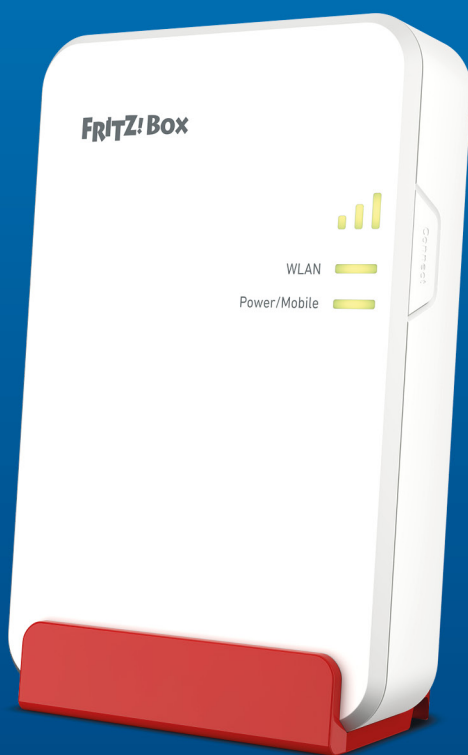




Questo manuale d'istruzione è fornito da trovaprezzi.it. Scopri tutte le offerte per [AVM FRITZ!Box 6860 5G](#) 20003048 o cerca il tuo prodotto tra le [migliori offerte di Modem e Router](#)



FRITZ!Box 6860 5G



Manual

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General Information on the FRITZ!Box

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Safety Instructions

Before connecting the FRITZ!Box 6860 5G, observe the following security instructions in order to protect yourself, the surroundings, and the FRITZ!Box from harm.

General Security Information

- Only use the power adapter of the FRITZ!Box indoors.
- Connect the power adapter to an electric outlet that is easy to reach, so that you can unplug the power adapter at any time.
- Connect the FRITZ!Box to the power adapter using only a LAN cable included with delivery and check the cable regularly for damage. Do not use damaged cables.
- Avoid using socket strips and extension cords if at all possible.
- Do not connect multiple extension cords or socket strips to each other.
- Place the FRITZ!Box and the PoE power adapter in locations without direct sunlight which are well ventilated.
- Do not place the FRITZ!Box near any heat sources.
- Do not cover the FRITZ!Box.
- Do not place the FRITZ!Box on heat-sensitive surfaces.
- The FRITZ!Box should not be placed on carpets or upholstery.
- Do not install the FRITZ!Box during an electrical storm.
- Do not operate the FRITZ!Box outdoors during an electrical storm.
- Do not allow any liquids to enter the power adapter of the FRITZ!Box and protect the power adapter from liquids, vapors, and moisture.
- Do not attach any other objects to the FRITZ!Box.
- Do not mount the FRITZ!Box on tilt windows or on windows that are unstable or change shape.
- Mount the FRITZ!Box so that it does not come into contact with blinds or shutters on the window.

- The window where the device is to be mounted with the adhesive pad must be smooth, clean, dust-free, and dry, and there may not be any thermal film on the window.
- Check the adhesive pad at least every 2 months to ensure that it is firmly in place and replace it if the adhesive is getting weak.
- During operation of the FRITZ!Box outdoors, you must enable the setting **FRITZ!Box used outdoors** under **Wi-Fi > Wi-Fi Channel** in the user interface.
- When used outdoors, the FRITZ!Box must be secured in the white router bracket with the mounting screw.
- The FRITZ!Box is dust and splash-protected according to protection class IP54 and suitable for use in protected outdoor areas. Do not expose the FRITZ!Box to direct streams of water and do not mount the FRITZ!Box on the weather side of the house.
- Mount the FRITZ!Box at a location that is protected from lightning, strong wind, and from unauthorized access. When in doubt, consult a specialist for mounting the FRITZ!Box.
- Do not mount the FRITZ!Box in places where people could be injured, for instance, by the device falling down.
- Make sure that the window weep holes are clear and that the window seals are suitable for mounting. No moisture may enter the power adapter via the cable.

Improper Cleaning

Improper cleaning with strong detergents, solvents or wet cloths can cause damage to the FRITZ!Box.

- Please refer to the information about how to clean your FRITZ!Box; [see page 15](#).

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 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 where 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.

About this Manual

FRITZ!OS Version

This FRITZ!Box manual describes settings and functions starting with FRITZ!OS 7.50.

Symbols Used

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

Package Contents

Package Contents

No.	Supplied Part	Details
1	FRITZ!Box 6860 5G	
1	PoE power adapter	PoE stands for Power over Ethernet
1	router bracket for in-doors	red
1	router bracket for outdoors	white
1	power cable	
2	network cable	also called LAN cable
2	adhesive pads	
5	cable clips	
1	mounting screw	
1	quick guide	Instructions for connecting the FRITZ!Box
1	FRITZ! Notes	Service card with FRITZ!Box settings upon delivery



Instructions and Help

Instructions and Help

Use the comprehensive customer documentation to connect, configure, and operate your FRITZ!Box. The latest information on products and updates is presented in the newsletter (available only in German), and in social media.



After a FRITZ!OS update, download the latest manual from en.avm.de/service/manuals.

Medium	Contents	Location
Manual	Connecting, configuration, and operation	en.avm.de/service/manuals
Quick guide	Connecting and configuration	Provided in print with your FRITZ!Box
Service card	- Important settings upon delivery - Meaning of the LEDs	Provided in print with your FRITZ!Box
Online help	- Configuration and operation - Functions and Settings in the User Interface	http://fritz.box/?
Knowledge Base	Solutions for common problems during connection, configuration, and operation	en.avm.de/service
Newsletter (in German)	New AVM products, updates, and practical tips	en.avm.de/newsletter
Social media	The latest about the FRITZ!Box, your FRITZ!Box home network, and your FRITZ! device	Facebook
		Instagram
		Twitter
		YouTube

Information on Cleaning

Please Note

- 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.

Functions and Structure

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Functions

Internet Router

The FRITZ!Box 6860 5G is an internet router for mobile communications.

Using a SIM card the internet connection can be established via a mobile network. The following mobile communication networks are supported:

- 5G
- 4G (LTE)
- 3G (UMTS)

Internet via Wi-Fi

The FRITZ!Box can also share an existing internet connection, for instance via a Wi-Fi connection to another router.

Telephone System

The FRITZ!Box is a telephone system for IP-based connections with fax function, answering machine, telephone book, call blocks, and other functions. You can connect the following devices:

- Cordless telephones
- IP Telephones

DECT Base Station for Cordless Telephones

The FRITZ!Box is a DECT base station for cordless telephones. You can register up to six cordless telephones like FRITZ!Fon with the FRITZ!Box.

Smart Home Hub

The FRITZ!Box is a smart home hub for Smart Home devices from FRITZ! and smart home devices from other manufacturers that support the DECT ULE/HAN FUN protocol.

Wi-Fi

The FRITZ!Box supports Wi-Fi 7 (Wireless AX) on the 2.4 GHz band and on the 5 GHz band.

Hub in the Home Network

The FRITZ!Box is the hub of the home network composed of the devices connected with the FRITZ!Box.

With MyFRITZ! you can also access your FRITZ!Box and devices in the home network from the internet when you're on the go.

Device Data on the Type Label

Important device data on the FRITZ!Box are presented on the type label on the housing. There you find the preset network key for Wi-Fi connections with the FRITZ!Box, the preconfigured FRITZ!Box password for the user interface, the serial number for support queries, and additional data.

Device Data on the Type Label

1

FRITZ!Box 6860 5G

7

Art. no: 2000 3071



6

IMEI: 12345678-123456-1

CWMP account:

00040E-123456789012



4

Power adapter: 311POW216

FRITZ!Box password:

afbecd1234

Serial no.:

H515.123.45.678.901



2

Wi-Fi network (SSID):

FRITZ!Box 6860 WW

Wi-Fi password (WPA2):

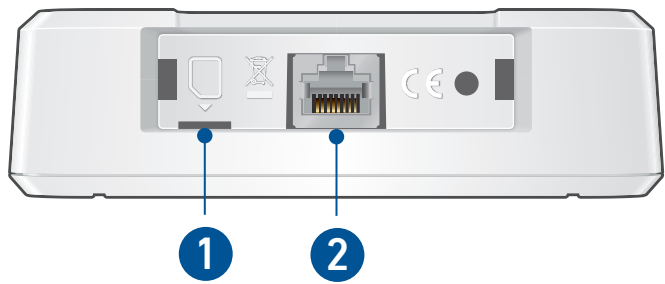
3779 8981 1562 8981 0123

5

No.	Meaning
1	Product name
2	Name of Wi-Fi network (SSID)
3	Network key (Wi-Fi password)
4	FRITZ!Box password
5	Serial number
6	Power adapter specification
7	Article number

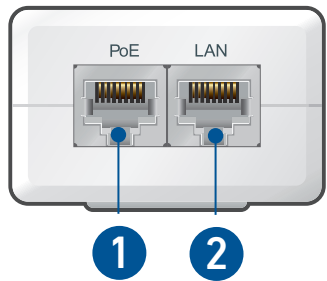
Connection Sockets

Connector Panel



No.	Name	Function
1	SIM	Slot for the nano SIM card
2	LAN	LAN port for connecting to the PoE power adapter

Connectors on the Power Adapter



No.	Name	Function
1	PoE	RJ45 socket for connecting the FRITZ!Box
2	LAN	RJ45 socket for connecting network compatible devices or for connecting a modem or a router

Button

Button Functions



No.	Button	Function
1	Connect	• Register wireless devices with the FRITZ!Box via WPS; see page 37 • Enabling Mesh for FRITZ!Repeaters and FRITZ!Powerline; see page 73 • Register cordless telephones with the FRITZ!Box; see page 63 • Register Smart Home devices with the FRITZ!Box

LEDs

Meaning of the LEDs

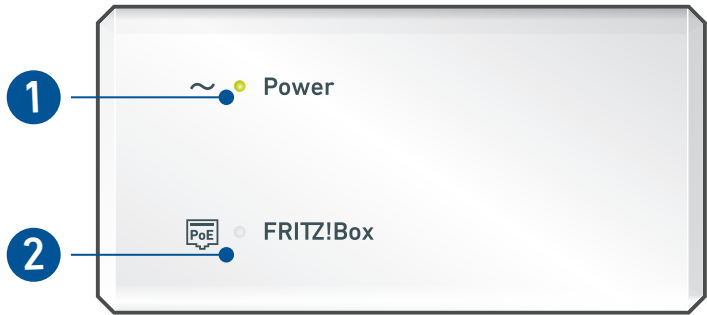


No.	LED	Condition	Meaning
1	Signal strength		Quality of the mobile network connection; see Signal strength LED, page 24.
2	WLAN	off	Wi-Fi is disabled.
		on	Wi-Fi is enabled.
		flashing	Registration in progress for a wireless, DECT, Smart Home or powerline device.
			Switching Wi-Fi function on or off. Applying changes to the Wi-Fi settings.
3	Power/ Mobile	off	The device has no electrical power.
		on	Mobile network connection ready.
		flashing	Mobile network connection being established or is interrupted.

Signal strength LED

LED	Color	Meaning
	blue	mobile network connection in the 5G network high signal strength
		medium signal strength
		low signal strength
	green	mobile network connection in the 4G/3G network high signal strength
		medium signal strength
		low signal strength
	yellow	internet connection via Wi-Fi high signal strength
		medium signal strength
		low signal strength
	orange	mobile network or Wi-Fi connection weak signal strength
	red	important message on http://fritz.box
	flashes white	FRITZ!OS update or modem update

LEDs on the power adapter



No.	LED	Condition	Meaning
1	Power	off	The device has no electrical power.
		on	The device has electrical power.
2	FRITZ!Box	off	There is no connection to the FRITZ!Box.
		on	Connection to the FRITZ!Box is active.

Requirements for Operation

Requirements

- For internet access via mobile network: SIM card (5G, LTE or UMTS)
- For configuration of the FRITZ!Box: a computer or tablet with a network connection or Wi-Fi support and up-to-date web browser

For comprehensive technical information about your FRITZ!Box, [see page 227](#).

Connecting

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Connecting Wireless Devices with FRITZ!Box..... 36

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Connecting FRITZ!Box: Steps

Instructions	
	Select a suitable location for the FRITZ!Box.
	Insert the SIM card into the FRITZ!Box.
	Connect the power adapter to an electric outlet.
	Connect the FRITZ!Box to the power adapter.
	Connect a computer, smartphone, or tablet with the FRITZ!Box.



Selecting a Location

With the following information you can find the ideal location for your FRITZ!Box.

Rules for Setting Up the FRITZ!Box

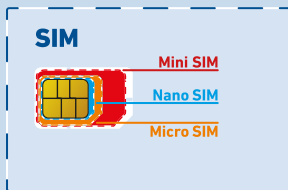
- Note the security instructions; [see page 8](#).
- The ideal location is a place that is about one meter above the ground that is free from obstacles, sources of interference, and heat.

Inserting the SIM Card

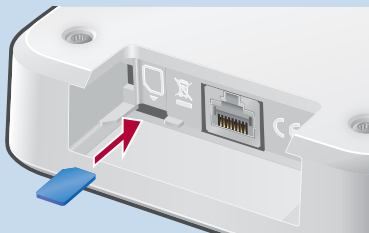
The FRITZ!Box establishes the internet connection via the mobile network. For a mobile network connection a SIM card is required.

Instructions: Inserting the SIM Card

1. Break the nano SIM card out of the SIM card.



2. Hold the FRITZ!Box such that the LEDs are on the bottom and the SIM slot is facing you.
3. Insert the SIM card into the slot of the FRITZ!Box with the contacts facing downwards. The slanted edge of the card will be on the left.



4. Push the SIM card gently into the slot until the SIM card clicks into place.

The SIM card is inserted correctly when it is firmly in the slot and just a few millimeters stick out. Pressing the SIM card again releases it from the slot.

Connecting the Power Supply

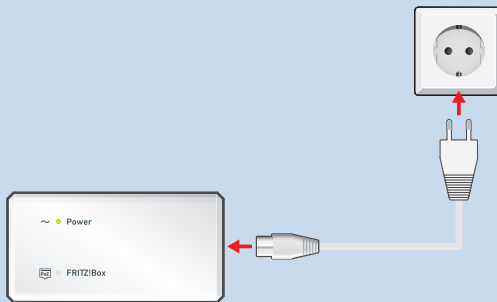
Connect the power adapter to an electric outlet.

Instructions: Connecting the Power Adapter

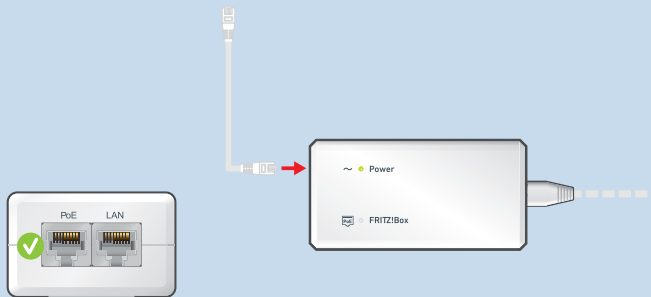


The power adapter may only be used indoors.

1. Connect the power cable to the power adapter and plug the cable into an electrical outlet indoors that is easy to reach.
The **Power** LED on the power adapter lights up.



2. Connect a LAN cable included with delivery to the **PoE** port on the power adapter.



Connecting the FRITZ!Box for Outdoor Operation

Connect the FRITZ!Box to the power adapter and position the FRITZ!Box inside.

You need

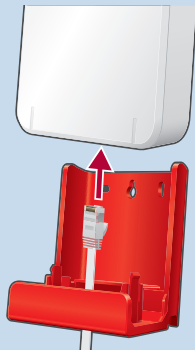
- router bracket for indoors (red)

Instructions: Connecting the FRITZ!Box



Note the security instructions; [see page 8](#).

1. Connect the FRITZ!Box to the LAN cable inserted in the **PoE** socket of the power adapter:
Thread the free end of the LAN cable through the router bracket for indoors and insert the LAN cable in the **LAN** socket of the FRITZ!Box.



2. Insert the FRITZ!Box in the router bracket.
The Power/Mobile LED flashes.



3. Position the FRITZ!Box.
4. The signal strength LED shows the quality of the mobile network connection; [see Signal strength LED, page 24](#).
If the signal strength is low, test other locations for the FRITZ!Box. Position the FRITZ!Box in a location with medium or high signal strength.
On suitable locations, [see Optimizing the Mobile Connection, page 39](#).

