

# INSTALLATION

# FRITZ!

ISDN

FRITZ!X USB

English Edition



High-Performance Communication by...



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## FRITZ!X USB v3.0

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## Safety Instructions

Please note the following when working with your FRITZ!X USB PBX:

- Do not open the housing of FRITZ!X USB. The device contains hazardous components and should only be opened by authorized repair technicians.
- All terminal equipment that is connected to the FRITZ!X USB must be approved for operation in public telephone networks in the European Union (Declaration of CE Conformity).
- Never let liquids get inside the FRITZ!X USB. Otherwise, electric shocks or short circuits may result.
- Do not install the FRITZ!X USB PBX or connect or disconnect any cables during an electrical storm.
- FRITZ!X USB is intended for indoor use only.
- Route all cables so that they cannot be stepped on or tripped over.
- Before mounting the FRITZ!X USB, be sure to pull the power plug.
- Only operate FRITZ!X USB with the mains adapter included with delivery (e.g. AVMo1026 or AVMo1028).
- Put FRITZ!X USB into operation as is described in the section “Installing the Hardware”.

---

## Typographical Conventions

The following symbols and highlighting conventions are used in this manual to make reading easier and to emphasize important information.

### Highlighting

The table below explains the highlighting used in this manual.

Highlighting	Function	Example
Quotation marks	Keys, buttons, icons, tabs, menus, commands	“Start / Programs”; “Enter”
Capitals	Path and file names in running text	SOFTWARE\INFO.PDF or README.DOC
Pointed brackets	Variables	<CD-ROM drive>
Typewriter font	Information to be typed in using the keyboard	<b>a: \setup</b>
Gray italics	Hints, instructions and warnings, always accompanied by a symbol in the margin	<i>... For more information, see ...</i>

---

## Symbols

The following graphic symbols used in the manual always appear in connection with text printed in gray italics:



*FRITZ!* marks useful hints to assist you in working with the product.



*The hand indicates important instructions that must be observed to avoid malfunctions.*

The following symbols are used in explaining how to configure and operate FRITZ!X USB using a tone-dialing telephone:

## The Telephone Keypad

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	Numeric keys
	Asterisk key
	Hold or Flash key
	Pound sign key

---

## Instructions for Operation at the Telephone

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	Dial a number.
	Pick up the handset.
	Hang up the handset.
	Talk.
	Three-party calls
	Wait for the acknowledgment tone.
	You hear the ring tone.

---

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## Disposal Instructions



After use, please subject this product to orderly disposal as electronic scrap in accordance with the current EU disposal regulations.



# 1 Introduction

FRITZ!X USB is a combined ISDN-Controller and PBX (Private Branch Exchange) in one. This intelligent combination allows you to connect your computer and four analog devices to ISDN. This means you can continue using your existing analog equipment, such as telephones, answering machines and fax machines, while taking advantage of ISDN features. You can use both tone-dialing (touch tone) and pulse-dialing terminal equipment.

Thanks to the built-in ISDN-Controller in FRITZ!X USB and the FRITZ! communications software connected computers can use ISDN applications such as file transfer, telefax (Group 3), answering machine functions, PC telephony, and Internet services.

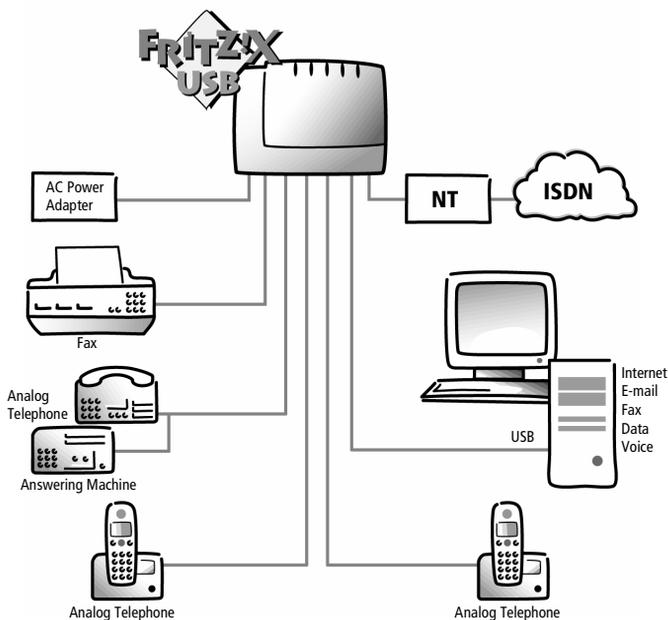
FRITZ!X USB works with a USB interface. USB stands for Universal Serial Bus. The USB is a serial bus which equips your computer with a new level of convenience and operating potential. Just plug FRITZ!X USB into the USB port of your computer and install the software. FRITZ!X USB is connected to the USB port of your computer with a standardized plug.

The configuration of the integrated ISDN PBX can be performed either using the configuration software FRITZ!X, or from a touch-tone (DTMF: Dual-Tone MultiFrequency dialing) telephone.

This manual describes the configuration of the PBX using the FRITZ!X configuration software. For information about how to configure FRITZ!X USB by telephone, see the PDF file TELEPHONE.PDF in the SOFTWARE\INFO\<ENG> folder on the FRITZ!X USB-CD.



*In some countries you have to activate certain country-specific settings. For details, see the PDF file COUNTRY\_SETTINGS.PDF in the SOFTWARE\INFO\<ENG> folder on the FRITZ!X USB CD.*



*Computer and analog terminal equipment connected to an ISDN line using FRITZ!X USB*

## 1.1 Package Contents

The following items are included in delivery:

- 1 PBX FRITZ!X USB
- 1 CD-ROM with the installation software for FRITZ!X USB (International Edition)
- 1 AC power adapter with cable
- 1 ISDN cable
- 1 USB cable to connect FRITZ!X USB to the computer
- 1 FRITZ!X USB manual
- 1 drilling template

## 1.2 System Requirements

FRITZ!X USB is designed for use with point-to-multipoint ISDN lines using the Euro-ISDN signaling protocol DSS1. Connection to other line types is contrary to the intended use of the product and may cause malfunctions. Trouble-free operation of the product is not guaranteed in such cases.

The following minimum PC configuration is required for installation of the FRITZ! communications software and for Internet access:

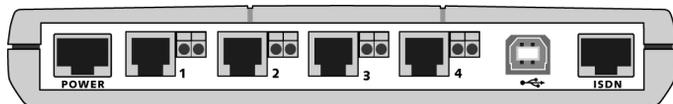
- IBM or 100%-compatible computer with a USB port
- Pentium processor with at least 32 MB main memory and memory on hard disk
- CD-ROM drive
- Operating system Microsoft Windows XP, Windows Me, Windows 2000 Professional, Windows 98

## 1.3 The PBX FRITZ!X USB

The FRITZ!X USB PBX and its accessories are introduced below.

### Connectors

The following illustration shows the back view of FRITZ!X USB. The back panel has a row of connectors, including jacks for the power cord, for the analog telephone extension lines, for the connection to the PC and for the ISDN line.



*FRITZ!X USB Connector Panel*

## LEDs FRITZ!X USB

The current operational state of FRITZ!X USB is indicated by five LEDs (light-emitting diodes) on the front panel. The various LEDs indicate specific conditions as listed in the following table:

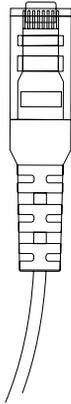
LED	Meaning
Power	shows the operation status of FRITZ!X USB  ...indicates that the device is connected to the power mains and to ISDN  ...blinks if the device is connected to the power mains, but the connection to ISDN has been lost
USB	indicates that the connection between FRITZ!X USB and the computer is active
Phone	indicates the status of the extension lines:  LED off: all terminal equipment on the extension lines is inactive, or no terminal equipment is connected  LED on: at least one terminal device on an extension is active  LED blinking: at least one extension is ringing or an MWI message has arrived.
B1	indicates an active connection on the first B channel
B2	indicates an active connection on the second B channel



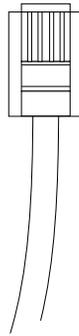
**Contact your Internet provider for additional information on MWI (Message Waiting Indication).**

## Connectors

FRITZ!X USB uses the following connectors:



*RJ45 plug*



*RJ12 plug*



*USB connector  
Series A*



*USB connector  
Series B*

The ISDN cable supplied with FRITZ!X USB has an RJ45 plug at each end. The power cord also has a RJ45 plug at one end.

Analog terminal devices are connected to FRITZ!X USB by means of RJ12 plugs or the cable clips.

If your analog terminal device is equipped with a plug type other than RJ12, it can be connected to FRITZ!X USB by means of an appropriate adapter, generally available in most good electrical retail outlets.

The computer cable has a Series-A USB plug on one end and a Series-B USB plug on the other.

### Cables

FRITZ!X USB is connected to ISDN by plugging the ISDN cable into the ISDN Network Terminator (NT). The ISDN cable has an RJ45 plug at each end.

The computer is connected to FRITZ!X USB with the USB cable. The flat, rectangular plug is a Series A connector. It connects to your computer's USB port. If the computer is connected to a USB hub, the Series A connector is plugged into the hub. The square plug is a Series B connector. It is connected to the USB socket on the back of FRITZ!X USB.

The AC power adapter cable connects FRITZ!X USB to the power mains.

### Technical Specifications

- ISDN-Connector for Euro-ISDN (DSS1) lines
- Dimensions: (w x h x d) approx. 185 x 32 x 137 mm
- 4 analog extension lines connected by RJ12 connectors or wire clips
- 1 USB port for connection to the PC
- 1 Euro-ISDN interface (RJ45 jack)
- 5 LED status indicators
- Remote Wake Up over ISDN
- 16-kHz charge-unit pulse at the extensions
- Supply voltage: 230 V / 50 Hz
- Power consumption when idle: 3W
- Maximum power consumption during operation: 7W
- Conforms to CE standard

---

## Features

### ISDN Features Supported

Your network operator may not support all ISDN services.

