

FRITZ!Box 6890

Configuration and Operation

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General Remarks

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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 lead to fires or electric shocks.

- Avoid using socket strips and extension cords if at all possible.
- Do not connect multiple extension cords or socket strips to each other.

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 DSL or VDSL line .
- During a storm, disconnect the FRITZ!Box from the power supply.

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 273](#).

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.

Parts of the Customer Documentation

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 6890 is located in the “Service” area of the AVM website:

en.avm.de/service

Symbols

The following symbols are used in this manual:

Symbol	Meaning
	Important message that should be complied with in order to prevent material damage, errors or malfunctions
	Useful tip for configuring and operating the FRITZ!Box
	Reference to instructions in the FRITZ!Box online help

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 of the housing. 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 of the housing.

Device Data on the Type Label

FRITZ!Box 6890 LTE		Installation: http://fritz.box	Edition International
WLAN Network (SSID) FRITZ!Box 6890 XY		FRITZ!Box password afbcd1234	
WLAN Network Key (WPA2) 3779 8981 1562 8981 1234		Power units 311POW134 • 311POW136 12V 2,5A	
Serial no. H515.123.45.678.901	Article no. 2000 2818	IMEI 12345678-901234-5	
CWMP account 00040E-123456789012	AVM GmbH, 10547 Berlin		

No.	Meaning
1	Product name
2	Address of user interface
3	Name of wireless radio network (SSID)
4	Password of user interface
5	Network key

No.	Meaning
6	Power adapter specification
7	Serial number
8	Article number

Package Contents

Package Contents

Num-ber	Supplied Part	Details
1	FRITZ!Box 6890	
2	LTE antennas	screwable LTE antennas
1	Power adapter	white
1	Network cable	also "LAN cable", yellow
1	DSL/telephone cable	gray-black
1	DSL adapter	gray
1	Telephone adapter	black
1	Quick guide	Connecting the FRITZ!Box
1	Service card	<p>FRITZ! Notice: Looking up the FRITZ!Box factory settings:</p> <ul style="list-style-type: none"> • Network key • FRITZ!Box password • Name of the radio network (SSID) • Button and LEDs

AVM Accessories

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

Functions and Structure

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Functions

Internet Router

The FRITZ!Box can be operated at the following DSL connections:

- ADSL line (up to 24 Mbit/s)
- VDSL line (up to 100 Mbit/s)
- VDSL line (up to 300 Mbit/s)

The internet connection is established via either the DSL line or the mobile telephone connection. If the internet connection is established via DSL, then the mobile telephone connection can be configured as a fallback.

Telephone System

The FRITZ!Box is a telephone system (or PBX: Private Branch Exchange) for landline and for internet telephony (IP telephony, VoIP). You can operate the FRITZ!Box at an analog telephone line, at an ISDN line, and at an IP-based line (All-IP).

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 Port

The FRITZ!Box has a USB 3.0 port 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 hubs

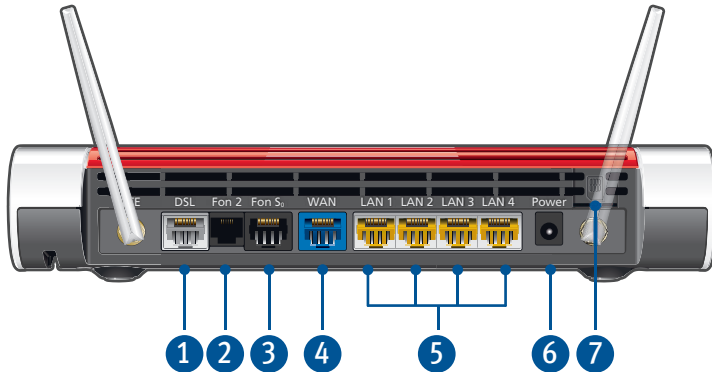
Smart Home

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


Type of Device	Number	Features
Switchable sockets <ul style="list-style-type: none"> • FRITZ!DECT 200 • FRITZ!DECT 210 	up to 10	<ul style="list-style-type: none"> • Control the power supply to connected devices • Measure the power consumption of connected devices • Configuration and operation on the computer, tablet or smartphone, even via the internet from on the go
Radiator control <ul style="list-style-type: none"> • FRITZ!DECT 300 • FRITZ!DECT 301 • Comet DECT 	up to 12	<ul style="list-style-type: none"> • Control the room temperature automatically and save energy costs • Configuration and operation on the computer, tablet or smartphone, even via the internet from on the go

Connection Ports

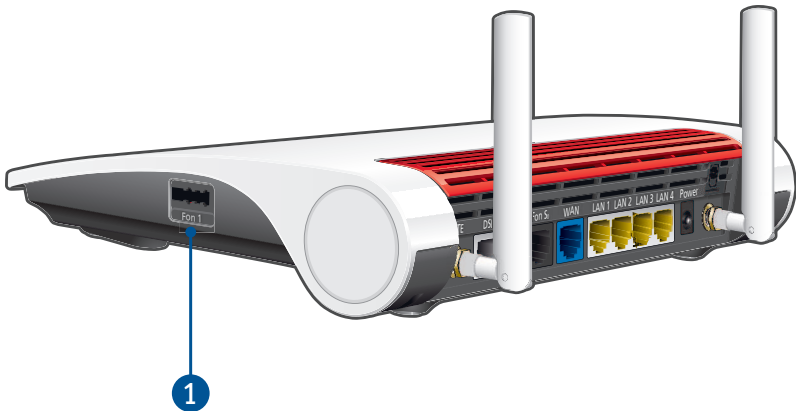
Back of the Device



No.	Name	Function
1	DSL	Port for connecting to DSL (ADSL2+/VDSL) and to the telephone network (analog/ISDN)
2	FON 2	RJ11 jack for connecting an analog telephone, fax machine, answering machine or a door intercom system
3	FON S ₀	RJ45 socket for connecting ISDN telephones and telephone systems (PBXs)
4	WAN	<ul style="list-style-type: none"> RJ45 socket for connecting to a modem or a router for Internet access For connecting the FRITZ!Box to DSL via the “DSL” port: additional gigabit Ethernet port to connect computers and other network-compatible devices

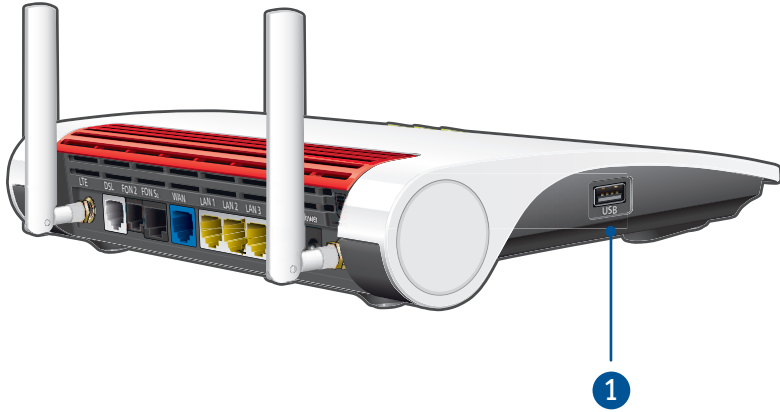
No.	Name	Function
5	LAN 1 to LAN 4	Ports for connecting computers and other network-compatible devices like hubs and game consoles
6	Power	Socket for plugging in the power supply
7		Card slot for the mobile communications SIM card

Right Side



No.	Name	Function
1	FON 1	TAE jack for connecting an analog telephone, answering machine fax machine, or a door intercom system

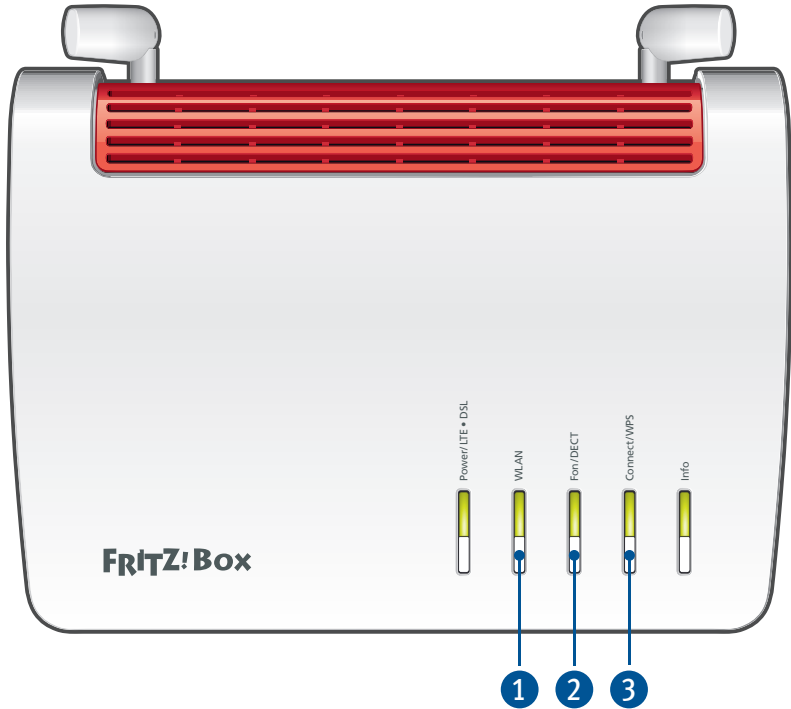
Left Side



No.	Name	Function
1	USB	USB port for connecting USB devices like printers or storage media

Buttons

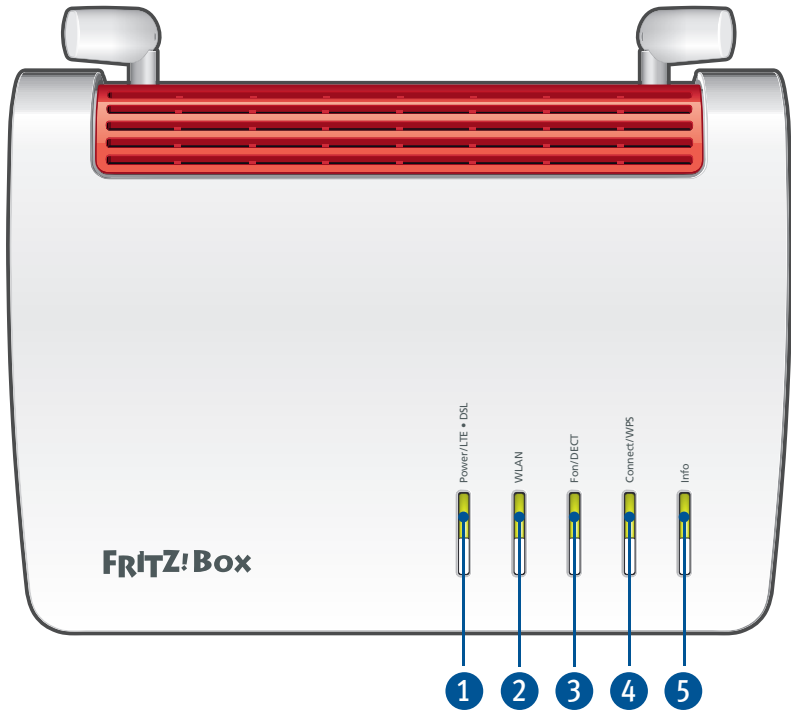
Button Functions



No.	Name	Function
1	WLAN	Switch wireless LAN of the FRITZ!Box on and off
2	Fon/DECT	Search for cordless telephones (paging call)
3	Connect/WPS	<ul style="list-style-type: none"> Register cordless telephones with the FRITZ!Box; see page 56 Register wireless devices with the FRITZ!Box via WPS, see page 55

LEDs (Light-emitting Diodes)

Meaning of the LEDs



No.	LED	Condition	Meaning
1	Power / LTE · DSL	on	Device has electrical power, DSL line is ready for operation or mobile network connection is ready
		flashing	Device has electrical power, mobile or DSL connection being established or interrupted
2	WLAN	on	Wireless LAN is switched on

No.	LED	Condition	Meaning
2	WLAN	flashing	<ul style="list-style-type: none"> Switching wireless LAN on or off Applying changes to the wireless LAN settings
3	Fon/DECT	on	Telephone connected via internet or landline connection
		flashing	<p>Messages in your voice mail/email inbox</p> <p>This function must be supported by your telephony provider.</p>
4	Connect/WPS	flashing	<ul style="list-style-type: none"> Performing WPS Registering a DECT device
		flashing rapidly	WPS procedure aborted: more than two wireless devices performing WPS at the same time; repeat WPS procedure
5	Info	on	<ul style="list-style-type: none"> Stick & Surf with FRITZ!WLAN USB Stick concluded Adjustable, see Selecting Signaling of the "Info" LED, page 194

No.	LED	Condition	Meaning
5	Info	flashing	<ul style="list-style-type: none"> Updating FRITZ!OS Stick & Surf for FRITZ!WLAN USB Stick in progress Time budget for online time has been reached Adjustable, see Selecting Signaling of the "Info" LED, page 194
		lights or flashes red	<p>Error:</p> <ul style="list-style-type: none"> Open the FRITZ!Box user interface; see page 63. Follow the instructions on the "Overview" page in the user interface

Requirements for Operation

Requirements

- For an internet connection via DSL:
 - DSL line or
 - VDSL line
- For an internet connection via mobile network:
 - an LTE SIM card or
- For an internet connection via cable:
 - cable connection with cable modem
- For an internet connection via fiber optic:
 - fiber optic connection with fiber optic modem
- For an internet connection via another access device
 - any internet connection with a modem or router
- 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 landline telephony:
 - analog telephone line or
 - ISDN point-to-multipoint line

Comprehensive technical information about your FRITZ!Box
[see page 263](#).









Connecting

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Overview: Connecting the FRITZ!Box

Overview

Connecting the FRITZ!Box entails the following steps:

Instructions	
	Insert the SIM card into the SIM card slot.
	Screw the LTE antennas onto the FRITZ!Box.
	Place or hang up the FRITZ!Box in a suitable location.
	Connect the FRITZ!Box to the power supply.
	Connect the FRITZ!Box with your ADSL or VDSL line.
	Connect the FRITZ!Box with your landline.
	Connect your computers and network devices to the FRITZ!Box.
	Connect your telephones to the FRITZ!Box.

Placement

Overview

You can either place the FRITZ!Box or mount it on a wall.



