



Digital Satellite Receiver

User's Manual

Viaccess Embedded

Warning!

Please do not insert metal or alien substance in hole for Smart Card.

In this case, it is possible that life span of STB is damaged.

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Safety

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

MAINS SUPPLY : 190 ~ 260V AC 50/60Hz.

OVERLOADING : Do not overload wall outlets, extension cords or adapters as this can result in fire or electrical shock.

LIQUIDS : Keep liquids away from the STB.

SMALL OBJECTS : Coins or other small objects must be kept away from the STB as they can fall through the ventilation slots of the STB and cause serious damage.

CLEANING : Disconnect the STB from the wall socket before cleaning it. Use a cloth lightly dampened with water (no solvents) to clean the exterior of the STB.

VENTILATION : Do not block the STB's ventilation slots. Ensure that a free airflow is maintained around the STB. NEVER stand the STB on soft furnishings or carpets. Do not use or store the STB where it is exposed to direct sunlight or near a heater. NEVER stack other electronic equipment on top of the STB.

ATTACHMENTS : Do not use any attachments that are not recommended as these may cause hazards or damage the equipment.

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

EARTHING : The LNB cable MUST BE EARTHED to the system earth for the satellite dish. The earthing system must comply with SABS 061.

LOCATION : Locate the STB indoor place properly to prevent lightning, raining and direct 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.

STB Connection

Introduction

There are several ways of connecting the STB to your existing TV/Audio system. Some of the methods enable you to listen to music in stereo sound of CD like quality.

Consult your local supplier for assistance in setting up an Video/Audio configuration best suited to your unique requirements.

Hints to Quality TV System Configurations

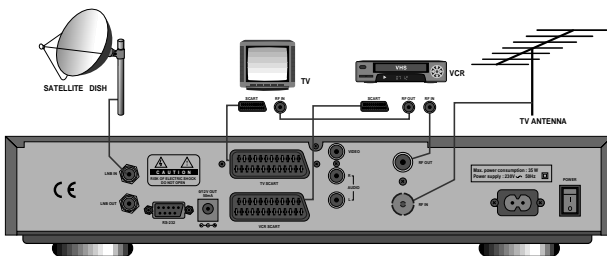
- Connect cables via Audio/Video Outputs/Inputs or SCART connector instead of RF connectors, where possible.
- Use an appropriate, correctly installed antenna system.
- Ensure that the system is properly earthed and protected against lightning.
- Connect the STB to high quality stereo TV and Hi-Fi equipment.

Note : *When Video/Audio Input Outputs or SCART connector are available a "Video" mode may need to be selected in place of a "TV" mode on the VCR and the TV.*

Connection

1. Switch off the mains supply in the STB before connecting or disconnecting the LNB.
Connect the TV antenna connector into the RF IN socket on the STB.
2. Use the flylead supplied with the STB to connect the RF OUT socket on the STB to the RF IN (aerial) connector on the VCR.
3. Use the flylead supplied with the VCR to connect the RF OUT socket on the VCR to the RF IN (aerial) connector on the TV.
4. Connect the coaxial cable from the LNB into the socket marked LNB IN on the STB.
The connector on the LNB IN should be turned until it is finger tight.
5. Connect the power plug of the STB into the mains wall socket and switch the power on.

Note : *As the SCPC channel is a weak signal it is important that the satellite dish is installed precisely to receive it, or moving pictures may be displayed with picture break up errors.*



CAUTION

DISCONNECT THE IRD FROM THE MAINS BEFORE CONNECTING OR DISCONNECTING THE LNB.

Remote Control Unit (RCU)

We designed the most friendly shape to use. You can operate every function of our STB using the RCU. Please read this section to help your understanding of the STB's functions.



Switch between normal mode and standby mode



Select TV or SAT Service



Select audio service



Use to select the TV or Audio channels and enter the channel information & PIN code.



