

# Inverto

digital - labs



Digital Video Recorder  
Satellite receiver

## IDL-7000PVR



## Table of Contents

<b>Safety Precautions.....</b>	<b>2</b>
<b>Control elements and connections.....</b>	<b>3</b>
<b>Remote Control.....</b>	<b>4</b>
<b>Quick installation guide.....</b>	<b>5</b>
<b>1. Installation guide.....</b>	<b>6</b>
1.1 Connection.....	6
<b>2. Graphical User Interface (Menus).....</b>	<b>7</b>
2.1 Installation/Setup.....	7
2.2 Reset (returning to default setting).....	11
<b>3. Recording specifications / Media manager.....</b>	<b>12</b>
3.1 Library.....	12
3.2 Recordings at the Time Shift Buffer.....	13
3.3 Main TV List.....	13
3.4 Favourite list.....	13
3.5 Creating a list of personal favourite programmes and channel sorting.....	14
<b>4. Electronic Programme Guide (EPG).....</b>	<b>15</b>
4.1 Programme information (Now/Next).....	15
4.2 Calling up the Channel Guide.....	15
<b>5. Personal Planner.....</b>	<b>16</b>
<b>6. Parental Lock function.....</b>	<b>18</b>
6.1 Activating the PIN code.....	18
6.2 Changing the PIN code.....	18
6.3 Blocking individual channels.....	18
<b>7. Common Interface.....</b>	<b>19</b>
<b>8. Sleep Timer.....</b>	<b>19</b>
<b>9. Videotext.....</b>	<b>19</b>
<b>10. Switching between various audio channels (Soundtrack) and Subtitles activation</b>	<b>19</b>
<b>11. PiP – Picture in Picture.....</b>	<b>20</b>
11.1 Navigation.....	20
<b>Trouble-shooting.....</b>	<b>21</b>
<b>Technical Data.....</b>	<b>22</b>
<b>Index.....</b>	<b>25</b>

This digital video recorder has been manufactured in accordance with international safety standards. For your own safety, you should read the notes on safety precautions carefully, and take note of them, before operating your new receiver. For your own safety, please be sure to follow these safety precautions:



**Mains power supply:** Connect the unit only to power supplies that have the following outputs: 90-260 V AC, 50-60 Hz for the main power connector (see page 3, View of the rear panel ).

**Connect the unit to the LNB/multi-switch only when the unit is switched off:** The digital receiver must be disconnected from the mains power supply before it is connected to the LNB (Low Noise Block Converter) or multi-switch (in a multi-party installation). Otherwise, the electronics of the LNB may be damaged.

**Connection to the TV set and other peripherals:** The receiver must be disconnected from the mains power supply before using a SCART cable to establish connections to the TV set and other peripherals.

**Optimum location:** Set up your digital receiver indoors, in an area where it is protected from lightning, rain water and direct sunshine.

**Do not open the unit:** Never open the casing, as you are in danger of electrocution!

**Protect from humidity:** Ensure that no humidity, dampness or liquid can get into the unit. You should therefore also not position any liquids near the receiver. Do not use any liquid detergents, as these may damage the unit, and may subject you to high-voltage shock.

**Prevent intrusion of foreign matter:** The receiver is fitted with small ventilation slots, small objects could fall into these slots, so please do not put any objects on top of the receiver.

**Ensure adequate ventilation:** Never cover the ventilation slots on the unit casing. When in operation, the digital receiver should be placed on a straight and solid base. It should not be placed in direct sunshine or too close to a heater or radiator. Ensure there is sufficient free space around the unit for air circulation.

**Earthing the LNB and satellite antenna:** If lightning strikes the antenna, this would be dangerous. Therefore the LNB on the satellite antenna as well as the antenna itself must be connected to the house/building earth system.

**Protection from lightning:** In case of thunderstorms, to prevent damage switch off the receiver, disconnect from the main power supply, and disconnect the satellite antenna cable from the unit.

**Use only original parts and accessories:** Use only original parts, or parts recommended by a specialist retailer. Non-observance of this warning cancels the unit guarantee. Any repairs should only be carried out by qualified specialist personnel.

**Disconnecting power during extended absence:** If the appliance is to be unattended for an extended period of time, e.g. when you go on holidays, you should disconnect it completely from the mains power supply.

**Retain original packaging material:** Please retain the original packaging, should it be necessary at some stage to return the unit.

**The manufacturer undertakes no responsibility for damage or injury caused by non-observance of these safety precautions, or by inappropriate handling of the appliance.**



# Control elements and connections

## View of the front panel



## Front panel controls

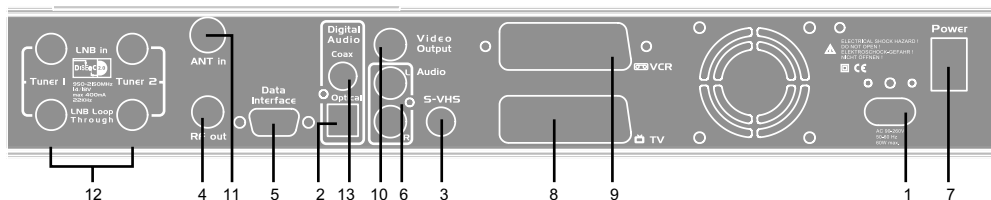
1. **VFD-Display (10 digits, 7x5 segment display)**  
Indicates programme selected, time, etc...  
Examples of possible displays:  
-12:00 current time  
-MENU the on-screen menu is active
2. **Multimedia card reader**
3. **Infra-red sensor (Remote Control)**  
Receives signals from the remote control unit
4. **Standby key**  
On/Off switch
5. **Programme up**  
Key to enable fast zapping of programmes in ascending order
6. **Programme down**  
Key to enable fast zapping of programmes in descending order
7. **Programme right**  
Key to enable navigation in the graphical unit interface
8. **Programme left**  
Key to enable navigation in the graphical unit interface
9. **OK**  
Confirming a selection
10. **Common Interface\***  
Two slots for expansion modules (e.g. for reception of Pay-TV)
11. **Stop**
12. **Rewind**
13. **Forward**
14. **Play / Pause**
15. **Record**
16. **USB-B**
17. **USB-A**
18. **CA Interface x 2**  
(conditional access)

\*optional only for certain receiver models

## Connections on the rear panel

1. **Mains Power Connection**  
For connecting to domestic power supply (cable supplied) 90-260 V AC, 50-60 Hz
2. **Optical Digital Audio Output**
3. **S-VHS**
4. **RF Modulator Out**
5. **RS-232 Data Interface**  
Serial interface for updates, etc.
6. **Audio Outputs (L/R)**  
Cinch analogue connections for connecting to a Hi-Fi/Audio system
7. **Power Switch (On/Off)**
8. **TV Scart**  
For connection to TV set
9. **VCR Scart**  
Facility for connecting a video recorder
10. **Video Output (CVBS, composite, FBAS)**  
Facility for connecting an additional video recorder or TV set
11. **RF In**  
Input for a terrestrial antenna signal(\*)
12. **IF Input + Loop Through Output**  
Satellite IF input, output for LNB power supply and LNB switching signals (14/18 V, 22 kHz and DiSEqC)
13. **Electrical Digital Audio Output**

