



DVB-PC TV Stars

User's Guide Part 1
Installation

User's Guide Part 2
Setup4PC/Server4PC

**User's Guide Part 3
DVBViewer TE**

User's Guide Part 4
Troubleshooting

This manual matches the following products:

TechniSat SkyStar 2 PCI / USB
TechniSat AirStar 2 PCI / USB
TechniSat CableStar 2 PCI

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Chapter 1: Introduction

Defining the TechniSat DVB-PC TV Stars

Defining SkyStar 2 PCI/USB

SkyStar 2 PCI is a small board that is plugged into a PCI slot of your computer. The SkyStar USB is the USB version that is connected to a USB1.1 port of your computer. It gives you unprecedented access to Internet services and any "Free To Air" broadcast digital satellite television channel (DVB-S).

Defining AirStar 2 PCI/USB

AirStar 2 PCI is a small board that is plugged into a PCI slot of your computer. The AirStar USB is the USB version that is connected to a USB1.1 port of your computer. It gives you unprecedented access to any free to air broadcast digital terrestrial television channel (DVB-T).

Defining CableStar 2 PCI

CableStar 2 PCI is a small board that is plugged into a PCI slot of your computer. It gives you unprecedented access to any free available broadcast digital cable television channel (DVB-C).

Using IP services with a DVB-PC TV Star Device

The TechniSat DVB-PC TV Stars products will request all information by ground-based Internet. In response the requested data will be delivered using satellite, broadband cable or terrestrial systems at high speed.

Using printed help

The DVB-PC TV Stars product range includes the 4 parts of the Users Guide (Part 1: "Installation" / Part 2: "Setup4PC/Server4PC" / Part 3: "DVBViewer TE" / Part 4: "Troubleshooting").

User's guide conventions

For clarity, the User's Guide employs the following conventions:

1. Navigation paths are represented as follows:

"Start" => "Programs" => "TechniSat DVB" => "Setup4PC"

The path shown in this example launches Setup4PC

2. Pay attention to the following:



This icon designates a note, which is an important information to the description above.



This icon designates a warning, which is an important information to the description above.

3. The DVB-PC TV Stars TV application "DVBViewer TechniSat Edition" is designated in the following as "DVBViewer TE"

User Task Summary

Steps to perform basic user tasks are summarized below.

Step one: Watch TV with DVBViewer TE

The second chapter introduces you to the main features of DVBViewer TE. You will learn how to watch TV and configure DVBViewer TE to your needs.

Step two: Using DVBViewer TE as PVR

After you know how to use the DVBViewer TE as a television, in chapter 3 you will learn how to use this application as a personal video recorder (PVR) and playback software for files recorded with the PVR functionality.

Step three: Managing TV/radio channels

In the fourth chapter you will learn how to manage the channels, add/remove them and scan a satellite for new channels with the application DVBViewer TE in combination with your type of DVB board (SkyStar 2 TV PCI, AirStar 2 TV PCI CableStar 2 TV PCI, SkyStar USB, AirStar USB)

Step four: IP Multicast

In this chapter the IP multicast streaming functionalities of DVBViewer TE are described. Within this chapter you will learn to manage the function within the DVBViewer TE and how to receive the stream with the VLC Player.



The behavior of the software regarding TV and radio reception is similar. Most functions described within this document will be available with TV and radio reception.

Chapter 2: Watch TV with DVBViewer TE

Summary

This chapter is divided into three parts. In the first part, the DVBViewer TE GUI (graphical user interface) and the main functionalities are introduced. In the second part, the more advanced features like the EPG or the PVR are described. The third part shows, how to use the DVBViewer TE in combination with your keyboard, mouse or the available TechniSat remote control.



This chapter requires a correctly configured channel list. If you are using ASTRA 19.2°E or Eutelsat Hotbird 13.0°E, the DVBViewer TE is already set up. If you use another satellite, you have to add this to your channel list first, before trying to receive a channel. Read chapter 4 for managing your channel list first.

First startup

If you start DVBViewer TE for the first time, the remote control selection dialogue will appear:



Figure 2.1: Remote Control selection: “No Remote”

If you don't want to use a IR receiver, you have to select the option “No Remote” and press the OK button.

Configure COM Port IR Receiver / WinLIRC

If you want to use the TechniSat COM-Port IR receiver, you have to select the option WinLIRC

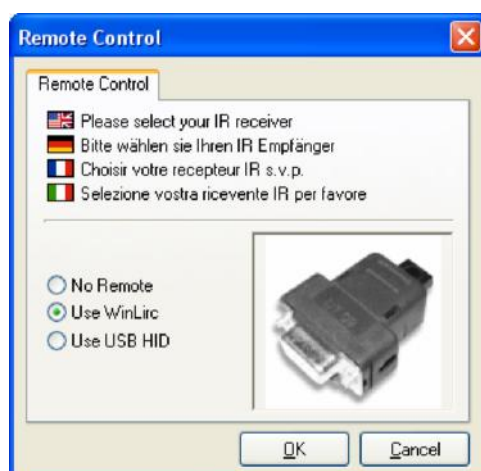


Figure 2.2: Remote Control selection: "Use WinLIRC"

Then press the OK Button and you have to configure the WinLIRC application

1. First the following error message will appear:



Figure 2.3 WinLIRC

If this message appears, the default configuration of WinLIRC does not match the needs of your system.

2. Press "OK" to show the configuration tab.
3. Here you have to configure the COM port (e.g. COM1), where your IR receiver is attached.



Figure 2.4 WinLIRC Configuration

4. You also have to choose the configuration file, which contains the configuration for your remote control. Press the "Browse" button and choose

the file “technisat.cf” (default location: “C:\Program Files\DVBViewer TE”) in the appeared “Open” window. Click “Open” to finish the select.

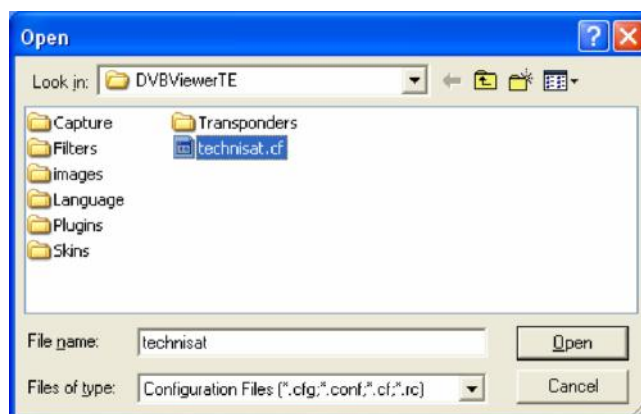


Figure 2.5 WinLIRC Open Configuration Files

5. Now your configuration has been completed. Choose “OK” to finish the configuration and start WinLIRC.

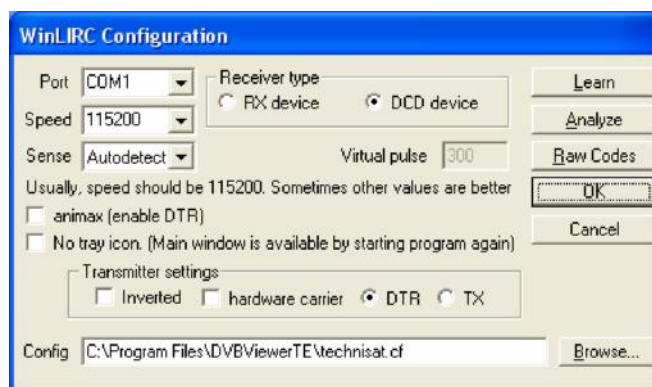


Figure 2.6 WinLIRC Configuration completed

Configure USB HID IR Receiver

If you have a USB IR receiver you select the third option and press the OK button.



Figure 2.7: Remote Control selection: “Use USB HID”

The USB HID IR receiver uses keyboard commands to control the application. No additional configuration is required.

Device support

No device

If no compatible TechniSat DVB device is available during startup of DVBViewer TE, the following error message will appear:



Figure 2.8: Message "No valid DVB device found!"

DVBViewer TE can be used as multimedia player for files, which were recorded with this application.

Single device

If you use one single device with DVBViewer TE, the application will recognize the used device automatically and present the GUI for the used frontend type (DVB-S / DVB-T / DVB-C).

Multiple device

If you have installed a multiple number of compatible TechniSat DVB cards / USB devices, the following dialog will appear:

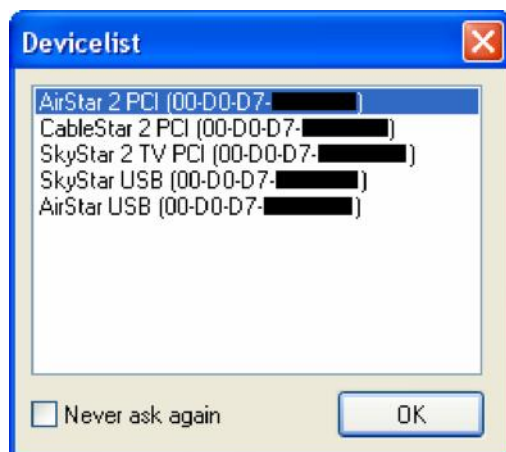


Figure 2.9: Selection dialogue "Devicelist"

Here you have to select the device you want to use during the current DVBViewer TE session. If you want to switch to another TechniSat device, you have to close DVBViewer TE and open it again. Then you can change the used device again.



If you scheduled a recording within DVBViewer TE and switch to another device, the scheduled recording cannot be processed.

Watching TV - introduction

Main window

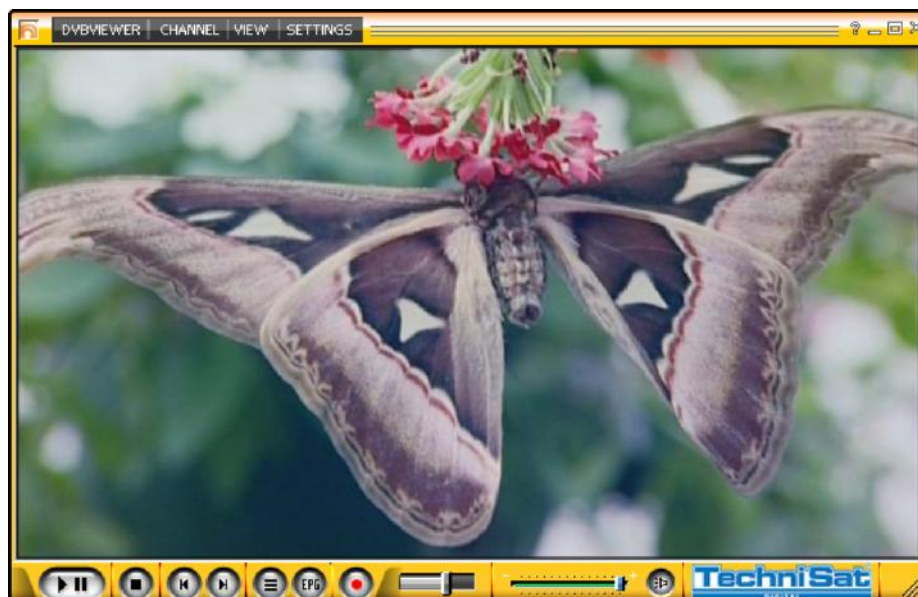


Figure 2.10: main window during DVB reception

The main window is divided into three areas:

- The first is the menu bar, which contains text-based options to the user.
- The second is the display area. This is the window, where TV programs are displayed. The On-Screen display and the EPG info will also be displayed in this area.
- The third is the control and tool bar. This area provides access to main functionalities of DVBViewer TE such as EPG, teletext, PVR/time shift and the volume control.

Control and tool Bar



Figure 2.11: control and tool bar during DVB reception

To start the time shift function of DVBViewer TE simply press the “Play/Pause” button. If you press the “Play/Pause” button again, the time shift toggles from paused to playback. If you press the “Stop” button, time shift will stop and DVBViewer TE switches back to live playback.

The “left” and “right” buttons are used to switch channels up and down.

The next two buttons will open and close the teletext window and the EPG window, which are both described in this manual.

The record button is used to start and stop manual recordings. The buttons indicates a recording running, when the button is colored gray.

The left slider indicates the position within the program running. This slider indicates the current position only, if EPG data are sent as part of the TV channel.

The right slider is used to control the volume. Drawn to the left will decrease the volume, drawn to the right will increase the volume. Using the yellow “loudspeaker”

buttons, you decrease or increase the loudness. If you want to mute the DVBViewer TE, you have to choose this option in "Settings" => "Mute" or use the mute button at the right to the volume slide bar.

Watching TV - advanced features

Time shift

Time shift provides the possibility to pause and resume the running program for short breaks. After you have held the running program, the DVBViewer records the running program. After you have resumed the playback of the video, you can jump forward and backward within the recorded time.



Figure 2.12: control bar during DVB reception

The time shift will be started after you have pressed the pause button of the control bar, the stop button of your remote control or the "ESC" key. After the time shift has started, the DVBViewer TE records the running program into a DVBViewer TE time shift file, saved on the local hard drive.

To resume playback during time shift, you have to press the play button in control bar, to hold the program again you have to press the pause button again. If you are using the keyboard or remote control, you can toggle between play and pause using the STOP-button on your remote or the "ESC" Key on your keyboard.

If you want to leave the time shift mode of DVBViewer TE, you might do this by switching the channel you are currently watching, the time shift will be canceled immediately. It is also possible to leave time shift by pressing the stop button in control bar to stop time shift and resume live mode.



If a recording is scheduled while you are currently using the time shift function, the time shift will be canceled without notice and the recording will start immediately.

Channel list

If you want to choose a TV or radio channel directly without clicking through the whole channel list, you might do this using the channel list of DVBViewer TE. Just choose "Channel" => "Channellist" in menu bar or click directly the "Channellist" button located in the tool bar.

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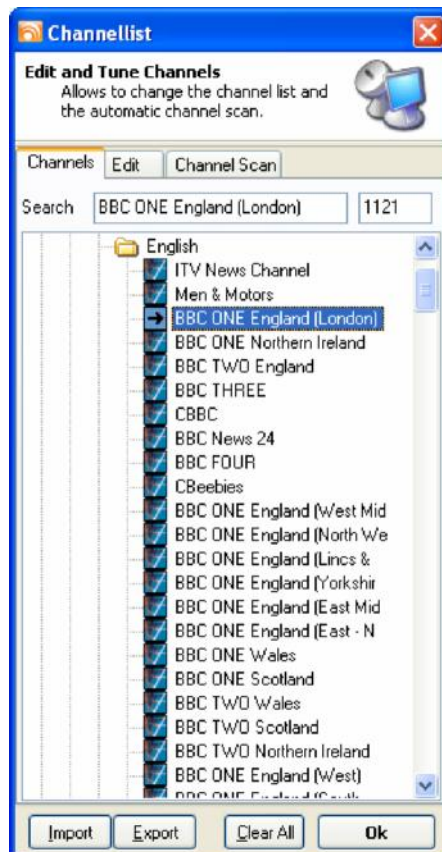


Figure 2.13: Channellist “Channels”

The “Channels”-tab of the channel list is arranged like a directory tree. Choose your satellite, choose the type of content (Video or Audio) and select your channel. To choose a channel, you have to double-click onto this channel, DVBViewer TE switches directly to the selected one. For information about editing existing channels or scan for new channels, read chapter 5.

EPG

The Electronic Program Guide is a service of the DVB technology, which offers additional information about the running program to end-users. DVBViewer TE is capable to receive that kind of information and offers two methods of presenting that information.



Not all TV station provides EPG data. That information can only be displayed, if the chosen TV channel provides EPG data.



Please ensure that the current system date and time is set up correctly.

