



## Digital Free to Air Satellite Receiver **SRT 6155**

### User Manual

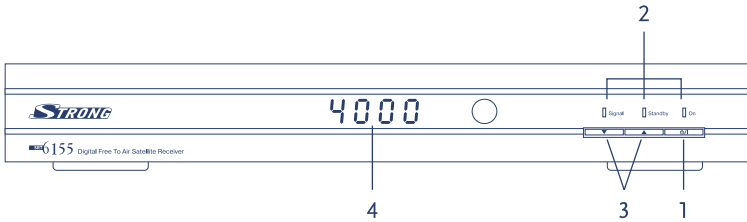


Figure 1

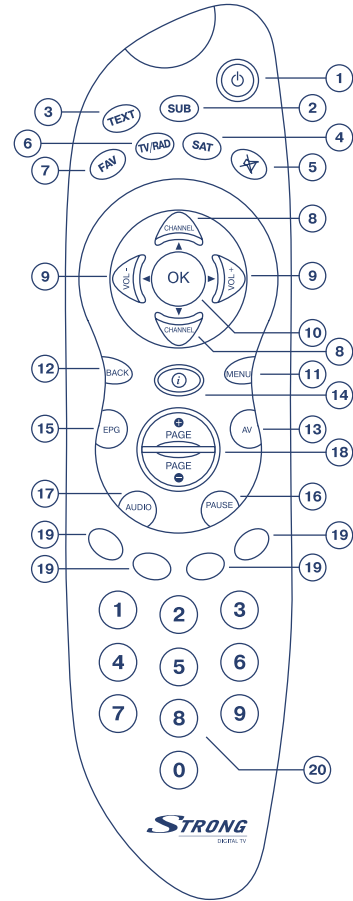


Figure 3

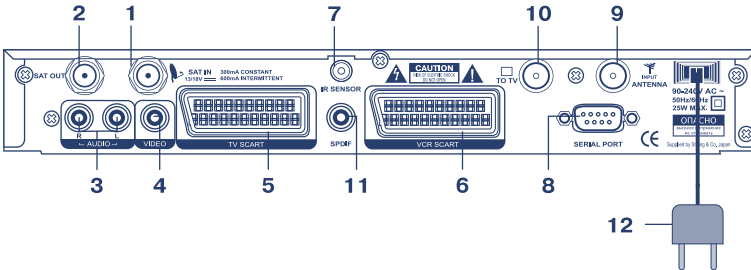


Figure 2

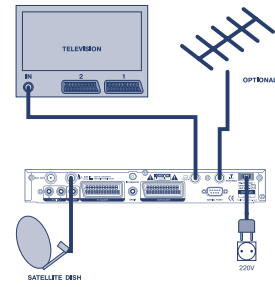


Figure 4

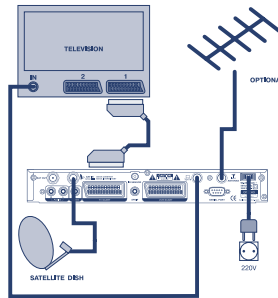


Figure 5

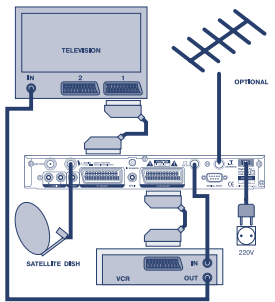


Figure 6

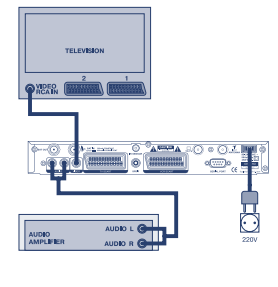


Figure 7

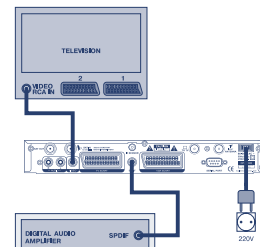


Figure 8

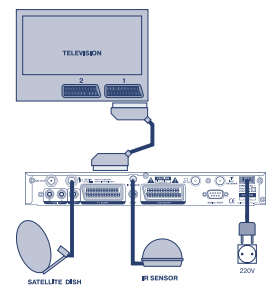


Figure 9

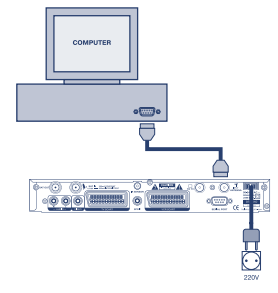


Figure 10

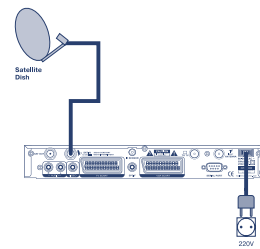


Figure 11

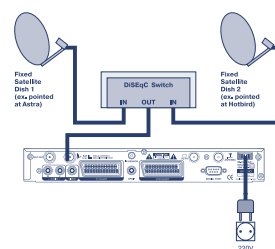


Figure 12

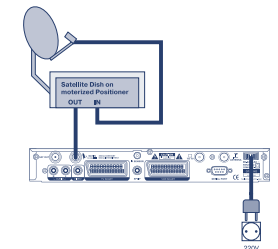


Figure 13

Thank you for choosing this Strong satellite receiver. This receiver is of our latest development and it is designed to be capable of safely install your receiver and to achieve its optimum performance.

## **1.0 Usage**

This user manual is applicable for Strong SRT 6155 Digital Satellite Receiver and its related accessories. It is advised that first-time and experienced users read this manual in order to safely install the receiver.

Strong has supplied this product with the most recent innovations of software and hardware. Strong reserves the right to make changes in production to the software used by your satellite receiver without prior notification. In order to maintain and ensure that your receiver is compatible and updated with the most recent software technology, we recommend that you visit our website to check the latest software.

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## 1.1 Safety Instructions

### Warning:

#### DO NOT INSTALL YOUR RECEIVER:

- In a closed or poorly ventilated cabinet;
- Directly on top of or under any another equipment;
- On a surface which might obstruct the ventilation slots.

#### DO NOT EXPOSE THE RECEIVER OR ITS ACCESSORIES:

- To direct sunlight or near any other equipment that generates heat;
- To rain or intense moisture.
- To any shock which may cause permanent damage to your receiver;
- To any magnetic objects, such as loudspeakers, transformers, etc.;
- To intense vibration.
- Never open the cover. It is dangerous to touch the inside of the receiver due to high voltage currents and possible electrical hazards. Your warranty will be void if the receiver has been opened.
- When the receiver is not used for a long period of time, you should unplug the power cord from the wall socket.
- Do not use a damaged power cord. It may cause a fire or an electrical shock.
- Do not touch a power cord with wet hands. It may cause an electric shock.
- Place the receiver in a well-ventilated environment.
- When you are connecting the cables, be sure that the receiver is disconnected from the mains supply voltage.
- Do not use your receiver in humid environment.

Make sure you read this user manual before installing your receiver.

