

Manual Software Release 4

Call Recording Solution
ISDN Test and Measurement Equipment

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1 Introduction

1.1 Welcome

Thank you for choosing an EyeSDN USB recording device. In this manual you can find information about the software installation process and the usage of the devices.

1.2 Device Package

In Table 1 all items are listed, which are part of an EyeSDN USB device package. If any of the mentioned items are missing, please contact your dealer or the manufacturer directly.

Device Package	Call Re-corder	ISDN Cable	Analogue Cable	USB Cable	Software CD
EyeSDN USB-S0	1	1	0	1	1
EyeSDN USB-4S	1	4 + Y-adapters	0	1	1
EyeSDN USB-4SBx	1	4	0	1	1
EyeSDN USB-E1	1	1	0	1	1
EyeSDN USB-A2	1	0	2	1	1
EyeSDN USB-A8/ EyeSDN USB-A8Bx	1	0	4 Y-cables	1	1

Table 1: Scope of supply

1.3 System Requirements

Please note that operation under different preconditions is not guaranteed.

Attribute	Required	Note
Operating Systems	Windows [®] 2000, Windows [®] XP, Windows Server [®] 2003, Windows Vista [®] , Windows 7 [®]	
Processor	At least 500 MHz	EyeSDN USB-S0/-4S/-4SBx EyeSDN USB-A2/-A8/-A8Bx
Processor	At least 2 GHz	Only EyeSDN USB-E1
Drive Space	At least 5 – 170 MB	
Ports	USB port per device	Hub possible (except for EyeSDN USB-E1 devices)
Drive	CD drive for software CD	
Sound Card	Yes	
Audio Player	Yes	MediaPlayer if saving in MP3 or GSM formats

Table 2: System Requirements

1.4 Safety Advice

Please read the manual first and keep it at hand for future reference.

Device usage	<ul style="list-style-type: none">■ Do not place the device on an unstable surface, stand or table. The device may fall, possibly damaging it seriously.■ Do not use the device near water.
Cleaning	<ul style="list-style-type: none">■ Unplug the device from both the ISDN Bus and the computer before cleaning it.■ Never clean it using solvents or detergents.■ Only use a damp cloth for cleaning the device.
Malfunction	<ul style="list-style-type: none">■ Opening the device may expose you to dangerous voltages or other risks. Therefore, do not attempt to service the device yourself, except for those instances described in the manual.■ Unplug the device and contact qualified service personnel if:<ol style="list-style-type: none">a. liquid has been spilled on it or it has been exposed to rain or water.b. it has been dropped or the housing has been damaged.c. it does not operate normally although the operating instructions were followed.



Attention!

In many countries it is illegal to record calls without the consent of all or some participants.

If you are uncertain which laws apply in your area, please check the local legislation or consult a lawyer.

2 System Architecture

This chapter gives a survey of functions and interactions of the particular programmes of the EyeSDN USB software version 4. Thus it is addressed to system administrators and decision makers, who must be informed about the software's features in detail.

Various software use cases

- **Single-user installation**
The PC, which the recording devices are connected to, is used for operation too. All software components are installed on this PC only.
- **Client/server installation**
If the PC used for recording is located in a server room, then it is desirable to control the software from the user's workstation. In this case the server programmes are installed on the recording server machine and the user programmes on the user's workstation.
- **Distributed installation**
Central storage of recordings from telephone lines, which are located at different sites (different branches or part of the building). The server programmes are installed on the recording server machines and a central storage server. The recorded data is transferred to the central storage periodically.

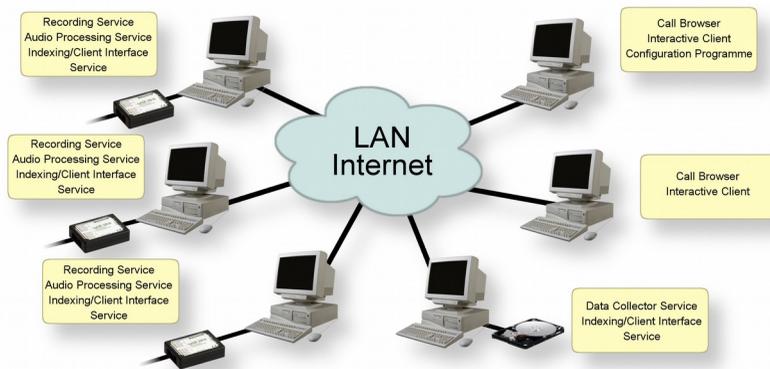


Figure 1: Example for Installation; Distributed Installation

Interaction of Software Components

All server programmes run as a service under Windows®. The user programmes are graphical .Net 2.0 applications.

Server Programmes	
Recording Service (recS)	controls the recording devices
Audio Processing Service (apS)	comprises audio files or converts fax data
Indexing and Client Interface Service (ICIS)	indexes the data and offers an interface for the access of the user programmes to the recordings
Collector Service (colS)	collects all data of the recording devices distributed in the network and stores them centrally.
User Programmes	
Call Browser	the main program for finding and replaying recording data
Interactive Client	facilitates listening in current calls and manual recording and shows the status of lines
Configuration Programme	
Recording Service Configuration	graphical interface for setting recording parameters

Processing Procedure

When call starts on one of the monitored phone lines the *recording service* (recS) will create a new recording depending on the settings and filter rules. The audio file contains all information related to the call being recorded in its file name. The file is not compressed yet. If encryption is selected the file will be encrypted.

After the call has finished and if a compressed audio format has been selected the file will be opened by the *audio processing service* (apS). The apS will create a compressed copy of the audio file. If audio compression succeeded the original file will be deleted. After successful compression the file will be moved to the input folder for indexing.

If the *index and client interface service* (iciS) detects a new file in its input folder it will obtain the call relevant information from the file name and create a database entry for it. Then the file is moved to the managed storage. Client programmes like CallBrowser communicate with iciS using structured query language (SQL) to receive information about recorded calls.

If calls recorded at different sites should be centrally stored the *collector service* (colS) will periodically poll the sites and receive the recordings from these sites via the network. After transmission the files are deleted in the remote recorder. For the local machine operating the central storage the colS behaves like a special recording service.

A user of the call recording solution can access calls from a PC connected to the same network as the recording server. The client programmes can also be run on the same machine as the recorder. The main client application, *CallBrowser*, communicated with iciS via SQL and displays the result of the database queries in a table. The actual recordings stay on the recording server, only information about the recordings is exchanged. However, when a file is selected for playback or archiving it will be retrieved from the recording server.

To monitor the activity of the phone lines in real time and to listen to calls in progress the *Interactive Client* can be used. This programme can also be used to manually create client side recordings.

3 Software Installation

The configuration of the devices is performed by the provided software only.

Recommendation	<p>Please install the software before you attach the device to the computer in order to get following benefits:</p> <ul style="list-style-type: none">■ devices are detected automatically,■ devices are enumerated. <p>Execute the installation procedure after business hours or at weekend, since calls may be dropped because of telephone line disconnection</p>
 Hint	<p>The EyeSDN USB devices are initialized by a firmware download every time you start your computer. This process may take up to a minute.</p>
Installation	<ul style="list-style-type: none">▶ Start your computer.▶ Insert the software CD into the CD drive.✓ The dialogue window <i>EyeSDN USB Software Installation</i> opens (see figure 2).
 Hint	<p>If the programme has not been started after a short while, run the installation programme manually:</p> <ul style="list-style-type: none">▶ Open the folder for the CD drive▶ Double-click the programme icon <i>Banner.exe</i>.



Figure 2: Dialogue "EyeSDN USB Software Installation"

- ▶ Click on *EyeSDN USB Version 4*
- ✓ A dialogue window for selecting a language opens.
- ▶ Select the desired language of the installation and click *OK*.
- ✓ The installation assistant for EyeSDN USB 4 opens (see figure 3)



Figure 3: Installation Assistant EyeSDN USB 4

- ▶ Click *Next*
- ✓ The next dialogue asks for a choice of the components to be installed (figure 4).

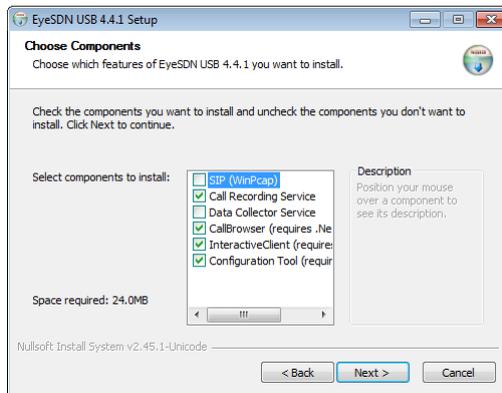


Figure 4: Selection of EyeSDN USB4 Components

- ▶ Select the desired components.
- ▶ Click *Next*
- ✔ In the next dialogue the destination folder for the installation is requested (figure 5).

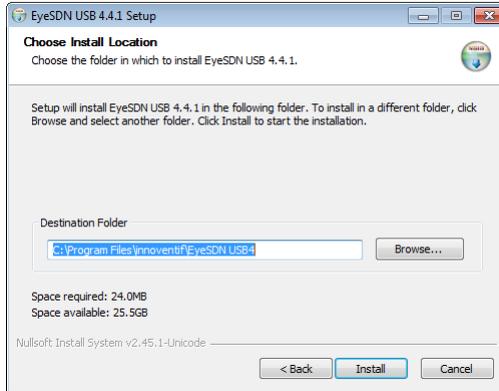


Figure 5: Providing a Destination Folder

- ▶ Change the destination folder if necessary.
- ▶ Click *Install*.
- ▶ Follow all further instructions of the assistant.

Uninstall

- ▶ Click on *Start / All Programs / EyeSDN USB4 / Uninstall*.



Hint

- If you have installed the programmes Wireshark or Goldwave, then you must uninstall them separately.
- ▶ Click on *Start / Control Panel / Uninstall a program*.

3.1 Convert Release 3 call recordings

The recorded data of software release 4 are stored in a format other than Software Release 3. After upgrading the recording software from Release 3 to Release 4, recordings that were created with the version 3.XX are no longer displayed. These files can be converted for further use in the new format.



Figure 6: Conversion Tool

convert

- ▶ Click on *Start / All Programs/ EyeSDN USB4 / Conversations Tool*
- ▶ Choose first the folder in which the recordings with the new format be stored.
- ▶ Choose then the storage folder of your Release 3 call recordings.
- ✓ The successful process of convert will be confirmed.
- ▶ Then you can repeat this process or click the “x”-button to finish.

4 Hardware Installation

4.1 EyeSDN USB-S0



Figure 7: EyeSDN USB-S0 Device Overview

Connecting to the Computer

- ▶ Attach one end of the USB cable supplied to an unused USB socket on your computer and the other end to the EyeSDN USB-S0.

When the attached hardware was detected, further S0 devices can be connected.



Hint

Alternatively, if your computer does not have a free USB port, you can use an USB hub.

 Attention!	<i>Please note that you may not be able to receive calls while you perform following steps.</i>
Connecting to the ISDN Bus	Please use an RJ45 Western Modular socket (see also on page 85)
 Hint	No additional ISDN bus distributor is required.
Installation	<ul style="list-style-type: none"> ▶ Disconnect the ISDN cable from your TE¹ device (usually your telephone). ▶ and connect it to either of the EyeSDN USB-S0's RJ45 sockets. ▶ Then use the supplied ISDN cable to connect the other RJ45 socket to your telephone. ▶ Lift the receiver of the telephone: If you can hear a dial tone, everything has been installed properly.

Meaning of the Light Emitting Diodes

There are four bi-coloured Light Emitting Diodes (LED) at the EyeSDN USB-S0 devices.

LED	Off	Red	Yellow	Green
TE/B2	no TE Signal	TE Polarity Error	TE Signal OK	B2 active
NT/B1	no NT Signal	NT Polarity Error	NT Signal OK	B1 active
Layer 1	no Layer 1	Layer 1 active	USB transfer	Layer 2 active
Power	Device not connected or USB driver not loaded	Blinking: no ISDN power Constant light: firmware download	Emergency Power	ISDN powered

Table 3: LED Indicators EyeSDN USB-S0

¹ Terminal Endpoint

4.2 EyeSDN USB-E1



Figure 8: EyeSDN USB-E1 Device Overview

<p>Connecting to the Computer</p>	<p>▶ Attach one end of the USB cable supplied to an unused USB socket on your computer and the other end to the EyeSDN USB-E1.</p> <p>When the attached hardware was detected, further E1 devices can be connected.</p>
<p>i Hint</p>	<p>Please note that you should not use an USB hub with the EyeSDN USB-E1. Instead connect the device to an USB port of your computer directly.</p>
<p>Connecting to the ISDN Line</p>	<p>Please use an RJ45 Western Modular socket (see also on page 85).</p>
<p>i Hint</p>	<p>No additional ISDN bus distributor is required.</p> <p>If your system still uses asymmetrical cabling with 2 coaxial cables with 75 Ohm characteristic impedance, you will require two T-junctions and an adaptor (coaxial to RJ45). These components are available as accessories.</p>

Installation without Using a Patch Panel	<ul style="list-style-type: none"> ▶ Disconnect the ISDN cable from the TE² (usually the telephone system). ▶ Attach the ISDN cable to one of the EyeSDN USB-E1's two RJ45 ports. ▶ Connect the other RJ45 port with the TE (use the delivered patch cable).
 Hint	<p>The protocol resynchronization may take up to 15 minutes. The cabling is correct, if both the LED „NT-Signal“ and „TE-Signal“ on the EyeSDN USB-E1 device show a correct G.704 framing.</p>

Meaning of the Light Emitting Diodes

There are four bi-coloured Light Emitting Diodes (LED) at the EyeSDN USB-E1 devices.

