMAGE THE LNB.

## CONNECTION TO THE TV

: Disconnect the STB from the mains before connecting or disconnecting the cable from the satellite dish.  
FAILURE TO DO SO CAN DAMAGE THE TV.

**EARTHING** : The LNB cable **MUST BE EARTHED**.  
The earthing system must comply with SABS 061.

**LOCATION** : Place the STB indoor in order not to expose to lightening, rain or sunlight.

	TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	This symbol indicates "dangerous voltage" inside the product that presents a risk of electric shock or personal injury.
	This symbol indicates important instructions accompanying the product.
<b>Warning!</b>	
Please do not insert metal or alien substance into the slots for the Modules and Smart Cards. In doing so can cause damage to the STB and reduce its life span.	

# Copyright & Glossary

## Copyright

- VIACCESS™ is a trademark of France Telecom.
- CryptoWorks(TM) is a trademark of Philips Electronics N.V.
- Irdeto is a trademark of Mindport BV.
- Nagravision is a registered trademark of Kudelski S.A.
- Conax is a trademark of Telenor Conax AS.

## Warning

HUMAX cannot be held responsible for any kind of problems caused by the use of unofficial software. The use of software versions other than HUMAX official software will void the manufacturer's warranty. It is advised that only the formal software released from HUMAX should be used in all HUMAX product range.

## Glossary

- **Antenna**  
A device that collects and radiates electromagnetic waves. Includes a satellite dish and broadband antenna.
- **Forward Error Correction(FEC)**  
A system of error control for data transmission.
- **Frequency**  
The number of cycles or events per one second, which is expressed in the unit of Hertz(Hz).
- **Intermediate Frequency(IF)**  
A frequency to which a carrier frequency is shifted as an intermediate step in transmission or reception.
- **Low Noise Block(LNB) Downconverter**  
A low noise microwave amplifier and converter which downconverts a range of frequencies to IF range.
- **Packet Identifier(PID)**  
A set of numbers that identifies transport stream packets containing data from a single data stream.
- **Polarisation**  
Characteristic of an electromagnetic wave determined by the orientation of the electric field vector.
- **Quaternary Phase Shift Keying(QPSK)**  
Phase-shift keying in which four different phase angles are used.
- **Service**  
A channel to which a decoder or TV is tuned.
- **Transponder**  
An automatic device that receives, amplifies and retransmits a signal on a different frequency.

# Reference

## 1. Connect DiSEqC 1.0

All our receivers are designed to be DiSEqC 1.0 compatible. This allows multiple antennas to be connected to the STB simultaneously.

If you have two or more fixed antennas or LNBs, you can use a DiSEqC 1.0 switch.

1. Connect the coaxial cable from the first LNB to the LNB 1 or LNB A input connector of the DiSEqC switch.
2. Connect the coaxial cable from the second LNB to the LNB 2 or LNB B input connector of the DiSEqC switch.
3. Do the same for other LNBs.
4. Connect one end of a Coaxial cable to the RF output connector of the DiSEqC switch and the other end to the LNB IN socket on the STB.

## 2. Connect DiSEqC 1.2

Please refer to page E33.

## 3. Connect a Satellite antenna

To the digital receiver, you can connect either a single satellite antenna directly or through converter box several antennas or LNB of multi-feed equipment.

You can connect a further Sat-receiver(for example analogue), with the receiver of common antenna equipment that has satellite signals.

## 4. Loop Through

If you have another analogue or digital STB and you wish to use the same LNB then you can connect it via the loop through. Connect one end of a Coaxial cable to the LNB OUT on the STB and connect the other end to the LNB IN on your second STB.

## 5. Upgrade via Satellite and Personal Computer

To maintain the STB up-to-date, it will be possible to upgrade the software of the STB via satellite and personal computer. New versions of the software may include new or improved functions for the current one. If you want to download and upgrade the software via satellite, first of all tune your signal to ASTRA 1 Satellite. When the STB switches into presentation from standby or you choose the STB upgrade menu, the STB detects the new software. If the new software is available, the STB will ask you whether it downloads the software or not. If you want to download and upgrade the software via personal computer, visit our homepage to get more information and the new software.  
(Homepage: <http://www.humaxdigital.com>)

# Reference

## 6. Software Upgrade

HUMAX digital set-top box is a highly sophisticated product - incorporating one of the best software applications.

Whenever a problem is found with this software or, in fact, extra functions or enhanced applications are added, the software in the equipment has to be upgraded.

In order to maintain proper performance of the product, it is essential to have the most up to date software. The latest news and release of software versions may be found at HUMAX website - <http://www.humaxdigital.com>.

It is recommended that users register to HCSA(HUMAXCustomer Service Area) and periodically check for the availability of software upgrade.

There are three methods to upgrade the software:

- (a) set-top box to set-top box download(copies the software of the main unit into slave unit);
- (b) pc to set-top box download(downloads the software directly from pc to the model requiring upgrade);
- (c) OTA over-the-air(downloads the software where the manufacturer reserves the right to decide when and where to release through satellite system).

Over The Air(OTA) is simply another alternative for downloading software versions. However, the manufacturer reserves the right to decide when and where this software upgrade can take place by "beaming" latest software versions over the air via satellite systems. Note that OTA is only limited to certain geographical regions mainly due to different satellites having different footprints(area where the signal can be received).

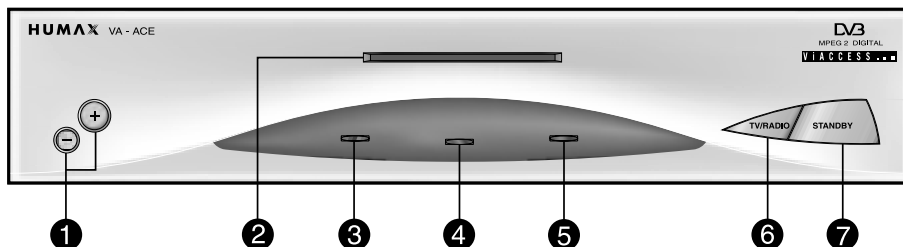
SUSS(TM) is an official trademark and logo for HUMAX loader software to perform OTA.

The software upgrade via satellite system will only occur under the following circumstances:

- 1) the equipment should have appropriate loader software;
- 2) the manufacturer decides to release software downloading via a designated satellite system;
- 3) the equipment must be "tuned" properly to the same satellite that the manufacturer uses.

# STB Connections

## Front & Rear Panel



### 1 - , +

Press to change services down and up.

### 2 SMART CARD SLOT

Insert the SMART CARD with it's IC-Chip part facing the botton side.

### 3 ERROR LED(AMBER)

Indicates that the STB has an error.

### 4 STANDBY LED(RED)

Indicates that the STB is under standby.

### 5 OPERATING LED(GREEN)

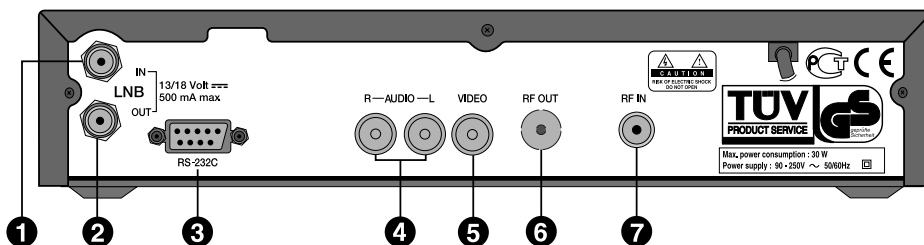
Indicates that the STB is operating.

### 6 TV/RADIO

Press to switch between TV and Radio modes.

### 7 STANDBY

Press to switch between Operation and Standby modes.



### 1 LNB IN

Use to connect an antenna.

### 2 LNB OUT

Use it when connecting to another STB.

### 3 RS-232C

Use it when connecting to your PC.

### 4 AUDIO OUTPUT

Audio signal from your STB to Hi-Fi system.

### 5 VIDEO OUTPUT

Video signal from your STB to your TV.