This manual provides complete instructions for installing and using this receiver. The following symbols will be used as follows:

**Bold Characters:** Represents a button on the remote control or the receiver.

*Italic Characters:* Represents a menu item within the On Screen Display (OSD) Menu

## 1.2 Features & Accessories

### SRT 6155 Digital Satellite Receiver:

- Easy to use Graphic MENU Interface;
- Multi-lingual support on screen Menu: English, German, French, Italian, Spanish, Dutch, Russian, Turkish, Swedish, Slavic, Slovak, Hungarian, Czech, Bulgarian, Romanian, Lithuanian, Latvian, Polish;
- RS 232 port for updating control software and additional services;
- Supports DiSEqC 1.0/1.1/1.2.
- 2-SCART Connectors (TV, VCR);
- 3RCA Connectors (CVBS, Audio Left/Right)
- Multi-Language function (Menu, Audio);
- IR sensor-connector for connecting an external remote eye to control the receiver (available as accessory);
- Front Panel Buttons;
- Editing Functions (TV or Radio Channel, Channel Name, PID, Transponder Name);
- EPG (Electronic Program Guide) for on screen channel information;
- Over 4000 channels memory capacity;
- Memory for Multi-satellite reception (up to 64);
- Four Favourite lists, for both TV and Radio;
- 3 Operation Modes (Digital TV, Digital Radio, Favourite);
- LNB, 13/18V, 0/22 KHz Tone;
- Receives QPSK Satellite Broadcasting I.F. Signal and Decodes the Digitally Encoded Signal;
- Digital Tuner with Loop-through output;
- SCPC/MCPC Receivable from C/KU-band Satellite;
- MPEG-2 Main Profile at Main Level
- Teletext (800 pages memory) ;

- Channel Memory: about 2900 Digital TV Channels, about 1400 Radio Channels;
- Supports software downloading via satellite (O.T.A.);
- S/PDIF output for connection with a digital audio amplifier.

**Accessories**

- User's Manual;
- Remote control unit;
- 2x Batteries (AAA type);
- Warranty Card;
- Remote Eye: The external remote eye is an optional accessory.

**Note:** The batteries should not be recharged, disassembled, electrically short-circuited or be mixed or used with other types of batteries.

### 1.3 Safety Precautions

To maintain your receiver's optimum performance, you are advised to apply the following safety precautions:

- Read this manual carefully and make sure you fully understand the instructions given;
- Refer all maintenance or servicing to suitably qualified personnel;
- If you wish, you may clean your receiver with a soft lint-free cloth slightly made damp with a mild soap solution, only after disconnecting from the mains voltage supply;
- Do not use alcohol or ammonia based liquids to clean the receiver;
- Do not open the receiver cover, as you will be exposed to a shock hazard;
- Do not open the receiver cover this will void your warranty;
- Do not place any objects on top of the receiver because this might prevent proper cooling of the components inside;
- Make sure no foreign objects fall through the ventilation slots because this could cause fire or an electric shock;
- Wait a few seconds after switching off the receiver before you move the receiver or disconnect any equipment;
- Please ensure that the electrical power supply corresponds with the voltage on the electrical identification plate at the back of the receiver;
- It is a necessity that you only use an approved extension and compatible wiring that is suitable for the electrical power consumption of the installed equipment;
- If the receiver does not operate normally even after strictly following the instructions in this user manual, it is recommended to consult your dealer.

### 1.4 Storage

Your receiver and its accessories are stored and delivered in a well protective packaging against electric shocks and moisture. When unpacking it, make sure that all the parts are included and keep packaging away from children. When transporting the receiver from one place to another or if you are returning it under warranty make sure to store the receiver in its original packaging with its accessories. Failing to comply with such packaging procedures could void your warranty.

### 1.5 Equipment Set-up

We recommend you to consult a professional installer to set up your equipment. Otherwise, please follow the following instructions:

- Refer to the user manual of your TV and dish;
- Make sure that the SCART cable is in a good condition;
- Make sure that the SCART cable connections are well shielded;
- Make sure that the outdoor components of the dish are in good condition;
- Make sure that the dish is aimed at the satellite of your choice;
- Make sure that the dish is connected with the correct I.F. coaxial cable (75 Ohm) and is in good condition.

## 2.0 Your Receiver

### 2.1 Front Panel (Please see inside cover Figure 1)

#### 1. Power Button

Turns the receiver ON/OFF.

#### 2. Stand-BY/ ON/ SIGNAL (3 LEDs)

The red LED is the “stand-by” indicator. The green LED is the “Power On” indicator.

The orange LED lights up once you correctly receive a satellite signal (signal locked).

#### 3. UP/DOWN Buttons

Move the cursor **UP/DOWN** in Menu state. Changes the channels **UP/DOWN** in no menu state.

#### 4. LED Display

This 4-digit LED panel indicates the time or the program number.

### 2.2 Rear Panel (Please see inside cover Figure 2)

#### 1. SAT IN (LNB IN)

Connect the I.F. digital signal from your LNB of your satellite dish to this connector.

#### 2. SAT OUT

Gives you the possibility to connect an extra receiver (analogue or digital).

#### 3. AUDIO Right (Red RCA) and Left (White RCA)

These connectors give you the possibility to connect the audio signal to an external amplifier or to the audio input of your TV.

#### 4. VIDEO (Yellow RCA)

This connector has a constant video signal for additional VCR-connections

#### 5. TV Scart Connector

Use this connector to connect your receiver to your TV using a scart cable.

#### 6. VIDEO Scart Connector

Use this connector to connect your receiver to your video recorder using a scart cable. Your video signal will now be looped through to your TV.

#### 7. IR SENSOR

Use this connector to connect an external remote eye if you wish to store your receiver in a place where the IR on your receiver cannot communicate with the remote. For example, if you wish to put your receiver in a closed environment such as a well ventilated closet, then this accessory will be useful because it can allow the remote control to control the receiver through the remote eye.

#### 8. RS 232 Serial Port

This serial port can be used to connect your PC to your receiver, and enables you to download new versions of software into your receiver. Detailed information about downloading software into your receiver can be found on our website ([www.strongsat.com](http://www.strongsat.com)).

**Note:** It is recommended to **ONLY** use the original software provided via our website. Loading other versions of software not adapted to your model number can cause severe damage to your receiver, and will not be covered by the warranty.

#### 9. Input Antenna

RF Modulator (female part). If you have cable TV or if you have an outdoor antenna, then you can connect the RF cable coming from the antenna or wall connector to this ANT input. If you use a scart cable to connect the receiver to your TV, the additional antenna can be put directly into your TV.

#### 10. To TV

RF Modulator (male part). If you do not use a scart cable to connect your receiver to your TV, or if you have connected a cable to the ANT input, you will have to use this connector to connect the receiver to your TV by using a coaxial cable.

#### 11. S/PDIF

Use this coaxial output to connect your receiver to the input of your digital audio amplifier.

#### 12. Power Cord

Your receiver requires a mains voltage supply of 90~240V AC (Auto-selectable), 50~60Hz+/-5%. Make sure to check the power specification of the wall outlet before connecting your receiver to the main power.