For ideal operating conditions, we recommend mounting the FRITZ!Box on a wall.

Rules in General

Keep the following rules in mind for positioning the FRITZ!Box:

- Position the FRITZ!Box near an electrical outlet that is easy to reach, so that you can unplug the FRITZ!Box at any time.
- The FRITZ!Box is intended only for indoor operation.
- 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 LTE Reception

- Use the alignment aid of the FRITZ!Box to determine the best possible position of the FRITZ!Box and its antennas for LTE reception.

The alignment aid is located in the FRITZ!Box user interface (see page 63) under “Internet / LTE Information / Reception”.

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 85](#).

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.

Instructions: Mounting FRITZ!Box on the Wall



Damage to electric wiring or gas or water pipes during drilling can present a significant danger. Before mounting the FRITZ!Box on the wall, make sure that there are no electrical lines, gas or water pipes located where you need to drill the holes. If necessary, check the site with a pipe detector or consult with qualified experts.

1. In compliance with the rules mentioned above, select a suitable location for mounting the FRITZ!Box on the wall.
2. Mark the spots for drilling at the desired location using the drilling template (see [Drilling Template, page 269](#)).
3. Mount the FRITZ!Box on the wall with the socket strip down.

Connecting to the Internet: Possibilities

Overview

The FRITZ!Box can be connected using various types of internet connections:

Type of Connection	Connecting the FRITZ!Box
DSL	directly to the DSL or VDSL line
Mobile	using a SIM card for LTE or UMTS/HSPA+
Cable connection	to the cable modem
Fiber optic connection	to the fiber optic modem
Any internet connection	to an existing router

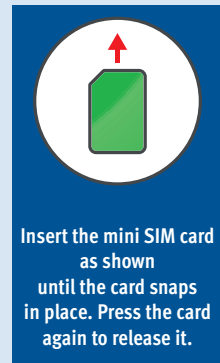
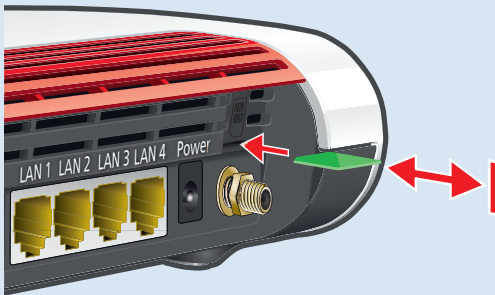
Connecting with the Internet Access: LTE

Overview

Your FRITZ!Box provides internet access via an LTE radio connection. The connection to the LTE radio network is established using the SIM card.

Instructions: Inserting the SIM Card

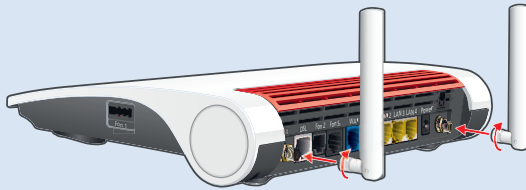
1. Pick up the FRITZ!Box so that you are facing the underside of the device and can read the "SIM Card" label on the slot.
2. Insert the SIM card into the slot with the slanted edge of the card on the left and the contacts facing downwards.



3. Push the SIM card gently into the slot until it clicks into place. A few millimeters of the SIM card protrude from the slot.

Instructions: Screwing on the LTE Antennas

1. Pick up the two LTE antennas included in the package.
2. Screw the antennas onto the sockets labeled "LTE".



Connecting an Outdoor Antenna

Overview

You can connect an outside antenna to the FRITZ!Box, which you can mount on the roof or wall. In areas located on the edge of LTE radio coverage, the two LTE antennas included in the package may not be sufficient for successful radio traffic.

Requirements

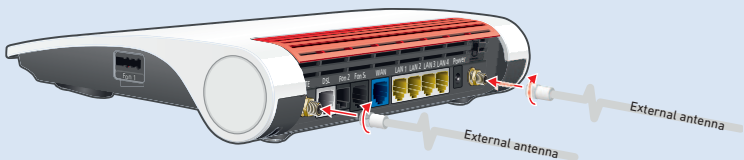
- The outside antenna fits with SMA connectors (the antenna sockets on the FRITZ!Box are SMA connectors).
- The antenna cable has an SMA connector.

Rules

- The FRITZ!Box receives on both antenna sockets and transmits on one. The transmission socket is the left antenna socket next to the “DSL” socket.
- If your outdoor antenna has only one connector, connect the antenna to the transmitting socket of the FRITZ!Box.
- If your outdoor antenna has two connectors, connect the antenna to both antenna sockets on the FRITZ!Box.

Instructions: Connecting an Outdoor Antenna with One Connector

1. Connect the outdoor antenna to the transmitting socket of the FRITZ!Box.



2. Connect the one of the LTE antennas included with delivery to the other antenna socket on the FRITZ!Box.

Connecting to Electrical Power

Overview

Connect the FRITZ!Box to the power supply.

Connecting Instructions: Plugging in to Electrical Power

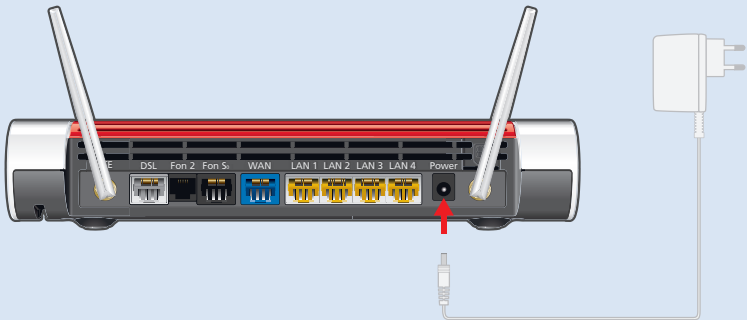


Avoid using socket strips and extension cords if at all possible.

Do not connect multiple extension cords or socket strips to each other.

Use only the power adapter included with delivery.

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 / LTE · DSL" LED begins flashing after a few seconds to indicate that the FRITZ!Box is ready for operation.

Connecting to the Internet: Determining the DSL Line Type

Overview

You would like to use the FRITZ!Box on your DSL or VDSL line. So that you can connect the FRITZ!Box correctly, you must know whether you have an IP-based line or a landline.

Types of DSL Connections

There are two kinds of DSL connections, which use different technologies for telephony. The two kinds of connections are the IP-based DSL connection and the DSL connection with a landline:

Line Type	Other Expressions Used	Technology for Telephony Used
IP-based DSL line	<ul style="list-style-type: none"> All-IP connection NGN line Splitterless connection Direct access Unbundled connection 	<p>You make telephone calls via the internet.</p> <p>The internet protocol ("IP" for short) is used for both telephone and data connections.</p>
DSL line with landline	DSL or VDSL line with a classic telephone line	<p>You make telephone calls via the landline.</p> <p>The landline is an analog telephone line or an ISDN line.</p> <p>You can also make telephone calls via the internet.</p>

Determining Your Line Type

If you do not know whether you have an IP-based DSL line or a DSL line with a landline, contact your DSL provider, take a look at the materials you received along with your DSL or VDSL line , or research your telephony package in the internet.

Connecting to the Internet via an IP-based DSL Line

Overview

If you have an IP-based DSL or VDSL line, then connect the FRITZ!Box directly to the telephone jack.

Requirements

- All cables have been removed from your telephone jack.

If a DSL splitter is still connected to your telephone jack from a previous internet connection, remove the cable. You can also remove the DSL splitter.



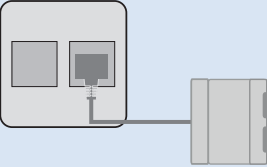
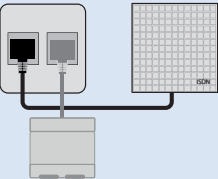
Connecting with the Internet via a DSL Line

Overview

If you have a DSL or VDSL line with an analog telephone line or ISDN line, connect the FRITZ!Box to the DSL splitter. Use the DSL/telephone cable included with delivery.

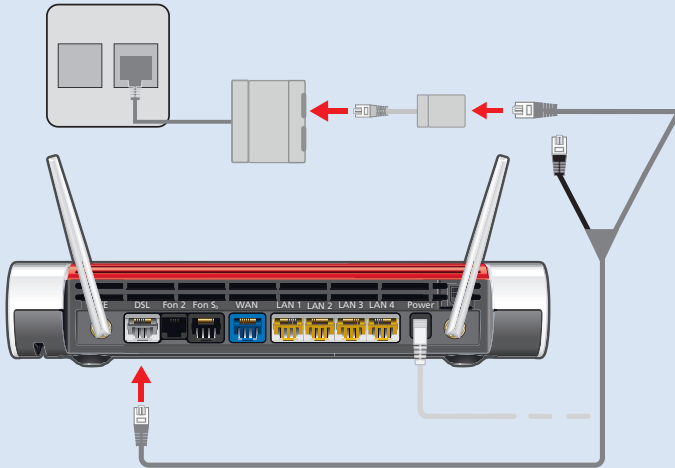
Requirements

- A DSL splitter is connected to your telephone jack.

Line Type	Sockets
DSL line with analog telephone line	 <p data-bbox="521 791 891 818">Telephone jack with DSL splitter</p>
DSL line with ISDN line	 <p data-bbox="521 1066 930 1093">Telephone jack, DSL splitter and NT</p>

Instructions: Connecting to a DSL Connection with a Landline

1. Insert the long end of the DSL/telephone cable into the socket on the FRITZ!Box labeled "DSL".



2. Insert the short, gray end of the cable into the appropriate socket on the DSL splitter.

If the plug on the gray end of the cable does not fit into the DSL splitter, use the gray DSL adapter included in the FRITZ!Box package.

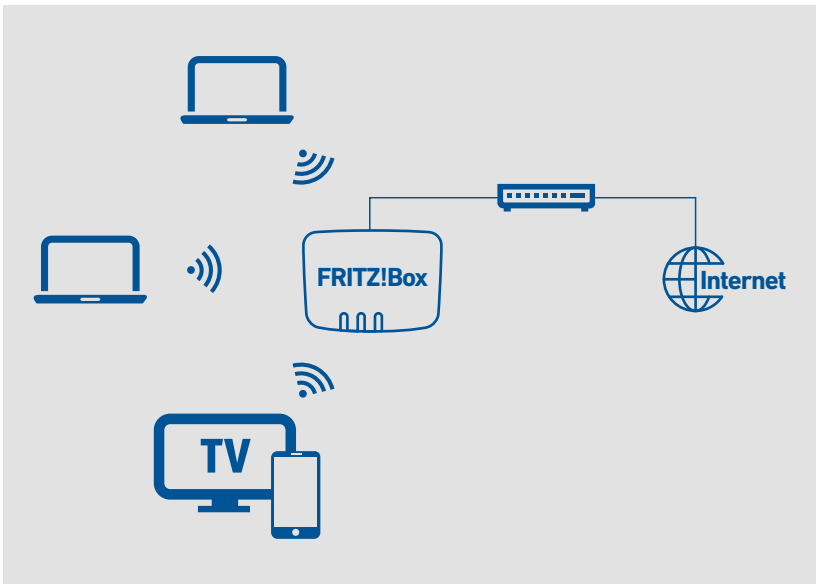
After a short time the "Power / LTE · DSL" LED on the FRITZ!Box lights up. The FRITZ!Box is ready to connect to the internet.

Connecting to the Internet Access: Cable Connection

Overview

If you have a cable connection with a cable modem, you can connect the FRITZ!Box to the cable modem, from where it interfaces with the cable connection. Use a network cable.

Example Configuration



Instructions: Connecting with a Cable Modem

1. Connect the one end of the network cable to the LAN (Ethernet) port on the cable modem.
2. Insert the other end of the network cable in the “WAN” port on the FRITZ!Box.

3. Connect a computer with the FRITZ!Box, [see page 51](#) or [see page 53](#).
4. Set up the internet connection for connections via cable in the FRITZ!Box; see [see Setting Up Internet Access via Cable Modem, page 78](#).

Connecting to the Internet Access: Fiber Optic Connection

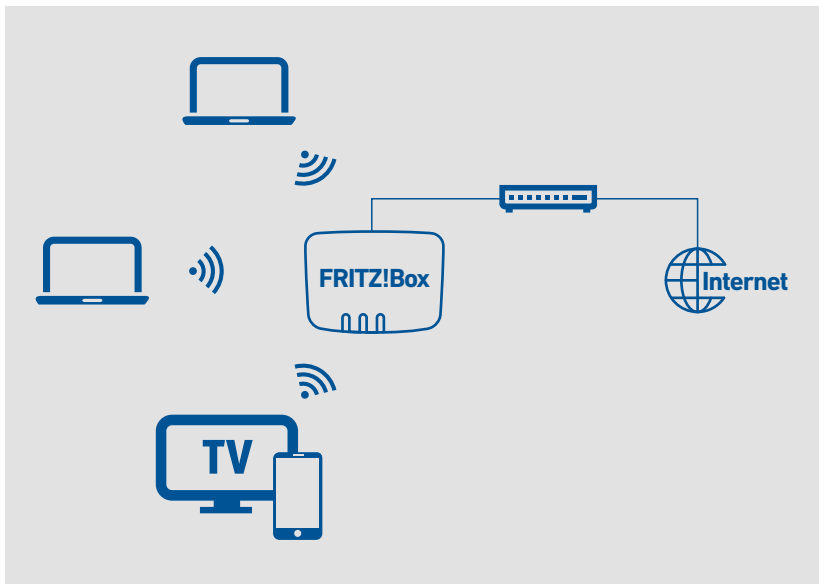
Overview

You can connect your FRITZ!Box to a fiber optic modem (FTTH-ONT).