EPG onscreen display:

The first method is to insert the content into the display area. This option is useful if you want to know which program is currently running and which program follows. To display the EPG data into the view area, select “DVBViewer TE” => “Show EPG”.



Figure 2.14: main window during DVB reception with EPG OSD

There are a couple of designs for the EPG onscreen display available. To change the settings, open the options window and select “Teletext & EPG”.

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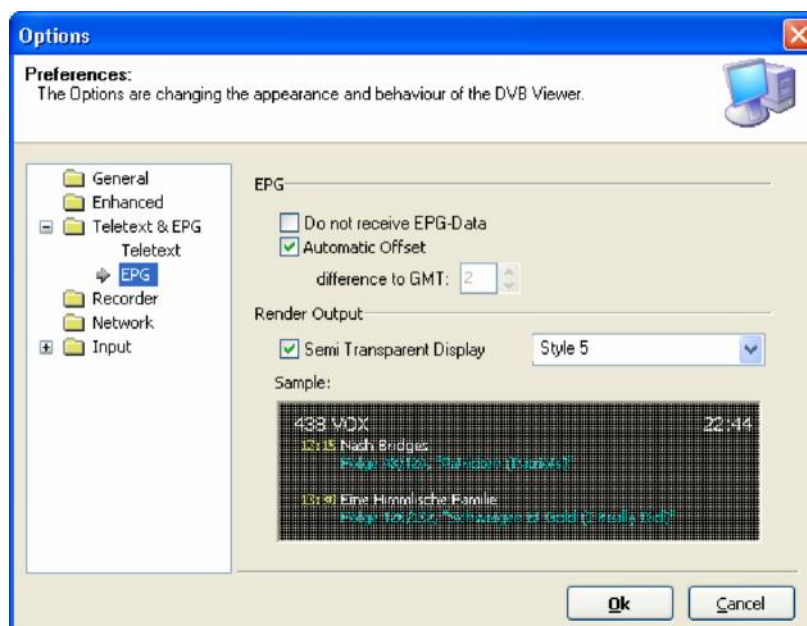


Figure 2.15: Options menu “EPG”

Here you can change the appearance settings for the EPG display. If you choose “Do not receive EPG-Data” the EPG display won’t work caused by the fact, that no EPG data will be available.

The option “Automatic Offset” will enable the synchronization of the GMT offset with the timezone configuration of your Windows operating system. If this option is disabled, you have to configure the GMT offset manually.

EPG window:

The second method for displaying EPG content in combination with DVBViewer TE is to use the EPG window. This is arranged like a “TV magazine” with programs sorted by channel and time.

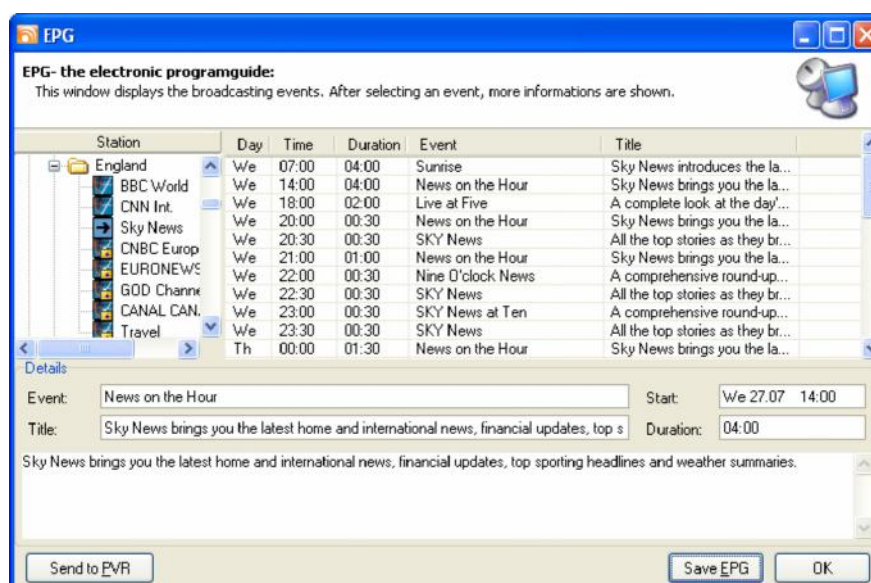


Figure 2.16: EPG window

Using the EPG window, you gain access to additional information, which are not shown within the EPG display. It is also possible to save the EPG data to your hard

drive as HTML TV magazine. For this purpose the “Save EPG” button opens the save as dialog.

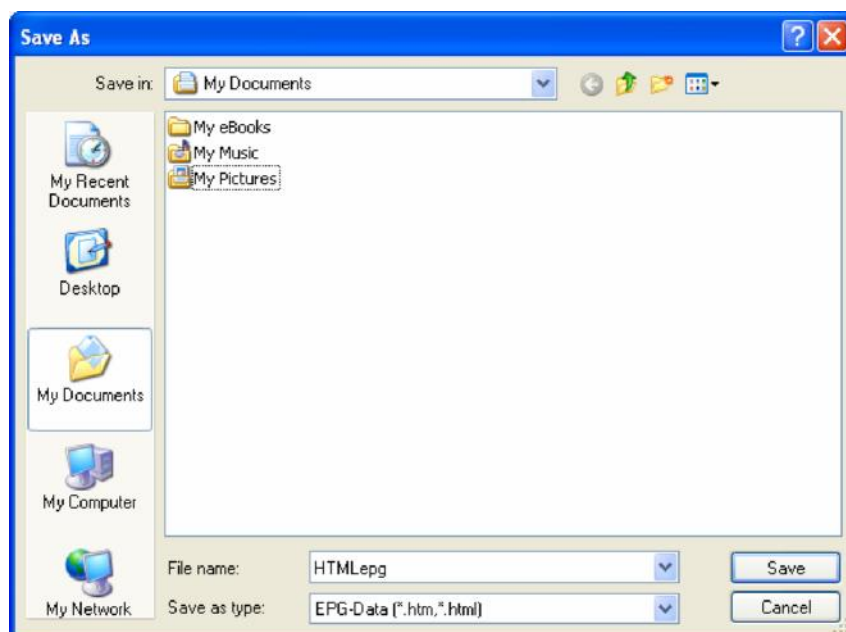


Figure 2.17: Save as dialog

Enter the location and the name of the files and press the “Save” button. All known EPG data will be combined into a set of HTML files, which can be displayed with a web browser



Figure 2.18: Browser with opened DVBViewer TE HTML EPG

The second option is the capability of sending programs directly to the DVBViewer TE recorder module. This option is described in chapter 4 “Using DVBViewer TE as PVR”

Teletext

Using DVBViewer TE you also gain access to the teletext services of most TV stations. Open the teletext window by using the Teletext button in Toolbar or using the menu "DVBViewer TE" => "Teletext".

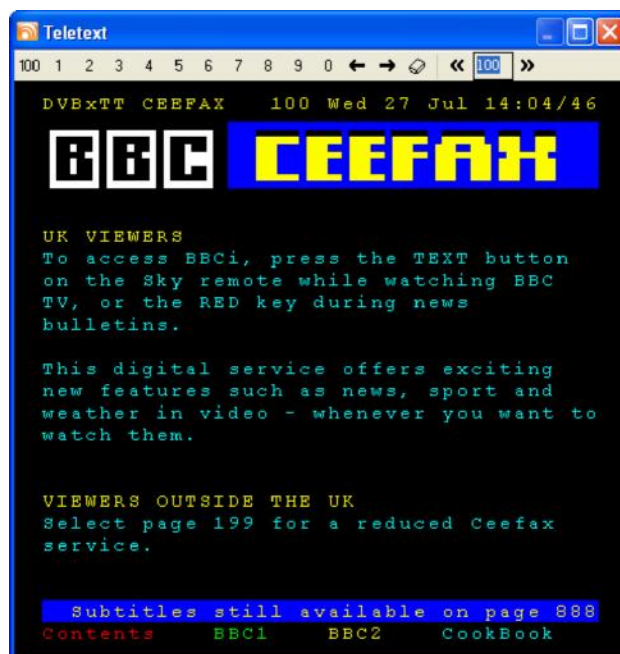


Figure 2.19: Teletext window

The usage of this application is very simple. Enter the page number using the number buttons in the toolbar of the Teletext window or enter those numbers using your keyboard or remote control. Use the forward/reverse button nearby the number field to navigate through the pages. You might also access sites by clicking on displayed page numbers with the left mouse button.

Subtitle

The DVBViewer TE supports showing and recording of teletext and DVB subtitles. By selecting the menu "View" => "Show Subtitle" the option will be enabled.

Teletext subtitles:

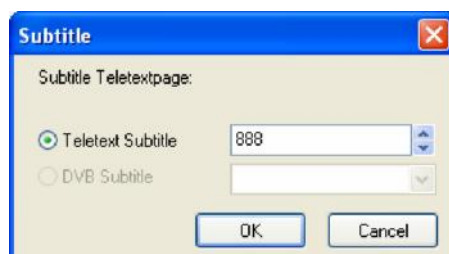


Figure 2.20: Subtitle dialogue for teletext subtitles

After the subtitle page number is entered and the "OK" button is pressed, the subtitle teletext will be shown in display area.



If the specified subtitle teletext page is not available, no subtitle will be shown in display area.

DVB subtitles

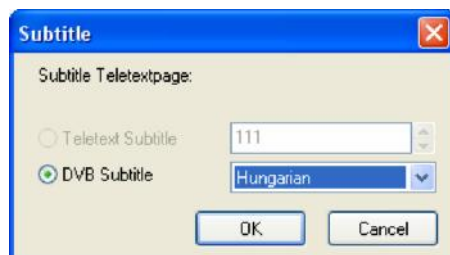


Figure 2.21: Subtitle dialogue for DVB subtitles

After selecting the language of the DVB subtitle, press the “OK” button and the subtitle will be shown in display area



Figure 2.22: Main window during DVB reception with subtitle

If the subtitle function is enabled and you start a recording of this program, the subtitle will also be recorded. If you playback a recorded program with recorded subtitle using DVBViewer TE, the option "View" => "Show Subtitle" is available. If you enable "Show Subtitle", the recorded subtitle will be shown in display area.

Selecting the menu "View" => "Show Subtitle" again will disable the subtitle display.



The teletext subtitle function requires a channel with teletext and at least one subtitle page. If the channel does not provide teletext information, this option is unavailable.



The DVB subtitle function requires a channel with DVB subtitle information. If the channel does not provide those data, this option is unavailable.

Configure the application

Within the DVBViewer TE options menu you can configure most functionalities of DVBViewer TE to your needs. First the general and enhanced options are introduced.

“General” options

Within the general options you can configure the main settings of DVBViewer TE.

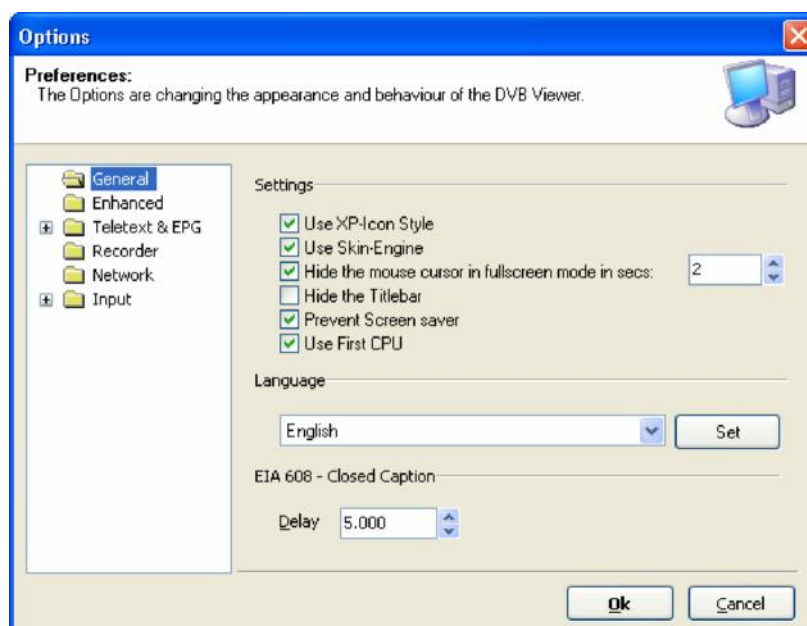


Figure 2.23: Options “General”

Use XP-Icon Style:

This option can be used only while the skin engine is disabled. It toggles between the XP style icon set and a alternative icon set.

Use Skin-Engine

This option toggles the skin engine of DVBViewer TE on/off

Hide the mouse cursor in fullscreen mode in secs

This option configures the timeout, when the mouse cursor will be hided in full screen mode

Hide the title bar

This option toggles the title bar on/off and is available with disabled skin engine only.

Prevent Screen saver

This option toogles the screen saver prevention on/off.

Use first CPU

This option enables the usage of the first CPU within SMP/HT/Dual Core systems

Language

Here you can select the GUI language. Select the required language and press the set button.

EIA 608 – Closed caption

This option configures the delay transmission and appearance of closed captions (if available)

Enhanced options

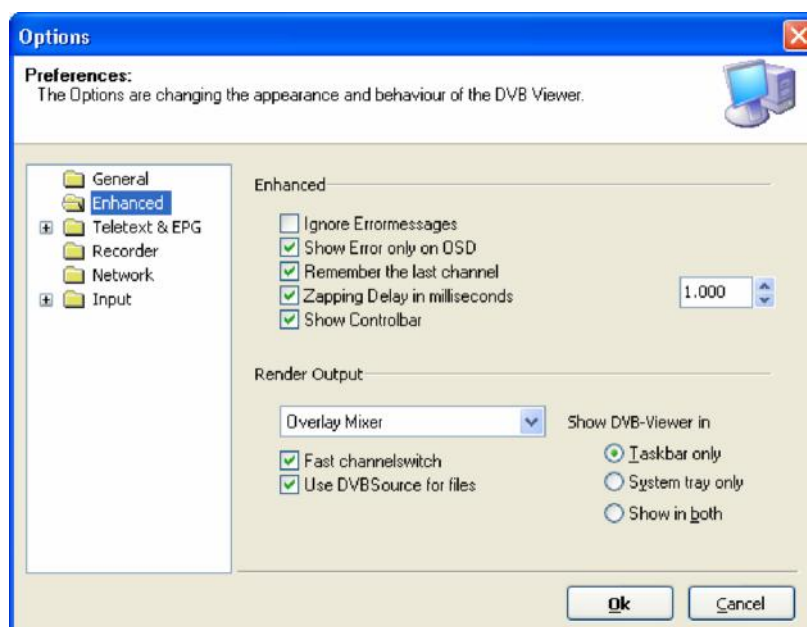


Figure 2.24: Options “Enhanced”

Ignore Error messages

Toggles error messages on/off

Show Error only on OSD

Disables/enables error messages shown as overlay and not as pop-up window

Remember the last channel

If this option is enabled, DVBViewer TE will tune the last channel after startup automatically.

Zapping Delay in milliseconds

The delay time will be use to delay channel switch command..

Show Controlbar

Toggles the controlbar on/off and is available with disabled skin-engine only.

Render Output

Configures the render output format.

Fast channelswitch

Toggles the fast channel switching feature on/off. If this option is enabled, DVBViewer will not retune, if the selected channel is located on the current transponder.

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Use DVBSource for files

Toggles the compatibility mode for the playback of transport stream formatted MPEG-2 files on/off.

Show DVB-Viewer in...

This option toggles the appearance of DVBViewer TE between the taskbar, the system tray or both.

The other option windows are described within the following chapters of this document within the chapter context.