## 3.0 Connections

### 3.1 Connecting to your TV & VCR

#### Warning:

If you are not sure how to connect your receiver, do not take the risk of doing it yourself. Ask your Strong dealer to do it for you. They are specially trained by our technicians and can get the best performance out of your receiver. Although there are entechologies, and requires specialised equipment. Do not hesitate to ask any questions you have to your Strong dealer about installing your receiver.

It is possible to connect the receiver through the use of UHF coaxial cables, SCART cables, and/or so called Audio/Video cables with RCA connectors.

#### 3.1.1 Basic connection with a coaxial cable (Please see inside cover Figure 4)

- Connect the satellite signal from the LNB to the LNB IN connector.
- Connect the To TV connector at the back of the receiver to the ANT IN connector on your TV set.
- Optional: connect a UHF coaxial or cable coming from your antenna or cable TV to the ANT input connector at the back of the receiver.

#### 3.1.2 Basic connection with a Scart cable (Please see inside cover Figure 5)

- Connect the satellite signal from the LNB to the LNB IN connector.
- Connect the TV scart connector at the back of the receiver to the scart-in connector on your TV set.
- Optional: connect a UHF coaxial or cable coming from your antenna or cable TV to the ANT input connector at the back of the receiver.

#### 3.1.3 Advanced connection (Please see inside cover Figure 6)

- Connect the satellite signal from the LNB to the LNB IN connector.
- Connect the TV scart connector at the back of the receiver to the scart-in connector on your TV set.
- Connect the VCR scart connector at the back of the receiver to the scart-in connector on your VCR set.
- Connect a UHF coaxial or cable coming from your antenna or cable TV to the ANT input connector at the back of the receiver.
- Connect a coaxial cable to the TV/VCR connector at the back of the receiver. Connect the other end of this coaxial cable to the ANT IN connector of your VCR.
- Connect the TV OUT connector of your VCR to the ANT IN connector of your TV set with a coaxial cable.

**Note:** If you have a digital audio amplifier with a digital audio input, use the S/PDIF output.

#### 3.1.4 Connection with Audio Cable RCA Connectors (Please see inside cover Figure 7)

- On the back of your receiver you will find the RCA connectors (Audio Left & Right - Red & white, Video - Yellow).
- Install an audio/video cable between the RCA connectors of the receiver and those of your TV set or amplifier.

#### 3.1.5 Connection to a digital audio amplifier using the S/PDIF output

(Please see inside cover Figure 8)

- Connect the S/PDIF out connector on the back of your receiver to the S/PDIF input connector of your digital amplifier, using a coaxial cable.
- Do not forget to turn the S/PDIF function on (Main menu > Installation > PIN code "0000" > TV/VCR Settings > SPDIF Output > On).



### 3.1.6 Connecting a remote eye (Please see inside cover Figure 9)

- Connect the IR sensor to your remote eye if you wish to store your receiver in a place where the IR on your receiver cannot communicate with the remote. For example, if you wish to put your receiver in a closed environment such as a well ventilated closet, then this accessory will be useful because it can allow the remote control to control the receiver through the remote eye.

### 3.1.7 Connecting a serial cable for downloading software

(Please see inside cover Figure 10)

- Connect the RS 232 connector on the back of your receiver to the Serial port of your computer using a serial cable.
- Instructions on how to download software can be found on our website [www.strongsat.com](http://www.strongsat.com) (support > downloads). However, this receiver can download new system software automatically by satellite.

## 3.2 Connecting to a satellite dish

### 3.2.1 Connecting a fixed satellite dish to your receiver

(Please see inside cover Figure 11)

- Make your choice of satellite from which you want to receive your TV/Radio channels.
- Have your Strong dealer align your dish at the requested satellite.
- Connect a coaxial cable to your LNB.
- Connect the other end directly to the LNB IN connector of your receiver.

### 3.2.2 Connecting multiple fixed dishes to your receiver using a DiSEqC1.0 switch

(Please see inside cover Figure 12)

If you want to watch programs from more than one satellite (For instance from Astra and from Hot Bird) it is advisable to use fixed dishes and a DiSEqC 1.0 switch.

- Have your Strong Dealer aim the dishes at the requested satellites.
- Connect the LNB's with coaxial cables to the IN connectors of the DiSEqC 1.0 switch.
- Connect the OUT connector of the DiSEqC 1.0 switch to the LNB IN connector at the back of your receiver.

### 3.2.3 Connecting a dish on a motorized positioner to your receiver

(Please see inside cover Figure 13)

Another possibility of watching programs from multiple satellites is by mounting a dish to a motorized DiSEqC 1.2 positioner.

- Have your Strong dealer mount the dish to the positioner with the correct azimuth angle of elevation and let him set the centre point for your positioner.
- Connect the LNB with a coaxial cable to the LNB IN connector of the positioner.
- Connect the OUT connector of the positioner to the LNB IN connector at the back of your receiver.

## 4.0 Starting up

Ensure that your satellite receiver is correctly connected to your television and dish, and that your satellite signal is of good quality. (If you are not sure about this then ask your local Strong dealer to check your installation or satellite signal).

### 4.1 Starting up for the First Time

To offer you the best service, we have already pre-programmed the TV and Radio channels from the Astra 19° East and Hot Bird satellites into our receivers. However, it may be that for some countries the channels are not pre-programmed.

The pre-programmed channels are for ASTRA first, then Hot Bird.

- **IF dish is on ASTRA:** The receiver will start up with channel 1 (channel from ASTRA).
- **IF dish is on HOT BIRD:** NO SIGNAL message will appear. Use the SAT button on your remote control to select Hot Bird.

## 4.2 Dish aimed at other satellites

IT download the channels, please refer to "Channel Set-up". (Described in section 5.1.4.3)

## 5.0 Basic settings

**Note:** Every time the receiver asks you to put your PIN code, enter '0000' on your remote control using [0-9] numeric keypads.

**Remember:** To switch between the TV/Radio channels list, you will have to press the TV/RAD buttons on your remote accordingly.

### 5.1 Main Menu (Please see inside cover Screen 1)

All the important settings and features of your receiver can be operated from the Main Menu. The Main Menu consists of several sub-menus such as "Channel Organizer", "Favourite Organizer", "Timer", "Installation" and "Games". To display and navigate through the main menu of the receiver please apply the following steps:

1. Press the **Menu** button.
2. Use **UP/DOWN** keys, to navigate through the menu.
3. Press **OK** button every time you select an item from the menu.
4. Press the **BACK** button to terminate an operation.
5. Press the **BACK** button until you go back to main menu.

**Tip:** Always read the Help bar displayed at the bottom of your screen.

### 5.1.1 Channel Organizer Menu

The "Channel Organizer" menu enables you to sort channels, make your own Favourite channels list, edit channel names and delete channels from the list.