Requirements

- A fiber optic modem that is connected to your fiber optic connection
- A network cable (for instance, from the FRITZ!Box package)

Example Configuration



Instructions: Connecting to a Fiber Optic Modem

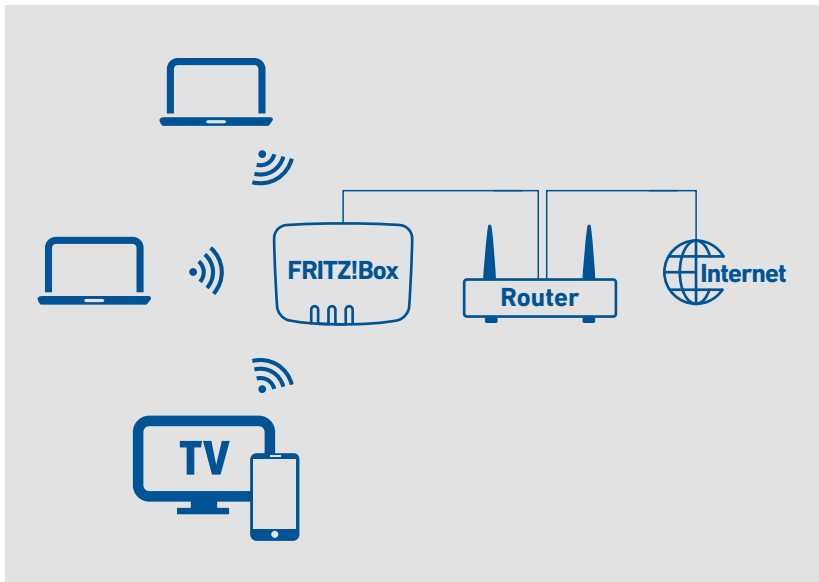
1. Insert one end of the network cable in the “WAN” port on the FRITZ!Box.
2. Insert the other end of the network cable into the LAN (Ethernet) port on the fiber optic modem.

Connecting to the Internet Access: Existing Router

Overview

You can use the FRITZ!Box at an already existing internet access. To do this the FRITZ!Box is connected to the existing internet router.

Example Configuration



Instructions: Connecting to the Router with a Network Cable

1. Insert the one end of the network cable to the “WAN” port on the FRITZ!Box.
2. Insert the other end of the cable into a network socket on the internet router.

Connecting with the Landline

Overview

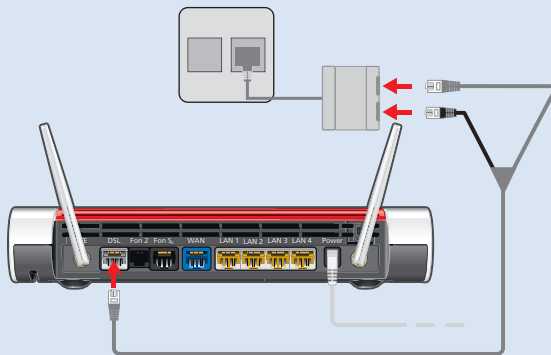
You can connect the FRITZ!Box with the following landlines:

- Analog telephone line
- ISDN line

An analog telephone line is a single line with one telephone number. ISDN lines have three or more telephone numbers.

Instructions: Connecting with the Analog Telephone Line

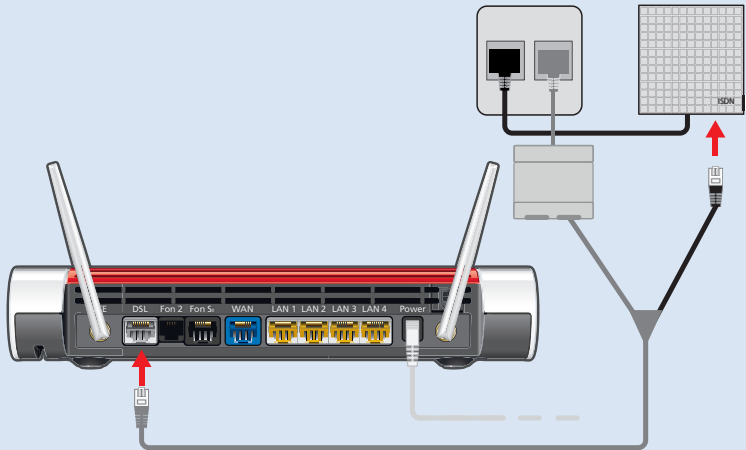
1. Insert the long, gray end of the DSL/telephone cable into the socket on the FRITZ!Box labeled "DSL".
2. Insert the short, black end of the cable into the telephone adapter (black).



3. Then insert the telephone adapter into the appropriate socket of your DSL splitter.

Instructions: Connecting with the ISDN Line

1. Insert the long, gray end of the DSL/telephone cable into the socket on the FRITZ!Box labeled "DSL".



2. Insert the short, black end of the cable into a jack (S_0 interface) on your ISDN NT.

Connecting a Computer with a Network

Overview

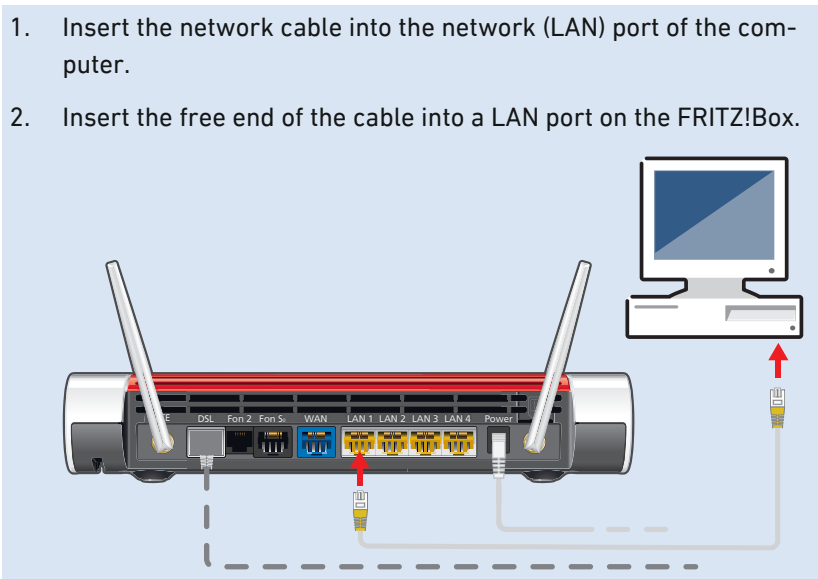
You can connect computers and other network devices with the FRITZ!Box using a network cable. This is recommended especially for the initial configuration of your FRITZ!Box. The way a computer is connected to the FRITZ!Box is the same regardless of the operating system on the computer. Open the user interface of the FRITZ!Box in an up-to-date web browser ([see page 63](#)).

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:

Encryption	Mode	Protocol	Security
WPA	WPA2	CCMP	Very secure
	WPA	TKIP	Secure
non-encrypted	–	–	Very insecure, not recommended

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:

Mode	Use
WPA2	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.
WPA + WPA2	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.

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 6890” and two random letters (for instance, “FRITZ!Box 6890 XY”), and is printed on the type label on the bottom of the housing.

3. Click “Connect”.
4. Enter the network key of the FRITZ!Box. The network key is printed on the bottom of the housing of the FRITZ!Box; [see Device Data on the Type Label, page 14](#).

The wireless LAN connection will be established.

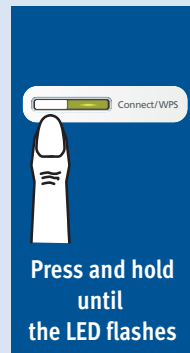
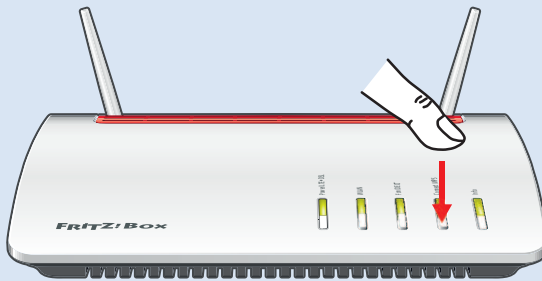
Transferring the Instructions: Network Key Using WPS

With WPS (Wi-Fi Protected Setup) you can connect a wireless device with the FRITZ!Box quickly and easily without entering the wireless 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 6890" and two random letters (for instance, "FRITZ!Box 6890 XY"). The name is printed on the type label on the bottom of the housing.

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.



The "Connect/WPS" LED on the FRITZ!Box flashes while the wireless connection is being established.

Connecting Telephones

Overview

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

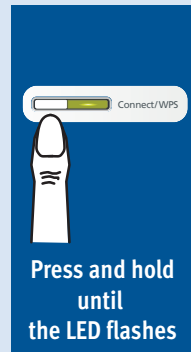
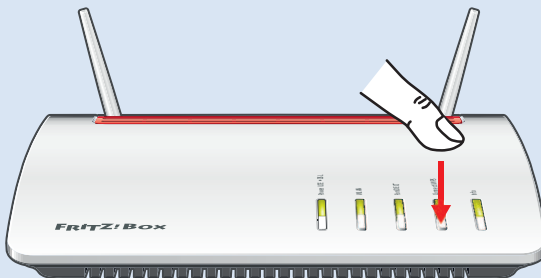


During a power outage you cannot make any telephone calls with the telephones connected with the FRITZ!Box.

Instructions: Registering a Cordless Telephone

You can register up to 6 cordless telephones with the FRITZ!Box.

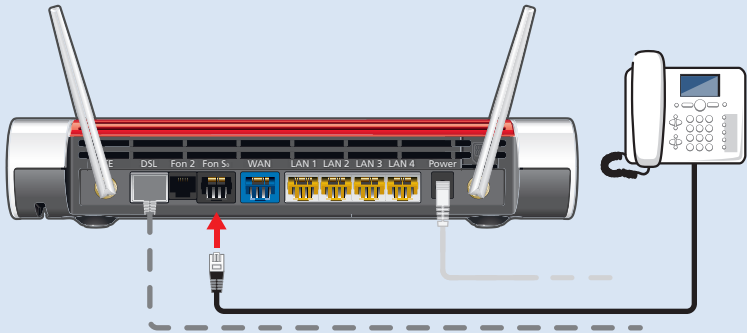
1. Start the registration of your cordless telephone with a DECT base station.
2. On the FRITZ!Box: Press the “Connect/WPS” button.
The “Connect/WPS” LED flashes.



3. Enter the PIN of the FRITZ!Box on the telephone (preset value: 0000).
4. In the user interface of your FRITZ!Box: Configure the telephone; see [Configuring Telephones, page 88](#).

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 88.

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). If your FRITZ!Box is connected with a landline, you can use the connected IP telephone to make calls over the landline network as well.

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 88](#).

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 with 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”)

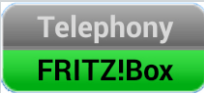
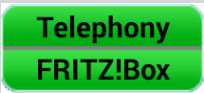
Instructions: Connecting a Smartphone

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 88](#).

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.

Icon	Meaning
 The icon consists of two stacked rounded rectangular buttons. The top button is grey with the word 'Telephony' in white. The bottom button is green with the text 'FRITZ!Box' in white.	Wireless connection to the FRITZ!Box is active.
 The icon consists of two stacked rounded rectangular buttons. The top button is green with the word 'Telephony' in white. The bottom button is green with the text 'FRITZ!Box' in white.	You can make calls via the FRITZ!Box with your smartphone.

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 the home.
- You can have the camera image from your door intercom system displayed 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 89](#).

User Interface

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Using the Wizard for Basic Configuration	67
Logging Out of the User Interface	69
Using the Standard View and Advanced View.....	71

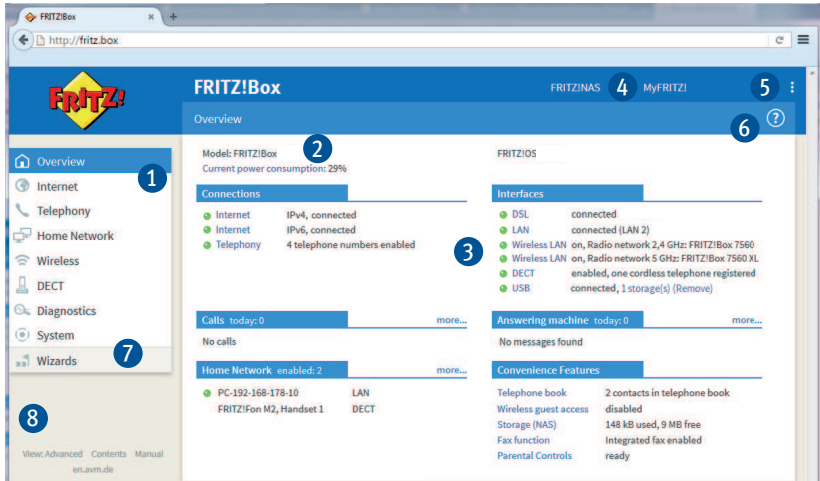
Opening the User Interface

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:



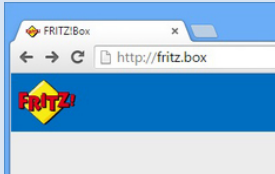
No. Function / Display

- | | |
|---|---|
| 1 | The FRITZ!Box user interface menu |
| 2 | System Information <ul style="list-style-type: none"> Product name or individually assigned name of the FRITZ!Box FRITZ!OS installed Current power consumption Important notifications for secure, reliable operation of your FRITZ!Box |

No. Function / Display	
3	<p>Information about connections and interfaces</p> <ul style="list-style-type: none">• Information on internet and telephony connections and on all FRITZ!Box interfaces• Information on telephone calls and voice messages on the integrated answering machine• Devices connected to the FRITZ!Box, such as computers, smartphones, network storage, printers, or Smart Home devices• Configured convenience features
4	Links to the FRITZ!NAS and MyFRITZ! areas
5	<p>3 vertical dots menu</p> <ul style="list-style-type: none">• Log off the user interface• Change the password• Switch between standard and advanced view• Links to the FRITZ!NAS and MyFRITZ! areas
6	Link to the online help
7	Wizards for configuration of the FRITZ!Box
8	<p>Related Links</p> <ul style="list-style-type: none">• View: Switching between standard and advanced view• Contents: overview of all pages in the user interface• Manual: FRITZ!Box 6890 (PDF)• Tips & Tricks: Link to the FRITZ!Box Knowledge Base• en.avm.de: AVM web pages

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 of the housing.

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 of the housing.
- 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 of the housing.
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 on or off of your FRITZ!Box; see [Configuring Push Services, page 192](#).

Automatic Logout when Idle

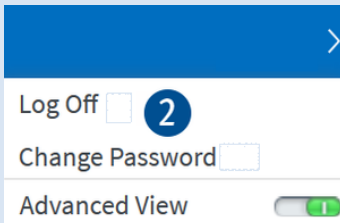
If you have not logged out of the FRITZ!Box user interface, and have not been active in the browser for 20 minutes, you will be logged off automatically. You must log in again to regain access to the FRITZ!Box user interface

Instructions: Manual Logout

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



2. Click "Log Out" (2) in the menu.



You have been 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.