Control the application

Keyboard

A list of assigned keyboard commands is given in Appendix B.

If you want to change the default settings to your needs, you might do this using the Keyboard tab in “Settings” => “Control”

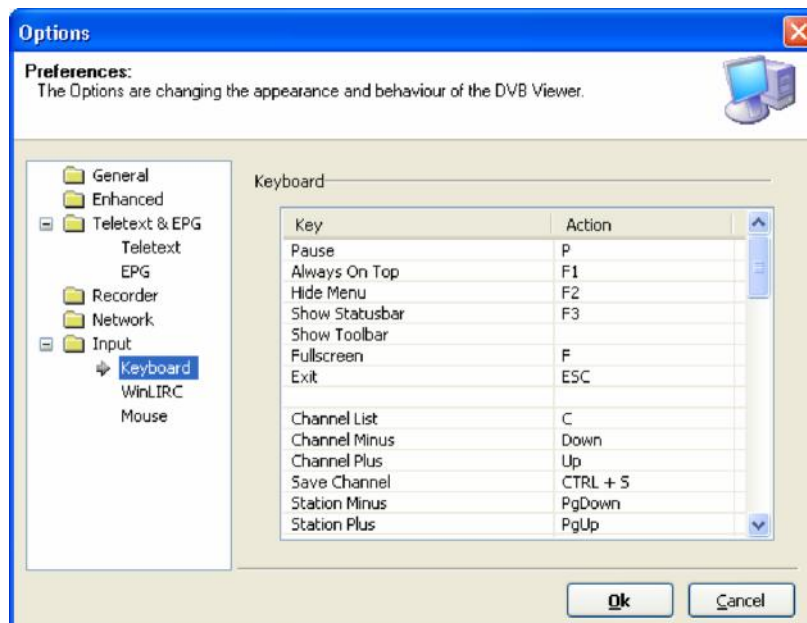


Figure 2.25: Options menu “Control Keyboard”



If you use a remote control with the USB IR receiver, you also have to configure the settings of the remote control within the keyboard configuration. The USB IR receiver uses keyboard commands to control the application.

The USB IR receive is not compatible to WinLIRC.

Mouse Wheel

If you want to change the default settings to your needs, you might do this using the Keyboard tab in “Settings” => “Control”

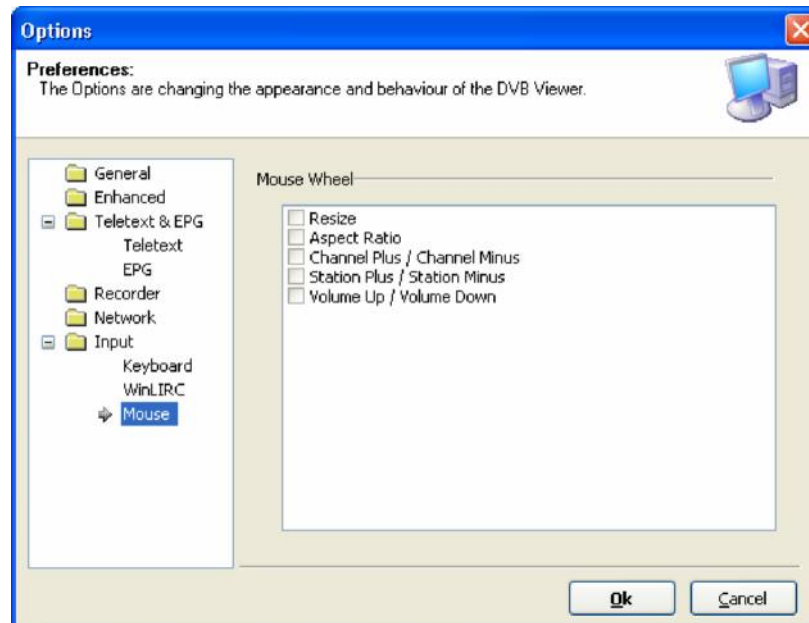


Figure 2.26: Options menu “Control Mouse Wheel”

TechniSat Remote Control

A list of assigned commands is given in Appendix B for the current TechniSat remote controls

If you want to change the default settings to your needs, you might do this using the WinLIRC tab in “Settings” => “Control”

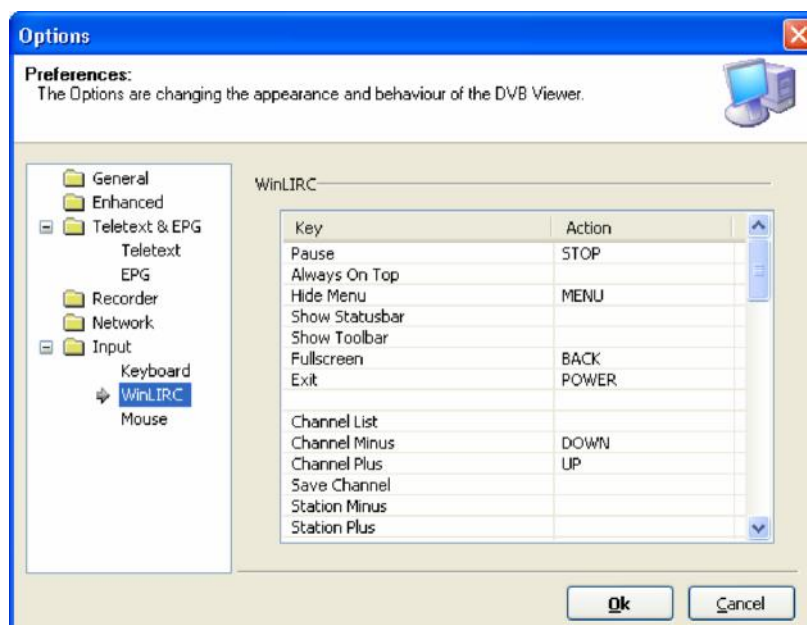


Figure 2.27: Options menu “Control WinLIRC”



If you use a remote control with the USB IR receiver, you have to configure the settings of the remote control within the keyboard configuration. The USB IR receiver uses keyboard commands to control the application. The USB IR receive is not compatible to WinLIRC.

Chapter 3: Using DVBViewer TE as PVR

Summary

This chapter shows how to use the built in PVR functionalities for recording and playback of DVBViewer TE and also how to play recorded videos with third party software.

Necessary settings

Before you record files for the first time, you should be sure that there is enough space available for recording DVB content.



DVB TV channels could create data rates with up to 25Mbit/s. For this purpose you need more than 10GB of free hard disc capacity for one hour of recording time.

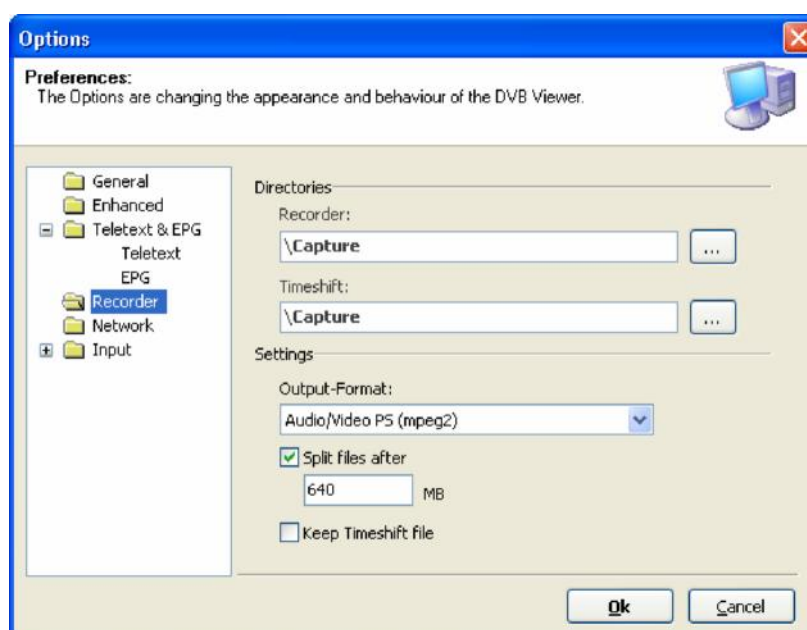


Figure 3.1: Options menu “Recorder”

Specify location with enough free available space.



If you are using the FAT32 file system, you have to split files caused by the fact, that FAT32 can handle files up to 4GB only. In this case you have to check the “Split files” checkbox.

You should also split files, if you want to backup the recorded files with CD or DVD recorders. If you are using NTFS formatted drives and don't want to save files to CD or DVD, there is no need to enable the file splitting.

Record programs manually

To start a manual recording, press the red button in the tool bar. You can also use the keyboard shortcut or the button on your remote control.



Figure 3.2: Tool bar during DVB reception

The recording starts immediately. If you want to stop the recording, press the record button again.



If you change to another channel during a recording, the "Recorder is active!" message appears



Figure 3.3: "Recorder is active!"

If you press "OK", the recording will stop and the DVBViewer TE tunes the chosen channel. If you press "Cancel", the DVBViewer TE remains in recorder mode.

The recorded file will be saved in the specified directory.

Record programs automatically

The PVR functionality of DVBViewer TE provides a recording schedule, which can be programmed manually or by using the EPG.



Your PC must be active and DVBViewer TE must be started for scheduled recording. If DVBViewer TE is not started or the system is not active while passing a scheduled event time the event entry will be discarded without recording.



If a recording is scheduled and while you are time shifting a TV program, the time shift will be canceled without notice and the recording starts immediately.

Add events to recorder manually

Using the recorder window of DVBViewer TE it is possible to add multiple events to the recording scheduler. You'll find the recorder window by choosing "DVBViewer TE" => "Record Setting".

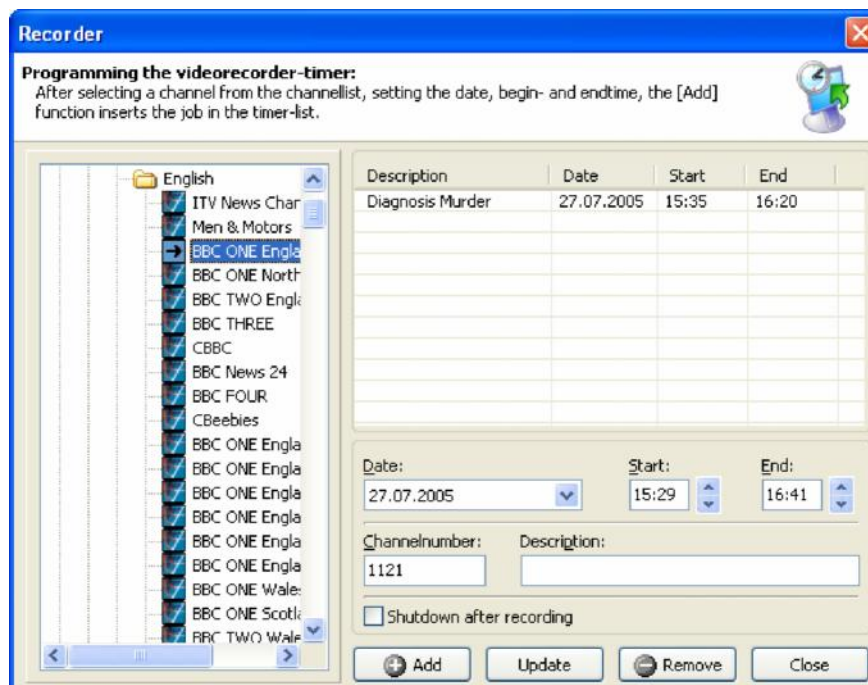


Figure 3.4: Recorder window

To add a new event to the scheduler, enter the event date, start and end time, the channel number and the event description. You might take the channel number using the tree view of the channel list located at the left side of the recorder window. Click "Add" to add the event to the scheduler. If you want to remove an event, choose it and click "Remove". If you want to edit an existing event, choose this event and edit the necessary values. After this, press "Update" and the scheduled event will be updated.

If you enable the option "Shutdown after recording", DVBViewer TE will shutdown your system after finishing the last scheduled element.

Add events to recorder using the EPG

For all channels, which provides EPG data, you might use the EPG window to add recording timers to the recorder timetable

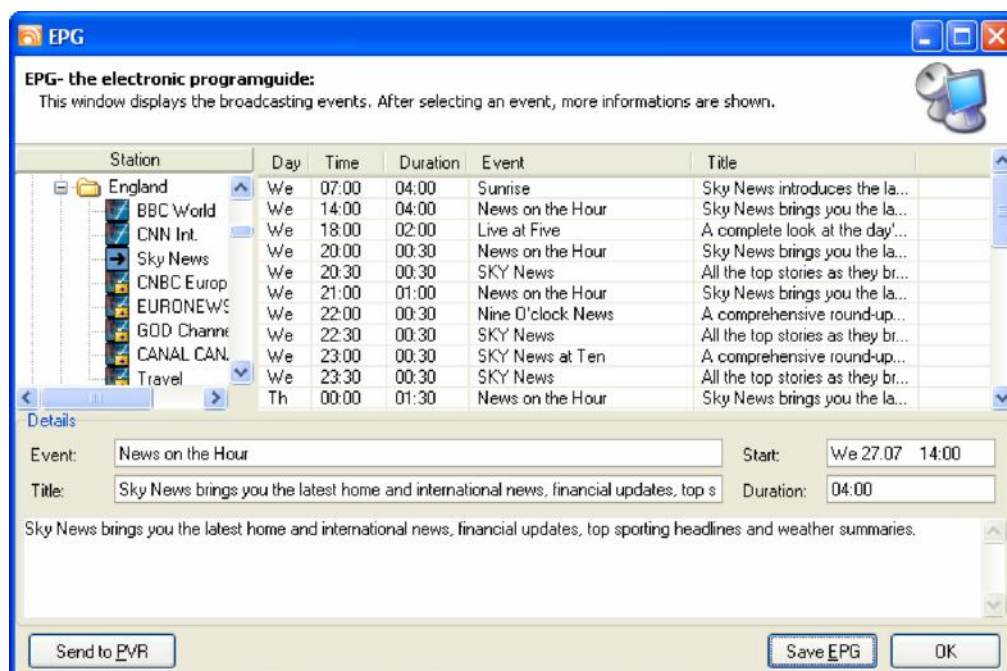


Figure 3.5: EPG window

To add events using the EPG, you have to open the EPG window. Select the event, you want to record and press the “Send to PVR” button. This event will be added to the recorder scheduler and automatically recorded on your hard drive.



If a recording is scheduled and while you are time shifting a TV program, the time shift will be canceled without notice and the recording starts immediately.

Play recorded programs with DVBViewer TE

Play files with DVBViewer TE

To play recorded files with DVBViewer TE, open the video using “DVBViewer TE” => “Open Video” or use the “Change TV/Video Mode” button in the tool bar.



Figure 3.6: control and tool bar during DVB reception

After DVBViewer TE has loaded the file the playback will start immediately.