### 6 RF OUT

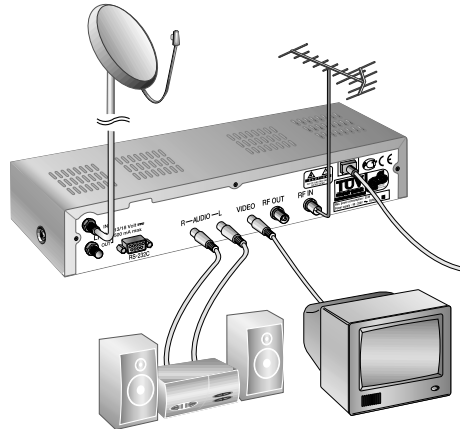
If your TV doesn't have a RCA/Cinch Jack, use to connect your TV.

### 7 RF IN

Use to connect a terrestrial antenna.

# STB Connections

There are several ways of connecting the STB to your existing Audio/TV system. We recommend using one of the following set-up for best results:



## TV only(with RCA/Cinch)

1. Connect one end of RCA/Cinch cable to the RCA/Cinch socket on the STB and the other end to a RCA/Cinch socket on your TV.  
If your TV doesn't have a RCA/Cinch socket, connect one end of RF cable to the RF OUT on STB and the other end to a RF input socket on your TV.
2. Connect the coaxial cable from the LNB to the LNB IN socket on the STB.

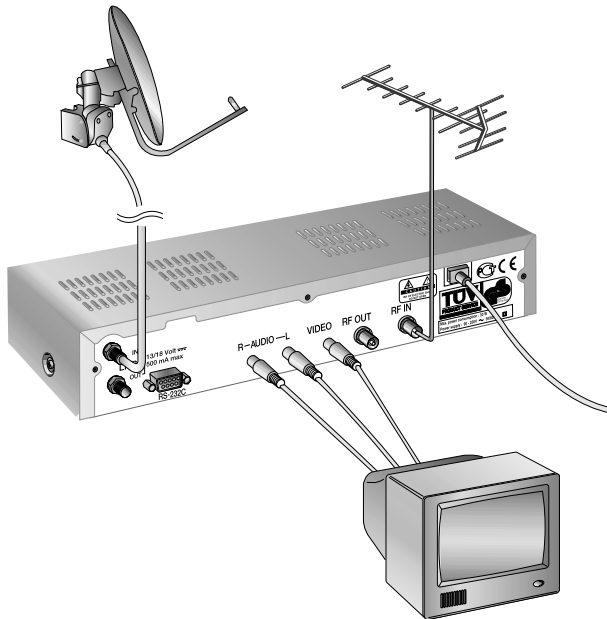
## TV with Terrestrial antenna

1. Connect one end of RCA/Cinch cable to the RCA/Cinch socket on the STB and the other end to a RCA/Cinch socket on your TV.
2. If your TV doesn't have a RCA/Cinch socket, connect one end of RF cable to the RF OUT on STB and the other end to a RF input socket on your TV.
3. Connect one end of RF cable to the RF IN on the STB and the other end to a terrestrial antenna connection or the socket for public antenna on the wall.
4. Connect the coaxial cable from the LNB to the LNB IN socket on the STB.

## With Hi-Fi System

1. Connect an RCA/Cinch stereo cable from the AUDIO L,R sockets on the back of the STB to the LINE, AUX, SPARE OR EXTRA input sockets on your Hi-Fi system.

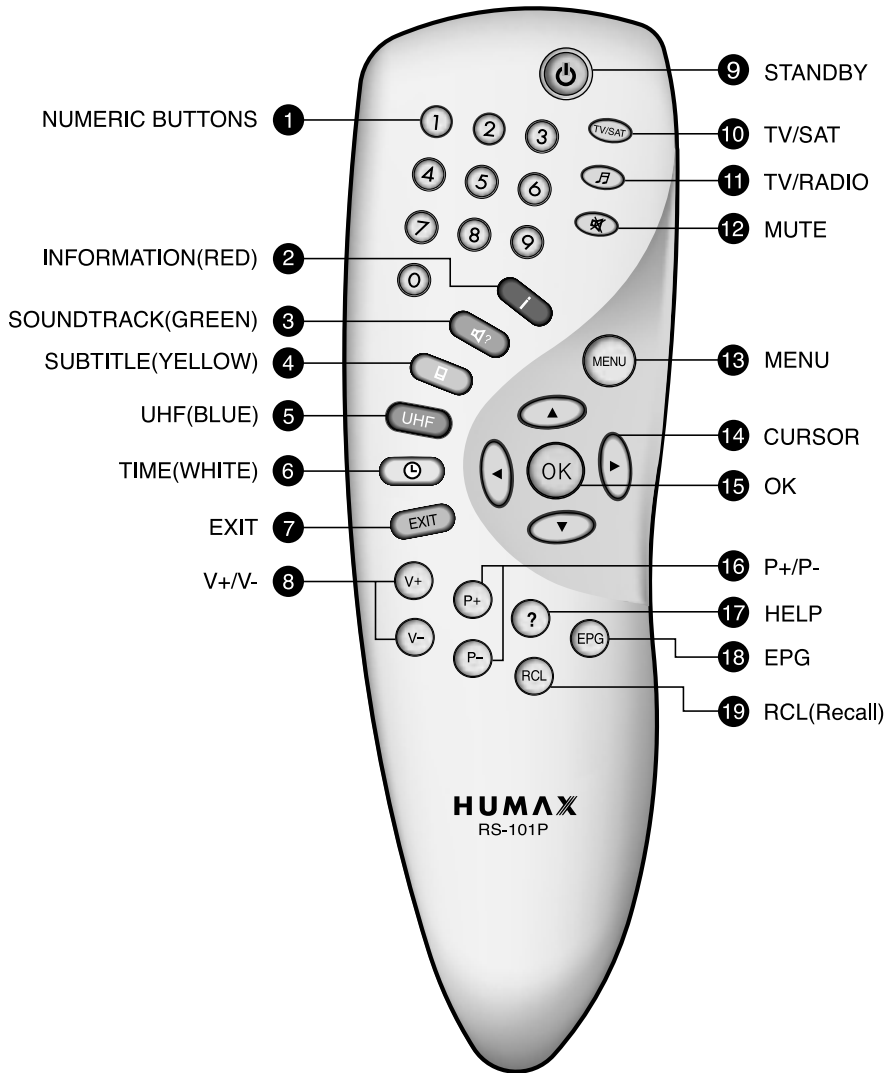




### TV with Motorised System(DiSEqC 1.2)

1. Connect one end of a RCA/Cinch cable to the RCA/Cinch connector on the STB and the other end to a RCA/Cinch socket on your TV.
2. Connect one end of a RCA/Cinch cable to the RCA/Cinch connector on the STB and the other end to a RCA/Cinch socket on your VCR.
3. Connect the coaxial cable from the LNB of your motorised system(DiSEqC 1.2 Motor) to the LNB IN socket on the STB.

# Remote Control Unit



**1 NUMERIC BUTTONS**

Press to select a service, enter your PIN code or Numerics on the menu.

**2 INFORMATION(RED)**

Press to display the programme information box on the screen. This button functions same as the RED button on the menus.

**3 SOUNDTRACK(GREEN)**

Press to display the soundtrack list for the current service. And this button functions same as the GREEN button on the menus.

**4 SUBTITLE(YELLOW)**

Press to display the subtitle language list for the current service. And this button functions same as the YELLOW button on the menus.

**5 UHF(BLUE)**

Press to set the UHF menu. This button function same as the BLUE button on the menu.

**6 TIME(WHITE)**

Press to display the current time on the screen. Press to reserve services on the Information box or EPG. And this button functions same as the WHITE button on the menus.

**7 EXIT**

Press to return to the previous menu and screen.

**8 V+/V-**

Volume up/down buttons.  
Press to increase or decrease the volume.

**9 STANDBY**

Press to switch between Operation and Standby modes.

**10 TV/SAT**

Press to select the TV/SAT mode.

**11 TV/RADIO**

Press to switch between TV and Radio modes.

**12 MUTE**

Press to temporarily cut off the sound.

**13 MENU**

Press to display the Main Menu on the screen or return to the screen from a sub menu screen.

**14 CURSOR**

Press to move the highlight bar for selecting options on the menus.  
And this button is used to change services(up/down) and increase or decrease the audio volume.