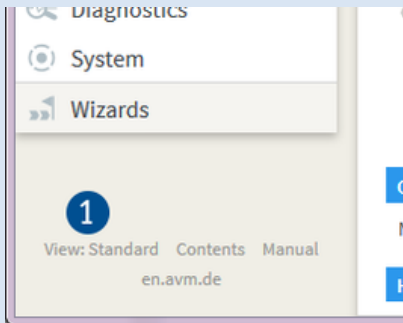
In the advanced view, additional settings options are offered for advanced users. These settings are not required for everyday operation of the FRITZ!Box.

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

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Overview: Configuring FRITZ!Box

Overview

Configuration of the FRITZ!Box entails the following steps:

Instructions	
	Set up the internet connection in the FRITZ!Box.
	Set up the connected telephones and their telephone numbers in the FRITZ!Box.
	Configure your smartphone in the FRITZ!Box (optional).

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 Mobile Network

Overview

The internet connection for the mobile telephone network has to be set up 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

- A SIM card from a mobile communications network provider has been inserted in the SIM card slot of the FRITZ!Box.
- You have the PIN you received along with the SIM card at hand.

Instructions: Configuring Internet Access

1. Open the FRITZ!Box user interface; [see page 63](#).
2. If the wizard does not start automatically, select the “Wizards” menu.
3. Click the “Check Internet Connection” Wizard and follow the instructions.
4. Start your web browser and enter a web address, for instance en.avm.de.

The requested internet page is displayed.

Configuring an Internet Connection via DSL

Overview

The internet access is set up in the FRITZ!Box user interface. A wizard assists you in entering the account information from your internet service provider. The first time the user interface is opened, the wizard opens automatically.

Requirements

- The account information has been supplied by your internet service provider.

Instructions: Configuring Internet Access

1. Open the FRITZ!Box user interface; [see page 63](#).
2. If the wizard does not start automatically, select the “Wizards” menu.
3. Click the “Configure Internet Connection” Wizard and follow the instructions.

After the internet connection has been configured you can check your access to the internet.

Configuring the Type of Access to the Internet

Overview

In the FRITZ!Box 6890 you can configure the internet connection for two types of access: for internet access via LTE mobile connections, and for the DSL or WAN connection. You can specify which internet connection the FRITZ!Box uses to establish the internet connection.

Options

You can choose among the following options for types of internet access:

Selection	Behavior of the FRITZ!Box
Use mobile communications for internet connection	The FRITZ!Box establishes its own connection to the internet via the mobile network.
Use DSL/WAN for internet connection	The FRITZ!Box establishes the internet connection via the DSL/WAN connection.

For the option “Use DSL/WAN for internet connection” an additional setting can be specified:

Setting	Behavior of the FRITZ!Box
Use mobile connection as fallback (available for DSL only)	When the DSL connection fails, the FRITZ!Box establishes the internet connection via the mobile network. This fallback function works only for the DSL line, not for connections to a modem or another router.

Configuring the Type of Internet Connection

1. Open the FRITZ!Box user interface; [see page 63](#).
2. In the “Internet / Account Information” menu, select the “General” page.
3. Select the internet connection there.
4. Click “Apply”.

Setting Up Internet Access via Cable Modem

Overview

You can connect the FRITZ!Box to a cable modem which provides the internet connection.

Operating Mode of the FRITZ!Box

If the FRITZ!Box is connected with the internet access via cable modem, the following applies:

- The FRITZ!Box obtains the public IP address from the internet service provider via DHCP.
- The FRITZ!Box establishes the internet connection itself.
- The FRITZ!Box functions as a router.
- The FRITZ!Box opens up its own IP network.
- The firewall of the FRITZ!Box is enabled.

Requirements

- The FRITZ!Box is connected to a cable modem, which is connected with the cable junction; [see Connecting to the Internet Access: Cable Connection, page 44](#).

Instructions: Setting Up Internet Access on the Cable Connection

1. Open the FRITZ!Box user interface; [see page 63](#).
2. Select the “Internet / Account Information” menu and the “Internet Connection” tab.
3. In the “Internet Service Provider” area, select the settings “More internet service providers” and then “Other internet service provider”.

4. In the “Connect via” area, select the option “Connection to a cable modem (cable connection)”.
5. For further settings, use the online help of the FRITZ!Box.

Configuring Internet Access via Fiber Optic Modem

Overview

You can connect the FRITZ!Box to a fiber optic modem which provides the internet connection.

Operating Mode of the FRITZ!Box

If the FRITZ!Box is connected with the internet access via fiber optic modem, the following applies:

- The FRITZ!Box obtains the public IP address from the internet service provider via DHCP or PPPoE.
- The FRITZ!Box establishes the internet connection itself.
- The FRITZ!Box functions as a router.
- The FRITZ!Box opens up its own IP network.
- The firewall of the FRITZ!Box is enabled.

Requirements

- The FRITZ!Box is connected to a fiber optic modem, which is connected with the fiber optic connection; see [Connecting to the Internet Access: Fiber Optic Connection, page 46](#).

Instructions: Configuring Internet Access on the Fiber Optic Connection

1. Open the FRITZ!Box user interface; see [page 63](#).
2. Select the “Internet / Account Information” menu and the “Internet Connection” tab.
3. In the “Internet Service Provider” area, select the settings “More internet service providers” and then “Other internet service provider”.

4. From the “Connect via” area, select the “Connection to an external modem or router” option.
5. For further settings, use the online help of the FRITZ!Box.

Setting Up Internet Access via Another Router

Overview

You can connect the FRITZ!Box to a router which provides the internet connection.

Operating Mode of the FRITZ!Box

The following applies to this kind of Internet connection:

- The FRITZ!Box receives an IP address from the upstream device via DHCP (default setting).
- The FRITZ!Box functions as its own router.
- The FRITZ!Box opens up its own IP network.
- The firewall of the FRITZ!Box is enabled.

Requirements

- The FRITZ!Box is connected with a router that provides the Internet connection; see [Connecting to the Internet Access: Existing Router, page 48](#).

Instructions: Setting Up Internet Access via WAN (as Router)

1. Open the FRITZ!Box user interface; see [page 63](#).
2. Select the "Internet / Account Information" menu and the "Internet Connection" tab.
3. In the "Internet Service Provider" area, select the settings "More internet service providers" and then "Other internet service provider".
4. From the "Connect via" area, select the "Connection to an external modem or router" option.
5. For further settings, use the online help of the FRITZ!Box.

Configuring Internet Access via Another Router: IP client

Overview

You can connect the FRITZ!Box as an IP client to a router which provides the internet connection.

Operating Mode of the FRITZ!Box

The following apply in IP client mode:

- The FRITZ!Box receives an IP address from the upstream router via DHCP (default setting).
- The FRITZ!Box becomes a part of the router's IP network.
- The network devices connected to the FRITZ!Box receive their IP addresses from the upstream router.
- The firewall of the FRITZ!Box is disabled.

Requirements

- The FRITZ!Box is connected with a router that provides the internet connection; see [Connecting to the Internet Access: Existing Router](#), page 48.

Instructions: Setting Up Internet Access via LAN (IP Client)

1. Open the FRITZ!Box user interface; see [page 63](#).
2. Select the "Internet / Account Information" menu and the "Internet Connection" tab.
3. In the "Internet Service Provider" area, select the settings "More internet service providers" and then "Other internet service provider".
4. From the "Connect via" area, select the "Connection to an external modem or router" option.

5. In the “Operating Mode” menu, select the “Share existing internet connection in the network (IP client mode)” setting.
6. For further settings, use the online help of the FRITZ!Box.

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

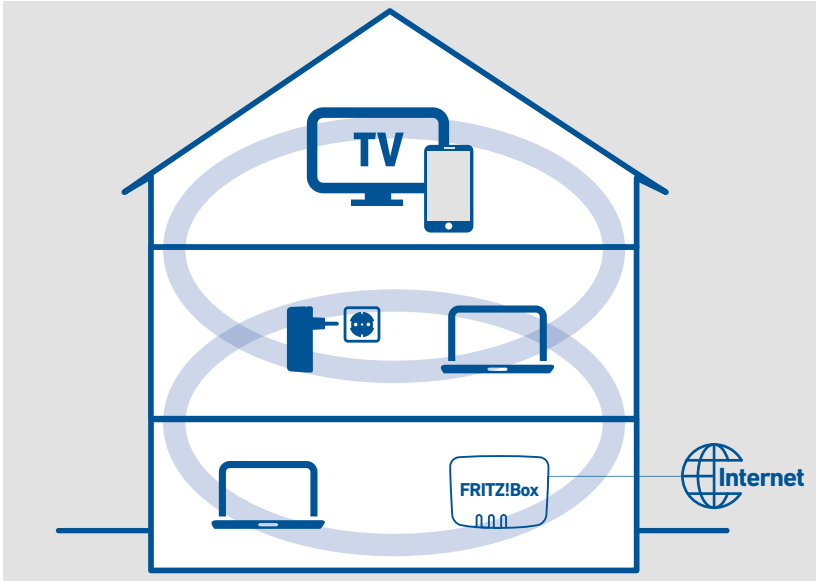
The following conditions favor the extension of your FRITZ!Box's wireless radio signal:

- 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](https://www.avm.de/en/avm.de/products/fritzwlan)

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



For instructions, see the Online Help at: "Wireless / Repeater".

Configuring Your Telephone Numbers

Overview

The following telephone numbers must be configured in the FRITZ!Box:

- Landline telephone numbers you would like to assign to telephones, answering machines and other devices
- Internet telephone numbers 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 63](#).
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).

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 63](#).
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 / Energy Consumption”.

Using Savings Potential

What	How	Where
Wireless	Set up a wireless LAN schedule, see page 165	“Wireless LAN / Schedule” menu
	Switch off wireless LAN, see page 165	• “Wireless / Radio Network” menu
	Reduce the maximum transmitter power	“Wireless / Radio Channel” menu
LAN	Use the LAN port in energy-saving (Green) mode	“Home Network / Home Network Overview / Network Settings” menu
USB	Use the USB port in energy-saving (Green) mode, see page 157	“Home Network / USB Devices / USB Settings”

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 timer. At the same time, they inform the FRITZ!Box about consumption, energy costs incurred, and the CO₂ footprint.

Instructions: Configuring a Timer for Electrical Appliances in the Home Network



For instructions, see the Online Help at: "Home Network / Smart Home".

User Interface: Menu Overview

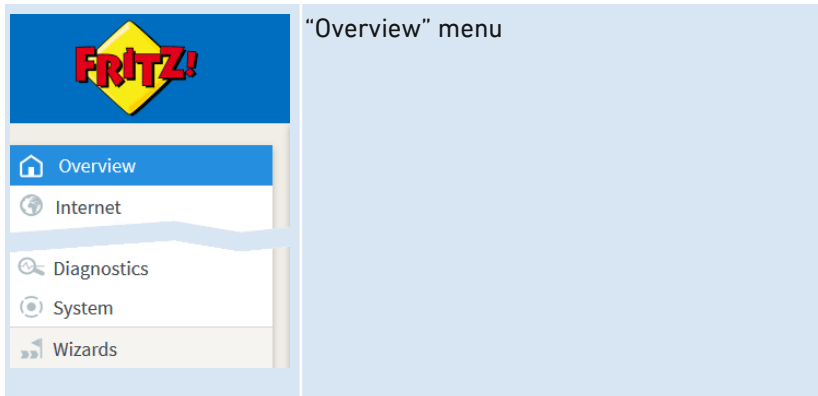
Menu Overview: Settings and Features 93

Menu Overview: 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.



The FRITZ!Box User Interface

For a comprehensive description of the FRITZ!Box user interface: [see User Interface, page 62.](#)

User Interface: Internet Menu

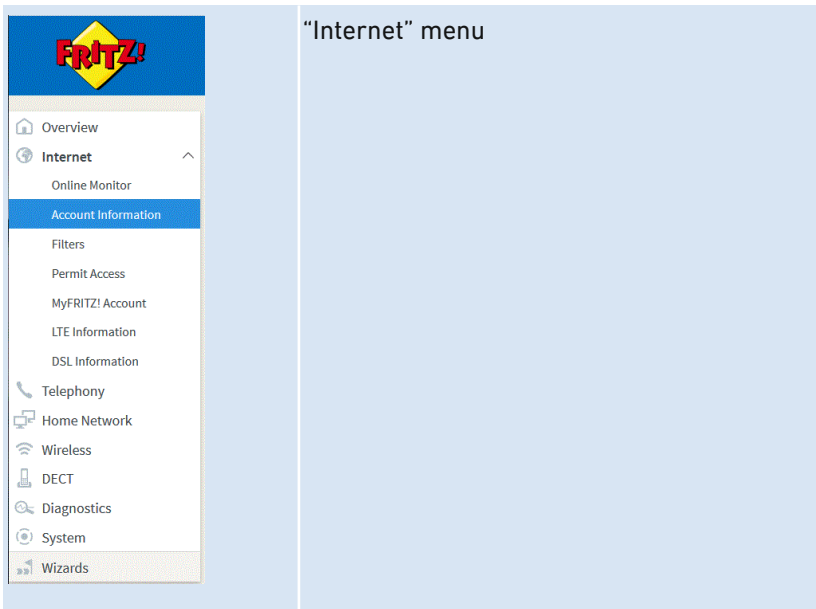
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Internet Menu: Settings and Features

Overview

The “Internet” menu pools all of the features that have to do with the internet. Here is where you configure your internet connection, and use access profiles to control the use of the internet in your network, for instance by setting up blacklists and whitelists. For secure access to the FRITZ!Box from the internet you can set up a MyFRITZ! account using an email address and password. FRITZ!Box users interested in technology can read information on the LTE connection and the DSL 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:

Criterion	Description
Online time	Specifies when and for how long internet access is permitted
Permitted websites	Specifies which websites may be accessed
Internet access for network applications	Specifies which network applications are allowed to communicate over the internet (for instance, file sharing programs or chat platforms)

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 web sites 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.

Filter List	Function and Use
Blacklist	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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".