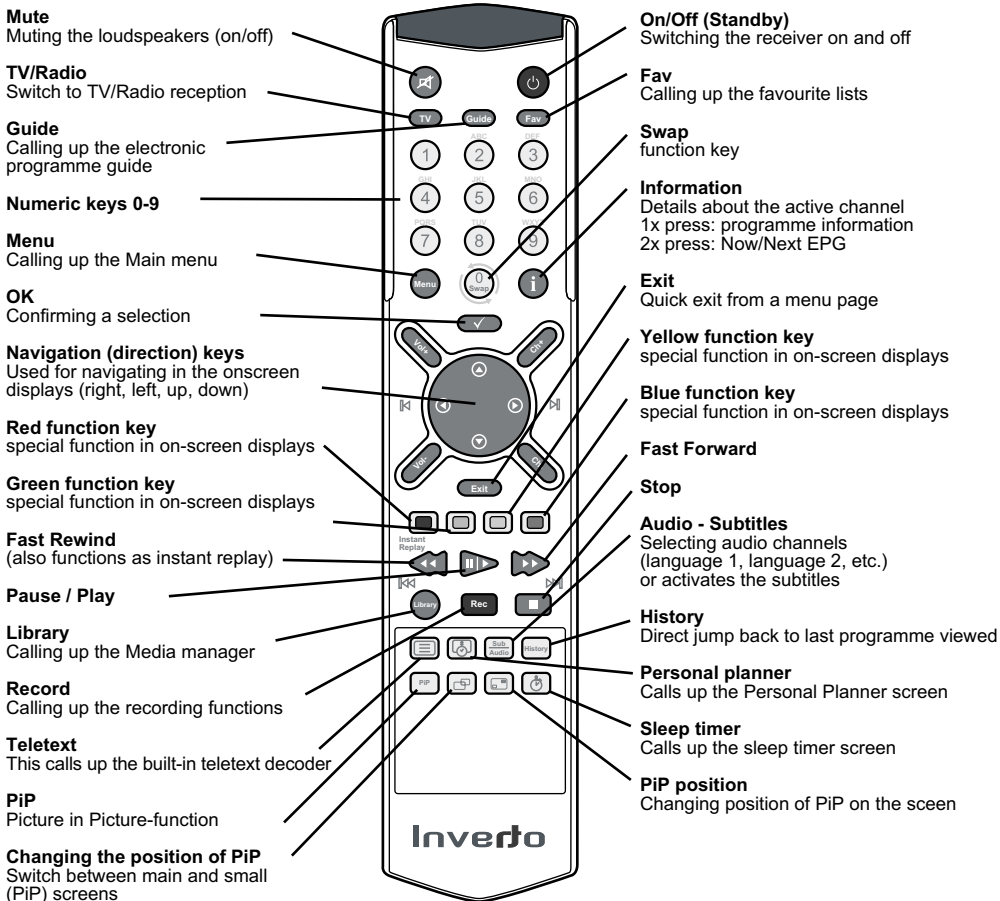
## View of the rear panel



## Function keys on the remote control unit

The keys on the remote control can be divided into groups:

- Function keys that directly control a specific function (these keys have a double functionality according to the situation)
- Navigation keys
- Numeric keys 0-9



## Batteries:

Batteries are required to operate the remote control unit (supplied with unit). To insert the batteries, open the battery compartment cover on the rear of the remote control unit, insert the batteries (AA size, 2 x 1.5 Volt), and replace the compartment cover.

Spent batteries should not be discarded in your domestic refuse. In most countries, you are legally obliged to ensure spent batteries are properly recycled. They can be disposed of either in special bins provided in your community, or may be returned to any retailer who sells batteries.

# Quick installation guide

This short instruction explains the most important functions to ensure that you can directly watch television and make recordings with your hard disk receiver. Please note, that additional satellite adjustments may have to be made.

In the quick installation guide the steps are described with the help of the function/short keys, in the manual the steps are described through the main menu

Please note the general safety instructions on page 1.

## Connection

Connect your device as described in chapter 1.1 to the power supply and the TV Set.

## Remote control

Open the remote control at the back and place the batteries.

## Switching on your receiver

Switch the power key on the back on the position "I".

The satellite receiver is now switched on and starting. This can take around 30 seconds. From now on you can switch your receiver with the "Standby-key" on or off (almost instantly).

## Programme selection

- With the numeric keys 0-9 on your remote control
- Switching with the directional keys up and down between the programmes
- Scroll through the programme-list by pressing the "TV-key", select with the navigation key "up/down" the programme, and confirm the selection with "OK/Menu"

## Volume control

With the "directional keys" left and right.

## Recording TV programmes

### Current Programme

If you want to record the programme that is actually broadcast, you have to press the "REC-key", from this instant the Time Shift Buffer (intermediate memory) is recording. You can stop the recordings with the "STOP-key", a query appears if the recording should be ended. If more than one recording is running, you can select which recording to stop.

Confirm with "OK/Menu".

### From the EPG:

Press the "GUIDE-Key", the EPG appears (Electronic Program Guide).

Here you can find a list of the actual programmes to be broadcast, if the channels provide this information. It also depends on the channel how far into the future the programme data is provided.

Select with the navigation keys right/left/up/down the desired programme.

The programme selected by you is highlighted. By pressing "RECORD" you can add the marked programme to your Personal Planner for further processing.

- For more recording specifications see: **3. Recording specifications.**

## Viewing recorded programmes

Press the "LIBRARY-Key", a list of the recorded programmes appears.

Select with the directional keys "up/down" the desired programme and press "OK/Menu".

- For more functions/playing options for recorded programmes see chapter **3.1.1 Playing functions.**

## 1.1 Connection

### 1.1.1 Connection to the satellite antenna

In a single-party reception installation, the digital receiver is connected directly to the Universal LNB mounted on the satellite antenna, by means of a coaxial cable. An F-connector must be mounted on the end of this coaxial cable.

This must be connected to the “LNB IN” connector of the receiver while the receiver is switched off. In the case of a multi-party installation, the coaxial cable will be connected to a multi-switch.

### 1.1.2 Connection to the TV set

Digital receivers and TV sets are usually connected by means of a SCART cable. Simply connect the two ends of the cable with the main socket on the TV set and with the TV socket on the receiver, respectively. The SCART connection ensures that audio and video signals are transmitted to the TV set in optimum quality.

If your TV set is not equipped with a SCART socket: the receiver is also optionally obtainable fitted with a built-in HF modulator. In this case, use an antenna (coaxial) cable to connect the HF output of the receiver (socket “RF OUT”) with the antenna input socket of the TV set. The digital TV programme currently being received is converted in the receiver to a UHF channel (channel selectable via the installation menu), and is transmitted to the TV set via the antenna cable. The antenna cable previously connected to the TV set should now be connected to the HF input socket of the receiver (socket “ANT IN”). In this way, the terrestrial antenna connection is looped through the receiver.

If you also have a video recorder connected to the terrestrial antenna cable, this terrestrial antenna connection should run first from the receiver to the video recorder, and only from there to the TV set. As in this case the audio and video signals have to be modulated for high-frequency transmission on a UHF channel, signal quality is not as good compared to a connection with a SCART cable.

### 1.1.3 Connection to a video recorder

Just as the TV set, the video recorder is connected to the receiver via a SCART connection. Use the “VCR SCART” socket for this purpose.

