

FRITZ!CARD DSL INSTALLATION AND OPERATION

FRITZ!

DSL/ISDN
FRITZ!Card DSL



English Edition

High-Performance Communication by...



FRITZ!Card DSL

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Documentation release 05/2002

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Typographical Conventions

The following typographic conventions and symbols have been used to make the contents of this guide clearer and to emphasize important information.

Highlighting

You will find a quick overview of the highlightings used in this guide below.

Highlighting	Command	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 at the keyboard	a : \setup
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 are used in the guide. These always appear in connection with text printed in gray italics.



This symbol indicates useful hints to assist you in working with the product.



Indicates important instructions that must be observed to avoid malfunctions.

1 FRITZ!Card DSL

Welcome to the world of ADSL and ISDN! This manual is your introduction to ADSL and ISDN communication with FRITZ!Card DSL. It contains important information about the scope of functions, operation and installation of your FRITZ!Card DSL and the corresponding software.

ADSL (**A**symmetric **D**igital **S**ubscriber Line) is a data transmission procedure for high-speed Internet access via standard telephone cable. FRITZ!Card DSL supports the ADSL accesses offered by various providers and makes available the entire range of telematics services like telephone, fax, file transfer and video communication via ISDN.

1.1 What Does FRITZ!Card DSL Include?

FRITZ!Card DSL by AVM presents a communications package which provides the advantages of both ADSL and ISDN: high transmission speed, fast connection, optimum line quality and maximum operating reliability.

The communications package FRITZ!Card DSL consists of:

- the FRITZ!Card DSL with the appropriate driver software
- FRITZ!DSL, the ADSL software with:
 - FRITZ!web DSL, the software for Internet access
 - FRITZ!web DSL Network Sharing
 - the diagnostics software ADSLWatch, WebWatch and the configuration tool “DSL Assistant”
- FRITZ!, the ISDN communications software
- and the AVM system drivers
 - for ADSL operation
AVM DSL NDIS WAN CAPI Driver
 - for ISDN operation
AVM ISDN CAPI Port Driver, AVM NDIS WAN CAPI Driver and AVM TAPI Services for CAPI.

1.2 What Was Delivered?

The box contains:

- 1 FRITZ!Card DSL

The FRITZ!Card DSL connects your computer to ADSL technology and to the ISDN network.

- 1 ADSL cable

Use the cables delivered in the package to connect FRITZ!Card DSL to the socket of the splitter labeled “DSL”.

- 1 ISDN cable

Use this cable to connect the FRITZ!Card DSL to the ISDN jack of the network terminator (NT).

- 1 FRITZ!Card DSL CD with

- driver software for FRITZ!Card DSL
- FRITZ!DSL ADSL software
- FRITZ! ISDN communications software
- AVM system driver for ADSL and ISDN operation
- documentation for all enclosed AVM products

- FRITZ!Card DSL manual (what you’re reading now)

Documentation for the FRITZ!Card DSL ADSL/ISDN-Controller

- 1 registration card

This card is used to register the customer in the AVM customer database. AVM support is only available to customers who have submitted their registration card.



The Product Identification Code is printed on the back of the CD envelope. This number is part of your license agreement with AVM. Be sure to keep it in a safe place!

1.3 Installation Requirements

Your computer must meet the following requirements to operate FRITZ!Card DSL:

- You must have an ADSL access.
FRITZ!Card DSL supports the ADSL accesses offered by various providers.
- An ISDN access with the DSS1 (Euro ISDN) D-channel protocol must be installed.
- An IBM or 100% compatible computer with Pentium II processor or comparable processor, 300 MHz or higher, and at least 32 MB RAM.
- Your computer must have a free PCI slot and a free interrupt for this slot.
- The operating system Microsoft Windows Me, Windows 98, Windows XP or Windows 2000 Professional must be installed.
- To operate FRITZ!fon, a module of the FRITZ! communications software, you must have a sound card and driver with full-duplex capability, and suitable sound input/output equipment (such as a headset).

You can install FRITZ!Card DSL if your computer meets all of these requirements.

1.4 Installing FRITZ!Card DSL Parallel to an ISDN-Controller

If you already have an ISDN-Controller installed, for instance an AVM FRITZ!Card PCI, then please follow the instructions below:

Operating FRITZ!Card DSL and an ISDN-Controller

The FRITZ!Card DSL is equipped with an integrated passive ISDN-Controller, comparable to a FRITZ!Card PCI by AVM. Operating both of these products in one system presents no problems. However, the ISDN features of FRITZ!Card DSL can-

not be activated in addition to those of an ISDN-Controller already installed in the system! If you would like to continue using an existing ISDN-Controller, it must be completely integrated and operable in the system (CAPI 2.0 drivers installed) before FRITZ!Card DSL is installed.



Please note that multi-functional products with integrated a/b interfaces like the AVM ISDN-Connector FRITZ!X USB are also equipped with an integrated ISDN-Controller.

During installation of the FRITZ!Card DSL driver software, any existing ISDN-Controllers are recognized automatically and the driver software activates only the DSL features of FRITZ!Card DSL.

Removing an Existing ISDN-Controller

To use both the ADSL and ISDN features of FRITZ!Card DSL, any ISDN-Controllers already installed in your system must be removed before installation of the new drivers. For details about removing the ISDN-Controller, please see the documentation for that product.