**15 OK**

Press to display the service list.  
This button is used to select the item on the menus.

**16 P+/P-**

Programme up/down buttons.  
Press to tune to the next or previous service.  
Press to move up or down pages on the menus.

**17 HELP**

Press to display the help box on the screen.

**18 EPG**

Electronic Programme Guide button displays the TV/RADIO programme guide.

**19 RCL(Recall)**


Press to select the service that was previously viewed.

• **Please note** : The design of Remote Control Unit may be changed without notice in advance.

# Guide of Functions




## Information Box(I-Plate)

The details of service part and event part are automatically displayed on the I-Plate when pressing the **i**() button or changing services.

I-Plate is divided into service part and event part.

## SERVICE-PART(Left side of the box)

SERVICE PART consists of the following items:

- I-Plate icon, Current time
- Service name, Service number,  icons
- Subtitle, Teletext, Scrambling service symbol  
(These are automatically displayed when the broadcasting station provides appropriate information.)
- Signal quality bar

## EVENT-PART(Right side of the box)


EVENT PART consists of the following items:

- Event name, Event duration time
- Description text of event, State of reserved event


Event part shows the current and next event information.


- ▶ button : Use to move from the current event information to the next event information.
- ◀ button : Use to move from the next event information to the current event information.



When the **Help**() button is pressed under I-Plate display and there are no detailed event informations in the I-Plate, the Help window will appear on the screen.

The Help window shows the current Network information, including: Satellite Name, Frequency, Polarisation, Symbol Rate, FEC...

The detailed information for the event can be displayed by pressing the **Help**() button in the I-Plate with event data displaying mode.

You can reserve the programme in the event data display mode by using the **White**() button.

You can reset timer programme Once, Daily or Weekly mode.

When you release the timer programme mode, then you will be asked to confirm the action.

## Changing Services

**To change services, do in the following sequence:**

1. Press the **Numeric** buttons(0~9) on the remote control unit.
2. Press the **P+/P-** buttons or **▲/▼** buttons.  
Or press the **Recall**(RCL), **Service-list**(OK), **EPG**(EPG) mode button. To switch between TV and Radio services, press the **TV/Radio**(TV) button. To select the previous viewed service, press the **Recall**(RCL) button.



## Volume Control

To adjust the volume level, use the **V+ / V-** buttons or **◀ / ▶** buttons. To temporarily stop the volume, press the **Mute**(M) button. To cancel mute, press the **Mute**(M) button again or press the **V+ / V-** buttons or **◀ / ▶** buttons.

## Soundtrack

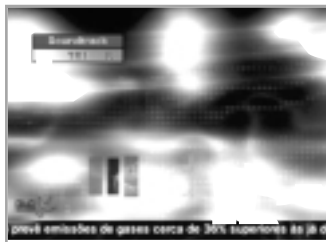
When you want to change the audio language of current service, press the **Green**(G) button firstly.

The on-screen menu is displayed on the top to left side of the screen.

**To change the audio language:**

1. **◀ / ▶** buttons : Use to select the audio on the left, right or both.
2. **▲ / ▼** buttons : Use to select the audio language you want.
3. **OK , EXIT** button : When this button is pressed, the Soundtrack OSD will disappear keeping the selected Soundtrack language constant.

When the current service is switched, the audio language returns to the audio language that was selected in previous service. If the returned audio language is invalid, the audio language that you selected from the audio language menu has the priority of playback.



## Subtitle

When the current broadcasting programme provides subtitle, press the **Subtitle**(S) button to see the current subtitle language list.


**To change the subtitle language:**

Use the **▲ / ▼** buttons to select a Subtitle language you want. Press the **OK** button and the selected language is highlighted and then the Subtitle language you want is displayed on the screen. Press the **EXIT** button to cancel the Subtitle mode.



# Guide of Functions

## Teletext


Use your TV remote control unit to control the Teletext service. The teletext button doesn't exist on the STB remote control unit. When the service supports Teletext, the Teletext icon (  ) is displayed on the I-plate.


## Service List

The Service List consists of Service All and Service Favourite. On the service list, you can change the attributes of a service through the Service Configuration.

▲/▼ button : Use to move to the previous or next service.


◀/▶ button : Use to move to the forward or backward service (maximum 8 services.).

**Red** button (  ) : Service All


**Green** button (  ) : Service Favourite

## Service Configuration


### To change the attributes of a service

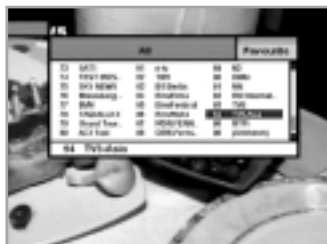
1. Use the ▲/▼/◀/▶ buttons to move a service you want to change in the service list.
2. Press the **Menu**(  ) button.
3. Use the ▲/▼ buttons to move to an item(such as Favourite, Lock, Skip, Delete) you want on the Service Configuration screen.
4. Use the ◀/▶ buttons to select. Press the **OK** button to complete.

## Service All

1. To display the service list, press the **OK** button.  
Use **Red**(  ) button to select the Service All list.
2. Select the desired service by using the ▲/▼/◀/▶ buttons.
3. Press the **OK** button to view the selected service.  
The right side scroll-bar of the screen displays the location of the selected service in relation to All services.

## Service Favourite

1. To add the services to the Service Favourite, use the Service Configuration at Service All or Service Organising menu.
2. When you press the **Green**(  ) button in the service list, the favourite service list will be displayed on the screen.
3. When you want to see the services added to the favourite group, use the ▲/▼/◀/▶ buttons.



# Guide of Main Menu



## 1. TV Guide

Your STB has an Electronic Programme Guide(EPG) to help you navigate through all the possible viewing options.

The TV Guide supplies information such as programme listings and start and end times for all available services.

In addition, detailed information about the programme listings and start and end times for all available services.

In addition, detailed information about the programme is often available in the EPG(the availability and amount of these programme details will vary, depending on the particular broadcaster).

## 2. Parental Control

Access to services and programmes is controlled by a PIN code (i.e., a 4-digit secret code that is defined by the user).

The very first time you attempt to lock all services(or lock programmes by ratings), the on-screen menu will instruct you to assign a PIN code(Later on, if necessary, you can change it).

## 3. Installation

The Installation mode allows you to have the information of setting services and newly set services(language, time, organise, search,..)

Furthermore, you can recognise the states of hardware and software versions and signals from your STB.

## 4. Utility


This menu provides Calendar and Biorhythm.

# Guide of Main Menu


## 1. TV Guide

You can watch a programme being shown and reserve it in the TV Guide mode.

### To enter the TV Guide mode





Press the **EPG**() button on the remote control unit or select the TV Guide on the Main Menu.

### To select the TV/Radio Guide

Press the  button on the remote control unit and TV Guide will be switched to the Radio Guide.

TV Guide mode includes four different modes.

### To select each mode, use the following buttons:

- **Red** () button : Use to display the current or next programme list.
- **Green** () button : Use to display the programme list for one-week.
- **Yellow**() button : Use to display the reserved programme list.
- **Blue** () button : Use to display the simple TV Guide list. (Quick mode)







### Now/Next mode









Show the informations of the programmes that are played now or will be played next time.

This mode consists of the service name, event name, event duration time, current time and on-screen-display window.

### To watch a programme you want through the display window:

- Use the / buttons to select a programme you want. The selected service will appear on the right display window.
- Use the / buttons to select a programme you want. And then press the **OK** button on the remote control unit. The selected service will appear on the right display window. The selected OSD will be highlighted every time the cursor moves.

### To reserve a programme you want:

- Select a programme you want by using the / buttons or / buttons. And then press the **White**() button. Press the / buttons to watch the programme of previous page or the programme of next page. Press the **Yellow**() button to watch the reserved programme list.





### Weekly mode

Shows the information of programmes that will be played for a week. Select a day you want using the ◀/▶ buttons. To watch and reserve a programme you want, do the same steps with the Now/Next mode.



### Reserved mode

Shows the programme lists that you have already reserved on the TV Guide or Information Box.

Maximum twenty programmes can be reserved.