### 1.1.4 Connection to a hi-fi system

The audio quality of digital TV and radio programmes can be enjoyed even more when reproduced through a hi-fi system. To do this, use a RCA cinch stereo cable to connect the sockets marked “Audio L/R” on the receiver to one of the inputs of your hi-fi system marked either “Line”, “Aux”, “Spare” or “Extra”.

If your hi-fi system is equipped with a digital audio input facility, you may use a digital RCA cinch cable to connect the electrical audio digital output of your receiver (socket DIGITAL AUDIO COAX) to your hi-fi or Dolby Digital system.

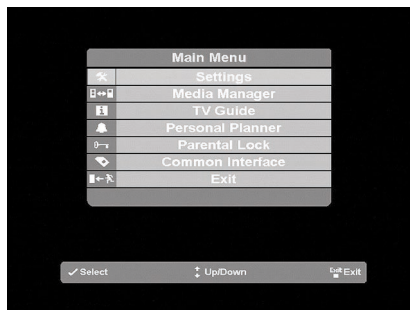
## 2. Graphical User Interface (Menus)

The various on-screen displays available are described in detail in this chapter. The actual on-screen displays generated by your receiver may differ slightly from those shown here, as continuous updates of the software may alter the appearance or even the structure of the displays.

**Navigation within the on-screen displays is effected by means of the four directional keys, by means of the “OK/Menu” key, which is used to confirm a selection, as well as in some cases by means of the coloured function keys. In each case you can exit from a page by pressing the “Exit” key.**

Press the “Menu” key to call up the Main Menu:

From here you can select the various sub-menus:



### 2.1 Installation/Setup

This is the place to set the basic parameters of your receiver.

#### 2.1.1 Display Settings

**Display Language:** The on-screen display may be shown in a variety of languages. Use the directional keys to select the desired language, then confirm by pressing the “OK/Menu” key.

**Display Colour:** If you would prefer to view the display in a different colour, use the directional keys to select the desired colour type and confirm by pressing the “OK/Menu” key.

**Display Transparency:** the transparency can also be adjusted, i.e. the degree to which the TV image is visible through the overlaid on-screen text display. Use the directional keys to select the degree of transparency, from 0% to 20%, then confirm by pressing the “OK/Menu” key.

**Message Time:** When switching between programmes, for instance, a message is briefly displayed with programme information. The duration of this message being displayed can be set, from 1 to 4 seconds. Use the directional keys to select the desired message time, then confirm by pressing the “OK/Menu” key.

#### 2.1.2 Audio/Subtitles

**Audio Settings:** Some channels broadcast their programmes in different languages. You can select your language preference with the directional keys and confirm the selection by pressing the “OK/Menu” key.

If multi-lingual programmes are broadcast, then your selected language is automatically taken into consideration.

**Subtitles:** Select the desired language of the subtitles with the directional keys and confirm by pressing the “OK/Menu” key.

#### 2.1.3 Audio/Video Settings

**SCART connectors:** Depending on the type of appliance connected, you can determine the type of signal to be fed to the SCART connectors marked “TV” or “VCR”. Use the directional key to select from: CVBS (Composite/FBAS), SVHS or RGB (only for TV SCART connector).

**Picture format (screen size, aspect ratio):** Use the directional keys to select the appropriate picture format for your TV set, then confirm by pressing the “OK/Menu” key.

**Digital Audio Out:** Use the directional keys to select “Stereo” or “Dolby Digital”. When Dolby Digital is selected, the receiver automatically detects if there is any sound in Dolby Digital (AC3) format available.

**Audio HF Modulator:** The modulator is used, to output the selected TV programme via a previous set UHF-channel. In this case select the sound sub-frequency according to PAL standards of the TV system(5,5 MHz for PAL B/C/G/H, 6,0 MHz for PAL I or 6,5 MHz for PAL D/K/L).

**HF-Modulator channel:** With the numeric keys you can set the UHF-channel, on which the programme should be broadcast, only values between 21 and 69 can be entered. If you have entered a number and confirmed it with the OK/Menu-key, then you can raise or reduce it with the directional keys. Note that every new value has to be confirmed with the OK/Menu-key.

If the correct channel is set then press “Exit” to save it.



## 2.1.4 Hard disk Settings

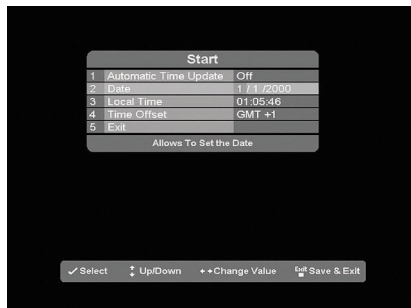
Formatting the Hard disk: If you have to format your Hard disk e.g. in case of a defective function, select activating formatting. **Warning:** All stored data (recorded movies of the library etc.) will get lost during formatting. Confirm the desired function with the red (No) or the green (Yes) key.

## 2.1.5 Time/Date

**General Settings:** If the "Automatic Time Setup" (bottom right) is set to "On", the receiver will receive the digital clock time and date as broadcast by the digital TV programme providers. The DVB standard will broadcast this in the GMT time zone. In order to display local time correctly, it may be necessary to set a time offset, indicating the difference between local time and GMT (e.g. in Germany daylight savings time in summer is + 2h, winter time is + 1h).

**Clock mode:** The time can be displayed in 12 or 24 hour format.

**Automatic Time Setup:** The receiver can either receive the current time via the digital TV programmes (On), or it can calculate current time independently (Off). In this case, the current time must be selected under "General Settings". On this page use the "OK/Menu" key, then the time must be entered manually by using the directional keys.

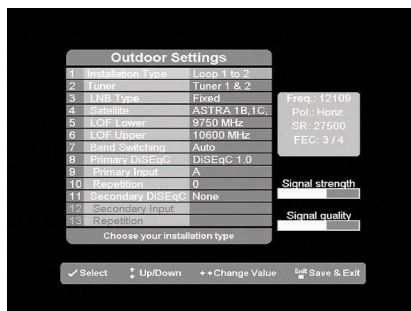


## 2.1.6 LNB Settings (Outdoor settings)

The receiver must be fed with information as to how many satellite positions can be received by the satellite antenna (the number of LNB's), and which switching signals are available to control the individual components of the installation, such as the LNB's or the multi-switches.

**Complete information required on this page separately for each LNB!**

**Tuner:** If you have selected the installation type "Dual", the options Tuner 1 and Tuner 2 are displayed. You can now differently define the characteristics for both Tuner, e.g. adjust both Tuner to the different satellites.



**LNB Type:** Press the OK/Menu key to open a window to select the matching LNB-Type "Firm" or "Unicable".

**Satellite:** Here you should select from a list of all European satellite positions the current position at which the LNB being configured is pointed (e.g. Astra 1, Hotbird or another satellite). The lower half of the display will show a bar graph indicating signal strength, and will also indicate the SNR (Signal Quality) of a TV programme found at this satellite position. The larger the signal graph is, the better the signal quality.

**LOF 1/2:** The receiver needs to know precisely the two local oscillator frequencies (LOF) in the LNB (Standard: Universal LNB with 9,75/10,6 GHz). Depending on the type of LNB selected, LO frequencies may already be suggested at this stage. These can, however, be changed as required. Press the "OK/Menu" key to open a selection window, which will display several suggested values, and in which you can also enter any specific value you require.