#### Sorting Channels from the channels list:

To sort your channels, please apply the following steps:

1. Press the **Menu** button.
2. Using **UP/DOWN** keys, select "Channel Organizer" and press **OK**.
3. Enter PIN CODE ('0000' default code) and press **OK**
4. Press the **Red** (Sort) button to sort your channels. <Please see inside cover Screen 2>
  - If you press the **Red** (Name) button, you can sort the list of channels alphabetically. <Please see inside cover Screen 3>
  - If you press the **Green** (Type) button, you can sort the channels by the type of the channel , CI or scrambled program.
  - If you press the **Yellow** (TP) button, you can sort the channels by transponder order.
  - If you press the **Blue** (Manual) button you can sort the channels manually.

A check mark will be shown on the selected channel. Use the **UP/DOWN** buttons to move to the position that you want the channel to be at, and press the Blue (manual) button once again. The channel will then be moved to the position you selected.

Once you have finished sorting the channels, press the **BACK** button until you are back in the Normal TV mode. (A message that the receiver is saving the changes you made will be displayed).

#### Setting Favourite channels from the channel list:

You can set a list of Favourite channels from the current TV/Radio channels list.

To set your Favourite channels, please apply the following steps:

1. Press the **Menu** button.
2. Using **UP/DOWN** keys, select "Channel Organizer" and press **OK**.
3. Press the **Green** (Fav) button to switch into Favourite organizer mode. <Please see inside cover Screen 2>
4. The default favourite list names are: "Movie", "News", "Sports", and "Music".

5. Using **UP/DOWN** or **P+/P-** keys, select the channel and press the coloured button on your remote corresponding to the classification of the channel. For example, if you press the Red (movie) button the channel is designated as "Movie" Favourite channels. A red heart will appear behind the channels' name. If the Red button is pressed again the selected channel is un-selected from Movie Favourite list. <Please see inside cover Screen 4>
6. One channel can be saved into more than one Favourite list. You can change selected Favourite channels in "Favourite Organizer" menu.
7. Press the **BACK** button until you go back to main menu.

You can view the Favourite list you set by pressing the Fav button while you are watching TV or listening to a Radio channel.

#### Editing Channels from the channel list:

You can change the channel name, lock a channel and change the skipping functions.

Change name of channel:

To change the name of the channel, please apply the following steps:

1. Press the **Menu** button.
2. Using **UP/DOWN** keys, select "Channel Organizer" and press **OK**.
3. Using **UP/DOWN** or **P+/P-** keys, select the channel.
4. Press the **Yellow** (Edit) button. <Please see inside cover Screen 2 and 5>
5. Press **OK** on the channel name and the keyboard will appear on screen. <Please see inside cover Screen 6>
6. Use **UP/DOWN** or **P+/P-** keys to select a letter, and the **OK** button to overwrite the current channel name letter by another letter. Go up with the cursor into the line of the new name and press **OK** to confirm the changed name.

Press **BACK** to go back to the menu.

#### Change lock function:

If you lock a channel, you can only watch it from the TV list after entering your PIN Code. To change lock function, apply the following steps:

1. Apply the first four steps detailed in "Change name of channel" described in section 5.1.1).
2. Using **UP/DOWN** or **P+/P-** keys, select "Lock field". <Please see inside cover Screen 7>
3. Press **OK** and enter your PIN Code.
4. The lock function will be marked.
5. Move your cursor to the **OK** field and press the **OK** button.
6. To unlock the channel repeat the same procedure.

#### Change the Skip function:

If Skip function is activated, the channel will be skipped when you are scrolling through the TV list in normal watching mode. Please apply the following steps:

1. Apply the first four steps detailed in "Change name of channel" (Described in section 5.1.1).
2. Using **UP/DOWN** or **P+/P-** keys, select "Skip field". <Please see inside cover Screen 8>
3. Press **OK** and enter your PIN Code.
4. The skip function will be marked.
5. Move your cursor to the **OK** field and press the **OK** button.
6. To unlock the channel repeat the procedure.

#### Change Video Package Identifier V-PID, Audio A-PID, Program P-PID Values:

1. Apply the first four steps detailed in "Change name of channel" described previously.
2. Using **UP/DOWN** or **P+/P-** keys, select "PID field". <Please see inside cover Screen 8>
3. Using the numeric keypad **[0-9]**, enter the new value.
4. Move your cursor to the "OK field" and press the **OK** button.

#### Deleting Channels from channel list

You can delete channels from the channel list by applying the following steps:

1. Press the **Menu** button.
2. Using **UP/DOWN** keys, select "Channel Organizer" and press **OK**.
3. Press the **Blue** (Delete) button <Please see inside cover Screen 2>

4. Using **UP/DOWN** or **P+/P-** keys on your remote, select the channel.
5. Press the **Red** button to delete the selected channel.
6. Press the **Green** button to delete all channels from the list.
7. Press the **Yellow** Button to exit the delete menu

### 5.1.2 Favourite Organizer Menu

This menu enables you to organize your Favourite channels list. All the channels that you have marked as your Favourite in the "Channel organizer" menu can be sorted by applying the following steps:

1. Press the **Menu** button. <Please see inside cover Screen 1>
2. Using **UP/DOWN** keys , select "Favourite Organizer" and press **OK**. <Please see inside cover Screen 9>
  - **Sort Red** button: Same as the Sort function of "Channel Organizer" menu. <Please see inside cover Screen 3>
  - **NxtFav** (Next Favourite Group) Green button: Shows the next Favourite group list.
  - **Edit Yellow** button: You can edit the name of the favourite group in the same way as you change a channel name in the "Channel Organizer" Menu. <Please see inside cover Screen 6>
  - **Remove Blue** button: Removes the selected channel directly from the Favourite list that was selected.

### 5.1.3 The Timer Menu

ThVCR while you are not at home. It also can be used to wake you up at the time you set it. Please apply the following steps:

1. Press the **Menu** button. <Please see inside cover Screen 1>
2. Using **UP/DOWN** keys on your remote, select "Timer Menu" and press **OK**. <Please see inside cover Screen 10>
  - **Timer number**: You can select up to 8 different events.
  - **Timer State**: Set to "Enabled" to use the timer function, or "Disable" to stop the timer functions of the timer number you selected.
  - **Timer mode**: You can select the following functions in the timer mode.
    1. "Power On": The receiver powers on at the designated date and time.
    2. "Time interval": The receiver switches on at the designated date and time, displays the channel and then switches off at the designated date and time (The value set at the ending time).
    3. "Power Off": The receiver powers off at the designated date and time.

Press **OK**, now you will see the channel list, select a channel and Press **OK**

- **Timer Cycle**: You can set the cycle of the action designated in the timer mode (one time, Every Day or Every Week).
  - **Date**: You can set the starting date of the timer action.
  - **Time**: You can set the starting time of the timer action.
  - **Ending Time**: You can set the ending time of the channel view when the Timer mode is on Time Interval.
  - **Channel**: You can select the channel to be shown when the receiver timer mode Powers ON
3. Press the **Red** button to save and proceed with another timer event
  4. Press the **Green** button to save and exit the timer menu
  5. Press the **Yellow** button to exit the timer menu WITHOUT saving the settings

**Tip:** You have to select the channel, starting time, and ending time settings if the Timer mode is "Time interval". An error message will appear if any of the settings are incorrect.