Connecting Computers and Other Devices Using a LAN Cable

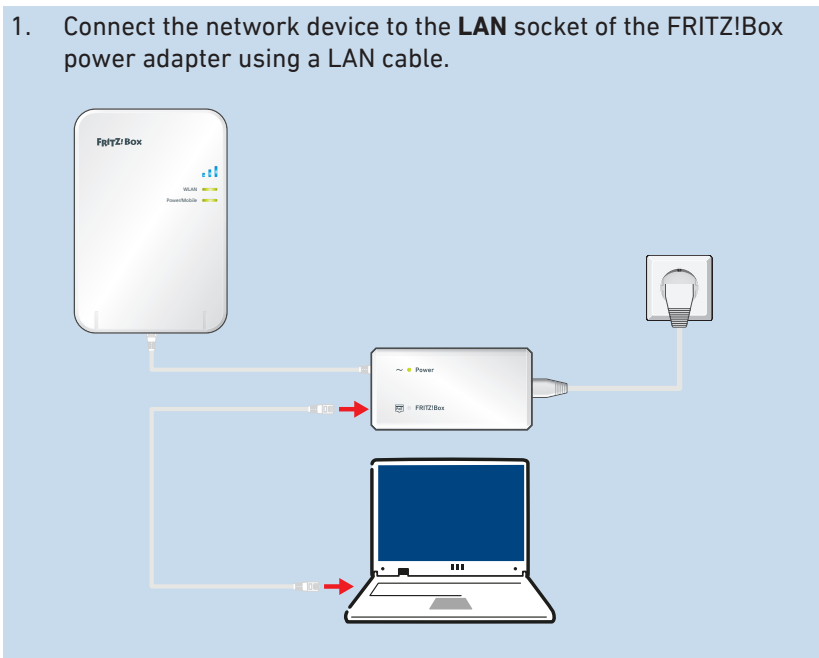
You can connect laptops, PCs, and other network devices with the FRITZ!Box using a LAN cable.

Please Note

- The LAN cable used must not be longer than 100 m.

Instructions: Connecting a Computer with a LAN Cable

1. Connect the network device to the **LAN** socket of the FRITZ!Box power adapter using a LAN cable.



Instructions: Connecting a Network Hub or Network Switch

1. Insert a LAN cable into the uplink port of the network hub or network switch.
You can use a LAN cable supplied with the FRITZ!Box.

2. Insert the other end of the cable into a **LAN** socket on the FRITZ!Box power adapter.

Connecting Wireless Devices with FRITZ!Box

You can connect computers, smartphones, tablets, and other network devices wirelessly with the FRITZ!Box via Wi-Fi.

Wi-Fi connections can be established using a QR code, the Wi-Fi network key of the FRITZ!Box, or via WPS.

Requirements

- For Wi-Fi connections via WPS: Your wireless device supports WPS at the touch of a button (WPS Push Button).

Many Windows computers support WPS. Apple devices (macOS, iOS) do not support WPS.

Scanning QR Codes on a Smartphone or Tablet

Many smartphones and tablets can scan QR codes using the camera app. Open the camera app and point the camera at a QR code.

If the camera app detects the QR code, a message appears about the information stored in the QR code. If no message appears, use a QR code app to scan the QR code.



Example QR code with the address of the English-language AVM website:

Instructions: Establishing a Wi-Fi Connection with the QR Code

1. Open the user interface; [see page 47](#).
2. Click on **Wi-Fi > Wi-Fi Network** in the menu.
Here is where to find the current QR code for Wi-Fi connections with the FRITZ!Box.
3. Scan the QR code on your smartphone or tablet.
You can scan the QR code directly from the screen or print it out (by clicking on **Print Info Sheet**).

Instructions: Establishing a Wi-Fi Connection Using a Network Key

1. Select the Wi-Fi network of the FRITZ!Box.
The preconfigured name of the Wi-Fi network (SSID) is printed on the type label attached to the FRITZ!Box housing.
2. Start the connection procedure.
3. Enter the network key of the FRITZ!Box.
This is printed on the type label on the outside of the FRITZ!Box housing.

Instructions: Establishing a Wi-Fi Connection Using WPS

WPS is a method for establishing secure Wi-Fi connections at the touch of a button.

1. Select the Wi-Fi network of the FRITZ!Box.
The preconfigured name of the Wi-Fi network (SSID) is printed on the type label attached to the FRITZ!Box housing.
2. Start the connection procedure with WPS; see the documentation of the wireless device.

3. On the FRITZ!Box: Press the **Connect** button briefly.



The **WLAN** LED flashes while the Wi-Fi connection is being established.

Optimizing the Mobile Connection

The signal strength LED of the FRITZ!Box shows the quality of the mobile network connection; see [Signal strength LED](#), page 24.

If the signal strength of the mobile network connection is low, test different locations for the FRITZ!Box. Position the FRITZ!Box in a location with medium or high signal strength.

Use the Alignment Aid

In addition to the signal strength LED, you can use the alignment aid in the FRITZ!Box user interface to find the ideal location for the FRITZ!Box.

The alignment aid is located in the FRITZ!Box user interface under **Internet > 5G Information** on the **Reception** tab.

Suitable Locations Indoors

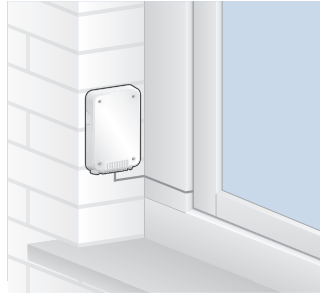
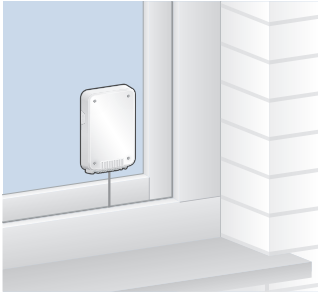
You can position the FRITZ!Box anywhere inside or stick it to the inside of a window.

The ideal location is a place that is about one meter above the ground that is free from obstacles, sources of interference, and heat.



Suitable Locations Outdoors

You can stick the FRITZ!Box to the outside of a window or screw it on to a protected outside area of the window soffit.



Mounting FRITZ!Box on a Window

If the signal strength is unsatisfactory when positioned at other locations, you can mount FRITZ!Box on a window.

Requirements

- You already connected the power adapter to an electric outlet; see [Connecting the Power Supply](#), page 31.

You need

You need the following parts included with delivery of the FRITZ!Box:

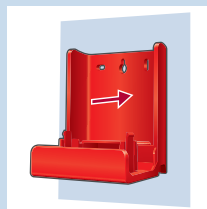
- 1 adhesive pad
- For mounting on the inside of a window: the red router bracket
- For mounting on the outside of a window: the white router bracket
- For mounting on the outside of a window: the mounting screw

Instructions: Mounting on the Inside of a Window

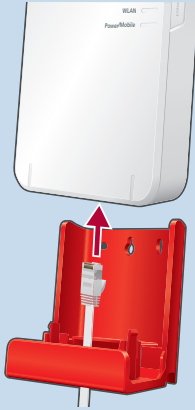


Note the security instructions; see [page 8](#).

1. Clean the part of the window where the FRITZ!Box is to be mounted.
2. Stick the red router bracket to the window with an adhesive pad.



3. Connect the FRITZ!Box to the LAN cable inserted in the **PoE** socket of the power adapter:
Thread the free end of the LAN cable through the router bracket and insert the LAN cable in the **LAN** socket of the FRITZ!Box.



4. Insert the FRITZ!Box in the router bracket.
The Power/Mobile LED flashes.

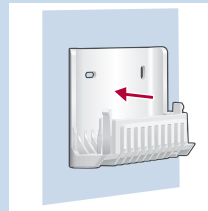
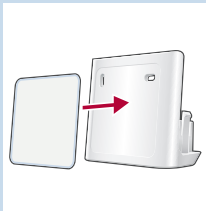


Instructions: Mounting on the Outside of a Window



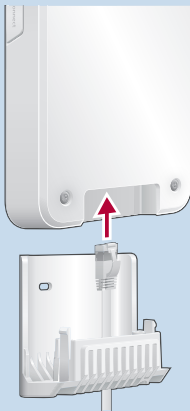
Note the security instructions; [see page 8](#).

1. Clean the part of the window where the FRITZ!Box is to be mounted.
2. Stick the white router bracket to the window with an adhesive pad.



3. Connect the FRITZ!Box to the LAN cable inserted in the **PoE** socket of the power adapter:

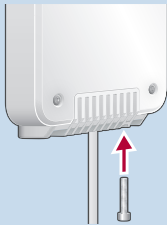
Thread the free end of the LAN cable through the router bracket and insert the LAN cable in the **LAN** socket of the FRITZ!Box.



4. Insert the FRITZ!Box in the router bracket.
The Power/Mobile LED flashes.



5. Use the mounting screw to secure the FRITZ!Box.



6. Open the user interface; [see page 47](#).
7. Click in the menu on **Wi-Fi > Wi-Fi Channel** and enable **FRITZ! Box Used Outdoors**.

Accessing the FRITZ!Box

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Access and Operation Options

The FRITZ!Box has a user interface in which you can configure the FRITZ!Box and receive information on connections, ports, and your home network.

The user interface can be opened in a web browser on computers, smartphones, and tablets that are connected with the FRITZ!Box.

You can also operate the FRITZ!Box using the FRITZ!Apps and with FRITZ!Fon telephones.

Overview of Access and Operation Options

Operation Option	Features
User interface	Configure and operate the FRITZ!Box.
MyFRITZ!	Access the FRITZ!Box in the home network at home or via the internet from anywhere.
FRITZ!Fon	Use FRITZ!Box functions and operate devices in the home network.
MyFRITZ!App	Access your FRITZ!Box from on the go.
FRITZ!App Fon	Make landline calls at home using your smartphone and tablet.
FRITZ!App Smart Home	Switch Smart Home devices in the home network at home or from on the go.
FRITZ!App Wi-Fi	Receive an overview of your Wi-Fi network and the Wi-Fi networks in your vicinity.

Opening the FRITZ!Box User Interface

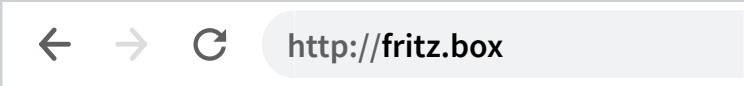
The FRITZ!Box has a user interface you can open in a browser on your computer, tablet or smartphone.

Requirements

- Your computer, smartphone, or tablet is connected with the FRITZ!Box via Wi-Fi or network cable.
- The connection is **not** via the Wi-Fi guest access of the FRITZ!Box.

Instructions: Opening the FRITZ!Box User Interface

1. Start a web browser on your computer or mobile device.
2. Enter the address **http://fritz.box**.



You can also use the following addresses:

- **http://169.254.1.1** (fallback IP address)
- local IP address of the FRITZ!Box (default:
http://192.168.178.1)

3. Log in with the FRITZ!Box password or with the login data of a FRITZ!Box user.
The preconfigured FRITZ!Box password is printed on the type label on the outside of the housing and on the FRITZ! Notes service card.

The first time the user interface is opened, the Initial Configuration of the FRITZ!Box wizard starts; [see page 56](#). The next time the user interface is started, the **Overview** page appears.

FRITZ!Fon

With a FRITZ!Fon you can use various FRITZ!Box functions.

Overview

You have the following options with a FRITZ!Fon:

- Switch Wi-Fi of the FRITZ!Box on and off
- Switch Wi-Fi guest access on and off
- Switch Smart Home devices
- Change telephony settings
- Set up a telephone book
- Perform software updates

Instructions are presented in the manual for your FRITZ!Fon.

MyFRITZ! in the Home Network or from On the Go

With MyFRITZ! you can access various information and features of your FRITZ!Box at home in the home network or via the internet.

Using MyFRITZ!

For more information on MyFRITZ!, [see page 188](#).

MyFRITZ!App

With the MyFRITZ!App you can access your FRITZ!Box from anywhere:

- View the call list and listen to the answering machine
- Change settings, view information, and manage all functions
- Manage telephony settings
- Switch Wi-Fi

Downloading MyFRITZ!App

The MyFRITZ!App is available free of charge for Android and iOS:

Google Play Store (Android)	App Store (iOS)
	



FRITZ!App Smart Home

With the FRITZ!App Smart Home you can control your FRITZ! Smart Home devices from home or on the go:

- Switch FRITZ! smart plugs and FRITZ! radiator controls
- Operate FRITZ!Smart LED lights and create color templates
- Display the energy consumption of the devices connected to FRITZ! smart plugs
- Switch on and off routines to automate Smart Home devices

Downloading FRITZ!App Smart Home

The FRITZ!App Smart Home is available free of charge for Android and iOS:

Google Play Store (Android)	App Store (iOS)
	



FRITZ!App Fon

With the FRITZ!App Fon you can make calls using your smartphone or tablet at home over your landline telephone numbers:

- Make outgoing calls and accept incoming calls
- Access your smartphone contacts and the contacts in the FRITZ!App Fon telephone book
- Listen to the answering machine.

Downloading FRITZ!App Fon

The FRITZ!App Fon is available free of charge for Android and iOS:

Google Play Store (Android)	App Store (iOS)
	



FRITZ!App Wi-Fi

FRITZ!App Wi-Fi informs you about your Wi-Fi connection and the FRITZ! devices in the home network:

- Monitor Wi-Fi connections
- Mesh: find the ideal position to the FRITZ!Box for the Repeater
- Share Wi-Fi with friends (Android)

Downloading FRITZ!App Wi-Fi

The FRITZ!App Wi-Fi is available free of charge for Android and iOS:

Google Play Store	App Store (iOS)
	

Configuring

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Configuring the FRITZ!Box: Steps

Configure the FRITZ!Box by performing the following steps:

Instructions	
	Set up the internet connection in the FRITZ!Box.
	Configure your telephone numbers in the FRITZ!Box.

Requirements

- The FRITZ!Box is connected with the internet access.



Using the Initial Configuration Wizard

The first time the user interface is opened, the Initial Configuration of the FRITZ!Box wizard starts. The wizard assists you in configuring your internet connection and telephony.

You need

- The preconfigured FRITZ!Box password, which is printed on the FRITZ!Box FRITZ! Notes service card and on the type label on the outside of the FRITZ!Box housing.
- If you received telephone numbers from your internet/telephone provider, keep them handy.

Instructions: Using the Initial Configuration Wizard

1. Start a web browser on your computer or mobile device.
2. Enter the address **http://fritz.box**.



You can also use the following addresses:

- **http://169.254.1.1** (fallback IP address)
 - local IP address of the FRITZ!Box (default: **http://192.168.178.1**)
3. Enter the preset FRITZ!Box password and click on **Log In**.
The password is printed on the type label on the outside of the FRITZ!Box housing and on the FRITZ! Notes service card.
The FRITZ!Box user interface is opened and you are directed to the Configuration Wizard.
 4. Choose whether you would like to use the AVM services for diagnostics and maintenance. We recommend leaving this option enabled. You can always change the setting later.

5. Click on **Next**.
6. Follow the wizard's instructions.

Once the wizard is complete, the initial configuration of the FRITZ!Box has been concluded. The FRITZ!Box is ready for the internet and for telephony.

Configuring the Internet Connection via the Mobile Network

The internet connection for the mobile telephone network has to be set up once in the FRITZ!Box. 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 network provider has been inserted into the SIM card slot of the FRITZ!Box.

You need

- The PIN you received along with the SIM card.

Instructions: Configuring the Internet Connection

1. Open the user interface; [see page 47](#).
2. If the wizard does not start automatically, click on **Wizards** in the menu.
3. Click on **Configure the Internet Connection**.
4. Follow the wizard's instructions.
5. After the wizard has concluded: Open a new tab in your web browser and enter a web address, for instance en.avm.de.
The requested internet page is displayed.

Configuring Your Telephone Numbers

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

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

Which telephone numbers can be configured in the FRITZ!Box?

You can configure up to 20 of the following telephone numbers:

- Landline telephone numbers for making calls via the internet connection (also known as: internet telephone numbers, SIP telephone numbers, VoIP telephone numbers)
- SIP trunking from Deutsche Telekom (CompanyFlex, Deutschland LAN SIP-Trunk Pooling, Deutschland LAN SIP-Trunk) or from another provider
- SIP DDI line

You can also configure the mobile telephone number of the SIM card inserted in the FRITZ!Box to make calls. For this the mobile phone plan must support telephony via LTE (VoLTE).