**Band switching:** Here you can specify whether the receiver is to switch between the low and high bands by means of a 22 kHz switching signal (Standard for Universal LNB: "Auto"), or whether the signal should be transmitted continuously or not at all.

**Primary DiSeqC:** If the satellite installation is equipped for switching by means of DiSeqC commands, the DiSeqC position of the LNB can be entered here (up to four LNB's designated A, B, C or D).

## 2.1.7 Motorised antenna (DiSEqC rotating antenna)

If you wish to connect the receiver to a rotating antenna (DiSEqC Level 1.2), call up the menu “Outdoor settings”, then go to the entry “LNB type” and use the left/right directional keys to select the setting “Motorised” for every LNB number, which has to be controlled by the motor. Use the yellow function key and press the green key to call up the next page, where you will find a facility for setting the position of the antenna manually for the various satellite positions, and can then store these positions in memory. In the window “Motor settings”, select from the displayed list the satellite you want to reach with the next antenna position. The receiver at this stage has already registered which transponders are available on this satellite, and will indicate the signal strength and signal quality in the form of a bar graph. You can use this to find the optimum position for the antenna.

In order to rotate the antenna towards the East or West, go to the category “Settings”, then use the directional keys to select either “Move coarse” or “Move fine”. When the satellite position has been found, select “Save position” in order to store this permanently. From now on, the receiver will automatically turn the antenna to this position whenever you tune to a programme slot available from this position.

Apart from storing all required satellite positions, you should also make a point of programming an easterly and a westerly limit position for the motor. This is particularly important if other buildings or structures in the vicinity restrict the rotation of the antenna. These could damage the antenna, motor or surrounding objects if the limit of rotation is not restricted by pre-programming.

**Secondary DiSEqC:** Analogue dealing of the primary DiSEqC.

**Secondary entry:** Analogue dealing of the primary DiSEqC.

## 2.1.8 Channel Search

New digital satellite TV and radio programmes are added almost on a daily basis, or existing programmes change their frequency. If you wish to receive these programmes, you must allocate them to specific programme slots in the programme list, and store them in memory. The programme search function is designed to assist you in this activity, and there are various types of programme search available.

Several procedures can be followed in order to initiate a programme search. Press the “Menu” key to call up the Main Menu, then using the directional keys select the sub-menu “Installation Setup”, followed by “Channel Search”, confirming your selection in each case by pressing the “OK/Menu” key. Here you can decide between the two options available, as described below.

In order to rotate the antenna towards the East or West, go to the category “Settings”, then use the directional keys to select either “Move coarse” or “Move fine”. When the satellite position has been found, select “Save position” in order to store this permanently. In future, the receiver will automatically turn the antenna to this position whenever you tune to a programme slot available from this position. Apart from storing all required satellite positions, you should also make a point of programming an easterly and a westerly limit position for the motor. This is particularly important if other buildings or structures in the vicinity restrict the rotation of the antenna. These could damage the antenna, motor or surrounding objects if the limit of rotation is not restricted by pre-programming.

### 2.1.8.1 Satellite Search

Use the automatic programme search to allow your receiver to search through an entire satellite range for new programmes. In this case, the entire frequency range of the satellite is searched. The following information must be configured:

**Satellite:** First select the satellite position to be searched. Below this you will see a display of the current signal strength.

**Search mode:** Here you can select between “Complete” or “Quick Scan”.

**You can now initiate the automatic programme search by pressing the red function key.**

All newly found programmes will now be displayed one after the other on the following page. This can take a couple of minutes. At the end, the result of the programme search will be displayed. You can then decide whether you want to store the newly found programmes in memory, or whether you wish to discard them.

**The search procedure can be terminated at any time by pressing the “Exit” key. The response may not be immediate.**

### 2.1.8.2 Advanced (Single) Channel Search

In addition to the automatic search, a manual search procedure is also available. In this case you must search specifically for new programmes on a specific satellite transponder. Unlike the automatic search procedure, here you must enter all reception parameters explicitly. The technical reception parameters that must be entered in this display can be obtained either from satellite magazines, from the Internet, or from the relevant programme provider.

The following information must be input:

**Satellite:** First select the satellite position to be searched.

Below this you will see a display of the current signal strength.

**Frequency:** Here you must enter the five-digit transponder frequency, e.g. 11836 for 11.836 GHz.

**Polarity:** Here you must enter the polarisation plane of the transponder ("Horizontal" or "Vertical").

**Symbol rate:** Either select one of the two usual rates commonly found on the Astra and Eutelsat satellites, 22.000 as well as 27.500 symbols/s, or enter a specific value manually. The receiver is equipped to process symbol rates between 2.000 and 45.000 symbols.

**FEC-Code (Error protection):** Here you must enter the type of error correction used by the programme you are searching for. At a symbol rate of 22.000 symbols/s an FEC of 5/6 is standard, at 27.500 symbols/s the FEC is usually 3/4.

If the manual programme search so far has not been able to find the programme you are looking for, it is necessary to enter the following three **PIDs (Packet identifier)**, which must be entered in four-digit form.

**PID Video:** Packet identifier for the video signal

**PID Audio:** Packet identifier for the audio signal

**PID PCR:** Program Clock Reference

**Now press the red function key to initiate the manual programme search.** All programmes broadcasting within the framework of the specified parameters will be displayed, one after the other, on the following page. You can then decide whether you want to store the newly found programmes in memory, or whether you wish to discard them.

**The search procedure can be terminated at any time by pressing the "Exit" key. The response may not be immediate.**

Advanced Channel Search	
1. Satellite	ASTRA 1B, 1C, 1E, 1F
2. Frequency	12100
3. Polarity	Hori
4. Symbol Rate	27500
5. FEC	Automatic
6. PIDs	Automatic
7. Video PID	100
8. Audio PID	100
9. PCR	100
10. Channels	All
11. Exit	

Press select to view Satellite list.

Signal strength: [Bar Graph]

Signal quality: [Bar Graph]

Buttons: Add Transponder, Select, Up/Down, Change Value, Start Search, Exit

## 2.2 Reset (returning to default setting)

A reset function is provided to return the receiver to all the default settings programmed at the factory during production. This deletes all subsequent programming commands, and means that you have to start again with the installation procedure. A reset always makes sense when a large number of settings have accidentally been made incorrectly or in error.

In order to proceed with a reset, press the "OK/Menu" key to call up the Main Menu. Select the entry "Default Settings", then press the "OK/Menu" key to confirm your selection.

In the next display, you will be given the option of pressing the green function key to confirm the selection, or the red function key to abandon the reset and return to the Main Menu.

**Please note: if you press the green function key at this stage in order to start the reset procedure, all individual settings relating, e.g. to antenna configuration, programme lists and sorting of programmes, parental control, etc., will be lost permanently! Any former firmware/software updates (see chapter 2.1.8.2) will not be lost.**

### 2.2.1 System information

In the last category of the Installation/Setup display you will find detailed technical information relating to the programme currently being viewed, as well as to the hardware and software of the receiver, and, where applicable, to the built-in Common Interface module.

#### 2.2.2 System information

The submenu "System information" provides you with all data of the hard and software of your receiver. Each appliance has a unique serial number (Product ID). When contacting the service hotline it is important to indicate the present hardware so that the technicians know, which parts, board etc. are used in the appliance. The same is valid for the data for the PIC- and FPGA-Version.