Configuring Priorities for Internet User

Overview

For network devices or network applications you can define different priorities for access to the internet connection. You can reserve bandwidth for the home network whenever the guest network of the FRITZ!Box is in use.

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 and 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.

Reserving Bandwidth for the Home Network

All of the network devices connected with the FRITZ!Box share the bandwidth available on the connection. This means that devices in the home network and in the guest network have to share bandwidth. You

can reserve bandwidth for the home network. Whenever the bandwidth reserved for the home network is not needed, it can be used by the devices in the guest network.

Instructions: Configuring Priorities



For instructions, see the Online Help at: “Internet / Filters / Prioritization”.

Setting Up 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:

Protocol	Internet Protocol	Explanation
PING	IPv4	The FRITZ!Box responds to ping inquiries from the internet addressed to the IPv4 address of the FRITZ!Box.
	IPv6	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.

Protocol	Internet Protocol	Explanation
TCP UDP	IPv4	Within IPv4 networks you can open the FRITZ!Box firewall for the protocols TCP and UDP when entering the port range. One port can be opened for exactly one computer.
	IPv6	Within IPv6 networks you can open the FRITZ!Box firewall for the protocols TCP and UDP when entering the port range. One port can be opened for each computer in the network.
ESP GRE	IPv4	Within IPv4 networks you can open the firewall for the two protocols ESP and GRE, which do not use ports.

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 though 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 215](#).

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 71](#)).

Instructions: Enabling Dynamic DNS



For instructions, see the Online Help at: "Internet / Permit Access / DynDNS".

Accessing the FRITZ!Box Remotely

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

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

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 which 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

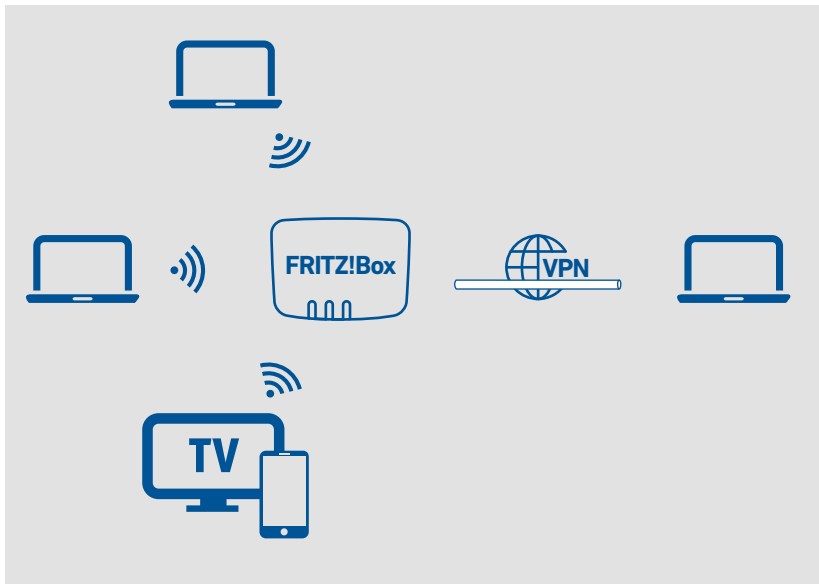
VPN stands for Virtual Private Network. Via VPN a secure remote access to the network of the FRITZ!Box can be established. The connection is established via the internet. The data are transmitted in encrypted form via what is known as a tunnel. This excludes the possibility of unauthorized access to 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 214.

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 years ahead. 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

Home Network / Internet	Services that Support IPv6
IPv6-capable services in the home network	<ul style="list-style-type: none"> • 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

Home Network / Internet	Services that Support IPv6
IPv6-capable services in the internet	<ul style="list-style-type: none"> • FRITZ!NAS access via FTPS • Completely closed firewall to protect against unsolicited data from the internet (Stateful Inspection Firewall) • Voice over IPv6 • Automatic provisioning (TR-069) • Time synchronization over NTP (Network Time Protocol) • Remote access via HTTPS • Dynamic DNS via dyndns.org or namemaster.de

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 71](#).

Instructions: Configuring IPv6 in the FRITZ!Box



For instructions, see the Online Help at: "Internet / Account Information / IPv6".

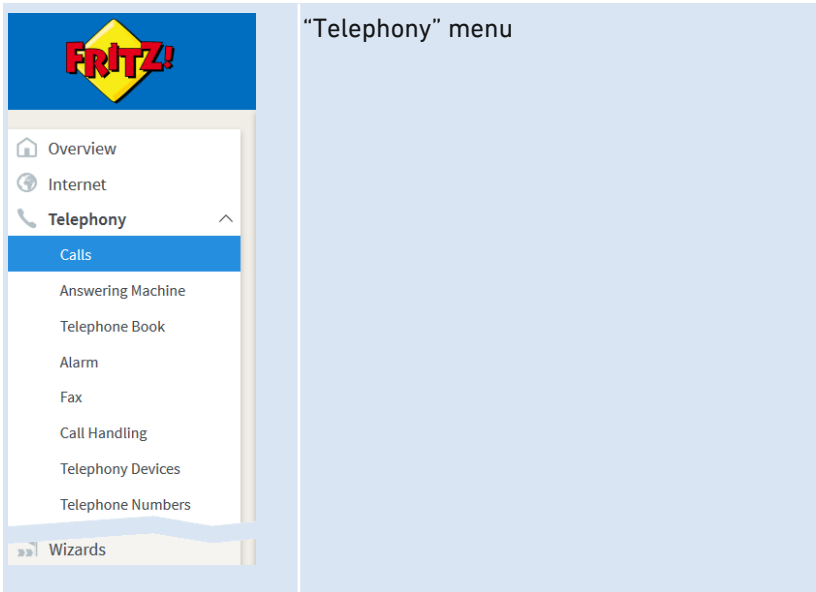
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Telephony Menu: Settings and Features

Overview

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:

Telephone	Available Functions
FRITZ!Fon	<ul style="list-style-type: none"> • Telephone book available in the FRITZ!Fon menu • Option for separate telephone books for multiple FRITZ!Fon telephones • Quick-dial numbers • Click to Dial
Cordless telephone with CAT-iq 2.0 support	<ul style="list-style-type: none"> • Telephone book available in the telephone menu • Quick-dial numbers • Click to Dial
Others	<ul style="list-style-type: none"> • Quick-dial numbers • Click to Dial

Kinds of Telephone Books

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

Telephone Book	Description
Local telephone book	The entire telephone book is saved in the FRITZ!Box.

Telephone Book	Description
Online telephone book	<p>Online telephone books include Google Contacts and the contacts of email accounts with 1&1, GMX or WEB.DE.</p> <p>The online telephone book is available in the FRITZ!Box and synchronized with your telephone book in the internet at regular intervals.</p>

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 5).

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 232](#).

[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 234](#).

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 per fax. If you append a graphics file, the second page is reserved for the graphics.



If you would like to check 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”.

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:

Call Block for	Function
Outgoing calls	The blocked telephone number can no longer be called from the FRITZ!Box. Ranges of telephone numbers can also be blocked, for instance, mobile networks, or all telephone numbers that begin with 0180.
Incoming calls	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.
Calls without a telephone number (anonymous calls)	The FRITZ!Box will not accept any calls from callers who suppress their telephone number.

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 to be woken up by your telephone 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 in a certain number range, for instance to mobile networks or abroad.

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”.

Configuring Call-by-Call Numbers

Overview

You can configure call-by-call numbers (provider prefixes) in the FRITZ!Box. A call-by-call number is dialed before the actual telephone number to place an outgoing call. The provider prefix ensures that you conduct the call at a discount via the provider with that prefix rather than via your telephone provider.

Example

You would like to use an economic call-by-call prefix for international calls.

Requirements

- Your telephone provider must allow the use of call-by-call prefixes.

Instructions: Configuring Call-by-Call Numbers



For instructions, see the Online Help at: “Telephony / Call Handling / Provider Prefixes”.

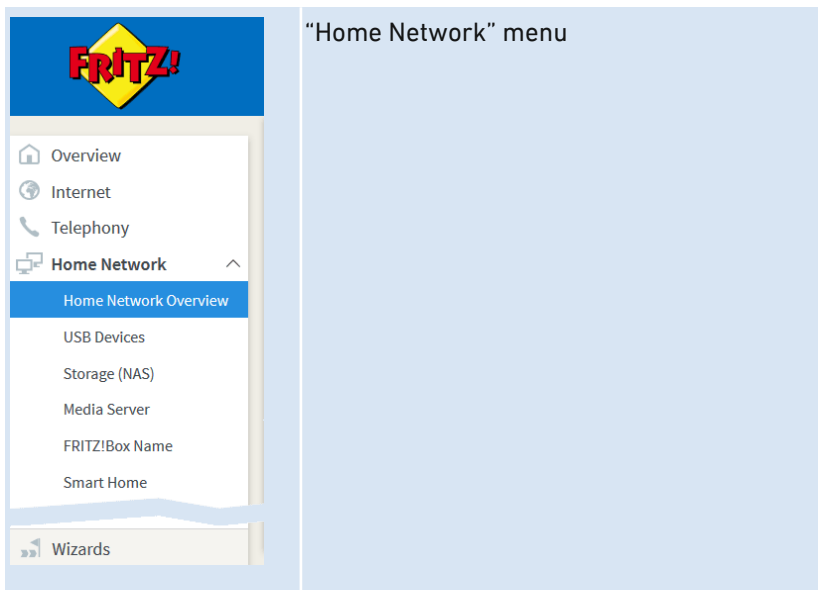
User Interface: Home Network Menu

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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 graphical 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 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 communications 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:

Column Name	Contents / Advantages
Device / Name	The name or the designation with which the device is registered with the FRITZ!Box.
Connection	The connection technology with which the device is connected with the FRITZ!Box. Click the link to open the page with connection settings.

Column Name	Contents / Advantages
Properties	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.
FRITZ!Box Update	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.

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

Term	Explanation
Network device	<p>Network devices are devices that are connected with the FRITZ!Box in one of the following ways:</p> <ul style="list-style-type: none"> • with a network cable to a LAN port on the FRITZ!Box • via wireless LAN • via the internet with a VPN connection (see page 108)
Network	All network devices on the FRITZ!Box comprise a network.
Internet protocol (IP)	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.
IP network	A network based on the internet protocol is also known as an IP network. Connections within an IP network are known as IP connections.

Term	Explanation
Network interface	A network interface as 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.

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 sometimes connected 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 there are Windows computers in the home network 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.

Add 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 71](#).

IPv4 Factory Settings

The following values are preconfigured in the FRITZ!Box:

IPv4 Setting	Preset Value
IPv4 address of the FRITZ!Box	192.168.178.1
Subnet mask	255.255.255.0

IPv4 Setting	Preset Value
IPv4 network address	192.168.178.0
Address range available for network devices	192.168.178.2 - 192.168.178.254
DHCP server	enabled
Address range of the DHCP server	192.168.178.20 - 192.168.178.200
Local DNS server	192.168.178.1

Reserved IPv4 Addresses

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

IPv4 Address	Purpose
192.168.178.1	IPv4 address of the FRITZ!Box
192.168.178.255	Broadcast address. This address is used to send messages within the network. The messages are received by all network devices.

IPv4 Address in Case of Emergency

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

IPv4 Address	Purpose
169.254.1.1	The FRITZ!Box can always be reached at this IPv4 address.

For instructions for using the emergency IPv4 address, see [Opening the User Interface with the Emergency IP Address, page 254](#).

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.

IPv4 Addresses Reserved for the DHCP Server upon Delivery

192.168.178.20 - 192.168.178.200

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

Kind of Change	Need
Enlarge	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

Kind of Change	Need
Reduce	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
Move	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

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” must be enabled in the IPv4 settings of the network devices; see [Obtaining an IP Address Automatically, page 144](#).

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 assigns 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 71.
- 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:

Topic	Setting
Unique Local Addresses (ULA)	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.
Additional IPv6 routers in the home network	This FRITZ!Box provides the default IPv6 connection. Other IPv6 routers are disregarded.
DNSv6 server in the home network	Also announce DNSv6 server via router advertisement.
DHCPv6 server in the home network	The DHCPv6 server is enabled. Only the DNS server is announced via DHCPv6.

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 71.

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

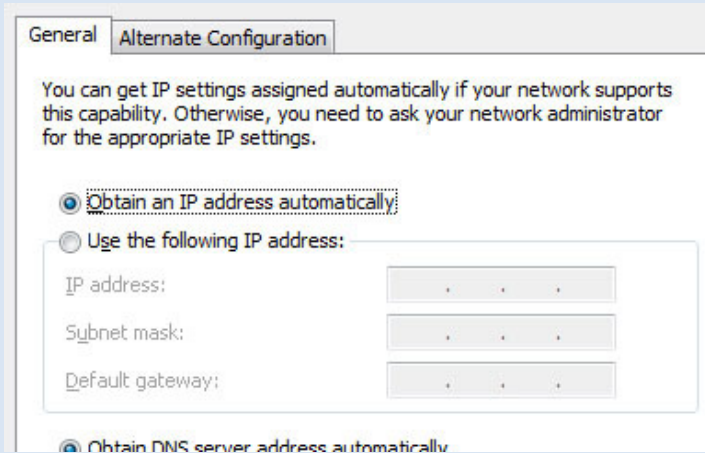
Overview

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”.



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. Switch to the “TCP/IP” settings page and select the “Using DHCP:” option from the “Configure IPv4” drop-down menu.
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.