This programme list includes service name, date, duration time, reservation mode and event name.

To cancel the Reserved service, select a programme you want to cancel using the ▲/▼ buttons and then press the

**White**(⊖)button.



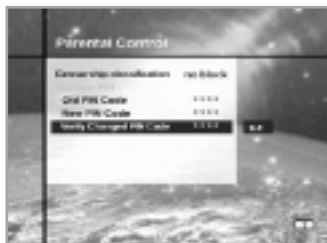
### Quick mode

Shows a simple TV Guide like an Information box.

This mode shows in the A/V playback mode.

- Blue vertical line : Indicates the current time.
- Black/white bar : Shows the preceding state of programme.
- Time range of bar : This consists of three blocks by 30 minutes per block.

# Guide of Main Menu



## 2. Parental Control

You can set a parental guidance rating to each programme in this mode.

1. When the **OK** button is pressed after selecting the highlighted parental control on the initial menu screen, a display window for entering the PIN code will appear on the centre of screen.  
\*\* The default PIN code is **0000** .
2. Enter the PIN code on the display window.  
(If any problem occurs when entering a PIN code, you cannot switch to the next mode.)
3. Set the parental guidance rating of highlighted censorship classification. The parental level is given as age-based numbers : no block, 6, 10, 14, 18 and total block.  
Enter the PIN code to unlock or lock programmes.
4. To change your PIN code:
  - Select the highlighted Old PIN code using the ▲/▼ buttons and then enter your Old PIN code.
  - Enter a New PIN code in the highlighted New PIN code using the ▲/▼ buttons.
  - To verify the New PIN code, re-enter a New PIN code in the highlighted Verify Changed PIN code.
5. When the entered PIN code is correct, then all settings are completed.  
(If the PIN code is wrong, the message “PIN code mismatch” will be displayed on the display window. When the **OK** button is pressed at this time, the Old PIN code is valid and the cursor is located in the first position of this menu.)



## 3. Installation

This mode allows you to customise, add a new service and displays the state of the STB. Enter the submenus after selecting the Installation mode in the Main Menu.

### 3-1. System Setting

The System Setting mode supports the STB internal settings according to the connection of the receiver and external units. This mode includes Language Setting, Time Setting, A/V Output Setting, UHF Turning and Other Setting.

## Language Setting

Select the language for menu, audio or subtitle.

1. Select the highlighted language setting using the ▲/▼ buttons in the system setting mode and then press the **OK** button.
2. Select the highlighted Menu(or Audio, Subtitle) Language and press the ◀/▶ buttons and the language list will be displayed.
3. Use the ▲/▼ buttons to move to a language you want and then press the **OK** button to finish setting.



### Menu Language

We support the various menu languages of Europe & Middle East areas. For Europe areas, there are Czech, English, French, German, Hungarian, Italian, Polish, Russian and more. Also, it includes Arabic, English, French, German, Italian, Persian, Russian, Turkish for Middle East areas.

- The kind of languages can be changed depending on the country.



### Audio Language

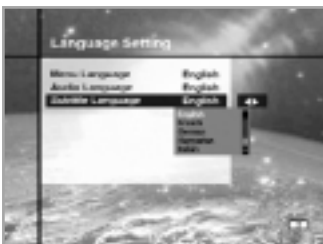
Select the default language for audio when changing services.

If you change the current service, your STB will initially select the previously memorised Audio Language. If the Audio Language of current service is not provided, at this time, you should reselect a language on the Audio Language menu.

Languages provided:

Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Portuguese, Rumanian, Russian Spanish, Swedish, Turkish and more.

If no language is provided, then the default language of current service will be automatically selected.

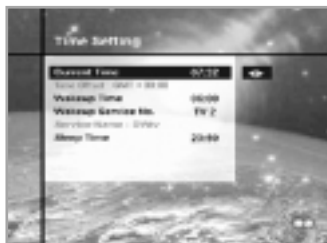


### Subtitle Language

Select the default language for subtitle when changing services.

Language provided: Danish, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Portuguese, Spanish, Swedish and more.

# Guide of Main Menu



## Time Setting

You can set the Current Time and Wakeup Time in this mode. Furthermore, the Service Number in the Wakeup Time mode and Sleep Time(standby mode) can be set. When a VCR is connected, recording can be automatically done according to Wakeup/Sleep Time Setting.

## Current Time

To set the Current Time, enter the Offset value using the standardised information of current service area. The time setting will be used as the standardised time for the I-Plate, TV Guide, Wakeup and Sleep Timer.


## Time Offset

Current Time is based on TDT(Time and Data Table) at the stream of the current service.

## Wakeup Time

Select the time when STB is turned on. Use the **Numeric** buttons(0~9) on the remote control unit to enter your Wakeup Time.

## Wakeup Service No.

Use the ◀/▶ buttons to set the service number provided for the set Wakeup Time. Use the **TV/Radio**() button on the remote control unit to toggle TV/Radio service.

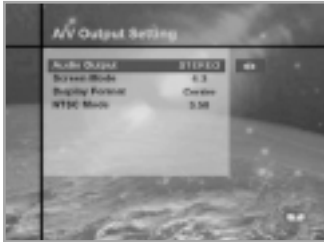
## Service Name

The Service Name that has been determined by the Wakeup Service No. will be shown.

## Sleep Time

Depending on Time Setting, select the time when STB is turned off.





## AV Output Setting

### Audio Output

Set the audio mode which is output from the RCA/Cinch Jack. (Stereo/Mono)

### Screen Mode

Select the aspect ratio of TV which is connected to STB (4:3 or 16:9).

### Display Format

Select the format which the video is to be displayed on screen. When your TV set is 4:3 and video source is 16:9, STB will display in Letter-box or Centre mode as selected. When your TV set is 16:9 and video source is 4:3, STB will display in the Pillar-box or Full mode as selected.

### NTSC Mode

Adjust this value between 3.58 and 4.43 if your TV displays the video only in black and white color. Normally NTSC 3.58 mode is used worldwide, but some TV sets can support only NTSC 4.43 mode.

# Guide of Main Menu



## UHF Tuning

Select an UHF channel. The range of channels and frequency value are different for each PAL standard:

### Channel

PAL I/G for Europe : CH21 ~ CH69  
PAL B for Europe/Australia : CH28 ~ CH69  
PAL D for China : CH13 ~ CH62  
PAL K for Russia : CH21 ~ CH69

### PAL Standard

Select a PAL standard according to the above range of channels.

### Offset

Adjust the Fine Tuning value. The Offset ranges from -4 to +4 and each Offset represents 1 MHz.



## Other Setting

Select the OSD Transparency and Information Box Display Time.

### OSD Transparency

Select the OSD Transparent type. It affects Information box, Soundtrack, Subtitle, Service list, Time and Quick mode of TV Guide. Use the ◀/▶ buttons to toggle transparent and opaque.

### Info. Box Display Time

Set the display duration of information box displayed on the screen after changing services. The time ranges from 0 to 20 seconds.

### 3-2. Service Organising

This menu gives users access to options that allow them to organise their Networks, TV Services and Radio Services.

\*\* The default PIN code is **0000**.




#### Organise TV Services



#### Organise All Services

This mode allows users to Delete, Move, Lock, Skip and Rename TV Services.



##### • Delete

1. Press the **Red** (  ) button to delete unwanted services.
2. Highlight the services that you want to delete in grey.
3. Press the **OK** button to confirm.
4. Press the **EXIT** button to cancel the deletion.




##### • Move



1. Press the **Green** (  ) button to move the service to where you want to locate.  
Then, the icon (  ) will be displayed in front of the service number.
2. Use the **▲/▼/◀/▶** buttons to select a new location.
3. Press the **OK** button to fix the location.
4. Press the **EXIT** button to return to the original location.

##### • Lock

1. Press the **Yellow** (  ) button to lock services.  
Then, the symbol "  " will be displayed at the right side of the service name.
2. Enter the PIN code to view the locked services.

##### • Skip

1. Press the **Blue** (  ) button to skip services.  
Then, the symbol "  " will be displayed at the right side of the service name.
2. Use Numeric buttons, service list or **EPG** (  ) button to view the skipped services when selecting channels.