### 5.1.4 The Installation Menu (Please see inside cover Screen 1)

All settings that are related to TV, Dish, LNB and Satellites are within this menu. The installation menu contains several sub menus such as "System Set-up", "LNB Set-up", "Channel Set-up" and "Parental Lock". To access the different sub menus, apply the following:

### 5.1.4.1 System Set-up Menu (Please see inside cover Screen 11)

To install your receiver to your personal preferences, go to “System Set-up” menu. Then please apply the following steps:

1. Press the **Menu** button.
2. Using **UP/DOWN** keys, select “Installation” and press **OK**.
3. Using **UP/DOWN** keys, select “System Set-up” and press **OK**.
  - **Language Settings:** You can change the language of the menu, audio and subtitles by applying the following steps <Please see inside cover Screen 12>:
    1. Select “Language Settings” and Press **OK** or the Right button.
    2. Select “Menu Language” and Press **OK** or the Right button.
    3. Using **UP/DOWN** keys, select the language in which you want your menu to be displayed and press **OK**. The screen of the menu will change to the language of your choice.
    4. You can also choose your preferred first audio language, second audio language and the subtitle language by applying the same steps.
5. Press **BACK** until you return to the main menu.
  - **TV/VCR Settings** <Please see inside cover Screen13>: You can set the TV/VCR settings to your personal preferences. Check your TV and VCR user manuals for the correct settings. You can change your TV/VCR settings by applying the following steps:
    1. Select “TV/VCR Settings” and press **OK** or the Right button.
      - **TV Mode:** Press **OK** or the Right button and set your TV mode to “Multi”, “PAL” or “NTSC”.
      - **Video Mode:** Press **OK** or the Right button and set your VCR mode to “CVBS” (Composite video) or “RGB” (preferred option if your TV set is compatible with it).
      - **Screen Mode:** Press **OK** or the Right button and set your screen mode to “4:3 Full Screen”, “4:3 Letter” or “16:9”.
      - **Audio Output:** Press **OK** or the Right button and set your audio output to “Stereo”, “Left only” or “Right only” (left or Right is for mono TV sets)
      - **SPDIF Output:** Press **OK** or the Right button and activate your S/PDIF output on the back of your receiver, so you can connect it to a digital Audio amplifier using a coaxial cable.
      - **VCR Scart:** Press **OK** or the Right button and set the scart output to “Auto” or “STB” (Set Top Box). If set to “STB”, the VCR scart signal is not automatically looped through.
      - **UHF Mode:** Press **OK** or the Right button and set the UHF mode to “PAL B/G”, “PAL I” or “PAL D/K”. If the TV set is connected using a coaxial (RF) cable, you must select RF modulator type here. The RF modulator type affects the channel audio. (Select PAL I for UK, NI or ROI use.)
      - **UHF Channel:** Press **OK** or the Right button and set the UHF channel number to the same UHF channel number of your TV set. This only has to be done if your TV set is connected with a coaxial (RF) Cable. If the UHF Channel numbers of the receiver and the TV set are not set the same, no picture will be displayed.
    2. Press **BACK** until you go back to main menu.
  - **OSD Settings:** You can set the OSD (On Screen Display) on your TV to your personal preferences. You can change the OSD settings by applying the following steps:
    1. Select “OSD Settings” and press **OK** or the Right button. <Please see inside cover Screen 14>
      - **Colour Scheme:** Press **OK** or the Right button and set the colours of the OSD menu to “Basic”, “Colour 1” or “Colour 2”.
      - **Transparency:** Press **OK** or the Right button and select how transparent you want your OSD.
      - **Brightness:** Press **OK** or the Right button and select how you want the OSD to be.
      - **OSD Timeout:** Press **OK** or the Right button and select how long you want the information banner to be on the screen when starting up your receiver or when changing channels.
    2. Press **BACK** until you go back to main menu.
  - **Time setting:** The system uses GMT (Greenwich Mean Time) as a default. To set the time, apply the following steps <Please see inside cover Screen 15>:
    1. Select “Time Settings” and press **OK** or the **Right** button.
      - **Select Time Zone:** Press **OK** or the **Right** button, and a list of the GMT plus or minus the hours you need for your country is displayed. Using **UP/DOWN** keys select the correct one, and the receiver will automatically show the current time in your country. To set the time manually:

- **Select GMT usage:** Press **OK** or the Right button and use the **UP/DOWN** buttons to set the GMT usage to "off". Press **OK** to save your setting. The time setting menu will now activate the bottom two fields of the menu.
  - **Select Set Local Time:** Press **OK** or the Right button. Use your **UP/DOWN** buttons or Numeric buttons [0-9] to set the local time. When set, press **OK** to save the local time.
  - **Select Set Date:** Press **OK** or the Right button and set the date the way you have set the time.
2. Press the **BACK** button until you go back to the Main Menu.
- **Power on Channel:** This function allows you to set the channel you want when the receiver turns on. To set the power on channel, apply the following steps <Please see inside cover Screen 16>:
    1. Select Power on Channel and press **OK** or the **Right** button.
      - **Last Viewed:** The receiver will start-up with the channel that you viewed before turning the receiver off.
      - **Define Channel:** This function allows you to set the channel you want when the receiver turns on. To define the channel, apply the following steps:
        1. Press **OK** or the **Right** button and select in the TV or radio list of channels the channel you want to have your receiver start-up with.
  - **System Upgrade:** You can download the latest software available including new technologies to your receiver. To upgrade your system, apply the following steps:
    1. Select "System Upgrade" and press **OK**
    2. A system upgrade is available on ASTRA and on HOTBIRD. Choose the satellite, your dish points to and press **OK**. The receiver will display the message: "Please wait, checking for new software". If there is a recent software version available for your receiver, it will automatically download it via the satellite signal. If you already have the latest version nothing will happen <Please see inside cover Screen 17>.
    3. Press the **BACK** button until you go back to main menu.

**Note:** Be sure that your receiver is connected to the satellite signal. Do not turn off your receiver while you are downloading new software.

- **System Information:** The system information displays information about your receiver such as model number, software and boot version. To check system information, apply the following steps:
  1. Select "System information" and press **OK** or the **Right** button. <Please see inside cover Screen 18>
- **Factory Reset:** Be careful when using this function, because it will erase all the data and parameters you may have set earlier to your receiver. Once you have made a Factory Reset you will have to re-install your preferences and re-scan your channels. To reset your receiver to factory default, apply the following steps:
  1. Select "Factory Reset" and press **OK**.
  2. Enter your PIN Code. The receiver will reset itself to the original factory settings.