Instructions: Configuring Your Own Telephone Numbers

1. Open the user interface; [see page 47](#).
2. Click on **Wizards** in the menu.
3. Click **Manage Your Own Phone Numbers**.
4. Click on **Add Telephone Number** and follow the wizard's instructions.

Option: Configuring Internet Access by Wi-Fi (Cascading)

The FRITZ!Box can share the internet connection of another device via a Wi-Fi connection. This can be a router, or a smartphone configured as a hotspot.

Operating Mode of the FRITZ!Box

The following applies to this kind of internet connection:

- In the default setting, the FRITZ!Box receives an IP address from the other router via DHCP.
- The FRITZ!Box functions as its own router.
- The FRITZ!Box creates its own IP network.

Important

The IP network of this FRITZ!Box and the IP network of the other router must have different IP address ranges. If not, you have to adjust the IP address range of this FRITZ!Box.

- The firewall of the FRITZ!Box is enabled.
- You can use the FRITZ!Box as a telephone system and make telephone calls with connected telephones using the internet connection of the other router.

Requirements

- The Wi-Fi network of the other device transmits in the 2.4-GHz frequency range.
- The connection is encrypted using WPA2 or WPA3.
- The Wi-Fi network of the other device allows the FRITZ!Box to set up a Wi-Fi connection.

Instructions: Configuring Internet Access via Wi-Fi

1. Open the user interface; [see page 47](#).
2. Click in the menu on **Internet > Account Information**.

3. Select the Wi-Fi network you want to connect the FRITZ!Box with.
4. Enter the network key of the Wi-Fi network in the **Network key** field in the **Security** area.
5. Save your settings with **Apply**.

The FRITZ!Box is configured as a router and the network range is changed automatically. The FRITZ!Box, along with the connected network devices, forms its own self-contained network.

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Connecting Telephones

Please Note

- During a power outage you cannot make any telephone calls with the connected telephones.

Instructions: Connecting a Cordless Telephone

You can register up to six cordless DECT telephones like FRITZ!Fon with the FRITZ!Box.

1. On a cordless telephone: Start registration with a base station.
2. On the FRITZ!Box: Press the **Connect** button.



The **WLAN** LED flashes.

3. On a cordless telephone: Enter the PIN of the FRITZ!Box on the telephone (preset value: 0000).
4. Configure the telephone in the FRITZ!Box user interface; [see page 67](#).

Instructions: Connecting an IP Telephone

IP telephones are special telephones for internet telephony (IP stands for Internet Protocol).

1. Connect the IP telephone to the FRITZ!Box using a network cable or connect the IP telephone with the FRITZ!Box over Wi-Fi.

2. Configure the telephone in the FRITZ!Box user interface; [see page 67](#).

Connecting a Smartphone

If you install FRITZ!App Fon on your iPhone or Android smartphone, you can register the smartphone with your FRITZ!Box.

Then you can make calls with your smartphone at home, using all of the telephone numbers configured in the FRITZ!Box. 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 > Network > Network Settings**)

Instructions: Connecting a Smartphone

1. Establish a Wi-Fi 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. Configure the IP telephone **FRITZ!App Fon** in the FRITZ!Box user interface; [see page 67](#).

Connecting a Door Intercom System

IP door intercoms can be connected to the FRITZ!Box. 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 another telephone connection away from 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 ringtone to signal the doorbell on a FRITZ!Fon.

Supported Door Intercom Systems

- Door intercom system with an a/b interface that uses DTMF (dual-tone multi-frequency signaling) tone dialing.
- IP door intercom systems that can be configured as SIP clients (by entering the login data for a SIP registrar).

Instructions: Connecting an IP Door Intercom System

1. Connect the IP door intercom system to the FRITZ!Box using a network cable or Wi-Fi.
2. Configure the door intercom system in the FRITZ!Box user interface; [see page 69](#).

Configuring Telephones

Once you have connected your telephony devices, 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 react (ring, for instance) to every call, or only respond to calls for certain telephone numbers?
- Further settings that depend on the kind of device.

Requirements

- Your own telephone numbers are set up in the FRITZ!Box.

Please Note

- IP telephones are configured in the FRITZ!Box such that no international calls are possible. You can disable this security feature, [see page 68](#).
- Various FRITZ!Box features are not available for IP telephones, including telephone books, fax and data connections, routing, busy on busy, and controlling FRITZ!Box functions (for instance, switching Wi-Fi on and off).

Instructions: Configuring Telephones and Other Devices

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Telephony Devices** in the menu.
3. If the device to be configured is not yet included in the list of telephony devices, click on **Configure New Device**. The wizard guides you through the assignment of telephone numbers and enters the device in the list.

4. To configure further settings for a device in the list, click next to the device on the **Edit** button . The kind of device determines which additional settings are available.

Instructions: Enabling International Calls for an IP Telephone

An IP telephone is configured in the FRITZ!Box such that only domestic calls and calls to emergency numbers are possible. You can disable this security feature:

1. Open the user interface; [see page 47](#).
2. Click in the menu on **Telephony > Telephone Numbers** and on the **Line Settings** tab.
3. Under **Security**, click on **Change selection**.
4. Disable the checkbox next to the desired IP telephone and click on **OK**.
5. Save your settings with **Apply**.

Configuring a Door Intercom System

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 from the door intercom system sent to your FRITZ!Fon.

Instructions: Configuring a Door Intercom System

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Telephony Devices** in the menu.
3. Click on **Configure New Device**. With the **Edit** button  you can also change the settings of a door intercom system that has already been configured.

Mesh with FRITZ!

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Enabling Mesh for FRITZ!Repeaters and FRITZ!Powerline..... 73



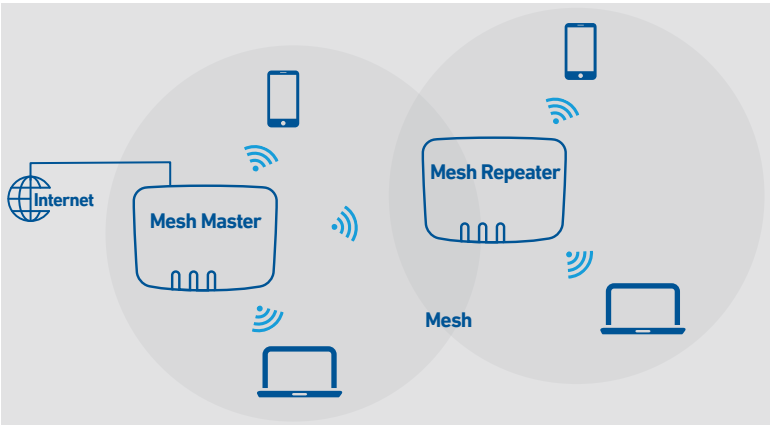
Expanding the Wi-Fi through Mesh

If the Wi-Fi network of the FRITZ!Box does not reach all of your rooms, then you can extend it with various FRITZ! products.

Mesh combines the individual Wi-Fi networks of the FRITZ! devices into one large Wi-Fi network which has just one Wi-Fi network name and one network key.

The FRITZ!Box is the hub of the Mesh, the Mesh Master. Other FRITZ! devices in the Mesh are Mesh Repeaters.

Example Configuration



FRITZ! Devices with Mesh

The following FRITZ! products can be used as **Mesh Repeaters** to expand the Wi-Fi network of the FRITZ!Box:

FRITZ! Device	Details
FRITZ!Repeater	Connection to the FRITZ!Box via Wi-Fi or LAN cable (FRITZ!Repeater with LAN port only). en.avm.de/products/fritz wlan

FRITZ! Device	Details
FRITZ!Powerline	Connection to the FRITZ!Box over electrical wiring en/avm.de/products/fritzpowerline)
second FRITZ!Box	The second FRITZ!Box must support the Mesh Repeater and IP client mode functions; see the manual at en.avm.de/service/manuals .

Enabling Mesh for FRITZ!Repeaters and FRITZ!Powerline

In order to benefit from the advantages of Mesh, enable Mesh for all FRITZ!Repeater and FRITZ!Powerline devices located in the home network of your FRITZ!Box.

Requirements

- FRITZ!Repeater / FRITZ!Powerline with FRITZ!OS 7 or later

Instructions: Enabling Mesh for FRITZ!Repeater

1. Open the FRITZ!Box user interface; [see page 47](#).
2. Click on **Home Network** > **Mesh** in the menu.
3. The FRITZ!Box is displayed in the overview with the **Mesh enabled**  symbol. If the symbol is also displayed for the FRITZ!Repeater, then Mesh is already enabled for the FRITZ!Repeater. If the symbol is missing next to the FRITZ!Repeater, continue with the next step.
4. Press the button on the FRITZ!Repeater.
After the button is released, the **WLAN** or **Connect** LED on the FRITZ!Repeater flashes rapidly.
5. Within 2 minutes, start WPS on the FRITZ!Box. Do this by pressing the **Connect** button.

Mesh is enabled and the FRITZ!Repeater is displayed in the overview marked with the **Mesh enabled** symbol.

Instructions: Enabling Mesh for FRITZ!Powerline

1. Open the FRITZ!Box user interface; [see page 47](#).
2. Click on **Home Network** > **Mesh** in the menu.

3. The FRITZ!Box is displayed in the overview with the **Mesh enabled**  symbol. If the symbol is also displayed for the FRITZ!Powerline, then Mesh is already enabled for the FRITZ!Powerline. If the symbol is missing next to the FRITZ!Powerline, continue with the next step.

4. Press a button on FRITZ!Powerline to establish a connection:

FRITZ!Powerline Model	Connection Button
1260E	Connect
1240E, 546E, 540E	WLAN/WPS

After the button is released, all of the LEDs on FRITZ!Powerline flash.

5. Within 2 minutes, start WPS on the FRITZ!Box. Do this by pressing the **Connect** button.

Mesh is enabled and FRITZ!Powerline is displayed in the overview marked with the **Mesh enabled** symbol.

User Interface: Internet Menu

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Using AVM Services for Diagnostics and Maintenance

The AVM services for diagnostics and maintenance keep your FRITZ!Box 6860 5G and the FRITZ!OS operating system up to date and support the security and further development of your FRITZ!Box.



We recommend leaving the use of all AVM services enabled for your FRITZ!Box.

AVM Services

The following AVM services are provided by your FRITZ!Box:

AVM Service	Explanation
Search for updates	Your FRITZ!Box connects with the AVM update server regularly to search for and install new versions of FRITZ!OS.
Diagnostics data for error analysis	Upon suspicion of misuse by third parties, your FRITZ!Box transmits error reports or technical diagnostics data to AVM for analysis.
Diagnostics data for system maintenance	Your FRITZ!Box transmits device-specific data to AVM for the development of security updates and to further develop FRITZ!OS.

Data Protection

The diagnostics data and the device-specific data transmitted by your FRITZ!Box to AVM do not contain any personalized data. The data transmitted serve the exclusive purpose of technical adaptations and optimizations of your FRITZ!Box. Also, AVM does not pass these data on to third parties. The exact wording of the data privacy statement is presented under **Legal Notice > Data Privacy Statement** in the online help.

Instructions: Configuring AVM Services

1. Open the user interface; see page 47.

2. Click in the menu on **Internet > Account Information** and on the **AVM Services** tab.
3. For instructions, open the online help .

Configuring Parental Controls

With parental controls you can control network devices' internet use. For each individual network device, you can limit the duration and content of internet use. The specifications for temporal and content-related restrictions are created and saved as access profiles. You assign these access profiles to the network devices.

- You can create multiple different access profiles; [see page 81](#).
- With the device block you can block all internet use for a network device without using a special access profile; [see page 79](#).
- With tickets you can extend the restricted use time for individual network devices. A ticket is redeemed on the network device and extends the use time by 45 minutes. Tickets can be redeemed before the use time has been exhausted to avoid interruption of online time. To distribute a ticket for extended use time, [see page 80](#).
- The remaining online time permitted can be queried on any network device with restricted online time; [see page 80](#).

Example

You have three children, all of whom use various devices that access the internet via the FRITZ!Box. You would like to restrict your children's use of the internet as follows:

- Their daily time online is to be restricted to a few hours.
- Access to websites with adult content is to be blocked.

With parental controls you can restrict the internet use of each child individually.

Instructions: Configuring Parental Controls for a Network Device

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter** in the menu and then on the **Access Profiles** tab.
3. If there is no access profile with the restrictions you want, then create an access profile:
 - For instructions, open the online help .
4. Click on **Internet > Filter** in the menu and then on the **Parental Controls** tab.
5. Click on **Change Access Profiles**.
6. Assign to the network device the access profile with the desired restrictions:
 - For instructions, open the online help .

Instructions: Blocking a Device

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter** in the menu and then on the **Parental Controls** tab.
3. Select the network device in the device overview and click on the **Block** link.

Internet access is blocked for this network device. It is no longer possible to access the internet from this device.

Instructions: Distributing a Ticket for Extended Use Time

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter** in the menu and then on the **Access Profiles** tab.
In the **Tickets for Additional Online Time** area, a table with 10 tickets is displayed.
3. Distribute the tickets by printing them out:
 - Click on **Print Tickets**.
 - › The 10 tickets are shown in the **Tickets for Online Access** window.
 - Print out the tickets and distribute them to the users of the network devices whose online time is to be extended.
4. If you want to distribute only one single ticket, then click on **Share Ticket**.
A ticket is saved to the clipboard and can be sent to the user of a network device however you like. In the drop-down list of tickets, that ticket is displayed crossed out and gray.

Instructions: Querying Remaining Online Time

1. Open a browser on the network device for which the remaining online time is to be queried.
2. Enter **fritz.box** in the address bar of the browser.
The time remaining before the permitted online time has been exhausted is shown in the **Parental Controls** window. If the user has a ticket to extend online time, it can be redeemed here.

Creating and Assigning Access Profiles

In an access profile you can enter the time and content restrictions for internet use. The network devices can have different access profiles. An access profile can be assigned to one or multiple network devices. A network device then accesses the internet exactly as specified in the access profile.

Access Profile: Definition

An access profile is a provision that describes exactly what is allowed during internet use. An access profile takes into consideration three aspects of internet use:

Aspect	Description
Time limit	With time limits you can define when and for how long internet use is permitted each day.
Filters for websites	With the filter lists you can specify which websites are allowed to be accessed.
Blocked network applications	With the list of blocked network applications you specify which network applications are allowed to communicate over the internet. This list can contain, for instance, file sharing programs or chat software.

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.



Preconfigured Access Profiles

Name	Properties
Standard	• Set by default to unrestricted use • Automatic access profile for network devices registering with the home network for the first time • Can be changed
Guest	• Automatic, exclusive access profile for network devices registering with the guest network • Can be changed
Unrestricted	• Unrestricted internet use • Cannot be changed

Instructions: Creating an Access Profile

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter** in the menu and then on the **Access Profiles** tab.
3. For instructions, open the online help .

Instructions: Assigning an Access Profile

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter** in the menu and then on the **Parental Controls** tab.
3. For instructions, open the online help .

Editing Filter Lists

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 can enter websites in these lists. These lists can then be used as filters in the access profiles.

Types of Filter Lists

There are different types of filter lists in the FRITZ!Box. The lists work in the following way:

Filter List	Function and Use
Permitted Websites	• You can edit this list yourself. • This list can then be used in the access profiles. • This list only affects devices that use an access profile which uses this list. • Access is allowed to websites included in this list. • Use the permitted websites list if most websites are to be blocked and only a few are permitted.
Blocked Websites	• You can edit this list yourself. • This list can then be used in the access profiles. • This list only affects devices that use an access profile which uses this list. • Access is blocked to websites included in this list. • Use the blocked websites list if most websites are to be permitted and only a few are to be blocked.



Filter List	Function and Use
Permitted IP Addresses	• The entries in this list are created automatically. • This list only affects devices that use an access profile which uses the Blocked Websites list. • When websites from this list of blocked websites are opened with your IP address, these IP addresses are automatically registered in the Permitted Websites list. • The IP addresses can be released individually in the Permitted IP Addresses list to allow direct access to these IP addresses.
IP Block List	IP addresses that are entered in the IP Block List cannot establish a connection to the FRITZ!Box. With the IP Block List you can block incoming connections from specific IP addresses.

Instructions: Editing Filter Lists

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter** in the menu and then on the **Lists** tab.
3. For instructions, open the online help .