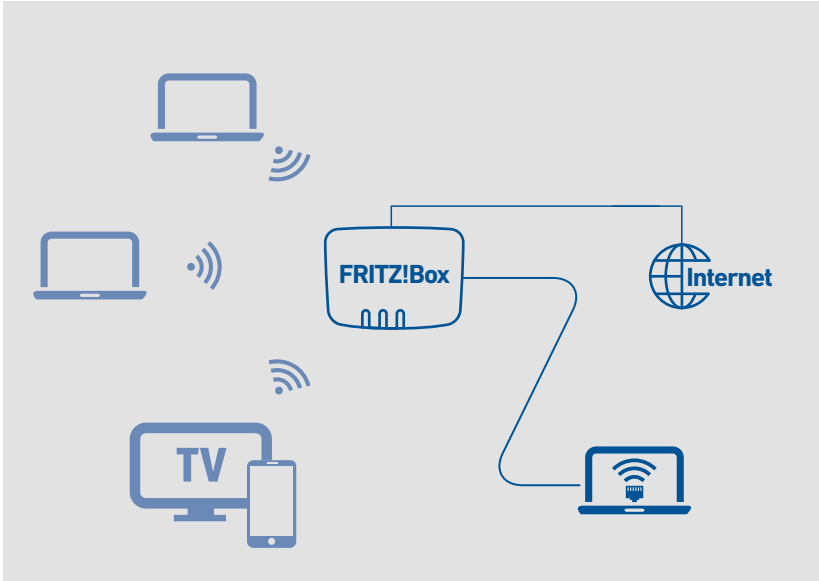
Criteria

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:

Your Guests Can	Your Guests Cannot
Surf the web (according to the filters you specified)	Access the contents of the home network
Send and receive email	Configure settings in the FRITZ!Box user interface

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, without wasting electricity by keeping 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

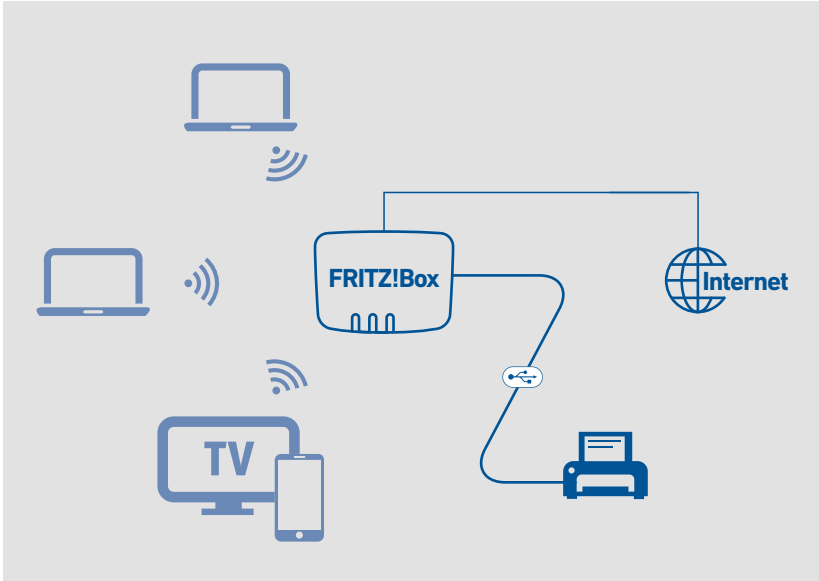
The FRITZ!Box has a USB port to which you can connect various USB devices. All devices in the FRITZ!Box home network can use these USB devices jointly and simultaneously.

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 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 can not 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 USB 2.0 and USB 3.0

For power saving operation of the FRITZ!Box the "Home Network / USB Devices / USB Settings" menu in the user interface offers the following settings for the USB port:

Power Mode (USB 3.0)	Green Mode (USB 2.0)
Full power: up to 3 times faster than USB 2.0	Reduced power
Increased power consumption	Reduced power consumption
Preset	



Operating USB devices at a USB port in "Power Mode" may result in slower data transmission in the 2.4-GHz wireless network and poor voice quality in telephone calls with DECT cordless telephones.

The occurrence of interference depends on the quality of the USB cable used. To remedy interference, select "Green Mode" and/or switch to wireless LAN in the 5-GHz band.

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.

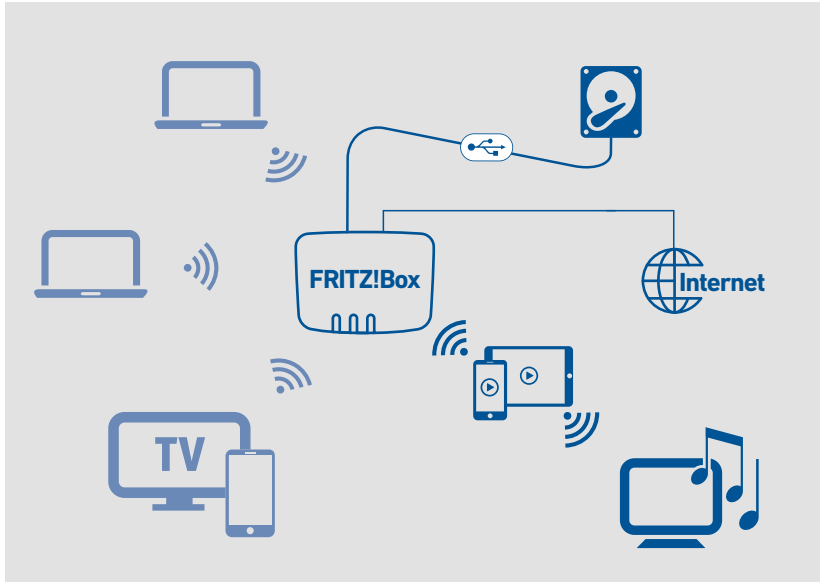
Criteria

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

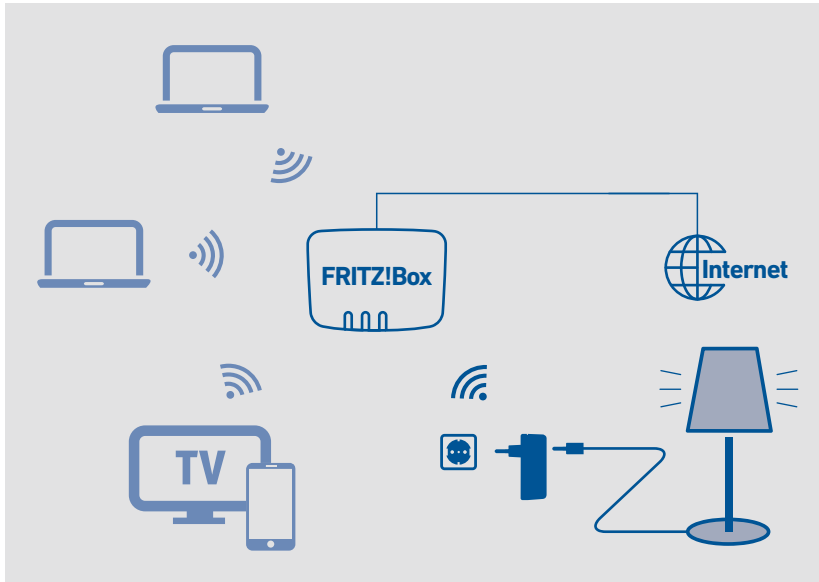
Overview

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 300/Comet DECT radiator controls

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, table, or smartphone, and even via the internet from on the go.

Example Configuration



Requirements

- A 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”.

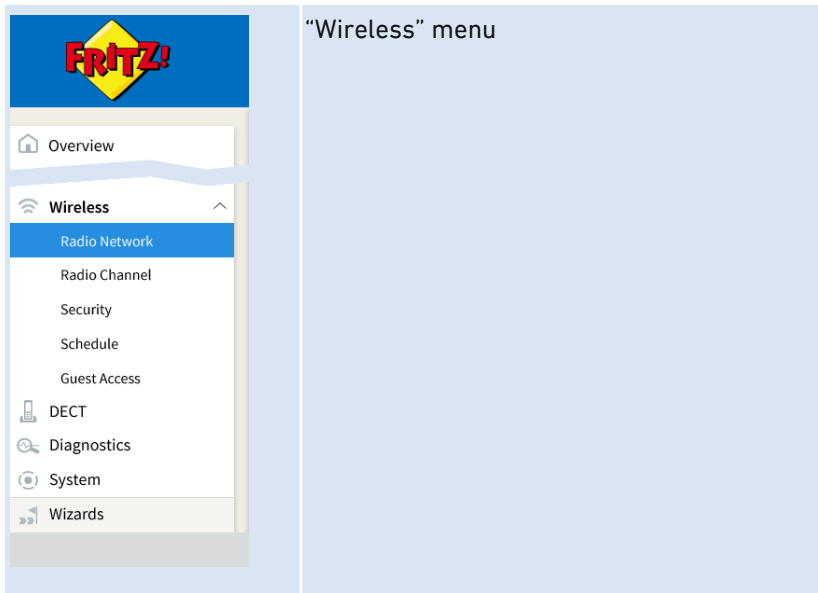
User Interface: Wireless Menu

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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 230](#) and see [Instructions: Switching Wireless LAN Off, page 231](#)
- in the menu of a connected FRITZ!Fon cordless telephone

Instructions: Switching Wireless LAN 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:

	2.4 GHz	5 GHz
Advantages	Greater range – supported by older and newer clients	Less busy, therefore less interference
Dis-advantages	Subject to heavy use, therefore often lots of interference	Lower range – only supported by newer clients
Recommendation	Use for applications that require a low to normal throughput rate (for instance, reading and writing email).	Use for applications that rely on a steady, high throughput rate (for instance, streaming).

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 monit-

or, microwave oven). 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



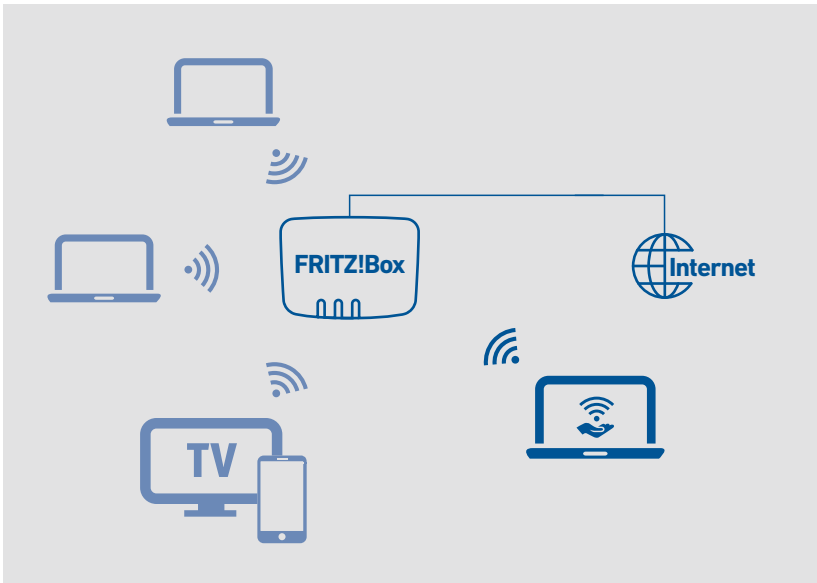
For instructions, see the Online Help at: “Wireless / Radio Channel”.

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".

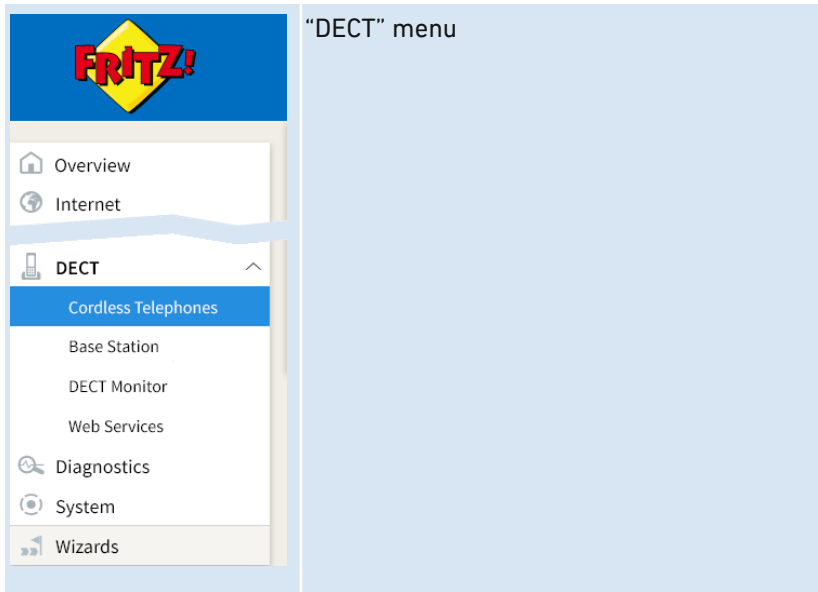
User Interface: DECT Menu

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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 can not be used if you allow non-encrypted connections:

- Registering 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 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 63](#).
2. Select the “DECT / Base Station” menu.
3. Enable or disable the “DECT base station enabled” checkbox.
4. Click “Apply”.

User Interface: Diagnostics Menu

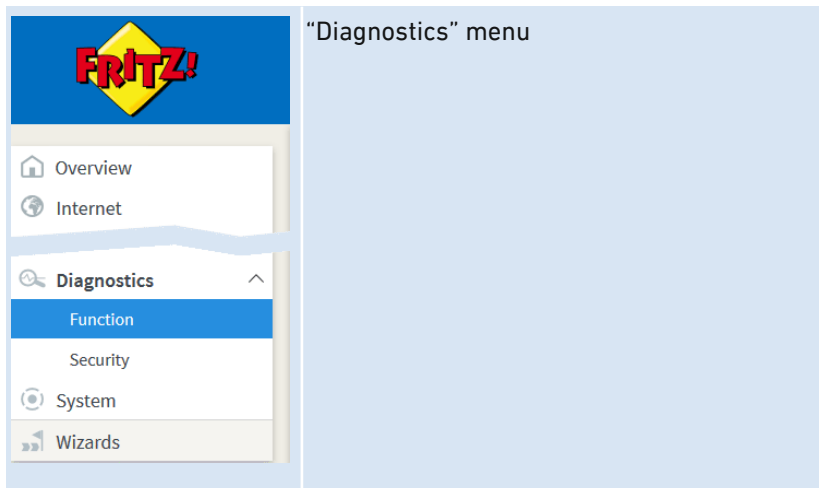
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Diagnostics Menu: Settings and Features

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, its internet connection and about your home network. 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:

Area	Checkpoint / Status
FRITZ!Box 6890 LTE	<ul style="list-style-type: none"> Name of the FRITZ!Box FRITZ!Box version FRITZ!IOS up to date
Login	Configured kind of login to the FRITZ!Box user interface
LAN	<ul style="list-style-type: none"> Allocation of LAN ports Power settings on LAN ports
Wireless LAN	<ul style="list-style-type: none"> Wireless LAN frequency band enabled/disabled with wireless LAN Number of wireless LAN devices connected Security settings
DECT	<ul style="list-style-type: none"> DECT enabled/disabled Number of DECT devices connected

Area	Checkpoint / Status
USB devices	<ul style="list-style-type: none"> • Number of storage media connected • Number of partitions • Connected printers
Mobile connection	<ul style="list-style-type: none"> • State of the mobile connection • Download and upload rate
Internet connection	<ul style="list-style-type: none"> • IPv4 connection active since/not active • IPv6 connection active since/not active • Current IP address
DSL connection	If the internet connection check is negative, the DSL connection is checked.
Telephone numbers	Count and number of own telephone numbers
MyFRITZ!	<ul style="list-style-type: none"> • Status of the MyFRITZ! activation • MyFRITZ! account email address
Home network	<ul style="list-style-type: none"> • 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 with the FRITZ!Box and much more.