#### 2.2.3 Software Update

The receiver software can be updated via satellite (OTA – over the air), and can thus be kept up to date at all times. The software updates are broadcast from the satellite position Astra 19,2° East. If you have a rotating antenna, please ensure that it is aligned for this position before attempting a software update. Choose the option "Software Update" and follow the instructions appearing on the TV set. The whole process might take around 30 minutes.

# 3. Recording specifications/ Media manager

The Media Manager allows you to design and administrate your favourite list and is also the access to recorded programmes, which are archived here.

## 3.1 Library

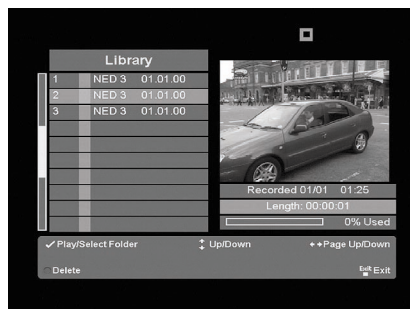
The library is the archive of the programmes which have been recorded by you and are therefore stored on the hard disk of your receiver. When zapping, you will see a still video on the Mini TV Screen of the recorded sequences as well as the date, hour and length of the recording.

Select the desired recording with the directional key and start it with the OK/Menu-key.

After the recording is finished, the receiver shows a still video. Leave the menu by pressing "Exit".

The number of programmes you can archive depends on the volume of the stored data, which can vary from transmission to transmission. An overview of the remaining capacity is shown by a bar under the Mini TV Screen, whose percent indication documents the present occupied disk space.

If there is no storage capacity left on the hard disk, with the directional keys select the recording you want to delete. With the red "delete" key remove the recorded data from the hard disk.



**Tip:** With Page up/down (right/left key) you can skip the list in page steps. This enables you to manoeuvre easily within the list, even if a large amount of recordings are stored.

To reach the end – meaning the last recorded event –, press the up key in case of a long list instead of zapping down within the complete list.

### 3.1.1 Playing functions:

Besides the usual playing function with sequences the receiver offers you some comfort functions. Select a recording to play with the directional keys and confirm it with the OK/Menu-key. At the beginning of the playing mode a pop up showed off with the functions: Fast Slow RWD, Play/Pause, Fast Slow FWD, Stop/Exit.

**Fast Slow RWD:** By pressing the key the recording is winded back. Repeatedly pressing the key raises the rewinding speed up to 32 times over of the usual playing speed. Select the Fast Slow FWD key once to return to the usual playing mode.

**Fast Slow FWD:** Choose this key to forward. Repeatedly pressing the key raises the forwarding speed up to 32 times over of the usual playing speed.

**Play/Pause:** If you want to interrupt the playing function for a short time, stop the playing by pressing the Play/Pause-key. The recording stops with a still video. Press the Play/Pause-key to continue playing.

You can play recorded movies within the list presentation on the Mini TV Screen. Select the recording you want to play with the directional keys and confirm with a single pressing of the Fast Slow FWD-key.

**Tip:** The pop up for the keys Slow RWD, FWD and Play/Pause can be activated from the playing function by pressing the info key at any time. You can also activate the function by pressing the function key directly.

## 3.2 Recordings at the Time Shift Buffer

The Time Shift Buffer offers you broader functions, that converts broadcast television to a new experience.

- You can watch, stop and rewind a programme during the recording
- To watch the recorded programme, you do not have to wait until the recording is finished
- A scene of the actual live programme can be repeated, even several times by pressing a key (Instant Replay). In the meantime the Time Shift Buffer ensures that nothing is lost
- You can stop a programme by pressing "PAUSE" and for example make a phone call, while the recording is continuing at the background. By pressing the "PLAY-key" the programme will continue at the same place where you stopped it = staggered television.
- You can watch other programmes and record at the same time .
- You can watch programmes already archived on you hard disk and record at the same time.
- You can record a programme pre-programmed for recording out of you Personal Planner, record, a second programme at Time Shift and watching a third from the same Transponder.

When the Time Shift Buffer is full, the oldest recording is deleted automatically, to make space for a new recording.

The recordings on your hard disk remain as long as you do not delete them.

### 3.2.1 Navigating within the Time Shift Buffer

You can switch to all desired position within the already stored recordings of the Time Shift Buffer. Use the navigation keys as follows:

"Jump Back"

Rewinding, if the beginning of the recording is reached, the playing speed is switched to normal after rewinding

"Jump FWD"

Forwarding, if the end of the recording is reached, you will see the actual broadcast programme. You can use this key to "catch up" with the actual programme and to watch "real time" again.

"Instant Replay"

Repetition of the last actually watched seconds or minutes also directly repeatable. With this function you can watch again e.g. a goal that has just been scored.

"PLAY"

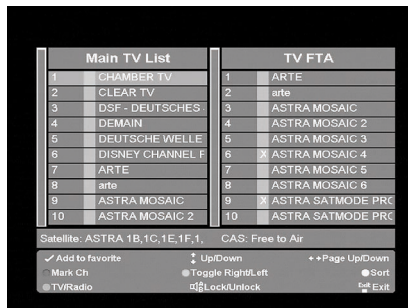
Play with usual speed. The limitations of the Time Shift Buffers will never be passed.

## 3.3 Main TV List

The main TV List includes factory made pre-listed , common programmes of your country.  
Within the main TV List you can change the programmes and/or block them with the parental lock function (see 6. Parental Lock function)

## 3.4 Favourite list

The favourite lists are TV list assembled individually by you, which can be defined according to the preferences of the single TV user.



## 3.5 Creating a list of personal favourite programmes and channel sorting

Many viewers prefer to use the huge list of TV and radio programmes found in an automatic channel search in a particular order, or to use the list only selectively. In addition, the list of several hundred programmes includes many scrambled programmes, which tends to be frustrating when one is zapping from one programme to the next.

Your receiver provides the facility of creating separate lists of personal favourite programmes. This means that each member of the family, for instance, can create his own list of personal favourites, sorted according to his or her individual preference.

### 3.5.1 How to create a list of Personal Favourites

Press the "OK/Menu" key to display the Main Menu, then select the sub-display "Media Manager" and confirm by pressing the "OK/Menu" key.

The display "Favourite List Manager" will display all active programme lists. This includes the two Main Lists, for TV and radio programmes, as well as any lists of favourites that have already been created. The Main List reflects all the programmes found by the most recent automatic channel search.

Use the green key to create a new list of favourite programmes.

A new display window will be shown that includes an on-screen keyboard. Here you can enter a name for the list of favourites to be created, simply use the directional keys or GSM-style to select each letter individually, then confirm each letter by pressing the "OK/Menu" key. You may delete the entry one letter at a time - to correct errors - by pressing the red function key, and you can use the blue function key to switch between uppercase and lower-case letters. Press the "exit" function key to return to the display of channel lists.

Here you should select the name of the list just created or the list in which you want to sort the channels and confirm by pressing the "OK/Menu" key. Now you can now copy programmes from the Main List (left) to the selected list of favourites (right). To do this, select a programme in the Main List and confirm by pressing the "OK/Menu" key. The programme will be copied to the list on the right, and will appear in the list of favourites. You can navigate between the Main List and the favourites list by means of the green key. Press the-function key to lock/unlock a channel (Parental lock).