LED	Off	Red	Yellow	Green
USB	no power	USB Error	USB active	Software active
State Layer 1,2,3	no Layer 1	Layer 1 active	Layer 2 active	Layer 3 active
NT Signal	not active	no Signal	NT Signal present	G.704 Signal
TE Signal	not active	no Signal	TE Signal present	G.704 Signal

Table 4: LED Indicators of EyeSDN USB-E1

The Layers

Layer 1 active (State LED red)

- A functioning connection to the nearest switching centre has been established. Both communication end-points send a correct signal and are synchronized.

Layer 2 active (State LED yellow)

- An exchange of data packets is taking place through this connection and the line is available for use.

Layer 3 active (State LED green)

- At least one telephone call is currently active on this line.



Attention!

*LED „Layer 1, 2, 3“ is not lighting:
There is cabling or synchronization problem.*

4.3 EyeSDN USB-4S

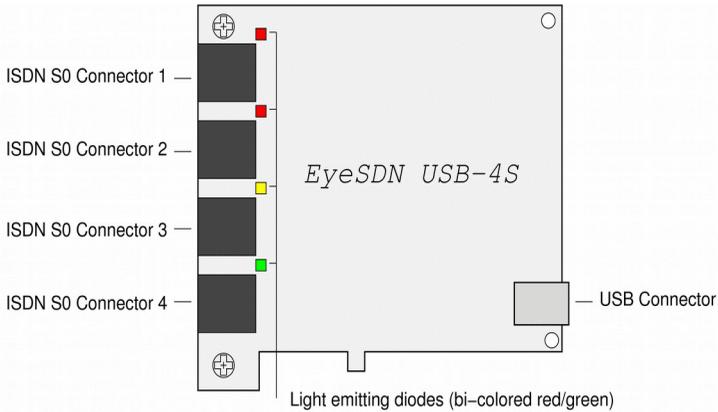


Figure 9: EyeSDN USB-4S Device Overview

Connecting to the Computer

- ▶ Attach the supplied USB cable to then USB socket type A of the EyeSDN USB-4S board and to your mainboards internal USB socket (see for more information on page 86).

When the attached hardware was detected, further 4S devices can be connected.

Connecting to the ISDN Bus

Please use RJ45 Western Modular sockets. You can connect either of the four RJ45 sockets to a different ISDN S0 line using the external Y-adaptors.

Installation without Using a Patch Panel

- ▶ Connect a Y-Adaptor to one of the four RJ45 socket of the EyeSDN USB-4S/-4SBx device.
- ▶ Disconnect the ISDN cable from your TE³ device (usually your telephone).
- ▶ Attach the free end of this ISDN cable to either of the two Y-Adaptors RJ45 sockets.
- ▶ Use the supplied ISDN cable to connect the other Y-Adaptors RJ45 socket to your telephone.
- ▶ Lift the receiver of the telephone: If you can hear a dial tone, everything has been installed properly.
- ▶ Repeat these steps when connecting another RJ45 socket of the EyeSDN USB-4S device with a different ISDN line.

Meaning of the Light Emitting Diodes

There are four bi-coloured Light Emitting Diodes (LED) at the EyeSDN USB-4S devices. Either of these LEDs shows the state of one ISDN S0 line.

LED	State Indicator
Red blinking	Device not active
Green blinking	ISDN Power, USB Bus active
Red constant light	Layer 1 active
Yellow constant light	Layer 2 active
Green constant light	Layer 3 active, channel in use

Table 5: LED Indicators of EyeSDN USB-4S

4.4 EyeSDN USB-4SBx

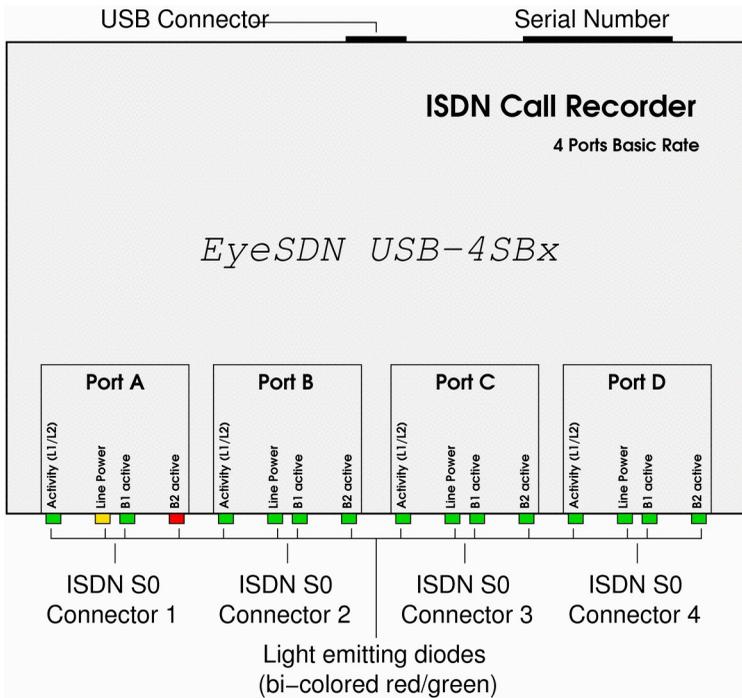


Figure 10: EyeSDN USB-4SBx Device Overview

Connecting to the Computer

- Attach one end of the USB cable supplied to an unused USB socket on your computer and the other end to the EyeSDN USB-4SBx.

When the attached hardware was detected, further 4SBx devices can be connected.

Connecting to the ISDN Bus	Please use RJ45 Western Modular sockets (see also on page 85). You can connect either of the four RJ45 sockets to a different ISDN S0 line.
 Hint	No additional ISDN bus distributor is required.
Installation without Using a Patch Panel	<ul style="list-style-type: none"> ▶ Disconnect the ISDN cable from your TE1 device (usually your telephone). ▶ Attach the free end of this ISDN cable to either of the two RJ45 sockets of a EyeSDN USB 4SBx port. ▶ Use the supplied ISDN cable to connect the other RJ45 socket of the same EyeSDN USB 4SBx port to your telephone. ▶ Lift the receiver of the telephone: If you can hear a dial tone, everything has been installed properly. ▶ Repeat these steps when connecting another port of the EyeSDN USB-4SBx device with a different ISDN line.

Meaning of the Light Emitting Diodes

There are four bi-coloured Light Emitting Diodes (LED) per port at the EyeSDN USB-4SBx devices.

LED	Off	Red	Yellow	Green
Activity (L1/L2)	Device not connected or USB driver not loaded	Blinking: no Layer 1 Constant light: USB Transfer, but no Layer 1	Red/Yellow blinking: Layer 1 active, but no USB Transfer Constant light: Layer 1 active	Layer 2 active
Power	no ISDN Power	Emergency Power		ISDN powered
B1 active	no NT Signal	NT Polarity Error	NT Signal OK	B1 active
B2 active	no TE Signal	TE Polarity Error	TE Signal OK	B2 active

Table 6: LED Indicators of EyeSDN USB-4SBx

4.5 EyeSDN USB-A2

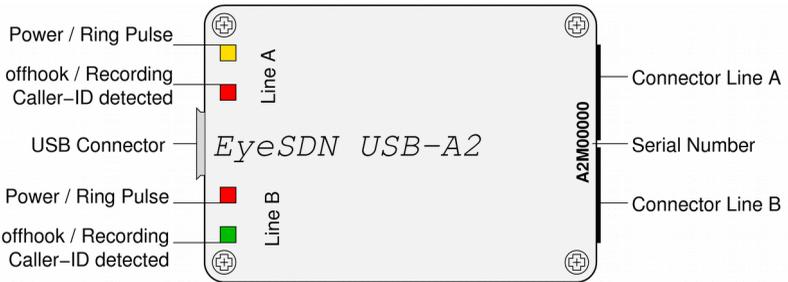


Figure 11: EyeSDN USB-A2 Device Overview

Connecting to the Computer

- ▶ Attach one end of the USB cable supplied to an unused USB socket on your computer and the other end to the EyeSDN USB- A2.

When the attached hardware was detected, further A2 devices can be connected.

Hint

Alternatively, if your computer does not have a free USB port, you can use an USB hub.

Connecting to an analogue Line

Please use RJ11 Western Modular sockets (see for more information on page 87).

Installation

- ▶ Use the supplied cables to connect the device to the telephone lines.
- ▶ PIN 3 (Tip a) and PIN 4 (Ring b) of the RJ11 are used to connect.
- ▶ Each RJ11 Western Modular Socket at the device can be use to monitor one analogue phone line.

Attention!

Connectors for analogue telephone lines vary from country to country, Please contact your local dealer or the manufacturer, if your accidentally got cables, which cannot be used in your country.

Meaning of the Light Emitting Diodes

There are two bi-coloured Light Emitting Diodes (LED) per socket.

LED	Red	Yellow	Green
Line A/B: Power / Ring Pulse	no Line Power	Ring Pulse present	operational
Line A/B: Caller-ID detected / offhook / Recording	Caller-ID detected	off-hook	Recording of Calls

Table 7: LED Indicators of EyeSDN USB-A2

4.6 EyeSDN USB-A8/-A8Bx

Device	Case	USB	Analogue	LED
EyeSDN USB-A8	installed inside a computer, no case	USB connector Type A mainboard socket	8 lines	4
EyeSDN USB-A8Bx	External device with black case	USB socket Type B standard USB cable	8 lines	4

Table 8: Overview EyeSDN USB-A8 and EyeSDN USB-A8Bx

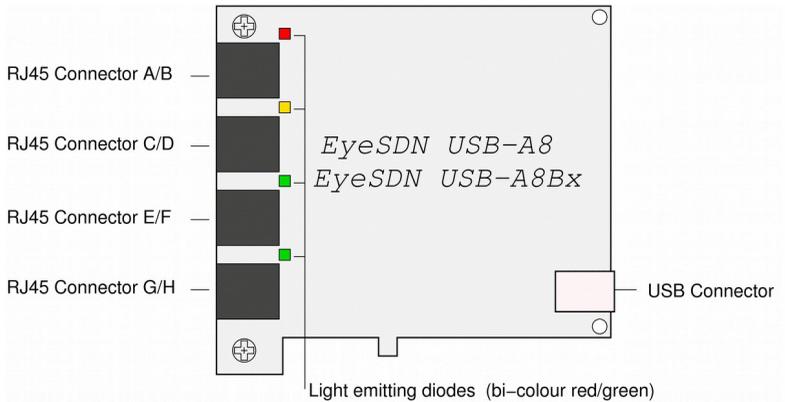


Figure 12: EyeSDN USB-A8/-A8Bx Device Overview

- | | |
|--|---|
| Connecting to the Computer | <ul style="list-style-type: none"> ▶ Attach one end of the USB cable supplied to an unused USB socket on your computer and the other end to the EyeSDN USB- A8/ -A8Bx. <p>When the attached hardware was detected, further A8/A8Bx devices can be connected.</p> |
| Connecting to the analogue Line | <ul style="list-style-type: none"> ▶ Please use the supplied analogue cable (see for more information on page 87). Attach the RJ45 Western Modular connector to the RJ45 socket of the EyeSDN USB-A8/ -A8Bx device. ▶ Attach either of the two RJ11 connectors to a different telephone line. |

Meaning of the Light Emitting Diodes



Hint

One Light Emitting Diode is shared for two telephone lines. Therefore the state information is indicated sequentially:

- LED flashing RED followed by state indicator for line A.
- short delay.
- LED flashing GREEN followed by state indicator for line B.