Configuring Priorities for Internet Use

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

Prioritization Categories

There are three prioritization categories for network applications:

- Real-time applications have the highest priority. This category is intended for applications with high demands on transmission speed and reaction times (for example, internet telephony, IPTV, video on demand). If an application of this category uses the internet connection to full capacity, no other data will be transmitted.
- Prioritized applications have intermediate priority. This category is intended for applications that require fast reaction times (for example, company access, terminal applications, games). These applications will be granted higher priority. When an application of this category uses the full capacity of the internet connection, the data of other applications will be transferred with lower priority.
- Background applications have the lowest priority. This category is for applications that run in the background, which are treated with low priority when the internet connection is running at capacity (for instance, automatic updates, peer-to-peer services). If no other network applications are active, then the background applications receive the entire bandwidth.

Instructions: Configuring Priorities

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Filter > Prioritization** in the menu.
3. For instructions, open the online help .

Configuring Port Sharing

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 to other internet users.

Port Sharing

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

Port Sharing on Protocols

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

Protocol	Internet Protocol	Explanation
PING	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 forwarding rules for each computer in the home network since each computer has its own globally valid IPv6 address.
TCP UDP	IPv4	Within IPv4 networks you can open the FRITZ!Box firewall for the TCP and UDP protocols when entering the port range. One port can be opened for exactly one computer.

Protocol	Internet Protocol	Explanation
	IPv6	Within IPv6 networks you can open the FRITZ!Box firewall for the TCP and UDP protocols when entering the port range. One port can be opened for each computer in the network.
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

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Permit Access** in the menu and then on the **Port Sharing** tab.
3. For instructions, open the online help .

Enabling Dynamic DNS

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

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

Dynamic DNS and MyFRITZ!

MyFRITZ! can be used as an alternative to dynamic DNS. The two services can also be used in parallel. For more information on MyFRITZ!, see [page 188](#).

Requirements

- You are registered with a dynamic DNS provider and have set up a domain name.

Instructions: Enabling Dynamic DNS

1. Open the user interface; see [page 47](#).
2. Click on **Internet** > **Permit Access** in the menu and then on the **DynDNS** tab.
3. For instructions, open the online help .

Remote Access to the FRITZ!Box

You can also access the FRITZ!Box user interface via the internet from on the go, and make settings in the FRITZ!Box userface with a laptop, smartphone, or tablet.

For access via the internet, enable the HTTPS protocol in the FRITZ!Box.

HTTPS

Protocol	Function
HTTPS (Hypertext Transfer Protocol Secure)	HTTPS is an internet protocol for bug-proof communication between the web server and the browser in the World Wide Web. Enable this protocol to allow access to the FRITZ!Box from the internet.

Requirements

- For access to the user interface: In the FRITZ!Box at least one FRITZ!Box user has been configured with access rights from the internet.
- To change FRITZ!Box settings that require additional confirmation (two-factor authentication): An authenticator app has been configured for the user with access rights from the internet. Instructions are presented in the online help of the FRITZ!Box user interface.
Additional confirmation is required to save or perform security-relevant settings and functions.
- For access to storage: In the FRITZ!Box at least one FRITZ!Box user has been configured with access rights from the internet and the right to access the available storage media.

Instructions: Enabling HTTPS in the FRITZ!Box

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Permit Access** in the menu and then on the **FRITZ!Box Services** tab.
3. For instructions, open the online help .

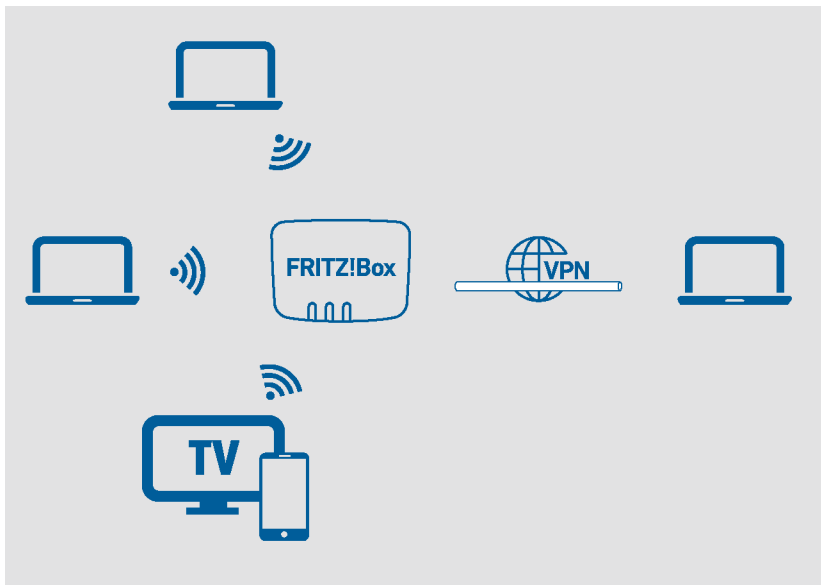
Configuring VPN

With a VPN (Virtual Private Network) it is possible to establish bug-proof encrypted connections over the internet. You can also establish VPN remote connections to your FRITZ!Box and the devices in your home network. You can connect individual devices like smartphones, tablets, or computers with the FRITZ!Box over VPN. You can also connect two FRITZ!Box home networks at different locations over one VPN.

The FRITZ!Box supports two VPN solutions:

- IPSec
- WireGuard

Example Configuration



VPN Service Portal

Additional information on VPN with the FRITZ!Box is presented under en.avm.de/vpn on the AVM website.

VPN with MyFRITZ!App for Android Devices

On smartphones and tablets with Android, it is easy to establish VPN-IPSec connections to your FRITZ!Box with the MyFRITZ!App.

1. Install the MyFRITZ!App on your smartphone or tablet.
2. Log in to your FRITZ!Box.
3. Configure the VPN connection in the MyFRITZ!App settings with just one click.

Once the VPN connection is configured, you can establish a VPN connection to your FRITZ!Box at any time from anywhere with the MyFRITZ!App.

As soon as the VPN connection is established, the following apply:

- In the MyFRITZ!App you can click on a link to access your FRITZ!Box and other devices that have their own web interface, for example a NAS system.
- All of your Android device's internet communication takes place over the VPN connection.

Connecting Individual Devices with the FRITZ!Box via VPN

You can configure VPN connections in the FRITZ!Box for smartphones, tablets, and computers. The table below provides an overview of the VPN solutions in the different operating systems.

Operating system	Establish an IPSec VPN connection	Establish a WireGuard VPN connection
Android	You can establish the VPN connections using the solution included in the operating system without additional software.	You need the WireGuard app to establish VPN connections.
iOS		
macOS		You need the WireGuard software to establish VPN connections.
Linux		
Windows 10 / 8 / 7	You need additional software to establish IPSec VPN connections. You can use the FRITZ!VPN software. You can download FRITZ!VPN free of charge from the AVM website: en.avm.de/vpn	You need the WireGuard software to establish VPN connections.
Windows 11		You need the WireGuard software to establish VPN connections.

Connecting FRITZ!Box Home Networks via VPN (LAN-LAN Linkup)

You can connect two or more FRITZ!Box home networks via VPN with bug-free encryption. The VPN configurations listed in the table below can be configured with IPSec and with WireGuard.

VPN Configuration	Description
VPN for two or more FRITZ!Box home networks	You can connect two or more FRITZ!Box home networks at different locations with each other via VPN (LAN-LAN linkup). From any home network you can access the devices in the other home networks and use all of the IP-based services such as email servers, databases, and file servers at all locations.

VPN Configuration	Description
VPN between two FRITZ!Box home networks for individual LAN ports	The VPN connection between two FRITZ!Box home networks can be restricted to individual LAN ports.
Configure a FRITZ!Box as a VPN client of another FRITZ!Box	You can configure the VPN connection between two FRITZ!Box home networks so that one FRITZ!Box acts as a VPN client of the other FRITZ!Box. In such a configuration, devices in the home network of the FRITZ!Box configured as a VPN server can only be reached from the home network of the FRITZ!Box configured as a VPN client. It is not possible for devices in the home network of the VPN server to access devices in the VPN client's home network.

Connecting a FRITZ!Box with a Company VPN Network

With IPsec you can configure a VPN that connects your FRITZ!Box home network with the VPN server at your company. In this case the FRITZ!Box is configured as a VPN client. Over this VPN connection you can access devices and data in the company's network from the home network of the FRITZ!Box. It is not possible to access devices in your home network from the company network.

The IPsec algorithms listed below must be applied in the company VPN.

The FRITZ!Box supports VPN connections according to the IPsec standard with ESP, IKEv1, and pre-shared keys. Authentication Header (AH) and Perfect Forward Security (PFS) are not supported.

- Supported IPsec algorithms for IKE phase 1:
 - Encryption method: AES with 256, 192, 128 bit, Triple DES with 168 bit or DES with 56 bit
 - Hash algorithms: SHA2-512, SHA1 or MD5-96

- The FRITZ!Box uses 1024-bit Diffie-Hellman initial key exchange (DH group 2). It then also accepts 768, 1536, 2048 and 3072 bit (DH groups 1, 5, 14, and 15).
- Supported IPSec algorithms for IKE phase 2:
 - Encryption method: AES with 256, 192, 128 bit, Triple DES with 168 bit or DES with 56 bit
 - Hash algorithms: SHA2-512, SHA1 or MD5-96
 - The Diffie-Hellman group is determined by IKE phase 1
 - Compression: None

Connecting FRITZ!Box with a VPN Provider

With WireGuard, you can use your FRITZ!Box to establish a VPN connection to an internet anonymization service (VPN provider). You can specify whether all or only some of your devices in the home network can access the internet via the VPN provider. The VPN provider must support WireGuard.

IPv4 and IPv6 Network Traffic over VPN

The FRITZ!Box can establish VPN connections over both IPv4 and IPv6. This means that VPN connections can also be established if the FRITZ!Box is operated on an internet connection with Dual-Stack Lite (DS-Lite).

However, the FRITZ!Box can only transmit IPv4 data within the VPN tunnel. It is not possible to access IPv6 web services or devices in the remote network over the VPN connection if they are only available via IPv6.

Maximum Number of Simultaneous VPN Connections to the FRITZ!Box

In the FRITZ!Box you can configure several VPN connections and use them at the same time. It does not matter whether the connections are IPSec or WireGuard connections, connections from a computer or smartphone, connections to another FRITZ!Box or a company VPN.

Theoretically the maximum number of VPN connections that can be configured in the FRITZ!Box is unlimited. However, IPSec connections can only be configured for up to 20 FRITZ!Box users.

The maximum number of VPN connections that can be used at the same time depends on the speed and current utilization of the internet connection, the VPN technologies being used, and the utilization of the FRITZ!Box. We recommend using no more than 10 to 20 VPN connections at the same time.

Instructions: Configuring VPN in the FRITZ!Box

1. Open the user interface; [see page 47](#).
2. Click on **Internet > Permit Access** in the menu.
3. If you would like to configure a VPN connection with IPSec, click on **VPN (IPSec)**.
4. If you would like to configure a VPN connection with WireGuard, click on **VPN (WireGuard)**.
5. For instructions, open the online help .

Configuring IPv6

IPv6 stands for internet protocol version 6. This is the successor protocol to IPv4. IPv6 is more powerful, and has more addresses and better security properties than IPv4.

The FRITZ!Box supports IPv6 and can establish IPv6 connections.

Services that Support IPv6

Home Network/ Internet	Services that Support IPv6
IPv6-capable services in the home network	• 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 Wi-Fi network, the home network and Wi-Fi guests are separated by IPv6 subnetworks.
IPv6-capable services in the internet	• 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 since Mac OS X 10).

Instructions: Configuring IPv6 in the FRITZ!Box

1. Open the user interface; [see page 47](#).
2. Click in the menu on **Internet > Account Information** and on the **IPv6** tab.
3. For instructions, open the online help .

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Configuring and Using the Telephone Book

You can set up various telephone books in the FRITZ!Box. Which telephone book features are available depends on the telephone used:

- FRITZ!Fon: Telephone book available in the menu, separate telephone books for multiple FRITZ!Fon, quick-dial numbers, Click to Dial
- Cordless telephone with CAT-iq 2.0 support: Telephone book available in the menu, quick-dial numbers, Click to Dial
- FRITZ!App Fon : Telephone book available in FRITZ!App Fon
- IP telephone: FRITZ!Box telephone not available
- Others: 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.
Online telephone book	You can set up the following contacts as an on-line telephone book:
	Google contacts
	iCloud contacts (Apple)
	Contacts from email accounts with 1&1, GMX, WEB.DE, and Telekom (Telekom Mail)
	Contacts in CardDAV format
	Once an online telephone book has been configured, its contacts are available on your FRITZ!Fon cordless telephones. The online telephone book is synchronized with your contacts in the internet at regular intervals.

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 the FRITZ!Box

1. Open the user interface; [see page 47](#).
2. Click in the menu on **Telephony** > **Telephone Book** and on the **Telephone Book** tab.
3. For instructions, open the online help .

Instructions: Enabling and Using "Click to Dial"

With "Click to Dial" you can establish calls from the call list or the telephone book.

1. Open the user interface; [see page 47](#).
2. Click on **Telephony** > **Telephone Book** in the menu and then on the **Click to Dial** tab.
3. For instructions, open the online help .

Configuring and Using the Answering Machine

You can configure up to five answering machines in the FRITZ!Box, including multiple answering machines for the same telephone number.

Features

- If desired, you can receive any new messages automatically by email.
- With a schedule you can define times to switch on and off on different days of the week.
- With remote playback you can check answering machines from on the go.

Example 1

You have one telephone number for personal contacts and a second telephone number for business contacts. You can set up a separate answering machine for each telephone number.

Example 2

You use the answering machine in the office and the answering machine should record messages at all times. However, callers should hear a different message during office hours than outside of business hours.

For this you can set up two answering machines with different messages for the office telephone numbers. Configure the schedules such that the answering machines are never enabled at the same time.

Instructions: Configuring Answering Machines

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Answering Machine** in the menu.
3. For instructions, open the online help .

Operating the Answering Machine with Devices in the Home Network

You can operate the answering machine with the following devices:

- With your FRITZ!Fon. Instructions are presented in the current FRITZ!Fon manual at en.avm.de/service/manuals.
- By voice menu using any connected telephone. Instructions are included in this manual: [see page 201](#).
- By pressing a button on your FRITZ!Smart 440. Instructions for configuring the buttons are presented in the current FRITZ!Smart manual at en.avm.de/service/manuals.

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 more information, [see page 203](#).

Instructions: Listening to Answering Machines via Remote Playback

If you enabled remote playback in the configuration of the answering machine, then you can listen to an enabled answering machine from on the go:

1. Call your telephone line.
2. When the answering machine answers: Press the  (star) key on the telephone and then enter the remote playback PIN.
3. Follow the voice menu.

Using the Fax Function

With the FRITZ!Box you can send and receive faxes. The FRITZ!Box can forward received faxes to your email address. Send the fax from the user interface. A graphic file in JPG or PNG format can be appended to any fax transmission.

Maximum Fax Length

A maximum of ten A4 pages can be transmitted as a fax. If you append a graphics file, page 10 is reserved for the graphics.

Instructions: Configuring the Fax Function

1. Open the user interface; [see page 47](#).
2. Click on **Telephony** > **Telephony Devices** in the menu.
3. For instructions, open the online help .

Instructions: Sending Faxes

1. Open the user interface; [see page 47](#).
2. Click on **Telephony** > **Fax** in the menu.
3. For instructions, open the online help .

Configuring Call Diversion

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 contact in the telephone book
- all calls from telephone numbers not included 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

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Call Handling** in the menu and then on the **Call Diversion** tab.
3. For instructions, open the online help .

Configuring Call Blocks

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 to certain telephone numbers or in certain ranges of telephone numbers	Blocked telephone numbers can no longer be called from the FRITZ!Box You can also block ranges of telephone numbers like mobile networks or all telephone numbers that begin with 0180.
Incoming calls from certain telephone numbers or certain ranges of telephone numbers	The FRITZ!Box does not accept calls from blocked telephone numbers. Call blocks for incoming calls only work when the caller transmits their telephone number.
Calls from telephone numbers not in the telephone book	You can block all telephone numbers that are not entered in a FRITZ!Box telephone book. The telephone book is then your positive list for telephone numbers: You can only be reached by contacts from a FRITZ!Box telephone book.
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.

You can also configure a call block for the range of **premium numbers** and further prevent the dialing of telephone numbers that start with 0190, 0180, 0137, or 0138.

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

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Call Handling** in the menu and then on the **Call Blocks** tab.
3. For instructions, open the online help .

Configuring Do Not Disturb

You can set up Do Not Disturb for individual telephones in the FRITZ!Box. Do Not Disturb ensures that a telephone does not ring when an incoming call arrives. If no other telephone rings either, the caller hears a busy signal. In any case, the call appears in the call list of the FRITZ!Box.