- Call holding, consultation mute (HOLD)
- Multiple Subscriber Numbers (MSN)
- Three-party conference calls (3PTY)
- Call-back on busy (CCBS)
- Call-back on no response (CCNR)
- Call tracing (MCID)
- Explicit call transfer (ECT)
- Message waiting indication (MWI)
- Call forwarding / call diversion (CFU / CFB / CFNR)
- Call waiting (CW)
- Caller ID (CLIP)
- Outgoing caller ID suppression (CLIR)
- Charge information (AOCE / AOCD)
- Terminal portability (TP)
- Connected line identification presentation (COLP)
- Connected line identification restriction (COLR)
- Keypad messages

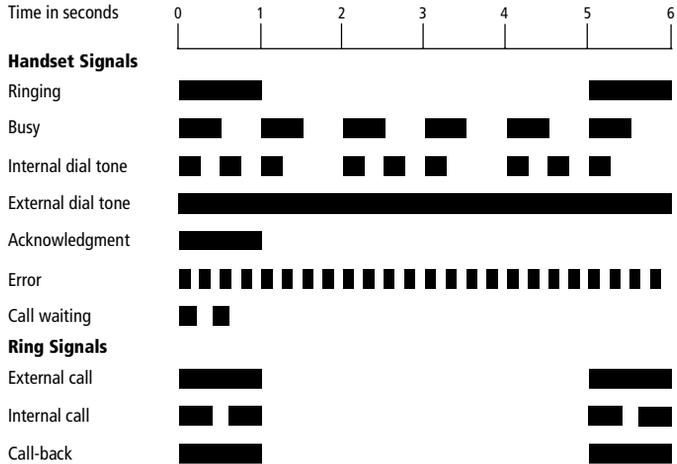
### Convenience Features

- 3 Multiple Subscriber Numbers (MSNs) configurable per extension
- Call pick-up
- Call bumping for 2-channel Internet connections
- Least Cost Routing (LCR)
- Call transfer

- Automatic outside dialing option
- Call rejection on busy (Busy on Busy)
- Dialing Restrictions
- SMS in fixed network (with terminal devices offering SMS support)
- Do Not Disturb
- Caller list
- Call diversion over the second B channel
- Internal call diversion
- Call waiting option
- Caller ID at the extension (including date and time)
- Accounting
- Programmable speed-dial numbers
- Toll-free internal calls
- Internal group calls
- Baby phone monitoring function
- Message on Hold
- Call-back on busy
- Call-back on no response
- Internal three-party conference
- MSNs assigned to specific terminal equipment

## 1.4 Audible Signals

The following diagram illustrates the duration and intervals of the various handset and ring signals.



*Handset and ring patterns on FRITZ!X USB extension telephones*

## 2 Hardware Installation

This chapter describes the installation of the FRITZ!X USB hardware, including how to connect it to the ISDN line, the PC and the power supply, as well as instructions for connecting analog terminal equipment to the PBX.

When the FRITZ!X USB installation has been completed, the analog extensions (for telephones, fax machines etc.) are ready for operation.



*If you want to use the full capabilities of FRITZ!X USB such as Internet and ISDN file transfer, you should also install the corresponding FRITZ!X USB software components. The complete software installation includes not only the driver software, but also the FRITZ! communications software and the PBX configuration program FRITZ!X (see the chapter “Software Installation” on page 21).*

Perform the installation in the following order:

1. Verify that the package contents are complete.
2. Install the hardware.
3. Install the software components of FRITZ!X USB.
4. Configure FRITZ!X USB.

### 2.1 Where to Install FRITZ!X USB

FRITZ!X USB can be installed on any suitable horizontal or vertical surface. The unit should be installed in a dry, dust-free location out of direct sunlight. If you want to mount your FRITZ!X USB on the wall, use the drilling template supplied in the package.

The extension jacks on the back panel of your FRITZ!X USB should be readily accessible. Make sure that the connected cables are not kinked, stretched or otherwise subjected to mechanical stress.

## 2.2 Connecting the Cables

Proceed as follows to connect the necessary cables:

1. Position your FRITZ!X USB so that the sockets on the back panel are facing you.
2. To connect FRITZ!X USB to the ISDN line, take the ISDN cable from the package. Plug one end into the jack labeled “ISDN” at the right end of the FRITZ!X USB connector panel. Plug the other end into an ISDN jack of your ISDN line.
3. Remove the enclosed USB cable from the package. The USB cable has two different plugs: one that is flat and square (known as the Series-A connector) and one that is rectangular (known as the Series-B connector).

Plug the rectangular connector into the USB socket of your computer or your USB hub.



Then insert the square connector into the USB socket of FRITZ!X USB.

4. To connect FRITZ!X USB to the power supply, take the AC power adapter from the package. Insert its RJ45 plug in the jack labeled “POWER” at the left end of the FRITZ!X USB connector panel. Plug the other end into an AC power outlet.



***Use only the mains adapter included with delivery. The use of other adapters may cause malfunctions.***

5. Now observe the LEDs on your FRITZ!X USB. The green “Power” LED should light up, indicating that FRITZ!X USB is operational.



***FRITZ!X USB is ready for operation. The PBX does not have an on/off switch.***

Upon completion of the hardware installation, FRITZ!X USB's default factory configuration settings are active. To configure your FRITZ!X USB according to your personal requirements, please see the section “Configuring FRITZ!X USB” from page 44.

## 2.3 Connecting Analog Terminal Equipment

FRITZ!X USB has been tested and CE-certified in accordance with European Union directives. All analog telecommunication devices with CE certification can be connected to its extensions.

To connect analog terminal devices such as telephones, fax machines, answering machines or modems, proceed as follows:

- Insert the RJ12 plug of the adapter into one of the four extension sockets of FRITZ!X USB.

To connect the terminal devices by means of the cable clips, please note the following:

- The wire diameter must be 0.5 to 1 mm.
- Strip the insulation from the wire to expose a length of 10mm of cable.

To connect a cable, press back the orange lever, insert a wire and release the lever. Repeat the procedure with the second wire of the cable.

## 3 Software Installation

FRITZ!X USB can be installed in the operating systems Windows XP, Windows Me, Windows 2000 or Windows 98.



*In some operating systems the display of menus and folders can be changed. The following instructions are based on the standard installation of each operating system.*

### 3.1 What Is Installed?

During the initial installation process, the setup program installs the following software components:



- The FRITZ!X USB driver software

*The exact steps taken to install the driver software in the operating systems Windows XP and Windows 2000 differ from those in Windows Me and 98. Read the section that describes the driver software installation for your operating system.*

- The FRITZ! communications software (Please see “The Many Facets of FRITZ!” on page 36 and the FRITZ! software manual).
- The AVM ISDN CAPI Port Driver (please see the section “Into the Internet With AVM System Drivers” on page 40).
- The FRITZ!X configuration software (please see the section “Configuring FRITZ!X USB” from page 44).

If you have already installed individual software components, such as FRITZ!, read the instructions in section “Installing Individual Software Components” on page 32.

The section “Where to Find What After Installation” on page 31 explains where to find the individual software components on your computer after installation.

Once installation is complete, additional AVM system drivers and software may be installed for online services (see section “FRITZ! Internet and ISDN Software” from page 36).

## 3.2 Installing the Driver Software in Windows XP



*Administrator rights are required to install the driver software in Windows XP Professional.*

Once the FRITZ!X USB has been inserted in your computer, proceed as follows:

1. Start the computer.

Windows XP Plug & Play automatically detects the FRITZ!X USB and automatically installs the drivers contained in the operating system.

A message in the task bar indicates that FRITZ!X USB has been installed. This message disappears after a few seconds.



*FRITZ!X USB has been installed.*

The “USB” LED lights up after the installation of the PBX has been completed successfully.

2. To check that the FRITZ!X USB installation was successful, open the “Device Manager” by clicking through “Start / Control Panel / Performance and Maintenance / System / Hardware”.
3. Double-click “Network adapters”. The list contains the entry “AVM ISDN-Connector FRITZ!X USB”.

This concludes the installation of the drivers delivered with FRITZ!X USB in Windows XP. FRITZ!X USB is now ready for immediate operation. After installation the CAPI 2.0 and the AVM ISDN NDIS CAPI Driver are available on your system.

To make sure that the latest version of these drivers is installed, it may be necessary to update the drivers with the installation program included on the FRITZ!X USB installation CD:

1. Insert the FRITZ!X USB CD and run the program SETUP.EXE in the WINDOWS.XP folder.

The installation program for FRITZ!X USB starts.

2. Choose your language and click “Continue”.
3. In its sign-on window, click “Continue”.
4. In the next dialog, select “Update” and confirm by clicking “Continue”.
5. At this point Windows may prompt you to install software not digitally signed by Microsoft. This request depends on the driver signature options set on your computer. Answer the question with “Continue Anyway”. Do likewise in the next dialog regarding the AVM ISDN NDIS WAN CAPI Driver.
6. The next window informs you that the drivers have been updated successfully. Conclude the installation by clicking “Finish”.

This concludes the installation of the FRITZ!X USB PBX. FRITZ!X USB is now ready for immediate operation.

Once the driver software installation has been completed, a message appears announcing that the FRITZ! communications software can be installed. For more information, read “Installing the Communications Software FRITZ!” on page 28.

### 3.3 Installing the Driver Software in Windows Me

Proceed as follows to install FRITZ!X USB:

1. After connecting FRITZ!X USB, start the computer and insert the FRITZ!X USB CD.

The Windows Me Plug & Play mechanism automatically detects the PBX. The Add New Hardware Wizard is started.

2. When asked: “What would you like to do?”, select the option “Automatic search for a better driver (Recommended).”.
3. Select the entry <CD-ROM DRIVE>:\WINDOWS.ME\FXUSBSET.INF in the list of entries found and confirm with “OK”.
4. Choose your language and click “Continue”.
5. Next, the sign-on window of the installation program for FRITZ!X USB appears automatically.
6. Specify the folder in which the driver software is to be installed on your computer.
7. As a final step of the driver software installation, a message box is displayed showing the configuration of FRITZ!X USB.