Press the red key to mark a programme for processing. Press the yellow function key to move a channel (1 time the yellow key) or a block (2 time the yellow key), when the function is activated, follow then the instructions appearing in the Information text field at the bottom of the screen.

Press the green function key to sort the list, then choose the sorting type, green or blue either red to come back to the initial numerical sorting.

To delete a channel in the favourite list, mark it with the red key and press the blue key for deleting.

### 3.5.2 Main Radio List

Working on the Main Radio List: according to the Main TV List.

**Tip:** Create different lists for the members of your family. Secure the other lists with a PIN (see 6. Parental Lock function) against unauthorised access. This helps you to prevent the access of children to unsuited programmes.

## 4. Electronic Programme Guide (EPG)

The EPG can increasingly take over the function of a programme guide. The EPG gives you an overview of the actual broadcast programmes as well as the pending programmes in the course of your favourite list.

**Tip:** The error message "No data" means, that the data is not provided by the channel, or the data is not yet downloaded.

### 4.1 Programme information (Now/Next)

Each time you switch channels there is a brief message on screen, displaying the programme name, current time, starting and end time, title and content of the current programme. The elapsed time bar graph display indicates how much of the programme's total broadcast time has already elapsed. In addition, the starting and end times, as well as the title of the next (following) programme is displayed.

You can specify how long this (and any other) information should be displayed on screen (go to "Installation / Setup", then select entry "Display Settings", followed by "Popup Time").

By pressing the blue key, the same screen does appear with additional details about the programme, it is possible to scroll the time with the Left/Right navigation key and a reminder can be set/ deleted with the "OK/Menu" key, then when a reminder will appear, a popup will inform the viewer.

As you can mix TV and Radio programmes in a list, the Teletext hotkey allows to switch between the Main TV and Main Radio lists.

The programme information can additionally be called up by pressing the „INFO" key.

### 4.2 Calling up the Channel Guide

You can access the electronic Channel guide at any time by pressing the "EPG" key (green function key) on the remote control. You can also access the EPG via the Main Menu. Here, you must use the directional keys to select the entry "TV Guide", then confirm by pressing the "OK/Menu" key.

#### Timer programming:

The receiver is able to display the programmes available on the channel currently selected, indicating the current programme as well as all following programmes.

This allows you quickly to obtain an overview of all programmes being broadcast that day, and possibly those of the next day as well.

Use the blue function key on the remote control to move 24 hours forward or the yellow key to move 24 hours back to move within the frame of the next 24 hours.

With the directional key up/down select the channel, of which you require more information. Pressing the directional key right you will reach the additional programme date, by each pressing of the directional key right the outstanding programmes will be marked in single steps. You get back to the previous programmes by pressing the directional key left.

If you want to record a marked programme press the OK/Menu-key.

The receiver switches to the mode Personal Planner reserves the selected programme for recording.

Define the recording preferences like described in chapter 3.

#### Recording specifications.

**The range of this overview (i.e. how many programmes are shown in advance), is determined by the channel and can differ from one programme to the other.**



## 5. Personal Planner

At the personal planner (planned recordings) all planned programmes for recording are listed.

Select personal planner in the main menu. The noted recordings at the EPG-Menu (see chapter ...) are listed here, whose recording preferences you define at the personal planner.

For the recording of repeating programmes e.g. series, the programming at the personal planner is preferable, the programming possibilities are similar to the known video function.

**Adding a programme to a recording:** Press the blue function key "new entry". channel: Press OK/Menu-key and choose with the directional key the desired channel. Confirm the selection with the OK/Menu-key.

**Name:** Press the OK/Menu-key, delete possible wrong entries with the red function key and enter with the numeric keys 2-9 a desired name for the programme, e.g. series XY. At this menu the letters behind the numeric keys are activated (GSM).

**Starting date:** Confirm the selection with the OK/Menu-key, raise/reduce the day with the directional keys up/down. With the directional key right you can select the month, raise/reduce the month with the directional keys up/down. With the directional key right you can select the year, raise/reduce the year with the directional keys up/down. Confirm your entries with the OK/Menu-key.

**Starting time:** Confirm the selection with the OK/Menu-key, raise the hour value with the directional key up/down, with the directional key right you can select the minutes, change them with the directional key up/down confirm the changes with the OK/Menu-key.

**Final date:** Confirm the selection and choose your specifications analogue Starting date. Confirm your entries with the OK/Menu-key.

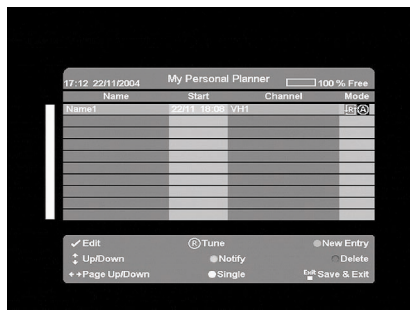
**Final time:** Confirm the selection and choose your specifications analogue Starting date. Confirm the changes with the OK/Menu-key.

**Sort of recording:** You can choose between three recording preferences. Record: the programme is directly programmed for recording. Tune: at the beginning of the programme the receiver switches to the respective channel, a pop up appears asking you to start or delete the recording. Reminder: at the beginning of the programme a pop up appears asking you to start or delete the recording.

When activating the reminder function no other additional selection option is available at the course.

**Mode:** Confirm the selection by pressing the OK/Menu-key, with the directional keys select at the pop up if the receiver shall switch to the channel when starting (Automatic Channel Switching) or if you only want to see a info pop up (Notification). Confirm your selection by pressing the OK/Menu-key.

**Cycle:** Confirm the selection by pressing the OK/Menu-key, with the directional keys select in the pop up between the recording cycles: single event, daily event and weekly event. Confirm your selection by pressing the OK/Menu-key.



With the confirm key all indications made will be saved. At the personal planner you can now see the planned recordings. Besides the information of the channel you will see small symbols that inform you of the planned modes. Changes are possible at this screen by pressing the function keys, the symbols will change accordingly.

Mark one selection in the list with the OK/Menu-key and press the desired colour function key.

Record-key: You can change the setting between Record, Tune and Reminder.

Green function key: You change the settings between the switching at recording start or info pop up.

**Yellow function key:** You change the settings between recording cycles, single events, daily events and weekly events.

**TIP:** The function keys do not have to be confirmed by pressing the OK/Menu-key. Therefore the symbol next to the information is important for the selected function. The modus which stands under the planning list in the information bar is the next possible to select not the defined one.

**Symbols:**

Red circle, R – recording

Green circle, i – switches (Tune) and requests

Alarm clock – Reminder

**TIP:** Spontaneous recordings are possible at any time by using the record key. By pressing this key the receiver will start the recording of the programme you are watching from that time on automatically. The recording is stopped, when you press the exit key. A pop up with the corresponding request appears, the recording is finished with the "OK/Menu" key.

## 6. Parental Lock function

Not all TV and radio programmes are suitable for listeners or viewers of all age groups. The receiver therefore provides an active parental control (lock) function, allowing you to block specific menu settings or individual channels by means of a four-digit security code (PIN or Personal Identification Number). It also makes sense to block menu settings if you want to prevent the receiver from being incorrectly programmed by unauthorised persons. The standard functions such as receiving programmes, EPG, Timer, etc., remain fully functional without a PIN having to be entered.