Do Not Disturb cannot be configured for IP telephones (connected via LAN port/Wi-Fi).

Example

You do not want your telephone to ring between 11 p.m. and 6 a.m.

Please Note

- Calls from **important persons** in the telephone book are signaled even when Do Not Disturb is enabled.
- Internal calls are signaled even when Do Not Disturb is enabled.

Instructions: Setting Up Do Not Disturb

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Telephony Devices** in the menu.
3. Click on the **Edit** button  for the desired telephone.
4. Switch to the **Do Not Disturb** tab.
5. For instructions, open the online help .

Setting an Alarm

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

Example

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

Instructions: Configuring an Alarm

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > Alarm** in the menu.
3. For instructions, open the online help .

Configuring a Dialing Rule

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

Example

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

Instructions: Configuring Dialing Rules

1. Open the user interface; [see page 47](#).
2. Click on **Telephony** > **Call Handling** in the menu and then on the **Dialing Rules** tab.
3. For instructions, open the online help .

Enabling DECT Eco

With the following settings you can reduce the radiation of DECT emissions:

- **Reduce DECT field strength:** Enable this setting only if you use all DECT devices in the vicinity of the FRITZ!Box. Reducing the field strength reduces the range of the DECT radio network.
- **DECT Eco:** When DECT Eco is enabled, the FRITZ!Box switches off the DECT radio network when all cordless telephones are in stand-by mode. The radio network is switched back on when a call arrives or you press a key on a cordless telephone.

You can enable these settings individually or at the same time.

Requirements

- All registered cordless telephones support DECT Eco: Under **Telephony > DECT > Monitor** in the FRITZ!Box user interface, **DECT Eco supported** is displayed for each telephone.
- The following devices are not registered with the FRITZ!Box:
FRITZ!Smart devices with a smart plug, FRITZ!DECT Repeater, another FRITZ!Box in DECT repeater mode.

Instructions: Reducing DECT Transmission Power

1. Open the user interface; [see page 47](#).
2. Click on **Telephony > DECT** in the menu and then on the **Base Station** tab.
3. Enable the **Reduce DECT field strength** checkbox.
4. Save your settings with **Apply**.

Instructions: Enabling DECT Eco

1. Open the user interface; [see page 47](#).

2. Click on **Telephony** > **DECT** in the menu and then on the **Base Station** tab.
3. Enable the checkbox **DECT Eco**.
4. Select whether DECT Eco should always be enabled, or define times when DECT Eco should be switched on and off.
5. Save your settings with **Apply**.

Allowing Non-Encrypted DECT Connections

Some DECT repeaters from other manufacturers do not support encrypted connections. For operation of such DECT repeaters you can allow non-encrypted DECT connections.

In the default settings, the FRITZ!Box allows only authenticated and encrypted DECT connections.

Please Note

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

- Registration of a FRITZ!DECT Repeater or FRITZ!Box in DECT repeater mode
- DECT Eco
- HD telephony
- With FRITZ!Fon: ring tones of your own, web radio, podcasts, background image, photos of callers

Instructions: Allowing Non-Encrypted DECT Connections

1. Open the user interface; [see page 47](#).
2. Click on **Telephony** > **DECT** in the menu and then on the **Base Station** tab.
3. For instructions, open the online help .

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Overview of All Devices

In the **Mesh Overview** you see all devices that are attached to the FRITZ!Box or connected with the network of the FRITZ!Box. The overview covers the home network and the guest network.

Home Network and Mesh Wi-Fi: Overview Diagram

An overview diagram shows all devices that are physically connected to the FRITZ!Box or connected with the FRITZ!Box via Wi-Fi. The overview diagram is a helpful tool to make the device connections transparent.

What the Diagram Shows	Details
Network devices	All devices connected with the FRITZ!Box via Wi-Fi, by network cable, via VPN or via powerline: PCs, laptops, tablets, smartphones, TVs, game consoles, wireless repeaters, powerline devices, etc.
Telephony devices	• Cordless telephones connected via DECT • Wired telephones
Smart home devices	Radiator controls, smart plugs, controllable switches, etc.
DECT repeaters	Repeaters to extend the DECT transmission range
Connection technology	The technology of the connection to the FRITZ!Box is shown for every device: • Wi-Fi, Ethernet cable, VPN, powerline: for network devices • 2.4 GHz or 5 GHz: for wireless devices • DECT: for cordless telephones, smart home devices and DECT repeaters
Connection topology	Connection path of the devices to the FRITZ!Box: direct connection or via a repeater, an access point, or a powerline device



What the Diagram Shows	Details
Devices in the guest network	Devices that are connected with the FRITZ!Box via the guest network.
Update available	The Perform update >> button for FRITZ! products indicates that a new FRITZ!OS is available.
Devices in the Mesh	Mesh enabled: the Mesh enabled  icon marks the devices that are configured as Mesh Repeaters.



Active Connections and Current Software Version

All devices shown in the **Home Network and Mesh Wi-Fi** diagram are also listed in the **Active Connections in the Home Network and Current Software Version** table.

The table offers the following functions:

Function	Description
Check FRITZ!OS version	For FRITZ! products, the Update column displays whether the FRITZ!OS installed on the FRITZ! device is the latest, or whether an update is available.
Perform FRITZ!OS update	If the Update column in the table indicates that a FRITZ!OS update is available, you can perform the update directly from the table.
Open a properties window for a device	The Properties column contains a Details link for each device. Clicking on this link opens the properties window for network devices. For other devices, it opens the settings page in the device's technology area.

Prioritize Device for Internet Access

You can prioritize network devices for internet access. Prioritized devices receive preferential treatment when they access the internet.

Properties and Actions	Description
Highest priority	• On prioritized devices, all applications that access the internet are treated as real-time applications. • When the internet connection is working at full capacity, a prioritized device receives preferential treatment. • If multiple devices are prioritized, they are prioritized equally.
Wireless repeaters and powerline devices	Prioritized wireless repeaters and powerline devices do not pass their prioritization on to the network devices that are connected with them. The prioritization must be configured on the network devices.
Adjusting prioritization	Prioritized devices and all of their applications are added to the real-time applications under Internet > Filter > Prioritization . There you can configure adjustments to the prioritization of the device.
Configuring prioritization	Prioritization is configured in the properties window of the device (opening a properties window; see page 119).

Editing the Properties of a Network Device

The properties of any network device can be viewed, and settings changed or reset, in the properties window of the given device.

Instructions: Opening a Properties Window for a Device

1. Open the user interface; [see page 47](#).
 2. Click on **Home Network** > **Network** in the menu and then on the **Network Connections** tab.
 3. Select the network device in the table and click on  **Edit**.
- The window with the properties for the device opens.

Performing a FRITZ!OS Update in the Mesh Overview

The FRITZ!Box works with its own operating system FRITZ!OS. AVM regularly makes new versions of FRITZ!OS available for your FRITZ!Box, free of charge. Updates contain further developments and often new features.

You can update the FRITZ!OS in the user interface of your FRITZ!Box, in the Mesh Overview.



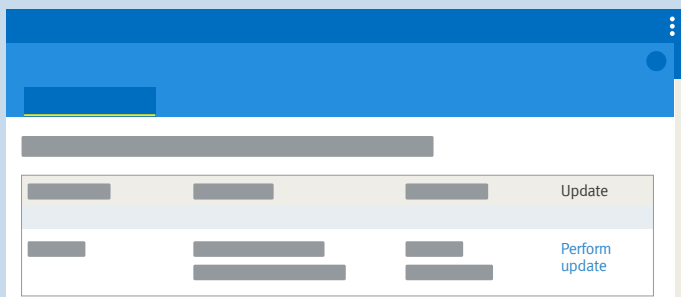
Always install the latest FRITZ!OS version on all FRITZ! products in your FRITZ!Box home network. This keeps your FRITZ! products up to date and ensures optimum synchronization of all devices in your home network.

Instructions: Performing a FRITZ!OS Update in the Mesh Overview



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

1. Open the user interface; [see page 47](#).
2. Click on **Home Network > Mesh** in the menu.
3. When a new update is available, the **Active Connections in the Home Network and Current Software Version** table displays the **Perform update** link next to the FRITZ!Box entry.



4. Start the update by clicking on **Perform update** and wait until the message **Update was successful** appears.

Managing Network Devices

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	Network devices are devices that are connected with the FRITZ!Box in one of the following ways: • with a network cable to a LAN port on the FRITZ!Box • via Wi-Fi • via the internet with a VPN connection (see page 91)
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 is the interface used to connect a network device with a network. This can be a wireless module for Wi-Fi connections or a network port for cabled connections.

Properties and Benefits

The table with the network connections assists you 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 Wi-Fi, or over VPN.
- Idle connections: Connections that are currently inactive are 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.
- Find devices quickly:
 - Show and hide table columns: 
 - Sort table columns:  for ascending and  for descending
- Adjustable connection properties: The properties window can be opened for each connection. Connection properties can be changed in the properties window.

Adding a Device

You can include in the table 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, they 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 Wi-Fi

Changing IPv4 Settings

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. The preconfigured IPv4 network is identical in all FRITZ!Boxes. You can change the IPv4 settings.



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

Application Example

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 into an existing FRITZ!Box network and both FRITZBoxes are operating in router mode (cascaded).

In both cases the FRITZ!Boxes involved cannot have identical IPv4 networks.

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 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.

Fallback IPv4 Address for Emergencies

The FRITZ!Box also has a fixed IPv4 address that cannot be changed.

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

How to use the fallback IPv4 address: [see Opening the User Interface with the Fallback IP Address, page 221](#).

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

1. Open the user interface; [see page 47](#).
2. Click on **Home Network > Network > Network Settings** in the menu.
3. For instructions, open the online help .

Distributing IPv4 Addresses

Every network device in the IPv4 home network of the FRITZ!Box has an address from the IPv4 address range of the FRITZ!Box. Either a network device receives its IPv4 address automatically from the DHCP server of the FRITZ!Box, or you enter the IP address 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	Requirement
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
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

Kind of Change	Requirement
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

Please Note

- Only one DHCP server may be active in a network.

Preparing Network Devices for DHCP

For the IP address to be assigned by the DHCP server, the **Obtain an IP address automatically** option must be enabled in the IPv4 settings of the network devices; [see page 134](#).

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 Assign the Same IPv4 Address

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

Disabling the DHCP Server

You can disable the DHCP server of the FRITZ!Box.

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

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

Changing IPv6 Settings

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

Requirements

- The **IPv6 support enabled** setting is enabled under **Internet > Account Information > IPv6** in the FRITZ!Box user interface.

Factory Settings

The following IPv6 settings are configured in the FRITZ!Box upon delivery:

IPv6 Property	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 the 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

1. Open the user interface; [see page 47](#).

2. Click on **Home Network > Network** in the menu and then on the tab **Network Settings**.
3. For instructions, open the online help .

Configuring a Static IP Route

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 Example

Static IP routes are intended for situations in which all three of the points below apply:

- 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 located in the subnet, it forwards the packet to the internet. To prevent this from happening and have the packets forwarded to the subnet instead, 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.

Instructions: Configuring a Static IPv4 Route

1. Open the user interface; [see page 47](#).
2. Click on **Home Network** > **Network** in the menu and then on the tab **Network Settings**.
3. In the **Static Routing Table** area, click on **IPv4 Routes**.
4. For instructions, open the online help .

Instructions: Configuring a Static IPv6 Route

1. Open the user interface; [see page 47](#).
2. Click on **Home Network** > **Network** in the menu and then on the tab **Network Settings**.
3. Click on **Additional Settings**.
4. Click under **Table for Static Routes** on **IPv6 Routes**.
5. For instructions, open the online help .

Obtaining an IP Address Automatically

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. Click on **Start** in Windows 11 and Windows 10.
2. Enter **ncpa.cpl** in the search field and press Enter.
3. Click with the right mouse button on the network connection between the computer and the FRITZ!Box and select **Properties**.
4. Under **This connection uses the following items**, select **Internet Protocol Version 4 (TCP/IPv4)**.
5. Click on the **Properties** button.
6. On the "General" tab, enable the options **Obtain an IP address automatically** and **Obtain DNS server address automatically**.
7. Save with **OK**.
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 macOS

1. Click on **System Settings** in the **Apple**  menu.
2. In the **System Preferences** window, click on **Network**.
3. In the **Network** window, click on **Ethernet (integrated)** in the **Show:** menu.
4. Switch to the **TCP/IP** tab and click on **DHCP** in the **Configure IPv4** menu.
5. Click on **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 Wake on LAN

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

Requirements

- The network adapter of the computer supports Wake on LAN.
- Your computer is connected with the FRITZ!Box in one of the following ways:
 - 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

1. Open the user interface; [see page 47](#).
2. Click on **Home Network > Network** in the menu and then on the **Network Connections** tab.
3. Select the network devices in the list and click on  **Edit**.
4. For instructions, open the online help .

Assigning a FRITZ!Box Name

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 Wi-Fi network (SSID).



Changing the name may make it necessary to reconfigure your Wi-Fi connections and network links.

Consequences of Assigning a Name

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

- name of the Wi-Fi network (SSID)
- name of the guest Wi-Fi network (SSID)
- name of the DECT base station
- the push service sender name
- name of your FRITZ!Box in the device overview in MyFRITZ!

Instructions: Assigning a FRITZ!Box Name

1. Open the user interface; [see page 47](#).
2. Click on **Home Network > FRITZ!Box Name** in the menu.
3. For instructions, open the online help .

User Interface: Wi-Fi Menu

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Selecting the Wi-Fi Channel..... 140

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Switching the Wi-Fi Network On and Off

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

You can switch the Wi-Fi network on and off manually, and set up a schedule for times when the Wi-Fi network is turned on and off automatically.

Switching the Wi-Fi Network On and Off Manually

You can switch the Wi-Fi network on and off in the following ways:

- On the FRITZ!Fon in the **Home Network** > **Wi-Fi** menu
- In the MyFRITZ!App in the **Convenience Features** > **Wi-Fi** menu
- By keypad code with connected telephones [see page 200](#)

Instructions: Switching the Wi-Fi Network On and Off by Schedule

1. Open the user interface; [see page 47](#).
2. Click on **Wi-Fi** > **Schedule** in the menu.
3. For instructions, open the online help .

Selecting the Wi-Fi Channel

In the default setting **Set Wi-Fi channel settings automatically**, the FRITZ!Box automatically searches for the ideal channel. The FRITZ!Box takes into consideration adjacent Wi-Fi networks and other sources of interference like baby monitors or microwave ovens.

Should problems with interference in the Wi-Fi network persist, try to find the source of interference and eliminate it.

In some cases it may be necessary to adjust the Wi-Fi channel settings.

Instructions: Adjusting the Wi-Fi Channel Settings

1. Open the user interface; [see page 47](#).
2. Click on **Wi-Fi > Wi-Fi Channel** in the menu.
3. For instructions, open the online help .

Configuring Wi-Fi Guest Access

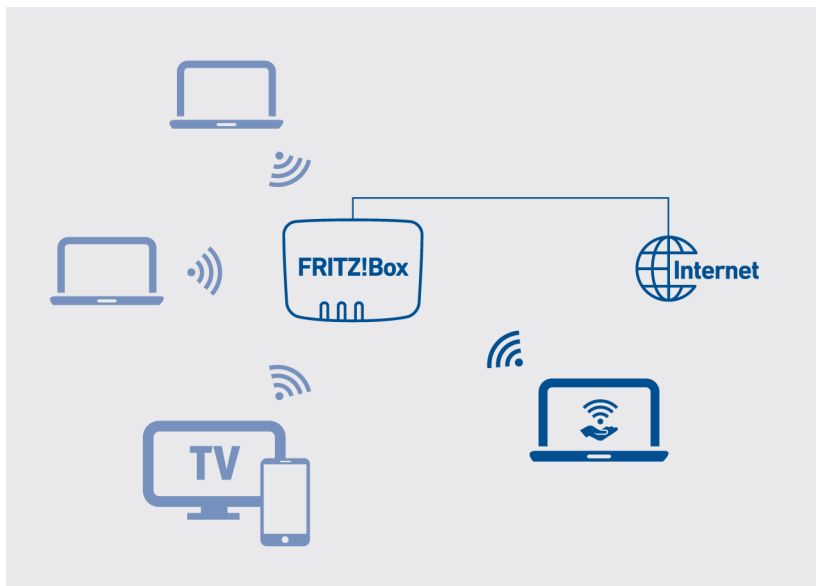
With the Wi-Fi guest access you can make an internet connection available to guests which is separate from your home network. Guests cannot access shared files or printers in the FRITZ!Box home network.

