FRITZ!Box 6590 Cable

Configuration and Operation
# Table of Contents

General Remarks.................................................................................................................. 7  
Safety Instructions ........................................................................................................... 8  
Instructions and Help ....................................................................................................... 12  
Device Data on the Type Label ...................................................................................... 14  
Package Contents ........................................................................................................... 16  
Functions and Structure .................................................................................................. 17  
  Functions ......................................................................................................................... 18  
  Connection Ports ............................................................................................................ 21  
  Buttons ............................................................................................................................. 23  
  LEDs ............................................................................................................................... 24  
Requirements for Operation ............................................................................................ 27  
Connecting ........................................................................................................................ 28  
  Overview: Connecting the FRITZ!Box ........................................................................ 29  
  Placement ......................................................................................................................... 30  
  Connecting to the Internet: Possibilities ...................................................................... 32  
  Connecting with the Internet Access: Cable Connection ............................................ 33  
  Connecting to Electrical Power ..................................................................................... 34  
  Connecting with the Internet Access: Mobile Network .............................................. 35  
  Connecting a Computer with a Network .................................................................... 37  
  Connecting the Computer via Wireless LAN ............................................................... 39  
  Connecting Telephones ................................................................................................. 42  
  Connecting Smartphones .............................................................................................. 47  
  Connecting a Door Intercom System .......................................................................... 49  
User Interface .................................................................................................................... 50  
  Opening the User Interface ......................................................................................... 51  
  Using the Wizard for Basic Configuration .................................................................... 55  
  Logging Out of the User Interface ................................................................................ 57  
  Using the Standard View and Advanced View ............................................................ 59
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuring</td>
<td>60</td>
</tr>
<tr>
<td>Overview: Configuring the FRITZ!Box</td>
<td>61</td>
</tr>
<tr>
<td>Configuring Internet Access via the Cable Connection</td>
<td>62</td>
</tr>
<tr>
<td>Setting Up Internet Access via Mobile Broadband Modem</td>
<td>63</td>
</tr>
<tr>
<td>Extending Wireless LAN Range</td>
<td>64</td>
</tr>
<tr>
<td>Configuring Your Telephone Numbers</td>
<td>66</td>
</tr>
<tr>
<td>Configuring Telephones</td>
<td>67</td>
</tr>
<tr>
<td>Configuring a Door Intercom System</td>
<td>69</td>
</tr>
<tr>
<td>Saving Power with the FRITZ!Box</td>
<td>70</td>
</tr>
<tr>
<td>User Interface: Overview Menu: Settings and Features</td>
<td>72</td>
</tr>
<tr>
<td>Configuring Parental Controls</td>
<td>76</td>
</tr>
<tr>
<td>Editing Filter Lists</td>
<td>78</td>
</tr>
<tr>
<td>Configuring Priorities for Internet Use</td>
<td>80</td>
</tr>
<tr>
<td>Configuring Port Sharing</td>
<td>81</td>
</tr>
<tr>
<td>Enabling Dynamic DNS</td>
<td>83</td>
</tr>
<tr>
<td>Remote Access to the FRITZ!Box</td>
<td>84</td>
</tr>
<tr>
<td>Configuring VPN Remote Access</td>
<td>86</td>
</tr>
<tr>
<td>Configuring IPv6</td>
<td>88</td>
</tr>
<tr>
<td>Configuring FRITZ!Box as a LISP Router</td>
<td>90</td>
</tr>
<tr>
<td>User Interface: Telephony Menu: Settings and Features</td>
<td>91</td>
</tr>
<tr>
<td>Configuring and Using the Telephone Book</td>
<td>92</td>
</tr>
<tr>
<td>Configuring and Using the Answering Machine</td>
<td>94</td>
</tr>
<tr>
<td>Configuring and Using the Fax Function</td>
<td>96</td>
</tr>
<tr>
<td>Configuring Call Diversion</td>
<td>98</td>
</tr>
<tr>
<td>Configuring Call Blocks</td>
<td>99</td>
</tr>
<tr>
<td>Configuring Do Not Disturb</td>
<td>100</td>
</tr>
</tbody>
</table>

Table of Contents

FRITZ!Box 6590 Cable
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watching Television with the VLC Media Player</td>
<td>158</td>
</tr>
<tr>
<td>Restart Channel Search</td>
<td>159</td>
</tr>
<tr>
<td><strong>User Interface: Diagnostics Menu</strong></td>
<td>160</td>
</tr>
<tr>
<td>Diagnostics Menu: Settings and Features</td>
<td>161</td>
</tr>
<tr>
<td>Starting the Function Diagnostics</td>
<td>162</td>
</tr>
<tr>
<td>Using Security Diagnostics</td>
<td>164</td>
</tr>
<tr>
<td><strong>User Interface: System Menu</strong></td>
<td>166</td>
</tr>
<tr>
<td>System Menu: Settings and Features</td>
<td>167</td>
</tr>
<tr>
<td>Setting a FRITZ!Box Password</td>
<td>169</td>
</tr>
<tr>
<td>Creating FRITZ!Box Users</td>
<td>172</td>
</tr>
<tr>
<td>Configuring Push Services</td>
<td>175</td>
</tr>
<tr>
<td>Selecting Signaling of the “Info” LED</td>
<td>177</td>
</tr>
<tr>
<td>Locking Buttons</td>
<td>178</td>
</tr>
<tr>
<td>Updating FRITZ!OS</td>
<td>179</td>
</tr>
<tr>
<td>Saving Settings</td>
<td>183</td>
</tr>
<tr>
<td>Loading Settings</td>
<td>184</td>
</tr>
<tr>
<td>Restarting the FRITZ!Box</td>
<td>185</td>
</tr>
<tr>
<td><strong>User Interface: Wizards Menu</strong></td>
<td>186</td>
</tr>
<tr>
<td>Using Wizards</td>
<td>187</td>
</tr>
<tr>
<td><strong>FRITZ!NAS</strong></td>
<td>189</td>
</tr>
<tr>
<td>FRITZ!NAS Features</td>
<td>190</td>
</tr>
<tr>
<td>Expanding FRITZ!NAS Storage</td>
<td>192</td>
</tr>
<tr>
<td>Displaying FRITZ!NAS in a File Manager</td>
<td>193</td>
</tr>
<tr>
<td>Saving FRITZ!NAS Storage</td>
<td>194</td>
</tr>
<tr>
<td><strong>MyFRITZ!</strong></td>
<td>195</td>
</tr>
<tr>
<td>Service for FRITZ!Box Remote Access</td>
<td>196</td>
</tr>
<tr>
<td>Creating a New MyFRITZ! Account</td>
<td>198</td>
</tr>
<tr>
<td>Using an Existing MyFRITZ! Account</td>
<td>199</td>
</tr>
<tr>
<td>Configuring the MyFRITZ!App: with Android</td>
<td>200</td>
</tr>
<tr>
<td>Configuring the MyFRITZ!App: with iOS</td>
<td>202</td>
</tr>
<tr>
<td>Using MyFRITZ!</td>
<td>203</td>
</tr>
</tbody>
</table>
## Table of Contents

**Controlling FRITZ!Box with Keypad Codes** .......................................................... 204
  - Information on Keypad Codes ........................................................................... 205
  - Configuration on the Telephone ...................................................................... 206
  - Operation at the Telephone ............................................................................. 219
  - Restoring Factory Settings with the Telephone ........................................... 230

**Malfunctions** .............................................................................................................. 232
  - Troubleshooting Procedures ......................................................................... 233
  - Troubleshooting Chart .................................................................................. 234
  - Opening the User Interface with the Emergency IP Address .................... 237
  - Knowledge Base ............................................................................................ 239
  - Support ......................................................................................................... 240

**Decommissioning** ..................................................................................................... 241
  - Restoring Factory Settings ........................................................................... 242
  - Disposal ......................................................................................................... 244

**Appendix** ................................................................................................................. 245
  - Technical Specifications ............................................................................... 246
  - Legal ............................................................................................................. 250
  - Information on Cleaning ............................................................................... 252

**Index** ........................................................................................................................... 253
General Remarks

Safety Instructions ........................................................................................................................................... 8
Instructions and Help ..................................................................................................................................... 12
Device Data on the Type Label .................................................................................................................... 14
Package Contents ........................................................................................................................................ 16
Safety Instructions

Overview

Before connecting the FRITZ!Box, observe the following security instructions in order to protect yourself, the surroundings, and the FRITZ!Box from harm.

Fires and Electrical Shocks

Overloaded outlets, extension cords and power strips can cause fires or electric shocks.

Outdated electrical or incorrect broadband cable installations can also present a fire hazard by allowing extremely high equalizing current to flow through your device.

• Avoid using socket strips and extension cords if at all possible.
• Do not connect multiple extension cords or socket strips to each other.
• Make sure that the electrical installation complies with the latest technical standards.
• Inform yourself about the performance of your electrical system, especially the power rating of power lines and outlets.
• Make sure that the earthing contacts of your power outlets are connected via a protective ground conductor that is earthed along with the cable network connection via the equipotential bonding bar, in accordance with the valid safety standards.
• When in doubt, ask the service technician performing installation or a competent electrician.

Overheating

Heat accumulation can lead to overheating of the FRITZ!Box and subsequently damage the FRITZ!Box.

• Provide for sufficient air circulation around the FRITZ!Box.
• Make sure that the ventilation slits on the FRITZ!Box housing are always unobstructed.
• The FRITZ!Box should not be placed on a carpet or on upholstered furniture.
• Do not cover the FRITZ!Box.

Power Surges Caused by Lightning

During electrical storms, electrical surges caused by lightning present a danger to connected electrical devices.
• Do not install the FRITZ!Box during an electrical storm.
• During a storm, disconnect the FRITZ!Box from the power supply and from the cable connection.

Moisture, Liquids and Vapors

Moisture, liquids and vapors that find their way into the FRITZ!Box can cause electric shocks or short circuits.
• Only use the FRITZ!Box indoors.
• Never let liquids get inside the FRITZ!Box.
• Protect the FRITZ!Box from vapors and moisture.

Improper Cleaning

Improper cleaning with strong detergents and solvents or wet cloths can cause damage to the FRITZ!Box.
• Please refer to the information about how to clean your FRITZ!Box; see Rules, page 252.

Improper Opening and Repairs

The device contains hazardous components and should only be opened by authorized repair technicians.
• Do not open the FRITZ!Box housing.
• If the FRITZ!Box needs to be repaired, please take it to a specialized vendor.
Internet Security

Comprehensive information about how to protect your FRITZ!Box and your home network from access by strangers is presented in the internet at:

en.avm.de/guide

Radio and Electromagnetic Interference

Radio interference can be generated by every device that emits electromagnetic signals. With so many devices transmitting and receiving radio waves, interference can occur when radio waves overlap.

- Do not use the FRITZ!Box in places where the use of radio devices is prohibited.
- Follow any instructions to switch off radio devices – especially in hospitals, outpatient treatment centers, medical practices and other medical facilities – in order to prevent interference with sensitive medical equipment.
- Consult your doctor and the manufacturer of your medical device (pacemaker, hearing aid, electronically controlled implant, etc.) to find out whether it could be affected by interference from your FRITZ!Box.
- If applicable, maintain the recommended minimum distance of 15 cm recommended by the manufacturers of medical devices in order to prevent malfunctions of your medical device.

Potentially Explosive Environments

Under unfavorable conditions, radio waves in the vicinity of explosive environments can cause fires or explosions.
• Do not install and operate your FRITZ!Box in the vicinity of explosive environments, flammable gases, areas in which the air contains chemicals or particles like grain, dust or metal powder, or in the vicinity of detonation grounds.

• In locations with potentially explosive atmospheres, and in the vicinity of detonation grounds, follow the instructions to switch off electronic devices in order to prevent interference with detonation and ignition systems.

**Electromagnetic Fields**

The FRITZ!Box receives and transmits radio waves during operation.

• The FRITZ!Box was designed and constructed to comply with the threshold values for the exposition of radio waves recommended by the International Commission on Non-ionizing Radiation Protection (ICNIRP).

• This directive was formulated by independent scientific organizations after regular and careful evaluation of scientific studies. It includes a large safety margin in order to ensure the safety of all persons, regardless of their age and health.

• For devices mounted in a fixed position that have their own power connection, like the FRITZ!Box, compliance with the minimum distance of 20 cm defined in the ICNIRP guideline has been certified. The measurements were conducted in accordance with the European EN 50385 standard.
Instructions and Help

Overview
The customer documentation of the device is composed of the following kinds of documents:

• User’s manual (this book)
• Quick guide
• Service card
• Online help
• Knowledge Base

Topics in the User’s Manual
This manual assists you in connecting, configuring and operating your FRITZ!Box. It introduces the diverse features of the device and explains various technical concepts.

Topics in the Quick Guide
The quick guide explains the basics of connecting and configuring the FRITZ!Box without dealing with any special cases (for these, please consult the manual). It is included in the device package as a printed document.

Topics in the Online Help
The online help assists you with instructions for configuring and operating your FRITZ!Box. It is opened in the FRITZ!Box user interface by clicking the question mark button.

Topics in the Knowledge Base
The Knowledge Base is a compilation of solutions to common problems with connecting, configuring and operating the FRITZ!Box. The Knowledge Base on FRITZ!Box 6590 Cable is located in the “Service” area of the AVM website:
en.avm.de/service
**Symbols**

The following symbols are used in this manual:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Important message that should be complied with in order to prevent material damage, errors or malfunctions</td>
</tr>
<tr>
<td>✂️</td>
<td>Useful tip for configuring and operating the FRITZ!Box</td>
</tr>
<tr>
<td>🔄</td>
<td>Reference to instructions in the FRITZ!Box online help</td>
</tr>
</tbody>
</table>
Device Data on the Type Label

Overview

Device data on your FRITZ!Box, such as the preconfigured network key, the FRITZ!Box password and the serial number, are presented on the type label on the bottom. The network key is required in order to connect computers and other devices securely with the FRITZ!Box. The FRITZ!Box password is needed to open the user interface. The serial number must be provided to the Support team when submitting support requests, for instance.

Where to Find the Type Label

The type label is located on the bottom.

Device Data on the Type Label

<table>
<thead>
<tr>
<th>No.</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Product name</td>
</tr>
<tr>
<td>2</td>
<td>Address of the user interface</td>
</tr>
<tr>
<td>3</td>
<td>Name of the wireless radio network (SSID)</td>
</tr>
<tr>
<td>4</td>
<td>Password of the user interface</td>
</tr>
<tr>
<td>5</td>
<td>Network key</td>
</tr>
</tbody>
</table>

General Remarks

- • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •
<table>
<thead>
<tr>
<th>Nr.</th>
<th>Bedeutung</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Power adapter specification</td>
</tr>
<tr>
<td>7</td>
<td>Serial number</td>
</tr>
<tr>
<td>8</td>
<td>Article number</td>
</tr>
</tbody>
</table>
## Package Contents

<table>
<thead>
<tr>
<th>Number</th>
<th>Supplied Part</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FRITZ!Box 6590 Cable</td>
<td></td>
</tr>
</tbody>
</table>
| 1      | Coaxial cable                 | Included in the package if you purchased the FRITZ!Box from a retail vendor.  
Not included in the package if you received the FRITZ!Box from a cable network provider. |
| 1      | Power adapter                 | white                                                                                                                                   |
| 1      | Network cable                 | also “LAN cable”, yellow                                                                                                               |
| 1      | TAE/RJ11 adapter              | black                                                                                                                                   |
| 1      | Quick guide                   | Connecting the FRITZ!Box                                                                                                               |
| 1      | Service card                  | FRITZ! Note: For looking up the FRITZ!Box factory settings:  
• Network key  
• FRITZ!Box password  
• Name of the radio network (SSID)  
• Buttons and LEDs                                                                 |

### AVM Accessories

The following accessories were developed by AVM and are not available from vendors.
# Functions and Structure

- Functions .................................................................................................................... 18
- Connection Ports........................................................................................................ 21
- Buttons......................................................................................................................... 23
- LEDs ............................................................................................................................. 24
- Requirements for Operation ................................................................................... 27
Functions

Internet Router

The FRITZ!Box 6590 Cable is an internet router for connecting to a cable connection.

Telephone System

The FRITZ!Box is a telephone system (or PBX: Private Branch Exchange) for internet telephony (IP telephony, VoIP) on IP-based lines.

The following devices can be connected to the FRITZ!Box:

- 6 cordless (DECT) telephones
- 2 analog devices (telephones, faxes, door intercoms)
- 8 ISDN telephones or 1 ISDN telephone system
- 10 IP telephones (FRITZ!App Fon, for instance)

Up to 5 integrated answering machines can be used to save voice messages and, upon request, send them to you by email.

Wireless Access Point

The FRITZ!Box is a wireless access point for any wireless LAN devices, for instance:

- notebooks
- tablets
- smartphones
- wireless printers

DECT Base Station

The FRITZ!Box is a DECT base station that supports the DECT ULE standard. The following DECT devices can be operated simultaneously on the FRITZ!Box:

- Up to 6 cordless (DECT) telephones
• Up to 10 FRITZ!DECT 200/210 outlet switches
• Up to 12 FRITZ!DECT 301/300/Comet DECT radiator controls

Hub in the Home Network

The FRITZ!Box is the hub in the home network. All of the devices connected with the FRITZ!Box make up the home network. With the FRITZ!Box you can keep track of all devices. The functions available for the home network include:
• A media server for transmission of music, pictures and video to playback device in the home network
• MyFRITZ! makes access to your own FRITZ!Box possible even from the internet
• FRITZ!NAS provides for easy access to all files in the network.

USB Ports

The FRITZ!Box has two USB 2.0 ports to which you can connect the following devices:
• USB storage devices (for example, flash drives, external hard drives, card readers)
• USB printers, USB all-in-one printers, USB scanners
• USB modems
• USB hubs
## Smart Home

The following Smart Home devices can be registered with the FRITZ!Box at the same time, and configured and controlled via the FRITZ!Box:

<table>
<thead>
<tr>
<th>Type of Device</th>
<th>Number</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart plugs</td>
<td>up to 10</td>
<td>• Control the power supply to connected devices</td>
</tr>
<tr>
<td>• FRITZ!DECT 200</td>
<td></td>
<td>• Measure the power consumption of connected devices</td>
</tr>
<tr>
<td>• FRITZ!DECT 210</td>
<td></td>
<td>• Configuration and operation on the computer, tablet or smartphone, even via the internet from on the go</td>
</tr>
<tr>
<td>Radiator controls</td>
<td>up to 12</td>
<td>• Control the room temperature automatically and save energy costs</td>
</tr>
<tr>
<td>• FRITZ!DECT 300</td>
<td></td>
<td>• Configuration and operation on the computer, tablet or smartphone, even via the internet from on the go</td>
</tr>
<tr>
<td>• FRITZ!DECT 301</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Comet DECT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Connection Ports

### Connector Panel

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FON 1</td>
<td>TAE connector for connecting analog telephones, fax machines and answering machines</td>
</tr>
<tr>
<td>2</td>
<td>FON 1 and FON 2</td>
<td>RJ11 sockets for connecting analog telephones, fax machines and answering machines</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Function</td>
</tr>
<tr>
<td>-----</td>
<td>----------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>FON $S_0$</td>
<td>RJ45 port for connecting ISDN telephones and telephone systems (PBXs)</td>
</tr>
<tr>
<td>4</td>
<td>USB</td>
<td>USB 2.0 ports for connecting USB devices like printers or storage media</td>
</tr>
<tr>
<td>5</td>
<td>LAN 1 to LAN 4</td>
<td>Ports for connecting computers and other network-compatible devices like hubs and game consoles</td>
</tr>
<tr>
<td>6</td>
<td>CABLE</td>
<td>Socket for connecting to the cable connection</td>
</tr>
<tr>
<td>7</td>
<td>Power</td>
<td>Port for plugging in the power supply</td>
</tr>
</tbody>
</table>
Buttons

Button Functions

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Connect / WPS</td>
<td>Establish a wireless connection using WPS, see page 41</td>
</tr>
<tr>
<td>2</td>
<td>DECT</td>
<td>- Register cordless telephones with the FRITZ!Box; see page 42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Search for misplaced cordless telephones (paging call)</td>
</tr>
</tbody>
</table>
### Meaning of the LEDs

<table>
<thead>
<tr>
<th>No.</th>
<th>LED</th>
<th>Condition</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power/Cable</td>
<td>on</td>
<td>Power supply is connected and the cable connection is ready for operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flashing</td>
<td>Power supply is connected and the cable connection is being established or has been interrupted</td>
</tr>
<tr>
<td>2</td>
<td>Fon</td>
<td>on</td>
<td>A telephone connection is active</td>
</tr>
<tr>
<td>No.</td>
<td>LED</td>
<td>Condition</td>
<td>Meaning</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>3</td>
<td>DECT</td>
<td>on</td>
<td>DECT is switched on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flashing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Registration procedure for a DECT handset in progress</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Registration procedure for a smart home device in progress</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>WLAN</td>
<td>on</td>
<td>Wireless LAN function is enabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flashing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Switching wireless LAN function on or off</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Applying changes to the wireless LAN settings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Performing WPS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WPS procedure aborted: More than two wireless LAN devices are performing WPS at the same time. Repeat the WPS procedure.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Info</td>
<td>glows green</td>
<td>Stick &amp; Surf with FRITZ!WLAN USB Stick is concluded</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Adjustable, see Selecting Signaling of the “Info” LED, page 177</td>
</tr>
<tr>
<td></td>
<td></td>
<td>flashing green</td>
<td>Updating FRITZ!OS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Stick &amp; Surf with FRITZ!WLAN USB Stick in progress</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Adjustable, see Selecting Signaling of the “Info” LED, page 177</td>
</tr>
</tbody>
</table>
### Function and Structure

<table>
<thead>
<tr>
<th>No.</th>
<th>LED</th>
<th>Condition</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Info</td>
<td>lights red or</td>
<td><strong>Error:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>flashing red</td>
<td>• Open the FRITZ!Box user interface;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>see page 51.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Follow the instructions on the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Overview” page in the user interface.</td>
</tr>
</tbody>
</table>
Requirements for Operation

Requirements

- An internet-ready cable connection
- For an internet connection via mobile network:
  - USB modem with mobile internet access
- Computer with network connection (to establish a connection with the internet connection of the FRITZ!Box via LAN cable)
- Computer, tablet or smartphone with support for wireless LAN (to establish a wireless connection with the internet connection of the FRITZ!Box)
- An up-to-date web browser

For comprehensive technical information about your FRITZ!Box, see page 246.
Connecting

Overview: Connecting the FRITZ!Box ................................................................. 29
Placement ............................................................................................................. 30
Connecting to the Internet: Possibilities ......................................................... 32
Connecting with the Internet Access: Cable Connection ............................... 33
Connecting to Electrical Power ......................................................................... 34
Connecting with the Internet Access: Mobile Network .................................... 35
Connecting a Computer with a Network .......................................................... 37
Connecting the Computer via Wireless LAN ................................................... 39
Connecting Telephones ..................................................................................... 42
Connecting Smartphones .................................................................................. 47
Connecting a Door Intercom System ................................................................. 49
Overview: Connecting the FRITZ!Box

Overview

Connecting the FRITZ!Box entails the following steps:

<table>
<thead>
<tr>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place or hang up the FRITZ!Box in a suitable location.</td>
</tr>
<tr>
<td>Connect the FRITZ!Box to the cable junction.</td>
</tr>
<tr>
<td>Connect the FRITZ!Box to the power supply.</td>
</tr>
<tr>
<td>Connect your computers and network devices to the FRITZ!Box.</td>
</tr>
<tr>
<td>Connect your telephones to the FRITZ!Box.</td>
</tr>
</tbody>
</table>
Placement

Rules for Setting Up the FRITZ!Box

- Only use the FRITZ!Box indoors.
- Position the FRITZ!Box near an electrical outlet that is easy to reach, so that you can unplug the FRITZ!Box at any time.
- Position the FRITZ!Box in a dry location that is free of dust.
- Do not place the FRITZ!Box on heat-sensitive surfaces like furniture with sensitive paintwork.
- To avoid heat accumulation, the FRITZ!Box should not be placed on carpets or upholstered furniture.
- Provide for sufficient air circulation around the FRITZ!Box and do not cover up the FRITZ!Box. The ventilation slits must never be obstructed.