Once the driver software installation has been completed, a message reports that the FRITZ! communications software can be installed. For more information, read “Installing the Communications Software FRITZ!” on page 28.

## 3.4 Installing the Driver Software in Windows 2000



*Administrator rights are required to install the driver software in Windows 2000.*

1. Once you have connected FRITZ!X USB to the computer and ISDN, Windows 2000 Plug & Play recognizes the PBX automatically. The Add New Hardware Wizard is started.
2. Now you are prompted to specify a D-channel protocol. “European ISDN (DSS1)” is already selected. Confirm this selection by clicking “Next”.
3. Choose your language and click “Continue”.
4. If desired, enter your ISDN line's Multiple Subscriber Numbers (MSN) in the “ISDN Multisubscriber Numbers” window. Click “Next”.



*Remember that the MSNs configured here are valid only for WAN connections, RAS and Internet access. These settings have no effect on other software that uses the CAPI 2.0 interface.*

5. Conclude the installation by clicking “Finish”.

This concludes the installation of the drivers delivered for FRITZ!X USB in Windows 2000. FRITZ!X USB is now ready for immediate operation. After installation the CAPI 2.0 and the AVM ISDN NDIS WAN CAPI Driver are available on your system.

To make sure that the latest version of these drivers is installed, it may be necessary to update the drivers with the installation program included on the FRITZ!X USB installation CD:

1. Insert the FRITZ!X USB CD and run the program SETUP.EXE in the WINDOWS.2K folder.

The installation program for FRITZ!X USB starts.

2. Choose your language and click “Continue”.
3. In its sign-on window, click “Continue”.

4. In the next dialog, select “Update” and confirm by clicking “Continue”.
5. At this point Windows may warn you that the “digital signature” for the FRITZ!X USB PBX was not found. Click “Yes” to continue the installation.
6. A second message then informs you that no digital signature was found for the AVM ISDN NDIS WAN CAPI Driver. Again, click “Yes” to continue.
7. The next dialog informs you that the drivers have been updated successfully. Click “Finish” to close the installation program.

This concludes the installation of the FRITZ!X USB. It is now ready for immediate operation.

Once the driver software installation has been completed, a message appears announcing that the FRITZ! communications software can be installed. For more information, read “Installing the Communications Software FRITZ!” on page 28.

### 3.5 Installing the Driver Software in Windows 98



*Windows 98 includes an “ISDN Configuration Wizard”. This Wizard cannot be used to install ISDN hardware and software correctly, nor to set up an ISDN connection. It can only be used to configure an NDIS WAN CAPI driver already installed.*

Proceed as follows to install FRITZ!X USB:

1. After connecting FRITZ!X USB, start the computer and insert the FRITZ!X USB CD.

The Windows 98 Plug & Play mechanism automatically detects the PBX. The Add New Hardware Wizard is started.

2. When asked: “What do you want Windows to do?”, select the option “Search for the best driver for your device. (Recommended).”

3. When the program asks where to search for the driver, activate only the option “CD-ROM drive”.



*Specifying the driver location in Windows 98*

4. When the message “Windows has finished installing the software selected that your new hardware device requires.” appears, click “Finish”.
5. Choose your language and click “Continue”.
6. Next, the sign-on window of the installation program for the FRITZ!X USB PBX appears automatically.
7. Specify the folder in which the driver software is to be installed on your computer.
8. As a final step of the driver software installation, a message box is displayed showing the configuration of FRITZ!X USB.

Once the driver software installation has been completed, a message reports that the FRITZ! communications software can be installed. For more information, read “Installing the Communications Software FRITZ!” on page 28.

## 3.6 Installing the Communications Software FRITZ!

1. After driver software for the FRITZ!X USB ISDN-Controller has been installed, the setup program reports that the FRITZ! communications software can be installed. Click the “Next” button to proceed.
2. Specify the folder in which the FRITZ! communications software is to be installed on your computer.
3. Next, specify the program group for FRITZ! in the Start menu.
4. Select the required FRITZ! module and click “Next”.
5. The next dialog asks whether you would like to perform a simple installation or an installation with configuration.
6. Select the FRITZ! module, which should start automatically with Windows.

**Installation:** The FRITZ! modules are installed with default settings in the specified folder. All default settings can be changed in the individual FRITZ! modules after installation. Please read the relevant sections in the FRITZ! manual or see the Online Help for instructions.

**Installation and Configuration:** A number of basic settings can be made during installation, for example, information for operation at a PBX.

## 3.7 Installing the AVM ISDN CAPI Port Driver

Upon conclusion of the FRITZ! communications software installation, you can install the AVM ISDN CAPI Port Driver. A window with four settings pages is displayed:

- **Modems**

Select here the CAPI Port modems you would like to install, such as “AVM ISDN Internet (PPP over ISDN)” for a connection to an Internet Service Provider using Windows’ Dial-Up Networking. View information about the individual modems by clicking a modem and then pressing “F1”.
- **MSN**

On the “MSN” settings page, you can enter a specific MSN to be used for outgoing connections over the two virtual modems “AVM ISDN Internet (PPP over ISDN)” and “AVM ISDN RAS (PPP over ISDN)”. This can be useful for keeping accounts of online costs. For more information, see the Online Help once you have installed the AVM ISDN CAPI Port Driver.
- **Ports**

On this settings page you can assign specific COM ports to the virtual modems. Unless your system requires special port settings, you can simply confirm the default settings.
- **AVM Test Connection / Fast Internet over ISDN**

Define here whether you want two new connections to be automatically created in Dial-Up Networking on installation: AVM Fast Internet and AVM Intranet. Dial-Up Networking must already be installed on your computer.

This concludes the installation of the AVM ISDN CAPI Port Driver.

## 3.8 Installing the Configuration Software FRITZ!X

After installing the FRITZ! communications software and the AVM ISDN CAPI Port Driver, a message informs you that the PBX configuration software can be installed. Proceed as follows:

1. Specify the folder in which the configuration software is to be installed on your computer.
2. Next, specify the program group in which the FRITZ!X configuration program is to appear in the Start menu.
3. In the next dialog, enter the area code of your location and confirm by clicking “Continue”. The program files are now copied to your hard disk.
4. Click “Finish” to close the installation program.

This completes the software installation for FRITZ!X USB. Restart your computer if required.

## 3.9 Errors During Installation: What to Do

If any errors occurred during installation and the software components of FRITZ!X USB were not installed correctly, proceed as follows:

1. Remove all of the installed FRITZ!X USB components by following the instructions in the section “Removing Software Components” from page 33.
2. Restart your computer.
3. Repeat the complete installation.



*If you want to install individual FRITZ!X USB software components, please read the instructions in the section “Installing Individual Software Components” on page 32.*

## 3.10 Where to Find What After Installation

After installation with default settings you will find the software components of FRITZ!X USB at the following locations:

The driver software for the PBX FRITZ!X USB is loaded automatically when Windows is started. The Windows “Start” menu now includes a program group “AVM” under “Programs” which contains the following entries:



- “AVM Internet Home Page” is a link to AVM’s web site (requires web browser and Internet connection).
- The FRITZ!X configuration program.
- “FRITZ!X USB Readme” contains the latest information about the product.
- The “FRITZ!X USB Setup” program can be used to permanently activate or deactivate data compression with CAPI SoftCompression X75/X42.



*In Windows XP and Windows 2000, the “AVM” program group is not created in the “Start / (All) Programs” menu unless “FRITZ!X” is installed. Then only the entry FRITZ!X appears in the program group.*



The FRITZ! modules are contained in the “FRITZ! ISDN and Internet” icon on the Windows desktop as well as in the “FRITZ!” program group. For information on features and operation of the FRITZ! modules, see the chapter “FRITZ!: Internet and ISDN Software” from page 36 and the FRITZ! manual available in PDF format on the installation CD.



The AVM ISDN CAPI Port Driver installation creates new entries under “Modems” in the Windows Control Panel. You can use these virtual modems in Dial-Up Networking to connect to your Internet Service Provider (ISP), for example, or in other data communication programs. A shortcut to the Online help file for the AVM ISDN CAPI Port Driver is created on the desktop.

## 3.11 Installing Individual Software Components

Certain software components may already be installed on your computer, such as FRITZ!, for example. In this case you may want to install only certain individual components from the product CD. You can do so as follows:

- To install the FRITZ!X USB driver software, follow the instructions in the section for your operating system.
- To install the FRITZ! communications software, start the program SETUP.EXE in the directory SOFTWARE\FRITZ!\<ENG> on the installation CD.
- The AVM ISDN CAPI Port Driver is installed using the SETUP.EXE file located in the SOFTWARE\CAPPORT\CAPPORT.<OPERATING SYSTEM>\ ENG folder on the CD.
- The FRITZ!X configuration software is installed by running the SETUP.EXE file found in the SOFTWARE\CONFIG\<ENG> folder on the CD.
- Install ISDNWatch with number filter functions using the SETUP.EXE file located in the SOFTWARE\TOOLS\ISDNWATCH folder on the CD.



*The CD\_INFO.HTM file in the root directory of the FRITZ!X USB CD lists the contents of the CD.*

## 4 Removing Software Components

The steps required to remove the software vary depending on your computer's operating system. See the section below that describes uninstallation in your operating system.

### 4.1 Removing Software in Windows XP

Proceed as follows to remove the FRITZ!X USB driver software in Windows XP:

1. Open the System Properties of Windows by clicking through “Start / Control Panel / Performance and Maintenance / System” and select the “Device Manager” button on the “Hardware” settings page.
2. In the “Network adapters” section of the Device Manager, select the “AVM FRITZ!X USB” entry.
3. Select the “Uninstall” command in the “Action” menu.
4. Confirm the uninstallation in the following security prompt. FRITZ!X USB will be removed.