**Note** : You can't view the skipped services by using  /  buttons.



# Guide of Main Menu

## • Rename

1. Press the **White** (Ⓞ) button to change the service name.  
Then, the keyboard image will be displayed on the screen.
2. Key in the new service name.

## You can use the four direction keys to move or select the services.

- ▲ : to move the previous service
- ▼ : to move the next service
- ◀ : to move back by 10 services
- ▶ : to move forwards by 10 services

**Note** : The box between service list and the description of the colour buttons offers the brief information of a service where the cursor is located.



## Organise Favourite Services

This mode service to add and delete services to and from the favourite group. To add services into Favourites, locate the cursor to the desired service and press the **OK** button. The function of the colour button is the same as Organise All Services, except for the following differences. When you delete a service in the Favourites window, the service is excluded from the favourite group and the service is still stored in services window. You can move the service only within Favourites window.

## • To group the services into Favourites;

1. Use the ▶ button to move the cursor to "Services"-plate(right).
2. Select the service you want to group into Favourites.
3. Press the **OK** button.
4. Use the ◀ button to move the cursor to "Favourites"-plate(left).
5. Press the **OK** button to save the selected group.

**Note** : 1. Use the ◀/▶ buttons to move the cursor.  
2. Use the (P+)/(P-) buttons to select the previous or next page.





### Organise Radio Services

The Organise Radio Services functions same as TV Services except that it uses Radio Services. You can delete or move Radio Services and change the attributes of them.

### Organise All Services

The Organise All Services lets the user Delete, Move, Lock, Skip or Rename Radio Services on the All Radio Services list.



### Organise Favourite Services

The Organise Favourite Radio Services lets the Delete, Move, Lock, Skip or Rename Radio Services from the Favourite Radio Services and group into a new Favourite Radio Services.

The Radio Services are grouped into a Favourite in the same way as the TV Services(refer to page E23).

### Organise Networks

You can edit services using the network unit.



- The provider names are displayed on the left side of screen and the TV/Radio Services included in the highlighted Network are displayed on the right side of screen. Only the Delete, Rename function can be used in this mode.
- When TV/Radio Services are too many to be displayed, use the ► button to move the cursor to the right window and use the ▲/▼ and (P+)/(P-) buttons to move the cursor to the next list.

When the number of services is under 10, the scroll bar is not displayed. In Radio Service icon( 🎵 ) is marked in front of service number.

## 3-3. Service Searching

Enter the PIN code to access the Service Searching menu as you access the Parental Control or Service Organising menu. Press the **OK** button to start Service Search after setting the parameters.

\*\* The default PIN code is **0000**.

# Guide of Main Menu

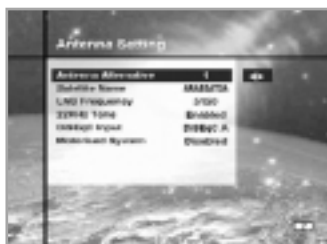


## Antenna Setting

Selects the antenna and LNB settings for service search. As you can change the settings for 22KHz Tone and DiSEqC switch, there are 32 possible Antenna Setting for use. The values that are set in this menu will be available for selection in other service searching menus.

## Antenna Alternative

There are 32 antenna alternatives, each one can have different combinations of settings for 22KHz Tone and DiSEqC switch.



## Satellite Name

Selects the Satellite Name that corresponds to the value of the Antenna Alternative.

1. Press the ◀/▶ buttons to display the satellite list box.
2. Select the wanted Satellite Name.
3. If the desired Satellite Name is not listed then select User Defined.
4. The keyboard will appear and you can type the Satellite Name directly.

The selected Satellite Name can help you select the Antenna Alternative in the searching menu, but it is possible to change or select the Satellite Name only in the Antenna Setting menu.

**Note :** In case the selected satellite is used as OTA target satellite, automatic detection of the OTA target satellite might not work properly if you change or edit the name of the satellite.

5. Satellite Name is listed in alphabetical order and the order can be changed according to Menu Language.
6. When inputting the Satellite Name, there is a 14 character limit.



## LNB Frequency

1. Select the L.O. Frequency that is set to antenna.
2. Use the ◀/▶ buttons to select the LNB frequency(Universal, 5150, 9750, 10600, 10750, 11475MHz or 0, 1, ....., 9).
3. If the required LNB Frequency is not available, then select "0" and enter the frequency manually using the **Numeric** buttons(0~9).
4. When you select Universal, both 9750 and 10600MHz are supported at the same time.  
The 22KHz Tone setting is unnecessary. (Disabled)

## 22KHz Tone

When you use a dual LNB or two antennas connected to a 22KHz Tone switch box, make 22KHz Tone switch Enable or Disable to select LNB or antenna.

## DiSEqC Input

According to the option and position of DiSEqC switch, select Disabled, Tone Burst A to B and DiSEqC A to D. After setting the above mentioned value, press the **OK** button to move to the Manual Search menu.

## Motorised System



The Motorised System is used to set the DiSEqC 1.2 motor by Eutelsat specification.


If you wish to use this system, please refer to page E33.

## Service Search OSD

1. If you press the **EXIT** button during the search, then Service Search stops and the searching menu will appear again.
2. When you find all the services, the following picture appears.
3. Before saving it, you can select the services you want to delete.

## Found services OSD

1. The picture above shows services that are found after Manual Search.
2. Use the **Red**(  ) button to mark the services that you want to delete. To unmark a service, select the service and press the **Red**(  ) button again.
3. Press the **OK** button to save or press the **EXIT** button to exit without saving.
4. Then Service Search menu appears again. When you exit from all menus, the first service of the found service list is played.

In the bottom of found service picture, network, the information of transponder and the number of found service that the services belong to are displayed. The deleted service by the **Red**(  ) button is excepted from counting of the number of services.

The deleted service is not included in this number.

“Free” applies to the empty space of the memory.

It will be used to store future services.



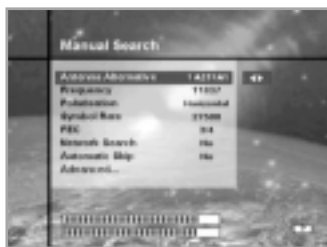
# Guide of Main Menu



## Manual Search

Set the search parameters(Frequency, Symbol Rate, etc.) to manually find the services that you have selected in the transponder.

The bar on bottom of the submenu shows the signal Level and signal quality(BER) of the entered parameters.



## Antenna Alternative

Select the target antenna for Manual Search.

The Satellite Name helps you select antenna alternatives.

This is only for reference and cannot be changed on this menu.

Antenna Alternative 16 is fixed for SMATV.

## Frequency

Use the **Numeric** buttons(0~9) on the remote control unit.

## Polarisation

Use the ◀/▶ buttons to select the Polarisation of the transponder. (Auto, Horizontal, Vertical)

- Horizontal : 18 V is output through LNB line
- Vertical : 13.5 V is output through LNB line

## Symbol Rate

Input the Symbol Rate of the transponder you want to find.

Use the ◀/▶ buttons or **Numeric** buttons(0~9) on the remote control unit.

## FEC(Forward Error Correction)

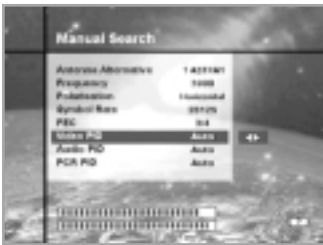
Use the ◀/▶ buttons to select the Forward Error Correction of the transponder. You can select the value of Auto, 1/2, 2/3, 3/4, 5/6 and 7/8.

## Network Search

- You can select Yes or No. When you select “Yes”, you can find more transponders using the home network.
- As it refers to NIT during searching, if there is the frequency information of other transponder, it searches the other transponders besides the transponder that the user inputs.

## Automatic Skip

- You can select Yes or No. When you select “Yes”, the search will skip all scrambled services.
- When the found services are scrambled during searching, they are not listed up.  
Refer to descriptor of PMT whether it is scrambled or not.



## Advanced...

Performs a manual search with the ability to enter PID(Video/Audio/PCR) values. This mode is necessary when you search for the signal that has abnormal service Information tables.  
The setting of the sub items is the same as Manual Search.