Rules for Optimum Wireless LAN Reception

Radio wave propagation during wireless LAN operation is strongly dependent on the positioning of your FRITZ!Box. Keep the following rules in mind for good reception:

- Position the FRITZ!Box in a central location.
- Position the FRITZ!Box in an elevated location.
- Keep sufficient distance from potential sources of interference like DECT base stations, microwave devices or electric devices with large metal housings.
- Position the FRITZ!Box so that it is not covered by other objects and there are as few obstacles as possible between it and the other wireless devices.

By slightly shifting the position of the FRITZ!Box it is often possible to improve the wireless connection significantly. If reception is still unsatisfactory, note our recommendations: see Extending Wireless LAN Range, page 64.
Instructions: FRITZ!Box Placement

1. In compliance with the rules mentioned above, select a suitable location for the FRITZ!Box.
2. Place the FRITZ!Box in this location.
Connecting to the Internet: Possibilities

Overview

The FRITZ!Box can be connected using two types of Internet connections:

<table>
<thead>
<tr>
<th>Type of Connection</th>
<th>Connecting the FRITZ!Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable connection</td>
<td>Directly to the cable junction</td>
</tr>
<tr>
<td>Mobile communications network</td>
<td>Connect with the USB broadband dongle (UMTS/HSPA/LTE)</td>
</tr>
</tbody>
</table>
Connecting with the Internet Access: Cable Connection

Overview

Your FRITZ!Box is designed to connect directly with the cable junction.

Requirements

To connect the FRITZ!Box you need a coaxial cable. You receive the coaxial cable from your cable network operator.

Instructions: Installation on the Cable Junction

1. Insert one end of the coaxial cable into the port on your FRITZ!Box labeled “CABLE”.
2. Insert the other end of the coaxial cable into the multimedia outlet of your cable junction.
Connecting to Electrical Power

Overview

Connect the FRITZ!Box to the power supply.

Instructions: Plugging In to Electrical Power

1. Remove the power adapter from the FRITZ!Box package.
2. Connect the power adapter to the socket on the FRITZ!Box labeled “Power”.
3. Plug the power adapter into an AC power outlet.

The “Power / Cable” LED begins flashing after a few seconds to indicate that the FRITZ!Box is ready for operation.
Connecting with the Internet Access: Mobile Network

Overview
The FRITZ!Box can connect to the internet via the mobile communications network.

Supported Devices and Mobile Communications Standards
The FRITZ!Box supports the following devices and mobile communications standards:

- USB mobile communications dongles for LTE/UMTS/HSPA
- Mobile communications dongles and smartphones that support USB tethering

Requirements
You need the following:

- a mobile communications device for internet access via LTE, UMTS or HSPA
- a SIM card from a mobile communications network provider

Restrictions by the Mobile Communications Network Provider
Due to technical limitations on the part of the mobile communications network providers, some limitations may arise for internet telephone calls and for applications requiring an incoming connection. This is also true for using port sharing, releasing USB storage media for sharing, remote maintenance over HTTPS, Dynamic DNS and VPN. Contact your network provider for details on any restrictions that may apply.
Instructions: Connecting the Mobile Broadband Dongle

1. Insert the mobile broadband dongle in a USB port of the FRITZ!Box.

Instructions: Connecting with the Smartphone via USB

1. Connect the smartphone to a USB port on the FRITZ!Box using a USB cable.
Connecting a Computer with a Network

Overview

You can connect computers and other network devices with the FRITZ!Box using a network cable. This is recommended especially for the initial configuration of your FRITZ!Box. The way a computer is connected to the FRITZ!Box is the same regardless of the operating system on the computer. Open the user interface of the FRITZ!Box in an up-to-date web browser (see page 51).

Rules

• The network cable used to connect the computer and other network devices to the FRITZ!Box must be a maximum of 100 m in length.

Instructions: Connecting the Computer Using a Network Cable

1. Insert the network cable into the network (LAN) port of the computer.
2. Insert the free end of the cable into a LAN port on the FRITZ!Box.
Instructions: Connecting a Network Hub or Network Switch

You can connect a network hub or network switch to the FRITZ!Box.

1. Insert the network cable included in the package into the uplink port of the network hub or network switch.
2. Insert the free end of the cable into a LAN port on the FRITZ!Box.
Connecting the Computer via Wireless LAN

Overview

You can connect computers and other network devices to the FRITZ!Box without cables via wireless LAN.

Encryption

WPA encryption with WPA2 mode is preconfigured in the FRITZ!Box. WPA2 mode is more secure than the older WPA mode.

The more up to date the encryption mode, the more secure the wireless connection:

<table>
<thead>
<tr>
<th>Encryption</th>
<th>Mode</th>
<th>Protocol</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPA</td>
<td>WPA2</td>
<td>CCMP</td>
<td>Very secure</td>
</tr>
<tr>
<td></td>
<td>WPA</td>
<td>TKIP</td>
<td>Secure</td>
</tr>
<tr>
<td>Non-encrypted</td>
<td>–</td>
<td>–</td>
<td>Very insecure, not recommended</td>
</tr>
</tbody>
</table>

The encryption method and mode must be supported by the network devices. Set the encryption mode in the FRITZ!Box according to the following table:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPA2</td>
<td>This mode is preconfigured in the FRITZ!Box. This mode is suitable if you use only network devices that support WPA2. Most up-to-date wireless devices support this mode.</td>
</tr>
<tr>
<td>WPA + WPA2</td>
<td>Set this mode if you would also like to use older network devices that do not support WPA2. With this setting the FRITZ!Box automatically uses the WPA mode most suitable for your connections.</td>
</tr>
</tbody>
</table>
Network devices that do not support WPA can establish only non-encrypted wireless connections to the FRITZ!Box. You should avoid using such devices if at all possible.

Comprehensive information about how to protect your FRITZ!Box and the wireless network from access by strangers is presented in the internet at:

en.avm.de/guide/security

Requirements

Wireless LAN must be enabled in the FRITZ!Box. Wireless LAN is enabled when the "WLAN" LED is lit up.

Instructions: Entering the Network Key Manually

1. Start the wireless LAN software on your wireless device.
2. Search for wireless networks in the environment (see the documentation of your wireless device) and select the wireless network of the FRITZ!Box.
   The preconfigured name of the FRITZ!Box’s wireless network is composed of “FRITZ!Box 6590 Cable” and two random letters (for instance, “FRITZ!Box 6590 Cable XY”), and is printed on the type label on the bottom.
3. Click “Connect”.
4. Enter the network key of the FRITZ!Box. The network key is printed on the bottom of the FRITZ!Box; see Device Data on the Type Label, page 14.

The wireless LAN connection will be established.
Instructions: Transferring the Network Key Using WPS

With WPS (Wi-Fi Protected Setup) you can connect a wireless device with the FRITZ!Box quickly and easily without entering the network key of your FRITZ!Box. This key is transmitted to the wireless device automatically.

1. Start the wireless LAN software on your wireless device.
2. Search for wireless networks in the environment on the wireless device (see the documentation of your wireless device) and select the wireless network of the FRITZ!Box. The preconfigured name of the FRITZ!Box’s wireless network is composed of “FRITZ!Box 6590 Cable” and two random letters (for instance, “FRITZ!Box 6590 Cable XY”). The name is printed on the type label on the bottom.
3. Start the connection procedure via WPS (see the documentation of your wireless device).
4. On the FRITZ!Box: Press the “Connect/WPS” button briefly.

Press the button. The "WLAN" LED flashes.

The “WLAN” and “DECT” LEDs on the FRITZ!Box flash and the wireless connection is established.


Connecting Telephones

Overview

You can connect telephones, fax machines, answering machines, and telephone systems to your FRITZ!Box.

You can also connect cordless telephones like FRITZ!Fon to the FRITZ!Box. A DECT base station is integrated in your FRITZ!Box.

During a power outage you cannot make any telephone calls with the telephones connected with the FRITZ!Box.

Instructions: Registering a Cordless Telephone

1. On the cordless telephone: Start registration with a base station.
2. On the FRITZ!Box: Press the “DECT” button.
   The “DECT” LED flashes.
3. On the cordless telephone: Enter the PIN of the FRITZ!Box (preset value: 0000).
4. In the user interface of your FRITZ!Box: Configure the telephone; see Configuring Telephones, page 67.
Instructions: Connecting an Analog Telephone

1. Connect the telephone, the answering machine or the fax machine to a “FON 1” port. The other “FON 1” port has to remain free.

2. In the user interface of your FRITZ!Box: Configure the connected device; see Configuring Telephones, page 67.
Instructions: Connecting a Second Analog Telephone

1. Connect the telephone, the answering machine or the fax machine to the “FON 2” port. If the device to be connected has a TAE connector, use the TAE/RJ11 adapter included with delivery.

2. In the user interface of your FRITZ!Box: Configure the connected device; see Configuring Telephones, page 67.
Instructions: Connecting an ISDN Telephone

1. Connect the telephone to the “FON S₀” port.

2. In the user interface of your FRITZ!Box: Configure the telephone; see Configuring Telephones, page 67.

Connecting Multiple ISDN Devices

You can connect up to eight ISDN devices to the FRITZ!Box. The FRITZ!Box can provide power to one ISDN device, but the other ISDN devices must have their own power supply. Multiple ISDN devices can be connected in the following ways:

- You can use an ISDN distributor (available from vendors).
- You can have a technician install a S₀ bus, which is connected to the “FON S₀” port. Note for the technician: The “FON S₀” port is terminated. Two terminating resistors are included in the FRITZ!Box.

Instructions: Connecting an IP Telephone

IP telephones are special telephones for internet telephony (IP stands for Internet Protocol).
1. Connect the IP telephone to the FRITZ!Box using a LAN cable or wireless LAN.

2. In the user interface of your FRITZ!Box: Configure the telephone; see Configuring Telephones, page 67.
Connecting Smartphones

Overview

Your iPhone or Android smartphone can be registered with the FRITZ!Box via wireless LAN using the FRITZ!App Fon. Then you can use the smartphone to make calls to the numbers configured in your FRITZ!Box whenever you are home. Advantage: No mobile communication charges will be incurred for outgoing calls, and you can also take calls to your home telephone line on your smartphone. The smartphone can still be reached at your mobile telephone number.

Requirements

- iPhone or Android smartphone
- The setting “Allow access for applications” is enabled in the FRITZ!Box (in the user interface under “Home Network / Home Network Overview / Network Settings”)

Instructions: Connecting a Smartphone

1. Establish a wireless LAN connection to the FRITZ!Box on your smartphone.
2. Install FRITZ!App Fon on your smartphone. FRITZ!App Fon is available from the Google Play Store and the Apple App Store.
3. Start the FRITZ!App Fon. FRITZ!App Fon is automatically configured as an IP telephone in the FRITZ!Box.
4. In the user interface of your FRITZ!Box: Configure the IP telephone “FRITZ!App Fon”; see Configuring Telephones, page 67.

Connection Status of FRITZ!App Fon

The icon in the FRITZ!App Fon title bar shows the state of the connection with the FRITZ!Box.
<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Telephony FRITZ!Box" /></td>
<td>Wireless connection to the FRITZ!Box is active.</td>
</tr>
<tr>
<td><img src="image2" alt="Telephony FRITZ!Box" /></td>
<td>You can make calls via the FRITZ!Box with your smartphone.</td>
</tr>
</tbody>
</table>
Connecting a Door Intercom System

Overview

Door intercom systems with an a/b interface and IP door intercoms can be connected to the FRITZ!Box. Then you have the following options:

- You can answer the doorbell on your telephones, speak with visitors, and open the door, even on a mobile telephone or other telephone connection away from home.
- You can view the camera image from your door intercom system on FRITZ!Fon telephones with a color display.
- You can configure a special ring tone to signal the doorbell on a FRITZ!Fon.

Requirements

- To connect a door intercom system with an a/b interface: The door intercom system must dial a telephone number using DTMF tone dialing whenever a button is pressed.
- To connect an IP door intercom system: The door intercom system must be configured as an SIP client (by entering the login data for an SIP registrar).

Instructions: Connecting an IP Door Intercom System

1. Connect the IP door intercom system to the FRITZ!Box using a LAN cable or wireless LAN.
2. In the user interface of your FRITZ!Box: Configure the door intercom system; see Configuring a Door Intercom System, page 69.
User Interface

Opening the User Interface.......................................................................................... 51
Using the Wizard for Basic Configuration ................................................................. 55
Logging Out of the User Interface ............................................................................. 57
Using the Standard View and Advanced View......................................................... 59
Opening the User Interface

Overview

The FRITZ!Box has a user interface you can open in a web browser on your computer or on mobile devices like a tablet or smartphone. In the user interface you configure the FRITZ!Box, enable or disable functions, and receive information on connections, interfaces, and on the entire home network. You can also configure whether and how you would like to use the AVM services for diagnostics and maintenance of your FRITZ!Box.
Areas of the User Interface

The following figure shows the most important areas of the user interface:

<table>
<thead>
<tr>
<th>No.</th>
<th>Function / Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The FRITZ!Box user interface menu</td>
</tr>
<tr>
<td>2</td>
<td>System information</td>
</tr>
<tr>
<td></td>
<td>• Product name or individually assigned name of the FRITZ!Box</td>
</tr>
<tr>
<td></td>
<td>• FRITZ!OS installed</td>
</tr>
<tr>
<td></td>
<td>• Current power consumption</td>
</tr>
<tr>
<td></td>
<td>• Important notifications for secure, reliable operation of your FRITZ!Box</td>
</tr>
<tr>
<td>No.</td>
<td>Function / Display</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
</tr>
<tr>
<td>3</td>
<td>Information about connections and interfaces</td>
</tr>
<tr>
<td></td>
<td>• Information on internet and telephony connections and on all FRITZ!Box interfaces</td>
</tr>
<tr>
<td></td>
<td>• Information on telephone calls and voice messages on the integrated answering machine</td>
</tr>
<tr>
<td></td>
<td>• Devices connected to the FRITZ!Box, such as computers, smartphones, network storage, printers, or Smart Home devices</td>
</tr>
<tr>
<td></td>
<td>• Configured convenience features</td>
</tr>
<tr>
<td>4</td>
<td>Links to the FRITZ!NAS and MyFRITZ! areas</td>
</tr>
<tr>
<td>5</td>
<td>3 vertical dots menu</td>
</tr>
<tr>
<td></td>
<td>• Log off the user interface</td>
</tr>
<tr>
<td></td>
<td>• Change the password</td>
</tr>
<tr>
<td></td>
<td>• Switch between standard and advanced view</td>
</tr>
<tr>
<td></td>
<td>• Links to the FRITZ!NAS and MyFRITZ! areas</td>
</tr>
<tr>
<td>6</td>
<td>Link to the online help</td>
</tr>
<tr>
<td>7</td>
<td>Wizards for configuration of the FRITZ!Box</td>
</tr>
<tr>
<td>8</td>
<td>Related links</td>
</tr>
<tr>
<td></td>
<td>• View: Switching between standard and advanced view</td>
</tr>
<tr>
<td></td>
<td>• Contents: Overview of all pages in the user interface</td>
</tr>
<tr>
<td></td>
<td>• Manual: FRITZ!Box 6590 Cable (PDF)</td>
</tr>
<tr>
<td></td>
<td>• Tips &amp; Tricks: Link to the FRITZ!Box Knowledge Base</td>
</tr>
<tr>
<td></td>
<td>• en.avm.de: AVM web pages</td>
</tr>
</tbody>
</table>
Instructions: Opening the User Interface

1. Start a web browser on your computer or mobile device and enter http://fritz.box in the address bar.

2. Enter the preset FRITZ!Box password and click “Log In”.
   The preset password is printed on the type label on the bottom and on the FRITZ!Notes service card.
   The FRITZ!Box user interface opens.
Using the Wizard for Basic Configuration

Overview

The first time the user interface is opened, the Wizard for Basic Configuration of the FRITZ!Box is started. This wizard assists you in entering your account information to connect to the internet and use your telephones.

Requirements

- The FRITZ!Box password has been supplied. The preset password is printed on the type label on the bottom.
- The account information has been supplied by your internet service provider.
- The telephone numbers have been supplied by your telephony provider.

Instructions: Using the Wizard for Basic Configuration

To protect your private data, settings and account information, the wizard starts by prompting you to assign a password for access to the user interface.

You can also choose whether you would like to use the AVM services for diagnostics and maintenance of your FRITZ!Box.

1. Enter the preset FRITZ!Box password and click “Log In”. The preset password is printed on the type label on the bottom.
2. Choose whether you would like to use the AVM services for diagnostics and maintenance. We recommend leaving this option enabled. You can change the setting later at any time.
3. Click “Next.”
4. Follow the wizard’s instructions.
Once the wizard is complete, the basic configuration of the FRITZ!Box has been concluded. The FRITZ!Box is ready for the internet and for telephony.
Logging Out of the User Interface

Overview

Session IDs are assigned for access to the FRITZ!Box user interface. The use of session IDs offers effective protection from attacks from the internet in which attackers send unauthorized data to a web application. For security reasons, we therefore recommend that you log out of the user interface before surfing the web.

Use push services to have yourself notified each time someone logs into or out of your FRITZ!Box; see Configuring Push Services, page 175.

Automatic Logout when Idle

If you have not logged out of the FRITZ!Box user interface, and have not been active in the browser for 20 minutes, you will be logged out automatically. You must log in again to regain access to the FRITZ!Box user interface.
Instructions: Manual Logout

1. Click the menu with the three dots (1) in the header of the FRITZ!Box user interface:

2. Click “Log Off” (2) in the menu.

You have logged out of the FRITZ!Box user interface.
Using the Standard View and Advanced View

Overview

The FRITZ!Box user interface offers two views: the standard view and the advanced view.

The standard view of the FRITZ!Box user interface includes all settings and functions that are needed for normal operation of the FRITZ!Box.

In the advanced view, additional settings options are offered for advanced users. These settings are not required for everyday operation of the FRITZ!Box.

Instructions: Switching between the Views

You should only use the advanced view of the “Internet” and “Home Network” menus if you have advanced network expertise. Combining various settings in these menus can produce a situation in which the user interface of the FRITZ!Box can no longer be opened.

1. Click in the area to the left under the menu on “View” (1) to switch back and forth between the “Standard” and “Advanced” views.
Configuring

Overview: Configuring the FRITZ!Box................................................................. 61
Configuring Internet Access via the Cable Connection .................................. 62
Setting Up Internet Access via Mobile Broadband Modem ....................... 63
Extending Wireless LAN Range ................................................................. 64
Configuring Your Telephone Numbers ................................................ 66
Configuring Telephones ............................................................................... 67
Configuring a Door Intercom System ....................................................... 69
Saving Power with the FRITZ!Box.............................................................. 70
Overview: Configuring the FRITZ!Box

Overview

Configuration of the FRITZ!Box entails the following steps:

<table>
<thead>
<tr>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure the internet connection in the FRITZ!Box.</td>
</tr>
<tr>
<td>Set up the connected telephones and their telephone numbers in the FRITZ!Box.</td>
</tr>
<tr>
<td>Configure your smartphone in the FRITZ!Box (optional).</td>
</tr>
</tbody>
</table>

Requirements

- The FRITZ!Box is connected with the internet access.
- You have connected all of the telephones you want to use with the FRITZ!Box.
Configuring Internet Access via the Cable Connection

Overview

The internet connection for the cable connection has to be configured once in the FRITZ!Box, then it is always available. The first time you open the FRITZ!Box user interface, you will automatically be prompted to configure the internet connection.

Requirements

The FRITZ!Box is connected to the cable connection.

Instructions: Configuring Internet Access

1. Open the FRITZ!Box user interface; see page 51.
2. If the wizard does not start automatically, select the “Wizards” menu.
3. Click the “Configure Internet Connection” Wizard and follow the instructions.
4. Open a new tab in your web browser and enter a web address, for instance en.avm.de.
   The requested internet page is displayed.
Setting Up Internet Access via Mobile Broadband Modem

Overview

In the FRITZ!Box you can configure internet access via the mobile network.

Requirements

- A mobile broadband modem must be connected to the USB port of the FRITZ!Box; see Connecting with the Internet Access: Mobile Network, page 35.

Instructions: Setting Up Internet Access via the Mobile Telephone Network

For instructions, see the online help at: “Internet / Mobile Communications”.

Extending Wireless LAN Range

Overview

In large apartments or houses the wireless LAN radio signal does not always reach every corner. However, you can generally extend the range of your wireless network by placing your FRITZ!Box at a better location. If this is not sufficient, you can improve the range of the radio signal with peripheral equipment like wireless repeaters.

Measures to Improve Wireless Coverage

The following conditions favor the extension of your FRITZ!Box's wireless radio signal:

- The FRITZ!Box is positioned in a central location.
- The FRITZ!Box is placed in a raised position.
- The FRITZ!Box is unobstructed, meaning that it is not inside a cabinet or behind another object.
- Structural circumstances are accounted for, such as thick concrete walls or ceilings.
- Sources of interference in the vicinity of your wireless radio network (for instance, microwaves, refrigerator or baby monitor) have been eliminated.
- The FRITZ!Box uses frequency ranges that are used by as few other devices as possible (can be checked under “Wireless / Radio Channel”).

Extending the Wireless Radio Network

If the FRITZ!Box is placed in a favorable location, but the radio signal still does not reach all of your rooms, then you can extend the range of the radio signal with a wireless repeater. You can also deploy a second FRITZ!Box as a wireless repeater.
Example Configuration: Using a FRITZ!WLAN Repeater

Extending the Wireless Network with a FRITZ!WLAN Repeater

You can extend your wireless radio network with a wireless repeater. In combination with the FRITZ!Box, the AVM FRITZ!WLAN Repeater is especially suitable. All models of the series can be integrated into your wireless network and your home network. For more information, see the web address:

en/avm.de/products/fritzwlan

Instructions: Using an Existing FRITZ!Box as a Wireless Repeater

For instructions, see the online help at: “Wireless / Repeater”.

FRITZ!Box 6590 Cable
Configuring Your Telephone Numbers

Overview
Configure all internet telephone numbers in the FRITZ!Box that are not configured automatically.

Some telephony providers configure your internet telephone numbers automatically. This remote configuration starts right after the FRITZ!Box is connected to the internet or after the FRITZ!Box user interface is opened.

Instructions: Configuring Your Own Telephone Numbers

1. Open the FRITZ!Box user interface; see page 51.
2. Select “Wizards / Manage Telephone Numbers”.
3. Click “Add Telephone Number” and follow the wizard’s instructions.
Configuring Telephones

Overview

Once you have connected your telephones, answering machines and fax machines to the FRITZ!Box, configure these devices in the FRITZ!Box. For each device, specify:

- Telephone number for outgoing calls to the public telephone network
- How incoming calls should be handled: Should the device ring (telephone) or pick up (fax machine, answering machine) for every call, or only respond to calls for certain telephone numbers?
- Internal name of the device to be displayed in the call list of the FRITZ!Box
- Further settings that depend on the kind of device. For analog and DECT telephones, for instance, you can enable the “call waiting” function.

Requirements

- Your own telephone numbers are set up in the FRITZ!Box (see the previous section).

Instructions: Configuring Telephones and Other Devices

1. Open the FRITZ!Box user interface; see page 51.
2. Select “Telephony / Telephony Devices”.
3. If the device to be configured is not yet included in the list of telephony devices, click “Configure New Device”. Follow the wizard’s instructions.
   The wizard guides you through the assignment of telephone numbers and enters the device in the list.