Line State LED	Line A/ Red Flashing	Line B/ Green Flashing
off	No line power	No line power
Red	Line is powered, on-hook	Line is powered, on-hook
Red/Yellow changing	Ring Pulse detected	Ring Pulse detected
Red/Green changing	Caller-ID detected	Caller-ID detected
Yellow	off-hook	off-hook
Green	Recording of Calls	Recording of Calls

Table 9: LED Indicators of EyeSDN USB-A8/A8Bx

5 The Recording Software

5.1 Use Cases of the Recording Software

The Recording Software consists of three parts.

Call Browser	<ul style="list-style-type: none">■ Automatic recording and archiving of telephone calls.■ Archiving of data according to arbitrary selection criteria.■ Management and playback of recorded data.■ Selection and analysis of recorded data according to user-defined criteria.■ Archiving , analysis and decoding of D and B channel protocol data.
Interactive Client	<ul style="list-style-type: none">■ Monitoring of ongoing telephone calls.■ Manual recording of arbitrary sequences of ongoing telephone calls.
Service Configuration	<ul style="list-style-type: none">■ Changing global settings of the Call Recording Service.■ Configuration of Call Recording devices■ Configuration of the Collector Service

5.2 The Call Browser

5.2.1 Overview

The recorded telephone calls and data traffic are presented in tabular form and is refreshed periodically.

Launching the Call Browser

- ▶ Double-click the desktop icon *Call Browser*
- or**
- ▶ *Start / All Programs / EyeSDN USB4 / Call Browser.*
- ✔ The Call Browser Login dialogue window opens (see figure 13).

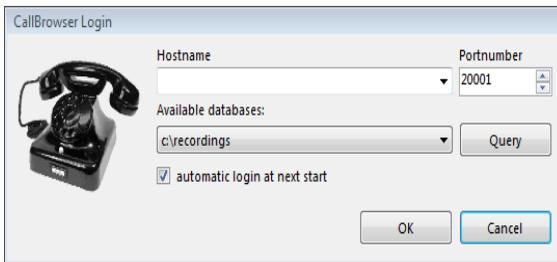


Figure 13: Dialogue "Call Browser Login"

- ▶ In the field *Hostname* enter the host name or IP address of the machine, where the Indexing Service runs on.
- ▶ Adjust the *Portnumber*, if you have modified the TCP Port Number of the Recording Service (see chapter 5.4.1.3)

i Hint

The Recording Service and the Indexing Service use two consecutive TCP port numbers. The Indexing Service allocates higher one.

- ▶ Click *Query* in order to get all available databases.
- ▶ Select the desired database from the list of *Available databases*.
- ▶ Tick the box *automatic login at next start*, if you want to login into the same database without filling in the login dialogue again when starting the Call Browser the next time.
- ▶ Click *OK*.
- ✔ The Call Browser window opens (see figure 14).

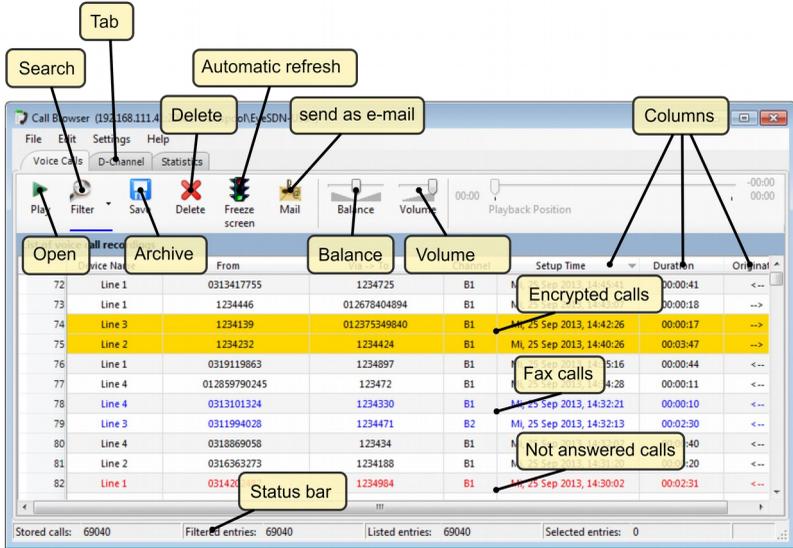


Figure 14: Dialogue "Call Browser"

Status Bar

If you disable the automatic update of information, the information in the status bar might be out-of-date. In this case, perform a refresh operation first (see chapter 5.2.2).

Status Bar	Meaning
Stored calls	number of stored calls in table <i>Voice Calls</i>
Filtered entries	number of calls selected by a filter
Listed entries	number of calls in the current display list
Selected entries	number of selected calls in the display list

Table 10: Fields of the Status Bar

Voice Calls Tab

By default the call related data of the recorded audio calls is sorted by date and time. Each line contains the call related data of one recorded call.

Column	Meaning
Device	EyeSDN USB device's name or number
From	Number of caller
Via / To	Number of callee
Channel	Used channel
Teleservice	ISDN service/bearer type
Setup Time	Date and time of the call
Duration	Length of call
Origination	Inbound call (←) Outbound call (→)

Table 11: Meaning of Columns of List of recorded Calls

Changing the Order of List Entries

- ▶ Click on the head of the column representing the criteria according to which the data should be sorted
- ▶ Click on the white arrow right to the heading.
- ✓ If the arrowhead is pointing upwards, then data is sorted ascending – otherwise descending.

Coloured marked Entries

Yellow Back-ground	The lines representing encrypted calls.
Red font colour	Incoming and outgoing calls, which have not been answered. The field “Duration” shows the ringing duration.
Blue font colour	Incoming and outgoing fax files. A fax number must be configured in order to show fax files.

Context Menu

The Call Browser context menu appears when you right-click on a call.

Open selected files	Plays a selected recording of a phone call. See chapter 5.2.4 for more information.
Edit selected call information	You can assign names to the party numbers of the selected recording or write a comment for the phone call. See chapter ??? for more information.
Archive selected files	Selected recordings are written to the local disk. See chapter 5.2.5 for more information.
Delete selected files	Deleted recordings are deleted from the server. See chapter 5.2.6 for more information.
Show Fax as PDF	To display a FAX call as a PDF file, you can just click play if the call has been identified (displayed in blue) as a FAX transmission by either a prefilter-rule or its ISDN bearer capability. A prefilter rule can tell the software which phone numbers belong to a fax machine. For more information, see Fax-to-PDF settings on page 74. If the audio file has not been subject to audio compression then you can also select “Show as FAX” from the Call Browser context menu.
Show conversation history	Choose a phone call for which you want to display the conversation history. Click in the context menu on "show conversation history". It creates a filtered view of recorded calls, which includes all calls between the same two parties. The created rule can be displayed by clicking on  and can be manually modified if desired. If you want to view all calls again, you can delete the filter expressions in the filter dialogue.

Export of voice recordings (CSV export)

The voice recording list can be exported with all line information in a spreadsheet program.

Export CSV	<ul style="list-style-type: none"> ■ All recorded calls in the list can be saved as csv file on File/ Export CSV. ■ You can configure the exported columns, the character set and the column delimiter according to the requirements of your spreadsheet program. ■ In addition to call number, time and duration of calls you will have further call information for your special evaluation.
 Hint	If you use a filter in your list, then only the current filter result can be exported.

D-Channel Tab

The EyeSDN Recording Service logs ISDN protocol data too. See chapter 5.2.9 for further information.

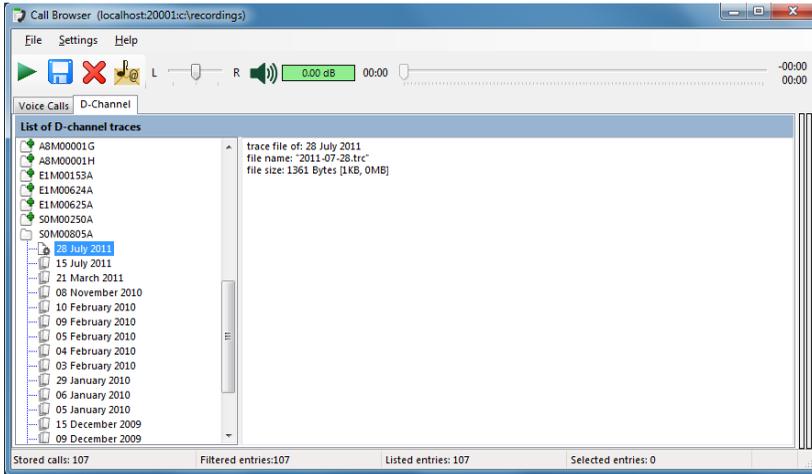


Figure 15: Tab "D channel"

5.2.2 Refresh of Voice Calls List

When the Call Browser is running the lists are updated whenever recorded data is added to the lists.

Action Button	 Start automatic refresh
Stopping or activating the automatic refresh	<ul style="list-style-type: none"> ▶ Toggle the state by clicking on the signal light. <p>If the signal light shows "green", then automatic refresh takes place. If the signal light shows "red", then automatic refresh is disabled (manual refresh is still possible).</p>

5.2.3 Send as e-mail

Action Button	 Send as e-mail
Sending	<ul style="list-style-type: none"> ▶ Select a recorded call from the list. ▶ Click the Action Button. ▶ Enter e-mail address, subject and text. ▶ Click on <i>Send</i> button.

5.2.4 Playback of Calls

By default the call playback uses the internal audio player.

Action Button	 Open selected files
Playback	<ul style="list-style-type: none"> ▶ Double-click the desired telephone call <li style="text-align: center;">or ▶ Select the call and click the <i>Play</i> action button <li style="text-align: center;">or ▶ Select the call and select the menu item <i>File / Open</i>. <p>In case of playing back an encrypted call a dialogue appears, which prompts to enter the pass phrase that should be used for decryption.</p> <ul style="list-style-type: none"> ▶ Enter the pass phrase. ▶ Click <i>Enter</i>.
Fax to PDF	If you have chosen a fax recording then it will open automatically a PDF Viewer (e.g. Acrobat Reader) and it will display the fax as a PDF file.

5.2.4.1 Internal Audio Player

The audio player can be operated via mouse clicks on action buttons.

Action Buttons	 Open selected files
	 Pause
	 Volume
Volume Control	<ul style="list-style-type: none"> ▶ Click in the green rectangle <i>0,00dB</i> right of the volume icon. ▶ Turn down: drag the mouse cursor to the left Turn up: drag to mouse cursor to the right
Balance Control	▶ Drag the slider left of the volume icon
Stop Playback	▶ Click on an arbitrary row of the <i>List of voice call recordings</i> .

5.2.4.2 External Audio Player

You can use an external audio player for voice call recording's playback.

Configuring the external player

- ▶ Select the menu entry *Settings / Audio Player*.
- ✔ The dialogue *Configure Audio Playback* opens.
- ▶ Check the option *specify path to audio player* (see figure 16).
- ▶ Enter the name of the players executable or the button right of the text field to browse for the player application.
- ▶ Confirm the input by clicking *OK*.

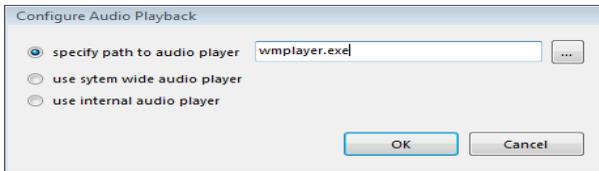


Figure 16: Dialogue "Configure Audio Playback"

5.2.4.3 Using the System Wide Audio Player

You can use the default audio player of your system for voice call recording's playback.

Configuring the exsystem wide player

- ▶ Select the menu entry *Settings / Audio Player*.
- ✔ The dialogue *Configure Audio Playback* opens.
- ▶ Check the option *use system wide audio player*.
- ▶ Confirm the input by clicking *OK*.

5.2.5 Archiving Calls

For permanent storage you must archive recorded calls manually. Calls are stored on hard disk by the recording software automatically, but you must delete them manually. Please use also external storage media like CD-R or DVD-R for archiving.

Action Button	 Archive selected files
Archive	<ul style="list-style-type: none"> ▶ Choose the desired calls. ▶ Click the action button <p style="text-align: center;">or</p> <ul style="list-style-type: none"> ▶ Select the menu entry <i>File / Archive</i>. ✓ The dialogue <i>Select storage location for archive</i> opens. ▶ Select the storage location and click <i>OK</i>.
 Note	If some of the recordings being archived are encrypted, then you can optionally decrypt them before they are saved.
 Note	Archived calls are not automatically removed from the <i>Voice Calls List</i> or the hard disk. Please delete them manually as described in chapter 5.2.6.

5.2.6 Erasing Calls

Action Button	 Delete selected files
	<ul style="list-style-type: none"> ▶ Choose the desired calls. ▶ Click the action button <p style="text-align: center;">or</p> <ul style="list-style-type: none"> ▶ Select the menu entry <i>File / Erase</i>.
 Hint	The data recorded by the Recording Service is stored on your PC's hard disk. Therefore it is expedient to delete unneeded data regularly.