### Video PID/Audio PID/PCR PID

You can set PID to search for services.

1. Use the ◀/▶ buttons to select PID input mode.
2. Use the **Numeric** buttons(0~9) on the remote control unit to enter a decimal PID value.
3. In the hexadecimal input mode, press one of the **Numeric** buttons(0~9) to display a hexadecimal keyboard.
4. Enter a hexadecimal PID value.

**Note** : If no PID is input(Auto is displayed), the Advanced Search functions same as Manual Search.

5. After the above mentioned value is set, press the **OK** button to start Service Search.

**Note** : The picture and the found service list during Advanced Search are identical with the ones during Manual Search.

# Guide of Main Menu



## Automatic Search

When you enter the Satellite Name that is set in Antenna Setting menu, search all of the selected satellite without inputting the extra frequency.

## Antenna Alternative

Select the target antenna for Automatic Service Search. The attribute of this antenna alternative number is already set in Antenna Setting menu and the Satellite Name is helpful in the selection of the antenna, but in this menu you cannot change the Satellite Name.




## Automatic Skip

Option to search only Free-To-Air services. The picture on the right tries to search with varying Frequency, Symbol Rate and FEC etc.

## Search Type


- You can select one of two modes(Quick or Detail).
- When you select Quick mode, it searches the service by search parameters that is preset.
- When you select Detail mode, it searches the service through all field of tuner(950 - 2150MHz).

## Detail Mode

The pre-fixed symbol rate list is changed according to Antenna Alternative and Satellite Name. If you want to add or change it, press the **Red**(  )button.

\*\* The value of Pre-fixed symbol rates can not be editable.  
(22000, 27500)

The picture of the Symbol Rate Add/Change mode is as follows:

1. When you press the **Red**(  )button after entered to detail mode from search type, yellow box will be trimmed with red edges meaning edit is possible.
2. You can easily put optional value with using **Numeric** buttons(0~9).



# Guide of Main Menu



## STB Upgrade

You can download and upgrade the software of this STB via ASTRA 1 satellite when the software of new version is released. Do not turn off the STB during downloading. When the power is switched OFF, turn on the STB and the process will be continued.

## 3-5. Conditional Access(for Viaccess Embedded)

This menu allows the user to view the information on the Smart Card and Viaccess conditional access system such as general Smart Card Information, Service List, Change Maturity Rating, Change PIN code.



## General Smart Card Information

You can see the Unique Address, so user Address, Current Maturity Rating of the Smart Card.

## Service List

Services or Bouquets are encrypted by Viaccess and operators name, like TPS or ABSat, are displayed on the TV screen. To get more detailed information of viewing rights of services or Bouquets, press **OK** button.

## Change Maturity Rating

The STB is required by Viaccess to include a parental control facility for the viewing of restricted services. This can be set to "No block" or for ages ranging from 4 to 18. The correct PIN code is required to change this option.

## Change PIN code

When you buy a new Smart Card, the initial PIN code is set to "NULL". Therefore, it is recommended that this PIN code should be changed.

This PIN code is available only on Conditional Access Menu. Enter this PIN code to see the blocked Viaccess Service.







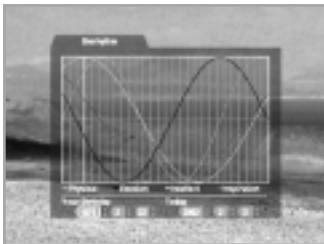
### 3-6. Default setting

When you press the **OK** button at the screen, the data of system setting will be changed into the default values and some Free-To-Air services of EUTELSAT W4(ASTRA 1 for Middle East areas) will be stored in replacement of all services found. If you press the **EXIT** button, the function will be cancelled and return the Installation menu.



## 4. Utility

STB supports additional functions such as Calendar and Biorhythm. At the Biorhythm use the **▲/▼/◀/▶** buttons to adjust your birth year and date to see your current biorhythm status.



# Motorised System

## DiSEqC 1.2 User Instructions

If you have a DiSEqC 1.2 motorised system, then you can use the DiSEqC 1.2 functions available. The following instruction describes how to use the DiSEqC 1.2 functions to store the positions of the satellites and to search for the services (STAB Rotor Sat motor recommended).

### 1. Satellite Setting Menu Options

When DiSEqC Motorised System is Enabled in the Antenna Setting, a new menu is available for configuring the motor. This menu is called Satellite Setting and is accessed by pressing the **OK** button while the option Antenna Alternative is highlighted in the Manual Search menu. The following options are available on the Satellite Setting menu.

#### Satellite Name

A selection of satellite names that can be used to identify a motor position. If the satellite name you require is not available, please use other. In installer mode the Satellite Name Reference refers to the 0 position of the motor.

#### Movement

In user mode this is used to fine-tune the position of the motor for better reception. In Installer mode this is used to search for the position of a satellite manually.

#### Motor Control

- Search : Searches for services on the chosen transponder.
- Goto : Moves the motor to the stored position of the selected satellite name.
- Store : Stores the current position of the motor for the selected satellite name.
- Reset : Resets all stored positions of the motor relative to the 0 position. (Installer mode only)

#### DiSEqC Command Mode

Changes the current mode between Installer and User.

### 2. Setting your Receiver for DiSEqC 1.2

You must set your receiver up so that it is ready to use DiSEqC 1.2. To do so, do as follows



1. Press the **Menu** (MENU) button, to display the Main Menu.
2. Select **Service Searching** option and press **OK** button, to display the Service Searching menu.
3. Select **Antenna Setting** option and press **OK** button, to display the Antenna Setting menu.
4. You must set up a separate antenna alternative for each satellite position required.
5. Select the name of the satellite you wish to use.
6. Select the correct LNB frequency for the LNB you are using.
7. Set the Motorised System to Enable using the **▲/▼/◀/▶** buttons.
8. The option DiSEqC Input Selection should now be disabled. This option is used for DiSEqC 1.0 and cannot be used in conjunction with DiSEqC 1.2. Your receiver is now ready to use DiSEqC 1.2. To return to the Main Menu, use the **EXIT** button until you are at the Main menu.

### 3. Initial Satellite Position Search

This is required when you first set your receiver up to use DiSEqC 1.2 and sets the positions of all pre-programmed satellites.

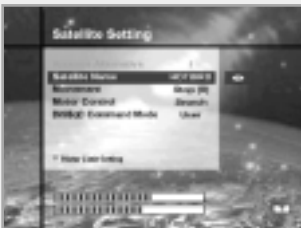


1. Make sure your motor is installed correctly with the calibrations adjusted for the region you are situated.  
(Please consult the user manual for your motor.)
2. Make sure your receiver is set up to use DiSEqC 1.2.  
(see section 2 above).
3. On the Main Menu, select Service Searching option and press the **OK** button, you should now see the Service Searching menu.
4. Highlight the option Antenna Alternative and press the **OK** button to display the Satellite Setting menu.
5. Highlight the DiSEqC Command Mode option and use the ◀/▶ buttons to change the value to Installer and press the **OK** button.
6. Highlight the Motor Control option and use the ◀/▶ buttons to change the value to reset and press the **OK** button.
7. You will now see a warning message, press the **OK** button to continue. All motor positions of the pre-programmed satellites should now be correct. If you have any other make or model of DiSEqC 1.2 motor then you may need to store the satellite positions in yourself (Please refer to the user manual for your motor).
8. Highlight the DiSEqC Command Mode option and use the buttons to change the value to User and press the **OK** button.
9. You should now be ready to start storing services for the various satellites (see 5 onwards).

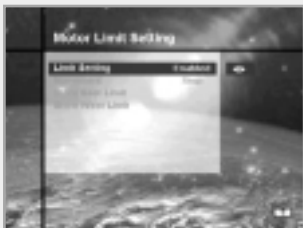
### 4. Motor Limit Setting

Use this option to set the East and West limits of the motor. This should be used to prevent your dish from hitting anything that may be obstructing the path of the dish.