You can configure a private Wi-Fi guest access or a public Wi-Fi hotspot. The private Wi-Fi guest access can only be used with a password, and data transmission on this access is encrypted. The private Wi-Fi guest access is suitable for friends and acquaintances who want access to the internet when visiting you at home.

The public Wi-Fi hotspot can be used without a password (open Wi-Fi), making it suitable for the public spaces in shops, cafés, or doctor's offices.

Your guests can connect to the Wi-Fi guest access quickly by scanning a QR code.

Example Configuration



Functions for Security and Monitoring the Wi-Fi Guest Access

Various functions are available for the security and monitoring of the Wi-Fi guest access.

- In the default setting, wireless devices in the guest network cannot communicate with each other.
- You can enable a **captive portal** for the guest access so that the user must confirm the provider's terms of use. Every time the FRITZ!Box is restarted, all users must log back in and consent to the terms of use.
- If you enable the push service for the guest access, you will receive email messages about registrations with and deregistrations from the guest network.
- You can restrict internet applications to surfing and email.
- Wireless devices in the guest network receive the **Guest** access profile in the FRITZ!Box parental controls. For this access profile you can restrict internet use to certain periods and block certain websites. When **Germany** is selected in the FRITZ!Box user interface as the country under **System > Region and Language**, all websites included in the index of the Federal Review Board for Media Harmful to Minors (German BPjM module) will be blocked.

Instructions: Configuring Wi-Fi Guest Access

1. Open the user interface; [see page 47](#).
2. Click on **Wi-Fi > Guest Access** in the menu.
3. For instructions, open the online help .

User Interface: Smart Home Menu

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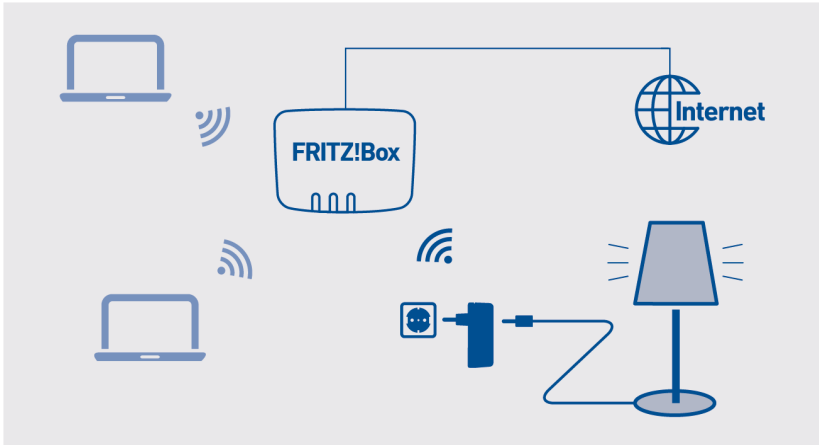
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Smart Home Devices

The FRITZ!Box is a hub for Smart Home devices from FRITZ! and smart home devices from other manufacturers.

Example Configuration



Compatible Smart Home Devices

The following devices can be registered with the FRITZ!Box:

- FRITZ!Smart radiator controls
- FRITZ!Smart sockets and LED lights
- FRITZ!Smart switches and door/window sensors
- devices from other manufacturers that support the DECT ULE/HAN FUN standard

Maximum Number of Devices

You can register a maximum of **50** smart home devices with the FRITZ!Box.



With a FRITZ!Smart Gateway or a second FRITZ!Box as a Mesh Repeater, you can increase this number of devices to a maximum of 100. All smart home devices in the home network are available in the FRITZ!Box user interface and can be configured and operated there.

Restrictions for Different Device Classes

- For FRITZ! radiator controls, switches, and door/window contacts, only the maximum number of 50 devices must be observed.
- You can register up to 20 FRITZ! smart plugs and LED lights with the FRITZ!Box (e.g. 10 smart plugs and 10 LED lights).
- You can register up to 30 smart home devices that support Zig-bee. Some limitations can arise when more than 3 cordless telephones and/or DECT door intercom systems are connected with the FRITZ!Box.

Example

Thirty HAN FUN devices are registered with the FRITZ!Box. Then you can register another 20 FRITZ! devices.

Registering Smart Home Devices with the FRITZ!Box

The way a smart home device is registered depends on the type of device.

Instructions: Registering a Smart Home Device

1. Open the user interface; [see page 47](#).
2. Click on **Smart Home > Devices and Groups** in the menu.
3. For instructions, open the online help .

Operating Smart Home Devices

Devices in the FRITZ!Box Smart Home can be operated in various ways.

Operating Smart Home Devices: Options

- At home in the FRITZ!Box user interface under **Smart Home > Operation**
- At home on the FRITZ!Fon in the **Home Network > Smart Home** menu
- At home and on the go with FRITZ!App Smart Home
- At home and on the go with MyFRITZ!App
- At home with the four-way switch FRITZ!Smart 440
- At home with the FRITZ!Smart 400 switch for FRITZ!Smart switchable LED lights

Settings and Possibilities in the Smart Home

Configuring an Automatic Switching Schedule

You can configure various types of automatic switching for devices like LED lights, smart plugs, and radiator controls, for instance:

- You can specify different switch-on and switch-off times for the individual days of the week.
- By having your LED lights switch on and off at random times, you can simulate that someone is home while you're away.
- For radiator controls you can specify when you want the room to have the desired temperature, and when the temperature can be lower.

Configuring Groups

You can combine different smart home devices of the same type in a group like LED lights, smart plugs, or radiator controls.

In the group you can switch devices on and on together. You can also configure automatic switching, templates, and scenes for groups.

Configuring Templates and Scenes

In templates and scenes you can save settings to be used later. When you get home, leave the house, and in other specific situations, these prepared templates and scenes can be applied quickly. When they are applied, the current settings of your smart home devices are overwritten with the settings from the template or scene.

With the predefined **Coming Home** scene, for instance, you can switch on all LED lights and set all radiator controls to the desired temperature.

Templates contain settings for smart home devices of the same type, such as LED lights. Scenes can contain multiple templates, even for different device types.

Configuring Routines

Routines are if-then rules containing a trigger, a condition, and an action.

The trigger is a smart home device with a sensor, for instance, a door/window contact.

The condition is an event on the trigger, for instance, the opening of a door or window.

The action is a template or a scene such as **switch on all LED lights**. The action is carried out when the condition is met.

User Interface: Diagnostics Menu

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Starting Function Diagnostics

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

Function Diagnostics Checkpoints

Number Range	Checkpoint/Status
FRITZ!Box 6860 5G	- Name of the FRITZ!Box - FRITZ!Box Version - FRITZ!OS up to date
Registration	Configured login method to the FRITZ!Box user interface
LAN	- Allocation of LAN ports - Power settings on LAN ports
Wi-Fi	- Wi-Fi frequency band enabled/disabled with Wi-Fi function - Number of wireless devices connected - Security settings
DECT	- DECT enabled/disabled - Number of DECT devices connected
Mobile network connection	- Status of the mobile connection - Download and upload rate
Internet connection	- IPv4 connection active since/not active - IPv6 connection active since/not active - Current IP address
Telephone numbers	How many and which numbers assigned
MyFRITZ!	- Status of MyFRITZ! activation - MyFRITZ! account email address



Number Range	Checkpoint/Status
Home network	• Number of network devices connected with the FRITZ!Box at present or at an earlier point in time • Number of network devices online
Smart Home	Number of Smart Home devices
Wi-Fi environment	Wi-Fi frequency band with number of Wi-Fi networks on the same or an adjacent channel

Instructions: Starting Function Diagnostics

1. Open the user interface; [see page 47](#).
2. Click on **Diagnostics** > **Function** in the menu.
3. For instructions, open the online help .

Starting Security Diagnostics

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

Security Diagnostics Test Points

Number Range	Checkpoint/Status
FRITZ!OS	• FRITZ!Box Version • FRITZ!OS up to date
Registration	Configured login method to the FRITZ!Box user interface
Internet connection	• Ports opened on the FRITZ!Box • Protocols used on these ports • Port sharing for home network devices to the internet • Filters for internet access
MyFRITZ!	• Status of MyFRITZ! activation • MyFRITZ! account email address • Registration link for MyFRITZ! • Overview of MyFRITZ! sharing for access from the internet
Outgoing filters	Overview of active filters for access from the internet
Wi-Fi	• Properties and security-relevant settings for access to the Wi-Fi network and Wi-Fi guest access • Names of registered and known wireless devices



Number Range	Checkpoint/Status
Telephony	• Mesh Repeater with telephony On a Mesh Repeater (FRITZ!Box) enabled for telephony in the Mesh, all of the telephone numbers configured in the Mesh Master are available. • 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 • CAPloverTCP driver function CAPi drivers install virtual modem drivers so that analog services like faxing can be used digitally. With CAPloverTCP you can use the FRITZ!Fax for FRITZ!Box program with the FRITZ!Box to send and receive faxes.
FRITZ!Box users	• All FRITZ!Box users and their rights to access FRITZ!Box contents, for the FRITZ!Box home network and for access from the internet • Time of the last login to the FRITZ!Box and the IP address used to do so

Instructions: Starting Security Diagnostics

1. Open the user interface; [see page 47](#).
2. Click on **Diagnostics** > **Security** in the menu.
3. For instructions, open the online help .



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Saving Power with the FRITZ!Box

The FRITZ!Box offers various settings for energy-saving operation.

Displaying Information on Power Consumption

Information on the current power consumption of the entire FRITZ!Box system is displayed on the **Overview** page in the FRITZ!Box user interface.

Configuring Energy-Saving Functions of the FRITZ!Box

You can configure various energy saving functions in the FRITZ!Box.

Wi-Fi

- You can configure a switching schedule for Wi-Fi; [see page 139](#).
- You can reduce the maximum transmitter power in the FRITZ!Box user interface in the **Wi-Fi > Wi-Fi Network** menu.

Configuring Push Services

The FRITZ!Box makes various push services available. Push services are service email messages with information on the activities of your FRITZ!Box. 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. Push services also support you in restoring your passwords and backing up the FRITZ!Box settings.

Available Push Services

You can request push service mails to notify you 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
Smart Home	Sends you the status of a Smart Home device regularly or when important events occur
Wi-Fi Guest Access	Sends a message whenever devices register with or deregister from the Wi-Fi guest access
SMS Reception	Forwards texts that arrive at the FRITZ!Box via the mobile network by email
New FRITZ!OS	Notifies you whenever a new FRITZ!OS version is available for your FRITZ!Box
Forgot password	Sends you an access link to the specified email address if you have forgotten your password

Push Service	Function
Save settings	Saves the settings of the FRITZ!Box to a backup file before each update and every time the factory settings are restored, and forwards this file by email, protected with a password
Change Notice	Sends you an email every time changes are made to a FRITZ!Box setting or when potentially security-relevant events occur
Current IP address	Sends the IP address assigned by the internet service provider every time the internet connection is established

Steps

Configure the push service emails by performing the following steps:

Instructions	
	Set an email address as the sender of push service mail.
	Enable the desired push services and make any other necessary settings.

Instructions: Configuring and Testing an Email Address for Sending Push Service Mail

1. Open the user interface; [see page 47](#).
2. Click on **System** > **Push Service** in the menu and then on the **Sender** tab.
3. For instructions, open the online help .

Instructions: Configuring and Enabling Push Services

1. Open the user interface; [see page 47](#).
2. Click on **System** > **Push Service** in the menu and then on the **Push Services** tab.
3. For instructions, open the online help .

FRITZ!Box Password and FRITZ!Box Users

When you open the user interface of your FRITZ!Box, you will be prompted to log in. This login serves to keep your FRITZ!Box secure and protects access to the user interface.

You have two options for logging in to your FRITZ!Box:

- with a FRITZ!Box password; [see page 162](#)
- as a FRITZ!Box user; [see page 164](#)

FRITZ!Box Password

For the first login to the FRITZ!Box, a FRITZ!Box password is preconfigured, which works without a username. The preconfigured FRITZ!Box password is printed on the FRITZ! Notes service card and on the type label on the outside of the FRITZ!Box housing.

The FRITZ!Box password has the following properties:

- Login with the FRITZ!Box password without a username is possible only within the FRITZ!Box home network.
- Every user who logs in with the FRITZ!Box password without a username has the right to access all contents and settings on the FRITZ!Box.
- For the FRITZ!Box password, the FRITZ!Box automatically creates a FRITZ!Box user with a username composed of the letters **fritz** and a four-digit string of numerals, for instance, **fritz1234**. The FRITZ!Box uses this user account internally whenever you log in with the home network with the FRITZ!Box password and without a username.

If you change the automatically created username, then you can no longer log in using just the FRITZ!Box password without a username. Then login is possible only with a username and password.

- You can change the preconfigured FRITZ!Box password; [see page 162](#).
- The preconfigured FRITZ!Box password is restored if you restore the factory settings to the FRITZ!Box.

Changing the FRITZ!Box Password

Within the FRITZ!Box home network you can log in with the FRITZ!Box using a FRITZ!Box password without a username. For the first login with the FRITZ!Box, use the FRITZ!Box password preset for your FRITZ!Box, which you can find on the **FRITZ! Notes** service card and printed on the FRITZ!Box housing.

You can change the preconfigured FRITZ!Box password.

Requirements

- The username automatically created for the FRITZ!Box password has not been changed yet; [see page 162](#).

Instructions: Changing the FRITZ!Box Password

1. Open the user interface; [see page 47](#).
2. Log in with your FRITZ!Box password.
3. Click on the menu with the three dots  in the header of the FRITZ!Box user interface.
4. Click on **Change Password** in the menu.
5. Enter a new password.
Remember to comply with the rules for passwords; [see page 164](#).

Email Service for a Forgotten Password

Configure the **Forgot Password** push service, too, right away after changing your password. The **Forgot Password** push service sends you an access link to a specified email address if you have forgotten your password. With this link your access to the FRITZ!Box user interface is restored.

If you changed the FRITZ!Box password and then forgot it, there is no way to find it out without this push service.

The **Forgot Password** push service is configured in the **System > Push Service** menu on the **Push Services** tab.

FRITZ!Box Users

FRITZ!Box users are individual authorizations to access and use the FRITZ!Box, which are linked with individual user accounts. A FRITZ!Box user account is set up with a username and a password.

A FRITZ!Box user account has the following properties:

- Login using a FRITZ!Box account is possible from the home network of the FRITZ!Box and, with the appropriate rights, also via the internet.
- If you create a FRITZ!Box user account for a person, then that person is granted rights to use selected areas and functions of the FRITZ!Box.
- A FRITZ!Box user does not have to be an actual person. You can create a FRITZ!Box user for the purpose of bundling certain use rights. For instance, you can create a Smart Home user who can access only Smart Home functions.
- Every FRITZ!Box user logs in with their own username and a unique password.
- You can set up as many as 18 FRITZ!Box user accounts.

You can configure the following rights for each FRITZ!Box user:

- Access the FRITZ!Box from the internet
- View and edit FRITZ!Box settings
- View and listen to voice messages, faxes, and the FRITZ!App Fon call list
- Control smart home devices
- Establish a VPN connection to the FRITZ!Box

Please Note

Please observe the following rules for usernames and passwords:

- For FRITZ!Box users, select a username that begins with a letter from a to z in upper or lower case and has a maximum of 32 characters; [see page 166](#).

- Select a password with at least twelve characters, which includes capitals and lower-case letters as well as numerals and special characters; [see page 166](#).
- 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 access information and did not configure the **Forgot Password** push service, you will have to restore the factory settings to the FRITZ!Box and reconfigure all of your personal settings for your internet connection, your telephone system, and your home network.

Characters Allowed for Passwords and Usernames

Characters	In Usernames	In Passwords
Latin letters from a to z in lower case and upper case	allowed	allowed
Numerals 0 to 9	allowed	allowed
Spaces	allowed	allowed
Umlauts in upper case and lower case (for example, ä, ö, ü)	not allowed	not allowed
The letter ß in lower case and upper case	not allowed	not allowed
Currency symbols: €	not allowed	not allowed
Special characters: - _ .	allowed	allowed
Special characters: ! " # \$ % & ' (*) + / : ; , < = > ? @ [\] ^ _ { } ~	not allowed	allowed
special characters: § ´	not allowed	not allowed

Instructions: Configuring FRITZ!Box Users

1. Open the user interface; [see page 47](#).
2. Click on **System > FRITZ!Box Users > User** in the menu.
3. For instructions, open the online help .