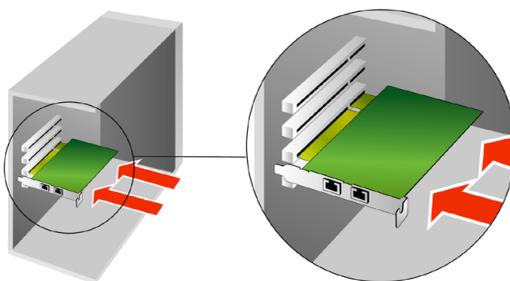
2 Installing FRITZ!Card DSL

FRITZ!Card DSL can be installed in the Windows Me, Windows 98 and in Windows XP or Windows 2000 operating systems.

Follow the instructions in the sections below.

2.1 Installing FRITZ!Card DSL

1. Switch off your computer and any connected devices and then pull the power plug.
2. Open the computer housing.
3. Select a free PCI slot and remove the blanking plate from the top end of the slot.
4. Insert the FRITZ!Card DSL, connector strip first, into the slot until the card is positioned firmly.



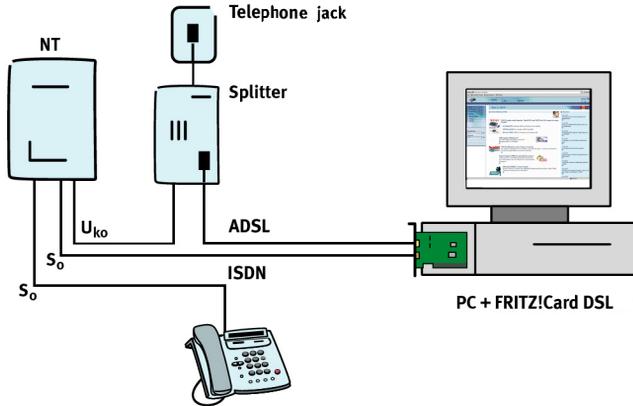
Inserting the FRITZ!Card DSL into the PCI slot

5. Screw FRITZ!Card DSL tightly to the top end of the slot.
6. Close the computer housing and plug the power cord back into the socket.

This concludes the physical installation of FRITZ!Card DSL in your PC.

2.2 Connecting FRITZ!Card DSL to the ADSL and the ISDN Access

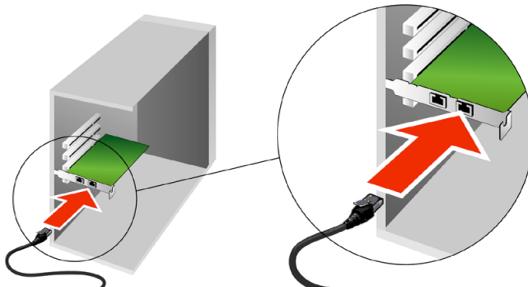
FRITZ!Card DSL is connected to ADSL and ISDN in just a few steps. Please note the following diagram first:



Connecting FRITZ!Card DSL to ADSL and ISDN

Now carry out the following steps:

1. Remove the enclosed ADSL cable from the package. The ADSL cable has identical plugs fitted to both ends.
2. Plug one of these into the FRITZ!Card DSL socket labeled “ADSL”.



Connecting the cable to the ADSL socket of FRITZ!Card DSL

3. Insert the other end of the ADSL cable into the socket of the splitter labeled “DSL”.

4. Remove the enclosed ISDN cable from the package.
The ISDN cable has identical plugs fitted to both ends.
5. Plug one of these into the FRITZ!Card DSL socket labeled “ISDN“.
6. Insert the other end into the ISDN socket of your ISDN access (ISDN network terminator ‘NT’).

Start your computer. As soon as the operating system is ready, you will be prompted to install the software components of FRITZ!Card DSL. Read the following sections.



For more information, see the sections “The ADSL Line” on page 36 and “FRITZ!Card DSL at the ADSL/ISDN Connection” on page 37.

2.3 What Is Installed?

The installation program sets up the following software components in the initial installation:

- driver software for FRITZ!Card DSL
- FRITZ!DSL ADSL software
- FRITZ!, the ISDN communications software
- AVM system drivers for ADSL and ISDN operation

If you already have individual software components such as FRITZ! installed, read the instructions in section “Installing Individual Software Components” on page 20.

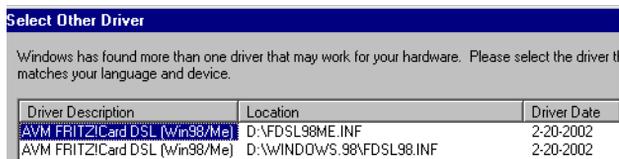
The section “Where to Find What After Installation” on page 19 explains where to find the individual software components on your computer after installation.

2.4 Installing the Driver Software in Windows Me

Once you have inserted the FRITZ!Card DSL in the computer, the Plug and Play mechanism of Windows Me recognizes the FRITZ!Card DSL as a “PCI Multimedia Device” automatically. The “Add New Hardware Wizard” is started. Click “Next”.

Insert the FRITZ!Card DSL CD and follow the instructions on the screen. Please note the following:

1. When asked: “What would you like to do?”, select the option “Automatic search for a better driver (Recommended)” and click “Next”.
2. Select the entry <CD-ROM DRIVE>\FDSL98ME.INF in the list of entries found and confirm with “OK”.



Driver Description	Location	Driver Date
AVM FRITZ!Card DSL (win98/Me)	D:\FDSL98ME.INF	2-20-2002
AVM FRITZ!Card DSL (win98/Me)	D:\WINDOWS.98\FDSL98.INF	2-20-2002

Drivers found

3. When the message “Windows has finished installing the new hardware device” appears, click “Finish”.
4. When the Windows “ISDN Configuration” dialog for entering the telephone number and SPID (Service Profile Identifier – telephone companies' identification code for service indicators in the USA) appears, ignore it and confirm by clicking “Next”. When the message “The ISDN configuration is complete” appears, click “Finish”.
5. The DSL Assistant starts automatically.