If no PIN code is activated (default setting), all receiver functions and operations can be utilised without any restrictions.

### 6.1 Activating the PIN code

**The PIN code default value is '1111'.** Press the "OK/Menu" key to call up the Main Menu, then select the sub-display "Parental Lock".

Now select the line "Activate PIN code", and confirm by pressing the "OK/Menu" key. You can now enter the four-digit PIN code; which is '1111' per default. If the receiver accepts this PIN entry, you must confirm this by means of the green function key or the "OK/Menu" key.

If the number is not accepted, you must repeat the whole process.



### 6.2 Changing the PIN code

If you wish to change the PIN code, go to the display "Parental lock" and select the line "Change PIN code". On the following page of the display you will now have to enter both the previous and the new PIN code, follow the instructions appearing on the TV set.

### 6.3 Blocking individual channels

As soon as a PIN code has been activated in the "Parental lock" display, it is automatically possible to also block access to individual programmes. In the display "Parental lock" you will now also see a line "deactivate blocking", which you can use at a later stage to lift the channel restrictions again at a later stage.

The default setting provides unrestricted access to all TV and radio programmes.

#### **How to block individual channels:**

Press the "Exit" key to exit from the display "Parental control". You will find yourself in the Main Menu. Use the up/down directional keys to select the entry "Channel list Manager", and confirm by pressing the "OK/Menu" key. As the parental lock function is already active at this stage, you must now enter the PIN code, and confirm by pressing the "OK/Menu" key.

On the following display page you must select the programme list in which you wish to block individual programmes. Use the directional keys to go to the relevant programme in the main list (left), then block access to this programme by pressing the red function key.

For as long as the parental lock is active, this programme can only be viewed if the PIN is entered immediately after the programme has been selected. The red function key is also used if you wish to **remove the block on this channel** at a later stage.

#### **General deactivation of channel restrictions:**

In order to completely remove the restrictions on individual channels and on-screen displays, go to the display "Parental lock", select the line "Deactivate blocking" and enter the PIN code.

#### **General deactivation of parental lock function:**

In order to completely remove the parental lock function in any form, go to the display "Parental lock", then select the line "Disable PIN code", enter the PIN code, and confirm by pressing the "OK/Menu" key. With immediate effect, no PIN code will be required for any of the functions of the receiver.

**TIP: Forgot your PIN?** Reset the receiver to factory settings!

## 7. Common Interface

If your receiver is equipped with a Common Interface module, the technical data relating to the modules inserted, as well as to any smart cards inserted in these, can be accessed via a specific display. To view this, first call up the Main Menu "Installation/Setup", followed by the sub-menu "System Information" and finally "Common Interface". You can then view the information as to which of the two CI slots is currently fitted with a module. Use the directional keys to select the module in respect of which you require additional information, and confirm by pressing the "OK/Menu" key. This will take you to a display that is generated by the CI module itself, and may therefore differ slightly in appearance from one module to the other. In order to obtain a full display of the data, a smart card must be inserted in the module. Please consult your installer or card provider for the details of the use of your specific card.

## 8. Sleep Timer

You can use the Sleep timer to specify a time (e.g. at night) at which the receiver is to switch over into standby mode. This is particularly useful if there is no person available at this time to switch off the receiver manually. Press the "SLEEP TIMER" key. The display "Sleep Timer" is now on screen, and you can use the up/down directional keys to change the time, at which the receiver should switch itself off in 15-minute steps. Press the "OK/Menu" key to confirm your selection. The Sleep Timer is active with immediate effect, and will count backwards the time still remaining to switch off time. Exit from the "Sleep Timer2 display without modifying the value by pressing the "Exit" key or confirming the new value by pressing the "OK/Menu" key.

## 9. Videotext

The teletext or videotext feature familiar from analogue TV programmes is also broadcast on many digital TV programmes. The digital receiver is equipped to decode the teletext/video text signal internally, and to display it on the TV screen. Press the "Teletext" key to display the videotext or teletext of the programme currently being viewed.

The teletext/video text will be displayed as an overlay on the screen over the current TV image.

In order to view a specific page of teletext/video text, use the numeric keys to enter the three-digit page number.

The receiver is capable of storing a large number of videotext pages in a temporary memory, which reduces waiting times when calling up a new page. Enter "100" at any time to return to the home page of the teletext/video text pages of the TV programme being viewed.

You may use the directional keys Up/Down to page quickly through the complete teletext/video text section of a particular TV programme. The benefit of the temporary page storage function is of particular benefit when using this function for fast page scanning.

## 10. Switching between various audio channels (Soundtrack) and Subtitles activation

Some TV broadcasters (e.g. Euronews) provide several audio channels or subtitles information, carrying commentary in various European languages, to accompany the TV image. To use this facility, press the "Audio A/B" key.

All available audio channels will now be displayed in a list on the screen. Use the directional Up / Down keys to select a specific audio channel, and confirm by pressing the "OK/Menu" key. Press the blue key to switch the focus to the subtitles list, use the directional Up / Down keys to select a subtitling language and press the "OK/Menu" key. Press 2Exit" to exit this menu. A subtitle can be deactivated later on by choosing the item "none" in the subtitling list.

Unfortunately only very few TV programmes provide additional audio channels, most are broadcasting a stereo signal in one language only.

A feature of the Twin receiver is the possibility to view with two independent receiving spots a Picture in Picture-function. Through the HDTV exit a second programme can be watched parallel in a small window. Switch over for example if your programme is interrupted by a commercial. In the small screen, which you can place in one of the four corners of the TV screen – you can keep an eye on the programme. You will never ever miss the beginning of the continuation of a programme.

It is activated by the direct keys.

## 11.1 Navigation

“PiP”

An additional small screen appears on the TV Screen with the same programme. When zapping to another programme the previous programme remains on the small screen. An additional pressing of the “PiP-key” closes the small screen.



With this key you can skip between the contents of both screens.



By pressing the key the small screen is moved one position clockwise – right top right, bottom, left top, left bottom.

You have successfully performed all necessary settings. We hope that our menu guide was able to describe the installation in a clear way. We wish you a lot of pleasure with the daily use of our receiver.