4. To configure further settings for a device in the list, click the “Edit” button of the device.
   The kind of device determines which additional settings are available.
Configuring a Door Intercom System

Overview

Once you have connected your door intercom system to the FRITZ!Box, configure the door intercom system in the FRITZ!Box. Specify the telephones or telephone numbers to which door calls should be forwarded. You can also configure other settings, for instance, to have the camera image sent from the door intercom system to your FRITZ!Fon.

Requirements

- Your telephones are configured in the FRITZ!Box (see previous section).

Instructions: Configuring a Door Intercom System

1. Open the FRITZ!Box user interface; see page 51.
2. Select “Telephony / Telephony Devices”.
3. Click “Configure New Device”. With the “Edit” button you can also change the settings of a door intercom system that has already been configured.
Saving Power with the FRITZ!Box

Overview
The FRITZ!Box offers various settings for energy-saving operation. The following section describes how you can configure these settings and what potential energy savings can be expected.

Viewing Information on Energy Consumption
The current power consumption of the total FRITZ!Box system is displayed on the “Overview” page of the user interface.

Information on the power consumption of the individual areas, and on the average power consumption over the last 24 hours, is presented in the FRITZ!Box user interface under “System / Energy Monitor / Power Consumption”.

Using Savings Potential

<table>
<thead>
<tr>
<th>What</th>
<th>How</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless</td>
<td>Set up a wireless LAN schedule, see page 144</td>
<td>“Wireless / Schedule” menu</td>
</tr>
<tr>
<td></td>
<td>Switch off wireless LAN, see page 144</td>
<td>“Wireless / Radio Network” menu</td>
</tr>
<tr>
<td></td>
<td>Reduce the maximum transmitter power</td>
<td>“Wireless / Radio Channel” menu</td>
</tr>
<tr>
<td>LAN</td>
<td>Use the LAN port in energy-saving (Green) mode</td>
<td>“Home Network / Network / Network Settings” menu</td>
</tr>
</tbody>
</table>

Saving Power with Smart Home
With intelligent Smart Home devices like FRITZ!DECT, electrical appliances are integrated into the home network. This way they can be
switched on and off by schedule. At the same time, they inform the FRITZ!Box about consumption, energy costs incurred, and the CO₂ footprint.

**Instructions: Configuring a Schedule for Electrical Appliances in the Home Network**

For instructions, see the online help at: “Home Network / Smart Home”.
User Interface: Overview Menu

Overview Menu: Settings and Features ................................................................. 73
Overview Menu: Settings and Features

Overview

The “Overview” menu is the start page of the FRITZ!Box user interface. This page presents an overview of all FRITZ!Box features and components: energy consumption, connections, ports, calls, answering machine messages, convenience functions (parental controls, alarm, etc.) and all devices in the home network.

In addition to the overview, next to the FRITZ!OS version currently installed, you will also find notifications important for secure, reliable operation of your FRITZ!Box.

For a comprehensive description of the FRITZ!Box user interface: see User Interface, page 50.
User Interface: Internet Menu

Internet Menu: Settings and Features................................................................. 75
Configuring Parental Controls ............................................................................. 76
Editing Filter Lists ............................................................................................... 78
Configuring Priorities for Internet Use ............................................................... 80
Configuring Port Sharing....................................................................................... 81
Enabling Dynamic DNS......................................................................................... 83
Remote Access to the FRITZ!Box ......................................................................... 84
Configuring VPN Remote Access......................................................................... 86
Configuring IPv6 .................................................................................................... 88
Configuring FRITZ!Box as a LISP Router............................................................ 90
Internet Menu: Settings and Features

Overview

The “Internet” menu pools all of the features for the internet connection. And users of the FRITZ!Box interested in technology can read detailed information on the cable connection here.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.

On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Configuring Parental Controls

Overview

The parental controls feature allows you to control the use of the internet by network devices. For each individual network device, you can limit the duration and content of internet use.

Criteria

The following settings for internet use are defined in an access profile:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online time</td>
<td>Specifies when and for how long internet access is permitted</td>
</tr>
<tr>
<td>Permitted Websites</td>
<td>Specifies which websites may be accessed</td>
</tr>
<tr>
<td>Internet access for network applications</td>
<td>Specifies which network applications are allowed to communicate over the internet (for instance, file sharing programs or chat platforms)</td>
</tr>
</tbody>
</table>

Rules

- In the FRITZ!Box there are four preconfigured access profiles available for use: “Standard”, “Guest”, “Unrestricted”, and “Blocked”.
- You can create as many of your own access profiles as you wish.
- Every network device that registers with the home network for the first time automatically receives the “Standard” access profile.
- Every network device that registers with the FRITZ!Box guest network automatically receives the “Guest” access profile.
Example

You have three children and would like to control the internet use of each child in different ways.

- Create an individual access profile for each child.
- Include in this access profile the time and content restrictions to be imposed on the given child.

Requirements

- The parental controls can be used in the FRITZ!Box only if the FRITZ!Box provides the internet connection. If the FRITZ!Box is configured as an IP client that uses the internet connection of another router, you must use the corresponding features offered by the other router.

Instructions: Configuring Parental Controls for a Network Device

1. Create an access profile with the desired restrictions, if the access profile does not exist already.
   For instructions, see the online help at: “Internet / Filters / Access Profiles”.

2. Assign the access profile to the network device.
   For instructions, see the online help at: “Internet / Filters / Parental Controls”.
Editing Filter Lists

Overview

You can use a filter list to block access to websites with inappropriate content. Upon delivery, there are two empty lists in the FRITZ!Box. You must enter the websites in these lists. These lists can then be used as filters in the access profiles.

Types of Lists

Access to websites with inappropriate content can be blocked using the blacklist or whitelist.

<table>
<thead>
<tr>
<th>Filter List</th>
<th>Function and Use</th>
</tr>
</thead>
</table>
| Blacklist   | • Access is blocked to websites included in the blacklist.  
            | • Use the blacklist if access to most websites is allowed and just a few are to be blocked. |
| Whitelist   | • Access is allowed to websites included in the whitelist.  
            | • Use the whitelist if access to most websites is blocked and only a few are allowed to be accessed. |

Requirements

- The filter lists can be used in the FRITZ!Box only if the FRITZ!Box provides the internet connection. If the FRITZ!Box is configured as an IP client that uses the internet connection of another router, you must use the corresponding features offered by the other router.
Instructions: Editing Filter Lists

For instructions, see the online help at: “Internet / Filters / Lists”.

FRITZ!Box 6590 Cable
Configuring Priorities for Internet Use

Overview

For network devices or network applications you can define different priorities for access to the internet connection.

Prioritization Categories

There are three prioritization categories for network applications:

• Real-time applications have the highest priority. This category is intended for applications with high demands on transmission speed and reaction times (for example, internet telephony, IPTV, video on demand). If an application of this category uses the internet connection to full capacity, no other data will be transmitted.

• Prioritized applications have intermediate priority. This category is intended for applications that require a fast reaction time (for example, company access, terminal applications, games). These applications will be granted higher priority. When an application of this category uses the full capacity of the internet connection, the data of other applications will be transferred with lower priority.

• Background applications have the lowest priority. This category is for applications that run in the background, which are treated with low priority when the internet connection is running at capacity (for instance, automatic updates, peer-to-peer services). If no other network applications are active, then the background applications receive the entire bandwidth.

Instructions: Configuring Priorities

For instructions, see the online help at: “Internet / Filters / Prioritization”.

User Interface: Internet Menu

FRITZ!Box 6590 Cable
Configuring Port Sharing

Overview

With default settings in the FRITZ!Box, programs on your computer and LAN cannot be accessed from the internet. For applications like online games and file sharing software or server services like HTTP, FTP, VPN, terminal and remote access servers, you have to make your computer accessible for other internet users.

Port Sharing

Using port sharing you allow incoming connections from the internet. By releasing certain ports for incoming connections, you grant controlled access to the computers in your network to other internet users.

Port Sharing on Protocols

Port sharing in the FRITZ!Box is possible on the following protocols:

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Internet Protocol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PING</td>
<td>IPv4</td>
<td>The FRITZ!Box responds to ping inquiries from the internet addressed to the IPv4 address of the FRITZ!Box.</td>
</tr>
<tr>
<td></td>
<td>IPv6</td>
<td>The FRITZ!Box responds to ping inquiries from the internet addressed to the IPv6 address of the FRITZ!Box. Additionally, you can set up PING6 port sharing rules for each computer in the home network since each computer has its own globally valid IPv6 address.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Internet Protocol</td>
<td>Explanation</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>TCP</td>
<td>IPv4</td>
<td>Within IPv4 networks you can open the FRITZ!Box firewall for the TCP and UDP protocols when entering the port range. One port can be opened for exactly one computer.</td>
</tr>
<tr>
<td>UDP</td>
<td>IPv4</td>
<td></td>
</tr>
<tr>
<td>IPv6</td>
<td>IPv6</td>
<td>Within IPv6 networks you can open the FRITZ!Box firewall for the TCP and UDP protocols when entering the port range. One port can be opened for each computer in the network.</td>
</tr>
<tr>
<td>ESP</td>
<td>IPv4</td>
<td>Within IPv4 networks you can open the firewall for the two protocols ESP and GRE, which do not use ports.</td>
</tr>
<tr>
<td>GRE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Instructions: Configuring Port Sharing**

For instructions, see the online help at: “Internet / Permit Access / Port Sharing”.
Enabling Dynamic DNS

Overview

Every time the internet connection is interrupted, the internet service provider re-assigns the IP address. The IP address may change in the process. Dynamic DNS is an internet service that makes it possible for the FRITZ!Box to remain accessible from the internet at all times under a fixed name, the domain name, even when the public IP address changes.

You must register with a dynamic DNS provider to use this service. Every time the IP address changes, the FRITZ!Box transmits the new IP address to the dynamic DNS provider in the form of an update request. Then the domain name is assigned to the current IP address by the dynamic DNS provider.

Dynamic DNS and MyFRITZ!

MyFRITZ! can be used as an alternative to dynamic DNS. The two services can also be used in parallel. For more information on MyFRITZ!; see Possible Uses, page 196.

Requirements

- You are registered with a dynamic DNS provider and have set up a domain name.
- The advanced view is enabled in the FRITZ!Box user interface (see Using the Standard View and Advanced View, page 59).

Instructions: Enabling Dynamic DNS

For instructions, see the online help at: “Internet / Permit Access / DynDNS”.
Remote Access to the FRITZ!Box

Overview

Over the internet it is possible to access the user interface of the FRITZ!Box. With a laptop, smartphone or tablet you can configure settings in the FRITZ!Box user interface.

HTTPS, FTP and FTPS

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTTPS (Hypertext Transfer Protocol Secure)</td>
<td>HTTPS is an internet protocol for bug-proof communication between the web server and the browser in the World Wide Web. Enable this protocol to allow access to the FRITZ!Box from the internet.</td>
</tr>
<tr>
<td>FTP (File Transfer Protocol)</td>
<td>FTP is a network protocol for transmitting files in IP networks. Enable this protocol to allow access by FTP to the FRITZ!Box storage media from the internet.</td>
</tr>
<tr>
<td>FTPS (FTP over SSL)</td>
<td>FTPS is a method for encrypting the FTP protocol. Enable this protocol to secure transmission over FTP.</td>
</tr>
</tbody>
</table>

Requirements

- Access to the user interface: Every user who would like to access the FRITZ!Box externally from the internet requires a FRITZ!Box user account that is authorized for access from the internet.
• Access to storage: Every user who would like to access the storage of the FRITZ!Box externally from the internet requires a FRITZ!Box user account with the rights to access from the internet and to access the contents on the storage media.

• The protocols for the desired access must be enabled in the FRITZ!Box.

Instructions: Enabling HTTPS, FTP and FTPS in the FRITZ!Box

For instructions, see the online help at: “Internet / Permit Access / FRITZ!Box Services”.

Configuring VPN Remote Access

Overview

VPN stands for Virtual Private Network. Via VPN, secure remote access to the network of the FRITZ!Box can be established. The connection is established via the internet. The data are transmitted in encrypted form via what is known as a tunnel. This excludes the possibility of unauthorized access to the data. In this way you can allow field representatives to connect with the corporate network over VPN – for instance, via their own laptops.

This section addresses system administrators.

That is why the settings for this function are enabled only in the advanced view of the FRITZ!Box user interface.

Example Configuration
Alternative

Setting up remote access via VPN can overwhelm the layman. It is easier to set up access from outside via MyFRITZ!. For more information see MyFRITZ!, page 195.

VPN Service Portal

The AVM website offers a service page which presents comprehensive information on VPN in general and in connection with the FRITZ!Box. If you would like to find out even more, visit this page at: en.avm.de/service/vpn

Also on the VPN Service Portal is the “FRITZ!VPN” software for free downloading. The “FRITZ!VPN” software is a VPN client. Install the program on the computers and laptops from which you would like to reach the FRITZ!Box over a VPN connection.

Instructions: Configuring VPN in the FRITZ!Box

For instructions, see the online help at: “Internet / Permit Access / VPN”.
Configuring IPv6

Overview

IPv6 stands for internet protocol version 6. It is the successor to IPv4, which is to be replaced completely by IPv6 in the coming years. IPv6 is more powerful, and has more addresses and better security properties than IPv4.

The FRITZ!Box supports the new IPv6 internet protocol and can establish IPv6 connections:

Services that Support IPv6

<table>
<thead>
<tr>
<th>Home Network / Internet</th>
<th>Services that Support IPv6</th>
</tr>
</thead>
</table>
| IPv6-capable services in the home network | • FRITZ!NAS access via SMB or FTP/FTPS  
• Access to the user interface with http or https over IPv6  
• The DNS resolver of the FRITZ!Box supports queries for IPv6 addresses (AAAA records) and can query the upstream DNS resolver of the internet service provider over IPv6.  
• The globally valid prefix is distributed via router advertisement.  
• For guest access to the wireless LAN, the home network and wireless guests are separated by IPv6 subnetworks.  
• UPnP, UPnP AV media server |
IPv6-capable services in the internet

<table>
<thead>
<tr>
<th>Home Network / Internet</th>
<th>Services that Support IPv6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• FRITZ!NAS access via FTPS</td>
</tr>
<tr>
<td></td>
<td>• Completely closed firewall to protect against unsolicited data from the internet (Stateful Inspection Firewall)</td>
</tr>
<tr>
<td></td>
<td>• Voice over IPv6</td>
</tr>
<tr>
<td></td>
<td>• Automatic provisioning (TR-069)</td>
</tr>
<tr>
<td></td>
<td>• Time synchronization over NTP (Network Time Protocol)</td>
</tr>
<tr>
<td></td>
<td>• Remote access via HTTPS</td>
</tr>
<tr>
<td></td>
<td>• Dynamic DNS via dyndns.org or namemaster.de</td>
</tr>
</tbody>
</table>

Requirements

- IPv6 must be installed and enabled on the computers in your home network (standard in Windows since Windows Vista and Windows 7, in Mac OS X since macOS 10).
- The advanced view must be enabled in the FRITZ!Box user interface; see Using the Standard View and Advanced View, page 59.

Instructions: Configuring IPv6 in the FRITZ!Box

For instructions, see the online help at: “Internet / Account Information / IPv6”.
Configuring FRITZ!Box as a LISP Router

Overview

LISP stands for LISt Processing. LISP is a routing architecture which separates information about location and identity: there is one IP address for the location and one for the identity. The FRITZ!Box can be configured as a LISP router.

LISP is useful if technical or organization reasons make it preferable to keep the same IP addresses, even when you switch internet service providers. With LISP, devices do not lose their identity (host devices, virtual machines) when they change location.

Requirements

- You are registered with a LISP provider.
- The advanced view must be enabled in the FRITZ!Box user interface; see User Interface, page 50.

Instructions: Configuring FRITZ!Box as a LISP Router

For instructions, see the online help at: “Internet / Account Information / LISP”.

User Interface: Telephony Menu

Telephony Menu: Settings and Features .............................................................. 92
Configuring and Using the Telephone Book ......................................................... 94
Configuring and Using the Answering Machine................................................... 96
Configuring and Using the Fax Function............................................................. 98
Configuring Call Diversion ................................................................................... 99
Configuring Call Blocks ......................................................................................100
Configuring Do Not Disturb .................................................................................102
Setting Up an Alarm ............................................................................................103
Configuring a Dialing Rule ..................................................................................104
Telephony Menu: Settings and Features

Overview
In the “Telephony” menu you configure your telephone numbers, telephones and other connected devices (for instance fax machine, door intercom system). You can also configure the FRITZ!Box answering machine, the internal fax function and various other features: the telephone book, alarm, call blocks, call diversion, call through and dialing rules.

The call list shows all of the calls you made, accepted or missed.

Description of the Submenus
The online help of the user interface includes a detailed description of the submenus.
On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Configuring and Using the Telephone Book

Overview

How you can use the FRITZ!Box telephone book depends on the telephone used:

<table>
<thead>
<tr>
<th>Telephone</th>
<th>Available Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRITZ!Fon</td>
<td>• Telephone book available in the FRITZ!Fon menu</td>
</tr>
<tr>
<td></td>
<td>• Option for separate telephone books for multiple FRITZ!Fon telephones</td>
</tr>
<tr>
<td></td>
<td>• Quick-dial numbers</td>
</tr>
<tr>
<td></td>
<td>• Click to dial</td>
</tr>
<tr>
<td>Cordless telephone with CAT-iq 2.0 support</td>
<td>• Telephone book available in the telephone menu</td>
</tr>
<tr>
<td></td>
<td>• Quick-dial numbers</td>
</tr>
<tr>
<td></td>
<td>• Click to dial</td>
</tr>
<tr>
<td>Others</td>
<td>• Quick-dial numbers</td>
</tr>
<tr>
<td></td>
<td>• Click to dial</td>
</tr>
</tbody>
</table>

Kinds of Telephone Books

You can set up different kinds of telephone books in the FRITZ!Box:

<table>
<thead>
<tr>
<th>Telephone Book</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local telephone book</td>
<td>The entire telephone book is saved in the FRITZ!Box.</td>
</tr>
<tr>
<td><strong>Telephone Book</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Online telephone book</td>
<td>Online telephone books include Google Contacts and the contacts of email accounts with 1&amp;1, GMX or WEB.DE. The online telephone book is available in the FRITZ!Box and synchronized with your telephone book in the internet at regular intervals.</td>
</tr>
</tbody>
</table>

You can set up multiple local and multiple online telephone books, for instance, separate telephone books for different FRITZ!Fon telephones. Quick-dial numbers can be configured only in the first local telephone book.

**Instructions: Setting Up a New Telephone Book in FRITZ!Box**

For instructions, see the online help at: “Telephony / Telephone Book / New telephone book”.

**Instructions: Creating an Online Telephone Book**

For instructions, see the online help at: “Telephony / Telephone Book / New telephone book”.

**Instructions: Creating a New Telephone Book Entry**

For instructions, see the online help at: “Telephony / Telephone Book”.

**Instructions: Creating and Using "Click to Dial"**

For instructions, see the online help at: “Telephony / Telephone Book / Click to Dial”.
Configuring and Using the Answering Machine

Overview

In the FRITZ!Box you can configure an answering machine, making an additional device superfluous. If you have more than one telephone number, you can set up multiple answering machines (up to five).

Features

• Messages by email: If desired, you can receive new messages automatically by email.
• Schedule: You can define times to switch on and off on different days of the week.
• Remote playback: You can check the answering machine from on the go.

Requirements

• For each answering machine you configure, a telephone number is required.

Example

You have two telephones with different telephone numbers (for instance, one for personal calls and one for business calls). Then you can configure an answering machine for each telephone. Assign your personal telephone number to the first answering machine and your office number to the second one.

Instructions: Configuring the Answering Machine

For instructions, see the online help at: “Telephony / Answering Machine”.

Operating Answering Machines by Telephone

Using a voice menu you can operate the answering machine on any telephone connected with the FRITZ!Box. You can listen to new
messages, for instance, or switch the answering machine on and off. For instructions, see Operation at the Telephone, page 219.

Picking Up a Call from the Answering Machine on the Telephone

Calls that have already been accepted by the answering machine can be picked up on your telephone. For instructions, see Instructions: Picking Up a Call from the Answering Machine or Telephone, page 221.
Configuring and Using the Fax Function

Overview

With the FRITZ!Box you can receive and send faxes without having to connect a fax machine. Received faxes are automatically forwarded by the FRITZ!Box by email or saved on a USB storage medium. Fax transmission can be used on every computer in the home network of the FRITZ!Box. Graphic files in JPG or PNG format can be appended to any fax transmission.

Maximum Fax Length

A maximum of two A4 pages can be transmitted by fax. If you append a graphics file, the second page is reserved for the graphics.

If you would like to make sure that fax transmission was complete after the fact, enable the “Forward by email” setting during configuration of the fax function. Then the FRITZ!Box will automatically forward to your email address all faxes received and successfully sent.

Requirements

- The fax function of the FRITZ!Box must be configured.

Instructions: Configuring the Fax Function

For instructions, see the online help at: “Telephony / Telephony Devices”.

Instructions: Sending Faxes

For instructions, see the online help at: “Telephony / Fax”.

User Interface: Telephony Menu
Configuring Call Diversion

Overview

You can configure call diversion for incoming calls in the FRITZ!Box.

Incoming Calls

Call diversion can be set up for the following calls:

• All incoming calls
• All calls from a certain telephone number or a certain person in the telephone book
• All calls without a telephone number (anonymous calls)
• For multiple telephone numbers: all calls for a certain telephone number or a certain telephone

Destination Numbers

You can divert calls to:

• Another telephone number (a different telephone line or mobile telephone number)
• One of the FRITZ!Box’s internal answering machines

Example

While you are on the go, calls are to be forwarded from the office to your mobile telephone.

Instructions: Configuring Call Diversion

For instructions, see the online help at: “Telephony / Call Handling / Call Diversion”.
Configuring Call Blocks

Overview

In the FRITZ!Box you can block telephone numbers for outgoing and for incoming calls.

Kinds of Call Blocks

You can configure various kinds of call blocks:

<table>
<thead>
<tr>
<th>Call Block for</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outgoing calls</td>
<td>The blocked telephone number can no longer be called from the FRITZ!Box.</td>
</tr>
<tr>
<td></td>
<td>Ranges of telephone numbers can also be blocked, for instance, mobile networks, or all telephone numbers that begin with 0180.</td>
</tr>
<tr>
<td>Incoming calls</td>
<td>The FRITZ!Box will not accept calls from the blocked telephone number. However, the call block only works if the caller allows transmission of her or his telephone number.</td>
</tr>
<tr>
<td>Calls without a telephone number (anonymous calls)</td>
<td>The FRITZ!Box will not accept any calls from callers who suppress their telephone number.</td>
</tr>
</tbody>
</table>

Example 1

You would like to prevent dialing of expensive premium telephone numbers. For this you can set up a call block for outgoing calls to all telephone numbers that begin with 0900.

Example 2

You would like to block sales calls from a certain telephone number. For this you can set up a call block for incoming calls from this telephone number.
Instructions: Configuring a Call Block

For instructions, see the online help at: “Telephony / Call Handling / Call Blocks”.
Configuring Do Not Disturb

Overview
Do Not Disturb keeps a telephone from ringing at specified times. Calls you miss then appear in the FRITZ!Box call list. Do Not Disturb cannot be configured for IP telephones (connected via LAN port/wireless LAN).

Example
You do not want your telephone to ring between 11 pm and 6 am.

Instructions: Configuring Do Not Disturb
For instructions, see the online help at: “Telephony / Telephony Devices / Edit / Do Not Disturb”.
Setting Up an Alarm

Overview
Setting an alarm will make your telephone ring at the specified time.

Example
You would like your telephone to wake you at 6:30 am every morning.