This completes uninstallation of the driver software of FRITZ!X USB in Windows XP.

Proceed as follows to remove the software components in Windows XP:

1. Click the “Add or Remove Programs” icon in the “Start / Control Panel”.
2. Make sure that the “Change or Remove Programs” button is selected in the column to the left.
3. The components of FRITZ!X USB are found in the list of installed software. Their names are:
  - AVM FRITZ!
  - AVM FRITZ!X
  - AVM ISDN CAPI Port

4. Select the software component you want to remove.
5. Click the “Change/Remove” button. All of the selected component's files and settings are deleted from your computer.
6. Repeat this process to remove other software components of FRITZ!X USB.

This completes the uninstallation of the selected components.

## 4.2 Removing Software Components in Windows Me/98

To remove some or all of the FRITZ!X USB software components, proceed as follows:

1. Select “Start / Settings / Control Panel”, then double-click the “Add/Remove Programs” icon.
2. The components of FRITZ!X USB are found in the list of installed software. They appear with the following descriptions:
  - AVM FRITZ!
  - AVM ISDN CAPI Port
  - AVM FRITZ!X USB
  - AVM FRITZ!X
3. Select the components to be removed.
4. Click the “Add/Remove” button. The Uninstall program starts. All of the selected component's files and settings are deleted from your computer.
5. Repeat this process to remove other software components of FRITZ!X USB.
6. Restart your computer.

Rebooting the computer concludes the uninstallation.

## 4.3 Removing Software Components in Windows 2000

Proceed as follows to remove the FRITZ!X USB driver software in Windows 2000:

1. Open the system properties of Windows by clicking through “Start / Settings / Control Panel / System” and select the “Device Manager” button on the “Hardware” settings page.
2. In the “Network adapters” section of the Device Manager, select the “AVM FRITZ!X USB” entry.
3. Select the “Uninstall” command in the “Action” menu.
4. Confirm the uninstallation in the following security prompt. FRITZ!X USB will be removed.

This completes uninstallation of the driver software of FRITZ!X USB in Windows 2000.

Proceed as follows to remove the software components in Windows 2000:

1. Click the “Add or Remove Programs” icon in the “Start / Control Panel”.
2. Make sure that the “Change or Remove Programs” button is selected in the column to the left.
3. The components of FRITZ!X USB are found in the list of installed software. Their names are:
  - AVM FRITZ!
  - AVM FRITZ!X
  - AVM ISDN CAPI Port
4. Select the software component you want to remove.
5. Click the “Change/Remove” button.

All of the selected component's files and settings are deleted from your computer.
6. Repeat this process to remove other software components of FRITZ!X USB.

This completes the uninstallation of the selected components.

## 5 FRITZ!: Internet and ISDN Software

FRITZ! opens the door to a whole world of communication: file transfer, fax, Web surfing and much more.

### 5.1 The Many Facets of FRITZ!

Once FRITZ!X USB is installed on your computer, the application interface CAPI 2.0 is available. The FRITZ! communications software uses this interface to access the installed hardware.

FRITZ! consists of the following modules:



The module FRITZ!web allows the user to dial into the Internet simply and directly. Thanks to channel bundling and data compression, Internet connections with extremely high data transmission speeds can be established. The option of automatically clearing down idle connections saves connection charges, regardless of the rate charged on the line.



The ISDN file manager FRITZ!data allows you to transfer files quickly and securely, and to provide files on your computer to outside callers. You can assign individual access rights as desired.



FRITZ!fax allows you to send and receive faxes in accordance with the analog Group 3 (analog) fax standard. You can send faxes directly from your text processing program. FRITZ!fax can also poll fax servers, or work as a fax polling server itself.



With FRITZ!fon plus a full-duplex sound adapter and a speech input/output device, telephone conversations can be conducted directly from your PC – with convenient phone book management and a notes function. Three parties can be connected in a conference call. You can send SMS messages to both fixed and mobile lines. FRITZ!fon includes an answering machine. Different messages can be configured for specific numbers, callers and times of day.



In the FRITZ! Address Book you can store all the information needed to dial up connections from the various modules. The Address Book can be opened from any FRITZ! module.



*For detailed information on FRITZ!, see the Online Help and the FRITZ! manual. The manual is supplied as a PDF file in the \SOFTWARE\INFO\<LANGUAGE> folder on the installation CD. If the Acrobat Reader for reading PDF files is not installed on your system, install it from the same folder on the FRITZ!X USB CD.*

## 5.2 Blocking Numbers With ISDNWatch

ISDNWatch is a program which offers a multitude of functions to support you in controlling and securing your ISDN connections.

With the ISDNWatch number filter you can block individual numbers or whole groups of numbers for outgoing and incoming connections. For instance, you can block foreign numbers, long-distance numbers or costly service numbers. By blocking expensive service numbers you can prevent web dialers from establishing costly connections from your computer.

ISDNWatch with filtering functions is integrated starting from FRITZ! version 3.03.

You can also install the ISDNWatch program separately; for more information, see the section “Installing Individual Software Components” on page 32.

For more information about the number filter and configuration instructions, see the ISDNWatch Online Help.



*No numbers can be blocked for telephones connected to the analog extensions. For terminal devices at extensions you can use the FRITZ!X configuration program to set up number restrictions.*

## 5.3 Into the Internet With FRITZ!web

In addition to the traditional ISDN services such as file transfer or telefax, FRITZ!X USB also supports Internet access. You can explore the World Wide Web, exchange e-mail or enter chat rooms.



*For detailed information on configuring and using FRITZ!web, please see the FRITZ! Online Help.*

### Defining the Default Provider

After installing FRITZ!web, specify which of your Internet Service Providers (ISPs) is your default connection to the Internet. The default connection is automatically on stand-by when FRITZ!web starts. When data from the Internet is requested, for example, when your Web browser starts up, the connection is dialed up automatically.

### All Information at a Glance

The FRITZ!web window displays all important information about the current connection:

- The colors of four connection LEDs indicate whether a default provider is configured, whether the B channels are inactive, in the process of connecting or active, and whether data compression is set for an active connection.
- The throughput chart displays the data transfer rates for incoming and outgoing data.
- A timer bar indicates how much time remains before an idle connection will be cleared down automatically.
- Click with the right mouse button in the diagram window to open the context menu. From this context menu you can access all FRITZ!web commands.

## **Clearing Idle Connections Automatically**

In the FRITZ!web settings you can specify how many seconds the line is allowed to remain idle before the existing connection to the Internet is automatically cleared down. An example: You request a web page and view it in your browser. While you are reading, no further data is requested over the Internet connection. After the delay you have specified in the settings, FRITZ!web hangs up the idle connection. Now you can continue reading the Internet page without accruing any further charges. The connection is not re-established until you click a link or enter another URL. Thanks to FRITZ!web's fast dial-up, you will hardly notice that the connection is being restored.

## **Specifying an Outgoing Caller ID**

In order to keep track of the online costs incurred, you can designate one of your line's MSNs as the outgoing Caller ID in the FRITZ!web "Settings" page, opened through the context menu. All online charges will then be billed to the specified number.

## **Call Bumping for 2-channel Internet Connections**

FRITZ!web can be configured to clear the second B channel for an incoming call during a 2-channel Internet connection. When an incoming call is signaled, one B channel is cleared down so that the call can be answered by the appropriate terminal equipment. When the connection with the incoming call is ended, the second B channel is switched back to the Internet connection automatically.

For more information, see the FRITZ!web Online Help on the "Channel Bundling" settings page in the "Settings" dialog.

## 5.4 Using ISDN Services With FRITZ!

ISDN integrates the entire range of telematics services, such as telephone, telefax, data and video communication, in a single digital telecommunications network. FRITZ! turns your computer into a convenient communications hub which provides all these services.



*You can also use third-party communications applications based on CAPI 2.0.*

### **Multiple Subscriber Numbers for the FRITZ! Modules**

To receive fax and data calls with FRITZ!, it is not necessary to assign distinct Multiple Subscriber Numbers (MSNs) to the different modules, since FRITZ!fax answers calls with the service indicator "voice", while FRITZ!data responds only to calls with the service indicator "data".

FRITZ!fax and FRITZ!fon, on the other hand, all use the "voice" indicator. If you want these modules to respond to calls ment for them, you must assign distinct MSNs for call acceptance to FRITZ!fax and FRITZ!fon, and to any telephones or fax machines connected to analog extensions. Specify the settings on the "ISDN" settings page of each FRITZ! module.

## 5.5 Into the Internet With AVM System Drivers

Alternative to FRITZ!web, Internet connections can be established using the AVM ISDN CAPI Port Driver. This system driver is controlled via Dial-Up Networking. The system driver from AVM allows you to use CAPI-based ISDN applications alongside communications programs that do not have built-in CAPI support.



*During the FRITZ! installation you can specify whether you want to add FRITZ!web to the "Startup" group. If so, then FRITZ!web acts as your computer's default connection to the Internet as soon as you start your computer. If you want to use Dial-Up Networking to connect to the Internet, you must exit FRITZ!web or remove it from the "Startup" group.*

## AVM ISDN CAPI Port Driver

The AVM ISDN CAPI Port Driver allows you to use an ISDN-Controller integrated in FRITZ!X USB as if it were a modem.

Programs designed to communicate with modems can use the AVM ISDN CAPI Port Driver to address the ISDN interface. This means that all of the various communications options of Windows can be used with all AVM ISDN-Controllers. For example, you can use Dial-Up Networking and the TCP/IP protocol to dial into your Internet Service Provider.

The ISDN CAPI Port Driver creates a number of virtual modems in your system, each of which is configured such that it can be used immediately with most applications. These modems can be selected in Windows applications such as Dial-Up Networking and Microsoft Exchange/Outlook. Just select a pre-configured destination to launch ISDN communication.