5.2.7 Filtering Calls

By using the filter function, you can call up a list of only those calls that fulfil certain conditions.

Action Button	 Search Recordings
Filter	<ul style="list-style-type: none"> ▶ Click the action button <li style="text-align: center;">or ▶ Select the menu entry <i>Edit / Search</i>. ✓ The dialogue <i>Select</i> opens (see figure17) and an empty form for filter expression 1 appears.

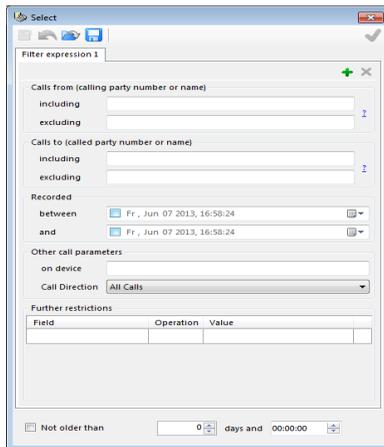


Figure 17: Dialogue "Select"

5.2.7.1 Creating Filter Rules

The voice calls list can be restricted by several filter conditions. A call is shown in the list only if all filter conditions are met. The particular filter conditions are described below.

You can create up to 10 filter expressions by clicking the plus sign in the first filter mask. The call list will display the sum of the calls matching each individual filter expression.



Hint

All entries within a single filter expression limit the selection of recorded calls. Inputs into multiple filter expressions can expand the range of conversations sought. Example: If you are looking for recorded calls with the extension numbers -10 and -11, you create the filter expression 1 with the number "10" and filter expression 2 with the number "11" in the appropriate field.

Calls from / Calls to

Specify in these fields, which call numbers should be displayed.

Call number entry	<ul style="list-style-type: none"> ▶ Enter the desired digit(s) in the field <i>including</i> respectively <i>excluding</i>. ▶ You can use place holders instead of digits, if you want to allow an arbitrary digit or sequence of digits at this position.
Place holder for one arbitrary digit	<p>– Underscore</p> <p>The underscore replaces exact one digit. It can be used multiple times.</p> <p>Example: 1_2</p> <p>Only those three-digit call numbers are listed that start with 1 and have the digit 2 at the third position. The second digit has no relevance.</p> <p>Example: 12345_</p> <p>All numbers within the range from 123450 to 123459 are listed.</p>
Place holder for a sequence of arbitrary digits	<p>% Per cent sign</p> <p>The per cent sign replaces one or more digits.</p> <p>Example: 1%2</p> <p>Only those numbers are listed that start with digit 1 and end with digit 2. The digit in between have no relevance.</p>

Recorded between / and

These fields restrict the period of listed recorded voice calls.

Date/time entry

- ▶ Activate the field *Recorded between* respectively *and* by clicking the check box (see figure 18).
- ▶ Manually enter the desired day, month, year and time as given by the template

or

- ▶ Activate the calendar by clicking the drop down list. Select the date using the mouse and enter the time using the keyboard.

The screenshot shows a 'Select' dialog box with the following fields and options:

- Filter expression 1**: Includes '+' and '-' icons.
- Calls from (calling party number or name)**: Includes 'including' and 'excluding' text boxes.
- Calls to (called party number or name)**: Includes 'including' and 'excluding' text boxes.
- Recorded**:
 - between: Fr, Jun 07 2013, 16:58:24
 - and: Fr, Jun 07 2013, 16:58:24
- Other call param**: Includes a calendar for 'Juni 2013' and a date picker set to '10'.
- Further restriction**: Includes a 'Field' section with a date 'Heute: 10.06.2013'.
- Not older than**: Not older than 0 days and 00:00:00

Figure 18: Rules for fixed periods of call recordings

Not older than

Using this field you can limit the maximum age of the listed calls.

Listed calls age entry

- ▶ Activate the field *Not older than* by clicking the check box (see figure 18).
- ▶ Set the desired number of days, hours, minutes and seconds.

On device

When using this field only those calls are listed that were recorded by the specified device.

Device selection

- ▶ Click in the field *on device*.
- ▶ Enter the desired device name (see *Voice Calls List*).

Call Direction

This field specifies the direction of the listed calls. By default both inbound and outbound calls are listed.

Call direction selection

- ▶ Choose the desired call direction from the drop down list *Call Direction*.

Additional Restrictions

Additional to the already described most important criteria all other database fields can be used to restrict the displayed call.

Set additional restrictions

- ▶ Choose the desired database field.
- ▶ Select the desired relational operator.
- ▶ Enter the criteria for the database field.

Activating the filter

-  Click the action button *Apply filter*. The dialog keeps open and you can make further entries.

Note

Already listed calls, which do not match the filter conditions, are hidden. Within the Call Browser window the *Voice Calls List* header has a red coloured background to indicate an active filter.

Adding filter expression

-  Filter expressions can be added by clicking on the [+] symbol.

Note

All entries within a single filter expression limit the selection of recorded calls. Inputs into multiple filter expressions can expand the range of conversations sought. Example: If you are looking for recorded calls with the extension numbers -10 and -11, you create the filter expression 1 with the number "10" and filter expression 2 with the number "11" in the appropriate field.

Removing filter expression

-  Filter expressions can be deleted by clicking on the [x] symbol. All tabs containing filter expressions except the first one can be deleted. To close the filter dialogue click the button, which is on the right top of this window.

5.2.7.2 Saving/Loading Filters

Filter rules can be saved and loaded later on.

Saving a filter

- ▶ Create your filter rule as described in chapter 5.2.7.1 without activating the filter.

 Click the action button *Export Filter*.

- ✔ The dialogue *Export Filter* opens (see figure 19)
- ▶ Select the desired storage location.
- ▶ Enter the file name.
- ▶ Click *Save*.

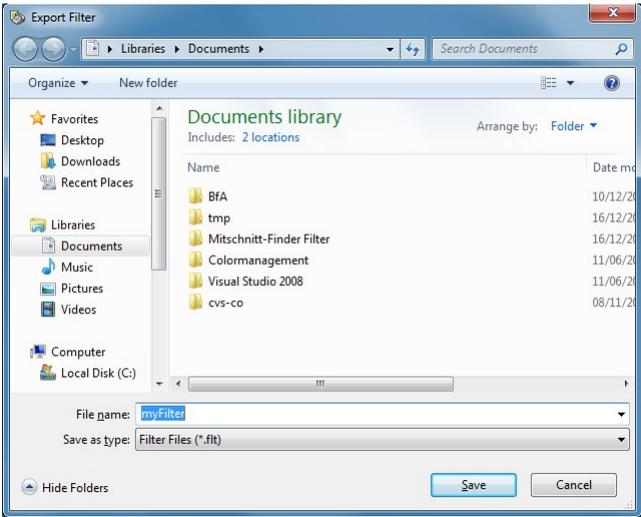


Figure 19: Dialogue „Export Filter“

<p>Loading a filter</p>	<p> Click the action button <i>Import Filter</i>.</p> <ul style="list-style-type: none"> ✓ The dialogue <i>Import Filter</i> opens. ▶ Select the desired filter. ▶ Click <i>Open</i>. ✓ The dialogue <i>Import Filter</i> closes. ✓ Click the action button <i>Apply Filter</i>. ✓ The loaded filter conditions are applied.
<p> Attention!</p>	<p><i>All calls are listed not until you deactivate the filter.</i></p>

5.2.8 Edit Call Information

You can extend the call related data by additional information. It is possible to assign a name to any of the party numbers. This name can be stored either for that specific call or in a user phone book. In the latter case the name will be assigned to the same phone numbers of all other call recordings.

Further you can add a comment to the call recording.

<p>Edit call information</p>	<ul style="list-style-type: none"> ▶ Select a phone call from the list. ▶ Click the menu item <i>Edit/Edit selected call information</i> or use the context menu entry <i>Edit selected call information</i>. ▶ Fill in the desired information. ▶ When you assign a name to a party number, then the appropriate field in the call recordings list will be updated. ▶ If the column “Comment” is not shown in the Call Browser, then you can add the missing column using the <i>Configure Columns</i> dialogue via the menu entry <i>Settings/Configure columns</i>.
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5.2.9 ISDN Analysis

ISDN analysis can help to identify misconfiguration, software errors or dialling problems, among other things. The recorded data is stored as a trace file.

Opening D channel traces

- ▶ Select the D-Channel tab.
- ✔ The List of D-channel traces contains daily traces for each connected device.
- ▶ Double-click the desired trace.
- ✔ The recorded trace files is decoded and displayed by Wireshark.

Show D channel

- ▶ Select the menu entry *Show D channel* in CallBrowser's settings menu
- ✔ The *D channel* tab disappears. A marked checkbox next to the menu entry shows the current display status. Please note that even if the tab is not shown, D-channel data will still recorded, but no longer displayed in the Call Browser.



Note

You can delete trace files, when you do not need them any longer.

5.2.10 Restricted User Interface

The mode “Restricted User Interface” allows you to limit the features provided by the Call Browser in order to make manipulations of the voice calls list or the device configuration impossible. Following feature are suppressed in this mode:

- Changing filter rules (currently active filter rules will remain operative)
- Archiving of calls
- Erasing of calls
- Device configuration

Locking the restricted user interface

- ▶ Select the menu entry *Settings / Restricted User Interface*
- ✓ A dialogue for defining the password to unlock the restricted user interface opens (see figure 20).
- ▶ Choose a password and enter it twice.
- ✓ The restricted user interface becomes effective and the corresponding features will be suppressed.

The screenshot shows a dialog box titled "Configure Restricted User Interface". It has the following components:

- Password section:** Two text input fields labeled "Enter Password" and "Repeat Password".
- Permissions during restricted user interface section:**
 - Voice Calls:** Open (checked), Archive (unchecked), Send as Mail (checked), Edit (unchecked), Erase (unchecked).
 - D-Channel:** Open (checked), Archive (unchecked), Send as Mail (checked), Erase (unchecked).
 - Settings:** Audio Player (checked), Configure Columns (checked), Devices (checked), Define main password (checked).
 - Other:** Export CSV (checked), Search (unchecked).
- Buttons:** "Defaults", "Restrict" (highlighted), and "Cancel".

Figure 20: Define the password to unlock the restricted user interface

Unlocking the restricted user interface

- ▶ Select the menu entry *Settings / Restricted User Interface*
- ✔ A dialogue with a request to enter the password to unlock the restricted user interface opens (see figure 21).
- ▶ Enter the password.
- ✔ The restricted user interface is deactivated and all feature of the Call Browser are available again.

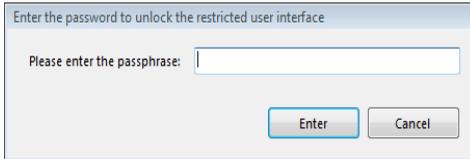


Figure 21: Request to enter a password to unlock the restricted user interface

5.3 The Interactive Client

5.3.1 Overview

Using this program you can monitor and record ongoing calls.

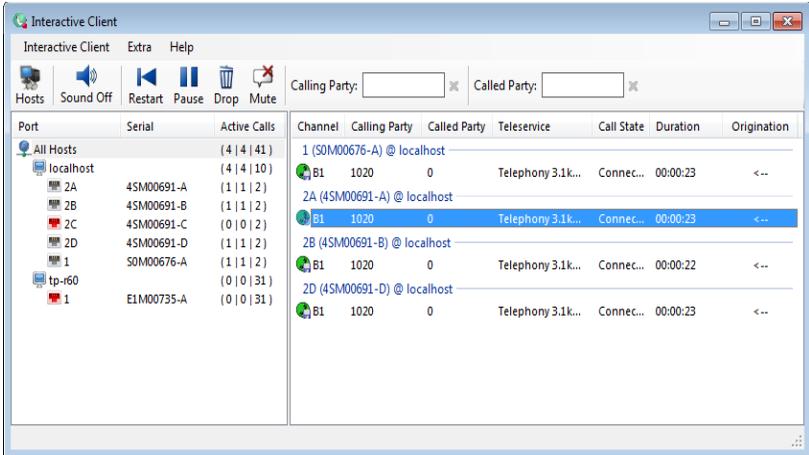


Figure 22: "Interactive Client" Window

Launching the Interactive Client

- ▶ Double-click the desktop icon *Interactive Client*.
- or
- ▶ *Start / All Programs / EyeSDN USB4 / Interactive Client*.

The *Interactive Client* window contains following two lists:

left list

A single host with all connected devices, or "All Hosts" with a selection of computers (0/0/0) = (lines with active calls / busy line, eg by ringing / available lines)

right list

Shows the calls in progress on the devices and ports selected in the left pane.