Instructions: Configuring an Alarm

For instructions, see the online help at: “Telephony / Alarm”.
Configuring a Dialing Rule

Overview

If you have multiple telephone numbers, you can configure dialing rules. A dialing rule determines which telephone number the FRITZ!Box uses for outgoing calls to a certain range of numbers, for instance to mobile networks or to foreign countries.

Example

You have a telephone number with which you can save on international calls. Then configure a dialing rule for international calls.

Instructions: Configuring Dialing Rules

For instructions, see the online help at: “Telephony / Call Handling / Dialing Rules”.
User Interface: Home Network Menu

Home Network Menu: Settings and Features ................................................................. 106
Keeping Track of All Devices ....................................................................................... 108
Managing Network Devices ......................................................................................... 110
Changing IPv4 Settings ............................................................................................... 114
Distributing IPv4 Addresses ......................................................................................... 117
Changing IPv6 Settings ............................................................................................... 120
Configuring a Static IP Route ....................................................................................... 122
Obtaining an IP Address Automatically ....................................................................... 124
Configuring LAN Guest Access ................................................................................... 126
Configuring Wake on LAN ......................................................................................... 128
Configuring USB Devices ............................................................................................ 129
Configuring and Using the Media Server .................................................................... 137
Assigning a FRITZ!Box Name ..................................................................................... 139
Controlling Smart Home Devices ............................................................................... 140
Home Network Menu: Settings and Features

Overview

The FRITZ!Box is the hub in your home network. All connected devices together make up the home network. The “Home Network / Home Network Overview” menu presents a graphic overview of all the devices connected with the FRITZ!Box. If you have set up Mesh WiFi, you can view your Mesh WiFi here. In the “Home Network” menu you can make all of the relevant settings for your home network.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.
On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Keeping Track of All Devices

Overview

Under “Home Network / Home Network Overview / All Devices”, all of the devices connected with the FRITZ!Box are listed in an overview.

Active Connections and Current Software Version

All devices connected with the FRITZ!Box are displayed in the “Active connections in the home network and current software version” table:

- FRITZ!Box: the FRITZ!Box itself
- Network devices: all network devices connected with a network cable or via wireless LAN, for example: computers (PCs, laptops), mobile terminal devices (tablets, smartphones), wireless repeaters, TV sets
- Telephones: all of the telephones connected with the FRITZ!Box
- USB devices: all connected USB devices, for example USB storage media, USB printers, USB mobile broadband dongles
- Smart Home devices: Smart Home devices connected with the FRITZ!Box, for example, smart plugs or radiator controls

In the “Connections”, “Properties”, and “Update” columns you can click links to the connection settings or the device settings and perform updates:

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Contents / Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device / Name</td>
<td>The name or the designation with which the device is registered with the FRITZ!Box.</td>
</tr>
<tr>
<td>Connection</td>
<td>The connection technology with which the device is connected with the FRITZ!Box. Click the link to open the page with connection settings.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Contents / Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Properties</td>
<td>Information on the devices. For devices from FRITZ!, the current FRITZ!OS version will be displayed. For network devices there is a “Details” link with which you can open the detailed view for the given device.</td>
</tr>
<tr>
<td>Update</td>
<td>For FRITZ! products, the “Update” column displays whether the installed FRITZ!OS is the latest, or whether an update is available. If there is an update, you can install it directly from the table.</td>
</tr>
</tbody>
</table>

**Central Location for the Update Status of the FRITZ! Devices**

For FRITZ! products, the “Update” column displays whether the installed FRITZ!OS is the latest, or whether an update is available. If there is an update, you can install it directly from the table.
Managing Network Devices

Overview

In the FRITZ!Box user interface, a table listing all network connections is shown under "Home Network / Network / Network Connections". A network connection is an IP connection between a network device and the FRITZ!Box. By means of the table you can keep track of the network connections and all network devices. You can edit the connection properties, and add and remove network devices.

Explanation of Terms: Network and Other Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network device</td>
<td>Network devices are devices that are connected with the FRITZ!Box in one of the following ways:</td>
</tr>
<tr>
<td></td>
<td>- with a network cable to a LAN port on the FRITZ!Box</td>
</tr>
<tr>
<td></td>
<td>- via wireless LAN</td>
</tr>
<tr>
<td></td>
<td>- via the internet with a VPN connection (see page 86)</td>
</tr>
<tr>
<td>Network</td>
<td>All network devices on the FRITZ!Box comprise a network.</td>
</tr>
<tr>
<td>Internet protocol (IP)</td>
<td>Communication within the network takes place using the internet protocol, IP for short. The internet protocol is the language that all network devices speak and understand.</td>
</tr>
<tr>
<td>IP network</td>
<td>A network based on the internet protocol is also known as an IP network. Connections within an IP network are known as IP connections.</td>
</tr>
</tbody>
</table>
### Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network interface</td>
<td>A network interface is the interface used to connect a network device with a network. It can be a wireless LAN radio module for wireless connections or a network port for cabled connections.</td>
</tr>
</tbody>
</table>

### Properties and Benefits

The table with the network connections has the following properties that can be useful in organizing and keeping track of the IP network:

- **Overview**: The table offers an overview of the entire IP network of the FRITZ!Box.
- **All connections**: Every connection any network device has to the FRITZ!Box is displayed. A connection can be established with a network cable, via wireless LAN, or over VPN. A network device that is connected sometimes with a network cable, and sometimes via wireless LAN, has two entries in the table, one for each connection.
- **Inactive connections**: Even connections that are currently not active are displayed.
- **Windows users**: If the network includes Windows computers on which AVM parental controls software is installed, the Windows users of these computers are also displayed.
- **Only shown here**: VPN connections are displayed only in this table.
- **Guest network overview**: Connections to the guest network are displayed.
- **Connection properties**: Properties are displayed for every connection.
• Finding devices: Table columns can be shown or hidden, and the table has a sorting function. By means of these functions devices can be located quickly. Devices can be identified by their IP address, for instance.

• Changing connection properties: A detailed view can be opened for each connection. Connection properties can be changed in the detailed view.

Adding a Device

You can include in the overview even network devices that are not physically connected with the FRITZ!Box.

As soon as an entry for a device is included in the table, you can configure various properties, for instance, port sharing. The type of connection is not listed in the table until the device is physically connected with the FRITZ!Box.

Example

The “Add Device” function is useful for vendors. When a customer orders a new FRITZ!Box, she or he can have the vendor set up the network in the FRITZ!Box. With the “Add Device” function this can be done without actually connecting any network devices.

Removing Devices

Unused connections can be removed individually or all at once, as long as they do not have any special settings. When a single unused connection is removed, all of the settings configured for this device are also deleted.
A click on the “Remove” button removes all inactive connections for which properties were never assigned. This function is useful in the following situations:

- in environments with walk-in customers (for example, hotels, cafés, betting offices)
- in households with children who often invite their friends to use the wireless LAN
Changing IPv4 Settings

Overview

The IPv4 settings define the IPv4 network of the FRITZ!Box. Without these settings there is no IPv4 network. In the FRITZ!Box an IPv4 network is the default setting. You can change the IPv4 settings.

Changes to the IPv4 settings can have the result that the FRITZ!Box can no longer be reached. Only make changes in this menu if you are proficient in network technology.

Application Scenario

In the following cases it is necessary to change the IPv4 address of the FRITZ!Box:

- VPN connection: The home network of the FRITZ!Box is connected with another FRITZ!Box network via a LAN-LAN linkup.
- The FRITZ!Box is integrated in an existing FRITZ!Box network and both boxes are operating in router mode (cascaded).

In both cases the boxes involved cannot have identical IPv4 networks. The IPv4 address must be changed in at least one FRITZ!Box.

Requirements

- The IPv4 settings can be changed only when the advanced view is enabled in the FRITZ!Box; see page 59.

IPv4 Factory Settings

The following values are preconfigured in the FRITZ!Box:

<table>
<thead>
<tr>
<th>IPv4 Setting</th>
<th>Preset Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4 address of the FRITZ!Box</td>
<td>192.168.178.1</td>
</tr>
<tr>
<td>Subnet mask</td>
<td>255.255.255.0</td>
</tr>
</tbody>
</table>
Reserved IPv4 Addresses

The following IPv4 addresses are reserved for certain tasks and cannot be assigned for any other use:

<table>
<thead>
<tr>
<th>IPv4 Address</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.178.1</td>
<td>IPv4 address of the FRITZ!Box</td>
</tr>
<tr>
<td>192.168.178.255</td>
<td>Broadcast address. This address is used to send messages within the network. The messages are received by all network devices.</td>
</tr>
</tbody>
</table>

IPv4 Address in Case of Emergency

The FRITZ!Box also has a fixed IPv4 address that cannot be changed. The FRITZ!Box can always be reached at this IPv4 address.

<table>
<thead>
<tr>
<th>IPv4 Address</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>169.254.1.1</td>
<td>The FRITZ!Box can always be reached at this IPv4 address.</td>
</tr>
</tbody>
</table>

For instructions for using the emergency IPv4 address, see Opening the User Interface with the Emergency IP Address, page 237.
IPv4 Network

IPv4: IPv4 stands for internet protocol, version 4. Together, the IPv4 address of the FRITZ!Box and the subnet mask specify the IPv4 network of the FRITZ!Box. The IPv4 address range available for the network devices is determined by this network. If either of these two values is changed, a different network results.

Instructions: Changing the IPv4 Settings

For instructions, see the online help at: “Home Network / Home Network Overview / Network Settings”, “IPv4 Addresses” button.
## Distributing IPv4 Addresses

### Overview

Every network device in the IPv4 home network of the FRITZ!Box has an address from the IPv4 address range of the FRITZ!Box. A network device either receives its IPv4 address automatically from the DHCP server of the FRITZ!Box, or the IP address is entered manually in the network settings of the network device.

### IPv4 DHCP Server

DHCP stands for Dynamic Host Configuration Protocol. A DHCP server in the IPv4 network assigns IPv4 addresses to the network devices automatically. Assigning the IP addresses via the DHCP server ensures that all of the network devices connected with the FRITZ!Box are located in the same IP network.

The DHCP server of the FRITZ!Box is enabled upon delivery.

One part of the IPv4 address range of the FRITZ!Box is reserved for the DHCP server. The DHCP server assigns IP addresses from this range to the network devices.

<table>
<thead>
<tr>
<th><strong>IPv4 Addresses Reserved for the DHCP Server upon Delivery</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.178.20 - 192.168.178.200</td>
</tr>
</tbody>
</table>

You can change the address range for the DHCP server if needed:

<table>
<thead>
<tr>
<th><strong>Kind of Change</strong></th>
<th><strong>Requirement</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Enlarge</td>
<td>If there are many network devices in the network, many IP addresses will be needed. In this case the address range of the DHCP server can be enlarged. Example for a larger range: 192.168.178.20 - 192.168.178.220</td>
</tr>
<tr>
<td>Kind of Change</td>
<td>Requirement</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Reduce</td>
<td>If there are fewer network devices, the address range can be reduced. Example for a smaller range: 192.168.178.20 - 192.168.178.120</td>
</tr>
<tr>
<td>Move</td>
<td>If you permanently assign the IPv4 addresses 192.168.178.2 - 192.168.178.49 to network devices, but want to maintain a DHCP address range of the same size, then you can shift the DHCP address range, for instance to the range 192.168.178.50 - 192.168.178.230</td>
</tr>
</tbody>
</table>

**Rules**

Only one DHCP server may be active in a network.

**Preparing Network Devices for DHCP**

For the IP address to be assigned by the DHCP server, the “Obtain an IP address automatically” option must be enabled in the IPv4 settings of the network devices; see Obtaining an IP Address Automatically, page 124.

When a network device registers with the FRITZ!Box, it receives an IPv4 address from the DHCP server. Every time the network device is restarted, the DHCP server assigns it an IP address again.

**Always Assigning the Same IPv4 Address**

You can specify that the DHCP server always assign the same IPv4 address to network devices. This option can be enabled under “Home Network / Network / Network Connections” in the detailed settings of the network devices.

**Disabling the DHCP Server**

You can disable the DHCP server of the FRITZ!Box.
In the following cases it is necessary to disable the DHCP server of the FRITZ!Box:

- You use a different DHCP server in your home network.
- You would like to assign addresses to all of the network devices in the home network manually.
Changing IPv6 Settings

Overview
The FRITZ!Box has preconfigured IPv6 settings upon delivery. You can change these settings.

Requirements
- The advanced view is enabled in the FRITZ!Box user interface; see page 59.
- The “IPv6 support enabled” setting is enabled under “Internet / Account Information / IPv6” in the FRITZ!Box user interface.

Factory Settings
The following settings for the IPv6 network of the FRITZ!Box are preset upon delivery:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Local Addresses (ULA)</td>
<td>As long as there is no IPv6 internet connection, the FRITZ!Box assigns unique local addresses to the network devices so that they can communicate with each other.</td>
</tr>
<tr>
<td>Additional IPv6 routers in the home network</td>
<td>This FRITZ!Box provides the default IPv6 connection. Other IPv6 routers are disregarded.</td>
</tr>
<tr>
<td>DNSv6 server in the home network</td>
<td>Also announce DNSv6 server via router advertisement.</td>
</tr>
<tr>
<td>DHCPv6 server in the home network</td>
<td>The DHCPv6 server is enabled. Only the DNS server is announced via DHCPv6.</td>
</tr>
</tbody>
</table>
You can change the settings. For more information on this subject, see the online help of the FRITZ!Box.

Instructions: Changing the IPv6 Settings

For instructions, see the online help at: “Home Network / Network / Network Settings”, “IPv6 Addresses” button.
Configuring a Static IP Route

Overview

A static IP route is a description of a path to an IP subnet whose network address is not known to the FRITZ!Box.

Application Scenario

Static IP routes are intended for the following situation:

• In the FRITZ!Box network there is a subnet whose network address in the FRITZ!Box is unknown.
• The network devices in the subnet are to communicate with the network devices of the FRITZ!Box or access the internet via the FRITZ!Box.
• Only relevant for IPv4: The router that spans the subnet does not do NAT (Network Address Translation).

How Static IP Routes Work

IP packets whose IP destination addresses are unknown are forwarded to the internet by default. In the application described above, because the FRITZ!Box does not know the destination addresses that belong to the subnet, it forwards the packet to the internet. To prevent this from happening, the FRITZ!Box must know the network address of the subnet and the IP address of the interface to the subnet. These two addresses are required to configure a static route. Static IP routes are registered in the routing table.

Requirements

• Static IP routes can be configured only when the advanced view is enabled; see Using the Standard View and Advanced View, page 59.
Instructions: Configuring a Static IPv4 Route

For instructions, see the online help at: “Home Network / Network / Network Settings”, “IPv4 Routes“ button.

Instructions: Configuring a Static IPv6 Route

For instructions, see the online help at: “Home Network / Network / Network Settings”, “IPv6 Routes” button.
Obtaining an IP Address Automatically

Overview

Network devices that are to obtain their IP address automatically by DHCP must be configured accordingly. This configuration is performed on the operating system level in the IP settings of the network devices.

Obtaining an IP Address Automatically in Windows

1. In Windows 10 and 7 click “Start”.
   In Windows 8, press the Windows key and the Q key at the same time.
2. Enter “ncpa.cpl” in the search field and press Enter.
3. Click the network connection between the computer and the FRITZ!Box with the right mouse button and select “Properties”.
4. Under “This connection uses the following items”, select “Internet Protocol Version 4 (TCP/IPv4)”.
5. Click the “Properties” button.
6. On the “General” tab, enable the options “Obtain an IP address automatically” and “Obtain DNS server address automatically”.

![IP Address Configuration](image)
7. Click “OK” to save the settings.
8. Enable the options “Obtain an IP address automatically” and “Obtain DNS server address automatically” for the internet protocol version 6 (TCP/IPv6) as well.

The network device receives an IP address from the FRITZ!Box.

Obtaining an IP Address Automatically in Mac OS X

1. Select the “System Preferences” in the Apple menu.
2. In the “System Preferences” window, click “Network”.
3. In the “Network” window, select the “Ethernet” entry from the “Show:” list.
4. Click the “Advanced...” button. The “TCP/IP” settings page opens. Select the “Using DHCP” option from the “Configure IPv4:” dropdown list.
5. Click “OK”.

The network device now automatically receives an IP address from the FRITZ!Box.

Obtaining an IP Address Automatically in Linux

For comprehensive information and tips on network settings in Linux, see, for example:

www.tldp.org/HOWTO/NET3-4-HOWTO-5.html
Configuring LAN Guest Access

Overview

With a LAN guest access it is simple to provide houseguests with an internet connection of their own via network cable (LAN cable). A guest access is a user account for temporary users like weekend guests. A guest access can also be made available wirelessly via wireless LAN.

Criteria

The access profile “Guest” is set for the LAN guest access. This access profile can be edited in the “Internet / Filters / Access Profiles” menu.

These activities are permitted and prohibited on the guest access:

<table>
<thead>
<tr>
<th>Your Guests Can</th>
<th>Your Guests Cannot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surf the web (according to the filters you specified)</td>
<td>Access the contents of the home network</td>
</tr>
<tr>
<td>Send and receive email</td>
<td>Configure settings in the FRITZ!Box user interface</td>
</tr>
</tbody>
</table>
Example Configuration

Requirements

- The FRITZ!Box establishes the internet connection itself, that is, it is not configured as an IP client.
- You have a network cable at hand.

Instructions: Configuring LAN Guest Access

For instructions, see the online help at: "Home Network / Network / Network Settings".
Configuring Wake on LAN

Overview

Wake on LAN is a function that allows a computer to be started via network adapter. Wake on LAN can be used with remote maintenance software, to eliminate the need to keep the computer switched on permanently. The FRITZ!Box supports Wake on LAN both for IPv4 and for IPv6 connections.

Requirements

• The network adapter of the computer supports Wake on LAN.
• The computer is connected with the FRITZ!Box
  - via a FRITZ!Powerline device or
  - by network cable
• For access from the internet, the computer must be in standby operation.

Instructions: Configuring Wake on LAN

For instructions, see the online help at: “Home Network / Network / Network Connections / Edit Device Details”. 
Configuring USB Devices

Overview
The FRITZ!Box has two USB ports to which you can connect various USB devices. All devices in the FRITZ!Box home network can use these USB devices jointly and simultaneously.

Suitable USB Devices
The following USB devices can be connected to the FRITZ!Box:
- USB storage media compatible with EXT2/3/4, FAT, FAT32 or NTFS
  - flash drives
  - external hard drives
  - card readers
- USB printers
- USB all-in-one printers
- USB scanners
- USB modems
  - UMTS/HSDPA dongles
  - LTE dongles
- USB hubs
Example Configuration

Rules

Follow the rules below for connecting USB devices to the FRITZ!Box:

- If more than one USB device without its own power supply is connected to the FRITZ!Box, the total current consumption may not exceed a value of 500 mA. Otherwise errors on the USB devices and even damage to the FRITZ!Box may occur.
- UMTS modems can have very high power consumption. For this reason, do not operate a UMTS modem directly on the FRITZ!Box, but on an active hub with its own power supply.
- Do not conduct any updates for USB devices that are connected with the computer via the FRITZ!Box USB remote connection.
• The FRITZ!Box cannot defend connected USB storage media from external influences. Voltage peaks or drops during an electrical storm can result in the loss of data. Therefore, you should back up the contents of the USB storage media on a regular basis.
• Place USB hard drives as far away from the FRITZ!Box as possible in order to prevent interference to wireless radio transmission.

Instructions: Connecting and Configuring USB Storage Media

⚠️ Click “Remove Safely” before removing a USB storage medium from the FRITZ!Box. This ensures that all data transmission has been completed.

1. Connect the USB storage device to the USB port on the FRITZ!Box.
   The USB storage medium will be re-indexed and you can access the stored contents.

Configuring Access Rights for USB Storage Media

Under “System / FRITZ!Box Users” in the FRITZ!Box user interface, you can specify which contents on a connected USB storage media can be accessed by each user account.
Instructions: Configuring a USB Printer as a Network Printer (Windows 7)

A USB printer connected to the FRITZ!Box can be configured as a network printer in Windows 7:

1. Click “Start / Control Panel” and select the printer category of your operating system.
2. Click the printer icon with the right mouse button and select “Properties” or “Printer properties”.
3. Switch to the “Ports” tab and click “Add Port…”.
4. Double-click the “Standard TCP/IP Port” entry.
5. Click “Next” and then enter “fritz.box” in the “Printer Name or IP Address” field.
6. Enter any name you wish in the “Port name” field and click “Next”.
7. Select the “Custom” option and click “Settings…”.
8. Enable the “Raw” option and enter “9100” in the “Port number” field.
9. Click “OK”, click “Next”, and confirm with “Finish” and “Close”.
10. In the “<Printer name> Properties” window, switch to the “Ports” tab.
11. Disable the “Enable bidirectional support” option and click “Apply”.

The USB printer has been configured and can be used as a network printer.
Instructions: Configuring a USB Printer as a Network Printer (Windows 8)

A USB printer connected to the FRITZ!Box can be configured as a network printer in Windows 8:

1. Press the keyboard shortcut “Windows key+X” and select “Control Panel” from the context menu.
2. Click “Hardware and Sound” and select “Devices and Printers”.
3. In the menu bar, click “Add a printer”.
4. In the “Add Printer” window, select “The printer that I want isn’t listed” and then “Next”.
5. Enable the option “Add a printer using TCP/IP address or hostname” and click “Next”.
6. Enter fritz.box in the “Hostname or IP address” field.
   Enter fritz.box in the “Hostname or IP address” field. If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached in the network.
7. Click “Next”.
8. Click “Next” and confirm with “Finish”.

The USB printer has been configured and can be used as a network printer.
Instructions: Configuring a USB Printer as a Network Printer (Windows 10)

A USB printer connected to the FRITZ!Box can be configured as a network printer in Windows 10:

1. Press the keyboard shortcut “Windows key+X” and select “Control Panel” from the context menu.
2. Click “Hardware and Sound” and select “Devices and Printers”.
3. In the menu bar, click “Add a printer”.
4. Click “The printer that I want isn’t listed” in the window “Add Printer” window.
5. Enable the option “Add a printer using TCP/IP address or hostname” and click “Next”.
6. Enter fritz.box in the “Hostname or IP address” field.
   Enter fritz.box in the “Hostname or IP address” field. If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached in the network.
7. Click “Next”.
8. Select the printer manufacturer and model, and click “Next”.
9. If the “Printer Sharing” window appears, select “Do not share this printer” and click “Next”.
10. Click “Finish”.

The USB printer has been configured and can be used as a network printer.
Instructions: Configuring a USB Printer as a Network Printer (Mac OS X 10.5 or Higher)

A USB printer connected to the FRITZ!Box can be configured as a network printer in Mac OS X version 10.5 or higher:

1. In the dock, click “System Preferences”.
2. Click “Printers & Faxes”.
3. Click the “+” sign.
4. Click “IP”.
5. In the “Protocol:” list, select the entry “HP Jet Direct – Socket”.
6. Enter fritz.box in the “Address” field.
   If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which it can be reached in the network.
7. In the “Use:” list, select the printer that is connected to the USB port of your FRITZ!Box.
   If the printer is not displayed, you must first install the printer drivers for this device. Consult the documentation of your printer for instructions.
8. Click “Add” or “Add Port...”.

The USB printer has been configured and can be used as a network printer.
Instructions: Configuring a USB Printer in Other Operating Systems

In operating systems other than Windows or Mac OS X, configure the following settings to set up a USB printer as a network printer:

1. As the port type, select “Raw TCP”.
2. Enter 9100 as the port.
3. Enter fritz.box as the printer name.
   If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which it can be reached in the network.
Configuring and Using the Media Server

Overview

With the media server of the FRITZ!Box you can make photos, videos and music available to compatible playback devices. The media server can be expanded using USB storage media or USB hard disks. You can also use the media server of the FRITZ!Box to listen to web radio.