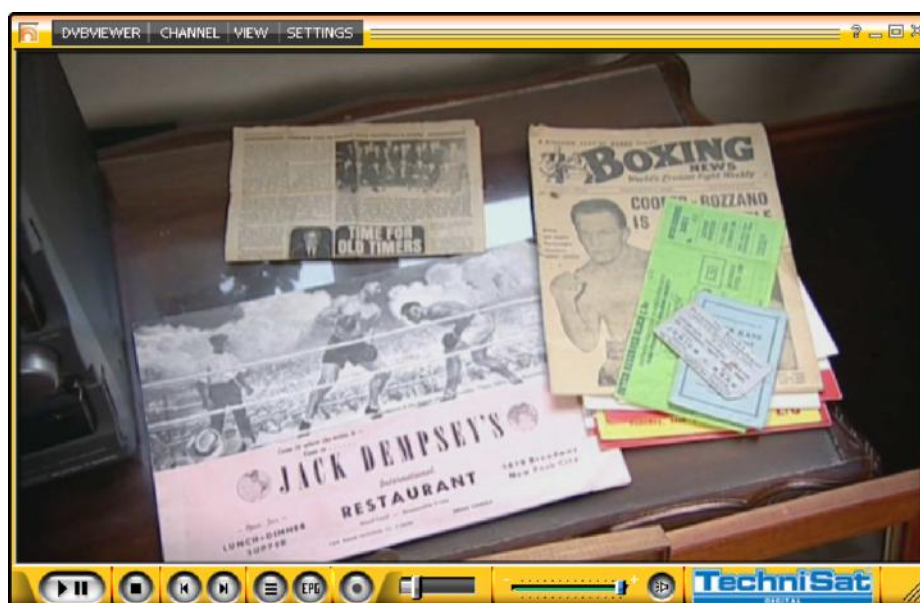


Figure 3.7: main window in playback mode

There are several ways of returning to TV mode. Choose a channel by using the graphical interface, your keyboard or a remote control.

Play files with third party software

Almost every media player like the Windows Media Player 9 is capable for playback a file recorded by DVBViewer TE.



To playback a file, the TechniSat DVB software and the DVBViewer TE must be installed in the system.



If you want to play a file recorded using DVBViewer TE in a system without this software, you have to transcode the file(s) to normal MPEG2 files.

Chapter 4: Managing TV/radio channels

Summary

This chapter shows how to manage TV/radio channels and perform imports and exports of the database with your DVB-PC TV card. It is divided into three parts, one for each device type:

- SkyStar2/SkyStar USB for satellite reception
- AirStar2/AirStar USB for terrestrial reception
- CableStar2 for cable reception

SkyStar2 PCI/USB

Edit existing channels

If you want to edit an existing channel in DVBViewer TE channel list, you have to select this channel in the channel list and switch from “Channels”-tab to “Edit”.

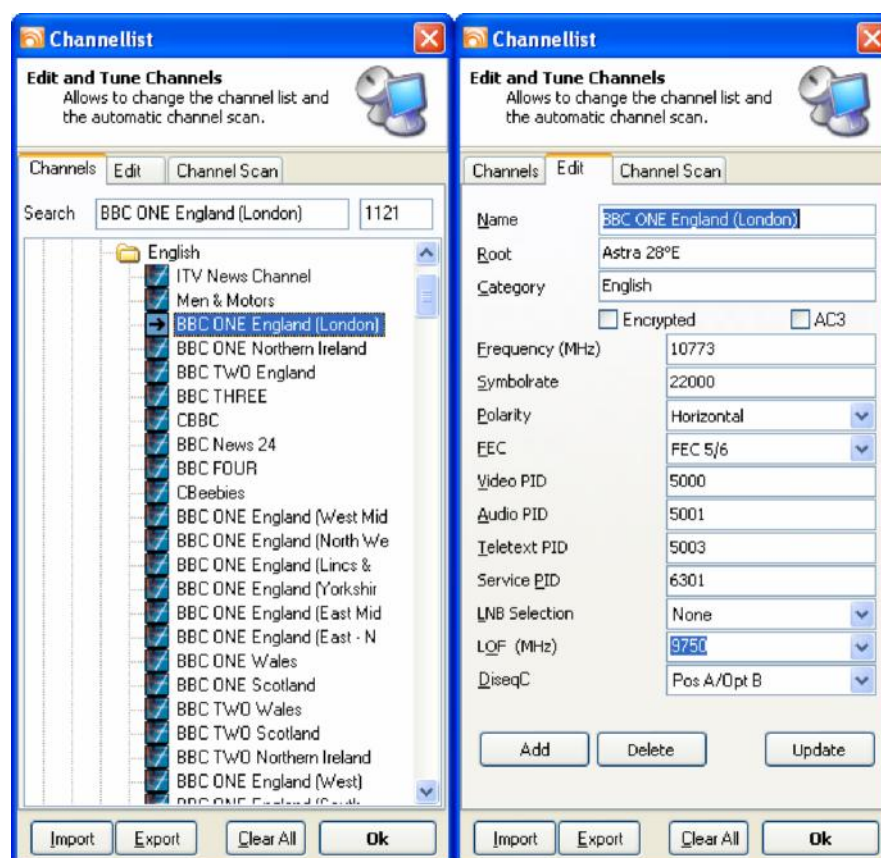


Figure 4.1: Channellist “Channels” and “Edit”

Here you have to enter the new values and press the “Update” button. The changed settings for this channel will be added to the current channel list.

Edit satellite parameters (DiSEqC settings)

If you use DiSEqC settings, which differ to the default settings of DVBViewer TE, you have to change those settings for each satellite you are able to receive using your equipment. For this purpose choose a satellite in the channel list and switch to the tab “Edit”. The settings for the satellite will be displayed.



Figure 4.2: Channellist “Edit” satellite settings

Here you have to select the correct DiSEqC settings for the satellite and press update to confirm the change of the DiSEqC parameter. Those settings will be valid for all TV and radio channels which are listed within the channel list of this satellite.

Using the “Clear All” button you can remove the whole satellite tree of the selected satellite.

Add/Remove channels manually

If you want to add or remove channels manually, you also have to use the edit tab.

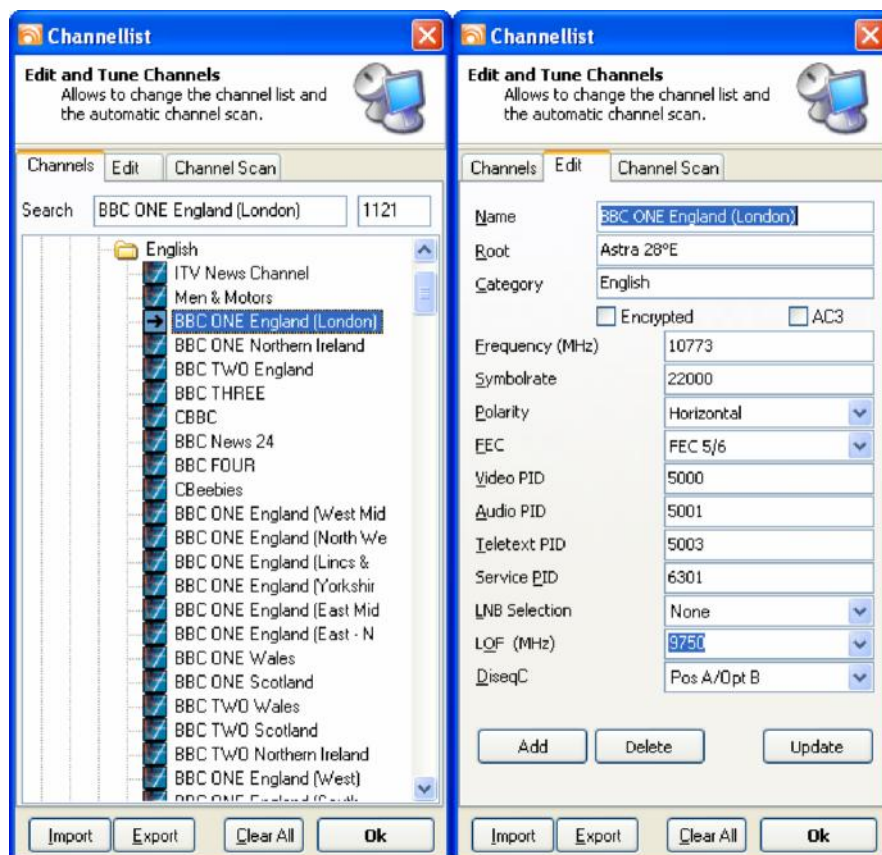


Figure 4.3: Channellist “Channels” and “Edit”

To add a new channel, you have to enter the necessary values; press “Add”...

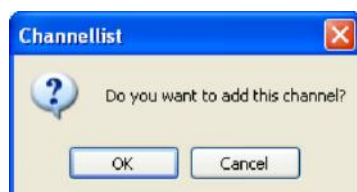


Figure 4.4: Channellist add channel popup message

...and confirm the appearing message. This channel is now added to your channel list.

To remove an existing channel, you have to select a channel using the tree view of the channel list and select a TV station. Then switch to the “Edit” tab and click the button “Delete”...

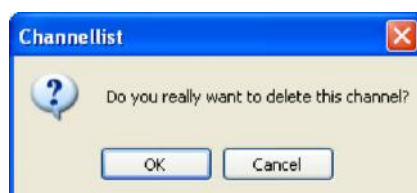


Figure 4.5: Channellist delete channel popup message

...and confirm the appearing message. This channel is now removed from the channellist.

To clear all channels from the channel list, you have to click the button "Clear All"...

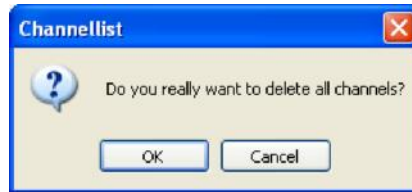


Figure 4.6: Channellist delete all channels popup message

...and confirm the appearing message. The channel list should be cleared completely.



If you clear an existing channel list, all information will be deleted. Please create a backup of your channel list before clearing, with the channel list export function of DVBViewer TE.

Scan for new channels

Another way of adding new channels is the “Channel Scan”.

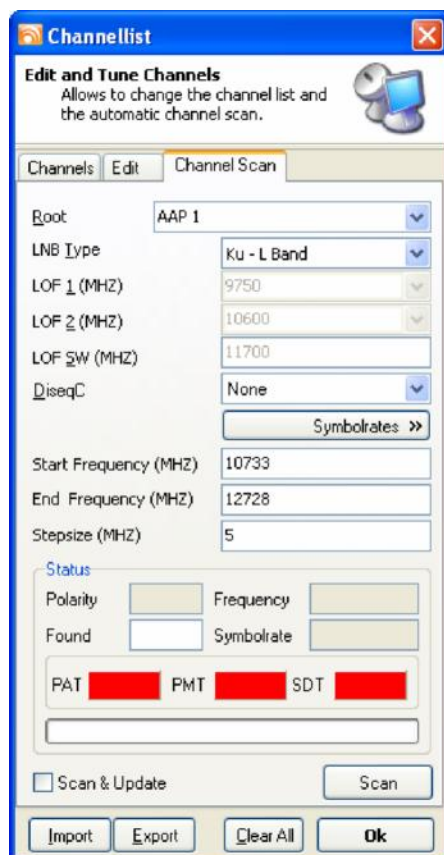


Figure 4.7: Channellist “Channel Scan”

To start a channel scan you should select a satellite root first, DVBViewer TE will scan for channels using a transponder list for the satellite system selected. If you want to scan for channels without a transponder list, enter a name for the satellite only, which is not used by the existing lists.

After selecting the root list, you have to select the used LNB type. The default “Ku-L Band” LNB is used for frequencies between 10.7 and 12.75GHz with linear polarization. The other LNB type options are “Ku-C Band” for circular polarization and “C-Band”.

You need to enter a name for the scanned root, the values for the used LNB and the frequency area you would like to scan. If you want to update an existing channel list for a satellite, check the “Scan & Update” option. Press the “Scan” button to start the scanning process.



The scan procedure might take several minutes to complete.

After the procedure has been completed, you will find the added channels browsing the specified root name at the end of the channel list. If you updated an existing root, the channels, which do not longer exist, should be removed and new channels should be added to the list.

Import/Export channel lists with DVBViewer TE

The third option for adding channels to DVBViewer TE is to import existing channel lists. For this purpose you need a channel list provided as a file.



Figure 4.8: Channellist “Channels”

To import an existing channel list to DVBViewer TE, click the button “Import” in the channel list and choose the file, which contains the channel data.

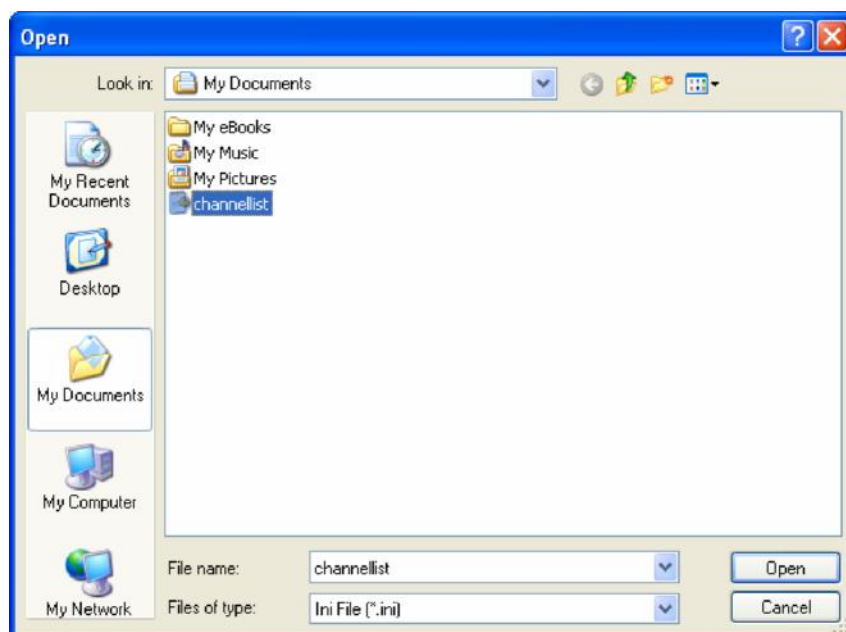


Figure 4.9: Import Channellist “Open” window

The information will be added to the existing channel list.

The following file-types can be imported to the DVBViewer TE:

- TechniSat Program List (*.txt)
- Microsoft Access Database (*.mdb)
- SatcoDX Channels (*.sdx)
- Ini File (*.ini)

To export your current channel list (e.g. for backup), click the “Export” button in the channel list and specify the destination directory and file name.

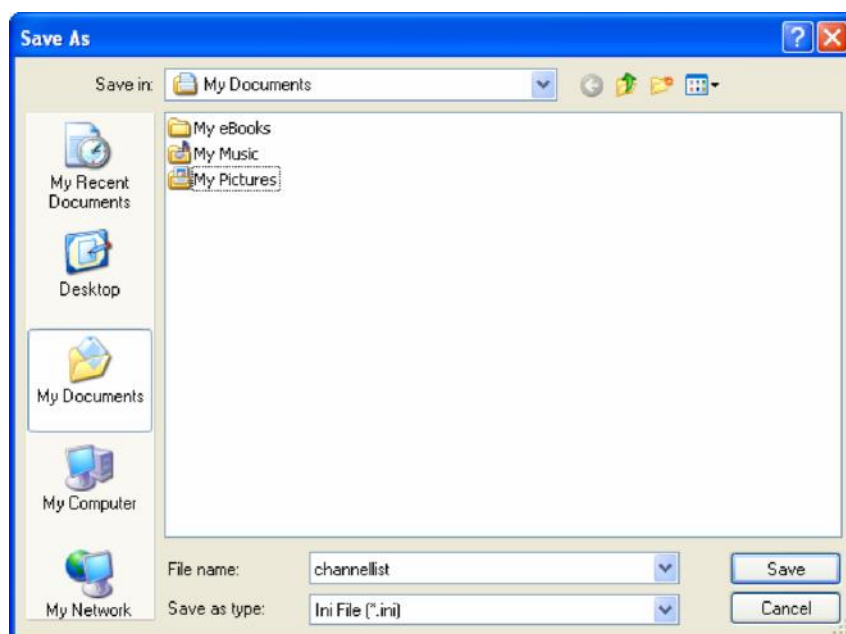


Figure 4.10: Export Channellist “Save As” window

The DVBViewer TE channel list can be exported to the following file-types:

- Ini File (*.ini)

CableStar2 PCI

Edit existing channels

If you want to edit an existing channel in the DVBViewer TE channel list, you have to select this channel in the channel list and switch from “Channels”-tab to “Edit”.