1. On the Main menu, select Service Searching option and press the **OK** button.  
You should now see the Service Searching menu.
2. Select Manual Search option and press the **OK** button, you should now see the Manual Search menu.
3. Highlight the Antenna Alternative option and press the **OK** button. You should now be in the Satellite Settings menu.
4. Press the **Ⓜ** button to access the Motor Limit Setting menu.
5. Highlight the Limit Setting option and use the ◀/▶ buttons to disable this. (**Warning** : When this option is disabled your motor will be able to move beyond any limits that have been stored - please take care in case there are anything obstructing the path of your dish.)



# Motorised System



## 6. To set the East Limit:

- a) Select Movement and use the ◀/▶ buttons to move your motor East or West until the motor is at the position you wish to use as your East Limit. Use the ◀/▶ buttons to stop the motor at the correct position.
- b) Highlight the Store East Limit option and press the **OK** button to store the current position as your East Limit.

## To set the West Limit:

- a) Select Movement and use the ◀/▶ buttons to move your motor East or West until the motor is at the position you wish to use as your West Limit. Use the ◀/▶ buttons to stop the motor at the correct position.
- b) Highlight the Store West Limit option and press the **OK** button to store the current position as your West Limit.

## 5. Manual Satellite Search

The purpose of this is to set the motor position for each satellite manually.

This is useful if the satellite you require is not available from the pre-programmed list(see 3 above). To do this, you must access the Satellite Settings menu. Do as follows ;

1. Select Service Searching from the main menu and press the **OK** button, to display the Service Searching menu.
2. Select the Manual Search option and press the **OK** button, to display the Manual Search menu. Select the relevant Antenna Alternative that you are using for this satellite.
3. Enter the Frequency, Polarisation, Symbol Rate and FEC of a transponder on the satellite you wish to find. This transponder information should be unique to this satellite.
4. Select the Antenna Alternative option and press the **OK** button, to display the Satellite Settings menu.
5. Highlight the option DiSEqC Command Mode and using the ◀/▶ buttons change this to Installer.
6. Highlight the option Satellite name and use the ◀/▶ buttons to select the satellite you want to find, use others if the name of the satellite you want does not appear.
7. When you have selected the satellite you wish to find, go down to the Movement option and again using the ◀/▶ buttons to start the motor moving.
8. You should move the motor as far west as possible and the move it east so that you cover the complete movement range of the motor.
9. During the move from west to east the Signal Quality bar should register a signal once. This is the position of the satellite. If there are two or more different positions which registers a signal, then you must choose another frequency that is unique to the satellite you want.
10. Use the Signal level and Strength Quality bar at the bottom of the screen to judge the best position of the dish.
11. Use the ◀/▶ buttons to stop the motor when required.
12. When you have the best position of the dish go to the Motor Control option and using the ◀/▶ buttons select store and press the **OK** button. The position of the satellite should now be stored.
13. If you do not store this position, it will be lost when you exit the menu.
14. Repeat the process for each satellite if required, remembering to use a different antenna alternative for each satellite.

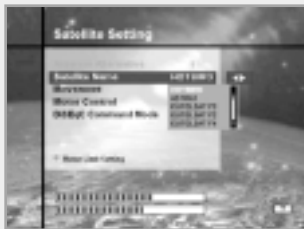
## 6. Moving to a pre-set satellite

Once you have stored the positions of the satellites you want (see left below) you can now search for the services transmitted from them. Before you can do this, you must move the motor to the position of the satellite you wish to search. To do this, you must access the Satellite Settings menu. Do as follows ;

1. Select Service Searching from the Main Menu and press the **OK** button, to display the Service Searching menu.
2. Select the Manual Search option and press the **OK** button, to display the Manual Search menu.
3. Select the Antenna Alternative option and press the **OK** button, to display the Satellite Settings menu.
4. In the Satellite Settings menu ensure that you have DiSEqC Command Mode option set to User.
5. Highlight the option Satellite Name and use the **▲/▼/◀/▶** buttons to select the satellite you want to view.
6. When you have selected the satellite you wish to view, go down to the Motor Control option and again using the **◀/▶** buttons select go to and press the **OK** button.
7. The motor will now move to the position of the selected satellite.
8. The Movement option is used to fine-tune the position of the motor.
9. When using the Movement option for fine-tuning, you must remember to store the changes you have made or else these will be lost.

## 7. Searching for services on your selected Satellite

Once you have moved the motor into position, you can search for the channels transmitted from the relevant satellite. To search for services on your new selected satellite, Do as follows ;



1. Move the motor to the position of the satellite you wish to search. (see section 6 above)
2. Select the service searching from the Main Menu and press the **OK** button. To display the Service Searching menu.
3. Select the manual search option and press the **OK** button to display the Manual Search menu.
4. Now enter the Frequency and Symbol Rate using the **Numeric** buttons(0~9). Next enter the Polarisation and FEC values using the **◀/▶** buttons.
5. When you have entered all these details in, press the **OK** button and the search will begin.
6. When the search has finished, press the **OK** button to view.
7. Repeat the process for all the transponders you want from this satellite.

# Motorised System

## 8. Automatic Search

It is possible to use automatic search using the DiSEqC 1.2 motorised system.

1. Ensure that the positions for the satellite you want to search is correct. (see Section 3 and 5 above)
2. In the Main Menu, select the option channel searching and press the **OK** button.
3. In the Service Searching menu, select the Antenna Alternative that you have set for this satellite.
4. When you search new services, please refer to **Automatic Search** of page E29.
5. When the search has finished, press the **OK** button to store and view the services.

Now that you have stored all the positions of the satellites and searched for all the services you want, you can now use your receiver as normal. When you change to a service that is being transmitted from a different satellite, you will have to wait a few seconds to allow the motor to move into position to receive the new service.

# Troubleshooting Guide

Problem	Solution
<b>About STB</b>	
Does not display any LED on the front panel or STB has no power.	<ul style="list-style-type: none"> <li>• Check the main power cable and check that it is plugged into a suitable power outlet.</li> <li>• Check whether STB is in Standby mode.</li> </ul>
No Picture	<ul style="list-style-type: none"> <li>• Ensure that the STB is switched on (see above).</li> <li>• Check the video output port (RCA/RF) is firmly connected to the TV or VCR.</li> <li>• Check that you have selected the correct channel or Video Output on your TV.</li> <li>• Check the brightness level of the TV.</li> </ul>
Poor picture quality	<ul style="list-style-type: none"> <li>• See "No Picture" above.</li> <li>• Check the signal level, if this is low then try adjusting the alignment of your dish.</li> </ul>
No Sound	<ul style="list-style-type: none"> <li>• See "No Picture" above.</li> <li>• Check the volume level of the TV and STB.</li> <li>• Check the Mute status of the TV and STB.</li> </ul>
Remote Control does not operate	<ul style="list-style-type: none"> <li>• Point remote control directly towards the STB.</li> <li>• Check and replace batteries.</li> </ul>
<b>On-Screen Error Messages</b>	
No or Bad Signal	<ul style="list-style-type: none"> <li>• Check the LNB - replace LNB if necessary.</li> <li>• Check the cable from the LNB.</li> <li>• Check the position of the dish - realign dish if necessary.</li> <li>• If you are using a DiSEqC 1.0 switch, check that you have connected the LNBs to the correct connections on the switch.</li> <li>• Check the "Signal Level" and the "Signal Quality" in the Signal Status menu.</li> </ul>
<b>Service Search</b>	
"No Signal" in Manual Search	<ul style="list-style-type: none"> <li>• Check the "Signal Level" and the "Signal Quality" in the Signal Status menu.</li> <li>• Check the LNB - replace LNB if necessary.</li> <li>• Check the cable from the LNB.</li> <li>• Check the position of the dish - realign dish if necessary.</li> </ul> <p>• <b>DiSEqC 1.0</b> Check that you have connected the LNBs to the correct connections on the switch. Check that you have set the connected setting in the Antenna Setting menu.</p> <p>• <b>DiSEqC 1.2</b> Check that you have selected this in the Antenna Setting menu. Check that the dish is aimed at the correct satellite.</p>
<b>LED Error Message</b>	
Amber only: Invalid system ID	<ul style="list-style-type: none"> <li>• Check whether the system ID is different for Software and STB.</li> </ul>
Amber & Red: Incorrect data block CRC error	<ul style="list-style-type: none"> <li>• You need to contact your retail shop.</li> </ul>
Amber & Red & Green: Incorrect application CRC error	<ul style="list-style-type: none"> <li>• You need to contact your retail shop.</li> </ul>

- If you can't solve the problem even referring this Troubleshooting Guide, contact us via our homepage.