# Trouble-shooting

Error	Possible cause	Remedial measures
No image, no sound, display does not lighten	No power supply	Check connecting cables
No image, no sound, display lightens	Short circuit in the LNB supply line	Disconnect device from mains supply, eliminate short circuit, reconnect and activate device
	LNB is defect	Change LNB
	Defect or missing connecting cables	Check connecting cables
	Incorrect antenna orientation	Correct the antenna orientation
Development of small blocks, temporarily no sound, no signal	Obstruction between satellite and reflector	Remount reflector if necessary
	Incorrect antenna orientation	Correct the antenna orientation
	Wrong video format selected in OSD settings	Check the settings. If your TV set does not support the selected format, you get an incorrect display
	Too small reflector	Replace it by larger reflector
	Signal too weak	Check the cable paths and lengths
	Heavy rain or snow	Remove snow from reflector
The displayed time differs from the current program	Incorrect time settings	Check the settings at Installation Time/Date, especially after having switched to summer time or winter time
	CI-CA module not or incorrectly inserted	Check the CI-CA module
	Smart card not or incorrectly inserted into CI-CA module	Check the smart card
Encoded programs are not received	CI-CA module and smart card belong to different decoding systems	Switch to the respective required type of encoding
	Set to radio operation	Switch to TV mode
	Sound OK, no image	
Remote control does not work	Empty batteries	Check batteries and replace them if necessary
	Remote control not orientated towards TV Box	Orientate the remote control towards the box
	Receiving unit of device is blocked	Remove the obstructing item to ensure a free signal path
	Batteries not or incorrectly inserted	Check batteries
Previously receivable programs are not received	Transponder has been changed	Start station finder
	Antenna is defect	Check antenna

<b>Satellite Front-Ends</b>	
Quantity	2
LNB IF input Connector	2 X F-Type, Female
Loop Through Output Connector	2 X F-Type, Female
Input Frequency range	950~2150 MHz
Input Impedance	75Ω
Input signal level	-65 dBm ~ -25 dBm
Demodulation type	QPSK
Symbol Rate	2~45 Mbaud
Supported FEC	Inner code rate 1/2, 2/3, 3/4, 5/6, 7/8 Outer code RS (204)
LNB Power (X2)	Vertical: 13.5V Horizontal: 17.5V, +/-1% Current: 400mA max., Overload protection
LNB Control (X2)	Frequency: 22 +/-4 KHz, Amplitude 0.9 +/-0.1 V
DiSEqC™ Control	DiSEqC™ 1.0, 1.1, 1.2, 2.0
<b>System</b>	
CPU + MPEG2 decoder / Clock	STi5514 / 166MHz 32-bit RISC
Transport	2 X DVB De-multiplexer
Flash memory	4 MB
System memory	16 MB
EEPROM	8 KB
<b>CI Slots (Common Interface)</b>	
Common Interface type	Dual, PCMCIA, 5V, 16-bit
Common Interface Chip	ALTERA ACEX1K10
Common Interface support	DVB-CI standard (EN-50221)
<b>AV Decoder</b>	
Video decoding capability	MPEG-1 ISO/IEC 11172-2 and MPEG-2 MP@ML
Video resolution	720 X 576 (Pal)
Aspect ratio	4:3 and 16:9, Automatic adjustment for 16:9 TV sets, Letter Box supported
Audio decoding capability	MPEG-1, MPEG-2, audio layers 1 & 2
Audio sampling frequency	16 kHz, 22.0516 kHz, 24 kHz, 32 kHz, 44.1 kHz, 44 kHz, 48 kHz, 88.2 kHz, 96 kHz
Digital Audio	AC3 compliant (Dolby Digital bit stream Out)
Digital Audio SPDIF Output format	IEC-60958 for PCM data
AV Memory SDRAM	8 MB
<b>Serial Port</b>	
RS232C	Transfer rate 115,200 bps
<b>Hard Disk Drive</b>	
Capacity	40 / 80 / 160 GB
Interface	Ultra ATA / 100MHz
Speed	5400 rpm

<b>Software Upgrade</b>	
Download through RS-232 port	
OTA Download	
<b>RF Modulator [optional]</b>	
TV standard	PAL (G/I//K), SECAM-K
Frequency range	47 ~ 862 MHz
<b>Multi-media card reader [optional]</b>	
Supported cards	CompactFlash, IBM Microdrive, SmartMedia, MultiMediaCards, SD Cards and Memory Stick
<b>USB interface [optional]</b>	
Bus access cycle speed	Up to 22MB/s
USB host	1 port, USB-A type
USB device	1 port, USB-B type
<b>Rear panel interface</b>	
Front-End: LNB IF input connector	2 X F-Type, Female
Front-End: Loop through Output connector	2 X F-Type, Female
RF modulator: RF input connector	1 X IEC169-2, Socket
RF modulator: Loop through Output connector	1 X IEC169-2, Plug
TV SCART connector	CVBS(output), RGB (output), L&R Audio (output), SVHS (output)
VCR SCART connector	CVBS (input & output), RGB (input), L&R Audio (input & output), SVHS (output)
Digital Audio SPDIF	1 X Coaxial, 1 X Optical
CINCH (RCA)	Audio – L & R, Video - CVBS
SVHS	Mini-DIN (Female)
Digital Audio SPDIF	Coaxial / Optical
Serial port	RS-232C (Female, DB-9)
<b>Front Panel</b>	
11 Keypads	
10-digit VFD display	
1 LED indicator	
1 IR Sensor	
2 CI slots	
USB: host + device sockets [optional]	
Multi-media card reader [optional]	
<b>Power requirements</b>	
Mains input voltage	90-260 VAC~
Mains input frequency	50 / 60 Hz
Power consumption	Normal operation: TBD Standby mode: TBD Max. : 60W



<b>Physical specification</b>	
Size (W X D X H), mm	420 X 300 X 65
Operating temperature	(+5) ~ (+40) °C
Storage temperature	(-20) ~ (+60) °C
<b>Accessories</b>	
Remote Control Unit Battery x 2	
User's manual	English, German
A/V Cable	1 SCART to SCART cable
<b>EMC / Safety</b>	
Compliant to CE	

Designed and Developed in CE. Made in PRC.

# Index

<b>AV cable:</b>	Cable for transmission of signals
<b>Coaxial cable:</b>	Connecting cable between the receiver and the LNB
<b>Scart:</b>	Pin-and-socket connectors in devices
<b>Cinch cables:</b>	Especially used to connect audio devices
<b>Slot:</b>	Plug-in shaft
<b>CI Module:</b>	Common Interface Module, uniform interface that allows an access to different paid offers via satellite
<b>DVB:</b>	Digital Video Broadcast, standard for transmission of digital television signals
<b>Smart card:</b>	Card for reception of pay pay-TV
<b>Receiver:</b>	Means of communication between external device and TV set
<b>Satellite:</b>	Celestial body that receives signals from a ground station and transmits them to a determined region on Earth
<b>OSD:</b>	Onscreen Display, the display that leads you through the programs and appears on the screen
<b>LNB:</b>	Low Noise Block Converter, receiving unit in the reflector
<b>LOF:</b>	Local oscillator frequency, receiving unit of the receiver
<b>Bandwidth:</b>	Frequency range required for the transmission of a signal
<b>DiSEqC:</b>	Digital Satellite Equipment Control, digital control signal
<b>PID:</b>	Packet Identification, number of the data pack packet assigned to the program
<b>Transponder:</b>	Transmission channel of the satellite
<b>Symbol rate:</b>	Parameter for digital reception
<b>Polarization:</b>	Direction of oscillation of an electromagnetic wave
<b>PCR:</b>	Program Clock Reference, time marks that serve to synchronize the decoder
<b>PIN:</b>	Secret number used to block functions etc.

- Your device bears the CE label. It meets all required EU standards.
- DiSEqC is a registered trademark of EUTELSAT.
- DVB VB is a registered trademark of DVB Digital Video Broadcasting Project.

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FTA Communication Technologies S.a.r.l.  
11, rue Pierre Werner  
L-6832 Betzdorf,  
Luxembourg

Please visit:  
[www.ftacom.com](http://www.ftacom.com)  
[www.inverto.tv](http://www.inverto.tv)

E-mail: [info@ftacom.com](mailto:info@ftacom.com)