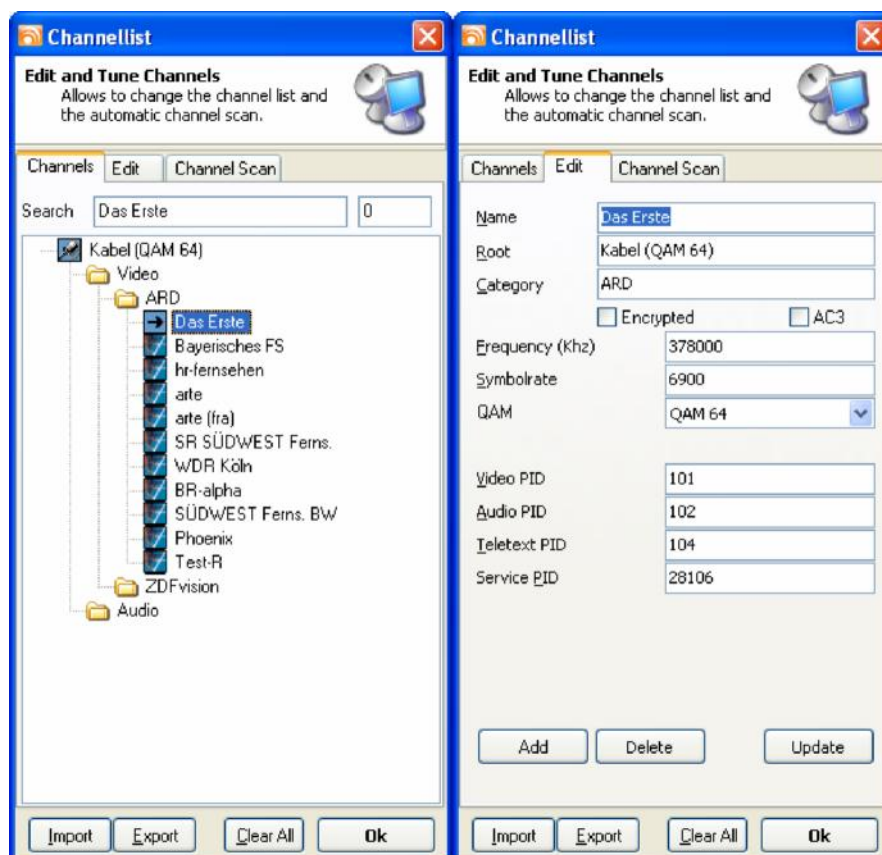


Figure 4.11: Channellist “Channels” and “Edit”

Here you have to enter the new values and press the “Update” button. The changed settings for this channel will be added to the current channel list.

Add/Remove/Update channels manually

If you want to add or remove channels manually, you also have to use the “Edit”-tab.

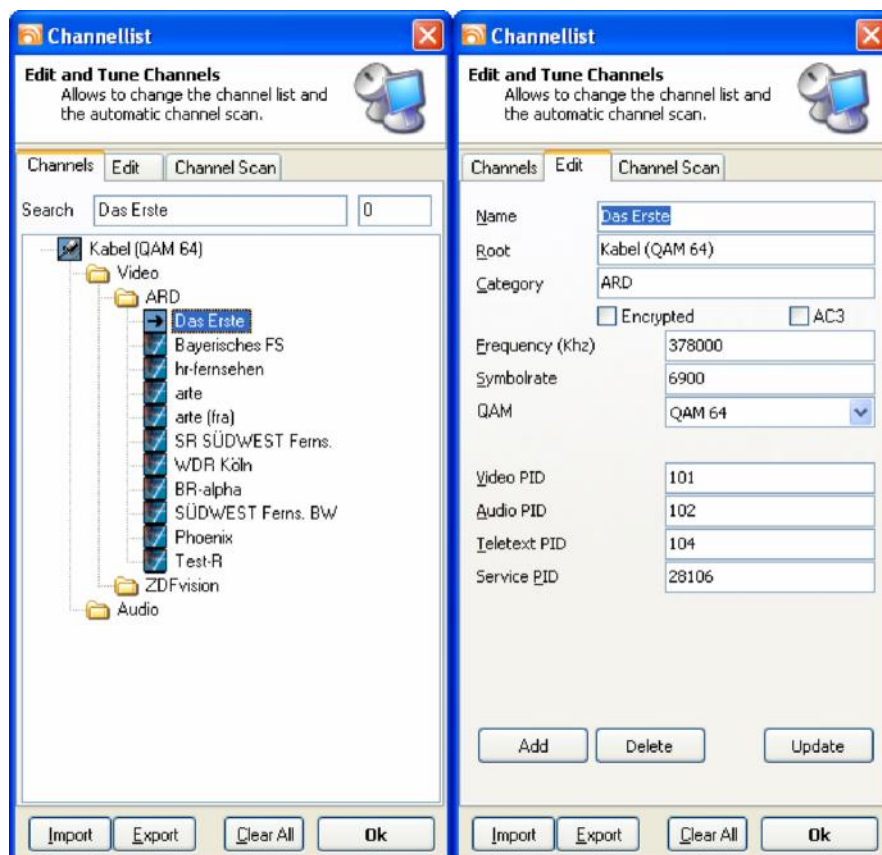


Figure 4.12: Channellist “Channels” and “Edit”

To add a new channel, you have to enter the necessary values, press “Add”...

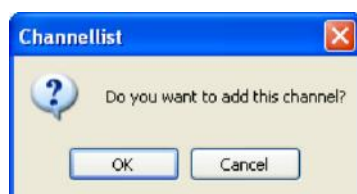


Figure 4.13: Channellist add channel popup message

...and confirm the appearing message. This channel is now added to your channel list.

To remove an existing channel, you have to select a channel using the tree view of the channel list and select a TV station. Then switch to the “edit”-tab; click the button “Delete”...

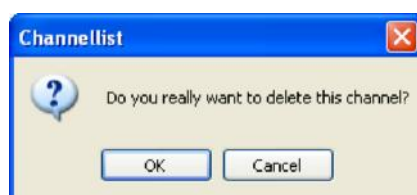


Figure 4.14: Channellist delete channel popup message

...and confirm the appearing message. This channel is now removed from the channellist.

To clear all channels from the channel list, you have to click the button "Clear All"...

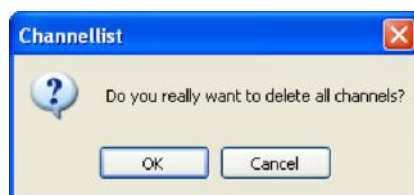


Figure 4.15: Channellist delete all channels popup message

...and confirm the appearing message. The channel list should be cleared completely.



If you clear an existing channel list, all information will be deleted. Please create a backup of your channel list before clearing using the channel list export function of DVBViewer TE.

Scan for new channels

Another way of adding new channels is the "Channel Scan".

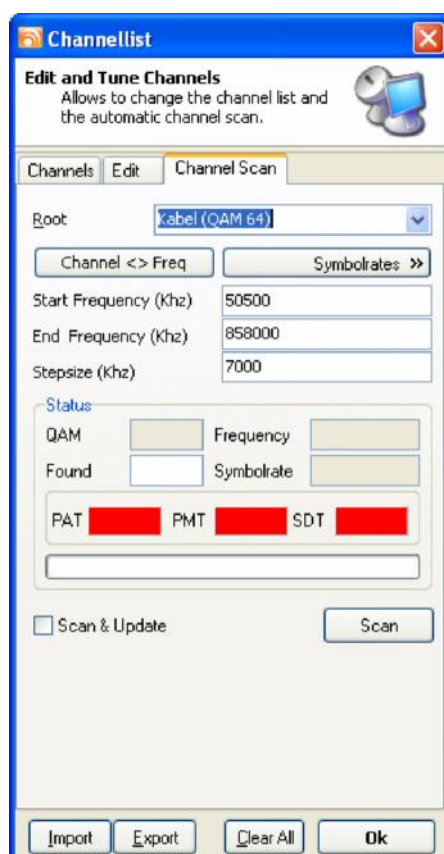


Figure 4.16: Channellist "Channel Scan"

This option should be used to scan for available cable TV channels or to update one root of the existing channel list. You need to choose the modulation type (in our example QAM64) and to enter the start and end frequency. If you want to update an

existing channel list for your cable TV system, check the “Scan & Update” option. Press the “Scan” button to start the scanning process.



The scan procedure might take several minutes to complete

After the procedure has been completed, you'll find the added channels browsing the specified root name in the channel list. If you updated an existing root, the channels, which do not longer exist should be removed and new channels should be added to the list.

Import/Export channel lists with DVBViewer TE

The third option for adding channels to DVBViewer TE is to import an existing channel list. For this purpose you need a channel list provided as a file.

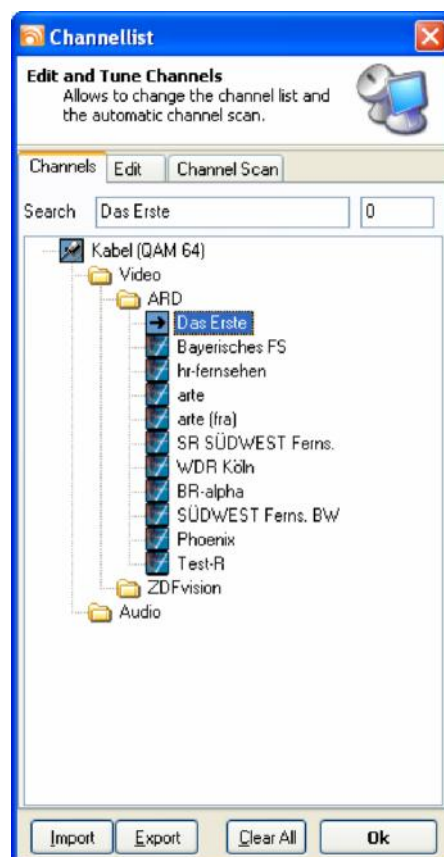


Figure 4.17: Channellist “Channels”

To import an existing channel list to DVBViewer TE, click the button “Import” in the channel list and choose the file which contains the channel data.

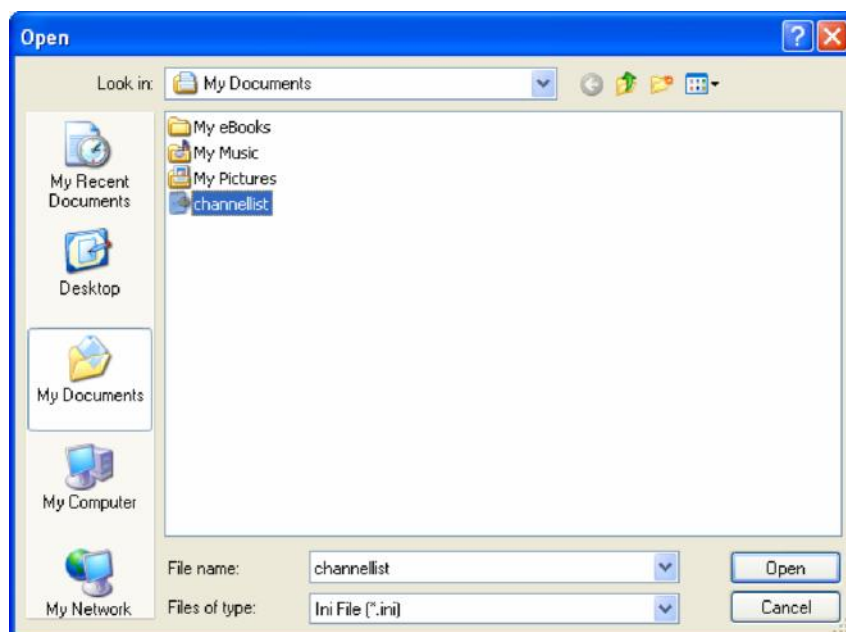


Figure 4.18: Import Channellist “Open” window

The information will be added to the existing channel list.

The following file-types can be imported to the DVBViewer TE:

- TechniSat Program List (*.txt)
- Microsoft Access Database (*.mdb)
- SatcoDX Channels (*.sdx)
- Ini File (*.ini)

To export your current channel list (e.g. for backup), click the “Export” button in the channel list and specify the destination directory and file name.

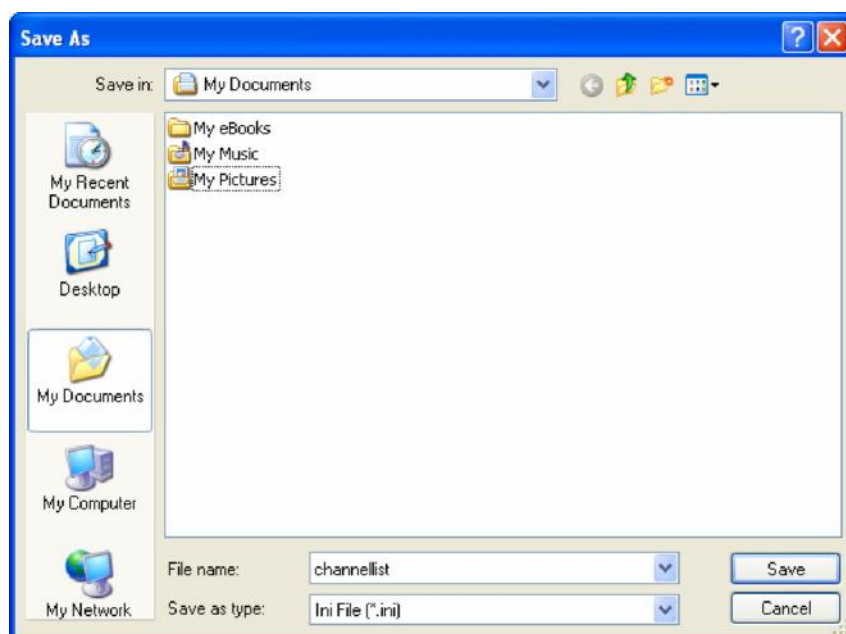


Figure 4.19: Export Channellist “Save As” window

The DVBViewer TE channel list can be exported to the following file-types:

- Ini File (*.ini)

AirStar PCI/USB

Edit existing channels

If you want to edit an existing channel in the DVBViewer TE channel list, you have to select this channel in the channel list and switch from “Channels”-tab to “Edit”.