Audio mute

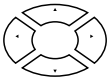


RESERVATION key

Use to reserve a programme in the TV Guide

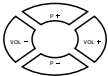


Use to page Up/Down in Channel List & Organising Channels



ARROW (UP/DOWN/LEFT/RIGHT) key

Use to select parameter of submenu and move highlight bar for selecting submenu in main menu & TV Guide



Use to select TV or Audio channels and to control volume on screen



Select programme in TV Guide and item in submenu. Display Channel List on the screen



Return to the previous menu and the screen (display mode)



Display the main menu on the screen or return to on the screen from a submenu



View programme information, schedule and reservation facilities

INFORMATION key



Display the programme information box on the screen or remove it



Select previously viewed channel



SUBTITLE Key

Display the Subtitle Information

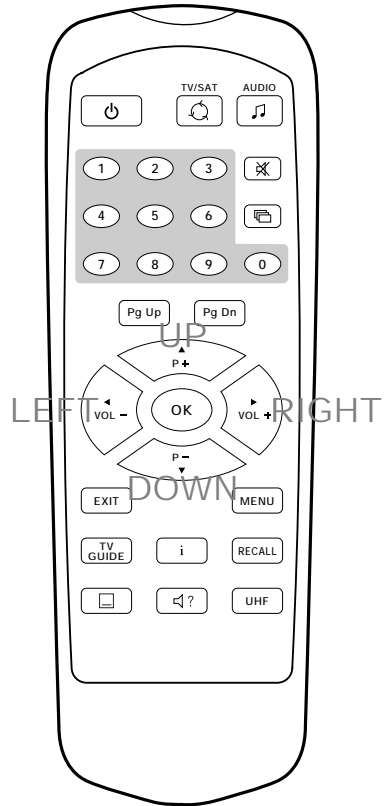
SOUNDTRACK Key



Select language for soundtrack and Dual/Mono function. It depends on broadcaster



Display and alter the UHF setting in menu



Guide of Functions

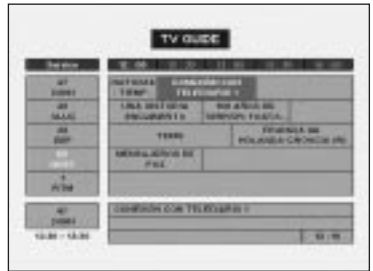
TV Guide

Using the **TV GUIDE** key on the RCU, will give the description of the programme information. You can view the programme schedules from -12 to 72 hours.

If you want to know more detail on a programme, refer to information box. Move the Highlight bar using the **ARROW** keys on the RCU and the contents in information box will change according to highlighted programme.

The items displayed in the programme box are as follows:

- Service number and name
- Title of programme
- A brief description of the programme
- Start and end times
- Local time



Programme Reservation : It is possible to reserve a future programme. To reserve a future programme, select the required programme using the **ARROW** keys then press **[OK]** key. The reserved programme box will change background colour.

A reserved programme will automatically change (or display) the channel at the starting time of the programme.

To cancel the reservation, select the reserved programme, then press **[OK]** key one more.

Information Box


Press **i** key, to view the programme information on the screen. Supplies the detailed content about the channels being viewed.


A signal level is shown between the channel name and programme information.

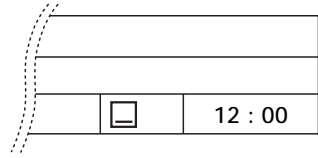
When a channel has subtitles and/or teletext, it will be displayed as symbol(**[CC]**, **[TT]**) in information box for your convenience.




Subtitle

To enable and select the language of subtitle, press  key. Select the required language with the **UP/DOWN** key, then press **OK** key on the required language for display.

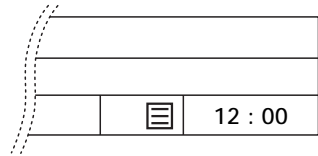
Some broadcasters do not provide subtitles. However, you will be able to confirm in the information box whether subtitles are available or not. If subtitles are provided, the  symbol is shown at the bottom in the information box.




Teletext

You will be able to confirm in the information box whether teletext is supported from the broadcaster or not. If teletext is provided, the  symbol is shown at the bottom in the information box.

To view teletext, use your TV remote control. (Not supplied on the STB's RCU) because the teletext service is controlled by the television.



Soundtrack

Some broadcasters supply multiple language Soundtracks. To select the language of Soundtrack, press  key.

Use the **UP/DOWN** keys to select the required language and press **OK** key to select it.