The modem settings can be customized by means of AT commands. For more information, see the Online Help of the AVM ISDN CAPI Port Driver. The Online Help is located on the SOFTWARE\CAPIPORT\CAPIPORT.<OPERATING SYSTEM\ENG> folder on the installation CD.

## 5.6 Ready to Receive on Standby

If your computer supports ACPI (Advanced Configuration Power Interface), you can take advantage of the energy-saving features of standby and hibernation.

These two conditions differ in the following ways:

- **Standby:** all devices that consume large amounts of energy are turned off, such as the monitor, hard disks and other devices.
- **Hibernation:** also saves the contents of main memory to the hard disk. In this condition energy consumption is even lower than on standby.

Computers on standby or in hibernation appear to be switched off. Both conditions are ended by operating the keyboard or the power switch. Standby can also be ended

upon the request of a hardware component or an external device, for instance, when a fax arrives through the FRITZ!X USB. When the fax program activates to accept the incoming fax, the energy-saving condition is ended.

FRITZ!X USB thus offers you the option of ending standby operation for incoming faxes and calls by using the “Remote Wake Up over ISDN” command. Once the computer is reactivated, it checks whether a suitable program is ready to accept the incoming call.

### Does the Computer Support ACPI?

Use the following checklist to determine whether your computer supports ACPI:

- You work with Windows XP, Me or 2000.
- Windows XP: ACPI-capable components are listed under “System devices” on the “Device Manager” settings page (“start / Control Panel / Performance and Maintenance / System / Hardware”).
- Windows Me: ACPI-capable components are listed under “System devices” on the “Device Manager” settings page (“Start / Settings / Control Panel / System”).
- Windows 2000: ACPI-capable components are listed under “System devices”, accessed by clicking the “Device Manager” button on the “Hardware” settings page (“Start / Settings / Control Panel / System”).
- The command “Stand by” appears along with “Hibernate” in the “Shut down” window, opened through the “Start” menu.



***“Remote Wake Up over ISDN” can only be used if the hibernation option is available on your computer but deactivated.***

- All of the devices installed on your computer support ACPI.



***A single device that does not support ACPI is enough to make your computer incapable of ACPI support!***

For more information on ACPI, see Windows Help on the FRITZ!X USB CD in the SOFTWARE\INFO folder or the manuals for your computer and motherboard.

### **Always Prepared With "Remote Wake Up"**

Please note the following to keep FRITZ!X USB and FRITZ! ready to receive at all times in standby operation.

- Deactivate the "Hibernation" option. The "Remote Wake Up over ISDN" command is not available when the system is hibernating.
- For an incoming call to "wake up" the computer from standby, at least one ISDN application must indicate to the CAPI driver that it is ready to receive. Make sure that a suitable application is started.

The computer will be "woken up" when FRITZ!X USB receives information about an incoming call during standby (hence the name "Remote Wake Up"). The program checks the service indicator and phone number of the incoming call; if a suitable program is active, the call will be accepted.

Depending on the power options set, the computer may return to standby after checking the call parameters.

## 6 Configuring FRITZ!X USB

The FRITZ!X configuration software is provided to configure your FRITZ!X USB conveniently. Use this program to adapt your telecommunications system to your individual needs. The program can save you the time and trouble of configuring each setting from an extension telephone.

### 6.1 The FRITZ!X Commands

All available commands of the configuration software are provided in the “Settings”, “Charges”, “Telephony”, “LCR” and “Update” menus. The individual menus are presented below. For more information, see the Online Help.



*Main window of the FRITZ!X configuration software*



#### Settings

The commands in this menu configure your PBX according to your needs. Here you can assign MSNs to the extensions and define properties for the extensions. Extension properties are features that can be activated or deactivated as you require. See section “Factory Settings” on page 45 for information about how the individual FRITZ!X USB features are configured when the device is dispatched from the factory.

This menu also provides commands for call diversion to another extension or call forwarding via the central exchange. You also have the option of defining which external numbers can be reached by any given extension and can configure the Do Not Disturb feature.



## Charges

FRITZ!X logs all charges incurred at the PBX and provides statistical evaluations. This provides an overview of the monthly charges incurred by the PBX. The charge statistics can be displayed in tables and also as a graph. The charge lists can also be exported to a file for further processing.



## Telephony

This menu includes everything you need to call internal or external parties from your computer. With these commands you can maintain the Address Book and view the Event Log and the Caller List. The Event Log records all events that take place at the extensions. All incoming calls are registered in the Caller List.



## LCR

FRITZ!X provides an LCR (Least Cost Routing) feature. With this function, the most economical provider for a connection is selected automatically, depending on the number dialed and the time of day. You can configure schedules to select the best provider according to the area code dialed and time of day the call is conducted.



## Update

Use this menu to update the PBX software (firmware) to keep your PBX up with the latest technology.

## 6.2 Factory Settings

Your FRITZ!X USB telecommunications system is ready for operation with the factory settings.

The following settings are configured upon delivery:

- No Multiple Subscriber Numbers (MSNs) are assigned to the individual extensions. All extensions ring for all incoming calls.
- All extensions are set to automatic outside dialing. You hear the external dial tone immediately when you pick up the receiver.

- Call waiting is disabled on all extensions.
- Reject calls when busy (Busy on Busy) is disabled for all extensions.
- Call Diversion via the second B channel is disabled on all extensions.
- Call forwarding is disabled for all MSNs.
- Suppression of the outgoing Caller ID is disabled on all extensions.
- Incoming Caller ID display is activated on all extensions.
- The Do Not Disturb function is enabled for all extensions.
- The LCR function is disabled for all extensions.
- The Group Call function is disabled for all extensions.
- For terminal devices that support SMS, the acceptance of SMS messages is activated for all extensions.
- Dialing restrictions are disabled on all extensions.
- Connected Line Identification Presentation (COLP) is enabled for all extensions.
- The 16 kHz charge-unit pulse is disabled for all extensions.
- The Quick-Dial memory of the PBX is empty.

## 6.3 Starting the Configuration Software

Start the configuration software by selecting “Start / (All) Programs / AVM / FRITZ!X”.

The first time you start the configuration program, the Configuration Wizard opens with a welcome window. Follow the instructions on the screen of the Configuration Wizard to make the basic settings for your FRITZ!X USB.



*You can also start the Configuration Wizard at a later point in time by selecting “File / Wizard...” from the main window of the configuration program.*

## 6.4 Adjusting Settings

In order to use all of the commands of your PBX, you should adapt the settings listed below. If you configured your PBX using the Configuration Wizard, then these settings are already in effect.

Among these settings are:

- assigning names to the extensions
- defining the local dialing prefix
- changing the charge unit
- entering MSNs
- assigning MSNs to the extensions
- assigning numbers for outgoing calls

The following sections explain how to go about configuring the settings. Perform the settings in the order presented here.



*Have ready the documents in which your ISDN provider supplied the Multiple Subscriber Numbers (MSNs) for your ISDN line.*

## Assigning Names to the Extensions

Four extensions are available on the FRITZ!X USB. You can enter a description for each extension.

1. Select the “General” settings page in the “Settings” menu.
2. You can enter a name for each extension in the window area labelled “Assigning Internal Parties/Devices to the Extensions”.

## Checking the Charge Unit

If you would like to use the charge statistics of FRITZ!X, make sure that the charge unit entered here is correct for your ISDN line. The charges are calculated on the basis of this value.

1. Select the “General” settings page in the “Settings” menu.
2. In the “Charge Unit” section of the window, enter the cost of one unit. The currency symbol displayed depends on your computer's currency settings (“Control Panel / Regional Settings”). The value can be changed here.



***Make sure that your ISDN provider has enabled the transmission of charge information on your line.***

## Entering MSNs

Your ISDN provider supplied 3 to 10 numbers for your ISDN line. These numbers are known as Multiple Subscriber Numbers (MSNs). The Multiple Subscriber Numbers facilitate the direct dialing of connected devices like telephones, answering machines or fax machines. A terminal device can only be dialed directly when it has been assigned its own MSN. Before assigning the MSNs to individual extensions, you must first tell the FRITZ!X software which MSNs are available. To do this, perform the following two steps:

1. Select the “MSNs” settings page in the “Settings” menu.
2. Enter the MSNs you received from your ISDN provider in the number fields. It is not necessary to enter the MSNs in any particular order.

### **Assigning MSNs to the Extensions**

To assign MSNs to extensions:

1. Select the “Extensions” settings page in the “Settings” menu.
2. Up to three MSNs can be assigned to each extension. Three list fields labelled “1st MSN”, “2nd MSN” and “3rd MSN” are provided for each extension. The MSNs configured on the “MSNs” settings page are available for selection in these list boxes. Select the desired MSNs for each extension.

### **Defining Outgoing Numbers**

The outgoing number is the one to which all costs for outgoing calls will be charged. For outgoing calls the MSN entered will be transmitted to the party called, unless Caller ID suppression (CLIR) has been activated.

1. Select the “Extensions” settings page in the “Settings” menu.
2. You have already assigned the MSNs to the extensions. The MSN entered in the list field labeled “1st MSN” is automatically the number used for outgoing calls. If no entry is specified here, the “main MSN” of your ISDN line will be defined as the outgoing number for this extension.
3. If you want an extension to be limited to outgoing calls only, activate the “only for outgoing calls” option.

## 6.5 Advanced Settings

The advanced settings allow you to use ISDN features at your analog extensions.

The three advanced settings used most frequently are explained in detail here. For information about how to configure additional settings, see the “Guide” section in the FRITZ!X Online Help.

### Configuring Extension Properties

The following properties can be activated for the extensions:

- Automatic Outside Dialing
- Busy on Busy
- CLIP (displaying the Incoming Caller ID) This feature is only effective if your telephone supports CLIP. It may also be necessary to activate a CLIP option on your telephone. For additional information, please see the PDF file COUNTRY\_SETTINGS.PDF in the SOFTWARE\INFO\- CLIR (local number will not be transmitted)
- COLR (Connected Line Identification Restriction)
- Use charge-unit pulse
- Answering Machine
- Call waiting option
- Use LCR
- Group Call
- Accept SMS

For information about how these features are configured upon delivery, see the section “Factory Settings” on page 45.