Criteria

The FRITZ!Box detects media files automatically and makes them available in a clear playlist. You can decide yourself which media sources on the media server should be made available to the users in the home network and from the internet.

Writing large amounts of data to a storage medium connected to the FRITZ!Box can take a while. You can accelerate the process by copying the data to the storage medium on your computer first and then connecting the storage medium to the FRITZ!Box.
Example Configuration

Requirements

- The playback devices must support the UPnP AV standard.

Instructions: Configuring and Using the Media Server

For instructions, see the online help at: “Home Network / Media Server / Settings”, “Home Network / Media Server / Web Radio” and “Home Network / Media Server / Podcast”.

Assigning a FRITZ!Box Name

Overview

You can assign an individual name for your FRITZ!Box in the FRITZ!Box user interface. This name is then adopted as the name of the wireless radio network (SSID).

⚠ Changing the name may make it necessary to reconfigure your wireless connections and network links.

Consequences of Assigning a Name

The name is adopted in the following areas of your home network:

• Name of the wireless radio network (SSID)
• Name of the guest radio network (SSID)
• Name of the working group released for home network sharing
• Name of the media server
• Name of the DECT base station
• Push service sender name
• Name of your FRITZ!Box in the device overview in MyFRITZ!

Instructions: Assigning a FRITZ!Box Name

For instructions, see the online help at: “Home Network / FRITZ!Box Name”.
Controlling Smart Home Devices

Overview

With Smart Home devices you can integrate household devices and home automation in your home network of your FRITZ!Box. All Smart Home devices can be configured and controlled on the computer, tablet, or smartphone, and even via the internet from on the go.

The following Smart Home devices can be registered with the FRITZ!Box and configured and controlled via the FRITZ!Box:

- Up to 10 FRITZ!DECT 200/210 outlet switches and
- Up to 12 FRITZ!DECT 301/300/Comet DECT radiator controls
- Up to 10 Smart Home devices via HAN FUN

With outlet switches you can control the power supply to connected devices by schedule, and record the devices’ energy consumption.

With radiator controls you can control the room temperature automatically and save energy costs. The Smart Home devices can be configured and controlled on the computer, tablet, or smartphone, and even via the internet from on the go.

With the radio standard HAN FUN you can register Smart Home devices of other manufacturers at the FRITZ!Box and control the outlet switches FRITZ!DECT 210/200 and FRITZ!Powerline 546E.
Example Configuration

Requirements

- At least one Smart Home device is registered with the FRITZ!Box.

Instructions: Setting Up a Group

For instructions, see the online help at: “Home Network / Smart Home”.

Instructions: Configuring Automatic Switching

For instructions, see the online help at: “Home Network / Smart Home / Edit Smart Home Device / Automatic Switching”.
User Interface: Wireless Menu

Wireless Menu: Settings and Features ................................................................. 143
Switching the Wireless Radio Network On and Off ............................................. 144
Selecting the Radio Channel .............................................................................. 145
Configuring Wireless Guest Access ................................................................. 147
Wireless Menu: Settings and Features

Overview

In the “Wireless” menu you can configure and secure a wireless radio network and a separate wireless guest access. In this menu you can also set up a schedule for your wireless radio networks and change the operating mode of the FRITZ!Box so that it can be used as a wireless repeater if needed.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.

On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Switching the Wireless Radio Network On and Off

Overview

When no one is using it, you can switch off the wireless network. This way you reduce both power consumption and wireless radiation.

You can switch the wireless network on and off manually, and set up a schedule for times at which the wireless network is turned on and off automatically.

The FRITZ!Box schedule can be transferred to other connected AVM devices, for instance FRITZ!WLAN Repeaters and FRITZ!Powerline adapters. By default, the AVM devices adopt the settings for the wireless switching schedule from the FRITZ!Box. You can also configure a separate wireless LAN switching schedule for the connected AVM devices.

Instructions: Switching the Wireless Network On and Off Manually

You can switch the wireless network on and off in the following ways:

- by keypad code using a connected telephone; see Instructions: Switching Wireless LAN On, page 217 and see Instructions: Switching Wireless LAN Off, page 218
- in the menu of a connected FRITZ!Fon cordless telephone

Instructions: Switching the Wireless Network On and Off by Schedule

For instructions, see the online help at: “Wireless / Schedule”.
Selecting the Radio Channel

Overview

Wireless LAN uses the frequency ranges at 2.4 GHz and 5 GHz for transmission. Generally the FRITZ!Box automatically checks the wireless environment and selects the optimum radio channel settings. In some cases it may be necessary to adjust these radio channel settings in order to adapt the wireless radio network to the circumstances at your location.

Comparison of the Frequency Ranges

The following table compares the 2.4-GHz and 5-GHz frequency ranges:

<table>
<thead>
<tr>
<th></th>
<th>2.4 GHz</th>
<th>5 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>Greater range – supported by older and newer clients</td>
<td>Less busy, therefore less interference</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>Subject to heavy use, therefore often lots of interference</td>
<td>Lower range – only supported by newer clients</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Use for applications that require a low to normal throughput rate (for instance, reading and writing email).</td>
<td>Use for applications that rely on a steady, high throughput rate (for instance, streaming).</td>
</tr>
</tbody>
</table>

Wireless Auto Channel

With the “Set radio channel settings automatically” (wireless auto channel) feature, the FRITZ!Box automatically searches for the channel subject to the least interference. This process takes into consideration interference from radio networks in the vicinity (wireless access points) and potential sources of interference (for instance baby...
monitors, microwave ovens). Should problems with interference persist despite this function, try to identify the source of interference and eliminate it.

Switching Frequency Bands Spontaneously (Band Steering)
To improve data transmission, the FRITZ!Box can automatically switch the frequency band used by dual-band wireless devices. For this the registered wireless devices are controlled so that they log in to the less busy frequency band, and thus take better advantage of the wireless spectrum available on both frequency bands.

Instructions: Adjusting the Radio Channel Settings Manually

For instructions, see the online help at: “Wireless / Radio Channel”.
Configuring Wireless Guest Access

Overview

In addition to its wireless network, the FRITZ!Box can provide a second, independent wireless guest network. You can make this wireless guest network available to your guests. Then your guests can log in with the wireless guest network on their own smartphones, tablets, laptops or other network devices, without being able to access the FRITZ!Box home network.

Example Configuration

Requirements

The FRITZ!Box is not configured as an IP client.
Instructions: Configuring Wireless Guest Access

For instructions, see the online help at: “Wireless / Guest Access”.
User Interface: DECT Menu

DECT Menu: Settings and Features ................................................................. 150
Enabling DECT Eco ......................................................................................... 151
Allowing Non-encrypted Connections ......................................................... 152
Switching DECT On and Off ........................................................................ 153
DECT Menu: Settings and Features

Overview

The “DECT” menu contains the settings to configure the DECT base station integrated in the FRITZ!Box.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.

On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Enabling DECT Eco

Overview

DECT Eco allows DECT radio transmission to be switched off during standby operation. DECT Eco reduces DECT radiation, but does not save any electricity.

How It Works

A telephone is on standby operation when you are not making any calls, not using any other features, and not pressing any buttons. When all registered cordless telephones are in standby operation, the DECT radio network of the FRITZ!Box and the telephones is switched off. As soon as a call arrives or you press a key on a cordless telephone, the DECT radio network is switched back on.

Requirements

• In the user interface, the “DECT Eco supported” option must be displayed for each telephone under “DECT / DECT Monitor”.
• The following devices may not be registered with the FRITZ!Box: FRITZ!DECT devices with an outlet switch, FRITZ!DECT Repeater, a FRITZ!Box in DECT repeater mode.

Instructions: Enabling DECT Eco

For instructions, see the online help at: “DECT / Base Station”.
Allowing Non-encrypted Connections

Overview

The FRITZ!Box is preconfigured to allow only authenticated and encrypted DECT connections. In order to use DECT repeaters from other manufacturers that do not allow encrypted connections, you can allow non-encrypted connections.

Consequences of Non-encrypted Connections

The following FRITZ!Box features cannot be used if you allow non-encrypted connections:

- Registration of FRITZ!DECT Repeater or FRITZ!Box in DECT repeater mode
- DECT Eco
- HD telephony
- Own ring tones for FRITZ!Fon
- Playback of web radio or podcast with FRITZ!Fon
- Display of background image or photos of callers on FRITZ!Fon
- Rendering of audio files from the FRITZ!Box media server with FRITZ!Fon

Requirements

DECT settings can be changed only if the following prerequisite is met:

- At least one DECT cordless telephone is registered with the FRITZ!Box.

Instructions: Allowing Non-encrypted DECT Connections

For instructions, see the online help at: “DECT / Base Station”.

Switching DECT On and Off

Overview

DECT is switched on automatically whenever you register a DECT device with the FRITZ!Box and switched off when you deregister all DECT devices. You can also switch off DECT in the user interface. Then the registered DECT devices will lose their connections to the FRITZ!Box, but remain registered with it. When you switch DECT back on, the connections will be restored.

Instructions: Switching DECT On and Off

1. Open the FRITZ!Box user interface; see page 51.
2. Select the “DECT / Base Station” menu.
3. Enable or disable the “DECT base station enabled” checkbox.
4. Click “Apply”.
User Interface: DVB-C Menu

DVB-C Menu: Settings and Features ................................................................. 155
Television in the Home Network ................................................................. 156
Watching Television with FRITZ!App TV ...................................................... 157
Watching Television with the VLC Media Player ........................................... 158
Restart Channel Search ................................................................................ 159
DVB-C Menu: Settings and Features

Overview

You can watch television in the home network with FRITZ!Box.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.

On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Television in the Home Network

Overview

The FRITZ!Box distributes the TV signal of your cable connection throughout the home network via wireless LAN. With FRITZ!App TV or other software you can receive free-to-air digital television channels on a computer, tablet or smartphone.

You can receive four TV programs at the same time and select between them on multiple devices.

The FRITZ!Box also provides an electronic program guide (EPG), teletext, alternative audio channels and subtitles.

Requirements

- For TV reception on a tablet or smartphone: FRITZ!App TV or a comparable TV app. FRITZ!App TV is available from Google Play (Android) and the App Store (iOS).
- For TV reception on the PC or notebook: VLC media player or a comparable TV app. Get the VLC media player, for instance, at http://www.videolan.org/vlc.
- For reception of electronic program guides (EPG), teletext, alternative audio channels and subtitles: TV app or TV software that supports the desired functions.
Watching Television with FRITZ!App TV

Overview
FRITZ!App TV receives all free-to-air channels available at the cable junction which your FRITZ!Box found during its channel search. The channel search starts automatically once the FRITZ!Box has been connected.

Instructions: Playing Back TV Programs
1. Start the FRITZ!App TV.
2. Select a channel. The program will be played.

FRITZ!App TV: Program Features
You can switch channels, exit, or return to the channel list:

<table>
<thead>
<tr>
<th>Function</th>
<th>iOS</th>
<th>Android</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching channels</td>
<td>Wipe</td>
<td>Wipe</td>
</tr>
<tr>
<td>Exit program</td>
<td>pinch fingers</td>
<td>Back</td>
</tr>
<tr>
<td>Back to channel list</td>
<td>End Call</td>
<td>Back</td>
</tr>
</tbody>
</table>

Instructions: Reloading the Channel List
The channel list will be reloaded when you completely exit FRITZ!App TV and then restart it:
1. Open the list of apps last used on your smartphone or tablet: In Android, tap the key or the Home key twice. In iOS: Tap the Home key twice.
2. Closing FRITZ!App TV: In Android, wipe the app off the top or the right of the screen. In iOS, wipe the app off the top of the screen.
3. Restart FRITZ!App TV.
Watching Television with the VLC Media Player

Overview

With the VLC media player you can receive all free-to-air channels available at the cable connection which your FRITZ!Box found during its channel search. The channel search starts automatically once the FRITZ!Box has been connected.

Instructions: Watching Television with the VLC Media Player

1. Start the VLC media player.
2. Open the user interface of the FRITZ!Box; see Instructions: Opening the user interface, page 54.
3. Select the “DVB-C / Channel List” menu and click “Generate channel list” with the right mouse button.
4. Select the command “Save destination to ... and enter a storage location.”
5. Drag the TV channel list tvsd.m3u and drop it into the window of the VLC media player.
6. Select a channel.
   The program will be played.
Restart Channel Search

Overview

After it is connected to the cable junction, the FRITZ!Box automatically performs a channel search. All free-to-air digital TV channels and radio stations are found. You can perform a new channel search at any time, for instance, to find new channels added to your cable package.

Instructions: Starting a Channel Search

1. Open the FRITZ!Box user interface, see Instructions: Opening the user interface, page 54.
2. Select “DVB-C / Channel Search”.
3. Click “Start Channel Search”.

The channel search may take up to 30 minutes.
User Interface: Diagnostics Menu

Diagnostics Menu: Settings and Features ............................................................. 161
Starting the Function Diagnostics ....................................................................... 162
Using Security Diagnostics .................................................................................. 164
Diagnostics Menu: Settings and Features

Overview

The “Diagnostics” menu presents an overview of the functional status of your FRITZ!Box, your home network, and the connection to the internet. You also get an overview of all security-relevant settings of your FRITZ!Box. At a single glance it shows which ports are opened, which users are logged in and which wireless devices are connected.

In the case of an error, the results of the function and security diagnostics can be saved and sent to the AVM Support team.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.

On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Starting the Function Diagnostics

Overview

With the function diagnostics you can get an overview of the functional status of your FRITZ!Box and its internet connection, and of your home network as well. In the case of an error the diagnostics results can help you localize and remedy any problems.

Areas of Diagnostics

The following areas are checked:

<table>
<thead>
<tr>
<th>Area</th>
<th>Checkpoint / Status</th>
</tr>
</thead>
</table>
| FRITZ!Box 6590 Cable | • Name of the FRITZ!Box  
• FRITZ!Box version  
• FRITZ!OS up to date |
| Login         | Configured kind of login to the FRITZ!Box user interface                             |
| LAN           | • Allocation of LAN ports  
• Power settings on LAN ports                                                    |
| Wireless      | • Wireless LAN frequency band enabled/disabled with wireless  
• Number of wireless LAN devices connected  
• Security settings                                                             |
| DECT          | • DECT enabled/disabled  
• Number of DECT devices connected                                               |
| USB devices   | • Number of storage media connected  
• Number of partitions  
• Connected printers                                                             |
<table>
<thead>
<tr>
<th>Area</th>
<th>Checkpoint / Status</th>
</tr>
</thead>
</table>
| Internet connection | • IPv4 connection active since/not active  
                        • IPv6 connection active since/not active  
                        • Current IP address                   |
| Telephone numbers | Count and number of own telephone numbers                                         |
| MyFRITZ!         | • Status of the MyFRITZ! activation  
                        • MyFRITZ! account email address        |
| Home network     | • Number of network devices connected with the FRITZ!Box at present or at an earlier point in time  
                        • Number of network devices online     |
| Smart Home       | Number of Smart Home devices                                                       |
| Wireless environment | Wireless LAN frequency band with number of wireless radio networks on the same or an adjacent channel |

**Instructions: Starting Function Diagnostics**

For instructions, see the online help at: “Diagnostics / Function”. 
Using Security Diagnostics

Overview

By means of the security diagnostics you get an overview of all security-relevant settings of your FRITZ!Box. At a glance you can see whether the latest FRITZ!OS is installed, which ports are open, which users are logged in or off the FRITZ!Box, which wireless devices with which properties are connected to the FRITZ!Box and much more.

Security Diagnostics Test Points

The following areas are checked:

<table>
<thead>
<tr>
<th>Area</th>
<th>Checkpoint / Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRITZ!OS</td>
<td>• FRITZ!Box version</td>
</tr>
<tr>
<td></td>
<td>• FRITZ!OS up to date</td>
</tr>
<tr>
<td>Login</td>
<td>Configured kind of login to the FRITZ!Box user interface</td>
</tr>
<tr>
<td>Internet connection</td>
<td>• Opened ports on the FRITZ!Box</td>
</tr>
<tr>
<td></td>
<td>• Protocols used on these ports</td>
</tr>
<tr>
<td></td>
<td>• Port sharing for home network devices to the internet</td>
</tr>
<tr>
<td></td>
<td>• Filters for internet access</td>
</tr>
<tr>
<td>MyFRITZ!</td>
<td>• Status of the MyFRITZ! activation</td>
</tr>
<tr>
<td></td>
<td>• MyFRITZ! account email address</td>
</tr>
<tr>
<td></td>
<td>• Registration link for MyFRITZ!</td>
</tr>
<tr>
<td></td>
<td>• Overview of MyFRITZ! sharing for access from the internet</td>
</tr>
<tr>
<td>Outgoing filters</td>
<td>Overview of active filters for access from the internet</td>
</tr>
</tbody>
</table>
## Area | Checkpoint / Status
--- | ---
**Wireless** | • Properties and security-relevant settings for access to the wireless network and wireless guest access  
• Names of registered and known wireless devices

**Telephony** | • Functions and properties of the DECT base station of the FRITZ!Box  
• Call handling like call diversion settings, premium numbers, settings for international calls and security-relevant connection settings  
• IP telephone settings: connected with the FRITZ!Box directly or via FRITZ!App Fon

**FRITZ!Box users** | • All FRITZ!Box users and their rights to access FRITZ!Box contents, for the FRITZ!Box home network and for access from the internet  
• Time at which the FRITZ!Box last logged in and the IP address it used to do so.

**FRITZ!NAS** | Access rights to the FRITZ!Box storage media with the following details:  
• which user has access to which storage media  
• which rights (write and read) are included  
• whether access is permitted only via the home network, or also from the internet.

### Instructions: Using Security Diagnostics

For instructions, see the online help at: “Diagnostics / Security”.
User Interface: System Menu

System Menu: Settings and Features................................................................. 167
Setting a FRITZ!Box Password ....................................................................... 169
Creating FRITZ!Box Users .............................................................................. 172
Configuring Push Services .............................................................................. 175
Selecting Signaling of the “Info” LED ............................................................ 177
Locking Buttons .............................................................................................. 178
Updating FRITZ!OS ......................................................................................... 179
Saving Settings ............................................................................................... 183
Loading Settings ............................................................................................. 184
Restarting the FRITZ!Box .............................................................................. 185
System Menu: Settings and Features

Overview

The “System” menu shows you all system-relevant events and presents an “Energy Monitor” showing information about the power consumption of your FRITZ!Box. Various notification services inform you about the activities of the FRITZ!Box and assist you in saving your passwords and FRITZ!Box settings.

In addition to allocating rights in the user administration, the “System” menu entries also allow the settings of the FRITZ!Box to be saved and restored.

Description of the Submenus

The online help of the user interface includes a detailed description of the submenus.
On the Following Pages

The following pages present information on settings, options and procedures included in this menu.
Setting a FRITZ!Box Password

Overview

With the FRITZ!Box password you open the user interface of the FRITZ!Box. Every user who knows this password can access all contents and settings of the FRITZ!Box.

A unique password is already set in your FRITZ!Box upon delivery. With this, access to the user interface of your FRITZ!Box is protected from the outset.

The preset network key is found here:
• on the bottom of the FRITZ!Box
• on the enclosed FRITZ! Notes

If needed, you can replace the preconfigured password with a FRITZ!Box password of your own.

With the FRITZ!Box password it is not possible to access the FRITZ!Box from the internet. For internet access to the FRITZ!Box you also need an account as a FRITZ!Box user; see Creating FRITZ!Box Users, page 172.
Password Protection

To protect the FRITZ!Box with a password, you can either use a FRITZ!Box password or set up FRITZ!Box accounts. These password variants differ in the following ways:

<table>
<thead>
<tr>
<th></th>
<th>FRITZ!Box Password</th>
<th>FRITZ!Box Users</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Password</strong></td>
<td>You specify a password.</td>
<td>There are user accounts.</td>
</tr>
<tr>
<td></td>
<td>Or you use the preconfigured password.</td>
<td>Every FRITZ!Box user receives her or his own password for opening the user interface.</td>
</tr>
<tr>
<td></td>
<td>Everyone who knows the password can access the FRITZ!Box user interface.</td>
<td></td>
</tr>
<tr>
<td><strong>Scope of access</strong></td>
<td>With the FRITZ!Box password, access to all contents and settings in the FRITZ!Box is permitted.</td>
<td>For each FRITZ!Box user, you specify in the user account which contents and settings of the FRITZ!Box the given user is allowed to access.</td>
</tr>
<tr>
<td><strong>Kind of access</strong></td>
<td>Login to the user interface is permitted from devices located in the home network of the FRITZ!Box.</td>
<td>A FRITZ!Box user can also log in to the FRITZ!Box user interface – with the appropriate user rights – from the internet.</td>
</tr>
</tbody>
</table>
Rules for Passwords

Comply with the following rules for setting passwords:

- Select a password with at least twelve characters, which includes capitals and lower-case letters as well as numerals and special characters.

<table>
<thead>
<tr>
<th>Characters Allowed</th>
<th>Illegal Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>• letters from a to z in lower case and upper case</td>
<td>• letter ß</td>
</tr>
<tr>
<td>• numerals 0 to 9</td>
<td>• umlauts ä, ö, ü in upper and lower case</td>
</tr>
<tr>
<td>• spaces</td>
<td></td>
</tr>
<tr>
<td>• special characters: _ - ! &quot; # $ % &amp; ' ( ) * + , . / ; : &lt; = ? @ [ \ ] ^ \ {</td>
<td>}</td>
</tr>
</tbody>
</table>

- Configure the “Forgot password” push service. When you have forgotten a password, the FRITZ!Box sends an access link to the email address you specified. Using this link you can set a new password.

If you lose your FRITZ!Box password and did not configure the “Forgot password” push service, you will have to restore the factory settings to the FRITZ!Box and reconfigure all of your personal settings for your internet connection, your telephone system and your home network.

Instructions: Configuring a FRITZ!Box Password

For instructions, see the online help at: “System / FRITZ!Box Users / Login to the Home Network”.

User Interface: System Menu
Creating FRITZ!Box Users

Overview

You can set up as many as 18 user accounts in the FRITZ!Box. FRITZ!Box users open the user interface of the FRITZ!Box by entering their personal passwords. There they can view and change those contents or settings to which they have been granted access rights.

It is up to you whether to use FRITZ!Box users instead of the FRITZ!Box password. You need to log in as a FRITZ!Box user in the following cases:

- You would like to access your FRITZ!Box from the internet.
- You would like to assign different rights to different users of your FRITZ!Box.

Do not create any user accounts for temporary users (like weekend guests, for example) whom you would like to grant internet access via your FRITZ!Box temporarily. Use the guest access of the FRITZ!Box instead; see Configuring Wireless Guest Access, page 147.

Password Protection

To protect the FRITZ!Box with a password, you can either use a FRITZ!Box password or set up FRITZ!Box accounts. These password variants differ in the following ways:

<table>
<thead>
<tr>
<th>Password</th>
<th>FRITZ!Box Password</th>
<th>FRITZ!Box Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password</td>
<td>You specify a password. Or you use the preconfigured password. Everyone who knows the password can access the FRITZ!Box user interface.</td>
<td>There are user accounts. Every FRITZ!Box user receives her or his own password for opening the user interface.</td>
</tr>
</tbody>
</table>
FRITZ!Box Password
FRITZ!Box Users

## Scope of access
With the FRITZ!Box password, access to all contents and settings in the FRITZ!Box is permitted.

For each FRITZ!Box user, you specify in the user account which contents and settings of the FRITZ!Box the given user is allowed to access.

## Kind of access
Login to the user interface is permitted from devices located in the home network of the FRITZ!Box.

A FRITZ!Box user can also log in to the FRITZ!Box user interface – with the appropriate user rights – from the internet.

### Rules for User Names and Passwords

Comply with the following rules for creating user names and setting passwords:

- For FRITZ!Box users, select a user name that begins with a letter from a to z in upper or lower case and has a maximum of 32 characters.