In addition, you are able to choose either only the left sound or right sound of Dual/Mono of soundtrack using the **LEFT** or **RIGHT** key.



Channel List

While you are viewing a channel, press **OK** key and you can view the channel List.

Select the required channel using **UP/DOWN** or **PgDn/PgUp** keys and press **OK** key to select the required channel.



To download new software

The software upgrade function allows the STB to be upgraded when new functions become available.

Embedded Viaccess Module and 2 x Smart Card

You can enjoy not only scrambled channels for Viaccess but also free channels by this STB.

And you can watch the scrambled channels without Common Interface Module because this STB includes functions of Common Interface Module by oneself. Therefore you need only Smart Card of Viaccess for pay TV channels.

Your required Smart Card is supported by service provider or distributor.



Guide of Main Menu

This section introduces the Main Menu structure of STB.

Using Menus

By pressing the **ARROW** key on the RCU you can select menus.

You can always confirm the option by pressing **OK** on the RCU.

This is a valid in all menus.



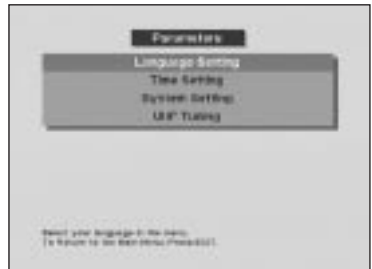
Parameters

Language Setting

Use to select the Menu and Audio language.

Menu Language

You are able to select the language for the menu and OSD(On-Screen Display). It supports English, French, German, Italian and more.



Main Audio Language

Some channel providers broadcast with one or more alternative language soundtracks. You can select your preferred Audio language in this submenu.

Time Setting

Time Adjustment

If your time zone is different from that of the service provider, you can adjust to your local time. It changes in steps of 30 minutes intervals.

Turn On Time (Automatic switch on time)

To set a wake up time, you can enter the 4 digits of hours and minutes using the **0~9** number keys. After setting, the STB is automatically turned on at the set time. If **DISABLE** is selected, the STB will not automatically turn on.



Turn Off Time (Automatic switch off time)

To set a sleep time, you can enter the 4 digits of hours and minutes. After setting, the STB is automatically turned off at the set time.

If **DISABLE** is selected, the STB will not automatically turn off.

System Setting

This menu is used to configure the Audio/Video output parameters, including setting the type of A/V output on the SCART, RF and RCA connector.

The Video output can be set for RGB, Composite video (CVBS) or S-VHS depending on the function of TV when you have connected to the SCART.

You can select Stereo or Mono Audio output.

If you have a widescreen TV, the aspect ratio setting in screen mode should be adjusted to 16:9 to allow the STB to automatically switch to widescreen format for a widescreen programme. Otherwise, set to 4:3.

Info. Box display type setting and Info. Box display time setting

The brightness and display duration of the information box is set here. The duration can be set in the region of 0 to 20 seconds.

If you enter 5 seconds, information box is displayed for 5 seconds after a channel change. Selecting duration of 0 seconds, prevents the Info. Box from being displayed when changing channel or pressing **i** key.

UHF Tuning

This menu is used to configure the UHF TV output setting. The required UHF channel, the PAL sound mode and channel offset adjustment are set here.

The UHF tuning on the TV may need to be altered after changing the UHF output channel on the STB.



Organizing Channels

The Organizing Channel menu allows the user to re-arrange or delete channels that the STB has registered during a channel search.

Note : *To restore the deleted channels, you must try the channel searching again.*

Organizing Bouquets

All Bouquets found are listed in the left hand column of the screen. A Bouquet is a group of channels organized together by the broadcaster.

You can delete any un-required bouquets using the **DELETE** function.

Organizing TV Channels

All TV channels found are listed in the left hand column of the screen.

Use this menu to reorganize and/or delete unwanted TV channels.

To Delete a channel, move the highlight bar to the required channel, then press **RIGHT** key. This will move the selected channel in the **DELETE** box.