5.3.2 Processing Ongoing Calls

Monitoring

- ▶ Choose the desired line interface from the left list.
- ▶ Choose the desired call from the right list.
-  Click the speaker button *Play*.
-  Click the action button *Stop Playback* to terminate the monitoring.

Recording

- ▶ Choose the desired call as described above.
-  Click the red action button *Record*.
-  Click the blue action button *Stop Recording* to stop the recording.

The recording is stored within the user's Music folder. The exact name of this folder slightly differs depending on the Windows® version you use:

- Windows® XP: *My Documents / My Music*
- Windows Vista®: *Music*
- Windows 7®: *Library / Music*

5.3.3 Selection Ongoing Calls

The list of displayed ongoing calls can be restricted by subset call numbers.

Selection of de- sired calls

- ▶ Choose the desired line interface from the left list.
- ▶ Enter the desired call number in the *Calling Party* or *Called Party* field of the status line.
- ▶ The selection can be finished by clicking on the cross symbol next to the fields.

5.3.4 D channel recording

Recording

- ▶ In the left column select the device and port where D channel data should be displayed.
- ▶ In the right view select the D channel.
-  Click the red action button *Record*.
-  Click the blue action button *Stop Recording* to stop the recording.
- ✓ After the stop Wireshark opens automatically to show the recorded data from the beginning of generated trace file. When closing Wireshark, you will be asked if you want to delete this recording.

5.3.5 Restricted User Interface in Interactive Client

Access to call information in Interactive Client can be limited with the dialogue „restricted user interface“.

Opening the dialogue

- ▶ Select in the menu „Extra“ and then „Restricted User Interface“.
- ✓ The dialogue box “Configure Restricted user interface” will be opened (figure 23).
- ▶ Assign a password of your choice.
- ▶ Within in the dialogue you can configure user permissions for recording control:
 - Client side recording: Recordings are stored locally on the computer in the music folder
 - Server side: Recordings are stored on the server.
 - Mute recording: recording of beep when sensitive data is exchanged.
- ▶ By setting a check mark in the right column you can give the user the ability to configure a filter expression or the host.

The image shows a dialog box titled "Configure Restricted User Interface". It has a light blue header. Below the header, there are two text input fields: "Enter Password" and "Repeat Password", both containing four asterisks. Underneath these is a section titled "Permissions during restricted user interface" which is divided into two columns. The left column, "Recording control", has three checked checkboxes: "Client side recording", "Server side recording", and "Mute recording". The right column, "Configuration", has two unchecked checkboxes: "Filter" and "Hosts". At the bottom of the dialog, there are three buttons: "Defaults", "Restrict", and "Cancel".

Figure 23: Dialogue "Configure Restricted User Interface"

5.3.6 Configuring EyeSDN Servers

Within the Interactive Client you can add, modify or remove EyeSDN servers that shall be used as data source for call monitoring.

 Hint	<p>You must register each server that shall provide data for the Interactive Client.</p>
Add a server	<p> Click the action button <i>Host Configuration</i> or</p> <ul style="list-style-type: none"> ▶ Select the menu entry <i>Extra / Configure EyeSDN servers</i>. ✓ The dialogue <i>EyeSDN Server Configuration</i> opens (figure 24). ▶ Click on <i>Add Host</i>. ▶ Enter the <i>Host Name</i> and the <i>Port</i> number (use the same port number as configured at the server side (see chapter 5.4.1.3)). ▶ Click on <i>Test / Start Test</i>. ▶ Confirm with <i>OK</i>.
Remove a server	<p> Click the action button <i>Host Configuration</i> or</p> <ul style="list-style-type: none"> ▶ Select the menu entry <i>Extra / Configure EyeSDN servers</i>. ▶ Select the desired host from the list <i>Host</i>. ▶ Click <i>Remove Host</i>. ▶ Confirm with <i>OK</i>.

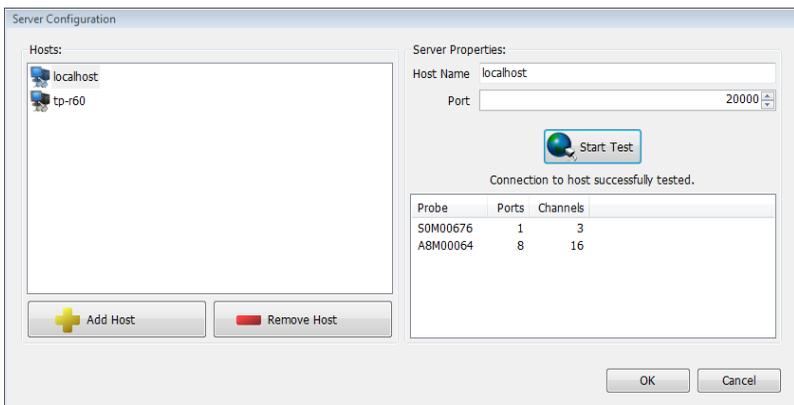


Figure 24: Dialogue „EyeSDN Server Configuration“

5.4 Configuring the Service

5.4.1 Call Recording Service Parameters

Parameters that influence the Call Recording Service can be changed in this configuration dialogue.



Attention!

Please note that the default values were chosen carefully to guarantee smooth operation and do not generally require adjustment.

We recommend that you only change the parameters if you are acquainted with the operation of the software and its parameters and if the parameters you wish to change are necessary for your intended usage of the device.



Hint

Any changes performed in this dialogue will only take effect after the Call Recording Service has been restarted.

Launching the dialogue

- ▶ Select the menu entry *Settings / Devices*
- or**
- ▶ *Start / All Programs / EyeSDN USB4 / Service Configuration*
- ✓ The Dialogue *Configuration Login* opens (Figure 25).
- ▶ Enter the name or IP address of the host that runs the recording service to be configured.
- ▶ Adjust the port number, if you changed the access port during a former service configuration (see chapter 5.4.1.3). Otherwise leave the value for the port number at 20000.
- ▶ Enter the configuration password, if you have defined one..
- ▶ Click *OK*
- ✓ The dialogue *Recording Service Configuration* opens (figure 26).

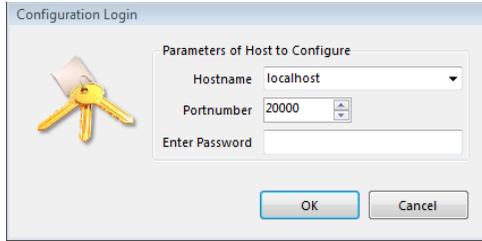


Figure 25: Dialogue "Configuration Login"

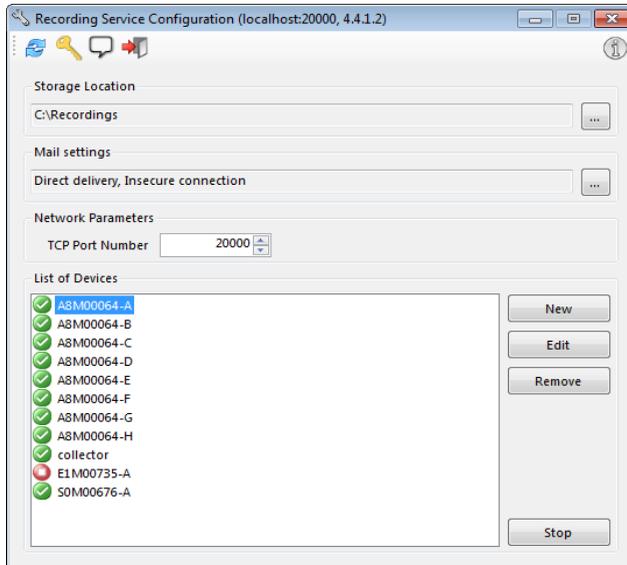


Figure 26: Dialogue "Recording Service Configuration"

Rereading service configuration	 Click the action button <i>Read Configuration</i> . <ul style="list-style-type: none"> ✔ The effective call recording service configuration is reread and displayed in the dialogue.
Changing the configuration password	 Click the action button <i>Define Configuration Password</i> . <ul style="list-style-type: none"> ✔ The dialogue <i>Define the configuration password</i> opens. <ul style="list-style-type: none"> ▶ Enter the new password. ▶ Click <i>OK</i> . ✔ The new password will be saved.
Changing the language of the the dialogue	 Click the action button <i>Select Language</i> . <ul style="list-style-type: none"> ✔ The dialogue <i>Select Language</i> opens. <ul style="list-style-type: none"> ▶ Choose the desired language. ▶ Click <i>OK</i>. ✔ The language setting for the dialogue <i>Recording Service Configuration</i> will be applied and saved.
Leaving the dialogue	 Click the action button <i>Logout</i> . <ul style="list-style-type: none"> ✔ The dialogue <i>Recording Service Configuration</i> closes. The dialogue <i>Configuration Login</i> is shown again (figure 25).
Displaying information about the configuration tool	 Click the action button <i>Information</i> . <ul style="list-style-type: none"> ✔ A dialogue containing version information of the configuration tool opens.

5.4.1.1 Storage Location and Quota Settings

The field *Storage Location* indicates where on the hard drive the recorded data is stored by default. Additionally it shows the effective quota settings for that storage location. *Quota* allows to automatically delete older recordings when a given volume or time limit exceeds.

You can manage multiple storage locations, but only one of them can be used as default storage location. It becomes effective only if no device specific storage location for the affected device is defined (see chapter 5.4.3.1) and if no pre-filter rule is applied, which results in selecting a different storage location (see chapter 5.4.3.3).

Starting the storage manager

- ▶ Use the button right next to the directory field for opening the dialogue *Storage Manager* (see figure 26).

Adding a new storage location

- ▶ In the dialogue *Storage Manager* (see figure 27) use the button *Add* to open the dialogue *Quota Settings*.
- ▶ In the dialogue *Quota Settings* (see figure 28) use the button right next to the *Storage Directory* field for opening the dialogue *Storage Location*.
- ▶ Select the desired folder and press *OK*.
- ▶ Enter the desired storage size limit respectively the maximum age of your recordings. Use the value 0 if you want unlimited storage.
- ▶ Confirm your settings by pressing *Apply*.

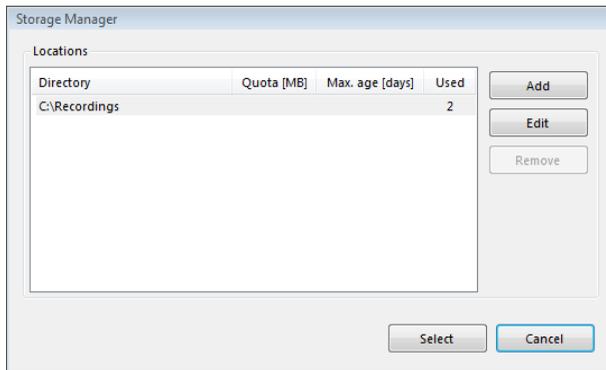


Figure 27: Dialogue "Storage Manager"

Changing the parameters of an existing storage location

- ▶ Within the storage manager select the entry to be changed from the list of existing storage locations.
- ▶ Use the button *Edit* to open the dialogue *Quota Settings*.
- ▶ Make your modifications of the storage directory or the quota settings.
- ▶ Confirm the dialogue using *Apply*.



Hint

If you change the storage directory or the quota settings of a storage location, then these changes also will be applied to devices or pre-filter rules, which use the same storage location definition.

Removing a storage location

- ▶ Within the storage manager select the entry to be deleted from the list of existing storage locations.
- ▶ Press the button *Remove*



Hint

A storage location can be removed only if it is not in-use within the recording service. The column *Used* indicate whether a storage location is in-use or not. A tooltip over the corresponding list entry shows more detailed information about its usage.

Selecting a storage location

- ▶ Within the storage manager select the desired entry from the list of existing storage locations.
- ▶ Close the dialogue *Quota Settings* by pressing the button *Select*

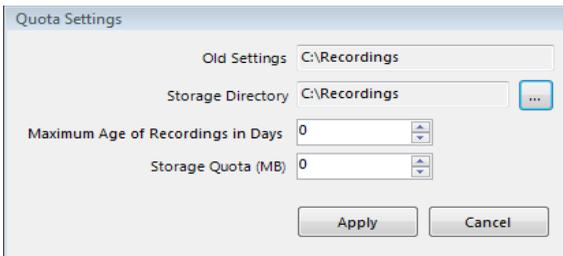


Figure 28: Dialogue “Quota Settings”

5.4.1.2 Send E-Mail automatically

Recorded calls can be automatically sent via e-mail. It is also possible to automatically send error reports by e-mail.

Mail settings

- ▶ Open the dialogue *Configure Mail Settings* by clicking on the button right next to the mail settings summary (see Figure 29).
- ▶ You can enter the parameters and the mail text, which are required for sending e-mails, in the dialogue *Configure Mail Settings*.
- ▶ Press *OK*. Your settings are saved.