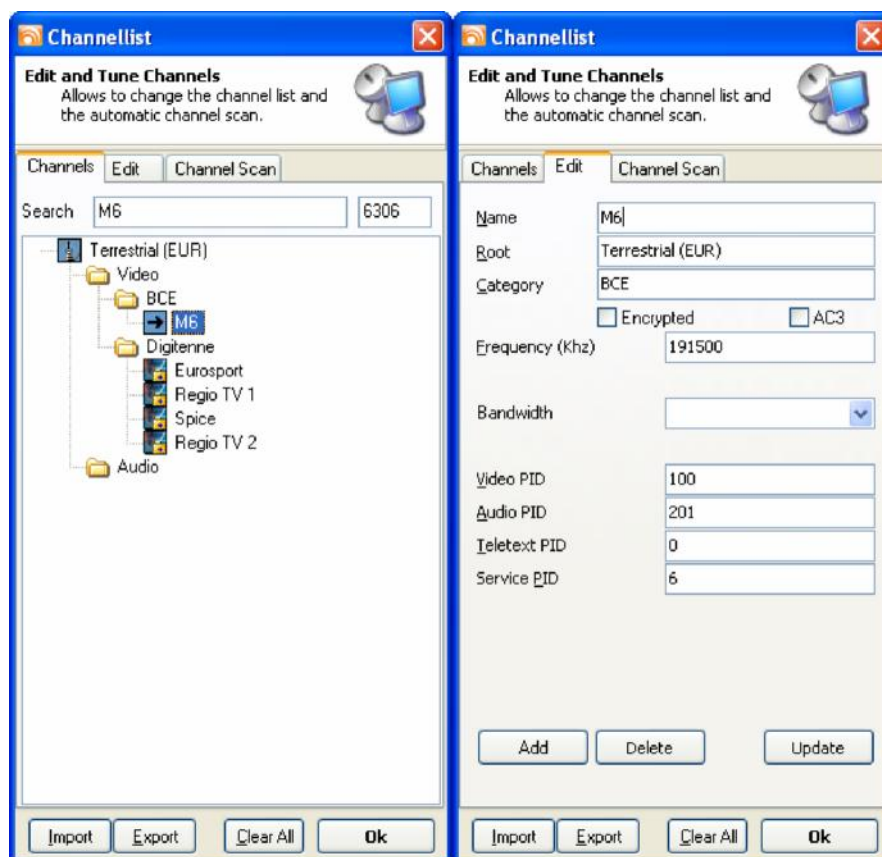


Figure 4.20: Channellist “Channels” and “Edit”

Here you have to enter the new values and press the “Update” button. The changed settings for this channel will be added to the current channel list.

Add/Remove/Update channels manually

If you want to add or remove channels manually, you also have to use the “Edit”-tab.

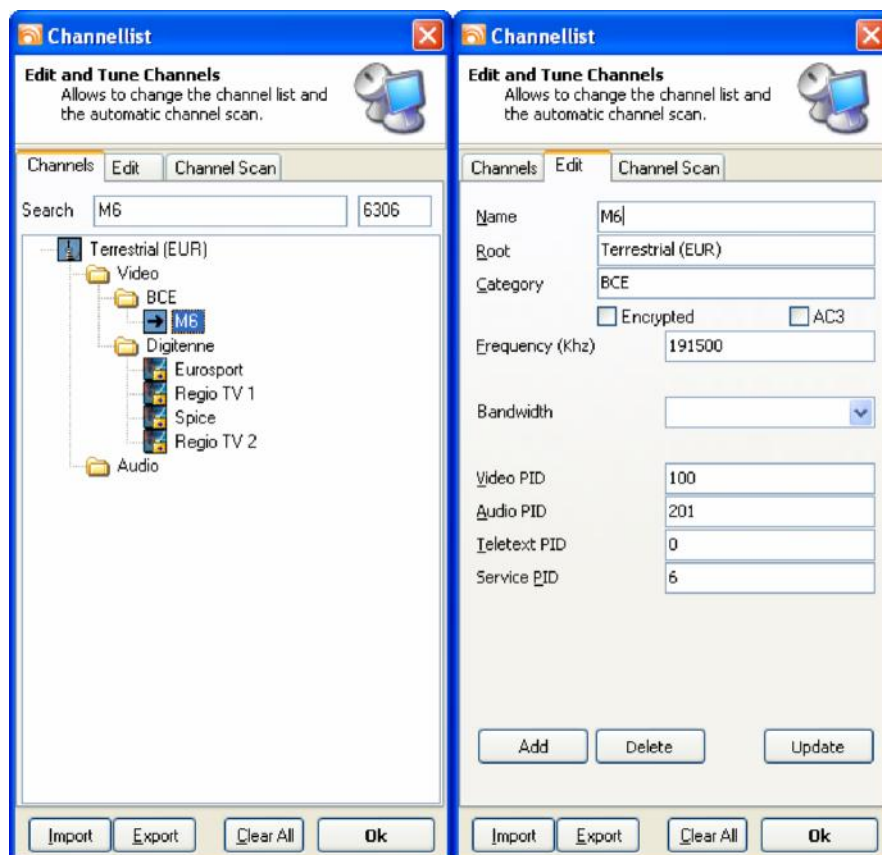


Figure 4.21: Channellist “Channels” and “Edit”

To add a new channel, you have to enter the necessary values, press “Add”...

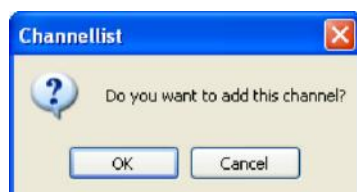


Figure 4.22: Channellist add channel popup message

...and confirm the appearing message. This channel is now added to your the channel list.

To remove an existing channel, you have to select a channel using the tree view of the channel list and select a TV station. Then switch to the “edit”-tab; click the button “Delete”...

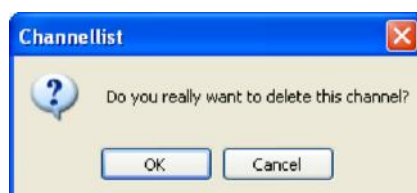


Figure 4.23: Channellist delete channel popup message

...and confirm the appearing message. This channel is now removed from channel list.

To clear all channels from the channel list, you have to click the button “Clear All”...

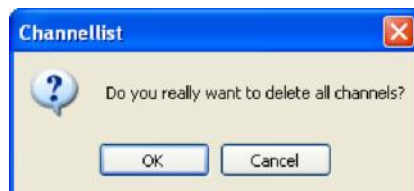


Figure 4.24: Channellist delete all channels popup message

...and confirm the appearing message. The channel list should be cleared completely.



If you clear an existing channel list, all information will be deleted. Please create a backup of your channel list before clearing using the channel list export function of DVBViewer TE.

Scan for new channels

Another way of adding new channels is the “Channel Scan”.

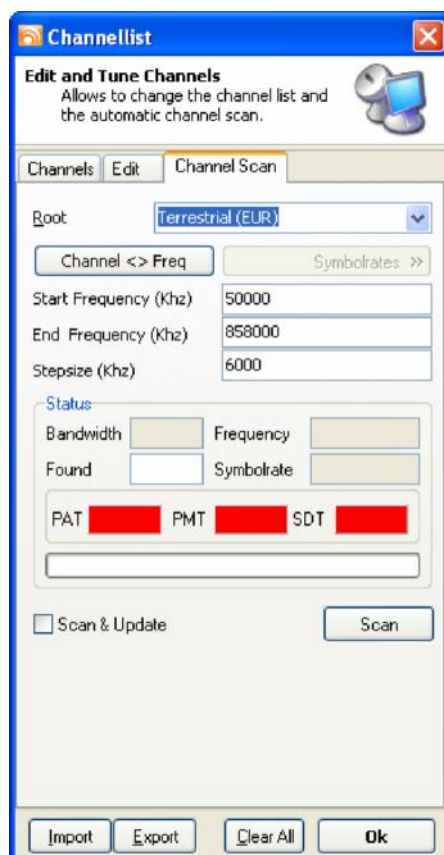


Figure 4.25: Channellist “Channel & Scan”

This option should be used to scan for available terrestrial TV channels or to update one root of the existing channel list. You need to choose your region (Europe, Australia or Taiwan) and to enter the start and end frequency. If you want to update

an existing channel list for your DVB-T region, check the “Scan & Update” option. Press the “Scan” button to start the scanning process.



The scan procedure might take several minutes to complete.

After the procedure has been completed, you will find the added channels browsing the specified root name in the channel list. If you updated an existing root, the channels, which do not longer exist, should be removed and new channels should be added to the list.

Import/Export channel lists with DVBViewer TE

The third option for adding channels to the DVBViewer TE is to import an existing channel list. For this purpose you need a channel list provided as a file.

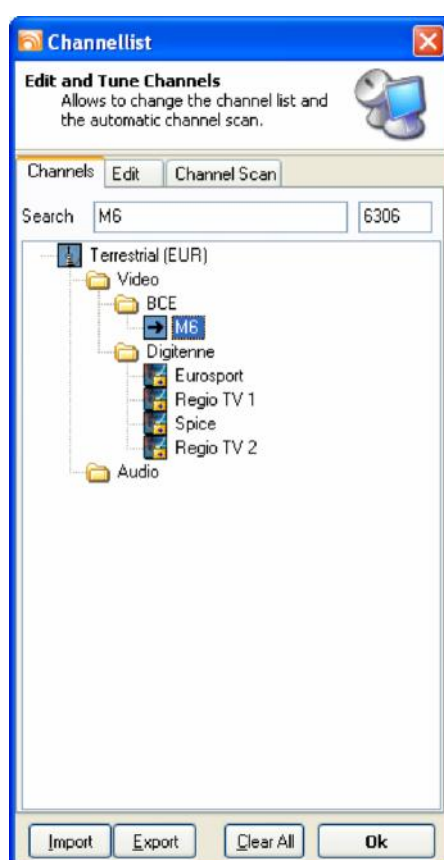


Figure 4.26: Channellist “Channels”

To import an existing channel list to the DVBViewer TE, click the button “Import” in the channel list and choose the file, which contains the channel data.

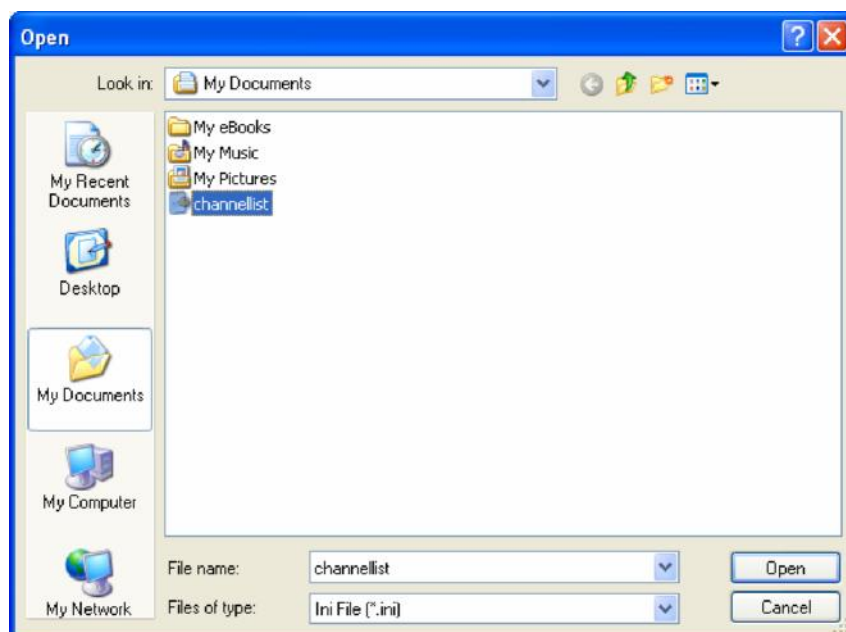


Figure 4.27: Import Channellist “Open” window

The information will be added to the existing channel list.

The following file-types can be imported to the DVBViewer TE:

- TechniSat Program List (*.txt)
- Microsoft Access Database (*.mdb)
- SatcoDX Channels (*.sdx)
- Ini File (*.ini)

To export your current channel list (e.g. for backup), click the “Export” button in channel list and specify the destination directory and file name.

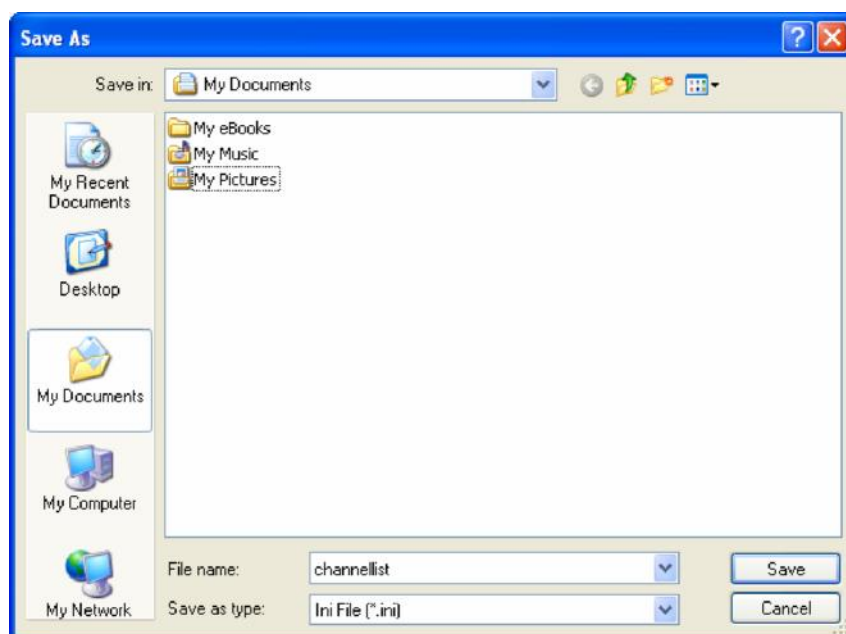


Figure 4.28: Export Channellist “Save As” window

The DVBViewer TE channel list can be exported into the following file-types:
Ini File (*.ini)

Sorting channels

Within the DVBViewer TE it is possible to alter the order of the channels.

One method is to rename the folders, in which the channels are located. Using this mechanism will create a new folder at the top of the satellite root. Please select the channel you would like to place into another category. Then switch to the “Edit” tab and rename the category to the new category name. This might be a name, which already exists or this might be a new name. New categories will be put at the top of the list.

The other method is to move the channels up and down until they are at the position you prefer. For moving one channel up or down, press and hold the “CAPS” key and use the up or down arrows to move the channel up or down.



It is not possible to move channels from one satellite to another and it is also not possible, to move a TV channel into a radio channel list or a radio channel into a TV channel list.

Example

Within our example, we want to get all major BBC channels into a folder named BBC. Therefore we select one of the BBC channels first – in our example the channel “BBC Four”.

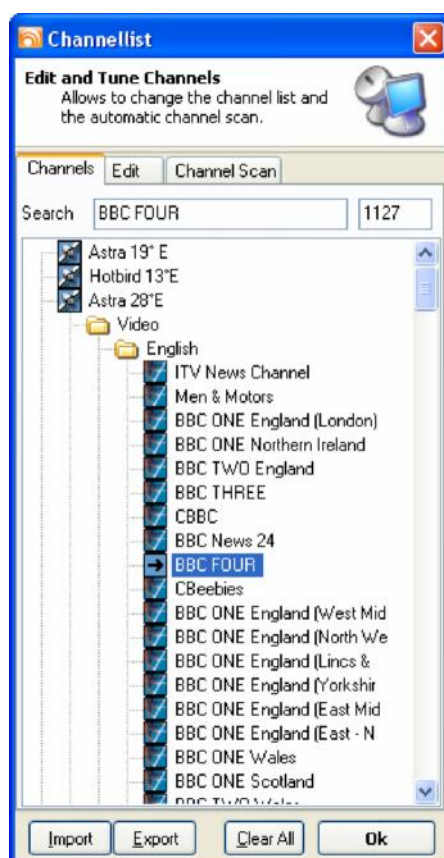


Figure 4.29: Channellist “Channels”

Now we switch to the edit tab and replace the category name named “English” with “BBC” and press the update button.