Security Diagnostics Test Points

The following areas are checked:

Area	Checkpoint / Status
FRITZ!OS	<ul style="list-style-type: none"> FRITZ!Box version FRITZ!OS up to date
Login	Configured kind of login to the FRITZ!Box user interface
Internet connection	<ul style="list-style-type: none"> Opened ports on the FRITZ!Box Protocols used on these ports Port sharing for home network devices to the internet Filters for internet access
MyFRITZ!	<ul style="list-style-type: none"> Status of the MyFRITZ! activation MyFRITZ! account email address Registration link for MyFRITZ! Overview of MyFRITZ! sharing for access from the internet

Area	Checkpoint / Status
Outgoing filters	Overview of active filters for access from the internet
Wireless	<ul style="list-style-type: none">• Properties and security-relevant settings for access to the wireless network and wireless guest access• Names of registered and known wireless devices
Telephony	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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.

Area	Checkpoint / Status
FRITZ!NAS	Access rights to the FRITZ!Box storage media with the following details: <ul style="list-style-type: none"><li data-bbox="448 272 956 336">• which user has access to which storage media<li data-bbox="448 363 981 395">• which rights (write and read) are included<li data-bbox="448 422 964 486">• 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

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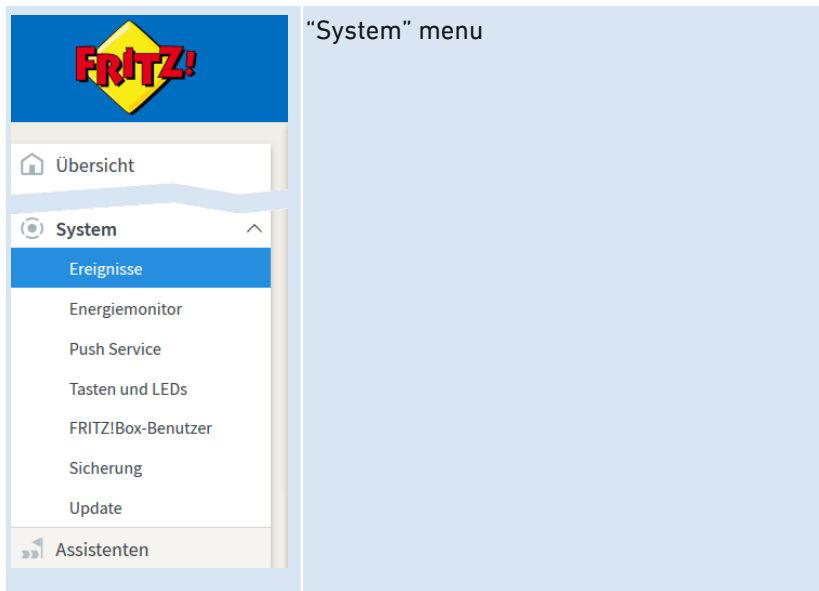
System Menu: Settings and Functions

Overview

The “System” menu shows you all system-relevant events and supplies you with 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.

In the “Update” menu you can also specify how the operating FRITZ!OS system is kept up to date.



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 housing of the FRITZ!Box
- on the enclosed FRITZ! Notice

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 188](#).

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:

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

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.

Characters Allowed	Illegal Characters
<ul style="list-style-type: none"> • Letters from a to z in lower case and upper case 	<ul style="list-style-type: none"> • Letter ß • Umlauts ä, ö, ü in upper and lower case
<ul style="list-style-type: none"> • Numerals 0 to 9 	
<ul style="list-style-type: none"> • Spaces 	
<ul style="list-style-type: none"> • Special characters: _ - ! " # \$ % & ' () * + , . / : ; < = > ? @ [\] ^ ' { } ~ 	<ul style="list-style-type: none"> • Special characters: § ´

- 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.



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 you will have to 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”.

Creating FRITZ!Box Users

Overview

You can set up as many as 18 user accounts in the FRITZ!Box. A FRITZ!Box user opens the user interface of the FRITZ!Box by entering her or his personal password. There she or he can view and change those contents or settings for which she or he has 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 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 over your FRITZ!Box temporarily. Use the guest access of the FRITZ!Box instead; see [Configuring Wireless Guest Access, page 168](#).

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:

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

	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, in the user account you define 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.

Characters Allowed for User Names	Illegal Characters for User Names
<ul style="list-style-type: none"> • Letters from a to z in lower case and upper case 	<ul style="list-style-type: none"> • Letter ß • Umlauts ä, ö, ü in upper and lower case
<ul style="list-style-type: none"> • Numerals 0 to 9 	
<ul style="list-style-type: none"> • Spaces 	
<ul style="list-style-type: none"> • Special characters: - _ , . 	Special characters: ! " § # \$ % & ' (*) + / : ; < = > ? @ [\] ^ ' ' { } ~

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

Characters Allowed for Passwords	Illegal Characters for Passwords
<ul style="list-style-type: none"> • Letters from a to z in lower case and upper case 	<ul style="list-style-type: none"> • Letter ß • Umlauts ä, ö, ü in upper and lower case
<ul style="list-style-type: none"> • Numerals 0 to 9 	
<ul style="list-style-type: none"> • Spaces 	
<ul style="list-style-type: none"> • Special characters: _ - ! " # \$ % & ' (*) + , . / : ; < = > ? @ [\] ^ ' { } ~ 	<ul style="list-style-type: none"> • Special characters: § ´

- 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:

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

Push Service	Function
New FRITZ!OS	Notifies you whenever a new FRITZ!OS version is available for your FRITZ!Box
Save settings	Saves the settings of the FRITZ!Box before each update and every time the factory settings are restored, and forwards these settings by email
Forgot password	Sends you an access link to the specified email address if you have forgotten your password
Current IP address	Sends the IP address assigned by the internet service provider every time the internet connection is established
Change notice	Sends you an email every time changes are made to a FRITZ!Box setting or when potentially security-relevant events occur.

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 \(light-emitting diodes\), page 25](#). 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 keys 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 196](#)). 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.

Instructions: Updating FRITZ!OS via Wizard



Interrupting the 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 63](#).
2. On the "Overview" page, select the "Wizards" menu.
3. Start the "Update" wizard.

The "System / Update" 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 the 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 sub-folder “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 63](#).
5. Enable the advanced view; [see page 71](#).
6. Select “System / Update / FRITZ!OS File”.
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 automatic-ally, or only critical updates, such as security updates, or whether you would rather just be informed about a new version of FRITZ!OS.

The "Auto Update" function offers you the following methods:

Procedure	Description
Notify about new FRITZ!OS versions	<ul style="list-style-type: none"> <li data-bbox="501 475 1002 579">• The FRITZ!Box indicates that a new version of FRITZ!OS is available on the "Overview" page. <li data-bbox="501 603 1002 675">• You start the update yourself; see page 196.
Notify me about new versions of FRITZ!OS and install necessary updates automatically (recommended)	<ul style="list-style-type: none"> <li data-bbox="501 707 1002 842">• The FRITZ!Box indicates that a new version of FRITZ!OS is available on the "Overview" page. You start the update yourself; see page 196. <li data-bbox="501 866 1002 1050">• Updates which AVM regards as necessary for continued secure and reliable operation (for instance, security updates) will be installed automatic-ally. <li data-bbox="501 1074 1002 1145">• The FRITZ!Box selects a suitable time for the update, generally at night. <li data-bbox="501 1169 1002 1273">• During the installation all internet and telephony connections will be interrupted briefly.

Procedure	Description
Notify me about new versions of FRITZ!OS and install new versions automatically	<ul style="list-style-type: none">• The FRITZ!Box indicates that a new version of FRITZ!OS is available on the "Overview" page.• Every new version of FRITZ!OS 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 Update



For instructions, see the Online Help at: "System / Update / Automatic Update".

Disabling Automatic Update



For instructions, see the Online Help at: "Internet / Account Information / AVM Services".

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.

Saving FRITZ!NAS Data

If you have saved data on the internal storage of your FRITZ!Box, you should back them up as well. For instructions, [see Saving FRITZ!NAS Storage, page 213](#).

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 259](#).

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 205



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:

Wizard	Function
Manage Telephony Devices	Connecting and configuring the following devices: <ul style="list-style-type: none"> • Telephones • Answering machine • Fax machines • ISDN telephone systems (PBXs) • Cordless (DECT) telephones
Manage Telephone Numbers	Adding and editing telephone numbers
Configure Internet Connection	Configuring and checking your internet connection
Check the Status of the FRITZ!Box	Diagnostics of the functional status of your FRITZ!Box, its internet connection and the home network connection to the FRITZ!Box
Security	<ul style="list-style-type: none"> • Diagnostics of FRITZ!Box settings that regulate access to the FRITZ!Box from the internet or in the home network • Indications of potentially insecure settings
Save and Restore Settings	Saving and restoring the FRITZ!Box settings
Update	Checks whether a new version of FRITZ!OS is available for your FRITZ!Box

Wizard	Function
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> 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

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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

No.	Area	Function
1	Toolbar	<ul style="list-style-type: none"> • Uploading and downloading files • Editing folders and folder contents • Shared (folders and files that are released for sharing from the internet) • View (list and tile view) • Refresh
2	Search mask	Search for file names
3	Path	Path name
4	Display surface	Display of all folders and folder contents

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 NAS 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 / Overview of Devices” and “Home Network / USB Devices / USB Settings”.

Displaying FRITZ!NAS Storage in a File Manager

Overview

You can display the NAS storage of your FRITZ!Box in the file manager of your computer. This section describes how to proceed in doing so.

Requirements

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

Instructions: Displaying FRITZ!NAS Storage in Windows Explorer

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

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

Instructions: Displaying FRITZ!NAS Storage 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 NAS 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 order you specified. This concludes the saving of your data from the internal memory of the FRITZ!Box.

MyFRITZ!

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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.

Kind of Access	MyFRITZ! Access
Via mobile device	<ul style="list-style-type: none"> • 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.

Can Be Used with MyFRITZ!	Authorization
Call list	View the call list of your FRITZ!Box
Answering machine	Listen to voice messages
NAS storage (FRITZ!NAS)	Access documents and media data in the NAS storage of your FRITZ!Box

Can Be Used with MyFRITZ!	Authorization
Smart Home	<ul style="list-style-type: none">• 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 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 2, 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".

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 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.
4. Open the MyFRITZ!App.
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 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! via 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

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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:

Type of Telephone	Dial Keypad Code
Telephone without call button	<ul style="list-style-type: none"> • Pick up the handset. • Enter the keypad code. • Hang up.
Telephone with call button (usually green)	<ul style="list-style-type: none"> • Enter the keypad code. • Press the "Call" ("Connect") button. • Press the "End Call" button.





Configuration on the Telephone

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.





Telephone without Call Button	Telephone with Call Button
	
<p>Configure immediate call diversion to destination call number <DCN>:</p> <p style="text-align: center;">*21* <DCN> *#</p> <p>Configure call diversion after 20 seconds to destination call number <DCN>:</p> <p style="text-align: center;">*61* <DCN> *#</p> <p>Configure call diversion on busy to the destination call number <DCN>:</p> <p style="text-align: center;">*67* <DCN> *#</p>	
	
<p style="text-align: center;">Wait for acknowledgment tone</p>	
	

Instructions: Switching Off Call Diversion for All Calls





Telephone without Call Button	Telephone with Call Button
	
<p>Switch off immediate call diversion: *21**#</p> <p>Switch off delayed call diversion: *61**#</p> <p>Switch off call diversion on busy: *67**#</p>	
	
<p>Wait for acknowledgment tone</p>	
	

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.





Telephone without Call Button	Telephone with Call Button
	
<p>Switch on immediate call diversion to destination call number <DCN>:</p> <p style="text-align: center;">*21* <DCN> * <TN> #</p> <p>Switch on call diversion after 20 seconds to destination call number <DCN>:</p> <p style="text-align: center;">*61* <DCN> * <TN> #</p> <p>Switch on call diversion on busy to the destination call number <DCN>:</p> <p style="text-align: center;">*67* <DCN> * <TN> #</p>	
	
<p style="text-align: center;">Wait for acknowledgment tone</p>	
	

Instructions: Switching Off Call Diversion for One Telephone Number





Telephone without Call Button	Telephone with Call Button
	
<p>Switch off immediate call diversion: *21**<TN>#</p> <p>Switch off delayed call diversion: *61**<TN>#</p> <p>Switch off call diversion on busy: *67**<TN>#</p>	
	
<p>Wait for acknowledgment tone</p>	
	

Instructions: Switching Wireless LAN On

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

Telephone without Call Button	Telephone with Call Button
	
Switch wireless LAN on: # 9 6 * 1 *	
	
Wait for acknowledgment tone	
	

Instructions: Switching Wireless LAN Off



Telephone without Call Button	Telephone with Call Button
	
<p>Switch wireless LAN off: #96*0*</p>	
	
<p>Wait for acknowledgment tone</p>	
	

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:

Telephone without Call Button	Telephone with Call Button
	
<p>Establish a connection to the answering machine:</p> <ul style="list-style-type: none">⓪⓪600 (answering machine 1)⓪⓪601 (answering machine 2)⓪⓪602 (answering machine 3)⓪⓪603 (answering machine 4)⓪⓪604 (answering machine 5)	
	
<p>Follow the voice menu</p>	

Voice Menu of the Answering Machine

Main Menu (Level 1)	Level 2	Level 3
1 Play back messages	3 Return call 5 Delete message 7 To previous message 9 To next message	
2 Delete all messages		
3 Answering machine on/off		
4 Record a greeting	1 Greeting message 2 Greeting for announcement mode 3 Closing message	1 Listen to all greetings, select greeting with 2 5 Delete greeting/announcement 8 Record greeting, end with 1
5 Enable recording/announcement mode (no messages recorded in announcement mode)		

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).