The screenshot shows a 'Configure Mail Settings' dialog box with the following fields and options:

- Mail Server:** Server: smtp.mailprovider.com, Port: 25, No Relay button.
- Security:** User Name: joe.bloggs, Password: *****, Connection: Try TLS.
- Parameters for Sending Error Reports by E-Mail:** Admin Mail: joe.bloggs@mailprovider.com, Min. Report: 01:00:00.
- Parameters for Sending Recordings by E-Mail:** Sender: joe.bloggs@mailprovider.com, Subject: call from %f to %t on device %d at %T.
- Message:** Dear EyeSDN-User! Please find attached an audio/PDF file of the phone/FAX call from calling party %f to called party %t lasting %d on device %d at %T.

Buttons at the bottom: Test, Apply, Cancel.

Figure 29: Dialogue "Configure Mail Settings"

Dialogue "Configure Mail Settings"

Mail Server	Enter the outgoing server (SMTP server) for your e-mail account and the appropriate port.
Security	To send e-mail through the SMTP server, you need your user name and password for authorisation with the outgoing server. In the <i>Connection Security</i> enter the transfer protocol.
Parameters for Sending Error Reports by E-Mail	If you want to send automatic error report by e-mail, then specify the administrator's mail address. Further you can adjust the minimum report interval.
Mail Content	Here you can specify the contents of the e-mail. In the <i>Sender</i> textbox you can enter a valid e-mail address of someone who is also the right contact person for further questions for the recordings. This person will receive email replies to the sent-out messages. The fields <i>Subject</i> and <i>Message</i> already contain some text with wildcard characters. The wildcard characters are filled in automatically by the software. When making changes to the text one should consider the text substitutions caused by the wildcard characters. To read an explanation of the meaning of the characters, you can click on "?".
 Attention!	<i>Please note that to use the automatic e-mail dispatch of recordings you need to create prefilter rules. These rules specify that matching recordings should be sent to specified e-mail addresses. These rules need to be manually defined (see section 5.4.3.3) and should set the recipients e-mail address as well as any desired matching criteria (e.g. extension number). In these rules you can also define whether the recording should be deleted or saved after transmission.</i>

5.4.1.3 TCP Port Number

This parameter sets the TCP port number for the network server port of the Call Recording Service.

 Hint	The default port number for this service is 20000. It is required to change this port number only if the default number is already allocated by a different programme. If you have changed the port number, then you must also apply that number in the Interactive Client (see chapter 5.3.6).
Changing the TCP port number	► Enter a valid port number in the field <i>TCP Port Number</i> .

5.4.1.4 List of Devices

This list shows the serial numbers of all of the EyeSDN devices connected to the computer. The list entries even remain when you disconnect a device from the USB port. The symbols left of the device names indicate whether a certain device is operating. You can configure, start/stop or remove specific devices using the buttons right of the list. Further you can add new SIP or demo devices.

Creating a new SIP or demo device	<ul style="list-style-type: none"> ▶ Click the button <i>New</i>. ✓ The dialogue <i>Create Device</i> opens. ▶ Follow the instructions given in chapter 5.4.2 for configuration.
Configuring a device	<ul style="list-style-type: none"> ▶ Choose the desired serial number. ▶ Click the button <i>Edit</i>. ✓ The dialogue <i>Configuration of device</i> opens. ▶ Follow the instructions given in chapter 5.4.3 for configuration.
Starting/Stopping a device	<ul style="list-style-type: none"> ▶ Choose the desired serial number. ▶ Click the button <i>Start</i> respectively <i>Stop</i>. ✓ The firmware of the selected device will be started or stopped depending on the current device state.
Removing a device	<ul style="list-style-type: none"> ▶ Choose the desired serial number. ▶ Click the button <i>Remove</i>. ✓ This erases all settings for this device.
 Hint	<p>The default settings will be automatically re-entered once the device is connected to the USB interface again.</p>

The list of devices contains an entry for the collector service too. This entry has the special name *collector*.

Configuring the Collector Service	<ul style="list-style-type: none"> ▶ Select the list entry <i>collector</i>. ▶ Click the button <i>Edit</i>. ✓ The dialogue <i>Collector Service Configuration</i> opens. ▶ Follow the instructions given in chapter 5.4.4 for configuration.
--	---

5.4.2 Creating a New Device

5.4.2.1 Registering a SIP License

If you have purchased a license for recording SIP phone calls, then you got an activation code. Using this code you can enable your SIP license for your computer. The registration procedure requires an online Internet connection to the registration server. If your computer does not have an Internet connection for any reason, then you have the option to register using a license file.

SIP license online registration

- ▶ Click the button *New* in the dialogue *Recording service configuration*.
- ✔ The dialogue *Create device* opens.
- ▶ Select the option *SIP license*.
- ▶ Enter the activation code for your license.
- ▶ Query the status of your license by pressing the button *Check*.
- ✔ The license information will be shown.
- ▶ Select one or more SIP monitoring interfaces.
- ▶ Click the button *Create* to register the SIP license online.

Registering using a license file

- ▶ Perform the steps of an online registration first.
- ✔ When your computer can't establish a connection to the registration server during the creation of the device, then an error message box will be shown (see figure). Please send the code shown in that message box to licensing@innoventif.com . When you receive the license file from us, then proceed as follows:
- ▶ Click the button *New* in the dialogue *Recording service configuration*.
- ✔ The dialogue *Create device* opens (see figure 30).
- ▶ Select the option *License file*.
- ▶ Click the button right of the field *License file*.
- ✔ A file selection dialogue opens.
- ▶ Navigate to your license file and open it.
- ▶ Select the same SIP monitoring interfaces as during the online registration.
- ▶ Click *Create* in order to register the SIP license.

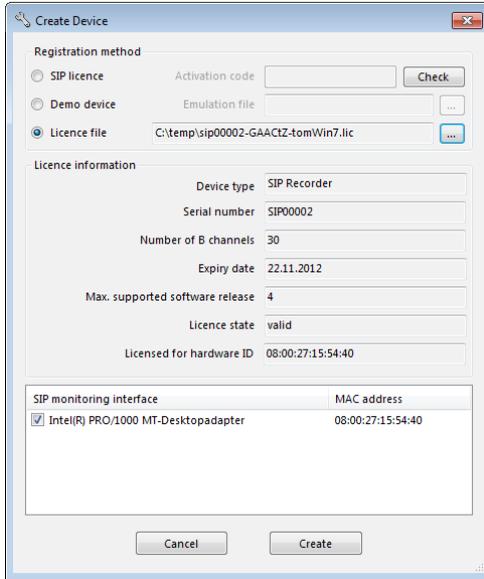


Figure 30: Register a SIP license

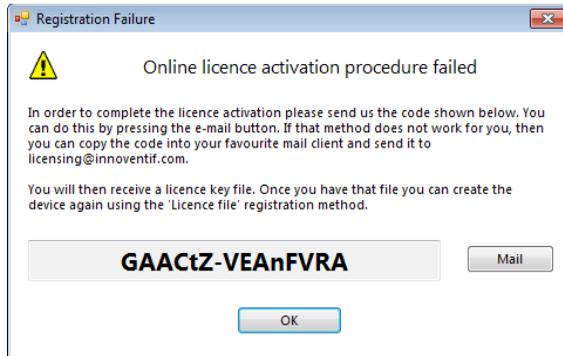


Figure 31: online license activation failure

Note

It is not possible to use the same SIP license on different computers. If you did a hardware change for some reason, then please contact our support for requesting a reregistration of your license. A subsequent registration for the same computer (e.g. after a software update) is possible at any time.

5.4.2.2 Creating a Demo Device

A demo device is a virtual device, which emulates a real recording device. It uses an emulation file for its operation. You can find some emulation files for demo devices on the software CD or on our website <http://www.innoventif.com>.

<p>Creating a demo device</p>	<ul style="list-style-type: none"> ▶ Click the button <i>New</i> in the dialogue <i>Recording service configuration</i>. ✔ The dialogue <i>Create device</i> opens (see figure 30). ▶ Select the option <i>Demo device</i>. ▶ Click the button right of the field <i>Emulation file</i>. ✔ The dialogue <i>Open emulation file</i> opens. ▶ Navigate to the desired file. ▶ Click <i>OK</i>. ▶ Click <i>Create</i> in order to create the demo device.
<p>Starting a demo device</p>	<ul style="list-style-type: none"> ▶ Select the desired demo device in the dialogue <i>Recording device configuration</i>. ▶ Click the button <i>Start</i>. ✔ The emulation file will be played. Then the demo device stops automatically.
<p> Note</p>	<p>You can identify demo devices by means of the serial number. The first two characters indicate the type of the emulated device. The third position of the serial number is always an “F” in case of a demo device.</p>

5.4.3 Configuration of Device

Settings that are specific for individual devices can be changed in this dialogue.

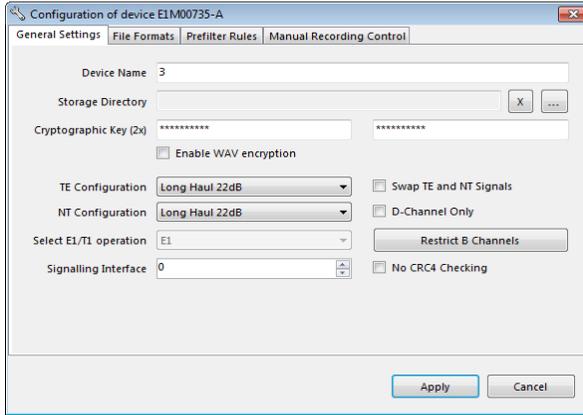


Figure 32: Dialogue “Configuration of device”

5.4.3.1 Tab General Settings

<p>Device Name</p>	<p>Each device connected to the computer gets a device name. As a default these names are numbers, that indicate the order of device attachment.</p> <p>You can also assign a logical name to the device.</p>
<p> Hint</p>	<p>If you intend to use multiple devices, attach them one by one after the software has been installed. The devices are numbered in the order of their appearance on the Universal Serial Bus.</p>
<p>Storage Directory</p>	<p>You can set a separate storage directory for every EyeSDN USB device which you have connected to your computer. So you can manage the call recordings of each device within a separate directory.</p>
<p>Changing the storage directory</p>	<ul style="list-style-type: none"> ▶ Click the button right of the <i>Storage Directory</i> field.. ▶ Select the desired storage location. ▶ Confirm with <i>OK</i>.

Cryptographic Key	<p>It is also possible to save recorded calls in encrypted form, so the opening and playing of these calls can only be performed after the correct key has been entered.</p> <p>Encrypted recordings will have a yellow coloured background in the Voice Calls list of the Call Browser.</p> <p>The string „innoventif“ is the default cryptographic key.</p>
Changing the cryptographic key	<ul style="list-style-type: none"> ▶ Enter the key twice (avoid special characters). ▶ Check the box <i>Enable WAV Encryption</i>. ▶ Confirm with <i>OK</i>.
Swap NT and TE Signals	<p>If you have swapped incoming and outgoing calls, then you must tick the corresponding box.</p> <p>This box is only active, when you use an EyeSDN USB-E1.</p>
TE/NT Configuration	<p>With this setting you can modify the input sensitivity of the two inputs of the EyeSDN USB-E1. Please choose the proper setting for your E1 line (the default setting will work in most circumstances).</p>
D Channel only	<p>If you wish to use the EyeSDN USB-E1 to record D-channel data for protocol analysis only then the corresponding box must be ticked.</p>

5.4.3.2 Tab File Formats

The audio formats for the recorded calls and protocol data can be adjusted in this area. Normally it is not necessary to change the default settings.

Some of the options described below are available only for certain types of EyeSDN USB devices.