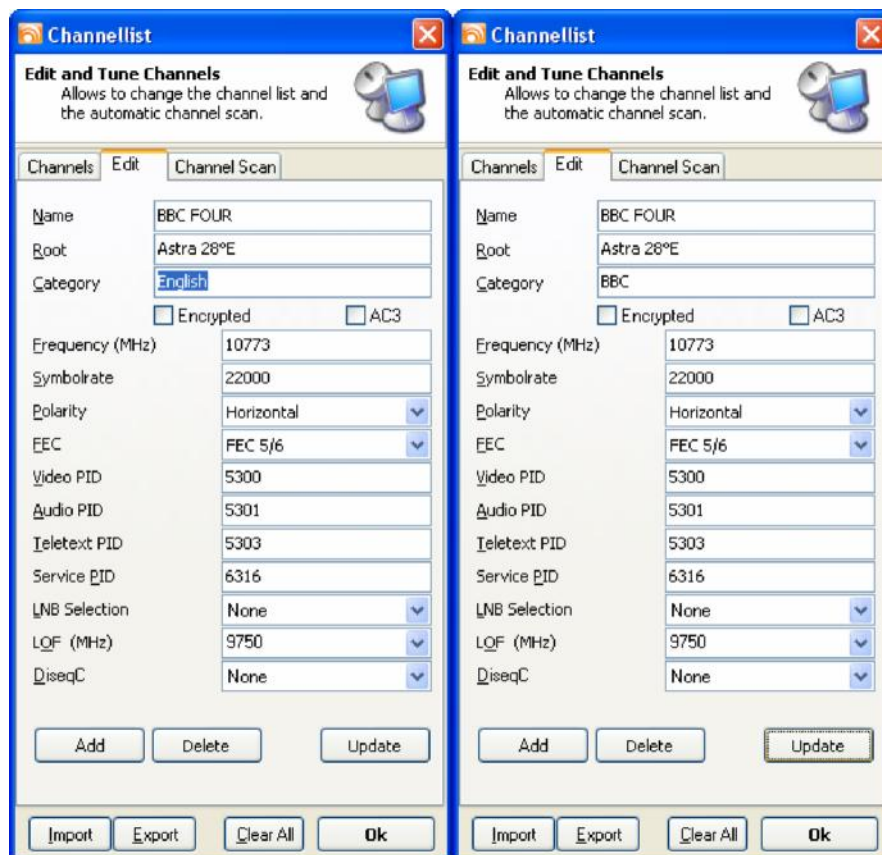


Figure 4.30: Channellist “Channel” and “Edit”

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Chapter 4: Managing TV/radio channels

Now there is a new category named “BBC” at the top of the channel list.



Figure 4.31: Channellist “Channels”

Now we can start to move the channels into this folder by renaming the category or by moving the channels up to the category “BBC”. In our example we now move the channel “BBC ONE England (London)” to the category “BBC”.

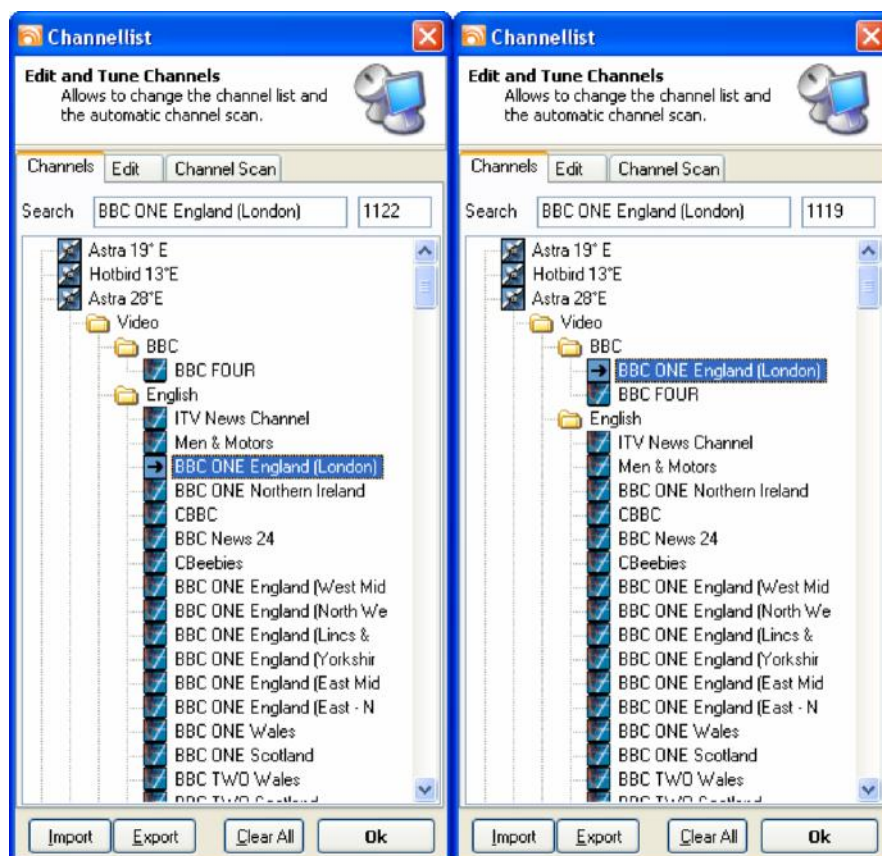


Figure 4.32: Channellist “Channels” before and after channel move

Chapter 5: IP multicast Streaming

Summary

This chapter will introduce the IP multicast streaming functionalities, which are part of the DVBViewer TE.

Recommended system requirements

- Supported operation systems:
Windows 2000 Professional/Server (service pack 4 required)
Windows XP Home Edition/Professional (service pack 2 required)
- Two computer systems, both equipped with fast Ethernet network adapter cards, which are capable to handle at least 100MBit/s
- Direct connection cable
or
- 100/1000 Mbit/s Ethernet switch
or
- 100/1000 Mbit/s Ethernet hub

Important information

This HOWTO requires two computer systems, which are configured to operate in a local area network (LAN) environment. The internal IP network settings should be configured correctly and the wiring and distribution components should be connected correctly.



To stream a normal TV station, you have to ensure, that your network is capable to handle a transfer rate of up to 15MBit/s. If you want to stream HDTV channels, you will need up to 80MBit/s.



Network streaming works well at a data rate of up to 8MBit/s. If you want to stream channels, which requires more than 8MBit/s, it should work properly, but this depends on the quality of the used infrastructure components. Some switches cannot handle higher bandwidth over a long time period and might break down during operation. The same is also valid for SoHo broadband routers with integrated switches used for broadband connections.



You need an MPEG-2 software decoder installed on the streaming client machine to decode the received DVB content.



WARNING:

If you want to use IP multicast transfers in large-scale environments, ensure that the switching components are capable to handle multicast transfers and the network routers in this environment are configured to block IP multicast. Otherwise heavy network problems might occur. Contact your system administrator first, before starting a multicast stream in your environment.

Streaming of one TV channel through a network

Building a network environment for IP streaming

The common system requirements are listed below:

PC 1:

- One operable DVB-PC TV Stars device
- One configured network interface (100BaseTX or 1000BaseTX)
- 3D AGP/PCIe Graphic card with hardware acceleration
- DVBViewer TE

PC 2:

- One configured network interface (100BaseTX or 1000BaseTX)
- 3D AGP/PCIe Graphic card with hardware acceleration
- A streaming client software installed (e.g.: VideoLAN Client)

In our example we are using two systems:

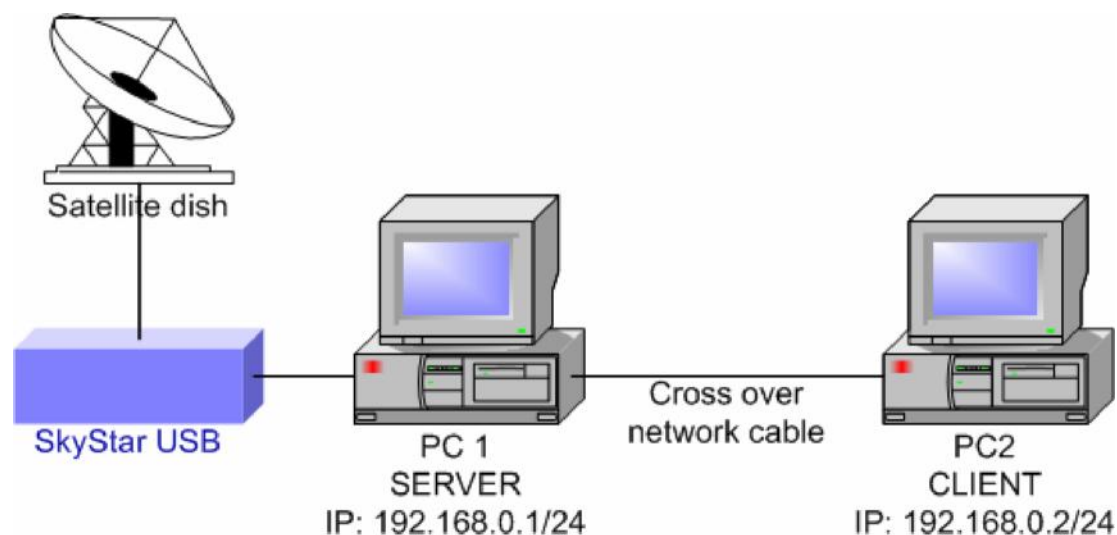


Figure 5.1: Multicast test configuration

The multicast server is equipped with a SkyStar USB card and correctly connected to a dish. The satellite on which the dish is aligned to and the channel, which will be streamed over the LAN, is unimportant for this example.

The connection between both systems will be realized with a cross-over network cable for direct connection. It is also possible to use a 100/1000MBit/s network switch or a 100/1000MBit/s Ethernet hub.

On our server, we open "Settings" => "Options" and change to the "Recorder" tab.

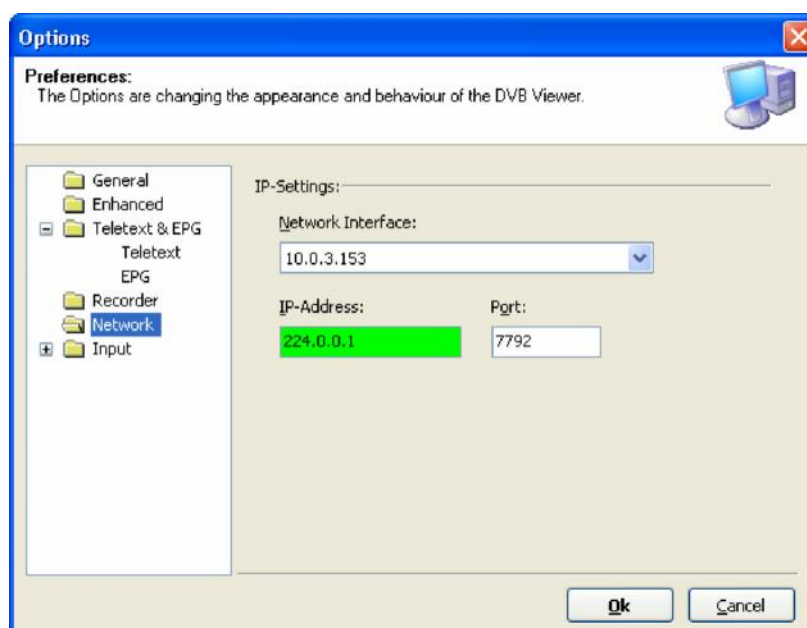


Figure 5.2: Options menu "Network"

Here you have to configure the necessary options for the IP multicast stream. First you have to choose the IP-address of the network interface, the multicast stream is sent for distribution. In our example, the network interface has the IP 192.168.0.1

The second information, which is necessary for IP multicast, is the multicast address and the port the stream is located on. If the MC-IP is valid, MC-IP field is filled with green colour. If the IP is invalid, the field is red.

The multicast IP range is specified in RFC 1112 (Aug-01-1989) and the following RFC documents. Multicast IP addresses are defined to the range between 224.0.0.0 to 239.255.255.255. If you want to send the stream to all clients in your subnet, you have to use the multicast IP 224.0.0.1. For further information about multicast IP addresses you should read the RFC document.

The multicast port number, you have to choose, can be chosen from the range between 0 and 65500. You should not use the first 1024 ports because they are reserved/used by IP services.

In our example we use the multicast IP 224.0.0.1 for all clients in the local subnet and the port number 7792.

Now press OK to confirm the settings and close the options window.

Now you can start the multicast IP streaming.



Figure 5.3: Main window "View" menu with disabled multicast option

To initialise the multicast stream, choose "View" => "Multicast". Now the current channel will be sent to the selected network interface.

To receive and view the data stream, a streaming client is required. In our example we use the application "VLC Media Player". This open source application is available at the project website <http://www.videolan.org/vlc/>.

Start the application.



Figure 5.4: VLC media player

Here you simply click onto "File"...



Figure 5.5: VLC media player "File" menu

... and then select the option "Open Network Stream...".

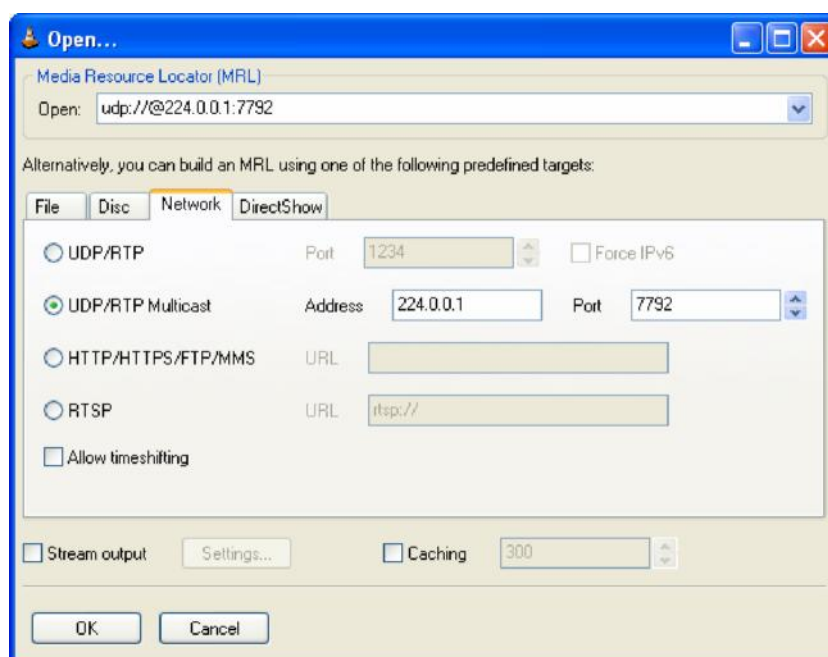


Figure 5.6: VLC media player "Open..." menu

Then you have to choose "UDP/RTP Multicast" and enter the address and port number where the multicast IP stream is located on.
Then press the "OK" button and VLC Media Player will start the playback of the stream immediately.