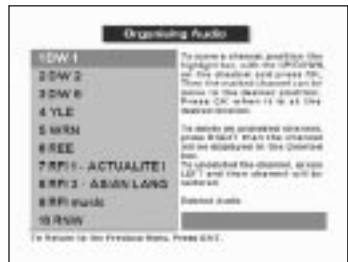
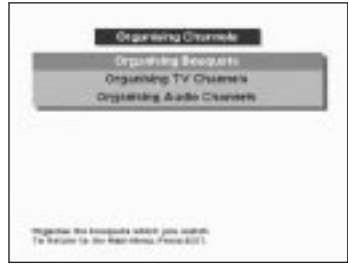
To confirm deletion, press **OK** or to restore the channel press **LEFT** key. Once a deletion has been confirmed, only way to restore the channel is to activate a Channel installation menu.

To re-position a channel in the channel list, e.g. to move it from channel 23 to channel 1, move the highlight bar by **UP/DOWN** key to the selected channel and press **OK**.

This places a marker by the selected channel. Now use **UP** key to move the channel to the required position (channel 1) then press **OK**.

Organizing Audio Channels

All the Audio channels found are listed in the left hand column of the screen. (Use the same procedure as the Organizing TV actions described above)



Status

IRD Status

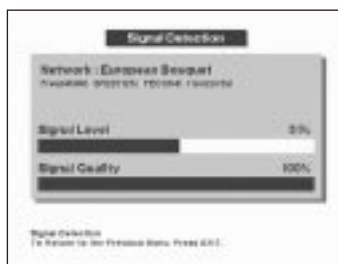
IRD Status provides important diagnostic and version information for a technician.

You may be asked to read some of this information to helpline person.



Signal Detection

Signal detection can be used to help the alignment of the satellite dish and to view the strength and quality of signal from satellite. Also, you can view Network information (Frequency, Symbol Rate, FEC, Polarization). The signal quality is more important than signal strength in digital systems.



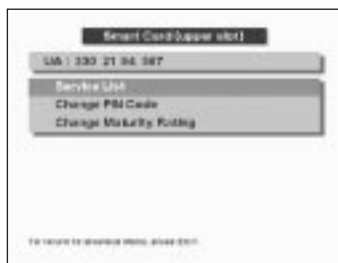
Smart Card

This menu allows the user to view and change information on the smart cards like the Service List, the PIN code and Maturity Rating.

Note : The UA is the same as the number that is printed on the smart card. It is automatic detected and displayed when smart card is inserted into the smart card slot of the STB.

Service List

Channels or Bouquets are encrypted by only Viaccess and operators name are displayed on the TV screen such as TPS or ABSat and more. To get more detailed information of viewing rights of channels or bouquets, press **OK**.



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.

Enter Old PIN Code

At first 'NULL' will be shown on this display, but after the PIN code has been changed 'NULL' will no longer be shown on this display. From then on, when 'NULL' is not shown, if you require to change the PIN code, you must insert in your current PIN code.

Enter New PIN Code

Insert in your new PIN code using the 0 ~ 9 number keys on the RCU.

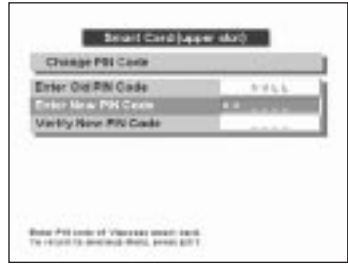
Verify New PIN Code

Insert in you new PIN code again and the STB will verify new PIN code. If you do not enter the same PIN code for this, you will have to enter the new PIN code again.

Change Maturity Rating

The STB is required by Viaccess to include a parental control facility for the viewing of restricted programmes.

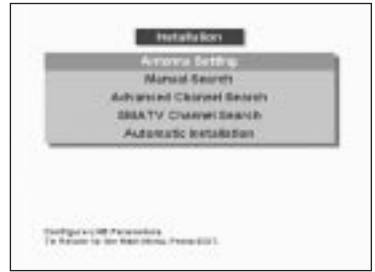
This can be set to 'No block' or for ages ranging from 4 to 18 in steps of 1. The correct PIN code is required to change this option.



Installation

Used to register wanted channels. Searching time is faster than another STB.

Note : *Check the signal level, quality or Network information when channel searching failed. This submenu includes signal quality as graphic bar shape so that you can check the status of antenna or Network information.*



Antenna Setting

More than one satellite antenna may be connected to the STB. It can store the characteristics of at least 8 different antenna configurations using the this sub menu. Press **OK** after Antenna Setting and go to Manual Search.