When you confirm the welcome window and information dialog with “OK”, the DSL Assistant will check that the ADSL line is functioning properly and configure the basic settings for ADSL connections.

Then the message that the AVM ADSL software can be installed appears. See the section “Installing the ADSL Software FRITZ!DSL” on page 17 for more information.

2.5 Installing the Driver Software in Windows 98

Once you have inserted the FRITZ!Card DSL in the computer, the Plug and Play mechanism of Windows 98 recognizes the FRITZ!Card DSL as a “PCI Multimedia Device” automatically. The “Add New Hardware Wizard” is started.

Insert the FRITZ!Card DSL CD and follow the instructions on the screen. Please note the following:

1. When asked: “What do you want Windows to do?”, select the option “Search for the best driver for your device (Recommended).”
2. When the program asks where the driver is located, activate **only** the option “CD-ROM drive”.



Specifying the position of the driver in Windows 98

3. When the Windows “ISDN Configuration” dialog for entering the telephone number and SPID (Service Profile Identifier – telephone companies' identification code for service indicators in the USA) appears, ignore it and confirm by clicking “Next”. When the message “The ISDN configuration is complete” appears, click “Finish”.
4. When the message “Windows has finished installing the software that your new hardware device requires.” appears, click “Finish”.
5. The DSL Assistant starts automatically.

When you confirm the welcome window and information dialog with “OK”, the DSL Assistant will check that the ADSL line is functioning properly and configure the basic settings for ADSL connections.

Then the message that the AVM ADSL software can be installed appears. See the section “Installing the ADSL Software FRITZ!DSL” on page 17 for more information.

2.6 Installing the Driver Software in Windows XP



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

Once the FRITZ!Card DSL has been inserted in your computer, the Plug and Play mechanism of Windows XP recognizes the FRITZ!Card DSL as a “Multimedia Controller” automatically. The “Found New Hardware Wizard” is started.

Insert the FRITZ!Card DSL CD and follow the instructions on the screen. Please note the following:

1. When asked: “What do you want the wizard to do?”, select the option “Install the software automatically (Recommended)” and confirm with “Next”.
2. Select the entry <CD-ROM DRIVE>:WINDOWS.XP\FDSL.INF in the list of entries found and confirm with “OK”.



Drivers found

3. If messages now appear for the Windows Logo Test, it is safe to ignore them and to select the button “Continue Anyway”.
4. When the message “The wizard has finished installing the software for: AVM FRITZ!Card DSL” appears, click “Finish”.
5. The DSL Assistant starts automatically.

When you confirm the welcome window and information dialog with “OK”, the DSL Assistant will check that the ADSL line is functioning properly and configure the basic settings for ADSL connections.

Then the message that the AVM ADSL software can be installed appears. See the section “Installing the ADSL Software FRITZ!DSL” on page 17 for more information.

2.7 Installing the Driver Software in Windows 2000



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

In addition, the current Service Pack for Windows 2000 must already be installed on your PC.

Once you have connected the FRITZ!Card DSL to the computer, the Plug and Play mechanism of Windows 2000 recognizes the FRITZ!Card DSL as a “Multimedia Controller” automatically. The “Found New Hardware Wizard” starts automatically.

Follow the instructions on the screen and observe the following:

1. When asked: “What do you want the wizard to do?”, select the option “Search for a suitable driver for my device (recommended)” and confirm with “Next”.
2. Insert the FRITZ!Card DSL CD, select the option “CD-ROM drives” and confirm your entries with “Next”.
3. Then you are informed that a driver for a Multimedia Device has been found.

4. In the next dialog 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 “Yes”. Repeat this procedure in the next two dialogs for the AVM NDIS WAN CAPI Driver and the AVM DSL NDIS WAN CAPI Driver.
5. Once the files have been copied onto your computer, end this stage of installation with “Finish”.
6. The DSL Assistant starts automatically.

When you confirm the welcome window and information dialog with “OK”, the DSL Assistant will check that the ADSL line is functioning properly and configure the basic settings for ADSL connections.

Then the message that the AVM ADSL software can be installed appears. See the section “Installing the ADSL Software FRITZ!DSL” on page 17 for more information.

2.8 Installing the ADSL Software FRITZ!DSL

For convenient use of the ADSL access, FRITZ!Card DSL provides the powerful FRITZ!DSL software.

The installation procedure for FRITZ!DSL is identical for all operating systems. Follow the instructions on the screen and observe the following:

1. The FRITZ!DSL welcome screen appears. Confirm with “Next”.
2. Specify the folder in which you want to install FRITZ!DSL on your computer.
3. Next, specify the program group for FRITZ!DSL in the Start menu.
4. The system files are copied into the specified folder and the ADSL software is installed on your computer. Finish installation by clicking “Exit”.

This completes the software installation for FRITZ!Card DSL.

Continue with the next section.

2.9 Installing the ISDN Communications Software FRITZ!

After the ADSL software has been installed, the setup program reports that the FRITZ! ISDN communications software can be installed.

1. Click “Install” or “Next” to proceed.
2. The welcome screen of the FRITZ! installation appears. Click “Continue”.
3. First enter the folder in which the FRITZ! ISDN communications software is to be installed on your computer.
4. Next, specify the program group for FRITZ! in the Start menu.
5. The next dialog asks you to choose whether you want just to install the software, or to enter certain configuration settings during the installation.