1. Select the “Extension Properties” settings page in the “Settings” menu.
2. Activate the features desired for each extension.

## Configuring Call Diversion via the Second B-channel

This kind of call forwarding lets you divert calls for an extension either to a different extension or to an external line. Call diversion to an external line is charged like an outgoing call to the diverted number.

1. Select the “Call Diversion” settings page in the “Settings” menu.
2. Enter the number to which the calls are to be diverted in the “Divert to” field. If calls are to be diverted to a different extension, enter the number of the other extension here (1, 2, 3 or 4, not the MSN assigned).

Extension	Divert to	Condition
1 Telephone 1	Telephone 2	When busy
2 Telephone 2		Never
3 Answering Machine		Never
4 Fax		Never

*Example for internal call diversion to extension 2*

3. Define in the list field “Condition” when and under what circumstances the call should be diverted.

### Configuring Call Forwarding

With call forwarding you can forward incoming calls for one Multiple Subscriber Number (MSN) to an external line. This means that calls are forwarded depending on which MSN of your line was dialed.

Ask your ISDN provider whether “Call Forwarding” is available on your ISDN line. Enabling call forwarding is subject to charges.

For additional information, please see the PDF file COUNTRY\_SETTINGS.PDF in the SOFTWARE\INFO\<LANGUAGE> folder on the FRITZ!X USB CD.

1. Select the “Call Forwarding” settings page in the “Settings” menu.
2. Select from the list field “Number (MSN)” the MSN for which calls are to be forwarded.
3. Enter the outside number to which the calls are to be forwarded in the “Forward to” field.
4. Define in the list field “Condition” when and under what circumstances the call should be forwarded.



***Avoid activating call diversion and call forwarding at the same time.***

## 6.6 Special Commands

FRITZ!X provides telephony, functions to log activities at your extensions and evaluate charges, the LCR feature, an updating function for the PBX software (firmware) and a command to restore factory settings.

The update command and the command for restoring factory settings are explained below. For information about how to configure additional settings, see the “Guide” section in the FRITZ!X Online Help.

### Updating the PBX Software



*The version of the software currently in use, its date of release and the date of the last update are displayed in the "Update" window of the menu.*

With FRITZ!X you can update your PBX the technical features of by simply loading the new PBX software to your computer and perform an update.

There are a number of ways to load new PBX software to your computer.

#### From the AVM Data Call Center (ADC)

1. Start FRITZ!data and dial the number of the ADC:  
`030 / 39 98 43 00`
2. The “CARDWARE\

#### From the AVM Internet server

Go to the AVM web site:

`http://www.avm.de/en`

The AVM web site offers detailed information and updates free of charge:

- The “Products” category provides detailed information about all AVM products as well as announcements of new products and product versions.

- From the “Service” area the FAQs may be accessed. These lists of **F**requently **A**sksed **Q**uestions along with their answers present concrete support suggestions and tips. Solutions to concrete problems are offered here.
- The latest driver software and software for your PBX can be downloaded from the “Download” section.

### Performing the Update

Once you have loaded new firmware on your computer and unpacked it (by double-clicking), proceed as follows:

1. Start the configuration software by selecting “Start / (All) Programs / AVM / FRITZ!X”.
2. Select the “Update” settings page in FRITZ!X.
3. In the text field, enter the path to the location where you have saved the update file locally. This entry can also be selected using the “Browse ...” button. The file ends with the suffix “.dat”. If you clicked “Browse...”, the lower window will report whether the selected file is a valid update file, and, if so, which version it contains. If the update file is a later version than the currently active firmware, it is recommended that you install the update.
4. Then click the “Update” button to perform the update. A warning message appears. If you are sure you want to perform the firmware update, confirm the message. If the update version is older or as old as the version installed on your computer, you will also be prompted to confirm that the update should be performed.



***Do not disconnect FRITZ!X USB from the computer during a firmware update, and do not unplug the FRITZ!X USB power cord! If the firmware update is interrupted, your FRITZ!X USB may become unusable! In that case, repeat the update procedure.***

A message indicates that the update has been completed successfully. The PBX is then reset and its new version number is displayed.

## Restoring Factory Settings

If you have not yet configured any settings for FRITZ!X USB, the factory settings are active (see the section “Factory Settings” on page 45).

If you have configured settings for FRITZ!X USB and would like to restore the factory settings, proceed as follows:

1. Click “Load Factory Settings...” from the “Tools” menu.
2. Confirm that you want to remove the selected component by clicking on “Yes” at the safety prompt.

This activates the factory settings in FRITZ!X USB and loads them to your computer. This operation may take several seconds.



***Please note that restoring the factory settings deletes all the configuration settings made for FRITZ!X USB, both in the PBX and in your computer. This operation cannot be reversed!***

Re-loading the “Factory Settings” using the FRITZ!X Configuration software will not affect the selected national setting of your PBX, as described in the COUNTRY\_SETTINGS.PDF on the installation CD.

## 7 FRITZ!X USB Operation



*For complete instructions on dialing calls from your computer using the FRITZ!X configuration program, see the Online Help.*

For additional information, please see the PDF file COUNTRY\_SETTINGS.PDF in the SOFTWARE\INFO\<ENG> folder on the FRITZ!X USB CD.

This chapter describes the use of features available on FRITZ!X USB extension telephones. Some of the functions described cannot be performed by pulse-dialing telephones. For details, see the section “Using Pulse-Dialing Telephones With FRITZ!X USB” on page 69.

For detailed information about how to use additional FRITZ!X USB commands in connection with a connected telephone, see the TELEPHONE.PDF file on the FRITZ!X USB CD.



*The Hold button may be designated differently on different telephone models (R, Hold, Flash etc.). Please see also the section “Adjusting the Hold Button Function” on page 69.*

### 7.1 Dialing External Calls

#### Dialing External Calls With Automatic Outside Dialing

---

	Pick up the handset. You can hear the external dial tone immediately, since the extension is set for automatic outside dialing.
---	---

---

	Dial the desired external number.
---	-----------------------------------

---

#### Dialing External Calls With the Outside Line Prefix

---

	Pick up the handset. You hear the internal dial tone.
---	---

---

	Dial “o”. Now you hear the external dial tone.
---	--

---

	Dial the desired external number.
---	-----------------------------------

---

## Dialing External Calls With Suppression of Outgoing Caller ID (CLIR)

This function prevents your number from being displayed on the telephone of the subscriber you call. Proceed as follows:

	Pick up the handset.
 <b>3</b> <b>1</b> 	Dial the sequence shown at left. Now you hear the external dial tone.
	Dial the desired external number.



*After the CLIR sequence you do not need to dial the outside line prefix “o”, regardless of whether your extension is set for automatic outside dialing.*

The CLIR sequence must be dialed before each call for which your outgoing Caller ID is to be suppressed. To activate CLIR permanently, see the configuration program's Online Help.



*It may be necessary to have your provider enable Caller ID suppression (CLIR) for individual calls on your ISDN line.*

## 7.2 Dialing Internal Calls

### Dialing Internal Calls With Automatic Outside Dialing

	Pick up the handset. You hear the external dial tone immediately, since the extension is set for automatic outside dialing.
 or  	Press the Hold button, or press the asterisk key twice. You now hear the internal dial tone.
	Dial the desired extension number.

### Dialing Internal Calls Without Automatic Outside Dialing

	Pick up the handset. You hear the internal dial tone.
	Dial the desired extension number.

## 7.3 Call Waiting

Activate the “Call Waiting” feature to be notified during a call if a second caller is dialing your line. An acoustic signal in your telephone handset notifies you that a second call is waiting. You can accept the connection with the new caller within 30 seconds. If you ignore the signal, the waiting call is rejected after 30 seconds.

---

**R 2** To accept a waiting call, dial the sequence shown at left. Your original call is now on hold.

---

**R 1** To return to your original connection, dial the sequence shown at left.

You can also accept to the waiting call by hanging up your existing connection, i.e., by hanging up the handset. In this case the phone rings as soon as you have hung up. Pick up the handset again to accept the waiting call.

---

**R 0** To reject a waiting call, dial the sequence shown at left.

---



*Call waiting can be enabled or disabled for each extension individually. For instructions, please see the information in the section “Assigning Names to the Extensions” on page 48.*

## 7.4 Consultation / Hold

The “Consultation/Hold” feature allows you to place an existing call on hold. You then may consult someone else at your workplace or dial a second call. The party on hold does not hear the second conversation. Once you have finished the consultation, you can return to the original connection.

To place a call on hold and then reactivate it, proceed as follows:

Call No. 1	You are talking to Caller No.1.
	
	Press the Hold button. Caller No.1 is now on hold and you can consult someone else.
	To dial a second call, simply dial either the desired extension number or the outside line access “o” followed by the desired external number.
Call No. 2	If the call is answered, you can consult on this line. The original caller is still on hold.
	
	If the number you dialed is busy or the call is not answered, press the Hold button again to return to Call No. 1.
	To switch back to Call No. 1 after talking on the second connection, dial the sequence shown at left. Call No. 1 is now active again.



***If you return to Caller No. 1 by pressing the Hold button, the connection to Caller No. 2 is not cleared down until Caller No. 2 hangs up. Connection charges continue to accrue.***

Call No. 1	Instead of pressing the key sequence shown above, you can also return to Call No. 1 by hanging up the handset. In this case the second connection is ended. Your telephone rings, and when you pick up the handset Call No. 1 is active again.
	
	Hang up the handset to end the connection.

## 7.5 Alternating Between Calls

Whenever you have one active connection and one caller on hold, you can switch from one call to the other as often as you want using the Hold button.

To alternate between two connections, proceed as follows:

Call No. 1	You are talking to Caller No.1.
	