Telephone without Call Button	Telephone with Call Button
	
<p>Press the following keys:</p> <p>* 0 9</p>	
	

Instructions: Making Internal Calls

You can conduct free internal calls between connected telephones.

Telephone without Call Button	Telephone with Call Button
	
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.

Telephone without Call Button	Telephone with Call Button
	
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.



Telephone without Call Button	Telephone with Call Button
<p>During the call with the party 1, press the hold button:</p> <p style="text-align: center;">R</p> <p style="text-align: center;">The call is on hold.</p>	
<p>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).</p>	
<p>When party 2 accepts the call, connect party 1 and party 2 with each other:</p>	
	<p>On cordless telephones:</p> <p style="text-align: center;">*4</p> <p>Others:</p> <p style="text-align: center;"></p>
<p>If party 2 cannot be reached, back to party 1:</p> <p style="text-align: center;">R 1</p>	

Instructions: Specifying the Telephone Number for the Next Call

If you have multiple telephone numbers, when dialing a call you can specify which telephone number the FRITZ!Box uses to make the call. Dialing rules are disregarded for this call.

Telephone without Call Button	Telephone with Call Button
	
<p>Select your telephone number:</p> <p>Landline: *111#</p> <p>Internet telephone number 1 (under "Telephone Numbers" in the user interface): *121#</p> <p>Internet telephone number 2: *122#</p> <p>Other internet telephone numbers: *123# and so on</p>	
<p>Enter the external telephone number</p>	
	

Instructions: Suppressing Telephone Number Once

Telephone without Call Button	Telephone with Call Button
	
<p>Press the following keys:</p> <p>* 3 1 #</p>	
<p>Enter the external telephone number</p>	
	

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.

Telephone without Call Button	Telephone with Call Button
<p>During the call with the party 1, press the hold button:</p> <p style="text-align: center;">R</p> <p>Call 1 is on hold.</p>	
	<p>To establish the call with party 2, enter an internal or external telephone number.</p>
	<p>When party 2 accepts the call, establish the three-party conference:</p> <p style="text-align: center;">R 3</p>
	<p>If party 2 cannot be reached, back to party 1:</p> <p style="text-align: center;">R</p>
	<p>During the three-party conference call you can:</p> <p>Interrupt the conference (you speak with party 1, call 2 is on hold):</p> <p style="text-align: center;">R 2</p> <p>Switch back and forth between parties 1 and 2 (alternate): R 2</p> <p>Restore an interrupted conference: R 3</p> <p>End call 2 and continue with call 1: R 1</p> <p>End the active call and continue the other call: Hang up, wait until your telephone rings and pick up</p>



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.

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

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.


Telephone without Call Button	Telephone with Call Button
	
<p>Press the following keys (<Seq> is the keypad shortcut):</p> <p style="text-align: center;">* # <Seq></p>	
	

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.

Telephone without Call Button	Telephone with Call Button
	
<p>Switch on the alarm:</p> <p># 8 8 1 * *</p>	
	
<p>Wait for acknowledgment tone</p>	
	

Instructions: Disabling an Alarm

Telephone without Call Button	Telephone with Call Button
	
<p>Switch alarm off: #881#</p>	
	
<p>Wait for acknowledgment tone</p>	
	

Operation on the Telephone (ISDN Convenience Features)



Overview

The following convenience features can be used if the FRITZ!Box is connected with an ISDN line.

Instructions: Callback on No Reply



You can enable a call-back for internal and external calls in the following cases:

- The telephone number called is busy. You will be called back when the telephone number is free again.
- The party called did not accept your call. You will be called back the next time the party ends a call.

Telephone without Call Button	Telephone with Call Button
Press the following key before hanging up: <div style="text-align: center;">5</div>	
Wait for acknowledgment tone	
	

Instructions: Enabling Tracing

The tracing feature (also known as MCID, malicious call identification) allows the recording of call data for a caller suppressing her or his caller ID. This feature has to be enabled for your ISDN line.

Telephone without Call Button	Telephone with Call Button
During a call, or after the caller hangs up, press the following keys: R * 3 9 #	
	
Tracing is enabled. For more information on the “tracing” feature, contact your ISDN provider.	

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 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

Telephone without Call Button	Telephone with Call Button
	
<p>Restore factory settings to FRITZ!Box: #991*15901590*</p>	
	
<p>Wait for acknowledgment tone</p>	
	

Malfunctions

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Troubleshooting Procedures

Overview

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

Error Scenario	Remedy
No access to the user interface	Troubleshooting chart; see page 250
Comprehensive help for problems with: <ul style="list-style-type: none"> • Connections • Configure • Telephony • Internet • Wireless LAN • etc. 	Knowledge Base; see page 256
Troubleshooting chart and Knowledge Base do not offer a solution.	Support, see page 257

Troubleshooting Chart

Overview

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

Troubleshooting Chart

Error Scenario	Cause	Solution
LEDs not on	Power supply interrupted	<ul style="list-style-type: none"> • Make sure the power supply unit is connected properly. • Try plugging in a different device to make sure that the electrical outlet is active.
Cannot establish a wireless LAN connection	Computer's wireless LAN adapter not ready for operation	Switch on your computer's wireless LAN adapter. For details, consult the manual of your computer.
	Wireless radio network of the FRITZ!Box switched off	When the "WLAN" LED is off, press the "WLAN" button on the FRITZ!Box. Hold it down until the "WLAN" LED begins flashing.
	Computer cannot find the wireless network of the FRITZ!Box	Enable the "Name of the radio network visible" function ("Wireless / Radio Network") in the FRITZ!Box user interface.

Error Scenario	Cause	Solution
Cannot establish a wireless LAN connection	Incorrect network key	Enter the correct network key ("Wireless / Security").
The user interface does not open	Path name incorrect	Open the user interface by entering its complete address (http://fritz.box instead of fritz.box).
	FRITZ!Box has crashed	Remove the FRITZ!Box from the power mains and restart the FRITZ!Box again after about five seconds.
	Cache is full	Empty the cache of your web browser. For more information on this, see the help of your web browser.
	Proxy configuration does not allow the FRITZ!Box address	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. For more information on this, see the help of your web browser.

Error Scenario	Cause	Solution
The user interface does not open	Computer is not configured to obtain IP address automatically	On your computer, enable the setting "Obtain an IP address automatically" for the network adapter used to connect to the FRITZ!Box. For more information, see the documentation by the manufacturer of your operating system.
	Forgot FRITZ!Box password	Restore factory settings to the FRITZ!Box (see page 259).
	Combination of various settings in the "Internet" and "Home Network" menus.	Attempt to open the user interface with the emergency IP address; see page 254 . If this does not work, restore factory settings to the FRITZ!Box (see page 259).

Error Scenario	Cause	Solution
Wireless LAN connection interrupted	Wireless radio connection between FRITZ!Box and wireless device interrupted	Change the positions of the FRITZ!Box and the wireless devices: <ul style="list-style-type: none">• Do not place the FRITZ!Box in the corner of a room.• Do not place the FRITZ!Box directly next to or beneath an obstacle or a metal object (like a cabinet or radiator).• Position the FRITZ!Box and the wireless devices so that there are as few obstacles between them as possible.
	Radio channel with heavy interference	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").

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 257](#).

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 the "Submit support request" button.
6. Fill out the form and then click the "Submit support request" button.

Our Support team will respond by email within one working day.

Decommissioning

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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 is not working 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 settings you made in the FRITZ!Box will be deleted.
- The internal memory of the FRITZ!Box is 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 201](#).
- Back up your data from the internal memory, for instance, using the download function in FRITZ!NAS; see [Saving FRITZ!NAS Storage, page 213](#).

Removing the SIM Card

If you want to end operation of the FRITZ!Box, remove the SIM card from the slot. To do this, press the SIM card briefly.

Instructions: Restoring Factory Settings



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

1. Open the FRITZ!Box user interface; see [page 63](#).
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.

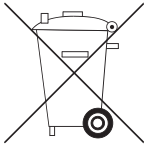


If you intend to restart operation of the FRITZ!Box, we recommend updating the FRITZ!OS of the FRITZ!Box; see [page 196](#).

Disposal

Disposal of Used Devices

In accordance with European regulations, 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 of the housing).



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.

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Technical Specifications

Device Properties

Property	Value
Dimensions (W x H x D)	Circa 250 x 48 x 185 mm
Supply voltage	230 V / 50 Hz

Ambient Conditions

Property	Value
Operating temperature	0 °C – +40 °C
Storage temperature	-20 °C – +70 °C
Relative humidity (operation)	10% – 90%
Relative humidity (storage)	5% – 95%

Power Consumption (Energy Use)

Property	Value
Maximum power consumption	30 W

Property	Value
Average consumption, determined with the following load: <ul style="list-style-type: none"> • DSL connection active • Wireless LAN on; no devices registered via wireless LAN • DECT on; one telephone registered via DECT; no active calls • One network device connected to a LAN port; no data transfer; other LAN ports not in use 	9 W – 10 W

Ports and Interfaces

Connect via	Interface
WAN	WAN port via an RJ45 socket for connecting to a modem or a router
DSL	DSL/telephone socket <ul style="list-style-type: none"> • VDSL/ADSL modem for use with VDSL in accordance with DT AG 1TR112 (also IP-based, also vectoring and supervectoring) and ITU G.993.2/5 or ADSL/ADSL2+ in accordance with DT AG 1TR112 (also IP-based, Annex J) or ITU G.992.3 (Annex B or J) • Telephone socket for connecting to the analog network or ISDN
LTE	LTE modem compliant with 3GPP standard, release 10 LTE category 6 UE

Connect via	Interface
FON 1, FON 2	<ul style="list-style-type: none"> • 1 a/b port with a TAE socket for connecting an analog terminal device • 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)
FON S ₀	1 ISDN S ₀ NT port with support for ISDN terminal devices; the CIP services voice, telephony, audio 3.1 and fax G2/G3 are supported
DECT	DECT base station: <ul style="list-style-type: none"> • up to 6 handsets • Up to 10 FRITZ!DECT 200/210 outlet switches • Up to 12 FRITZ!DECT 300/301/Comet DECT radiator controls
LAN	4 LAN ports via RJ45 sockets (standard Ethernet, 10/100/1000 Base-T)
USB	1 USB host controller (USB version 3.0)
Wireless LAN	Wireless access point with support for wireless LAN radio networks (wireless standard – data rate) <ul style="list-style-type: none"> • IEEE 802.11a—54 Mbit/s • IEEE 802.11b—11 Mbit/s • IEEE 802.11g—54 Mbit/s • IEEE 802.11n—800 Mbit/s (including 256QAM) • IEEE 802.11ac—1733 Mbit/s

LTE: Bands and Radio Frequencies

Band	Frequency Range and Transmitter Power
Band 20	<ul style="list-style-type: none"> Downlink frequency range: 791 MHz – 821 MHz Uplink frequency range: 832 MHz – 862 MHz Maximum transmitter power: 200 mW (uplink)
Band 3	<ul style="list-style-type: none"> Downlink frequency range: 1805 MHz – 1880 MHz Uplink frequency range: 1710 MHz – 1785 MHz Maximum transmitter power: 200 mW (uplink)
Band 7	<ul style="list-style-type: none"> Downlink frequency range: 2620 MHz – 2690 MHz Uplink frequency range: 2500 MHz – 2570 MHz Maximum transmitter power: 200 mW (uplink)
Band 1	<ul style="list-style-type: none"> Downlink frequency range: 2110 MHz – 2170 MHz Uplink frequency range: 1920 MHz – 1980 MHz Maximum transmitter power: 200 mW (uplink)
Band 8	<ul style="list-style-type: none"> Downlink frequency range: 925 MHz – 960 MHz Uplink frequency range: 880 MHz – 915 MHz Maximum transmitter power: 200 mW (uplink)

LTE: Band Combinations

Band combinations supported for simultaneous LTE connections with 2 cells (carrier aggregation):

Band Combinations Supported
1+8
3+7

Band Combinations Supported
3+8
3+20
7+20

UMTS Radio Frequencies

Frequency	Frequency Range and Transmitter Power
Band 1	<ul style="list-style-type: none"> Downlink frequency range: 2110 MHz – 2170 MHz Uplink frequency range: 1920 MHz – 1980 MHz Maximum transmitter power: 250 mW (uplink)
Band 8	<ul style="list-style-type: none"> Downlink frequency range: 925 MHz – 960 MHz Uplink frequency range: 880 MHz – 915 MHz Maximum transmitter power: 250 mW (uplink)

Wireless LAN Radio Frequencies

Frequency	Frequency Range	Maximum Transmitter Power
2.4 GHz	2400 MHz – 2483 MHz	100 mW
5 GHz	1/2: 5150 MHz – 5350 MHz	200 mW
	2/2: 5470 MHz – 5725 MHz	1000 mW

DECT Radio Frequencies

Frequency	Frequency Range and Transmitter Power
DECT	<ul style="list-style-type: none"> Frequency range: 1880 MHz – 1900 MHz Maximum transmitter power: 250 mW

Tones

Beep	Melody
Busy signal	500 ms tone, 500 ms pause, +/- 20 ms
Dial tone	1 s tone, 4 s pause, +/- 100 ms

Open and Standardized Interfaces

Information on interfaces and logs from the AVM product development can be found on the AVM website:

en.avm.de/service/interfaces

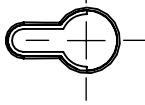
Drilling Template

FRITZ!Box 6890 Drilling Template

The following figure is a drilling template for your FRITZ!Box. The drilling template assists you in marking the holes needed to mount the FRITZ!Box on a wall.

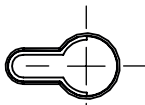


Be sure to print out the figure of the drilling template in its original size, or 100%. Do not enlarge it, adjust its size, reformat or rescale it in your printer settings.



This page must be printed out at a size of 100%. Do not enlarge it, adjust its size, reformat or rescale it in your printer settings.

197 mm



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



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AVM Audiovisuelles Marketing
und Computersysteme GmbH

Alt-Moabit 95

D-10559 Berlin

AVM in the internet: en.avm.de

AVM Computersysteme
Vertriebs GmbH

Alt-Moabit 95

D-10559 Berlin

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.

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