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

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

This concludes the software installation for FRITZ!Card DSL. Restart your computer.

2.10 Errors During Installation: What to Do

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

1. Remove all components according to the instructions in the sections “Removing Software Components in Windows Me and 98” on page 21 and “Removing Software Components in Windows XP and 2000” on page 21.
2. Restart your computer.
3. Repeat the complete installation.



If you want to install individual components, read the instructions in the section “Installing Individual Software Components” on page 20.

2.11 Where to Find What After Installation

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

The program groups “FRITZ!DSL” and “FRITZ!” with the following entries are created in the Windows “Start” menu in the “Programs” menu:

“FRITZ!DSL” Program Group

- ADSLWatch: detailed ADSL diagnostic information for experts
- WebWatch: tests the quality of your Internet connection
- DSL Assistant: for the initial configuration at an ADSL access
- FRITZ!Card DSL Readme: important product information
- FRITZ!web DSL: for fast, secure access to the Internet
- FRITZ!web DSL Network Sharing: the software that enables Internet connections in your network

“FRITZ!” Program Group

The “FRITZ!” program group includes the “FRITZ!” ISDN communications modules. The modules can also be opened by means of the “FRITZ! ISDN and Internet” link on your desktop. For explanations of the modules, see “FRITZ!: Software for Internet and ISDN” on page 33.

2.12 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. Please note the following:

- To install the FRITZ!Card DSL driver software, open the README.DOC file from the <OPERATING SYSTEM> folder on the CD and follow the instructions given there.
- To install the FRITZ!web DSL ADSL software, start the SETUP.EXE program in the SOFTWARE\FRITZ!DSL directory on the installation CD.
- To install the FRITZ! communications software, start the SETUP.EXE program in the directory SOFTWARE\FRITZ! directory on the installation CD.
- The AVM ISDN CAPI Port Driver is installed using the SETUP.EXE file located in the SOFTWARE\CAPIPORT\CAPIPORT.<OPERATING SYSTEM> folder on the CD.
- To use TAPI applications, install the AVM ISDN TAPI Services for CAPI by starting the SETUP.EXE file located in the SOFTWARE\TAPI folder on the CD.

2.13 Removing Software Components in Windows Me and 98

Proceed as follows to completely or partially uninstall FRITZ!Card DSL:

1. Click the “Add/Remove Programs” icon in the Control Panel (“Start / Settings / Control Panel”).
2. The components of FRITZ!Card DSL are found in the list of installed software. They appear with the following descriptions:
 - AVM ADSL/ISDN-Controller FRITZ!Card DSL
 - FRITZ!web DSL
3. Click the “Add/Remove...” button. The Uninstall program starts. All files and entries of the selected components are deleted from your computer.

Repeat this process to remove another software component of FRITZ!Card DSL.

4. When you have finished, restart your computer.

Conclude uninstallation by restarting your computer.

2.14 Removing Software Components in Windows XP and 2000

Proceed as follows to remove the FRITZ!Card DSL driver software in Windows XP and 2000:

In Windows XP “Category View”

1. Open the System Properties of Windows by clicking through “Start / Control Panel / Performance and Maintenance / System”. Select the “Hardware” settings page and click the “Device Manager” button.
2. Click the “Network adapters” section and select the “AVM FRITZ!Card DSL” entry.
3. In the “Action” menu, select the “Uninstall” command.

4. Confirm the uninstallation in the following security prompt. AVM FRITZ!Card DSL will be removed.

In Windows XP “Classic View”

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

This completes uninstallation of the driver software of FRITZ!Card DSL.

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!Card DSL” entry.
3. In the “Action” menu, select the “Uninstall...” command.
4. Confirm the uninstallation in the following security prompt. AVM FRITZ!Card DSL will be removed.

This completes uninstallation of the driver software of FRITZ!Card DSL.

Removing Additional Software Components in Windows XP and 2000

1. Click the “Add/Remove Programs” icon in the Control Panel (“Start / Settings / Control Panel”).
2. Make sure that the “Change or Remove Programs” button is pressed.

3. Select the software components you wish to remove.
4. Click the “Change/Remove” button. All files and entries of the selected components are deleted from your computer.

Repeat this process to remove another software component of FRITZ!Card DSL.

This completes uninstallation of the selected components.

3 Into the Internet with FRITZ!web DSL

FRITZ!web DSL is your gateway to fast and secure Internet access. You can explore the World Wide Web, exchange e-mail or enter chat rooms while monitoring your connection with the WebWatch diagnostic software.

This chapter describes the possibilities and advantages offered by access with FRITZ!web DSL.



You can also access the Internet via Windows' Dial-Up Networking. Simply select the AVM DSL NDIS WAN CAPI Driver as the device.

3.1 Defining the Default Provider

Set up an Internet default access before dialing into the Internet with FRITZ!web DSL. Define the most frequently used Internet Service Provider as the default access.

The first time you start FRITZ!web DSL, the “New Internet Connection” dialog opens automatically. Follow the instructions below:



For a number of Internet Service Providers you can select preconfigured profiles.

- Enter your access data.

A screenshot of a Windows dialog box titled "New Internet Connection". The dialog has a blue title bar with a close button (X) in the top right corner. The main area is light gray and contains the text "Enter your access data". Below this text are two input fields: "User name" and "Password". To the right of the "Password" field is a checkbox labeled "Request password every time".

Example: Dialog window for entering the access data



The necessary access data is supplied by your Internet Service Provider.