<table>
<thead>
<tr>
<th>Characters Allowed for User Names</th>
<th>Illegal Characters for User Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>• letters from a to z in lower case and upper case</td>
<td>• letter ß</td>
</tr>
<tr>
<td>• numerals 0 to 9</td>
<td>• umlauts ä, ö, ü in upper and lower case</td>
</tr>
<tr>
<td>• spaces</td>
<td></td>
</tr>
<tr>
<td>• special characters: - _ , .</td>
<td>special characters: ! &quot; § # $ % &amp; ( ) + / ; ; &lt;= &gt; @ [ \ ] ^ `</td>
</tr>
</tbody>
</table>
- Select a password with at least twelve characters, which includes capitals and lower-case letters as well as numerals and special characters.

<table>
<thead>
<tr>
<th>Characters Allowed for Passwords</th>
<th>Illegal Characters for Passwords</th>
</tr>
</thead>
<tbody>
<tr>
<td>• letters from a to z in lower case and upper case</td>
<td>• letter ß</td>
</tr>
<tr>
<td>• numerals 0 to 9</td>
<td>• umlauts ä, ö, ü in upper and lower case</td>
</tr>
<tr>
<td>• spaces</td>
<td>special characters: $ % &amp; ' ( * ) + , . / : ; &lt; &gt; ? @ [ \ ] ^ ` {</td>
</tr>
<tr>
<td>• special characters: _ - ! &quot; # $ % &amp; ' ( * ) + , . / : ; &lt; &gt; ? @ [ \ ] ^ ` {</td>
<td>} ~</td>
</tr>
</tbody>
</table>

- Keep your passwords in a safe place.
- Configure the “Forgot password” push service. When you have forgotten a password, the FRITZ!Box sends an access link to the email address you specified. Using this link you can set a new password.

Instructions: Configuring FRITZ!Box Users

For instructions, see the online help at: “System / FRITZ!Box Users / Users”.
Configuring Push Services

Overview

Various push services are available in the user interface under “System / Push Service”. Push services are notification services that inform you about the activities of your FRITZ!Box and assist you in saving your passwords and FRITZ!Box settings. With the push services you can have email sent to you at regular intervals informing you about the latest connections, usage and configuration of your FRITZ!Box.

Available Push Services

You can request push service mails to be notified about the following activities by the FRITZ!Box:

<table>
<thead>
<tr>
<th>Push Service</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRITZ!Box Info</td>
<td>Sends you regular email messages with data on FRITZ!Box usage and connections</td>
</tr>
<tr>
<td>Answering machine</td>
<td>Forwards messages recorded on the FRITZ!Box answering machines to the specified email address</td>
</tr>
<tr>
<td>Calls</td>
<td>Sends you email when calls arrive – either only for missed calls, or for all calls</td>
</tr>
<tr>
<td>Smart Home</td>
<td>Sends you the status of a Smart Home device regularly or when important events occur</td>
</tr>
<tr>
<td>Wireless guest access</td>
<td>Sends a message whenever devices register with or deregister from the wireless guest access</td>
</tr>
<tr>
<td>Fax function</td>
<td>Forwards your faxes by email and also saves them to a storage location you defined</td>
</tr>
</tbody>
</table>
## Push Service

<table>
<thead>
<tr>
<th>Push Service</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save settings</td>
<td>Saves the settings of the FRITZ!Box before each update and every time the factory settings are restored, and forwards these settings by email</td>
</tr>
<tr>
<td>Forgot password</td>
<td>Sends you an access link to the specified email address if you have forgotten your password</td>
</tr>
<tr>
<td>Current IP address</td>
<td>Sends the IP address assigned by the internet service provider every time the internet connection is established</td>
</tr>
<tr>
<td>Change notice</td>
<td>Sends you an email every time changes are made to a FRITZ!Box setting or when potentially security-relevant events occur.</td>
</tr>
</tbody>
</table>

### Instructions: Enabling Push Service

For instructions, see the online help at: “Overview / Wizards”.

### Instructions: Configuring Push Service

For instructions, see the online help at: “System / Push Service”.
Selecting Signaling of the “Info” LED

Overview
The “Info” LED signals various events. Some events are preset and configured permanently; see LEDs, page 24. In addition to this, the “Info” LED can be assigned to display another event of your choice.

Example 1
You would like to be notified about new messages on the answering machine. The “Info” LED flashes when there are new messages on the FRITZ!Box answering machine. The LED stops flashing as soon as all new messages have been heard.

Example 2
You would like to be notified when the data or time included in your internet package, stipulated in the “Internet / Online Monitor / Online Meter”, has been exhausted. The “Info” LED will then flash when the configured volume has been exceeded.

Instructions: Selecting the Signaling of the “Info” LED
For instructions, see the online help at: “System / Buttons and LEDs / “Info” Display”.
Locking Buttons

Overview

You can lock the buttons on the FRITZ!Box. Locking the buttons prevents the settings for your FRITZ!Box or your home network from being changed unintentionally or without authorization.

Instructions: Locking the Buttons of the FRITZ!Box

For instructions, see the online help at: “System / Buttons and LEDs / Keylock”.

 Updating FRITZ!OS

Overview

FRITZ!OS is the operating system of the FRITZ!Box. AVM regularly makes new versions of FRITZ!OS available for your FRITZ!Box, free of charge. Updates contain further developments and often new features for your FRITZ!Box.

Always install the latest version of FRITZ!OS on all FRITZ! products in your FRITZ!Box home network (see page 179). This keeps your FRITZ! products up to date and ensures optimum synchronization of all devices in your home network. Regular updates also protect from hacker attacks.

If you received your FRITZ!Box from your cable provider, you do not have to do anything further: Updates for your FRITZ!OS will be installed automatically by your provider. The features and wizards for updates are not available in the FRITZ!Box user interface.

Instructions: Updating FRITZ!OS via Wizard

Interrupting a FRITZ!OS update could damage your FRITZ!Box. Do not clear the connection between FRITZ!Box and the computer during a FRITZ!OS update, and do not unplug the power cord.

Perform the update as follows:

1. Open the FRITZ!Box user interface; see page 51.
2. On the “Overview” page, select the “Wizards” menu.
3. Start the “Update” wizard.
   The “System / Update / FRITZ!OS Version” page is opened.
4. Click the “Find New FRITZ!OS” button. The wizard checks whether a FRITZ!OS update is available for your FRITZ!Box. If the wizard finds an update, the version number of the new FRITZ!OS is displayed. Click the link under the FRITZ!OS version to view information about further developments and new functions contained in the FRITZ!OS update.

5. To install an update, click the “Start Update” button. The FRITZ!OS update starts and the “Info” LED starts flashing. When the “Info” LED stops flashing, the FRITZ!OS update is finished.

**Instructions: Updating FRITZ!OS Manually**

In some cases it is not possible to perform an automatic update. Then you have the option of performing an update manually.

Interrupting a FRITZ!OS update could damage your FRITZ!Box. Do not clear the connection between FRITZ!Box and the computer during a FRITZ!OS update, and do not unplug the power cord.

Perform the manual update as follows:

1. Enter the following address in the web browser:
   ftp.avm.de/fritz.box
2. Switch to the folder for your FRITZ!Box model, then to the subfolder “firmware”, and then to the folder with your language of choice. The complete model name of your FRITZ!Box is shown in the user interface on the “Overview” page and is also printed on the sticker on the underside of the housing.
3. Download the latest FRITZ!OS file for your FRITZ!Box with the file extension “.image” to the computer.
4. Open the FRITZ!Box user interface; see page 51.
5. Enable the advanced view; see page 59.
7. Click the “Save Settings” button to save the current settings of your FRITZ!Box on your computer and save the export file on your computer. Using this file you can restore the settings of your FRITZ!Box as needed.

8. Click the “Browse...” button and choose the file with the new FRITZ!OS you already downloaded and saved on your computer.

9. Click “Start Update”.
The FRITZ!OS update begins and the “Info” LED starts flashing. The FRITZ!OS update is complete when the “Info” LED stops flashing.

Information on the Automatic Update Function

FRITZ!Box searches for updates periodically. A new version of FRITZ!OS can contain improvements, bug fixes and important security updates, as well as significant new functions.

For secure, reliable use of your FRITZ!Box we recommend updating the FRITZ!OS regularly.

With the automatic update function you will never miss a software update for your FRITZ!Box and will be able to use new features right away. In the “System / Update / Automatic Update” menu you can specify whether every new version of FRITZ!OS should be installed automatically, or only critical updates, such as security updates, or whether you would rather just be informed about a new version of FRITZ!OS.

The “Automatic Update” function offers you the following methods:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notify about new FRITZ!OS versions</td>
<td>• The FRITZ!Box indicates that a new version of FRITZ!OS is available on the “Overview” page.</td>
</tr>
<tr>
<td></td>
<td>• You start the update yourself; see page 179.</td>
</tr>
</tbody>
</table>
### Procedure and Description

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
</table>
| Notify me about new versions of FRITZ!OS and install necessary updates automatically (recommended) | - The FRITZ!Box indicates that a new version of FRITZ!OS is available on the "Overview" page. You start the update yourself; see page 179.  
- Updates which AVM regards as necessary for continued secure and reliable operation (for instance, security updates) will be installed automatically.  
- The FRITZ!Box selects a suitable time for the update, generally at night.  
- During the installation all internet and telephony connections will be interrupted briefly. |

**Instructions: Configuring Automatic Updates**

For instructions, see the online help at: “System / Update / Automatic Update”.

**Instructions: Disabling Automatic Updates**

For instructions, see the online help at: “Internet / Account Information / AVM Services”.

---

*FRITZ!Box 6590 Cable*
Saving Settings

Overview

You can save all of the settings made in your FRITZ!Box to a backup file. Using this file you can save time on future configurations:

- You can restore the saved settings in your current FRITZ!Box.
- You can load the saved settings into a FRITZ!Box of the same model.
- You can load the saved settings into a FRITZ!Box of another model.

Instructions: Saving Settings Automatically

For instructions, see the online help at: “System / Push Service / Push Services”.

Instructions: Saving Settings Manually

For instructions, see the online help at: “System / Backup / Save”.

Loading Settings

Overview

FRITZ!Box settings you have previously saved can be restored.

• You can restore settings saved in your current FRITZ!Box.
• You can load the saved settings into a FRITZ!Box of the same model.
• You can load the saved settings into another FRITZ!Box of a different model.

When restoring your FRITZ!Box settings, you can choose whether to restore all settings, or only certain selected ones.

Instructions: Loading Settings

For instructions, see the online help at: “System / Backup / Restore”.
Restarting the FRITZ!Box

Overview

A restart of your FRITZ!Box may be necessary if the FRITZ!Box no longer reacts correctly, or if internet connections can no longer be established for no apparent reason. You can perform a restart directly on the FRITZ!Box or via the FRITZ!Box user interface.

Consequences of Restarting

Restarting the FRITZ!Box has the following consequences:

• The FRITZ!Box is reinitialized.
• Events in the “System / Event Log” menu are deleted.
• Settings and adjustments you made in the FRITZ!Box remain intact.

To delete all of the settings you made in the FRITZ!Box, see Restoring Factory Settings, page 242.

Instructions: Restarting the FRITZ!Box on the Device

1. Remove the power adapter of the FRITZ!Box from the electrical outlet.
2. Wait 5 seconds.
3. Plug the power adapter back in to the outlet.

Restarting the FRITZ!Box takes about 2 minutes.

Instructions: Restarting the FRITZ!Box from the User Interface

For instructions, see the online help at: “System / Backup / Restart”.
User Interface: Wizards Menu

Using Wizards ........................................................................................................... 187
Using Wizards

Overview

Wizards guide you step by step through the most important FRITZ!Box functions. All settings options are commented on in detail. Follow the wizard’s instructions in each window and configure your settings.

When you cancel a wizard, any entries you made during the course of using the wizard are discarded.

Range of Functions

The following wizards assist you in step-by-step configuration:

<table>
<thead>
<tr>
<th>Wizard</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Telephony Devices</td>
<td>Connecting and configuring the following devices:</td>
</tr>
<tr>
<td></td>
<td>• telephones</td>
</tr>
<tr>
<td></td>
<td>• answering machine</td>
</tr>
<tr>
<td></td>
<td>• fax machines</td>
</tr>
<tr>
<td></td>
<td>• ISDN telephone systems (PBXs)</td>
</tr>
<tr>
<td></td>
<td>• cordless (DECT) telephones</td>
</tr>
</tbody>
</table>
## Wizard Functions

<table>
<thead>
<tr>
<th>Wizard</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Your Telephone Numbers</td>
<td>Adding and editing telephone numbers</td>
</tr>
<tr>
<td>Check the Status of the FRITZ!Box</td>
<td>Diagnostics of the functional status of your FRITZ!Box, its internet connection and the home network connection to the</td>
</tr>
</tbody>
</table>
| Security                       | • Diagnostics of FRITZ!Box settings that regulate access to the FRITZ!Box from the internet or in the home network  

  • Warnings about potentially insecure settings                                                                                                                                 |
| Save and Restore Settings      | Saving and restoring the FRITZ!Box settings                                                                                                                                                     |
| Configure Push Service         | Configuring push services (automatic email sent with status and usage data)                                                                                                                    |

## Instructions: Starting Wizards

1. Open a web browser.
2. Enter [http://fritz.box](http://fritz.box) in the address field.
3. Click the “Wizards” menu.
4. Start the wizard of your choice with a mouse click.
5. Follow the instructions the wizard displays on the screen.
FRITZ!NAS

FRITZ!NAS Features ................................................................. 190
Expanding FRITZ!NAS Storage ............................................. 192
Displaying FRITZ!NAS in a File Manager ............................ 193
Saving FRITZ!NAS Storage .................................................... 194
FRITZ!NAS Features

Overview

With FRITZ!NAS you can display the data on the storage media of your FRITZ!Box in a clearly arranged interface. All participants in the FRITZ!Box home network can start FRITZ!NAS in a web browser and use it as a platform to access music, images, videos and documents in the FRITZ!Box memory.

The FRITZ!Box storage is composed of:

• internal memory
• configured online storage
• connected USB storage media

Areas of the FRITZ!NAS User Interface

<table>
<thead>
<tr>
<th>No.</th>
<th>Area</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Toolbar</td>
<td>• Upload and download files</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Edit folders and folder contents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Permit access (folders and files released for sharing from the internet)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• View (list and tile view)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Refresh</td>
</tr>
<tr>
<td>2</td>
<td>Search mask</td>
<td>Search for file names</td>
</tr>
<tr>
<td>3</td>
<td>Path</td>
<td>Path name</td>
</tr>
<tr>
<td>4</td>
<td>Display area</td>
<td>Display of all folders and folder contents</td>
</tr>
</tbody>
</table>

Requirements

• Web browser that supports HTML5, for instance Internet Explorer version 9 or higher, Firefox version 17 or higher, or Google Chrome version 23 or higher.
Instructions: Starting FRITZ!NAS in the Home Network

1. Open a web browser.
2. Enter “fritz.nas” in the address bar.
3. If password protection is configured: Log in to your FRITZ!Box.
FRITZ!NAS opens and displays the storage media enabled in the FRITZ!Box.

Instructions: Starting FRITZ!NAS in the Internet

1. Open a web browser.
2. Enter “myfritz.net” in the address bar of the browser.
3. Log in with email address and MyFRITZ! password.
4. Click “FRITZ!NAS” the user interface.
FRITZ!NAS opens and displays the storage media enabled in the FRITZ!Box.
Expanding FRITZ!NAS Storage

Overview

The FRITZ!Box storage is composed of:

- internal memory
- online storage
- USB storage media

Online storage can be configured with a provider. USB storage media can be connected to the FRITZ!Box. By combining these storage options, you can deploy the FRITZ!Box as high-performance network-attached storage.

Access Rights

Access to FRITZ!NAS and thus to the storage media of the FRITZ!Box can be protected by defining a password in the user interface. For user-oriented rights management, you can configure different FRITZ!Box users. You can set a password for each FRITZ!Box user and specify which FRITZ!NAS contents she or he is allowed to access.

Instructions: Configuring Online Storage

For instructions, see the online help at: “Home Network / Storage (NAS)”.

Instructions: Configuring USB Storage Media

For instructions, see the online help at: “Home Network / USB Devices / Device Overview” and “Home Network / USB Devices / USB Settings”.
Displaying FRITZ!NAS in a File Manager

Overview

You can display the network-attached storage of your FRITZ!Box in the file manager of your computer. This section explains how.

Requirements

- Your computer is connected with the FRITZ!Box via network cable.

Instructions: Displaying FRITZ!NAS in Windows Explorer

1. Open Windows Explorer.
2. Enter fritz.nas in the address bar.

The network-attached storage of your FRITZ!Box is displayed in Windows Explorer. You can list, rename, copy and delete files.

Instructions: Displaying FRITZ!NAS in OS X Finder

1. Click the Finder icon with the right mouse button to open the context menu of the Finder.
2. Select the “Connect to Server...” option.
3. Enter the server address: smb://fritz.nas

The network-attached storage of your FRITZ!Box is displayed in the Finder. You can list, rename, copy and delete files.
Saving FRITZ!NAS Storage

Overview

You can save the data you have stored on the internal FRITZ!NAS storage to a file.

Instructions: Saving Data from Internal Memory

1. Open FRITZ!NAS.
2. Select the data you would like to save.
3. Click in the FRITZ!NAS toolbar the icon for downloading, select a storage location for the data, and save with “OK”.

The selected data are copied to a ZIP file in the download folder you specified. This concludes the saving of your data from the internal memory of the FRITZ!Box.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service for FRITZ!Box Remote Access</td>
<td>196</td>
</tr>
<tr>
<td>Creating a New MyFRITZ! Account</td>
<td>198</td>
</tr>
<tr>
<td>Using an Existing MyFRITZ! Account</td>
<td>199</td>
</tr>
<tr>
<td>Configuring the MyFRITZ!App: with Android</td>
<td>200</td>
</tr>
<tr>
<td>Configuring the MyFRITZ!App: with iOS</td>
<td>202</td>
</tr>
<tr>
<td>Using MyFRITZ!</td>
<td>203</td>
</tr>
</tbody>
</table>
Service for FRITZ!Box Remote Access

Overview

MyFRITZ! is a free service from AVM, which is supported by all current FRITZ!Box models. Via an internet connection you can use MyFRITZ! to access your FRITZ!Box at home from anywhere.

Access to the MyFRITZ! Service

There are three ways you can use MyFRITZ! for secure, easy access to the information and data on your FRITZ!Box when you’re on the go.

<table>
<thead>
<tr>
<th>Kind of Access</th>
<th>MyFRITZ! Access</th>
</tr>
</thead>
</table>
| Via mobile device | • MyFRITZ!App  
                    • MyFRITZ!App 2 |
| Via web browser | The “myfritz.net” website |

Possible Uses

What information and data you can access via MyFRITZ! depends on the rights enabled in the account of your FRITZ!Box user. If needed, adjust the rights in the FRITZ!Box user account.

<table>
<thead>
<tr>
<th>Can Be Used with MyFRITZ!</th>
<th>Authorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call list</td>
<td>View the call list of your FRITZ!Box</td>
</tr>
<tr>
<td>Answering machine</td>
<td>Listen to voice messages</td>
</tr>
</tbody>
</table>
| Smart Home                | • Switch the home automation devices connected to the FRITZ!Box  
                              • Retrieve power consumption data on a device connected to a smart home outlet |
| User interface            | Check the settings of your FRITZ!Box |
Requirements

- The MyFRITZ!App (available for Android and iOS, free of charge) or the MyFRITZ!App 2 (available for Android, free of charge) is installed on your smartphone or tablet. (Not required for use of the “myfritz.net” website.)
- An account as a FRITZ!Box user has been set up for you in your FRITZ!Box. (Not required for use of the MyFRITZ!App 2.)
- A MyFRITZ! account was created and your FRITZ!Box is registered with this account. (Not required for use of the MyFRITZ!App 2.)
Creating a New MyFRITZ! Account

Overview

In order to be able to use MyFRITZ! via the MyFRITZ!App or the “myfritz.net” website, you must first create a MyFRITZ! account. During this process your FRITZ!Box is registered with your MyFRITZ! account.

If you would like to use MyFRITZ! via the MyFRITZ!App, this step is not necessary.

Requirements

• The browser on your device is connected with the internet.
• You can access your email on the device used.

Rules for Passwords

Comply with the following rules when assigning a password for your MyFRITZ! account:

• Your MyFRITZ! password must be different from the password of your FRITZ!Box user account.
• Use a password rated as secure.
• Select a password with at least twelve characters, which includes capitals and lower-case letters as well as numerals and special characters.
• Keep your passwords in a safe place.

Instructions: Creating a New MyFRITZ! Account

For instructions, see the online help at: “Internet / MyFRITZ! Account”. 
Using an Existing MyFRITZ! Account

Overview

You only have to set up a MyFRITZ! account once. It exists no matter which FRITZ!Box was used to create it. You can register as many FRITZ!Boxes as you like with one MyFRITZ! account.

Switching to a Newer FRITZ!Box

If you trade in your FRITZ!Box for a different FRITZ!Box model some day, simply register the new device with your existing MyFRITZ! account and delete the old device there. If you created a bookmark for access via MyFRITZ! in your web browser, this bookmark will then route you to the user interface of the new FRITZ!Box.

Registering Multiple FRITZ!Boxes

If needed, you can also register multiple FRITZ!Boxes with your MyFRITZ! account. Each FRITZ!Box is then registered with the MyFRITZ! account via its own user interface.

Instructions: Using an Existing MyFRITZ! Account

For instructions, see the online help at: “Internet / MyFRITZ! Account”.

MyFRITZ!

• • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •

• • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •

199
Configuring the MyFRITZ!App: with Android

Overview

If you would like to access your FRITZ!Box from an Android mobile device, you can use the free MyFRITZ!App 2 or the older, also free, MyFRITZ!App from AVM.

In order to be able to use MyFRITZ!App 2, your FRITZ!Box must use the software version FRITZ!OS 6.50 or higher.

Both MyFRITZ!Apps are available in the Google Play Store.

Requirements

• Android smartphone or Android tablet with Google Android 4 (or newer)
• Your Android mobile device is connected with your FRITZ!Box via wireless LAN.

Only when using the MyFRITZ!App (not required for use with the MyFRITZ!App 2):
• A MyFRITZ! account was set up.
• Your FRITZ!Box is registered with this MyFRITZ! account.
• An account as a FRITZ!Box user has been set up for you in your FRITZ!Box.

Instructions: Configuring the MyFRITZ!App

1. Update your software of your FRITZ!Box to the latest version by clicking the “Find New FRITZ!OS” button in the “System / Update / FRITZ!OS Version” menu and follow the instructions in the user interface.
2. Check the “System / Update / FRITZ!OS Version” to find out which FRITZ!OS version your FRITZ!Box uses.
3. Pick up your Android mobile device and install one of the MyFRITZ!Apps from the Google Play Store:
   FRITZ!OS 6.50 or higher: Install the MyFRITZ!App 2 on your Android mobile device.
   FRITZ!OS 6.40 or lower: Install the MyFRITZ!App on your Android mobile device.
5. To register with the FRITZ!Box, enter the required data.
Configuring the MyFRITZ!App: with iOS

Overview

If you would like to access your FRITZ!Box from a mobile Apple device, you can do so using the free MyFRITZ!App from AVM.

The MyFRITZ!App is available in the Apple App Store.

Requirements

- iPhone (model 4GS or later) or iPod touch (5th generation or higher) or iPad with iOS 8.0 (or later).
- A MyFRITZ! account was set up.
- Your FRITZ!Box is registered with this MyFRITZ! account.
- An account as a FRITZ!Box user has been set up for you in your FRITZ!Box.
- Your mobile Apple device is connected with your FRITZ!Box via wireless LAN.