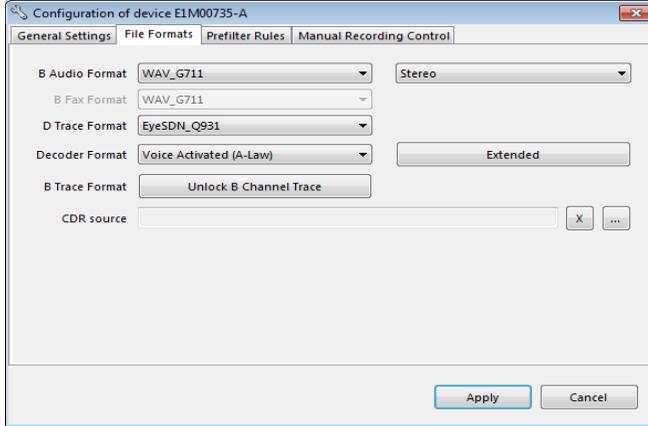


Figure 33: Tab "File Formats"

Parameter	Meaning	Default Value
B Audio Format	File format of voice data	WAV_G711
B Fax Format	File format of fax data	WAV_G711
D Trace Format	Format of trace file	EyeSDN_Q931
Decoder Format	Specification of signalling protocol	DSS1
Analogue Line Type	Type of analogue connection	Public Line
Analogue Extension ID	Own extension ID	
Analogue Input Gain	Additional input gain for analogue line	1.000x
B Trace Format	File format of data calls	Unlock B Channel Trace

Table 12: File format settings

B Audio-Format	Meaning
None	No audio data will be stored on disk
WAV G.711	with the G.711 codec compressed format, 64 kBit/s per channel
WAV PCM	uncompressed format for MS Windows®, 128 kBit/s per channel
WAV MP3	with the MP3 codec compressed format, Stereo: 18-32 kBit/s, Mono: 8-16 kBit/s
WAV GSM	with the GSM codec compressed format, 13 kBit/s, no Stereo possible

Table 13: Overview of selectable B Audio Formats

**Hint**

All audio-recordings will saved as a WAV file.
The adjustable Codecs change the format of the WAV file and influence the file size.
The compressed storage of the speech files in MP3 or GSM format requires a Codec for Windows®, which will only become available when the Media Player is installed.

Trace	Explanation
Stereo	Recording and storage of both audio streams
Mono	Recording and storage the sum of both audio streams
TE	Recording and storage of outgoing voice channel only
NT	Recording and storage of incoming voice channel only

Table 14: Audio streams

Examples for required hard drive capacity when using different audio formats.

100 hours recording	mono	stereo
WAV G.711	2,88 GB	5,76 GB
WAV PCM	5,76 GB	11,52 GB
WAV MP3	720 MB	1.08 GB
WAV GSM	582 MB	-

Table 15: Required hard drive capacity

D Trace Format	Meaning
None	No D Trace will be stored on disk
PCAP	Trace Format of libpcap
Toshiba	Trace Format of Toshiba ISDN router
EyeSDN_Q931	Native Trace Format for the EyeSDN products
Actris, TRN, TRM	Trace Formats of the company Actris
RF5	Trace Format of the company Tektronix

Table 16: Overview of trace formats

Decoder Format	Meaning
DSS1	European ISDN signalling protocol
DSS1 Early Media	European ISDN signalling protocol with audio recording activation as soon as the B channel information becomes available
DASS2/DPNSS	ISDN signalling protocols used in Great Britain
CAS MFC/R2	Use this if you have CAS signalling on your E1 line
MCDN	Use this on Nortel phone systems with MCDN signalling
Voice Activated	Voice activated call recording

Table 17: Overview of decoder formats

Analogue Line Type	Meaning
Public Line	Standard configuration for analogue telephone connections
Voice Activated	Configuration for voice activation using analogue connections

Table 18: Overview of analogue line types

Advanced settings in the selection of "Voice Activation"

Voice activation means that the voice volume is used to start or finish of call recording. As the noise level of lines may be different, can refine the advanced settings of voice activation the recording quality.

Advanced Settings	<ul style="list-style-type: none"> ▶ Select <i>Voice Activation</i> in list of <i>Decoder Format</i> or <i>Analogue Line Type</i> ▶ Click on <i>Extended</i> (see figure 33)
Activation signal level (DBFS)	<ul style="list-style-type: none"> ■ Level which starts from the DB-value voice recording ■ DBFS: Dezibel full scale is a normalized unit in audio engineering ■ Adjustable from -60 to 0 DBFS
Turn-off silence period (s)	<ul style="list-style-type: none"> ■ Duration in seconds if voice recording ends after quiet is in the line. ■ Adjustable from 1 to 20 seconds

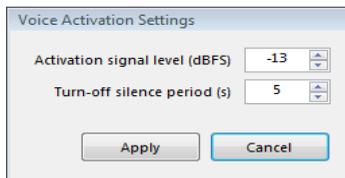


Figure 34: Dialogue Voice Activation Settings

5.4.3.3 Tab Prefilter Rules

You can decide which telephone calls should be recorded on an individual basis for each device.

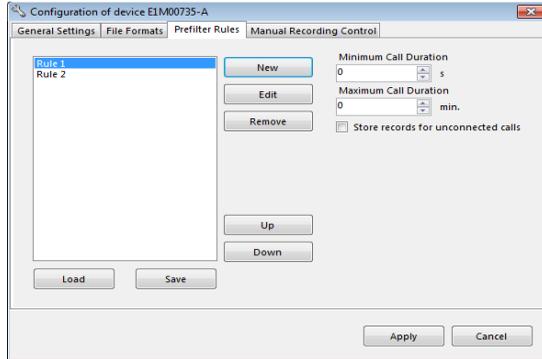


Figure 35: Tab "Prefilter Rules"

Creating a new rule	<ul style="list-style-type: none"> ▶ Click the button <i>New</i>. ✓ The dialogue <i>Rule Properties</i> opens (figure 36).
Editing a rule	<ul style="list-style-type: none"> ▶ Select the rule to be edited. ▶ Click the button <i>Edit</i>. ✓ The dialogue <i>Rule Properties</i> opens (figure 36).
Removing a rule	<ul style="list-style-type: none"> ▶ Select the rule to be deleted. ▶ Click the button <i>Remove</i>.
Rule order	<ul style="list-style-type: none"> ■ Once a telephone conversation begins, the rules governing the recording are checked one after the other, beginning at the top. ■ As soon as one rules matches, it determines whether or not the call should be recorded. All following rules will be ignored. ■ If, when executing the list of rules, the end should be reached without one of the rules being fulfilled, the call will be recorded. ■ As an expedient use of rules depends on their order, they can be moved about the list using the buttons <i>Up</i> or <i>Down</i>.

Figure 36: Dialogue "Rule Properties"

Field	Explanation
Rule Name	We recommend that you assign your rules meaningful names, as this saves time if you should later wish to reorder the rule list,
Probability of Match	If the probability is set to 100% then the rule will always be executed when all of its conditions are met. If you wish to randomly record the conversations held by one particular number or extension. In this case the probability should be reduced, i.e. to 10%. This means that the rule will be applied on average to every tenth call that fulfils its conditions.
Action of Rule	Using the “do record” or “do not record” actions, you can decide whether or not the call, if it fulfils the rules, should be stored.

Table 19: Explanation „General Properties“

**Hint**

You can save and load filter rules. We recommend to save your filter rules before installing a software update.
All data traffic will be recorded, if no filter rule is defined.

Field	Meaning
Origination Address	Caller ID
Destination Address	Calling ID
rule matched by anonymous call	Includes all unknown telephone numbers given as “unknown” or “anonymous”
All Calls	Choose this option if you wish to apply the sequence of numbers or figures to all incoming and outgoing calls.
Incoming Calls	Choose this option if you wish to apply the rule to incoming calls only.
Outbound Calls	Choose this option if you wish to apply the rule to outgoing calls only.

Table 20: Search Field “ISDN Properties”

Enter	Meaning
<i>Question mark “?”</i>	<i>The question mark is a wildcard representing any number, may be used repeatedly in any sequence in any position</i>
1234567?	All numbers between 12345670 and 123456789 fulfil the rule
<i>Asterisk “*”</i>	<i>The asterisk represents any given sequence of figures and may only appear once</i>
*	All telephone numbers will be examined
*123	Only telephone numbers ending with the numbers 123 fulfil the rule
123*	Only telephone numbers beginning with the numbers 123 fulfil the rule
12345670	Only this specific telephone number fulfils the rule

Table 21: Description and examples of wildcard characters

Field	Explanation
Period	The timespan in which the filter rules are applied to calls can be defined in the <i>Period</i> field. The length of time in which the rule is to be applied can be defined by ticking the “From” and ”To” boxes. If no boxes are ticked the rule will always be applied. The rule can also be activated either for every day of the week, or only for particular days, e.g. Mondays.
Each day	You can also define at which time of day the rule should be applied to recorded calls. If you do not tick the boxes, then the rules are applied without time limitation.

Table 22: Description of time conditions

Fax to PDF Rules

You can display and save incoming and outgoing faxpaper as PDF file. For this you need to create Prefilter rules in which you choose the action of rule "Save as Fax" for your faxnumber.

i

Hint

You will need two rules. (See figures)

- 1. Rule for incoming fax files.
- 2. Rule for outgoing fax files.
- Please create your rules according to following figures.

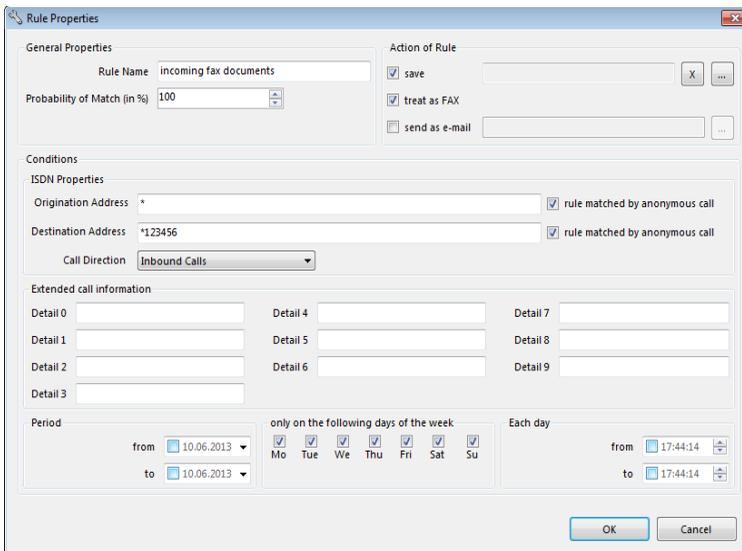


Figure 37: Fax to PDF Rule for incoming fax files

The screenshot shows the 'Rule Properties' dialog box with the following configuration:

- General Properties:**
 - Rule Name: outgoing fax documents
 - Probability of Match (in %): 100
- Action of Rule:**
 - save
 - treat as FAX
 - send as e-mail
- Conditions:**
 - ISDN Properties:**
 - Origination Address: *123456 rule matched by anonymous call
 - Destination Address: * rule matched by anonymous call
 - Call Direction: Outbound Calls
 - Extended call information:** Details 0 through 9 are empty.
 - Period:**
 - from: 10.06.2013, to: 10.06.2013
 - only on the following days of the week: Mo, Tue, We, Thu, Fri, Sat, Su (all checked)
 - Each day: from 17:44:14, to 17:44:14

Figure 38: Fax to PDF rule for outgoing fax files

Recorded fax files are shown in blue in the call list. After selecting a recording press Play . This will open the fax as a PDF document.

5.4.3.4 Tab Manual Recording Control

The call recording can be manually controlled tone signals produced by pressing the telephone keys or by using the Interactive Client.

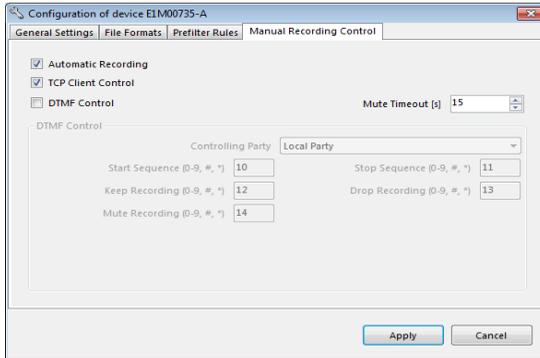


Figure 39: Tab "DTMF Control"

Control mode	Description
Automatic Recording	Per default all calls are recorded. According to the <i>TCP Client Control</i> and <i>DTMF Control</i> settings it is possible to manually control the recording process.
TCP Client Control	It is possible to manually control the recording process by the Interactive Client.
DTMF Control	It is possible to manually control the recording process by tone signals produced by pressing the telephone keys.

Table 23: DTMF Control Options

Mute Timeout	Here you can define the duration of the beep tone when muting a recording.
---------------------	--

Controlling Party	You can determine in this field, which of the calling parties must activate the DTMS signal to run the chosen mode.
--------------------------	---

Controlling party	Meaning
Any Party	Either the caller or the callee can send the DTMF signal
Local Party	The local party activates the DTMF sequence (key press)
Remote Party	The remote party activates the DTMF signal (key press)

Table 24: Controlling Party

 Hint	There is no parting between the incoming and the outgoing channel at analogue lines. Even if you chose the setting <i>Local Party</i> or <i>Remote Party</i> the call recording software will always use the mode <i>Any Party</i> .
---	---

Start Sequence	This DTMF sequence starts or continues a call recording
Stop Sequence	This DTMF sequence suspends or stops a call recording
Keep recording	This DTMF sequence marks the call recording for persistent storage.
Drop recording	This DTMF sequence marks a call recording for deletion. The recording will be deleted at the end of the call.
Mute recording	With this DTMF sequence you can beep out sensitive data during a conversation.
DTMF signals	► Enter a sequence of valid characters. Valid characters are numbers from 0 to 9, letters from a to d, the asterisk (*) and hash mark (#).
 Hint	The sequences have to be different.