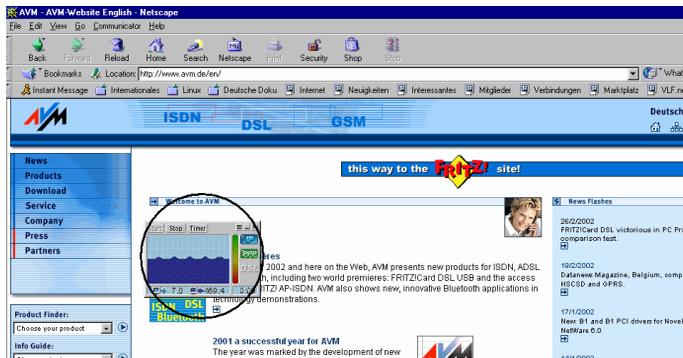
- Follow the instructions on the screen and conclude your input with “Finish”.

3.2 Dialing Up a Connection

Now start your Web browser or another Internet program. The connection to the Internet is dialed up automatically.

The Status Window

FRITZ!web DSL appears as a small status window:



A connection is set up to FRITZ!web DSL. Data is being transmitted.

The FRITZ!web DSL Commands

FRITZ!web DSL can be operated using the buttons in the window and the context menu of the right mouse button.



As soon as FRITZ!web DSL has been started, an icon appears in the system tray. Click this icon with either mouse button to operate FRITZ!web DSL.

The Connection Icons

Two connection icons which take on different colors to display information about the negotiation of the connection protocol, data transmission and whether an Internet connection is configured. See the comprehensive Online Help for details.

3.3 Features of FRITZ!web DSL

FRITZ!web DSL provides you with the following features:

Automatic Idle Timeout (Timer Bar)

In the FRITZ!web DSL 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 read it in your browser. While you are reading it, no further data is being requested over the Internet connection. After the delay you have specified in the settings, FRITZ!web DSL hangs up the idle connection to avoid incurring further charges. The connection is restored automatically when you click on a link to another page or type in another URL. Thanks to FRITZ!web DSL's fast dial-up, you will hardly notice that the connection is being restored.



During an online banking or chat session, you should turn off the “Automatic idle timeout” (timer) feature in order to prevent an unintended termination of the Internet connection during the session.

The Logs: All Information at a Glance

In FRITZ!web DSL all connections and events are recorded in logs. The logs can be opened using the context menu of the right mouse button. Select the command “Logs / Connections”, for example, to see a list of the connections dialed to all Internet Service Providers. Select “Logs / Events” for information about key program events, with the date and time they occurred. Such information includes the time at which FRITZ!web DSL went on standby, and whether an Internet connection was selected.

For more information, see the Online Help.

3.4 The FRITZ!web DSL Settings

When you select the “Settings” command in the context menu, a window with the tabs “ADSL”, “Logs” and “Start Options” appears. Make settings for FRITZ!web DSL here.

‘ADSL’ Settings Page

The following settings can be configured on this page.

Inactivity Timeout

Select the option “Use timer” to activate the inactivity timeout. Then you can specify how many seconds FRITZ!web DSL waits before hanging up an idle connection.

You can adjust the inactivity timeout to the charge schedule of your Internet Service Provider. The idle connection then will be cleared just before the next charge interval begins.

Automatic Redialing

If FRITZ!web DSL is unable to establish a connection, the program automatically attempts again to set up a connection after the time set here.

Internet Options

Open the Windows Internet options with the “Internet Options...” button. The Internet options for operating FRITZ!web DSL are set up when you install FRITZ!web DSL.

For more information, see the Online Help.

‘Start Options’ Settings Page

The settings on this page enable you to start FRITZ!web DSL automatically. If you activate both options here, FRITZ!web DSL is on standby immediately every time you start your computer and sets up a connection as soon as you open a web browser.

3.5 FRITZ!web DSL Network Sharing

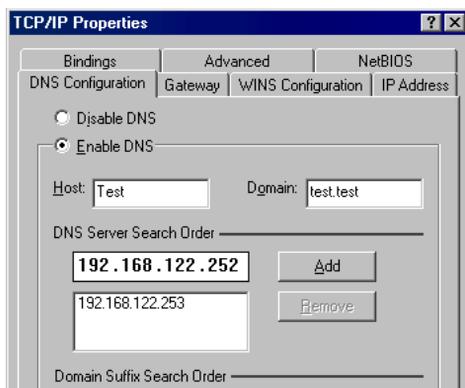
FRITZ!web DSL Network Sharing organizes Internet access via FRITZ!Card DSL for all users in a network.

Technical Background

In order to use the ADSL features of FRITZ!Card DSL and FRITZ!web DSL in a network, a functioning TCP/IP network is required.

The computer in which FRITZ!Card DSL has been installed serves to provide access to the Internet for all other computers in your network, functioning as what is known as a default gateway. The network adapter in the computer with FRITZ!Card DSL must receive a fixed IP address to ensure smooth operation. This IP address must be entered as the default gateway in the network settings of all other computers in the network.

DNS servers must also be configured on every computer in the network. Make this setting in the “TCP/IP Properties” of the network environment. The following illustration shows this settings in Windows Me. For more information, see the Online Help for FRITZ!web DSL Network Sharing.

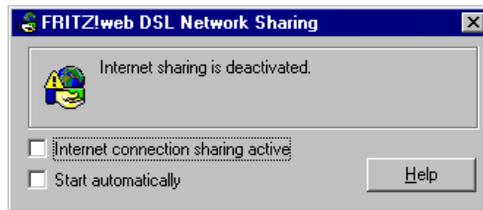


TCP/IP Properties: DNS settings

Share FRITZ!web DSL in the Network

Proceed as follows to grant all computers in your network access to the Internet:

1. Start the gateway computer on which FRITZ!Card DSL is installed.
2. Open the FRITZ!web DSL Network Sharing program.
3. Activate the option “Internet connection sharing active”.
4. Activate the “start automatically” option as well to activate network sharing automatically every time the computer is started.
5. When the “FRITZ!web DSL Network Sharing” window is closed, it appears as a small icon in the system bar. From there you can re-open the program to make any configuration changes desired.