Antenna Alternative : Select an antenna alternative from 1 to 8.
To separate each satellite from connected dishes.

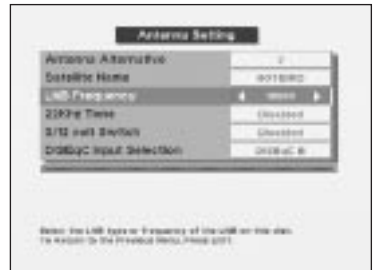
Satellite Name : Select a satellite name of LNB configuration.

LNB Frequency : Select a LNB frequency or type on the dish - Universal, 5150, 9750, 10600, 11475, User(Use to enter another alternative).

22 Khz Tone : To support the universal LNB.
-Enable, Disable.

0/12 Volt Switch : It is possible automatically switch between two LNBs.

DiSEqC Input Selection : It is possible to connection up to 4 LNBs. Select DiSEqC 1,2,3 and 4 according to LNB's connected configuration of DiSEqC. Refer to right table.



Matrix	Option S/W	Satellite position S/W
A	a	a
B	a	b
C	b	a
D	b	b

Manual Search

Use to search for channels using the frequency, polarisation, symbol rate and FEC of known transponders. This submenu includes signal level as graphic bar shape so that you can view the status of antenna.



- Antenna Alternative** : Select the number of the Antenna Setting.
- Frequency** : Input a frequency of wanted transponder using the **0~9** number keys on the RCU.
- Polarization** : Select the type of polarization - Horizontal, Vertical.
- Symbol Rate** : Input a symbol rate of transponder using the **0~9** number keys.
- FEC(Forward Error Correction)** :
Select the type of FEC.
- 1/2, 2/3, 3/4, 5/6, 7/8.
- Network Search** : Use to scan other associated transponder frequencies of similar channels during the search.
- Automatic Skip** : Use to skip the scrambled channels. This is search only free channels.

Note : *If you want to watch the required bouquet information(Frequency, Symbol Rate and so on), enter the Manual Search on the screen of the channel or the Organising Bouquets.*

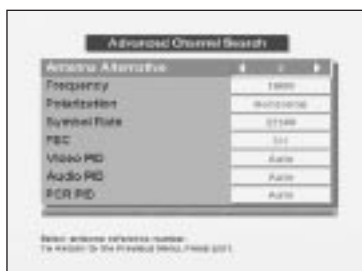
Advanced Channel Search

Use to search for channels under test for which you have PID codes(Video, Audio, and PCR code). For your convenience, there is included an **AUTO** function.

- Video PID** : You can enter not only Decimal code but also 'Hex' code.
- Audio PID** : You can enter not only Decimal code but also 'Hex' code.
- PCR PID** : You can enter not only Decimal code but also 'Hex' code.

In case of need to insert a 'Hex' Code.

1. Select the 'Hex' position using the **LEFT/RIGHT** keys.
2. Press **OK** then appears to Code Input Box.
3. Select the required 'Hex' Code by **ARROW/OK** keys.



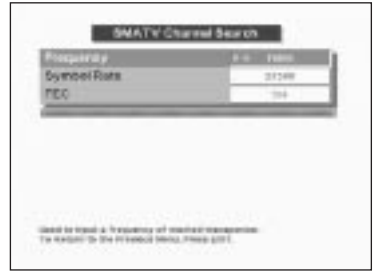
SMATV Channel Search

Use to search for channels when using SMATV equipment.

Frequency : Input a frequency of L-Band (950 ~ 2150 MHz).

Symbol Rate : Input a symbol rate of signal.

FEC : Select the type of FEC.



Automatic Installation

This menu offers the user a simple and straight forward method of carrying out a standard installation.

This installation method will store all the channels that it finds, including the scrambled channels. The undesired and scrambled channels can be deleted by using the Organizing Channel menu.