5.4.4 Configuration of the Collector Service

Settings for the Collector Service can be changed in this dialogue. From the configuration's point of view the Collector Service is treated like a device. Therefore its configuration starts via the list of devices in the Recording Service Configuration dialogue (see chapter 5.4.1.4).

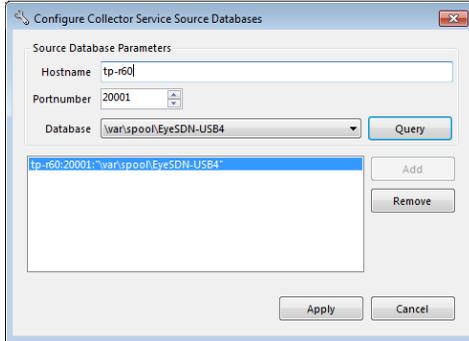


Figure 40: Dialogue "Collector Service Configuration"

Adding a new data source

- ▶ Enter the Hostname or IP address of the machine, where you want to collect the recording data from.
- ▶ Adjust the *Portnumber* of the Indexing Service, if you have modified the TCP port number of the Recording Service of that machine (see chapter 5.4.1.3).



Hint

The Recording Service and the Indexing Service use two consecutive TCP port numbers. The Indexing Service allocates higher one.

- ▶ Click *Query* in order to get all available databases.
- ▶ Select the desired database from the list of *Available databases*.
- ▶ Click *New*.
- ▶ Click *OK*.
- ✓ The selected database will be added to the Collector Service.

Removing a data source

- ▶ Select the database to be removed in the list of registered databases.
- ▶ Click *Remove*.
- ▶ Click *OK*.

6 Technical Data

6.1 EyeSDN USB-S0

Property	Value	Unit
Dimensions	76x55x19	mm
Weight	ca 60	g
S0 Interface	ITU Standard I.430	
Connectors	2x RJ45 Western Modular	
Tests	Polarity, Framing, Power, Protocols	
Channels	D, B1, B2, E, M, A, Q, S	
USB	1.1 and 2.0 (full speed)	
Socket	USB Type B	
Power	< 90	mA
LEDs	4 x red/green	
Disk Space (non-compressed WAV file)	16 per channel, second and call	kB
Sample Frequency	8000	Hz
WAV Formats	A-Law Mono/Stereo, MP3, GSM	
Operating System	Windows [®] 2000, Windows [®] XP, Windows Server [®] 2003, Windows Vista [®] , Windows 7 [®]	
Processor Clock	Min 500 per device	MHz
Disk Space Software	5 - 170	MB
Connection to Telephone System	Point to Point Point to Multipoint	

Table 25: Specifications EyeSDN USB-S0

6.2 EyeSDN USB-E1

Property	Value	Unit
Dimensions	76x55x19	mm
Weight	ca 60	g
Interface	ITU Standard G.703/G.704	
Connections	2x RJ45 Western Modular	
Impedance	DC > 940 ohm, AC > 1060 ohm	
Tests	LOS, G.704-Framing, AIS, Protocols	
Channels	D, B1, B2... B30	
USB	1.1 and 2.0 (full speed)	
Socket	USB Type B	
Power	< 150	mA
LEDs	4 x red/green	
Disk Space (non-compressed WAV file)	16 per channel, second and call	kB
Sample Frequency	8000	Hz
WAV Formats	A-Law Mono/Stereo, MP3, GSM	
Operating System	Windows® 2000, Windows® XP, Windows Server® 2003, Windows Vista®, Windows 7®	
Processor Clock	Min 2 per device	GHz
Disk Space Software	5 - 170	MB
Connection to Telephone System	Point to Point	

Table 26: Specifications EyeSDN USB-E1

6.3 EyeSDN USB-4S

Property	Value	Unit
Dimensions	120x97x13	mm
Weight	ca 46	g
S0 Interface	ITU Standard I.430	
Connectors	4x RJ45 Western Modular	
Tests	Polarity, Framing, Power, Protocols	
Channels	4x (D, B1, B2, E, M, A, Q, S)	
USB	1.1 and 2.0 (full speed)	
Socket	USB Type A	
Power	< 150	mA
Disk Space (non-compressed WAV file)	16 per channel, second and call	kB
Sample Frequency	8000	Hz
WAV Formats	A-Law Mono/Stereo, MP3, GSM	
Operating System	Windows® 2000, Windows® XP, Windows Server® 2003, Windows Vista®, Windows 7®	
Processor Clock	Min 500 per device	MHz
Disk Space Software	5 - 170	MB
Connection to Telephone System	Point to Point Point to Multipoint	

Table 27: Specifications EyeSDN USB-4S

6.4 EyeSDN USB-4SBx

Property	Value	Unit
Dimensions	150x109x28	mm
Weight	ca 202	g
S0 Interface	ITU Standard I.430	
Connectors	8x RJ45 Western Modular	
Tests	Polarity, Framing, Power, Protocols	
Channels	4x (D, B1, B2, E, M, A, Q, S)	
USB	1.1 and 2.0 (full speed)	
Socket	USB Type B	
Power	< 200	mA
LEDs	16 x red/green	
Disk Space (non-compressed WAV file)	16 per channel, second and call	kB
Sample Frequency	8000	Hz
WAV Formats	A-Law Mono/Stereo, MP3, GSM	
Operating System	Windows® 2000, Windows® XP, Windows Server® 2003, Windows Vista®, Windows 7®	
Processor Clock	Min 500 per device	MHz
Disk Space Software	5 - 170	MB
Connection to Telephone System	Point to Point Point to Multipoint	

Table 28: Specifications EyeSDN USB-4SBx

6.5 EyeSDN USB-A2

Property	Value	Unit
Dimensions	76x55x19	mm
Weight	ca 64	g
Interface	analogue Lines or Phone Lines	
Quantity Interfaces	2x analogue interfaces	
Connectors	2x RJ11 Western Modular	
Tests	Power, Caller-ID, off hook, Ring Pulse	
Signals	DTMF, V.23 Modem	
USB	1.1 and 2.0 (full speed)	
Socket	USB Type B	
Power	< 90	mA
LEDs	4x red/green	
Disk Space (non-compressed WAV file)	8 per channel, second and call	KB
Sample Frequency	8000	Hz
WAV Formats	A-Law Mono, MP3, GSM	
Operating System	Windows® 2000, Windows® XP, Windows Server® 2003, Windows Vista®, Windows 7®	
Processor Clock	Min 500 per device	MHz
Disk Space Software	5 - 170	MB
Connection to Telephone System	2x analogue lines or analogue phone lines	

Table 29: Specifications EyeSDN USB-A2

6.6 EyeSDN USB-A8/-A8Bx

Property	Value	Unit
Dimensions	111x98x13 / 120x102x21	mm
Weight	ca 72 / 188	g
Interface	analogue Lines or Phone Lines	
Quantity Interfaces	8x analogue interfaces	
Connectors	4x RJ45 Western Modular	
Tests	Power, Caller-ID, off hook, Ring Pulse	
Signals	DTMF, V.23 Modem	
USB	1.1 and 2.0 (full speed)	
Socket	USB Type A / USB Type B	
Power	< 90	mA
LEDs	4x red/green	
Disk Space (non-compressed WAV file)	8 per channel, second and call	kB
Sample Frequency	8000	Hz
WAV Formats	A-Law Mono, MP3, GSM	
Operating System	Windows® 2000, Windows® XP, Windows Server® 2003, Windows Vista®, Windows 7®	
Processor Clock	Min 500	MHz
Disk Space Software	5 - 170	MB
Connection to Telephone System	8x analogue lines or analogue phone lines	

Table 30: Specifications EyeSDN USB-A8/-A8Bx

6.7 Assignment of Interfaces

Assignment of RJ45 socket for ISDN BRI lines

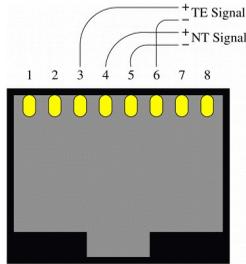


Figure 41: Assignment of RJ 45 Socket for BRI lines

Assignment of RJ socket for ISDN PRI lines (S2M)

PIN	Labelling to 1TR5	Direction
1	S2M outgoing from NT view	TE ← NT
2	S2M outgoing from NT view	TE ← NT
3		
4	S2M incoming from NT view	TE → NT
5	S2M incoming from NT view	TE → NT
6		
7		PS
8		PS

Table 31: RJ 45 Socket, Assignment to ISO/IEC 10173

USB Socket of a Mainboard

The dots represent pins and the numbers represent pin numbers.

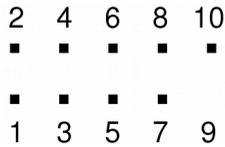


Figure 42: Mainboard's internal USB socket

The pins have different definitions which are described in Table

PIN no	Definition
1	Power +5V
2	Power +5V
3	USB1 D-
4	USB2 D-
5	USB1 D+
6	USB2 D+
7	GND
8	GND
9	No Pin
10	No Connection

Table 32: PIN Definition

The delivered USB cable of type A has following wire colours:

Colour	Signal
red	+5V
white	D-
green	D+
Black	GND

Table 33: USB Cable Assignment

The red plug will connected with pin 1 or pin 2. Pin 9 and pin 10 will be unconnected.

Assignment of RJ11 Socket

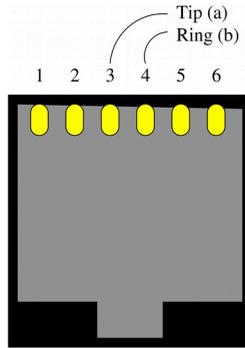


Figure 43: Assignment of RJ11 socket

Assignment of Analogue Cable for EyeSDN USB-A8/-A8Bx

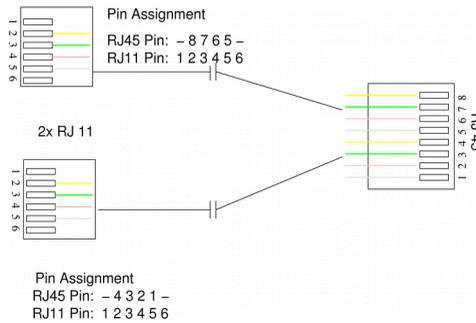


Figure 44: Pin-out of the EyeSDN USB - analogue cable

7 Declarations of Conformity and WEEE

7.1 EU Declaration of Conformity

The signee representing following manufacturer / marketing authorisation holder:

innoventif Ltd.
Wismarer Str. 44
12207 Berlin

declares that the products:

- EyeSDN USB-S0/-4S/-4SBx/-E1 (ISDN lines) and
- EyeSDN USB-A2/-A8/-A8Bx (analogue lines)

are in conformance with the provisions of following EU directives(s) including all applicable changes:

- Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity
- Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility
- Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

and that following normative document(s) and/or technical specifications are applied:

- EN 55022:1998 Class A + A1:2000 + A2:2003
- EN 55024:1998 + A1:2001 + A2:2003
- EN 60950:2001 + A11:2004

Year of CE Marking (required by low voltage directive only):

- 2003 for EyeSDN USB-S0
- 2004 for EyeSDN USB-E1
- 2005 for EyeSDN USB-4S/A2
- 2007 for EyeSDN USB-A8/A8Bx
- 2010 for EyeSDN USB-E1Card.

Following operating conditions and operational environments are implied:

- Warning: These are EN 55022 Class A products. In a domestic environment these products may cause radio interference in which case the user may be required to take adequate measures.

Berlin, 1 March 2010

A handwritten signature in black ink, appearing to read 'R. Fiedler', with a long horizontal line extending to the right.

Dr. Rolf Fiedler, innoventif Ltd.

7.2 Declaration of Electrical and Electronic Equipment (WEEE Directive)

According to the Act Governing the Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment (Electrical and Electronic Equipment Act, or ElektroG) of 16 March 2005 innoventif is registered as a producer of their EyeSDN USB products. The Registration Number is DE 86287401.

After the 24th of November 2005 the Registration Number from the Clearing House is displayed on our business stationary. The EyeSDN USB products will be labelled according to the act.

Return and Disposal

Devices of the EyeSDN USB family, which

- are disabled for their original purpose or
- will not be used any more,

should be sent back to the producer innoventif Ltd. for recycling or environmentally friendly disposal.

If you have some questions about this subject please send an e-mail to info@innoventif.de.



Thomas Gimpel
Director / Director innoventif Ltd.

WEEE Reg No DE-86287401, 24.11.2005