FRITZ!web DSL Network Sharing

To start an Internet connection from a computer in your network environment, proceed as follows:

1. Start FRITZ!web DSL on your gateway computer.
To have FRITZ!web DSL start automatically every time the computer starts, please see the information in the Online Help.
2. Open a browser on one of the computers in your network. The connection to the Internet will be established.



For more information on TCP/IP, on the corresponding configuration of your computer and on FRITZ!web DSL Network Sharing, see the comprehensive Online Help.

- In the following “Modem/Device Selection” window, select the entry “AVM DSL NDIS WAN Line 1”.

3.6 The Diagnostic Program ADSLWatch

The ADSLWatch program helps you solve problems with your ADSL connection. It logs and monitors all activities of FRITZ!Card DSL. ADSLWatch also provides a system overview of the features of the FRITZ!Card DSL.

For the user interested in technical details, ADSLWatch offers display of the existing connection, testing of the connection status, display of the ATM parameters and comprehensive statistics.

'Overview' Settings Page

The transmission speeds and the line states for establishing connections are displayed graphically on this settings page. Information on the ADSL switching technology for your line is also presented.

When you set up an ADSL connection, FRITZ!Card DSL and the local exchange negotiate transmission speeds and error corrections in a training phase. The connection icon "ADSL" and the ADSL line in the overview diagram show their respective states through different colors:

Color	Status
Red	No ADSL connection is active or the ADSL connection has been interrupted.
Yellow	An attempt to set up an ADSL connection is under way (training phase).
Green	An ADSL connection to the local exchange has been established.

The connection icon "ATM" (Asynchronous Transfer Mode) indicates the status of the ATM or PPPoE connection, respectively.

Color	Status
Red	No ATM/PPPoE connection has been established with the local exchange.
Green	An ATM/PPPoE connection to the local exchange has been established.



The connection states are also displayed in the status area of the task bar.

- When the “ATM” LED is lit, a connection has been established to the Internet.
- The “ADSL” LED glows when an ADSL connection has been established with the local exchange.

'ADSL' Settings Page

The “ADSL” settings page presents additional details about the transmission speeds, both for the transmit and receive direction of communication. Counters for error events on ADSL level are displayed in addition to the coding parameters and the data buffers used (FAST\INTERLEAVED).

'ATM' Settings Page

The counters on this settings page provide information about the various types of ATM cells, sorted by the transmission and reception directions of communication (see also “How Does the ADSL/ISDN-Controller FRITZ!Card DSL Work?” on page 39).

ATM Cells	Function
Idle cells	They contain no user data and are sent when no other data are to be transmitted.
Data cells	They contain user data, generally AAL5.
AAL5 cells	They are data cells on ATM Adaption Layer 5, which is used for Internet connections; perhaps user data, generally PPPoE.
OAM cells	They contain no user data.

'ADSL Spectrum' Settings Page

The signal-to-noise ratio, the carrier distribution and the pilot signals are displayed on this settings page.

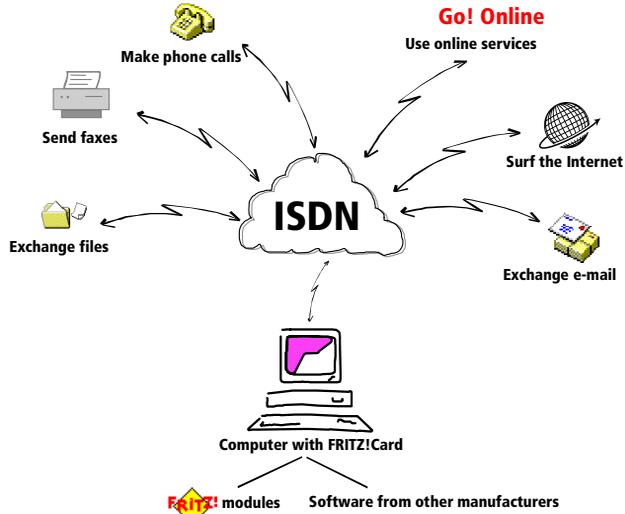
3.7 The FRITZ!Card DSL Assistant

The DSL Assistant for FRITZ!Card DSL checks that the ADSL line is functioning properly.

Have the program perform the configuration again by opening the DSL Assistant from “Start / Programs / FRITZ!DSL”. Confirm the welcome and information window by clicking “OK”. The “DSL Assistant” independently configures all necessary settings for FRITZ!Card DSL.

4 FRITZ!: Software for Internet and ISDN

FRITZ!Card DSL grants you freedom of connectivity, allowing communication not only with remote partners equipped with ADSL, but also connections to ISDN accesses and analog lines. FRITZ!Card DSL is the gateway to the entire world of ISDN communication: surfing the Internet, transmitting data, sending faxes and much more. The following graphic illustrates some of the potential uses of FRITZ!Card DSL:



Freedom of connectivity with FRITZ!Card DSL

4.1 The Many Facets of FRITZ!

Once FRITZ!Card DSL 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! includes 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.



Using the ISDN file manager FRITZ!data, files can be transferred quickly and securely, and your computer can be configured to receive files from outside callers. Access rights can be defined individually for each user.