	Press the Hold button. Call No. 1 is now on hold.
	To dial a second call, simply dial either the desired extension number or the outside line access “o” followed by the desired external number.
Call No. 2	If the call is answered, you can consult on this line. The original caller is still on hold.
	
 <b>2</b>	To switch from Call No. 2 to Call No. 1, dial the sequence shown at left.
Call No. 1	Call No. 1 is now active again and Call No. 2 is on hold.
	
 <b>2</b>	To switch back from Call No. 2 to Call No. 1, dial the same sequence again. In this way you can alternate between the two connections.

The alternating connections can be ended in a number of ways:

	The caller on hold hangs up. You can continue talking on the active connection.
	You end the active connection by dialing the sequence shown at left. The call that was on hold is now active again, and there is no call left on hold.
 	You can also return to the call on hold by hanging up the handset: this ends the currently active connection. In this case the phone rings as soon as you hang up. Pick up the handset again to return to the last call that was on hold.
Call	
	

## 7.6 Transferring Calls

The “Call Transfer” function allows you to transfer a connection from one FRITZ!X USB extension to another. To do so, proceed as follows:

Call No. 1	You are talking to Caller No.1.
	
	Press the Hold button. Caller No. 1 is now on hold.
	To announce the call to another internal user, dial his or her extension number.
Call No. 2	You can now talk with the other internal user.
	
	To transfer the original call to the other internal extension, simply hang up the handset.

## 7.7 External Transfer

With this ISDN feature you can connect two external parties with each other, when one connection has been active and the other has been on hold. Then you can end your own connection while the other two parties continue their conversation.

You can also connect external parties from a three-party conference. For more information, see also the instructions in the TELEPHONE.PDF file on the FRITZ!X USB CD.



*This feature must be enabled on the line by your ISDN provider. Once the function has been enabled, you can activate it using your telephone.*

Proceed as follows to connect two external parties, one from an active connection and the other from a call on hold:

	Pick up the handset of your telephone.
	Dial the number of the external subscriber and begin a normal call.
	Press the Hold button.
	Dial "0" followed by the number of a second external subscriber. You can now talk to the second subscriber while your first call is on hold.
	To clear your connections while allowing the external parties to continue the call, connect the parties with each other.
 4	Dial the sequence shown at left. The connection on hold and the active connection are connected with each other. The external parties continue the call while you clear the connection.
	Hang up the handset.

## 7.8 Three-Party Conference Call

FRITZ!X USB allows you to hold telephone conferences with two other people at once. Two external and one internal party, or two internal and one external party can conduct a conference call with each other.

You can set up a three-party conference as follows:

	Pick up the handset of your telephone.
	Dial the external number of the first party. Talk.
	Now press the Hold button.
	To dial a second call, simply dial the desired extension number or the outside line access “o” followed by the desired external number. You can now talk to the second subscriber while your first call is on hold.
 	Dial the sequence shown at left to begin a three-party conference call.
	Now all three participants can confer together. If either of the other two parties hangs up, your connection with the remaining participant remains active.
	You can end the three-party call by hanging up the handset.
 	You can also switch from the three-party call back to the original two-party connection. To do so, press the Hold button followed by “2”. This ends the three-party conference. The first connection is now active. The other external call is on hold. You can alternate between the two connections by dialing the same sequence again.

## 7.9 Call-back on Busy

If an external number that you dial is busy, you can request a signal to tell you when the line you dialed is available again. When the subscriber you dialed hangs up, your telephone rings for 20 seconds as it would for an incoming call. When you pick up your handset, the number of the desired party is automatically dialed again.



*Note that this feature, technically known as “Completion of Call to Busy Subscriber” or CCBS, must be enabled for your ISDN line. Once the function has been enabled, you can activate it using your telephone.*

To activate this feature, proceed as follows:

Ⓜ	You have just dialed a number and now you hear the busy signal.
5	Within 20 seconds, dial “5”. Wait for the acknowledgment tone.
Ⓣ	Hang up the handset.
Ⓜ	As soon as the subscriber you dialed hangs up, your telephone will ring.
Ⓣ	Pick up the handset. The subscriber’s number is dialed again automatically.

Your call-back request is cleared after 45 minutes, or after successful redialing. Only one call-back request may be active at a time.

## 7.10 Call-back on No Response

This function can be used when you dial an external number and the party does not respond. Once the party can be reached again and conducts a call from her or his phone, this function recognizes when this conversation is ended. Your telephone rings. When you pick up your handset, the number of the desired party is automatically dialed again.

This feature is supported for both external and internal connections.



*Note that this feature must be enabled for your line by your ISDN provider. Once the function has been enabled, you can activate it using your telephone.*

To activate this feature, proceed as follows:

	You have just dialed a number and hear a ring tone.
	If the call is not answered, dial the number “5”.
	Wait for the acknowledgment tone.
	Hang up the handset.
	Pick up the handset. The number of the remote party is dialed automatically.

The telephone network registers the next time the telephone you called is used, and then signals you as soon as the number is available.

	Your telephone rings.
	Pick up the handset. The number of the remote party is dialed automatically.
	The telephone at the desired number rings.

## 7.11 Call Tracing (MCID)

The “Call Tracing” feature, technically known as “Malicious Caller Identification” or MCID, must be enabled for your line by your ISDN provider. Once the function has been enabled, you can activate it using your telephone.

During a call or after the caller hangs up, dial the following sequence:

---

**R \* 3 9 #** Activating the “Call Tracing” feature

---

For more information about this feature, contact your ISDN provider.

## 7.12 Picking Up Calls From Another Extension

The pickup function allows you to respond to a call ringing on another extension at your own phone. You can pick up calls from known and unknown extension numbers. For more information, see also the instructions in the TELEPHONE.PDF file on the FRITZ!X USB CD.

---

**⤴** Pick up the handset.

---

**\* 0 9** Dial the sequence shown at left.

---

**⤵** The call is now connected to your extension, and you can talk with the caller.

---

This function can also be used to take an incoming call that has already been answered by an answering machine on the other extension. A call that has already been answered can only be picked up if the “Group call” has been disabled and the “Call waiting disabled” option on the “Extension Properties” settings page has been enabled for the given extension.

## 7.13 Group Call

FRITZ!X USB's "Group call" feature allows you to ring all other extensions at the same time. To do so, you must first configure the extension for internal dialing. Your call is connected with whichever extension answers first.

- 
- ① Pick up the handset.

---

  - ② Instead of an extension number, dial "9". All extensions that are not busy ring.
- 



*Group calls can be enabled or disabled for each extension individually.*

## 7.14 Suspend/Resume

The "Suspend/Resume" feature, also known technically as "Terminal Portability", allows you to suspend an existing connection and resume it at another point on the S<sub>0</sub> bus. The connection can be resumed at a different ISDN terminal device (such as an ISDN telephone) that is connected to your BRI line alongside FRITZ!X USB.

To suspend a call, proceed as follows:

- 
- ① You are talking to Caller No.1.

---

  - Ⓘ Press the Hold button. Call No. 1 is now suspended.

---

  - \*1 PC\* Dial the sequence shown at left, replacing "PC" with the parked-call ID. The parked-call ID can be any number between 0 and 99. You will need to enter this ID again when you resume the call.
- 

You will hear an acknowledgment signal to indicate that the call has been successfully suspended. If you hear the failure signal, this may indicate that you made a mistake, or that the

“Suspend/Resume” feature is not enabled on your line. It is also possible that the parked-call ID you chose may already be in use.

- 
- |     |  |
|-----|--|
| *** | After the acknowledgment tone, the connection is suspended. You can hang up the handset. |
| T   | The call remains suspended at the ISDN provider's local switch for two minutes.          |
- 

To resume the connection, proceed as follows:

- 
- |        |  |
|--------|--|
| T      | Pick up the handset again. You must not have a call on hold. Otherwise, FRITZ!X USB will attempt to suspend it.                                    |
| *1 PC* | Dial the sequence shown at left, replacing “PC” with the parked-call ID. The parked-call ID is the number you entered when you suspended the call. |
- 

## 7.15 Using Keypad Messages

FRITZ!X USB offers the “keypad” function. With this function you can control ISDN services or features by entering characters and number strings with the telephone keypad. These keyboard entries are called keypad messages. Keypad sequences allow you to use ISDN services and features that may not be supported by your ISDN terminal device.

Ask your ISDN provider for the specific keypad messages to access ISDN features.

To enter a keypad message on an extension with automatic outside dialing:

- 
- |        |  |
|--------|--|
| T      | Pick up the handset.   |
| *# Seq | Dial the sequence shown at left. “Seq” stands for the keypad message you received from your ISDN provider. |
-

To enter a keypad message on an extension without automatic outside dialing:

	Pick up the handset.
 Seq	Dial the sequence shown at left. "Seq" stands for the keypad message you received from your ISDN provider.

## 7.16 Adjusting the Hold Button Function



*Be sure to set the function of the hold button on your analog terminal devices. Flash times from 80 ms (short flash) to 310 ms (long flash) are supported.*

See the operating instructions accompanying your terminal equipment.

## 7.17 Using Pulse-Dialing Telephones With FRITZ!X USB

Only some of the features of FRITZ!X USB can be used with a pulse-dialing telephone. The following functions are accessible from a pulse-dialing telephone:

- external dialing
- internal dialing (unless automatic outside dialing is enabled)
- answering internal and external calls
- answering waiting calls by dialing "o"
- alternating between calls by dialing "o"
- holding calls by dialing "o"

The following operations cannot be performed from a pulse-dialing telephone:

- programming FRITZ!X USB
- picking up a call from another extension

## 8 Support

AVM provides numerous sources of information to assist you if any questions or problems arise. Whether manuals, updates or support – here you will find the important information you need.



*In many cases problems which arise during operation can be resolved by installing the current Microsoft Service Pack for your operating system. The current service pack can be obtained directly from Microsoft.*

### 8.1 Information Sources

To take advantage of all commands and features of your FRITZ!X USB consult the following information resources:

#### Documentation

The following documentation is provided for all components of FRITZ!X USB:



- Readme on the CAPI 2.0 Driver of FRITZ!X USB in the WINDOWS.<OPERATING SYSTEM> folder on the FRITZ!X USB CD. The readme contains the latest information.