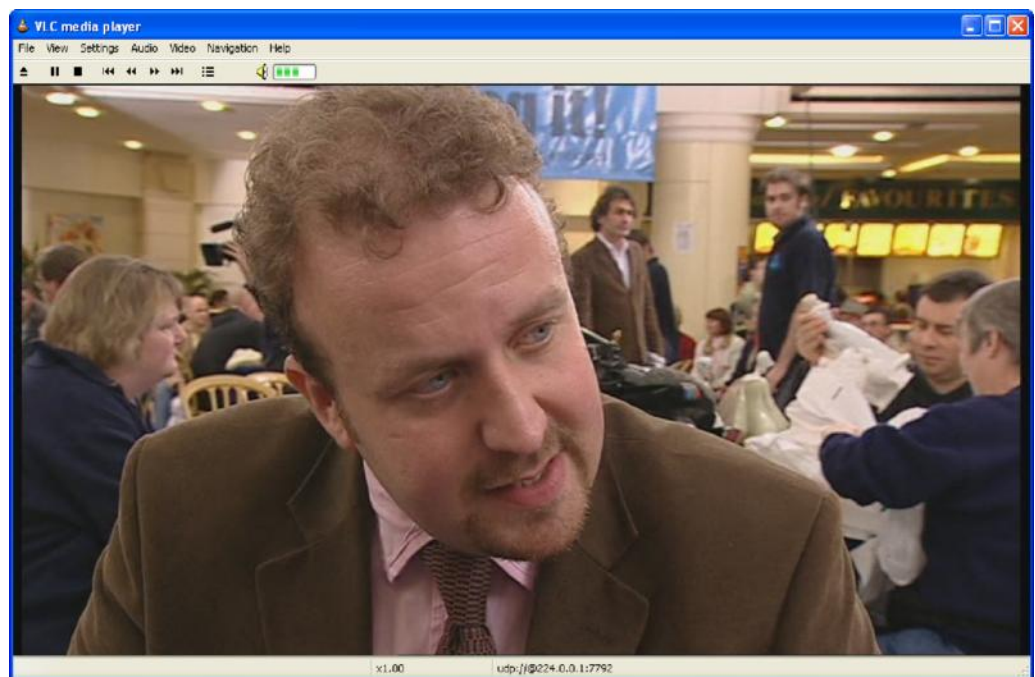


Figure 5.7: VLC media player during multicast stream playback

If you want to stop the streaming client playback, simply press the stop button.
If you want to stop the streaming server of DVBViewer TE, you have to uncheck the "Multicast" option in "View" menu.



Figure 5.8: Main window "View" menu with enabled multicast option

Appendix A: Additional information

Technical support / contact:

Germany

Postal address:

TechniSat Digital GmbH
Julius-Saxler-Strasse 3
D-54550 Daun
Germany

Homepage:

<http://www.technisat.de>

Support hotline (german only):

mo-fr from 8:00h to 19:00h

0180-5005910 (0,12 EUR / min)*

Remaining time

0190-151576 (0,62 EUR / min)*

(* conventional german telephone network)

Support email:

service@technisat.de

International

Postal address:

TechniSat Data Services S.A.
11, rue Pierre Werner
L-6832 Betzdorf
Luxembourg

Homepage:

<http://www.technisat.com>

Support email:

support@technisat.com

Appendix B: TechniSat remote control and keyboard commands

TechniSat TS35

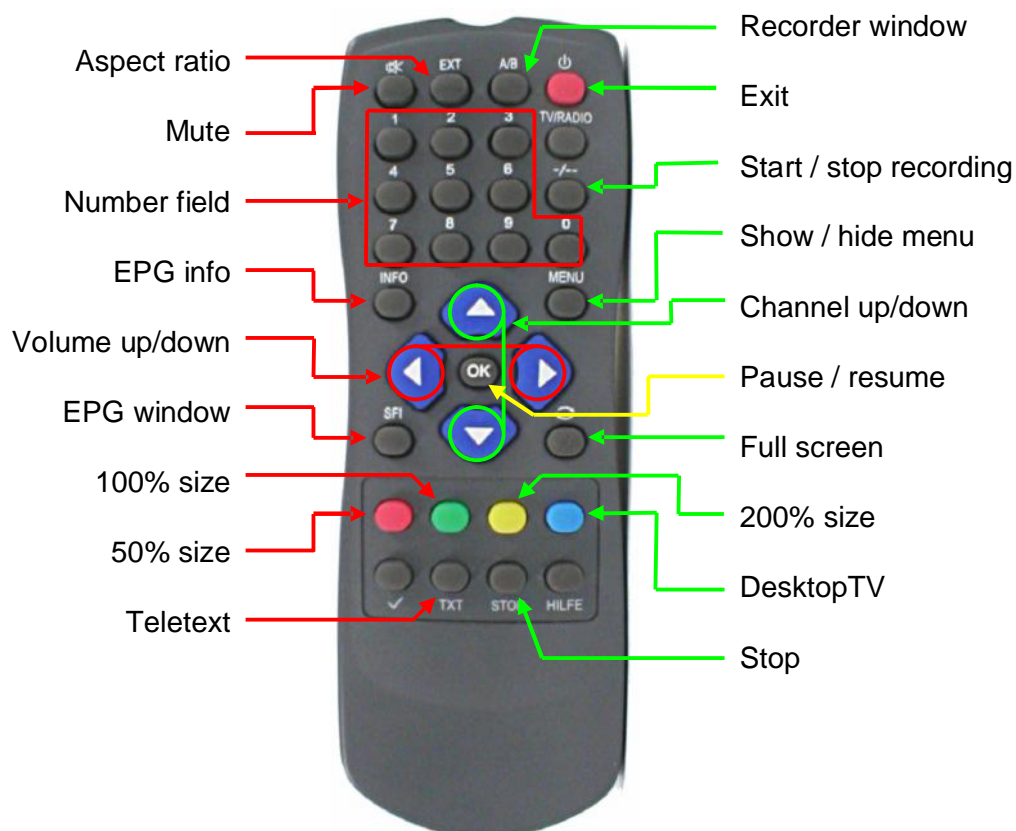


Figure B.1: TechniSat remote control T35 (default configuration)

TechniSat TTS35AI

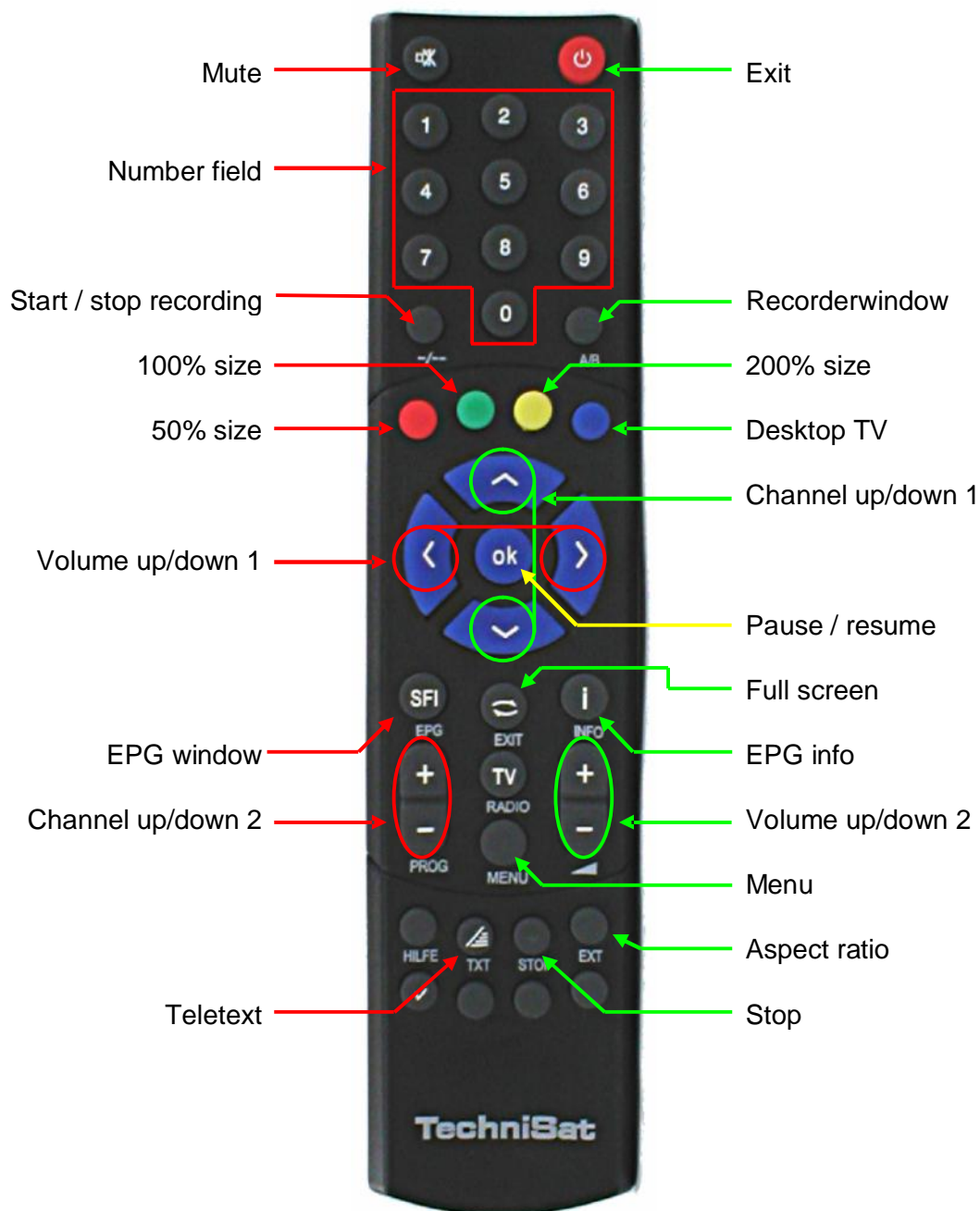


Figure B.2: TechniSat remote control TS35AI (default configuration)

Keyboard commands

Assigned short keys (default settings):

Pause / resume	P	Change TV/Video	F9
Always On Top	F1	Show Subtitle	F10
Hide Menu	F2	Plus 10 sec.	-
Show Statusbar	F3	Minus 10 sec.	+
Show Toolbar	F4		
Fullscreen	F	Number 0	0
Exit	ESC	Number 1	1
		Number 2	2
Channel list	C	Number 3	3
Channel Minus	DOWN ARROW	Number 4	4
Channel Plus	UP ARROW	Number 5	5
Save Channel	CTRL + S	Number 6	6
Station Minus	PgDown	Number 7	7
Station Plus	PgDup	Number 8	8
		Number 9	9
Aspect Ratio	V		
Zoom	Z	Favorite 1	SHIFT + 1
Options	O	Favorite 2	SHIFT + 2
		Favorite 3	SHIFT + 3
Mute	M	Favorite 4	SHIFT + 4
Volume Up	RIGHT ARROW	Favorite 5	SHIFT + 5
Volume Down	LEFT ARROW	Favorite 6	SHIFT + 6
		Favorite 7	SHIFT + 7
Display	D	Favorite 8	SHIFT + 8
50% size	F5	Favorite 9	SHIFT + 9
100% size	F6	Favorite 0	SHIFT + 0
200% size	F7		
Desktop TV	F8		
Record settings	S		
Record video/audio	R		
Teletext	T		
Mini EPG	I		
EPG Window	E		

Appendix C: Glossary

Band	Part of the radio spectrum occupied by a signal.
BER	Bit Error Rate
Carrier Frequency	Electromagnetic radiation that is modified to represent broadcast information for transfer across distances. See Modulation and Demodulation.
Converter	The device in the satellite dish, which amplifies the radiation from the satellite and converts it to an intermediate frequency (from 950 to 2,150 MHz), before the signal reaches coaxial cable that connects the antenna to the receiver Also-called Universal converter can receive signal from most European satellites.
DBW	Value in decibels of the signal broadcast by the transponder at the center of its footprint. The higher the value, the smaller the dish can receive the signal.
Decibel (dB)	Logarithmic measurement used to indicate increase or decrease in signal quality.
Demodulation	The reconstruction of original signal from radiation that has reached the end user's reception equipment. This commonly occurs at the tuner. See Modulation.
Digital	Broadcasting system based on the mapping of images and sounds to binary data formats. In Europe, the DVB standard is used.
DiSEqC	Device that connects the receiver and other equipment in a satellite receiving system, using coaxial cable to transmit signals to each component.
Dish	The satellite antenna. It is a parabolic surface which reflects the received signal towards the converter. The larger the dish, the better the signal quality.
Down-link	Signal path from satellite transponder to Earth.
DSR (Digital Satellite Radio)	Digital audio broadcasting system used by some German channels. It requires a special receiver.
Dualband	Converter, which is able to receive two different frequency bands at the same time.
Dualpole	"Marconi" converter, which receives both polarities (horizontal and vertical). Users select polarities by means of a voltage change (13 / 18 Volt).

DVB (Digital Video Broadcasting)	The digital broadcasting standard for Europe, based on MPEG-2. Developed by an international consortium, it is available in three flavors: DVB-S for satellite, DVB-C for cable TV and DVB-T for terrestrial.
Encryption	Scheme for scrambling subscriber television or radio.
EPG (Electronic Program Guide)	An on-screen listing that let digital television watchers see such information as time, channel, and content for current and upcoming programs.
FEC (Forward Error Correction)	Bits added to the transmitted data to check transmission errors and allow their correction at user's side. It is written as a fraction: the lower the value (e.g. 2/3 instead of 5/6), the higher the percentage of extra transmitted bits.
Feed	Antenna dish component, which aims the signal reflected by the dish towards the LNB.
Footprint	The area covered by the satellite or transponder signal.
GEO	Geo-stationary Earth Orbit, 36,000 km above the equator. Satellites at this altitude have the same angular rotation velocity as the Earth, meaning their signal can be received continuously at fixed points on the ground.
Geo-stationary Orbit	See GEO.
HDTV	High Definition Television
Intermediate frequency	Frequency band originated from LNB that the receiver can tune. The typical band is 950 - 2,150 MHz.
ISP	Internet Service Provider.
LNB (Low Noise Block converter)	See Converter.
Local Oscillator	Converter component, which shifts the converter received frequency (from 11,000 to 13,000 MHz) to the intermediate frequency band.
MAC	Media Access Control. An addressing scheme for data.
Modulation	The process by which electromagnetic radiation is modified to represent digital or analog input for transfer across distances. In modulation, electromagnetic waves are typically altered as to phase and other characteristics, according to the type of information they convey.

MPEG-2	Digital data compression format, which uses powerful algorithms to greatly reduce the size of final data. Developed by an international research group (the Motion Picture Expert Group-MPEG) it is the system used to compress the digital data for the DVB signals.
Multi-feed	Two or more converters positioned on the same fixed antenna dish to get signals from two or more satellites whose orbital positions are sufficiently close to each other.
Oscillator	See Local Oscillator.
PID (Packet Identification Code)	A code assigned to a unit of data before it leaves the transmitter, based on such particulars as the program of which the data is apart, and the type of data, e.g., audio, video. The term 'PID' is also used to refer to the unit of data itself. A typical channel comprises several PIDs.
Polarization	Characteristic behavior of the electromagnetic waves. In satellite transmission the polarization can be horizontal or vertical.
Polarizer	Device on end-user equipment, which separates vertically and horizontally polarized waves.
QPSK, QAM	Modulation schemes for satellite and cable TV, respectively. See Modulation and Demodulation.
Sampling	Conversion of analogue signal to numeric data, measuring an electric signal at a predefined pace.
Satellite Chart	A free, public source of information about each orbiting satellite, its channels, polarities, symbol rates, and the like. SatcoDX is an example of an organization that maintains such a chart.
Satellite Database	The database of channels that ships with SkyStar PCI. The factory database includes channels from the Astra satellite, and maybe modified at anytime using Channel Management or by performing a Scan.
Satellite List	The list of satellites available from the satellite database.
SDTV	Standard Definition Television
Symbol	Describes radiation that has been modified to represent digital information. Symbol characteristics such as phase represent particular configurations of binary data. A Carrier Frequency is manipulated into symbol. See also Modulation and Demodulation.
Symbol Rate	The speed at which the satellite sends symbol, or data, expressed in symbols per second. Different modulation schemes use different symbol rates.

Transponder	Device on the satellite, which can receive terrestrial input and transmit it back to the Earth in the form of a broadcast. Each transponder typically handles several channels.
Universal LNB	A converter equipped with two local oscillators. The Low Band one is at 9,750 MHz; the High Band one is at 10,600 MHz. Using this LNB the maximum frequency in Ku band (12,750 MHz) is shifted to 2,150 MHz.
Up-link	Signal path from the Earth to the satellite transponder.