FRITZ!fax allows faxes to be sent and received in accordance with the G3 fax standard (analog fax), at speeds up to 14,400 bit/s. Faxes are sent directly from your text processing program. Faxes also can be received and retrieved using FRITZ!fax as a fax polling server.



With FRITZ!fon plus a full duplex sound card 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.



FRITZ!vox turns your computer into an answering machine. Different messages can be configured for specific numbers, callers and times of day. In FRITZ! version 3.02 and upwards, the FRITZ!vox answering machine is integrated in FRITZ!fon.



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



For detailed information on FRITZ!, see the Online Help and the FRITZ! manual. The manual is supplied in PDF format in the SOFTWARE\INFO 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!Card DSL CD.

4.2 Using ISDN Services with FRITZ!

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



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

Multiple Subscriber Numbers for the FRITZ! Modules

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

However, FRITZ!fax, FRITZ!vox und FRITZ!fon all use the “voice” service indicator. If you want these modules to respond to calls meant 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 any analog extensions. Specify the settings on the “ISDN” settings page of the respective modules.

5 Basic ADSL/ISDN Information

This chapter provides basic information about ADSL and ISDN, FRITZ!Card DSL on these lines and the way an ADSL/ISDN-Controller functions.

5.1 The ADSL Line

ADSL (Asymmetric Digital Subscriber Line) is the most common variant of the well-known DSL technologies. DSL is a high-speed transmission method that uses conventional telephone lines. Data is transmitted in both incoming and outgoing directions, but at different speeds. The transmission speed of the data from the subscriber to the exchange is limited so that more data can be transmitted in the opposite direction. This transmission method therefore achieves high transfer rates especially for surfing in the World Wide Web, as few data is sent to a web server but large files such as HTML documents with multimedia data are received.

As in other DSL technologies the ADSL connection is purely a data service and cannot replace the telephone connection. Telematics services such as telephone, fax, data and video transmission are still implemented in combination with an ISDN or analog line. The ADSL connection usually constitutes an additional data line for the Internet, so that analog telephone and fax lines are not affected by surfing. A combination of ADSL and ISDN has the advantages of wide distribution, a high degree of comfort and a large number of features.

It is no problem to operate ADSL simultaneously with an ISDN basic access on one line because it occupies a higher frequency band than ISDN. The exact division of the two different frequency bands is performed by an additional device known as a splitter.

5.2 FRITZ!Card DSL at the ADSL/ISDN Connection

The splitter is connected to the telephone socket to configure a combined ADSL/ISDN line. There are two sockets on the splitter: The ADSL/ISDN-Controller is connected directly to the “ADSL” socket – this establishes the ADSL connection. A network terminator (NT) is also attached to the splitter to provide access to ISDN. The NT is equipped with two ISDN sockets, each of which is an external S₀ interface.

In most cases an ISDN PBX with analog extensions is connected to one ISDN socket of the NT and a digital terminal to the other: in this case, the ADSL/ISDN-Controller. Analog terminal devices such as a telephone, answering machine and G₃ fax machine are connected to the PBX extensions.

This provides you with all modern communication possibilities on a single combined ADSL/ISDN connection.

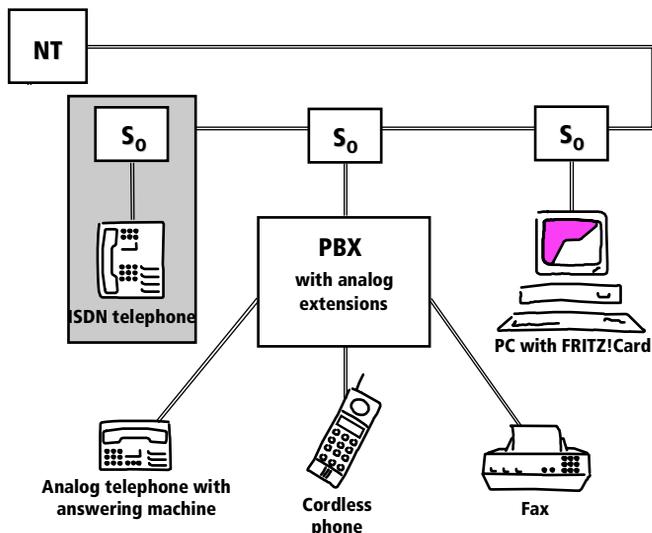


See the illustration “Connecting FRITZ!Card DSL to ADSL and ISDN” on page 11 for details.

5.3 The ISDN Line

Different telephone numbers are used to address the terminal devices at the NT of the ISDN access. These telephone numbers are referred to in ISDN terminology as Multiple Subscriber Numbers (MSNs). Each ISDN line is equipped with several MSNs.

If a PBX is connected to one of the ISDN sockets and your computer with FRITZ!Card DSL to the other, you will require additional ISDN sockets to connect additional ISDN terminal devices such as an ISDN telephone (see the gray area in the following illustration).



Typical configuration of a point-to-multipoint ISDN line.

Some PBX systems provide both analog and digital extensions. ISDN terminal devices may be connected directly to these digital extensions. Digital extensions are also known as “internal S₀ interfaces” as they present an alternative to external S₀ interfaces.

When a call arrives on your ISDN line, it is necessary to decide who will answer it: a FRITZ! module, the ISDN telephone, or the PBX. For incoming ISDN calls, a service indicator is transmitted first. This service indicator serves to differentiate between data calls and fax calls, for instance. For incoming analog calls no such differentiation is possible: telephone calls and G₃ (analog) faxes are both designated by the “voice” service indicator. In order to direct such calls correctly, different MSNs must be assigned to the different terminal devices or FRITZ! modules. See the section “Using ISDN Services with FRITZ!” on page 35 for more information.