Switching Off the LED Display

By means of the LEDs, your FRITZ!Box notifies you about the current connection status and signals events in the home network. In the **System / Buttons and LEDs / LED Display** menu you can switch off the LEDs. Error conditions will still be signaled, and it is also possible to switch them on briefly without permanently changing the LED display settings.

Example

Your FRITZ!Box is located in the bedroom and you find the light from the LEDs too bright or irritating.

Instructions: Switching Off the LED Display

1. Open the user interface; [see page 47](#).
2. Click on **System / Buttons and LEDs / Info Display** in the menu.
3. For instructions, open the online help .

Locking and Unlocking Buttons

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

Instructions: Locking or Unlocking the Buttons of the FRITZ!Box

1. Open the user interface; [see page 47](#).
2. Click on **System > Buttons and LEDs** in the menu and then on the **Keylock** tab.
3. Enable or disable **Buttons locked**.
4. Click on **Apply**.

Setting the User Interface Language

You can change the language of the user interface. You can choose between Dutch, English, French, German, Italian, Polish, and Spanish.

Please Note

- FRITZ!Fon cordless telephones automatically adopt the new language of the FRITZ!Box. You can prevent this: Within two minutes after you changed the language setting in the FRITZ!Box, press **Cancel** on the FRITZ!Fon.

Instructions: Setting the User Interface Language

1. Open the user interface; [see page 47](#).
2. Click on **System > Region and Language** in the menu and then on the **Language Settings** tab.
3. Select the desired language from the drop-down list.
4. Click on **Apply**.

The FRITZ!Box restarts. After restarting, the user interface is in the desired language.

Changing Regional Options

Use the Regional Options page to specify the country in which your FRITZ!Box is deployed. The country setting optimizes the connection settings of the FRITZ!Box for that country and automatically sets the right time zone.

Instructions: Changing Regional Options

1. Open the user interface; [see page 47](#).
2. Click on **System > Region and Language > Region**.
3. For instructions, open the online help .

Adjusting the Time Zone

By default, the FRITZ!Box automatically sets the time zone when it connects to the internet. However, you can also set the time zone where you use the FRITZ!Box manually.

If you are using the FRITZ!Box in a country with daylight saving time, you can enable the option to adjust to daylight time automatically.



For all features of the FRITZ!Box to work smoothly, the FRITZ!Box must always be set to the local time zone where it is located.

Instructions: Adjusting the Time Zone

1. Open the user interface; [see page 47](#).
2. Click on **System > Region and Language > Time Zone** in the menu.
3. For instructions, open the online help .

Saving Settings

You can save all of the settings made in your FRITZ!Box to a backup file.

- You can restore the 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 a FRITZ!Box of another model.

Instructions: Saving Settings Manually

1. Open the user interface; [see page 47](#).
2. Click on **System** > **Backup** in the menu and then on the **Save** tab.
3. For instructions, open the online help .

Instructions: Saving Settings Automatically

With the **Save Settings** email service you can have an automatically generated file of your FRITZ!Box settings sent to you before an update or before restoring the factory settings to the FRITZ!Box. With this backup file you can restore your personal settings.

1. Open the user interface; [see page 47](#).
2. Click on **System** > **Push Service** > **Push Services** in the menu.
3. For instructions, open the online help .

Loading Settings

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

1. Open the user interface; [see page 47](#).
2. Click on **System** > **Backup** > **Restore** in the menu.
3. For instructions, open the online help .

Restarting the FRITZ!Box

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

- The FRITZ!Box is reinitialized.
- Events in the **System > Event Log** menu are deleted.
- Settings you made in the FRITZ!Box remain intact.

Instructions: Restarting the FRITZ!Box

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

Restarting the FRITZ!Box takes about 2 minutes.

Instructions: Restarting the FRITZ!Box from the User Interface

1. Open the user interface; [see page 47](#).
2. Click on **System > Backup > Restart** in the menu.
3. For instructions, open the online help .

Restoring Factory Settings to the FRITZ!Box

You can restore the factory settings to the FRITZ!Box.

Application Example

- You forgot the login information for the FRITZ!Box and can no longer access the user interface.
- The FRITZ!Box no longer works properly (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

- All of the settings you made in the FRITZ!Box are deleted.
- The network key from the factory settings is reactivated.
- The name of the Wi-Fi network (SSID) is reset.
- The IP configuration of the factory settings is restored.

Preparations

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 page 172](#).

Instructions: Restoring Factory Settings



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

1. Open the user interface; [see page 47](#).
2. Click on **System** > **Backup** in the menu and then on the **Factory Settings** tab.

3. Click on **Load Factory Settings**.

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

Performing a FRITZ!OS Update Automatically

The FRITZ!Box works with its own operating system FRITZ!OS. AVM regularly makes new versions of FRITZ!OS available for your FRITZ!Box, free of charge. FRITZ!OS updates include new functions and provide for more security.

With the automatic update function of the FRITZ!Box you will never miss a software update for your FRITZ!Box and will be able to use new features right away.



Always install the latest FRITZ!OS version on all FRITZ! products in your FRITZ!Box home network. This keeps your FRITZ! products up to date and ensures optimum synchronization of all devices in your home network.

Properties of Automatic Updates

In the **System > Update > Auto Update** menu you can specify when and which updates should be installed automatically, or whether you would like to be merely informed about new FRITZ!OS updates. The default setting is for notification of updates and automatic installation of all updates (level III).

The **Automatic Update** function offers you the following methods:

Method	Description
Level I: Notify me about new FRITZ!OS versions	- The FRITZ!Box indicates that a new version of FRITZ!OS is available on the homepage. - You start the update yourself; see page 185.
Level II: Notify me about new versions of FRITZ!OS and install necessary updates automatically	- The FRITZ!Box indicates that a new version of FRITZ!OS is available on the homepage. You start the update yourself; see page 185. - Updates that AVM regards as necessary for continued secure and reliable operation (for instance, security updates) will be installed automatically. - The FRITZ!Box selects a suitable time for the update, generally at night. - During installation all internet and telephony connections will be interrupted briefly.
Level III: Notify me about new versions of FRITZ!OS and install new versions automatically (recommended)	- The FRITZ!Box indicates that a new version of FRITZ!OS is available on the homepage. - Every new version of FRITZ!OS will be installed automatically. - The FRITZ!Box selects a suitable time for the update, generally at night. - During installation all internet and telephony connections will be interrupted briefly.



In the default setting, the FRITZ!Box generally installs updates at night. During installation internet and telephone connections are briefly interrupted. If you require a stable internet connection without interruption at night, for instance for working on servers, large downloads or updates, then select a time period that works better for you in the **System > Update > Auto Update** menu of the FRITZ!Box user interface.

Instructions: Configuring Automatic Updates

1. Open the user interface; [see page 47](#).
2. Click on **System > Update > Auto Update** in the menu.
3. For instructions, open the online help .

Performing a FRITZ!OS Update Manually

The FRITZ!Box works with its own operating system FRITZ!OS. AVM regularly makes new versions of FRITZ!OS available for your FRITZ!Box, free of charge. Updates include new functions and provide for more security.

In some cases it is not possible to perform an automatic update, or an update via the “Mesh Overview” or wizard. Then you have the option of performing a manual update with a FRITZ!OS file that is already saved on your computer’s hard drive, or on a storage medium connected to the computer, for instance a USB stick. No internet connection is needed for this update.



Always install the latest FRITZ!OS version on all FRITZ! products in your FRITZ!Box home network. This keeps your FRITZ! products up to date and ensures optimum synchronization of all devices in your home network.

Instructions: Updating FRITZ!OS without an Internet Connection



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

1. On a computer with an internet connection, enter the following address in the browser: download.avm.de
2. Navigate through the following folders: **fritzbox** > **your FRITZ!Box model** > **deutschland** > **fritz.os**.
The complete model name of your FRITZ!Box is shown in the user interface on the **Overview** page and on the type label on the outside of the housing.
3. Download the file with the file extension **.image** and save it to a location which you can access via the FRITZ!Box user interface, for instance, to a USB storage medium.
4. Open the user interface on a computer that is connected with the FRITZ!Box; [see page 47](#).

5. Click on **System > Update > FRITZ!OS File** in the menu.
6. If you did not configure the **Save Settings** push service: Back up the settings on your FRITZ!Box before the update. Using this file you can restore the settings of your FRITZ!Box as needed.
 - Enable **Create a backup file before the update (recommended)**.
 - Assign a password for the encryption of your backup file.
 - Perform the additional confirmation and click on **OK**.
 - Save the backup file on your computer.
7. Click on the Browse button and select the downloaded file.
8. Click on **Start Update**.

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Using the Wizards

Wizards guide you step by step through the most important FRITZ!Box functions.

Configuring Step by Step with the Wizard

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

Wizard	Function
Manage Telephony Devices	Connects and configures the following devices: • cordless (DECT) telephones
Manage Telephone Numbers	Adds and edits telephone numbers
Configure the Internet Connection	Configures and check your internet connection via the mobile network
Check the Status of the FRITZ!Box	Performs diagnostics of the functional status of your FRITZ!Box, its internet connection, and the home network connection to the FRITZ!Box
Transfer Your Settings to a New FRITZ!Box	Transfers all FRITZ!Box settings for telephony, Smart Home, internet, Wi-Fi and MyFRITZ! to a new FRITZ!Box.
Security	• Performs diagnostics of FRITZ!Box settings that regulate access to the FRITZ!Box from the internet or in the home network • Warns about potentially insecure settings
Save and Restore Settings	Saves and restores the FRITZ!Box settings
Update	Checks whether a new version of FRITZ!OS is available for your FRITZ!Box
Configure Push Service	Sets up push services (automatic email sent with status and usage data)



Wizard	Function
More Functions in Brief	Introduces new and interesting functions, settings, and features of the FRITZ!Box

Instructions: Starting Wizards

1. Open the user interface; [see page 47](#).
2. Click on **Wizards** in the menu.
3. Click on your wizard of choice and follow the instructions.

Performing a FRITZ!OS Update with the Wizard

The FRITZ!Box works with its own operating system FRITZ!OS. AVM regularly makes new versions of FRITZ!OS available for your FRITZ!Box, free of charge. Updates contain further developments and often new features.

Using the **Update** wizard makes it especially easy to install a new version of FRITZ!OS. The wizard checks whether a new version of FRITZ!OS is available and guides you step by step through installation.



Always install the latest FRITZ!OS version on all FRITZ! products in your FRITZ!Box home network. This keeps your FRITZ! products up to date and ensures optimum synchronization of all devices in your home network.

Instructions: Performing an FRITZ!OS Update with the Wizard



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

1. Open the user interface; [see page 47](#).
2. Click on **Wizards** in the menu.
3. Click on **Update**.
The wizard checks whether a FRITZ!OS update is available for your FRITZ!Box.
4. If an update is available: Click on **Start Update** and follow the wizard's instructions.
The FRITZ!OS update begins and the LEDs that display signal strength start flashing. The FRITZ!OS update is complete when the LEDs stop flashing.

Using the Wizard to Switch FRITZ!Boxes

The wizard for switching FRITZ!Boxes assists you if you are using a FRITZ!Box and want to replace it with a new FRITZ!Box.

With the wizard you can adopt all settings for the internet, Wi-Fi, telephony, MyFRITZ! and Smart Home. Devices in the home network like FRITZ!Repeaters, cordless telephones, and radiator controls can be connected with the new FRITZ!Box for immediate use.

Example 1

You are switching to a different internet connection and using a FRITZ!Box with another internet technology.

Example 2

You want to replace your old FRITZ!Box with a newer FRITZ!Box.

Requirements

- FRITZ!OS 7.51 or later is installed both on the old FRITZ!Box and the new FRITZ!Box.
- The new FRITZ!Box has the factory settings configured and is not plugged in.
- The latest version of FRITZ!OS is installed on all FRITZ! devices connected with the old FRITZ!Box.

Please Note

- The wizard for easy switching to a different FRITZ!Box is available only when you access the FRITZ!Box user interface from within the home network. This wizard is not available with remote access.
- It is not possible to use the wizard if your old FRITZ!Box is used as a Mesh Repeater or operated in IP client mode.

- Older FRITZ! devices in the home network may not be automatically adopted by the new FRITZ!Box during the switch. These FRITZ! devices can be connected with the new FRITZ!Box manually at a later point in time.

Instructions: Starting a Switch to a New FRITZ!Box

Start the process of switching FRITZ!Boxes on the old FRITZ!Box:

1. Open the user interface; [see page 47](#).
2. Click on **Wizards** in the menu.
3. Click on **Transmit Settings to a New FRITZ!Box**.
4. Follow the wizard's instructions.

MyFRITZ!

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What Is MyFRITZ!?

MyFRITZ! adds several free additional functions to your FRITZ!Box. With MyFRITZ! you can access various information and features of your FRITZ!Box or FRITZ!Fon via the internet or from the home network.

MyFRITZ! Components

	MyFRITZ! account / MyFRITZ!net	MyFRITZ!App	MyFRITZ! / myfritz.box
Function	MyFRITZ! in the Internet: Connection between FRITZ!Box and the Internet	MyFRITZ! mobile	MyFRITZ! in the Home Network
Access to	Internet portal: • personal FRITZ!Box overview portal • depending on the user rights, to FRITZ!Box functions Services: • status information on FRITZ!Box by email • email when password forgotten • weather forecast and speech reproduction in FRITZ!Fon	FRITZ!Box functions from on the go	FRITZ!Box functions in the home network



	MyFRITZ! account / MyFRITZ!net	MyFRITZ!App	MyFRITZ! / myfritz.box
Accessed via...	Configuration of a MyFRITZ! Account and Login with the http:// www.myfritz.net Web- site	a mobile de- vice (with MyFRITZ!App installed)	MyFRITZ! link in the FRITZ!Box user inter- face or the ad- dress http:// myfritz.box in the browser

Using MyFRITZ! in the Internet: MyFRITZ! Account / MyFRITZ!net

Create a MyFRITZ! account with an email address and a password. The MyFRITZ! account establishes a connection between your FRITZ!Box and the internet.

- Log in to the FRITZ!Box Overview page <http://www.myfritz.net> with a web browser and access your FRITZ!Box from there.
- The FRITZ!Box automatically sends software updates and important information about the home network to the email address of the MyFRITZ! account.
- If you forget your password, you receive an email to restore it.
- Services like weather forecasts and speech reproduction in FRITZ!Fon require a MyFRITZ! account.
- Upon registration with the MyFRITZ! account, the FRITZ!Box receives a web address at which it can always be reached.

FRITZ!Box Web Address

Upon registration with the MyFRITZ! account, the FRITZ!Box receives a unique MyFRITZ! address with the domain ending **.myfritz.net**. The FRITZ!Box can always be reached at this fixed domain name, even when the IP address changes.

You can use the FRITZ!Box web address for purposes such as:

- Direct access to your FRITZ!Box via a web browser
- VPN connections to your FRITZ!Box; for instance via WireGuard; [see Configuring VPN, page 91](#)
- Access to server services in the home network via port sharing

Using MyFRITZ! from a Mobile Device: MyFRITZ!App

With the free MyFRITZ!App you receive information from the home network directly on your mobile device. You can access your FRITZ!Box at any time from anywhere.

- Messages: View the FRITZ!Box call list and listen to messages on the answering machine

- Home network: access the FRITZ!Box user interface and connected home network devices securely
- Smart home: Control smart plugs and radiator controls
- Convenience functions: Control answering machines and call diversion settings

Downloading MyFRITZ!App

The MyFRITZ!App is available free of charge for Android and iOS:

Google Play Store (Android)	App Store (iOS)
	

Using MyFRITZ! in the Home Network: myfritz.box

Via the **MyFRITZ!** overview page at the address **myfritz.box** you can access functions of your FRITZ!Box frequently used in the home network directly from your browser:

- Call list: View calls and listen to messages
- Convenience functions: Display and switch Wi-Fi, WPS, guest access, answering machines on and off
- Smart Home: Switch and control smart plugs and radiator controls

Which functions you can access depends on the rights configured for the FRITZ!Box users logged in. If you logged in with the general FRITZ!Box password, you have access to all areas; [see page 161](#).

Creating a New MyFRITZ! Account

Create a MyFRITZ! account with an email address and a password.

Please Note

- When the MyFRITZ! account is created, the FRITZ!Box from which the account is created is registered with the MyFRITZ! account.
- The MyFRITZ! account exists no matter which FRITZ!Box was used to create it. You can register multiple FRITZ!Box devices with one MyFRITZ! account.
- If you switch to a new FRITZ!Box, you can then register the new model with your existing MyFRITZ! account and delete any old FRITZ!Box models no longer in use.