**Note:** Your PIN code will change back to the factory setting "0000".

#### 5.1.4.2 LNB Set-up (Please see inside cover Screen 19)

It is recommended that you read the manual and installation instructions of your LNB, your DiSEqC switch your Positioner before you start setting up your LNB. To set up your LNB, please apply the following steps:

1. Press the **Menu** button.
2. Using **UP/DOWN** keys, select "Installation" and press **OK**.
3. Using **UP/DOWN** keys, select "LNB Set-up" and press **OK**.
4. Check the exact specifications of your LNB through the manufacturers information or your dealer. There are up to 16 types of LNB's available. The Default is set to Universal mode (9750/10600MHz), DiSEqC is not used and the LNB is mounted on a fixed dish.
5. Use the **UP/DOWN** keys on your remote to select an item and use the **LEFT/RIGHT** buttons to set up any values.
  - **LNB:** Up to 16 LNBs are available, select the correct one according to your LNB specifications.
  - **LNB Type:** Select the LNB type from Universal 1 ~ 3, and Single. You should type the LNB value in Single. In Single, the item parameter is 0 or another number. In UNI1=9750/10600 MHz, UNI2=9750/10700MHz, UNI3=9750/10750 MHz
  - **LNB Power:** Select 13/18V, 13V or 18V for LNB. Select "Off" if you want to switch the power of the LNB off.



- **LNB Dish:** Using the Left/Right buttons, select “Fixed” or “Moved” Dish. If you use a motorised dish, read the “Positioner Set-up” (Described in section 5.1.4.3.1).
- **DiSEqC switch:** The default is Off. To use the DiSEqC switch, set up the DiSEqC version you have (V1.0 or V1.1).
- **DiSEqC Input:** Select position 1~4 if DiSEqC switch is DiSEqC V1.0. Select position 1~16 if DiSEqC switch is DiSEqC V1.1.
- **DiSEqC Repeat:** Designate the repeat of switching. (0 ~ 3)
- **Switch 22kHz:** You can set the 0/22kHz switch to ON or OFF.

**Tip:** If you set “LNB type” to “Universal” (UNI1 ~ UNI3), you will not be able to change settings in both the “LNB Power” menu item and the “Switch 22kHz” menu item. If you want to change any of these two settings you must set “LNB type” to zero. If DiSEqC switch is Off, you will not be able to change settings in both the “DiSEqC Input” and “DiSEqC Repeat” menu items. Alternatively if you set LNB Dish to “Moved”, the DiSEqC switch menu item is automatically switched to off if your “LNB dish” is set to “fixed” you will be able to select the required DiSEqC level in the DiSEqC switch menu item.

6. Press the **Red** (Save) button or press the **Green** (Save & Exit) button to save the setting and to return to the installation menu.
7. Press the **Yellow** (Back) button or **BACK** button if you don't want to save the setting.

### 5.1.4.3 Channel Set-up (Please see inside cover Screen 20)

The channel set-up is for downloading the channels available on the satellites. There are up to 64 satellites available. To download channels, please apply the following steps (In this menu, you can edit the satellites name, and edit the transponder of the satellite. You can also display the LNB menu and the Positioner Set-up menu by selecting LNB and Dish Position respectively.):

1. Press the **Menu** button.
2. Using **UP/DOWN** keys on your remote, select “Installation” and press **OK**.
3. Using **UP/DOWN** keys, select “Channel Set-up” and press **OK**.
4. Use the **UP/DOWN** keys on your remote to select an item and use the **Left/Right** button to set up any values.
  - **Satellite:** Select “Satellite” and press **OK** or the **Right** button. The satellite list is displayed and then you can choose a satellite from which you want to download your channels from by pressing **OK**. <Please see inside cover Screen 20>

**Tip:** If you want to rename the satellite, press the button on the remote control when you are in the list of satellites.

- **LNB:** Select “LNB” and press **OK** or the **Right** button. In the “LNB field”, select one of the available LNB's. If you want to set LNB related values, press **OK** and the LNB Set-up menu (Described in section 5.1.4.2) will be displayed.
- **Dish Position:** Select “Dish position” and press **OK** or the **Right** button. It displays the dish position of the current satellite. When you use a DiSEqC 1.2 positioner, you can select dish position in this field. To set a dish position, the status must be “On” (in case the position has already been set) or “Off” (in case the position has not been set).

**Note:** If in the “LNB Set-up” menu described in section 5.1.4.2, the “LNB Dish” item is set to “fixed” you will not be able to change the dish position settings in the channel set up menu. Only when you have selected the “LNB Dish” to “moved”, you will be able to change the settings in the channel set up menu.

- Press **OK** button to set dish position. The “Positioner Set-up” menu will be displayed. (Detailed description is in Positioner Set-up section 5.1.4.3.1)
- **Frequency, Polarization, Symbol Rate:** Shows the transponder (TP) values of the current satellite. To change the value apply the following steps:
  1. Select “Frequency” and press **OK**. The list of TP values of the current satellite is displayed.
  2. The functions of the coloured buttons are switched to represent other functions. <Please see inside cover Screen 21>.
  3. To edit a TP value, press the **Red** (Edit) button
  4. To change the current TP value, press the **Blue** (Add) button
  5. Press the **Yellow** (Save) button to save the settings.
  6. Press the **Blue** (Delete) button to delete the current TP value. (Save is only available in the Edit mode or the Add mode.)
- **Scan Mode:** Designate channels scanning whether “FTA” (Free to Air) only or “All” channels (including scrambled channels)
- **Network Search:** Set this field to “On” to perform Network TP Search.

- **AutoScan (Red Button):** This function searches all the transponders of a satellite.
- **Net. Scan (Green Button):** “*Network Search*” Performs network search for a transponder.
- **TP Scan (Yellow Button):** Search channels from current specific transponder.
- **PID (Blue Button):** You can search a specific channel by entering the **PID** value of a channel. If you press the **Blue** (PID) button, the **PID** screen is displayed. Enter the **PID** value and press the **Blue** button again. To cancel the **PID** value, press **BACK** on the remote control or press the **Blue** (PID) button to search the channel. You should enter V-PID, A-PID and P-PID as described in “Editing channels from the channel list” (Described in section 5.1.1)

<Please see inside cover Screen 23>

**Tip:** Check the level and quality of the signal bar before searching any channels. The signal level of the TP of the current satellite is displayed. The green bar is displayed if the settings are correct, otherwise the red bar is displayed and you cannot get the channel. In the latter case, check if your dish is aimed at the selected satellite or if the DiSEqC switch of the LNB overlaps with another satellite. Also, change the Frequency with the Left/Right button until the Green bar is displayed to get the valid transponder. If you press the Red (Auto Scan), Green (Net. Scan), Yellow (TP Scan), or Blue (PID) button the channel searching status is displayed. <Please see inside cover Screen 22>

### 5.1.4.3.1 Positioner Set-up (if you are using a Motorised positioner with DiSEqC1.2)

(Please see inside cover Screen 24)

If yfunction is available only if in the “*LNB Set-up*” menu and the LNB Dish field is set to “*Moved*”. (As described in “*LNB Set-up*” Described in section 5.1.4.2).