5.4 How Does the ADSL/ISDN-Controller FRITZ!Card DSL Work?

FRITZ!Card DSL connects your computer with ADSL technology and ISDN. The cable included in the package is used to connect to both ADSL and to the S₀ bus, and thus to the local exchange of the telephone network.

All services in ADSL technology and ISDN are implemented using protocols. These protocols define how data transfer between the subscribers takes place. They facilitate smooth communication and adjust such parameters as transmission speed and data compression during transfer.

For the ADSL line, transmission is regulated by the protocols TCP/IP, PPP, PPPoE and ATM. These define that data can only be transmitted between two fixed locations – what is known as broadband POP and the user. It is not possible to establish a direct ADSL or PPP connection to another ADSL subscriber. The ATM (Asynchronous Transfer Mode) transport protocol defines how user data are transmitted on the ADSL line. The data are packed in “ATM cells” then are fed in and transported to the ATM network of the ADSL provider.

In both ADSL and ISDN both of the communicating parties must support the selected protocol to enable smooth data transfer. For ISDN these are the protocols T.30 for G3 fax, for example, or HDLC transparent for Internet communication.

The driver software for the ADSL/ISDN-Controller FRITZ!Card DSL must support the right parameters in real-time for every connection and pass them on to both local applications and the remote station. Transfer to the communications software takes place in the computer via the COMMON-ISDN-API interface, CAPI for short. CAPI establishes the connection between FRITZ!Card DSL and the installed applications. The driver software for FRITZ!Card DSL thus is also known as the CAPI driver.

While every FRITZ!Card DSL has a special CAPI driver for each operating system supported, the applications work identically and can be used universally with CAPI 2.0. The FRITZ! communications software modules, the FRITZ!web DSL pro-

gram and programs by other manufacturers are also based on CAPI 2.0. AVM provides the NDIS WAN CAPI Driver for programs requiring a Dial-Up Networking connection.

6 Support

Questions may arise occasionally when working with the components of FRITZ!Card DSL. This chapter offers tips about information sources to support you during everyday operation. Additional information, product descriptions and updates can be obtained from the Internet and the AVM Data Call Center. These sources also offer tips for installation and information about AVM Support.



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

6.1 Information and Updates

Information about all components of FRITZ!Card DSL is available here:

Documentation

FRITZ!Card DSL includes comprehensive documentation in various formats:



- Readme for FRITZ!Card DSL. The Readme file contains current information which was not yet available at the time the manual was printed.



- Help for FRITZ!web DSL. Comprehensive Online Help can be opened from anywhere in the program by pressing “F1” or clicking the “Help” button.



- Help for the FRITZ! ISDN 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 AVM DSL NDIS WAN CAPI 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> on the CD.



- The FRITZ! ISDN Communications Software manual. A PDF version is in the SOFTWARE\INFO folder on the FRITZ!Card DSL 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 SOFTWARE\INFO folder on the CD.

AVM Data Call Center

The AVM Data Call Center (ADC) offers access to the latest information and updates free of charge. The ADC can be reached over the URL of the AVM home page:

www.avm.de/en

In the Internet AVM 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” category the FAQs may be accessed. These lists of **F**requently **A**sksed **Q**uestions along with their answers present concrete support suggestions and tips.
- The current driver software for all AVM ISDN-Controllers can be downloaded from the “Download” section.

6.2 Assistance from FRITZ!Card DSL Support



Please use the information sources listed above before contacting FRITZ!Card DSL Support!

For direct assistance, AVM offers FRITZ!Card DSL Support, which helps when problems arise during installation and the first steps of operation with FRITZ!Card DSL and FRITZ!web DSL. The Support desk can be reached from the Internet.

If you have connection problems, try to narrow them down first. Proceed as follows:

- Open the ADSLWatch program if you are having problems with ADSL connections. This enables you to check the state of the connection. See also the section “The Diagnostic Program ADSLWatch” on page 30.

Support Via the Internet

Support requests may be submitted to AVM via the AVM home page. Please use the Support form at www.avm.de/en/service/support

Support by Fax

If necessary, you can reach FRITZ!Card DSL Support at the fax number:

+49 (0)30 / 39 97 62 66

The following information should be included 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, printed on the back of the CD envelope. Support staff will always check this number to ensure that you are a registered user.
- Which operating system are you using (e.g., Windows Me or Windows 2000)?

- Is your ADSL/ISDN-Controller FRITZ!Card DSL operating at a PBX?
- At what step of the installation or in which application does an error message appear? What is the exact wording of the message?
- Which software are you having problems with? What is the exact wording of any error messages?
- Include the version number and build of the driver used. The version number and build are included in the README file.
 - In the operating systems Microsoft Windows Me/98, the README file can be accessed from the “AVM” program group.
 - In the operating systems Microsoft Windows XP and 2000, the README file is located in the folder WINDOWS.2K or WINDOWS.XP, respectively, on the FRITZ!Card DSL CD.

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Declaration of CE Conformity

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

herewith declares that the product

Type ADSL-/ISDN-Controller
Product FRITZ!Card DSL

complies to the following directives:

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

The following norms were consulted to assess conformity:

- CTR 3/1998.06.17
- EN 55022/9.98 Class B
EN 55024/9.98
- EN 60950/1992+A1+A2+A3+A4+A11
EN 41003/1998



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

Berlin, 16/03/2000

Peter Foxel, Technical Direktor