- Help on the FRITZ!X configuration program: You can open the detailed Online Help by pressing “F1” or clicking the Help button.



- Configuring by Phone: for complete instructions, see the file configuration program TELEPHONE.PDF in the folder \SOFTWARE\INFO\<LANGUAGE> on the FRITZ!X USB CD.



- Configuration of country-specific settings: For additional information, please see the PDF file COUNTRY\_SETTINGS.PDF in the SOFTWARE\INFO\<LANGUAGE> folder on the FRITZ!X USB CD.



- The FRITZ! manual: A PDF version of the manual is included in the FRITZ!X USB package in the \SOFTWARE\INFO\<LANGUAGE> folder on the CD. If you need to install

the Acrobat Reader to read the PDF file, you can do so using the installation program included in the same folder on the CD.



- Help for the FRITZ! communications software: In all FRITZ! modules you can open the detailed Online Help by pressing “F1” or clicking the Help button.



- Help files for the AVM system drivers: If you install an AVM system driver, such as the ISDN CAPI Port Driver, a shortcut to the corresponding Help file is created on your desktop. The Help files can also be found in the folders SOFTWARE\CAPIPORT\CAPIPORT.<OPERATING SYSTEM>\<LANGUAGE> on the CD.

### Internet

The AVM web site offers detailed information and updates free of charge. Go to the following URL:

[www.avm.de/en/Produkte/FRITZX](http://www.avm.de/en/Produkte/FRITZX)

- The “Products” category provides detailed information about all AVM products as well as announcements of new products and product versions.
- Solutions to concrete problems are offered under “Help Me”.
- The current driver software for all AVM ISDN-Controllers can be downloaded from the “Download” area.

## 8.2 Updates

New driver software and software updates for your FRITZ!X USB are available for downloading free of charge from AVM's Internet site or the AVM Data Call Center (ADC).

### Internet

To download updates from the Internet, please enter the following URL:

[www.avm.de/en/download](http://www.avm.de/en/download)

Driver software for FRITZ!X USB can be downloaded from this location.

The AVM FTP server can also be used to download current driver software. The download area of the FTP server can be accessed by clicking the “FTP Server” link or entering the following address:

[www.avm.de/ftp](http://www.avm.de/ftp)

### 8.3 Troubleshooting

Not all errors indicate defects in FRITZ!X USB or your terminal equipment. This section describes the most common error conditions with their most likely causes and remedies.

Begin by performing the following checks:

- Do the LEDs on your FRITZ!X USB indicate normal operation? The LED signals are described in the section “LEDs FRITZ!X USB” on page 12.
- Is FRITZ!X USB operational? The green LED labeled “Power” should be lit.
- Test the “Phone” LED for each extension:

If you pick up the handset of an extension phone, or if the extension has an active connection, this is indicated by an amber LED. Incoming calls are indicated by a blinking LED.

If the LED does not light up when you pick up the handset, this probably indicates a fault in the telephone cord or a wiring error in the connector. Test all the extensions one after another.

- Is the USB cable securely connected to the computer and FRITZ!X USB?
- Is the power adapter securely connected to the AC outlet and FRITZ!X USB?
- Is the ISDN cable securely inserted in the ISDN socket of your NT (Network Terminator) and FRITZ!X USB?

- Are your terminal devices – telephones, modems, fax machines – correctly connected to FRITZ!X USB?
- Is your terminal device defective? Test it on a different FRITZ!X USB extension or on a different PBX.

**No external dial tone when you pick up the telephone handset**

Check whether automatic outside dialing is set for the extension. If not, see if you can obtain a dial tone by dialing “o”.

**No internal dial tone when you pick up the handset**

Check whether your extension is configured as an PBX extension (you can obtain an external line by dialing “o”) or whether automatic outside dialing is enabled for the extension.

**The busy signal sounds when the handset is picked up.**

- If your terminal device has been set to automatic outside dialing and the busy signal sounds when you pick up the handset, all outside lines are currently busy. At the moment you cannot dial an external call. Wait until an external line is free.
- If your terminal device has been configured as a PBX extension and the busy signal sounds after you dial the outside dialing access (“o”), all outside lines are currently busy. At the moment you cannot dial an external call. Wait until an external line is free.

**Your fax machine indicates that the line is busy**

All external lines are currently busy. At the moment you cannot dial an external call. Wait until an external line is free.

### **Automatic outside dialing is deactivated for your extension, and you hear a busy signal 30 seconds after picking up the handset or switching on your fax machine**

This is not an error. FRITZ!X USB sounds the busy signal if your handset is off the hook for 30 seconds and no number is dialed. Dial the desired phone or fax number within 30 seconds.

### **The extension does not ring for an incoming external call**

- Check whether the terminal device that you expect to receive an external call is connected to the right extension. Then make sure that the MSN which your caller is dialing is assigned to that extension. If not, either connect the terminal device to the extension to which the MSN is actually assigned, or assign the MSN to the extension to which the terminal device is actually connected.
- Check whether the extension has been assigned an MSN as its outgoing Caller ID, but not as a dial-in number. In order for the extension to ring, you must either assign it a valid MSN as a dial-in number, or clear all of its MSN settings, both outgoing Caller ID and dial-in numbers.
- Check whether the FRITZ! modules respond to incoming calls.

### **All incoming calls are answered by the integrated ISDN-Controller**

Check the program settings in FRITZ!fax and FRITZ!fon. Is FRITZ!fax standing by for incoming calls? If you have selected the call acceptance option “Answer all incoming fax calls” on the “ISDN” settings page, then no calls can be answered by FRITZ!X USB’s analog extensions.

If FRITZ!fon is standing by for incoming calls and you have selected the call acceptance option “All incoming calls” on the “ISDN” settings page, then FRITZ!fon takes all incoming calls after a certain delay. In this case, no calls can be answered by FRITZ!X USB’s analog extensions. The delay

after which FRITZ!fon answers calls can be specified in the program settings on the “Answering Machine” page over the “Answering Profile” button. The delay setting in effect is the one configured in the answering profile that is activated on the “ISDN” settings page.

### **FRITZ!X USB after a power failure**

When you restart FRITZ!X USB after a power failure, its configuration corresponds to the last settings saved in the PBX’s on-board memory. Settings are saved permanently with the FRITZ!X configuration software.

If you have changed settings but not saved them in FRITZ!X USB, then FRITZ!X USB starts up with its original factory settings.

### **No acknowledgment tone is heard during programming**

Only tone-dialing (DTMF) telephones can be used to program FRITZ!X USB. Pulse-dialing telephones are not suitable for programming FRITZ!X USB.



*Some terminal devices can operate with either tone or pulse dialing. Check your terminal equipment.*

## **8.4 Assistance From AVM Support**



*Please use the information sources described above before contacting the support.*

For direct assistance, AVM Support is available to provide help when problems arise, during installation and your first steps in operating FRITZ!X USB.

The support desk can be reached by e-mail or by fax. AVM Support then will contact you to assist in resolving your problem. You will receive an e-mail or a fax.

Should problems establishing connections arise, please try to establish a test connection to the AVM Data Call Center (ADC) before contacting Support. See the instructions in the

FRITZ! manual (FRITZ!data chapter). In the case of an error, write down the exact wording of the error message. Support requires this information to rectify the error.

### Support by E-mail

Support requests can be sent to AVM by e-mail. Please use the Support request form at:

<http://www.avm.de/en/service/support/>

Fill out the form and send it to AVM support by clicking the “Send” button.

### Support by Fax

If necessary, you can reach FRITZ!X USB Support at the fax number:

**+49 (0) 30 / 39 97 62 66**

Please also include the following information in your fax:

- An e-mail address or fax number at which you can be reached.
- Personal data like your name and address.
- The Product Identification Code which is printed on the back of the CD case. Support staff will always check this number to ensure that you are a registered user.
- The operating system you are using, such as Windows XP or Windows Me.
- What is the version number of the FRITZ!X USB driver software used? The version number of the README file in the WINDOWS.<OPERATING SYSTEM> folder on the FRITZ!X USB CD.
- What is the version number of the PBX software of your FRITZ!X USB? The version number is listed on the “Update” page in the FRITZ!X configuration software.
- At what point during the driver installation for FRITZ!X USB does an error message appear?

- What is the exact wording of any error messages you received?
- Please supply as detailed a description of the error as possible: at what point does the error occur, which software are you having problems with, etc.?
- Is it possible to establish a test connection to the AVM Data Call Center (ADC) with FRITZ!X USB? Please try several times to connect!
- Which software are you having problems with?
- Please include a detailed description of your computer and how it is equipped.
- Can you reproduce the error?

Once you have put together all of this information, please fax them to AVM Support. We hope that the support team will be able to assist you in resolving the problem to your satisfaction.

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# Declaration of CE Conformity

**The manufacturer** AVM GmbH  
Address Alt-Moabit 95  
D-10559 Berlin

**herewith declares that the product**

Product FRITZ!X USB v3.0  
Type ISDN Connector

**complies with the following directives:**

- 1999/5/EC R&TTE Directive:  
Radio and Telecommunication Terminal  
Equipment
- 89/336/EEC EMC Directive:  
Electromagnetic Compatibility
- 73/23/EEC Low Voltage Directive:  
Electrical equipment designed for use  
within certain voltage limits

The following norms were consulted to assess conformity:

- EN 60950-1:2001/A11
- CTR 3/1998.06.17
- EN 55022/9.98 + A1/10.00 + A2/01.03 Class B
- EN 55024/9.98 + A1/10.01 + A2/01.03



The CE symbol confirms that this product conforms with the above mentioned norms and regulations.

A handwritten signature in blue ink that reads 'P. Foxel'.

Berlin, 15-11-2005

Peter Foxel, Technical Director