Instructions: Creating a New MyFRITZ! Account or Using an Existing MyFRITZ! Account

1. Open the user interface; [see page 47](#).
2. Click on **Internet > MyFRITZ! Account** in the menu.
3. For instructions, open the online help .

Controlling the FRITZ!Box with Keypad Codes

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Information on Keypad Codes

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 Wi-Fi 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.

Please Note

- Keypad codes do not work with smartphones.
- Keypad codes do not work with FRITZ!App Fon; exception: internal calls.
- Only the following shortcuts work with IP telephones: internal calls, call transfer, using keypad sequences, suppressing telephone number once, and call diversion on/off (international calls must be allowed for the IP telephone; [see page 68](#))

Entering Keypad Codes

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

Type of Telephone	Action
Telephone without call button	• Pick up the handset. • Enter the keypad code. • Hang up.
Telephone with call button (usually green)	• Enter the keypad code. • Press the “Call” (“Connect”) button. • Press the end call key.

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
	
Configure immediate call diversion to destination call number <DCN>: *21*<DCN>*#	
Configure call diversion after 20 seconds to destination call number <DCN>: *61*<DCN>*#	
Configure call diversion on busy to the destination call number <DCN>: *67*<DCN>*#	
	
Wait for acknowledgment tone	
	

Instructions: Switching Off Call Diversion for All Calls

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



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
	
Switch on immediate call diversion to destination call number <DCN>: *21*<DCN>*<TN>#	
Switch on call diversion after 20 seconds to destination call number <DCN>: *61*<DCN>*<TN>#	
Switch on call diversion on busy to the destination call number <DCN>: *67*<DCN>*<TN>#	
	
Wait for acknowledgment tone	
	

Instructions: Switching Off Call Diversion for One Telephone Number

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

Instructions: Switching Wi-Fi On

The Wi-Fi network of your FRITZ!Box can be switched on and off using a connected telephone.

Telephone without Call Button	Telephone with Call Button
	
Switch Wi-Fi on: #96*1*	
	
Wait for acknowledgment tone	
	

Instructions: Switching Wi-Fi Off

Telephone without Call Button	Telephone with Call Button
	
Switch Wi-Fi off: #96*0*	
	
Wait for acknowledgment tone	
	

Operating on 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
	
Establish a connection to the answering machine:	
**600 (answering machine 1)	
**601 (answering machine 2)	
**602 (answering machine 3)	
**603 (answering machine 4)	
**604 (answering machine 5)	
	
Follow the voice menu	

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	

Main Menu (Level 1)	Level 2	Level 3
➊ Delete all messages		
➋ Answering machine on/off		
➌ Record a greeting	➊ Greeting message ➋ Greeting for announcement mode ➌ Closing message	➊ Listen to all greetings, select greeting with ➋ ➌ Delete greeting/announcement ➍ Record greeting, end with ➊
➍ 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
	
Press the following keys: * 0 9	
	

Instructions: Making Internal Calls

You can conduct free internal calls between connected telephones.

Telephone without Call Button	Telephone with Call Button
	
Enter an internal telephone number from the FRITZ!Box telephone book	
	

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: **9	
	
All telephones on the FRITZ!Box ring. You will be connected to the telephone that picks up the call first.	

Instructions: Transferring Calls with Consultation

With the **Call Transfer** feature you can forward (transfer) a call to another telephone or to an external telephone number.

For transferring a call on a telephone without a hold button, see the manual of the telephone.

Telephone without Call Button	Telephone with Call Button
During the call with party 1, press the hold button:	
	
The call is on hold.	
Enter the telephone number of party 2. This can be an external telephone number or an internal number from the FRITZ!Box telephone book.	
When party 2 accepts the call, you can consult with others in the room.	
Connect party 1 and party 2 with each other:	
	On cordless telephones:
	 
Others:	
	
or  	
If party 2 cannot be reached or does not wish to speak with party 1, go back to party 1:	
 	

Instructions: Transferring Calls without Consultation

With the Call Transfer feature you can forward (transfer) a call to another connected telephone or to an external telephone number.
For transferring a call on a telephone without a hold button, see the manual of the telephone.

Telephone without Call Button	Telephone with Call Button
During the call with the party 1, press the hold button: 	
The call is on hold. Enter the telephone number of party 2. This can be an external telephone number or an internal number from the FRITZ!Box telephone book.	
	On cordless telephones:  Others: 

Instructions: Picking Up from Call Waiting

When the call waiting feature is enabled for a telephone, you are notified about incoming calls during an active telephone call. You hear a signal tone. You can accept or reject waiting calls.

Telephone without Call Button	Telephone with Call Button
During a call:	
Pick up from call waiting: R 2	
Reject waiting call: R 0	
If you pick up the waiting call, you can:	
Switch between call 1 and call 2 (alternate): R 2	
End the active call and continue the other call: Hang up, wait until your telephone rings, and pick up	



Instructions: Suppressing Telephone Number Once

Telephone without Call Button	Telephone with Call Button
	
Press the following keys:	
*31#	
Enter the external telephone number	
	

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
During the call with the party 1, press the hold button: R	
Call 1 is on hold.	
To establish the call with party 2, enter an internal or external telephone number.	
When party 2 accepts the call, establish the three-party conference: R 3	
If party 2 cannot be reached, go back to party 1: R	
During the three-party conference call you can: Interrupt the conference (you speak with party 1, call 2 is on hold): R 2 Switch back and forth between parties 1 and 2 (alternate): R 2 Restore an interrupted conference: R 3 End call 2 and continue with call 1: R 1 End the active call and continue the other call: Hang up, wait until your telephone rings, and pick up	



Instructions: Holding/Consultation/Toggling

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:	
Toggle 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, go 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 sequences you can use, contact your carrier.

Telephone without Call Button	Telephone with Call Button
	
Press the following keys (<Seq> is the keypad shortcut): *#<Seq>	
	

Instructions: Enabling an Alarm

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

Telephone without Call Button	Telephone with Call Button
	
Switch on the alarm: #881**	
	
Wait for acknowledgment tone	
	

Instructions: Disabling an Alarm

Telephone without Call Button	Telephone with Call Button
	
Switch alarm off: #881#	
	
Wait for acknowledgment tone	
	

Restoring Factory Settings by Telephone

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

Consequences of Resetting

- All of the settings you made in the FRITZ!Box are deleted.
- The internal memory of the FRITZ!Box is deleted. Received messages on the answering machine and faxes will also be deleted.
- The preconfigured FRITZ!Box password is restored.
- The preconfigured network key and the preconfigured name of the Wi-Fi network (SSID) are reactivated.
- The preconfigured IP configuration is restored.

Instructions: Loading Factory Settings

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

Malfunctions

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Opening the User Interface with the Fallback IP Address..... 221

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Troubleshooting Procedures

Where can I find Help?

The following table offers recommendations about what do when problems arise:

Problem	Help
• LEDs not on • No access to the user interface • Wi-Fi connection cannot be established or is interrupted	Troubleshooting chart; see page 218
Problem with: • connecting • configuration • telephony • internet • Wi-Fi • etc.	Knowledge Base; see page 222
Troubleshooting chart and Knowledge Base do not offer a solution	Support, see page 223



Troubleshooting Chart

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

Troubleshooting Chart

Problem	Cause	Solution
LEDs not on	Power supply interrupted	• Make sure the power adapter is connected properly. • Try plugging in a different device to make sure that the electrical outlet is active.
Cannot establish a Wi-Fi connection	Wi-Fi switched off on the computer	Turn Wi-Fi on on your computer For details, consult the manual of your computer.
	Wi-Fi network of the FRITZ!Box switched off	If the WLAN LED is off, enable Wi-Fi under Wi-Fi > Wi-Fi Channel > Adjust Wi-Fi Settings in the FRITZ!Box user interface.
	Incorrect network key	Enter the correct network key (Wi-Fi > Security).



Problem	Cause	Solution
User interface does not open	Address not correct	Enter the complete address in the browser: http://fritz.box If the user interface does not open, see Opening the User Interface with the Fallback IP Address, page 221.
	Restart required 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.
	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 175).

Problem	Cause	Solution
Wi-Fi connection interrupted	Wi-Fi connection between FRITZ!Box and wireless device interrupted	• Do not set up the FRITZ!Box in the corner of a room. • Do not set up 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.
	Wi-Fi channel with heavy interference	Enable automatic configuration of the Wi-Fi channel settings under Wi-Fi > Wi-Fi Channel in the user interface. Then the FRITZ!Box automatically selects a WiFi channel with as little interference as possible.

Opening the User Interface with the Fallback IP Address

There is a "fallback IP address" at which the FRITZ!Box user interface can always be reached.

Fallback IP address

The fallback IP address is **169.254.1.1** and cannot be changed.

Instructions: Opening the User Interface with the Fallback IP Address

1. Enter the fallback address **169.254.1.1** in the browser.
2. If the FRITZ!Box user interface is not opened, make sure that there is no Wi-Fi connection between your computer and the FRITZ!Box.
3. Connect your computer to the **LAN** socket of the FRITZ!Box using a LAN cable.
4. Connect your computer to the **LAN** socket of the power adapter using a LAN cable.
5. Restart your computer.
6. Enter the fallback address **169.254.1.1** in the browser.
7. Log in to the FRITZ!Box user interface.

Knowledge Base

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 223](#).

AVM Knowledge Base

The AVM Knowledge Base is available online at:
en.avm.de/service

Support

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

Preparations

Keep the following information handy for a support request:

- FRITZ!Box model
- Article number, [see page 19](#)
- FRITZ!OS Version
- Internet service provider
- Error messages, if any

Instructions: Contacting Support

Contact AVM Support via the AVM website.

1. Open the en.avm.de website.
2. Click on **Service** and then on **Support**.
3. Keep your information handy ([see Preparations, page 223](#)).
4. Contact our Support team via email form, fax, or chat.

Important

Our email and chat support are not always available in all languages. Select another language for the AVM website if needed.

Taking Out of Service and Disposal

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Taking Out of Service

Deleting Private Data



As the final user of a FRITZ! product, you are responsible for deleting your own personalized data on devices to be disposed of.

Delete your personal settings and personalized data from your FRITZ!Box before taking it out of service and disposing of the device. To do this, restore the factory settings to the FRITZ!Box; [see page 175](#).

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.

Disposal

Disposal of Electronic Devices and Electronic Components

In accordance with European regulations and the Waste of Electrical and Electronic Equipment Directive (in Germany), the FRITZ! device, and all devices and electronic components contained in the package, may not be disposed with household waste, residual waste, or the yellow recycling bin.

Bring your FRITZ! device and all electronic components included with delivery to a collection point in your local community for the disposal of electronic appliances where it can be disposed of properly. According to the criteria stipulated in § 17 par. 1 and par. 2 of the Waste of Electrical and Electronic Equipment Directive (for Germany), distributors of electronic devices are also obligated to accept returns of their products free of charge.



The crossed out bin on the type label or on the housing of your FRITZ! device means that you are required by law to dispose of the electronic device separately from household waste.

Technical Specifications

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Technical Specifications

Device Properties

Property	Value
Dimensions (W x H x D)	approx. 112 x 168 x 54 mm (with housing adapter for indoors)
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%

Active Power (power consumption)

Property	Value
Maximum active power (power consumption)	16 W
Mean active power (power consumption), averaged with the following load: • Mobile network connection enabled • Wi-Fi on; no devices registered via Wi-Fi • DECT on; one telephone registered via DECT; no active calls • one network device connected to the LAN port; no data transfer	6,8 W



Ports and Interfaces

Connect via	Interface
Mobile network	Mobile communications modem compliant with 5G StandAlone (5G-SA) and 5G-NonStandAlone (5G-NSA) after 3GPP Release 15 with up to 1.3 Gbit/s downstream and 450 Mbit/s upstream
DECT	DECT base station for up to 6 cordless telephones
LAN	on the power adapter: 1 network port over RJ45 socket, gigabit LAN (10/100/1000 Base-T)
2.4-GHz Wi-Fi	- Wi-Fi 6 (IEEE 802.11ax), transmission rates of up to 600 Mbit/s - Compatible with IEEE 802.11g/n
5-GHz Wi-Fi	- Wi-Fi 6 (IEEE 802.11ax), for 160 MHz channel bandwidth, transmission rates of up to 2400 Mbit/s - Wi-Fi 6 (IEEE 802.11ax), for 80 MHz channel bandwidth, transmission rates of up to 1200 Mbit/s - Wi-Fi 5 (IEEE 802.11ac), for 160 MHz channel bandwidth, transmission rates of up to 1732 Mbit/s - Wi-Fi 5 (IEEE 802.11ac), for 80 MHz channel bandwidth, transmission rates of up to 866 Mbit/s - Compatible with IEEE 802.11a/n

Mobile Networks: Bands and Radio Frequencies

Band	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)*	5G	LTE (4G)	UMTS (3G)
1	2110 - 2170	1920 - 1980	x	x	x

Band	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)*	5G	LTE (4G)	UMTS (3G)
3	1805 - 1880	1710 - 1785	x	x	
5	869 - 894	824 - 849	x	x	x
7	2620 - 2690	2500 - 2570	x	x	
8	925 - 960	880 - 915	x	x	x
20	791 - 821	832 - 862	x	x	
28	758 - 803	703 - 748	x	x	
32	1452 - 1496	-		x	
38	2570 - 2620	2570 - 2620	x	x	
40	2300 - 2400	2300 - 2400	x	x	
41	2496 - 2690	2496 - 2690	x	x	
42	3400 - 3600	3400 - 3600		x	
43	3600 - 3800	3600 - 3800		x	
75	1432 - 1517		x		
76	1427 - 1432		x		
77	3300 - 4200	3300 - 4200	x		
78	3300 - 3800	3300 - 3800	x		

* Maximum transmitter power

5G and LTE: 200 mW; UMTS: 250 mW

Wi-Fi Frequencies

Frequency	Frequency Range	Max. transmitter power
5 GHz	5150 - 5350 MHz	200 mW
	5470 - 5725 MHz	1000 mW

In the 5 GHz band for Wi-Fi, the range from 5150 MHz to 5350 MHz is intended only for indoor operation. This restriction or requirement is effective in the countries AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, UK(NI).

DECT Radio Frequencies

Frequency	Frequency Range and Transmitter Power
DECT	• Frequency range: 1880 MHz – 1900 MHz • Maximum transmitter power: 250 mW

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 wide 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.

Audio Tones

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

Interfaces and Protocols Used with the FRITZ!Box

Information on interfaces and protocols from the AVM product development can be found on the following AVM web page (in German):

avm.de/service/schnittstellen

Legal Notice

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Legal Notice

Manufacturer's Warranty

We, AVM GmbH, Alt-Moabit 95, 10559 Berlin, as manufacturer of this original product, offer 5 years warranty for defects to the product which are demonstrably due to faults in materials or manufacturing. Your legal rights in the case of defects for which claims can be made free of charge are not restricted by this warranty.

The warranty period begins with the date of purchase by the first end user. Compliance with the warranty period must be proven by submission of the original invoice of the first end consumer or comparable documents as well as the return of the product in question. In order to return your product, our Support team will send you a link to an "RMA form". After filling out this form you will receive an RMA number authorizing you to return the product to us. This RMA number must be clearly visible and easy to read on the outside of the package, and sufficient postage must be attached (insured shipping is recommended). The product must be dispatched within 14 days after the RMA number has been issued. The package is to be returned without the original box and accessories, packed carefully and secured for transportation. AVM accepts no liability for any damage during transport. Returns without an RMA number, packages sent freight collect or without sufficient postage, and packages without an invoice will not be processed and sent back to the sender; in such cases we reserve the right to charge a processing fee of up to 35 €.

Within the warranty period, we will remove reported defects to the product hardware 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). In this case we reserve the right to return such devices without processing and will charge you a processing fee of 35 €. We may, at our discretion, repair or replace the defective product. AVM bears the costs for returning the repaired or exchanged product. Claims other than the right to the re-

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. Shipping costs will not be reimbursed. Products to be exchanged due to a warranty claim are transferred to our ownership upon provision of the replacement product. Claims recognized under warranty entail neither an extension nor a recommencement of the warranty period. If we reject a warranty claim, this claim lapses no later than six months after being rejected by us. All claims from or in association with 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).

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Declaration of CE Conformity

AVM declares herewith that the device is compliant with directive 2014/53/EU.

The full text of the declaration of EU conformity is available at <https://en.avm.de/service/declarations>.

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