Instructions: Configuring the MyFRITZ!App

1. Install the MyFRITZ!App on your mobile Apple device.
2. Open the MyFRITZ!App, enter the password for the user interface of your FRITZ!Box, and select “Connect…”.
3. Enter the data of your FRITZ!Box user account.
Using MyFRITZ!

Overview

With MyFRITZ! you can access your FRITZ!Box directly via the MyFRITZ!App 2 (Android), or via the MyFRITZ!App (Android and iOS), or via the “myfritz.net” website.

Requirements When Using the MyFRITZ!App 2

- You are using the latest version of the app.
- You have enabled the “Use from on the go” setting in the app. This is not necessary if you only intend to use MyFRITZ! in the FRITZ!Box home network.

Requirements When Using the MyFRITZ!App or the “myfritz.net” Website

- You are using the latest version of the app or a current web browser.
- A MyFRITZ! account was set up.
- The “Access from the internet allowed” option is enabled in your FRITZ!Box user account. This is not necessary if you only intend to use MyFRITZ! in the FRITZ!Box home network.

Instructions: Using MyFRITZ! on a Smartphone or Tablet

1. Open the MyFRITZ!App.
2. Where applicable, enter the data required to log in to your FRITZ!Box.

Instructions: Using MyFRITZ! in the Web Browser

1. Open a web browser.
2. Enter “myfritz.net” in the address bar of the browser.
3. Log in with your email address and the MyFRITZ! password.
Controlling FRITZ!Box with Keypad Codes

Information on Keypad Codes.................................................................205
Configuration on the Telephone..............................................................206
Operation at the Telephone.....................................................................219
Restoring Factory Settings with the Telephone ..............................230
Information on Keypad Codes

Overview

Various FRITZ!Box functions can be configured and operated using a connected telephone without opening the user interface. These include not only telephony functions like the alarm, Do Not Disturb and call diversion, but also other functions. For instance, you can switch wireless LAN on and off, and restore the factory settings to the FRITZ!Box.

How It Works

Keypad codes are combinations of keys (for instance, #811*1*), which you enter on the telephone keypad.

Entering Keypad Codes

A keypad code can contain the following characters: *, #, the numerals 0 to 9. Depending on the type of telephone, here is how to dial keypad codes:

<table>
<thead>
<tr>
<th>Type of Telephone</th>
<th>Dial Keypad Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone without call button</td>
<td>• Pick up the handset.</td>
</tr>
<tr>
<td></td>
<td>• Enter the keypad code.</td>
</tr>
<tr>
<td></td>
<td>• Hang up.</td>
</tr>
<tr>
<td>Telephone with call button (usually green)</td>
<td>• Enter the keypad code.</td>
</tr>
<tr>
<td></td>
<td>• Press the “Call” (“Connect”) button.</td>
</tr>
<tr>
<td></td>
<td>• Press the end call key.</td>
</tr>
</tbody>
</table>
Configuration on the Telephone

Instructions: Disabling Automatic Outside Dialing for the FON 1 or FON 2 Port

If you make a lot of internal calls, you can disable automatic outside dialing on the “FON 1” and “FON 2” ports. Then you can enter internal numbers without the prefix ** (for instance, 1 instead of **1). Instead, you must dial the prefix 0 for outside calls (for instance, 0030399760 instead of 030399760).

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Telephone Icon" /></td>
<td><img src="image2.png" alt="Telephone Icon" /></td>
</tr>
</tbody>
</table>

Disable automatic outside dialing:

- **#11**0** (FON 1)
- **#12**0** (FON 2)

Wait for acknowledgment tone

- ![Telephone Icon](image3.png)
- ![Telephone Icon](image4.png)
Instructions: Enabling Automatic Outside Dialing for the FON 1 or FON 2 Port

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone" /></td>
<td></td>
</tr>
<tr>
<td>Enable automatic outside dialing:</td>
<td></td>
</tr>
<tr>
<td>#11<em>1</em> (FON 1)</td>
<td></td>
</tr>
<tr>
<td>#12<em>1</em> (FON 2)</td>
<td></td>
</tr>
<tr>
<td>Wait for acknowledgment tone</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Telephone" /></td>
<td></td>
</tr>
</tbody>
</table>

Controlling FRITZ!Box with Keypad Codes

- • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •  
- 207FRITZ!Box 6590 Cable
Instructions: Switching On Call Diversion for All Calls

Call diversion automatically diverts incoming calls to a previously specified external telephone number. If your telephone provider supports this, calls will be diverted by your provider and your line will remain free for other calls. Otherwise the FRITZ!Box establishes a second connection. In either case, extra charges will accrue according to your contracted telephone rates.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
</table>

Configure immediate call diversion to destination call number `<DCN>`:

\[ \star 21 \star <DCN> \star \# \]

Configure call diversion after 20 seconds to destination call number `<DCN>`:

\[ \star 61 \star <DCN> \star \# \]

Configure call diversion on busy to the destination call number `<DCN>`:

\[ \star 67 \star <DCN> \star \# \]

Wait for acknowledgment tone
Instructions: Switching Off Call Diversion for All Calls

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone without Call Button" /></td>
<td><img src="image" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Switch off immediate call diversion:
\*21\*\*\#

Switch off delayed call diversion:
\*61\*\*\#

Switch off call diversion on busy:
\*67\*\*\#

Wait for acknowledgment tone

![Wait for acknowledgment tone](image)
Instructions: Switching On Call Diversion for One Telephone Number

If you have multiple telephone numbers, you can configure call diversion that is applied to only one specified telephone number (TN). Calls for your other telephone numbers will not be diverted.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Phone without call button" /></td>
<td><img src="image" alt="Phone with call button" /></td>
</tr>
</tbody>
</table>

Switch on immediate call diversion to destination call number <DCN>:

```
*21*<DCN>*<TN>#
```

Switch on call diversion after 20 seconds to destination call number <DCN>:

```
*61*<DCN>*<TN>#
```

Switch on call diversion on busy to the destination call number <DCN>:

```
*67*<DCN>*<TN>#
```

Wait for acknowledgment tone
## Instructions: Switching Off Call Diversion for One Telephone Number

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="telephone_without_call_button.png" alt="Diagram of a telephone without call button" /></td>
<td><img src="telephone_with_call_button.png" alt="Diagram of a telephone with call button" /></td>
</tr>
</tbody>
</table>

### Switch off immediate call diversion:

**21**<TN>#

### Switch off delayed call diversion:

**61**<TN>#

### Switch off call diversion on busy:

**67**<TN>#

Wait for acknowledgment tone
### Instructions: Switching On Call Diversion for the FON 1 Port

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Telephone without Call Button" /></td>
<td><img src="image2.png" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Switch on immediate call diversion for the FON 1 port without ringing to destination call number <DCN>:

\[ \star 4 1 1 \star <DCN> \star \]

Switch on immediate call diversion for the FON 1 port with ringing to destination call number <DCN>:

\[ \star 4 5 1 \star <DCN> \star \]

Switch on call diversion for the FON 1 port after 20 seconds to destination call number <DCN>:

\[ \star 4 2 1 \star <DCN> \star \]

Switch on call diversion for the FON 1 port on busy to the destination call number <DCN>:

\[ \star 4 3 1 \star <DCN> \star \]

Switch on immediate call diversion for the FON 1 port on busy, otherwise delayed, to the destination call number <DCN>:

\[ \star 4 4 1 \star <DCN> \star \]

Wait for acknowledgment tone
Instructions: Switching Off Call Diversion for the FON 1 Port

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Telephone icon]</td>
<td>![Telephone icon]</td>
</tr>
</tbody>
</table>

Switch off call diversion for the FON 1 port:

```
*401*
```

Wait for acknowledgment tone

![Telephone icon]
## Instructions: Switching On Call Diversion for the FON 2 Port

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>![ Telephone without Call Button ]</td>
<td>![ Telephone with Call Button ]</td>
</tr>
</tbody>
</table>

**Switch on immediate call diversion for the FON 2 port without ringing to destination call number \(<DCN>\):**

\[ \star\ 4\ 1\ 2\ \star\ <DCN>\ \star \]

**Switch on immediate call diversion for the FON 2 port with ringing to destination call number \(<DCN>\):**

\[ \star\ 4\ 5\ 2\ \star\ <DCN>\ \star \]

**Switch on call diversion for the FON 2 port after 20 seconds to destination call number \(<DCN>\):**

\[ \star\ 4\ 2\ 2\ \star\ <DCN>\ \star \]

**Switch on call diversion for the FON 2 port on busy to the destination call number \(<DCN>\):**

\[ \star\ 4\ 3\ 2\ \star\ <DCN>\ \star \]

**Switch on immediate call diversion for the FON 2 port on busy, otherwise delayed, to the destination call number \(<DCN>\):**

\[ \star\ 4\ 4\ 2\ \star\ <DCN>\ \star \]

Wait for acknowledgment tone

![ Telephone ]
## Instructions: Switching Off Call Diversion for the FON 2 Port

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone" /></td>
<td></td>
</tr>
</tbody>
</table>

Switch off call diversion for the FON 2 port:

```
*4 0 2**
```

Wait for acknowledgment tone

```
[Phone icon]
```
Instructions: Configuring a Telephone as a Baby Monitor

You can configure a telephone on the “FON 1” or “FON 2” port as a baby monitor and use it to listen in on a room. As soon as a certain noise level is reached, the telephone then automatically calls a previously specified telephone number, for instance, of your mobile telephone.

You can also use your FRITZ!Fon cordless telephone as a baby monitor. See the manual of your FRITZ!Fon for instructions.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Telephone without Call Button" /></td>
<td><img src="image2.png" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Press the following keys:

\[ \star 4 <\text{level}> \star <\text{TN}> \# \]

<Level> specifies the sensitivity. Permitted values: 1 (highest) – 8 (lowest)

<TN> is the internal or external telephone number that the baby monitor is supposed to call. Internal numbers should also be entered without **.

The baby monitor is enabled. Hang up to disable it.
Instructions: Switching Wireless LAN On

The wireless radio network of your FRITZ!Box can be switched on and off using a connected telephone.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Phone Icon" /></td>
<td></td>
</tr>
</tbody>
</table>

Switch wireless LAN on:

```
# 9 6 * 1 *
```

Wait for acknowledgment tone

<table>
<thead>
<tr>
<th><img src="image" alt="Phone Icon" /></th>
<th></th>
</tr>
</thead>
</table>
Instructions: Switching Wireless LAN Off

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Telephone icon]</td>
<td>![Telephone icon]</td>
</tr>
</tbody>
</table>

Switch wireless LAN off:

#96*0*

Wait for acknowledgment tone

![Telephone icon]
Operation at the Telephone

Instructions: Operating the Answering Machine with the Telephone

You can operate the answering machine with the telephone using a voice menu, for instance to switch the answering machine on or off and to listen to messages.

Here is how to establish a connection to the answering machine:

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish a connection to the answering machine:</td>
<td></td>
</tr>
<tr>
<td>✽✴600 (answering machine 1)</td>
<td></td>
</tr>
<tr>
<td>✽✴601 (answering machine 2)</td>
<td></td>
</tr>
<tr>
<td>✽✴602 (answering machine 3)</td>
<td></td>
</tr>
<tr>
<td>✽✴603 (answering machine 4)</td>
<td></td>
</tr>
<tr>
<td>✽✴604 (answering machine 5)</td>
<td></td>
</tr>
<tr>
<td>Follow the voice menu</td>
<td></td>
</tr>
</tbody>
</table>
## Voice Menu of the Answering Machine

<table>
<thead>
<tr>
<th>Main Menu (Level 1)</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Play back messages</td>
<td>3 Return call</td>
<td>1 Listen to all greetings, select greeting with 2</td>
</tr>
<tr>
<td></td>
<td>5 Delete message</td>
<td>5 Delete greeting/announcement</td>
</tr>
<tr>
<td></td>
<td>7 To previous message</td>
<td>8 Record greeting, end with 1</td>
</tr>
<tr>
<td></td>
<td>9 To next message</td>
<td>3 Closing message</td>
</tr>
<tr>
<td>2 Delete all messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Answering machine on/off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Record a greeting</td>
<td>1 Greeting message</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Greeting for announcement mode</td>
<td>2 Greeting for announcement mode</td>
</tr>
<tr>
<td></td>
<td>3 Closing message</td>
<td></td>
</tr>
<tr>
<td>5 Enable recording/announcement mode (no messages recorded in announcement mode)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Instructions: Picking Up a Call from the Answering Machine or Telephone**

You can pick up and take the following calls on connected telephones:

- Calls that have already been accepted by an answering machine. This can be the FRITZ!Box answering machine or a connected answering machine.
- Calls that arrive at another connected telephone (the other telephone rings).

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone without Call Button" /></td>
<td><img src="image" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Press the following keys:

* 0 9
Instructions: Making Internal Calls

You can conduct free internal calls between connected telephones.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone without Call Button" /></td>
<td><img src="image" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Enter the internal telephone number (see the telephone book in the user interface)

Instructions: Starting a Broadcast Call

A group call or broadcast call is an internal call that is signaled on all telephones connected with the FRITZ!Box.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone without Call Button" /></td>
<td><img src="image" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Press the following keys for a broadcast call: *

* All telephones on the FRITZ!Box ring. You will be connected to the telephone that picks up the call first.
Instructions: Transferring Calls

With the “Call Transfer” feature you can forward a call to another connected telephone or to an external telephone number.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the call with the party 1, press the hold button:</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>The call is on hold.</td>
<td>The call is on hold.</td>
</tr>
<tr>
<td>Enter the telephone number of party 2. This can be an external telephone number or an internal number (see the telephone book in the user interface).</td>
<td>Enter the telephone number of party 2. This can be an external telephone number or an internal number (see the telephone book in the user interface).</td>
</tr>
<tr>
<td>When party 2 accepts the call, connect party 1 and party 2 with each other:</td>
<td>When party 2 accepts the call, connect party 1 and party 2 with each other:</td>
</tr>
<tr>
<td><img src="image" alt="Cordless Telephone" /></td>
<td>On cordless telephones:</td>
</tr>
<tr>
<td><img src="image" alt="Cordless Telephone" /></td>
<td>✉ 4</td>
</tr>
<tr>
<td>Others:</td>
<td>Others:</td>
</tr>
<tr>
<td><img src="image" alt="Cordless Telephone" /></td>
<td><img src="image" alt="Cordless Telephone" /></td>
</tr>
<tr>
<td>If party 2 cannot be reached, go back to party 1:</td>
<td>If party 2 cannot be reached, go back to party 1:</td>
</tr>
<tr>
<td>R 1</td>
<td>R 1</td>
</tr>
</tbody>
</table>
**Instructions: Suppressing a Telephone Number Once**

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone icon" /></td>
<td></td>
</tr>
</tbody>
</table>

Press the following keys:

![Keypad keys](image)

Enter the external telephone number

![Telephone icon](image)
Instructions: Setting up a Three-Party Conference Call

A three-party conference call is a call with three participants. The call can be conducted with external or internal parties.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the call with the party 1, press the hold button:</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Call 1 is on hold.</td>
<td></td>
</tr>
<tr>
<td>To establish the call with party 2, enter an internal or external telephone number.</td>
<td></td>
</tr>
<tr>
<td>When party 2 accepts the call, establish the three-party conference:</td>
<td></td>
</tr>
<tr>
<td>R 3</td>
<td></td>
</tr>
<tr>
<td>If party 2 cannot be reached, go back to party 1:</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
</tr>
<tr>
<td>During the three-party conference call you can:</td>
<td></td>
</tr>
<tr>
<td>Interrupt the conference (you speak with party 1, call 2 is on hold):</td>
<td></td>
</tr>
<tr>
<td>R 2</td>
<td></td>
</tr>
<tr>
<td>Switch back and forth between parties 1 and 2 (alternate):</td>
<td></td>
</tr>
<tr>
<td>R 2</td>
<td></td>
</tr>
<tr>
<td>Restore an interrupted conference:</td>
<td></td>
</tr>
<tr>
<td>R 3</td>
<td></td>
</tr>
<tr>
<td>End call 2 and continue with call 1:</td>
<td></td>
</tr>
<tr>
<td>R 1</td>
<td></td>
</tr>
<tr>
<td>End the active call and continue the other call: Hang up, wait until your telephone rings and pick up</td>
<td></td>
</tr>
</tbody>
</table>
Instructions: Holding/Consultation/Alternating

During a telephone call you can establish a connection to another party (consultation) without ending the first call (the call is on hold). You can alternate between the two parties as often as you like.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the call with the party 1, press the hold button:</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
</tr>
<tr>
<td>The call is on hold.</td>
<td></td>
</tr>
<tr>
<td>To establish the call with party 2, enter an internal or external telephone number.</td>
<td></td>
</tr>
<tr>
<td>When party 2 accepts the call, you can:</td>
<td></td>
</tr>
<tr>
<td>Alternate back and forth between the calls: R 2</td>
<td></td>
</tr>
<tr>
<td>End the active call and continue the other call: Hang up, wait until your telephone rings and pick up</td>
<td></td>
</tr>
<tr>
<td>If party 2 cannot be reached, go back to party 1:</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>
Instructions: Using Keypad Shortcuts

Keypad shortcuts are commands consisting of characters and numerals which you enter on the telephone. With keypad shortcuts you can control services and features in your telephone provider’s network. For information about which keypad shortcuts you can use, contact your telephone provider.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Telephone without Call Button" /></td>
<td><img src="image" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Press the following keys (<Seq> is the keypad shortcut):

*# <Seq>
Instructions: Enabling an Alarm

You can use connected telephones for alarm calls. For this you can set up, enable and disable up to three alarms under “Telephony / Alarm” in the user interface. The first alarm configured can also be enabled and disabled with the telephone keys.

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Telephone without Call Button" /></td>
<td><img src="image2" alt="Telephone with Call Button" /></td>
</tr>
</tbody>
</table>

Switch on the alarm:

#881**

Wait for acknowledgment tone

![Telephone](image3)
### Instructions: Disabling an Alarm

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Telephone Icon]</td>
<td>![Telephone Icon]</td>
</tr>
<tr>
<td><strong>Switch alarm off:</strong></td>
<td></td>
</tr>
<tr>
<td><code>#881#</code></td>
<td></td>
</tr>
<tr>
<td><strong>Wait for acknowledgment tone</strong></td>
<td></td>
</tr>
<tr>
<td>![Telephone Icon]</td>
<td>![Telephone Icon]</td>
</tr>
</tbody>
</table>
Restoring Factory Settings with the Telephone

Overview

You can restore factory settings to the FRITZ!Box by telephone. This is necessary, for instance, if you can no longer access the user interface of your FRITZ!Box because you’ve forgotten your password and did not configure the “Forgot password” push service. Then the FRITZ!Box is reset to its factory settings.

Consequences of Resetting

• All of the settings you made in the FRITZ!Box will be deleted.
• The internal memory of the FRITZ!Box is deleted. Contents on FRITZ!NAS, messages on the answering machine and received faxes will be discarded.
• The preconfigured FRITZ!Box password is restored.
• The preconfigured network key and the preconfigured name of the wireless radio network (SSID) are reactivated.
• The preconfigured IP configuration is restored.
### Instructions: Loading Factory Settings

<table>
<thead>
<tr>
<th>Telephone without Call Button</th>
<th>Telephone with Call Button</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image of telephone without call button" /></td>
<td><img src="image2" alt="Image of telephone with call button" /></td>
</tr>
<tr>
<td><strong>Restore factory settings to FRITZ!Box:</strong></td>
<td></td>
</tr>
<tr>
<td>#991<em>15901590</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image3" alt="Image of telephone ringing" /></td>
</tr>
<tr>
<td><strong>Wait for acknowledgment tone</strong></td>
<td></td>
</tr>
</tbody>
</table>
Malfunctions

Troubleshooting Procedures ................................................................. 233
Troubleshooting Chart ................................................................. 234
Opening the User Interface with the Emergency IP Address .......... 237
Knowledge Base ......................................................................... 239
Support ...................................................................................... 240
### Troubleshooting Procedures

#### Overview

The following table offers recommendations about what to do when problems with your FRITZ!Box arise:

<table>
<thead>
<tr>
<th>Error Scenario</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No access to the user interface</td>
<td>Troubleshooting chart; see page 234</td>
</tr>
<tr>
<td>Comprehensive help for problems with:</td>
<td></td>
</tr>
<tr>
<td>• connections</td>
<td>Knowledge Base; see page 239</td>
</tr>
<tr>
<td>• configuration</td>
<td></td>
</tr>
<tr>
<td>• telephony</td>
<td></td>
</tr>
<tr>
<td>• internet</td>
<td></td>
</tr>
<tr>
<td>• wireless</td>
<td></td>
</tr>
<tr>
<td>• etc.</td>
<td></td>
</tr>
<tr>
<td>Troubleshooting chart and Knowledge Base do not offer a solution.</td>
<td>Support; see page 240</td>
</tr>
</tbody>
</table>
Troubleshooting Chart

Overview

If malfunctions occur, for instance, such that you can no longer access the user interface of the FRITZ!Box, first try to solve the problems using the following tables.

<table>
<thead>
<tr>
<th>Error Scenario</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEDs not on</td>
<td>Power supply interrupted</td>
<td>• Make sure the power supply unit is connected properly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Try plugging in a different device to make sure that the electrical outlet is active.</td>
</tr>
<tr>
<td>Cannot establish a wireless LAN connection</td>
<td>Computer’s wireless LAN adapter not ready for operation</td>
<td>Switch on your computer’s wireless LAN adapter. For details, consult the manual of your computer.</td>
</tr>
<tr>
<td></td>
<td>Wireless radio network of the FRITZ!Box switched off</td>
<td>When the “WLAN” LED is off, press the “WLAN” button on the FRITZ!Box. Hold it down until the “WLAN” LED begins flashing.</td>
</tr>
<tr>
<td></td>
<td>Computer cannot find the wireless network of the FRITZ!Box</td>
<td>Enable the “Name of the wireless radio network visible” function (“Wireless / Radio Network”) in the FRITZ!Box user interface.</td>
</tr>
<tr>
<td></td>
<td>Incorrect network key</td>
<td>Enter the correct network key (“Wireless / Security”).</td>
</tr>
<tr>
<td>Error Scenario</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The user interface does not open</td>
<td>Path name incorrect</td>
<td>Open the user interface by entering its complete address (<a href="http://fritz.box">http://fritz.box</a> instead of fritz.box).</td>
</tr>
<tr>
<td>FRITZ!Box has crashed</td>
<td></td>
<td>Remove the FRITZ!Box from the power mains and restart the FRITZ!Box again after about five seconds.</td>
</tr>
<tr>
<td>Cache is full</td>
<td></td>
<td>Empty the cache of your web browser.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For more information on this, see the help of your web browser.</td>
</tr>
<tr>
<td>Proxy configuration does not allow the FRITZ!Box address</td>
<td></td>
<td>If a proxy server is enabled in your web browser, the address of the FRITZ!Box must be entered as an exception. Check your web browser settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For more information on this, see the help of your web browser.</td>
</tr>
<tr>
<td>Computer is not configured to obtain IP address automatically</td>
<td></td>
<td>On your computer, enable the setting “Obtain an IP address automatically” for the network adapter used to connect to the FRITZ!Box.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For more information, see the documentation by the manufacturer of your operating system.</td>
</tr>
<tr>
<td>Error Scenario</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The user interface does not open</td>
<td>Forgot FRITZ!Box password</td>
<td>Restore factory settings to the FRITZ!Box (see page 242).</td>
</tr>
<tr>
<td></td>
<td>Combination of various settings in the “Internet” and “Home Network” menus.</td>
<td>Attempt to open the user interface with the emergency IP address; see page 237. If this does not work, restore factory settings to the FRITZ!Box (see page 242).</td>
</tr>
<tr>
<td>Wireless LAN connection interrupted</td>
<td>Wireless radio connection between FRITZ!Box and wireless device interrupted</td>
<td>Change the positions of the FRITZ!Box and the wireless devices:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Do not place the FRITZ!Box in the corner of a room.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Do not place the FRITZ!Box directly next to or beneath an obstacle or a metal object (like a cabinet or radiator).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Position the FRITZ!Box and the wireless devices so that there are as few obstacles between them as possible.</td>
</tr>
<tr>
<td>Radio channel with heavy interference</td>
<td></td>
<td>Configure automatic selection of the radio channel in the FRITZ!Box user interface. Then the FRITZ!Box will automatically select a radio channel with as little interference as possible (“Wireless / Radio Channel”).</td>
</tr>
</tbody>
</table>
Opening the User Interface with the Emergency IP Address

Overview
The FRITZ!Box has an emergency IP address at which it can always be reached. The emergency IP address can be useful if you can no longer access the FRITZ!Box user interface, for instance due to erroneous configurations.