Note : *It channels do not describe on the screen, should be check the antenna alignment or LNB frequency again.*



Specification

IRD Specification

Items	Specification
Power	190 ~ 250V AC 50/60Hz
Input frequency	950 ~ 2150 MHz
CPU	L64108 (MIPS R3000)
RAM	2Mbyte
Flash Memory	2Mbyte
EEPROM	16Kbyte
Data service	1 RS-232C, 19KBPS, 9P DSUB
SCART	2 SCART ; 1 VCR, 1 TV
RCA	2 left and right Audio/Video
LNB power	Switchable 13.5/18V (400mA max)
Modulation/FEC type	QPSK/Multiple convolutional coding (DVB compliant)
DiSEqC Bus	DiSEqC Ver 1.0 Supported
Tone Switching	22KHz
RF Modulator	UHF ch21 ~ 69 with PAL I/B/G
Specification	MPEG-2/DVB Compliant SI
Video compression	MP@ML in MPEG-2
Aspect ratio	4:3 and 16:9 with pan vector
On-screen display	16 colours
EPG	supported
LNB Selector (Control output)	0/12V
MCPC/SCPC	supported

Channel Processing

Items	Specification
Input Frequency Range	950 ~ 2150 MHz
Tuning System	PLL Digital Synthesis channels
Tuning Step Size	125KHz max
Modulation	QPSK (DVB Specification)
Inner FEC	Rates is 1/2, 2/3, 3/4, 5/6 or 7/8 (DVB Specification)
Outer FEC	Reed Solomon coding RS (204,188,t=8) DVB compliant
Input Signal Data Rate	2 ~ 31Ms/s
IF Bandwidth	36MHz
Connector Type	F-Type (IEC 169 - 24 female)

Video Specification

Items	Specification
Specification	Meets ETR 154 amended in ALM-95-021
TV system	PAL I, G or B
Video Decoding	ISO/IEC 13818-2, MP@ML
Multiple video resolutions	704 pixels x 576lines x 25 frames per second
	544 pixels x 576lines x 25 frames per second
	480 pixels x 576lines x 25 frames per second
	352 pixels x 576lines x 25 frames per second

MPEG Audio

Items	Specification
Operation Modes	Mono, dual, stereo and joint stereo audio
Sampling rates	32, 44.1 and 48KHz
Resolution	18 bit digital to analogue converters

RF Modulator

Items	Specification
Features	Input and lossless RF bypass supported
Connector	IEC coaxial female 9.5 mm. (IEC 169-2)
Channel Range	CCIR UHF E21-E69 adjustable
Preset Channel	channel 38 (or TBD)

Trouble Shooting Guide

Symptoms	Check Points
<i>About STB</i>	
Does not display any message on the front panel or STB does not work.	<ul style="list-style-type: none"> • Check the main power cable and main power switch on the rear panel. • Check Standby mode is On or Off.
Picture does not appear	<ul style="list-style-type: none"> • Check the video output port (SCART & CINCH) is firmly connected to TV or VCR. • Check that LNB cable is well connected from dish to STB. • Check the LNB <ul style="list-style-type: none"> - If LNB has problems, change to new LNB. • Check the SAT/TV/VCR status of STB by RCU. • Check the bright level of TV. • Check the signal level <ul style="list-style-type: none"> - If you have weak level, adjust the dish
No Sound	<ul style="list-style-type: none"> • Refer to "Picture does not appear". • Check the volume level of TV or STB. • Check Mute is On or Off.
Remote Control does not operate	<ul style="list-style-type: none"> • Check the battery exhausted.
<i>About Error Message on screen</i>	
No or Bad signal	<ul style="list-style-type: none"> • Check the LNB cable and dish position. • Check whether Smart Card is appropriate.
Service is not running or scramble / No access to the service slot.	<ul style="list-style-type: none"> • Check whether smart card is correctly inserted. • Check whether smart card and receiving stream are same.
Viaccess is not applicable to this service.	<ul style="list-style-type: none"> • Check the insert of smart card. • Check whether smart card and receiving stream are same.

Symptoms	Check Points
<i>About Front message (in case of Software download)</i>	
E - 8E : Incorrect data block (CRC-16)	<ul style="list-style-type: none"> • Try to turn STB power Off and On.
E - 1d E - 7d : Invalid system ID	<ul style="list-style-type: none"> • Check whether the system ID is different for Software and STB.
E - 0e : UART RX/TX time out	<ul style="list-style-type: none"> • Try to turn STB power Off and On.