**Before you start:**

1. Make sure that your installer has set the centre position of your dish.
2. Make sure that the mechanical limits of your motor are set, so that no damage can be done to your dish by moving it too far to the East/West.
3. Make sure you set the highest Symbol Rate (Ksymbols/sec) for your chosen transponder (TP). The Signal level and Quality indicator will help you set up the best dish position possible.
4. Use your **UP/DOWN** buttons to select the “*Dish Position*” field in the “*Channel Set-up*” menu.
5. Press the **OK** button and the “*Positioner Set-up*” Menu will be displayed.
6. Start setting the position of the selected satellite.
7. Use your **UP/DOWN** buttons to go to field “*Centre*” and use your **Left/Right** buttons to put the centre field to “*On*”.
8. Press **OK**, and your dish will move to the centre position. It takes your dish maximum 30 seconds to move to its central position.
9. To know in which direction you will need to move your dish, you will need to know the position of the satellite you want it to position to.
10. If correctly installed, your installer has set the centre position of your dish to the “*true*” South if in the Northern hemisphere and to “*true*” North if in the Southern Hemisphere.
11. If for instance you want to set the position for Astra 19.2°East, you know that you will have to move your dish to the left using the **Left** button. If you want to set the position for instance to Eutelsat 12.5°West, you know that you will have to move your dish to the right using the **Right** button. (As viewed from the rear of the dish)

To set the position of your selected satellite:

1. Use your **UP/DOWN** buttons to go to the “*Movement field*”.
2. Use your **Left/Right** buttons to have your dish turn towards the right direction, and keep this direction button pushed in continuously. Once the receiver has found the right position for the selected satellite, the word “*Locked*” will appear above the signal level and quality indicator. To be sure you have the strongest signal possible, press the direction you moved your dish in once again, and look if the signal/quality improves. If this is not the case, move the dish back one position, by pressing the other direction once.
3. If you are sure that you have the strongest signal/quality for the selected satellite:
  - Use your **UP/DOWN** buttons to go to the “*Save field*”.
  - Use your **Left/Right** buttons to set to “*On*” and press **OK**. The position for the selected satellite is now saved and your dish will move to this position, every time a channel from this satellite is chosen.

Repeat this procedure for every satellite position and once you have complete the settings:

Use **Red** (Auto Scan), **Green** (Net. Scan), **Yellow** (TP Scan) or **Blue** (PID) to search channels.



#### 5.1.4.4 Parental Lock - Changing PIN Code (Please see inside cover Screen 25)

This function changes the Personal Identification Number (PIN) that is used to control access to the menu and individual channels. In this function, you can lock/unlock channels and you can change your PIN code by applying the following steps:

■ **To lock/unlock the menu, please apply the following steps:**

1. Press the **Menu** button on your remote.
2. Using **UP/DOWN** keys on your remote, select "*Installation*" and press **OK**.
3. The receiver will ask you to put your PIN code. This PIN code is currently set to '0000'.
4. Using **UP/DOWN** keys, select "*Parental lock*" and press **OK**.
5. Using **RIGHT/LEFT** keys, you can select either "*lock*" or "*unlock*" and press **OK**. By selecting "*lock*", the receiver asks you to enter your PIN every time you want to access the menu. By selecting "*unlock*" it gives you the possibility to access the menu all the time without the receiver asking you for a PIN code.

■ **To change your PIN code, apply the following steps:**

1. Press the **Menu** button on your remote.
2. Using **UP/DOWN** keys, select "*Installation*" and press **OK**.
3. Using **UP/DOWN** keys, select "*Parental lock*" and press **OK**.
4. Using **UP/DOWN** keys, select "*Old PIN*" and enter '0000'
5. Using **UP/DOWN** keys, select "*New PIN*" and enter a new **PIN**
6. Using **UP/DOWN** keys select "*Verify PIN*" and enter the same new **PIN**
7. Press the **Green** button on your remote to save & Exit
8. Press the **BACK** button until you go back to main menu.

You are recommended to write down your new PIN code. In case you forget it, you can reset your receiver to factory default settings but you will lose all information you saved.

Your Personal PIN Code: \_ \_ \_ \_ \_

#### 5.1.5 Games

If you want to play a game, apply the following steps:

1. Press the **Menu** button on your remote.
2. Using **UP/DOWN** keys on your remote, select "*Games*" and press **OK**.
3. Using **UP/DOWN** keys on your remote, select the game you want to play and press **OK**.

## 6.0 Basic functions - Remote control

All features of the set-top box can be controlled with the remote control.

Inserting batteries to the Remote Control Unit:

1. Open the battery cover on the rear of the remote control Unit.
2. Insert the two supplied batteries (1.5V) observing the polarity (+/-) and the "AAA" specification.
3. Firmly replace the battery cover.

While viewing TV or Radio channels various functions can be applied using your remote control. Outlined is an explanation of the buttons on your Remote and their corresponding functions that can be performed while watching TV or listening to the Radio. (See inside cover for the illustration of the remote control).

### 1. STANDBY ON/OFF

Switches the Receiver **ON** or **OFF**.

### 2. SUB

Shows the list of subtitle languages the current channel supports. You can change the subtitle language you want by using the **UP/ DOWN** keys and pressing **OK** on your remote.

### 3. TEXT

Enables Teletext.

### 4. SAT

Displays the list of satellites you have scanned with your receiver. You can change the satellite you want to watch by using the **UP/ DOWN** keys and pressing the **OK** button. (The channel list is configured with the channels searched in that satellite. If you have set up a motorized positioner to change the satellite, a message "wait moving dish" is displayed. The SAT button is disabled in the favourite channel mode because there can be a number of different satellites on which you have different favourite channels.

### 5. Mute

Enables or disables the sound Mutes

### 6. TV/RAD

Switches between TV or Radio mode.

### 7. FAV

Displays the list of favourite channels If you press FAV on the remote control in No menu state. You can preview the channel via PIG (Picture in Graphic), and move through the list of channels quickly with the **CHANNEL UP/ CHANNEL DOWN** buttons.

### 8. CHANNEL UP/ DOWN

Used for stepping through the channels or navigating within the OSD Menus

### 9. VOL Left/ Right

Used for adjusting the volume or for navigating within the OSD Menus (left / right). In channel list (as well as in satellites and TP lists) used to scroll list - prev/next 10 items (duplicate Page-/Page+ buttons)

### 10. OK

To confirm actions in the menu systems.

In view mode displays the current channel list. (For example TV, Radio or Favourite).

### 11. MENU

The main menu for setting up the receiver.

### 12. BACK

Exits the current OSD page.

In TV mode: switches back to previous channels

### 13. AV

Selects TV or Digital TV

### 14. Information <Please see inside cover Screen 26>

Shows program information.

**15. EPG**

Display the **EPG** (Electronic Program Guide). EPG shows the event information on the current TP channel by time zone. EPG is divided into Weekly mode, Daily mode and Extend mode. It provides timer based recording and automatic power ON/Off. The event is displayed only if the channel supports EPG. If you press EPG, the Weekly mode is displayed as default.