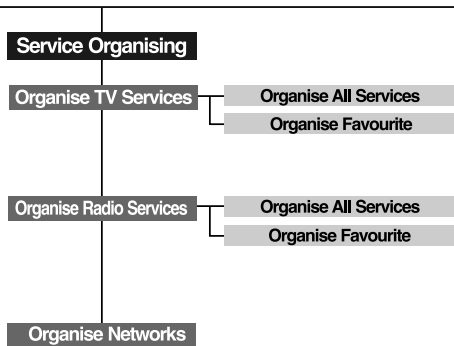
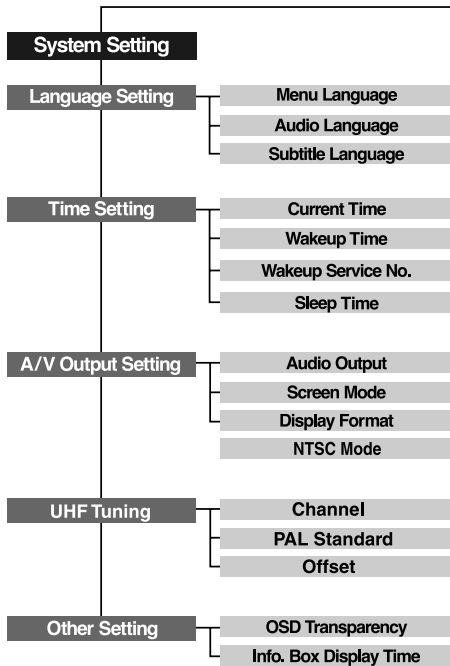
**Homepage : <http://www.humaxdigital.com>**

# Menu Map

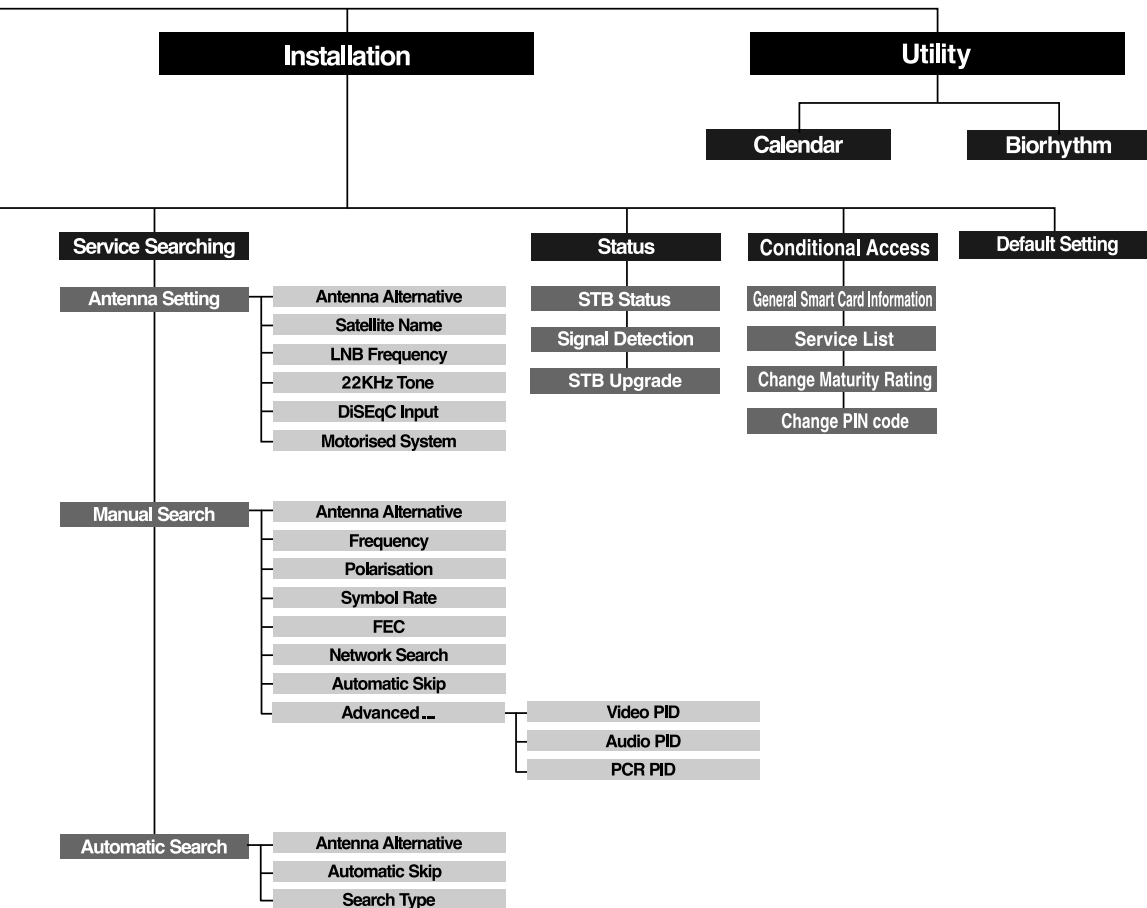
## MAIN MENU

### TV Guide

### Parental Control







# Specification

## Conditional Access Interface

Viaccess Embedded	1 Slot Smart card
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## Tuner & Channel

Input Connector	F-type, IEC 169-24, Female
Frequency Range	950 MHz to 2150 MHz
Input Impedance	75Ω unbalanced
Signal Level	-25 to -65 dBm
IF	480 MHz
IF Band width	36 MHz
LNB Power & Polarisation	Vertical : +13.5 V Horizontal : +18 V Current : 500 mA Max. Overload Protection
22 KHz Tone	Frequency : $22 \pm 4$ KHz    Amplitude : $0.6 \pm 0.2$ V
DiSEqC Control	Version 1.0/1.2 Compatible
Demodulation	QPSK
Input Symbol Rate	2-31 Ms/s
FEC Decode	Convolutional Code Rate 1/2, 2/3, 3/4, 5/6 and 7/8 with Constraint Length K=7

## MPEG Transport Stream A/V Decoding

Transport Stream	MPEG-2 ISO/IEC 13818 Transport stream specification
Profile Level	MPEG-2 MP@ML
Input Rate	60 Mbit/s Max
Aspect Ratio	4:3, 16:9
Video Resolution	720 x 576
Audio Decoding	MPEG/MusiCam Layer I & II
Audio Mode	Single channel/Dual channel/Joint stereo/Stereo
Sampling	32, 44.1 and 48 KHz

## Memory

Main Processor	TMIPS R3930(81 MHz)
Flash Memory	3 Mbyte
Graphic(MPEG) & System DRAM	4 Mbyte

- **Please note** : The specification of the STB may be changed without notice in advance.

## A/V & Data In/Out

VIDEO	RCA/Cinch Video Output(CVBS)
AUDIO R/L	RCA/Cinch Volume and Mute Control (Resolution : 20 bits DAC, Max. 2 Vrms)
RS-232C	Transfer rate 115,200 bps, 9pin D-sub Type

## Power Supply

Input Voltage	90 - 250 V AC, 50/60 Hz
Type	SMPS
Power Consumption	Max. 30 W
Standby Power	≤ 8 W
Protection	Separate internal fuse. The input shall have lightning Protection

## Physical Specification

Size(W x H x D)	260 x 50 x 180 mm
Weight(Net)	Around 1.3 kg
Operating Temp	0 °C to + 45 °C
Storage Temp	-10 °C to + 70 °C
Storage Humidity	5% ~ 95% RH(Non-Condensing)

- You can use a special antenna switch with DiSEqC commands.  
When changing ASTRA 1 to EUTELSAT for example, a DiSEqC command is sent with the 22KHz tone through the antenna cable. The antenna switch will change ASTRA 1 to EUTELSAT. The concept of DiSEqC is a protective trademark of EUTELSAT.
- Data rate decides the picture quality of digital TV programmes.  
Data rate of about 5-6 Mbit/s coincides with the picture quality of a analog TV programme.