Information on the Emergency IP Address
- The emergency IP address is: 169.254.1.1
- The emergency IP address cannot be changed.

Requirements
- The computer from which you want to open the user interface with the emergency IP address must be connected by network cable to a LAN port of the FRITZ!Box.
- This computer is not connected with the FRITZ!Box via LAN guest access.

Instructions: Opening the User Interface with the Emergency IP Address

1. Clear all other connections between your FRITZ!Box and other network devices.
2. If your computer is connected with the FRITZ!Box over wireless LAN, clear the wireless connection.
3. Connect your computer to the “LAN 2” port of the FRITZ!Box using a LAN cable.
4. Restart your computer.
5. Enter the emergency IP address in the web browser on the computer: 169.254.1.1
6. If the user interface is protected with a password: Enter your password.

7. If the FRITZ!Box user interface is not displayed, you have to assign the IP address 169.254.1.2 to the network adapter connected with the FRITZ!Box. Instructions from the AVM Knowledge Base can be viewed by searching in Google for Configuring a network adapter to access the user interface with emergency IP address.
Knowledge Base

Overview

Help for resolving problems with the FRITZ!Box is provided in the AVM Knowledge Base. This resource presents answers to the questions asked most frequently of our Support team.

If the problem cannot be resolved using the Knowledge Base, then contact the Support team; see page 240.

AVM Knowledge Base

The AVM Knowledge Base is available online at:

en.avm.de/service
Support

Overview
The Support team assists you in resolving any problems with your FRITZ! products.

Preparation
Keep the following device information handy:
• Model
• Serial number
• FRITZ!OS version
• Country
• Internet service provider
• Information on the operating system, network (LAN or wireless LAN), any error messages displayed

Instructions: Support by email
1. Start a web browser on your computer, tablet or smartphone.
2. Enter the following address: https://en.avm.de/service.
3. Select from the “Service” area the FRITZ!Box model for which you need support.
4. Enter a keyword in the search field of the Knowledge Base or select an FAQ (frequently asked question).
5. If you need more help, click “Support request”.
6. Fill out the form and click “Submit support request”.
   Our Support team will respond by email within one working day.
Decommissioning

Restoring Factory Settings .................................................................242
Disposal ..............................................................................................244
Restoring Factory Settings

Overview

You can restore factory settings to the FRITZ!Box.

Application Scenario

Resetting makes sense in the following cases:
• You forgot your password and can no longer access the user interface of your FRITZ!Box.
• The FRITZ!Box does not work any more (for instance, due to improper settings).
• The FRITZ!Box is to be passed on to an outside party for repair.
• The FRITZ!Box is to be resold to another user.
• The FRITZ!Box is to be disposed of.

Consequences of Resetting

Resetting the FRITZ!Box has the following effects:
• All of the settings you made in the FRITZ!Box will be deleted.
• The internal memory of the FRITZ!Box will be deleted. In addition to contents on FRITZ!NAS, messages received on the answering machine and faxes will be discarded.
• The network key of the factory settings will be activated again.
• The name of the wireless radio network (SSID) will be reset.
• The IP configuration of the factory settings will be restored.

Preparation

If you would like to restart operation of the FRITZ!Box after restoring factory settings, make the following preparations:
• Save your FRITZ!Box settings; see Saving Settings, page 183.
Instructions: Restoring Factory Settings

When the factory settings are restored, all of the settings you made in the FRITZ!Box are deleted.

1. Open the FRITZ!Box user interface; see page 51.
2. In the FRITZ!Box user interface, select the “System / Backup” menu.
3. Select the “Factory Settings” tab.
4. Click the “Load Factory Settings” button.

The FRITZ!Box is reset to its factory settings. All data have been deleted.

If you intend to restart operation of the FRITZ!Box, we recommend updating the FRITZ!OS of the FRITZ!Box; see page 179.
Disposal

Disposal of Used Devices

In accordance with European regulations, the FRITZ!Box, as well as all devices and electronic components contained in the package, may not be disposed with household waste.

Comply with the symbol for the separate collection of electric and electronic devices on the type label of your FRITZ!Box (bottom).

After use, please dispose of FRITZ!Box and all electronic components and devices included with delivery at a collection point in your local community for the disposal of electric and electronic appliances.
Appendix

Technical Specifications ............................................................ 246
Legal ............................................................................................ 250
Information on Cleaning ............................................................. 252
Technical Specifications

Device Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W x H x D)</td>
<td>circa 85 x 209 x 273 mm</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>230 V / 50 Hz</td>
</tr>
</tbody>
</table>

Ambient Conditions

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>0 °C – +40 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20 °C – +70 °C</td>
</tr>
<tr>
<td>Relative humidity (operation)</td>
<td>10 % – 90 %</td>
</tr>
<tr>
<td>Relative humidity (storage)</td>
<td>5 % – 95 %</td>
</tr>
</tbody>
</table>

Active Power

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum active power</td>
<td>26 W</td>
</tr>
<tr>
<td>Intermediate active power, determined with the following load:</td>
<td>11 W</td>
</tr>
<tr>
<td>Cable connection enabled</td>
<td></td>
</tr>
<tr>
<td>Wireless LAN on; no devices registered via wireless LAN</td>
<td></td>
</tr>
<tr>
<td>DECT on; one telephone registered via DECT; no active calls</td>
<td></td>
</tr>
<tr>
<td>One network device connected to a LAN port; no data transfer; other LAN ports not in use</td>
<td></td>
</tr>
</tbody>
</table>
## Network Access Interfaces

Interface specification for public networks:
- IETF RFC 3261 (Session Initiation Protocol for Voice over IP)
- Broadband Forum TR-069 (CPE WAN Management Protocol)

## Ports and Interfaces

<table>
<thead>
<tr>
<th>Connection via</th>
<th>Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cable</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FON 1, FON 2</strong></td>
<td>1 a/b port with a RJ11 and TAE socket for connecting an analog terminal device</td>
</tr>
<tr>
<td></td>
<td>1 a/b port with a RJ11 socket for connecting an analog terminal device (terminal devices with a TAE plug can be connected using the TAE/RJ11 adapter included with delivery)</td>
</tr>
<tr>
<td><strong>FON S₀</strong></td>
<td>1 ISDN S₀ NT port with support for ISDN terminal devices; the CIP services voice, telephony, audio 3.1 and fax G2/G3 are supported</td>
</tr>
<tr>
<td><strong>DECT</strong></td>
<td>DECT base station:</td>
</tr>
<tr>
<td></td>
<td>up to 6 handsets</td>
</tr>
<tr>
<td></td>
<td>Up to 10 FRITZ!DECT 200/210 outlet switches</td>
</tr>
<tr>
<td></td>
<td>Up to 12 FRITZ!DECT 300/301/Comet DECT radiator controls</td>
</tr>
<tr>
<td><strong>LAN</strong></td>
<td>4 LAN ports via RJ45 sockets (standard Ethernet, 10/100/1000 Base-T)</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>2 USB host controllers (USB version 2.0)</td>
</tr>
</tbody>
</table>
### Connection via Interface

<table>
<thead>
<tr>
<th>Wireless Access Point</th>
<th>Wireless access point with support for wireless LAN radio networks (wireless standard – data rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• IEEE 802.11a—54 Mbit/s</td>
</tr>
<tr>
<td></td>
<td>• IEEE 802.11b—11 Mbit/s</td>
</tr>
<tr>
<td></td>
<td>• IEEE 802.11g—54 Mbit/s</td>
</tr>
<tr>
<td></td>
<td>• IEEE 802.11n—800 Mbit/s (including 256QAM)</td>
</tr>
<tr>
<td></td>
<td>• IEEE 802.11ac—1733 Mbit/s</td>
</tr>
</tbody>
</table>

### Wireless LAN Radio Frequencies

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Frequency Range</th>
<th>Maximum Transmitter Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4 GHz</td>
<td>2400 MHz – 2483 MHz</td>
<td>100 mW</td>
</tr>
<tr>
<td>5</td>
<td>1/2: 5150 MHz – 5350 MHz</td>
<td>200 mW</td>
</tr>
<tr>
<td></td>
<td>2/2: 5470 MHz – 5725 MHz</td>
<td>1000 mW</td>
</tr>
</tbody>
</table>

### DECT Radio Frequencies

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Frequency Range and Transmitter Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECT</td>
<td>• Frequency range: 1880 MHz – 1900 MHz</td>
</tr>
<tr>
<td></td>
<td>• Maximum transmitter power: 250 mW</td>
</tr>
</tbody>
</table>

### Audio Tones

<table>
<thead>
<tr>
<th>Beep</th>
<th>Melody</th>
</tr>
</thead>
<tbody>
<tr>
<td>Busy signal</td>
<td>500 ms tone, 500 ms pause, +/- 20 ms</td>
</tr>
<tr>
<td>Dial tone</td>
<td>1 s tone, 4 s pause, +/- 100 ms</td>
</tr>
</tbody>
</table>
Open and Standardized Interfaces

Information on interfaces and logs from the AVM product development can be found on the AVM website (German language only): https://avm.de/service/schnittstellen
Legal

Manufacturer’s Warranty

We offer a manufacturer’s warranty of 5 years on the hardware of this original product. The warranty period begins with the purchase date from the first end user. Compliance with the warranty period can be proven by submission of the original invoice or comparable documents. This warranty does not restrict your warranty rights based on the contract of sale or other statutory rights.

Within the warranty period, we will remove defects to the product which are demonstrably due to faults in materials or manufacturing. Our warranty does not cover defects which occur due to incorrect installation, improper use, non-observance of instructions in the user manual, normal wear and tear or defects in the environment of the system (third-party hardware or software). We may, at our discretion, repair or replace the defective product. Claims other than the right to the removal of defects which is mentioned in these terms of warranty are not constituted.

We guarantee that the software conforms with general specifications, not, however, that the software meets your individual requirements. Delivery costs will not be reimbursed. Products which have been replaced revert to our ownership. Claims recognized under warranty entail neither an extension or recommencement of the warranty period. If we reject a warranty claim, this claim lapses no later than six months after being rejected by us.

This warranty shall be governed by German substantive law, to the exclusion of the United Nations Convention on Contracts for the International Sale of Goods (CISG).
Copyright

© AVM 2018. All rights reserved.

AVM Audiovisuelles Marketing und Computersysteme GmbH
Alt-Moabit 95
D-10559 Berlin

AVM Computersysteme Vertriebs GmbH
Alt-Moabit 95
D-10559 Berlin

AVM in the internet: en.avm.de

Declaration of CE Conformity

AVM declares herewith that the device is compliant with the basic requirements and the relevant rules in directives 2014/53/EU, 2009/125/EC and 2011/65/EU.

The long version of the declaration of CE conformity is available at en.avm.de/ce.
Information on Cleaning

Rules

Keep the following rules in mind for cleaning your FRITZ!Box:

- Remove the FRITZ!Box from the mains before cleaning.
- Wipe the FRITZ!Box with a slightly moist, lint-free cloth or an anti-static cloth.
- Do not use any strong detergents or solvents for cleaning.
- Do not use any wet cloths for cleaning.
Index

A
active power.............................................. 246
adapter
   TAE adapter........................................ 44
advanced view.......................................... 59
alarm..................................................103, 228
alternating............................................. 226
Android smartphone................................ 47
answering machine.............96, 175, 219
apps
   FRITZ!App Fon.................................... 47
   MyFRITZ!App.............................196, 200, 202
auto channel (wireless LAN).......145
auto update................................................181
automatic outside dialing........... 206
B
baby monitor............................................. 216
band steering............................................ 146
basic configuration.............................. 55
blacklist...................................................... 78
block caller............................................. 100
broadcast call........................................... 222
busy signal.............................................. 248
button
   DECT ................................................ 23
   WPS ................................................ 23
C
cable
   coaxial cable........................................... 33
   LAN cable............................................ 126
   network cable........................................ 37
cable connection
   configuring............................................. 62
   connecting............................................ 33
   internet access...................................... 33, 62
cables......................................................... 16
call
   holding................................................ 226
   missed........................................... 92, 175, 175
   picking up........................................ 221
   transfer............................................. 223
call block.............................................. 100
call diversion
   configuring........................................... 99, 208
   for all calls......................................... 208
   for FON port...................................... 212, 214
   for telephone number........................... 210
   switching off...................................... 209, 211
call list................................................. 92, 196
call waiting................................................ 67
CE conformity declaration.................. 251
choice of location................................. 246
cleaning..................................................... 9, 252
CLIR ........................................................... 224
coxial cable.............................................. 33
codes for FRITZ!Box................................. 249
conference call......................................... 225
configuration............................................. 50
telephones.............................................. 67
configuration by telephone.............. 204
configuring................................................. 60
   automatic update................................. 181
door intercom system...................... 69
external answering machine............... 67
external fax machine......................... 67
internet access...................................... 61
push services......................................... 175, 188
schedule................................................. 144
telephone.............................................. 187
telephone number................................. 66, 188	
timer .................................................. 71
 wizards................................................ 187
configuring schedule............................. 71
configuring telephone book............... 94
configuring telephone numbers......66, 188
configuring timer................................. 71
Index

connecting............................................. 28
cable connection................................... 33
choice of location................................. 30
computer............................................. 37
DECT telephone..................................... 42
door intercom system.............................. 49
electrical power.................................... 34
fax machine.......................................... 44
hub/switch.......................................... 38
IP telephone........................................ 45
ISDN devices........................................ 45
mobile network.................................... 35
network device..................................... 37
possibilities........................................ 32
smartphone......................................... 47
telephone............................................ 42
USB devices......................................... 129
connecting a computer
via wireless LAN.................................. 39
wake on LAN....................................... 128
with network cable............................... 37
connecting a fax machine....................... 187
connecting a network device
IP address automatically....................... 124
overview......................................... 110
via network cable............................... 37
via USB............................................ 129
via wireless LAN................................. 39
connecting fax machine.......................... 44
connecting network device
home network overview.......................... 108
connecting network devices
Smart Home device.............................. 140
connection data................................... 175
connections
ports.................................................. 21
consultation....................................... 226
contacts............................................ 94
conventions........................................ 13
conversation
missed............................................. 92
copyright.......................................... 251
cordless telephone
configuring....................................... 187
registering....................................... 23
searching......................................... 23
corporate info.................................... 251
customer service................................. 240
D
data
push services..................................... 175
restoring.......................................... 184
saving............................................. 183, 194
declaration of CE conformity............... 251
decommissioning................................. 241
DECT
cryptom........................................... 152
radio frequencies.............................. 248
switching on and off......................... 153
using repeaters................................. 152
DECT base station.............................. 18, 42, 150
DECT button....................................... 23
DECT cordless telephone
configuring....................................... 187
registering....................................... 23
searching........................................ 23
DECT Eco........................................... 151
DECT telephone
connecting....................................... 42
device properties................................. 246
DHCP server....................................... 117
diagnostics
function.......................................... 162, 188
overview.......................................... 161
security.......................................... 164, 188
dial tone............................................ 248
dialing rule........................................ 104
disposal............................................ 244
Do Not Disturb................................. 102
documentation.................................... 12
door intercom system
configuring....................................... 69
connecting.................................... 49
DVB-C
television........................................ 155
dynamic DNS..................................... 83
menus in the user interface
- DECT ........................................... 149
- diagnostics .................................. 160
- DVB-C .......................................... 154
- home network ............................... 105
- internet ....................................... 74
- overview ...................................... 72
- system .......................................... 166
- telephony ...................................... 91
- wireless ....................................... 142
- wizards ........................................ 186
mobile network .................................. 35

MyFRITZ!
- configuring app with Android............. 200
- configuring the app with iOS............. 202
- MyFRITZ! account ............................ 198
- overview ...................................... 196
- registering FRITZ!Box...................... 199
- using service ................................. 203

N
- NAS ................................................ 189
- network access interfaces................. 247
- network cable .................................. 37, 126
- network connections ........................ 110
- network key .................................... 14, 40
- network settings
  - DHCP server ................................. 117
  - IPv4 .......................................... 114
  - IPv6 .......................................... 88, 120
  - static IP route .............................. 122
- night service .................................. 144
- notifications .................................. 175

O
- online help .................................. 12
- open source .................................. 249
- operating system ......................... 179
- operating system: FRITZ!OS
  - restoring factory settings .............. 242
  - updating .................................... 179
- operating temperature .................... 246
- operation by telephone ................... 204
- operation requirements ................... 27

P
- package contents .......................... 16
- paging call .................................. 23
- parental controls .......................... 76
- password
  - forgot ....................................... 171
- password for FRITZ!Box ................. 170, 172
- password protection
  - forgot password ........................... 176
  - FRITZ!Box password ..................... 169
  - FRITZ!Box users ........................... 172, 173
  - possibilities ............................... 170, 172
  - push service ................................ 176
  - rules ......................................... 173
- password rules ............................. 171
- password, wireless LAN .................. 14
- phone number
  - blocking ..................................... 100
  - dialing rule ................................. 104
- picking up .................................... 221
- pickup ......................................... 221
- placement ..................................... 30
- port sharing .................................. 81
- ports
  - interfaces ................................... 247
- power
  - FRITZ!Box consumption .................. 246
- power consumption ....................... 246
- prioritizing internet use ................. 80
- public network standards ............... 247
- push services ............................... 175, 188

Q
- quick guide ................................ 12

R
- radio frequencies
  - DECT ......................................... 248
  - radio interference ....................... 10
  - wireless LAN .............................. 145
- reassigning “Info” LED ................. 177
- recycling ..................................... 244
remote access
FRITZ!VPN ........................................... 87
MyFRITZ! ............................................. 195
VPN .................................................. 84
repeater (wireless LAN) ................. 64
requirements for operation ............. 27
resetting
new start .......................................... 185
resetting firmware ......................... 242
resolving problems ......................... 232
restarting ........................................... 185
restoring .......................................... 50, 242
factory settings ...................... 230, 242
FRITZ!Box settings ................. 184, 188
restoring factory settings
via user interface ....................... 242
with FRITZ!Fon ............................ 230
room monitoring ...................... 216
S
safety
handling ........................................... 30
safety instructions ...................... 8, 8
saving
FRITZ!NAS data ......................... 194
saving power
overview ......................................... 70
potential savings ....................... 70
saving ............................................ 70
Smart Home .................................. 70
security
check ............................................. 188
checking ....................................... 164
FRITZ!Box password .................... 169
FRITZ!Box users ......................... 172
FRITZ!OS update ....................... 179
info mail ....................................... 176
password protection .................. 170, 172
push services .................................. 175
saving settings ......................... 183, 188
user name ..................................... 173
VPN ................................................. 84
wireless LAN encryption .......... 39
security diagnostics .................... 164, 188
serial number .......................... 14
service ............................................ 240
session ID ....................................... 57, 57
setting up ........................................ 60
wireless LAN range .................. 64
settings .......................................... 50
IP address ...................................... 115
loading ......................................... 184
network ........................................... 114, 120
protecting with a password ........ 170, 172
push service .................................... 176
restoring ....................................... 184, 188
saving ........................................... 183, 188
user interface ................................ 50
setup
basic configuration .................. 55
signaling of LEDs ...................... 24
Smart Home .................................. 20
Smart Home devices .............. 71, 140, 175
smartphone ....................................... 47
software
version ........................................... 73
software: FRITZ!OS
restoring factory settings ........... 242
updating ....................................... 179
speed in the home network ........ 80
standard view .............................. 59
starting operation ....................... 28
static IP route ............................... 122
storage (NAS) ................................. 189
storage temperature ............... 246
streaming ......................................... 137
structure ......................................... 17
support
by email ....................................... 240
instructions for use ..................... 12
knowledge base ..................... 12, 239
online help .................................... 12
symbols ........................................... 13
Index

T

technical specifications ........................................ 246
active power ................................................. 246
ambient conditions ............................................. 246
device properties ............................................ 246
humidity .......................................................... 246
interfaces ......................................................... 247
ports ............................................................... 247
power consumption ........................................... 246
power consumption ........................................... 246
temperature .......................................................... 246
tones .............................................................. 248
wireless LAN radio frequencies .......................... 248

telephone
alarm function .................................................... 103, 228
configuring .......................................................... 187
connecting .......................................................... 18, 42
Do Not Disturb .................................................... 102
keypad codes ...................................................... 204, 227
room monitoring .................................................. 216
searching ............................................................. 23

telephone call
broadcast call ....................................................... 222
call list ................................................................. 92
conference call ...................................................... 225
diverting ............................................................... 99, 208
holding ................................................................. 226
missed ................................................................. 92, 175
transfer ............................................................... 223
telephone number
assigning .............................................................. 67, 67
blocking .............................................................. 100
configuring ........................................................... 66, 66, 188, 188
dialing rule .......................................................... 104
suppressing ........................................................ 224, 224
telephone system ................................................... 18
telephones
configuring .......................................................... 67
terminal devices
configuring .......................................................... 67
connecting .......................................................... 18
test
function diagnostics ............................................ 162, 188
security diagnostics ............................................. 164, 188
three-party conference call .................................... 225
timeout ................................................................. 57
tones ................................................................. 248
transferring .......................................................... 223
troubleshooting ..................................................... 232
type label ............................................................. 14

U

UMTS ................................................................. 35, 63

update ............................................................... 179
automatic ............................................................. 181
manual ................................................................. 180
overview ............................................................. 179
status of device ...................................................... 109
wizard ................................................................. 179
usage data ........................................................... 175

USB device
access rights .......................................................... 131
configuring ............................................................. 129
connecting ............................................................ 130
suitable for FRITZ!Box ........................................... 129, 129

USB ports ............................................................. 19

user account .......................................................... 172
user interface ........................................................ 50, 50
factory settings ...................................................... 242
fallback ............................................................... 230, 242
firmware update .................................................... 179
FRITZ!NAS ........................................................... 190
logout ................................................................. 57
opening ............................................................... 51
password protection .............................................. 57
remote access ....................................................... 84
updating FRITZ!OS ............................................... 179
user name ............................................................ 173
user name ............................................................ 173
V
views of the user interface
  advanced view................................ 59
  standard view.................................. 59
  switching views................................ 59
voice menu of answering machine.......... 220
voice to mail..................................... 96
VPN
  remote access................................ 86
  service portal.................................. 87
W
wake on LAN...................................... 128
warranty.......................................... 250
whitelist........................................... 78
Wi-Fi protected setup......................... 41
wireless access point.......................... 18
wireless guest access........................... 147, 175
wireless LAN
  auto channel.................................. 145
  band steering.................................. 146
  computer....................................... 39
  configuring radio network.................... 143
  encryption..................................... 39
  extending range................................ 64
  location for the FRITZ!Box.................. 30
  network key.................................... 14, 39, 40
  password....................................... 14, 40
  radio channel.................................. 145
  radio frequencies............................ 145, 248
  reception....................................... 30
  schedule........................................ 144
  standards....................................... 247
  switching on/off by button................... 144
  switching on/off by telephone.............. 217
  WPS ................................................ 41
  wireless LAN frequency ranges.............. 248
  wireless LAN radio frequencies............. 248
  wireless repeater............................... 64
  wizards.......................................... 187
  WPS ............................................... 41
  WPS button...................................... 23