- **Weekly (Red Button)**: The current TP channel list is displayed on the left, and the event information is displayed on the right by time zone <Please see inside cover Screen 27>.
- **Daily (Green Button)**: If you want to display the Daily mode of the current channel, press **green** (Daily). In the daily mode, the receiver shows the designated channel in PIG, and displays the channel event in detail <Please see inside cover Screen 28>.
- **Extended (Yellow Button)**: If you press the **Yellow** button, the receiver shows the detailed information of the current event <Please see inside cover Screen 29>.
- **Timer (Blue Button)**: Move the cursor to an event in the required time zone, and press **Blue** (Timer). The timer is then set to the designated time. See "*Timer Menu*" (Described in section 5.1.3) for details of the timer.
- Press **BACK** to close the EPG menu.

**16. PAUSE**

Freezes the picture.

**17. AUDIO**

Shows the list of available audio languages for the channel you are watching. You can change the audio language you want to hear by using the **Up/Down** keys, and pressing the OK button. In addition it sets the current channel audio to stereo ((o)), left-mono ((o or right-mono o)). Pressing the sound button changes the sound icon on the top banner. The selected sound information is saved by channel, and is set to the sound mode when you watch the channel.

**18. PAGE Plus/ Minus**

Scrolling page by page. Page+ for the next 10 items, Page- for the previous 10 items.

**19. Color Buttons**

Within the Videotext mode the color buttons follow the color codes of the broadcaster.  
In the menu follow the color codes for various functions.

**20. 0 - 9 Numeric**

Direct entry of numerical functions in the menus or in channels selection

## A.1 Trouble Shooting

Occasionally receivers can hang-up (just like with a PC) so you are recommended to reset the receiver by disconnecting it from mains power. Wait 30 seconds and connect to mains power again and now check if the unit is working as expected. If the receiver does not work properly after checking the trouble shooting section, please contact the dealer. Don't open the receiver cover, it may cause an electrical shock due to high current voltage and the warranty of your receiver will be void if the receiver has been opened

Symptoms	Cause	Solution
The green/red lights on front panel do not light up	The power cord is not plugged in	Check that the power cord is plugged into the wall outlet
No picture and sound	TV is set to wrong channel	Check if the TV is switched on and set your TV to the correct EXT/ AV or UHF channel
No picture and sound	Problem in cable connections between receiver and TV	Check if the scart and/or RF cable is connected correctly to the TV and to the back of the receiver
No picture and sound	Receiver "hang-up"	Switch off receiver; disconnect the main power cord of the receiver from the 220 V main power. After 30 seconds reconnect to the main power and check if it is working properly
No sound	The receiver or TV is in "MUTE" mode	Press the MUTE button on the remote control unit of your receiver and TV
No sound or picture	Problem in scart cable connections between receiver and TV	Firmly press the scart connectors on the backside of the TV and receiver. Replace the scart cable
No picture	Wrong alignment of the dish	Check the signal strength with a spectrum analyser and adjust your dish correctly
The receiver displays the message "No or Bad signal" during bad weather conditions (heavy rain or snow)	This is normal, the bad weather is interfering the signal between the satellite and your dish	Once the weather is better the picture will appear. If not : check if there is no snow on your dish
The receiver displays the message "No or Bad signal"	Wrong satellite selected in the menu	Press the SAT button on the RCU and select the correct satellite
The receiver displays the message "No or Bad signal"	Wrong parameters set in the menu	Check settings in LNB- and Channel set up menu
The receiver displays the message "No or Bad signal"	Wrong alignment of the dish	Ask your dealer to check the outdoor unit and antenna cable to LNB
The RED and Green lights on the front panel of your receiver are blinking	Overload of the maximum available LNB power. (Short circuit in the LNB cable)	Disconnect the 220 V main power and ask your dealer to check the LNB cable
The remote control is not working	The batteries of the remote control are not inserted or exhausted	Check whether the batteries are inserted correctly in your remote control. Check the batteries, and if they are exhausted, replace them

## A.2 Glossary of terms

<b>C band</b>	3.7 ~ 4.2GHz Frequency.
<b>DiSEqC</b>	Digital Satellite Equipment Control.
<b>EPG</b>	Electronic program guides that are transmitted by a broadcaster from a particular satellite to display information guide about a program content.
<b>Fixed Dish</b>	A dish antenna that is aimed at one particular satellite.
<b>Free-To-Air broadcast</b>	Unscrambled broadcast which you can view for free.
<b>Ku band</b>	11 ~ 18GHz Frequency.
<b>LNB</b>	(Low-Noise Block down-converter). The LNB is an electronic unit mounted on the satellite dish. It receives the signals reflected by the dish and converts them to signals that can be used by Satellite receiver.
<b>MPEG</b>	The Moving Picture Experts Group is founded by the ISO. MPEG is a standard method for digital transmission of video and audio.
<b>Network</b>	A network which is also known as a bouquet is a set of channels that is offered by a single broadcaster.
<b>PAL</b>	Referring to the Phase Alternate Line colour system adopted by European broadcasters.
<b>Parental lock</b>	This function gives you the possibility to 'lock' other several functions of the receiver to prevent unauthorized users such as children to view channels that are not suitable for them. A PIN code is required to use of the parental lock.
<b>PID</b>	The transmitted packages have identifiers (PID) that tells the receiver what to do with the received information. Satellite receivers normally use four types of PID, these are V-PID (video PID), A-PID (audio PID), P-PID (Program PID) and data PID (EPG information).
<b>PIN Code</b>	Personal Identification Number A four-digit code that is used for locking/unlocking, e.g. with the parental control feature.
<b>Polarization</b>	Allows several programmes to be fitted into the same frequency band. The signals from a satellite are transmitter either with linear (vertical or horizontal) polarization or circular (right or left) polarization.
<b>RS 232</b>	Serial data port.

## Technical Specifications

<b>Demodulator</b>	Modulation: QPSK Input Symbol Rate: 2 ~ 45 Ms/s SCPC & MCPC signals from C & KU band satellites
<b>Video Decoder</b>	MPEG 2 Main profile @ Main level Input Rate: Max. 60 Mbit/s Video Resolution: 720 x 576 (PAL), 720 x 480 (NTSC) Aspect Ratio: 4:3, 16:9, Pan&Scan, Letter box
<b>Audio Decoder</b>	MPEG/MusiCam Layer I & II Audio mode: Stereo, Dual Channel, Mono, Joint Stereo, Mono, AC 3
<b>Tuner</b>	Input Frequency Range: 950 ~ 2150 MHz RF Input Level:-25~ -65 dBm LNB Power: 13 / 18 V DC Max.600 mA, Overload protected DiSEqC Version: 1.0 & 1.2
<b>RF Modulator</b>	Channels: 21-69 (for TV without Scart) Output: PAL/G/I/K
<b>System &amp; Memory</b>	Main Processor: STi 5518 Flash Memory: 2 Mbytes SDRAM: 8 Mbytes EEPROM: 64 kBits
<b>General Data</b>	Input Voltage Range: 90 ~240 V AC (SMPS) 50/60 Hz Power Consumption: Max. 25 W Standby Power consumption: 13 W Operating Temperature: +5°C ~ +45°C Storage Temperature: 0°C ~ +50°C Size (WxHxD) in mm: 280 x 40 x 190 Weight: 2 kg

Technical alterations reserved