FRITZ!Box 4690

Manual

Table of Contents

General Information on the FRITZ!Box

Safety Instructions

Before connecting the FRITZ!Box 4690, observe the following security instructions in order to protect yourself, the surroundings, and the FRITZ!Box from harm.

General Security Information

- Do not install the FRITZ!Box during an electrical storm.
- Only use the FRITZ!Box indoors.
- Protect the FRITZ!Box from vapors and moisture.
- Never let liquids get inside the FRITZ!Box.
- Connect the power adapter of the FRITZ!Box to an electric outlet that is easy to reach, so that you can unplug the power adapter at any time.
- Do not place the FRITZ!Box near any heat sources.
- Provide for sufficient air circulation around the FRITZ!Box.
- Make sure that the ventilation slits on the FRITZ!Box housing are always unobstructed.
- 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.
- Avoid using socket strips and extension cords if at all possible.
- Do not connect multiple extension cords or socket strips to each other.
- Do not attach any other objects to the FRITZ!Box.

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 14.

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.fritz.com/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 20 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 manual refers to the version FRITZ!OS 8 or later.

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 4690	
1	Power adapter	• white • 1.5 m
1	LAN cable	• network cable • white • 1.5 m
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.fritz.com/service/manuals.

Medium	Contents	Location
Manual	Connecting, configuration, and operation	en.fritz.com/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.fritz.com/newsletter
Social media	The latest about the FRITZ!Box, your FRITZ!Box home network, and your FRITZ! device	Facebook Instagram X YouTube

Information on Cleaning

Please Note

- Disconnect the FRITZ!Box from electrical power 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

Functions

Internet Router

The FRITZ!Box 4690 is a router which is connected to an internet access device. The FRITZ!Box 4690 can be used on the following internet access devices:

- DSL or VDSL modem
- Cable modem
- Fiber optic modem
- Router
- USB mobile broadband dongle

Telephone System

The FRITZ!Box is a telephone system for IP-based connections with 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 on the 2.4 GHz band and on the 5 GHz band.

Hub in the Home Network

The FRITZ!Box is the hub in the home network. The home network consists of all devices connected with the FRITZ!Box.

The FRITZ!Box media server transmits music, pictures, and videos to playback devices in the home network and FRITZ!NAS allows easy access to files in the network.

USB Port

The FRITZ!Box has a USB 3.0 port to which you can connect the following devices:

- USB storage devices (for example, flash drives, external hard drives, card readers)
- USB printers, USB all-in-one printers, USB scanners
- USB mobile network dongles or smartphones with USB tethering
- USB hubs

MyFRITZ!

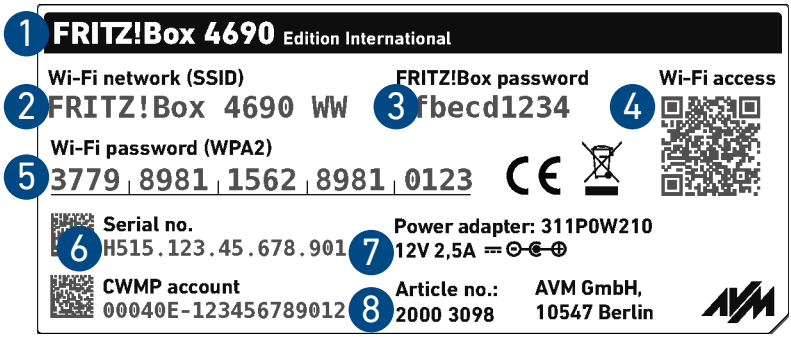
With MyFRITZ! you can access your FRITZ!Box home network securely from anywhere over the internet.

For instance, you can control smart home devices, open the call list, change FRITZ!Box settings, or access pictures, music, and videos that are saved on a connected USB storage medium.

Device Data on the Type Label

Important device data on the FRITZ!Box are presented on the type label on the housing.

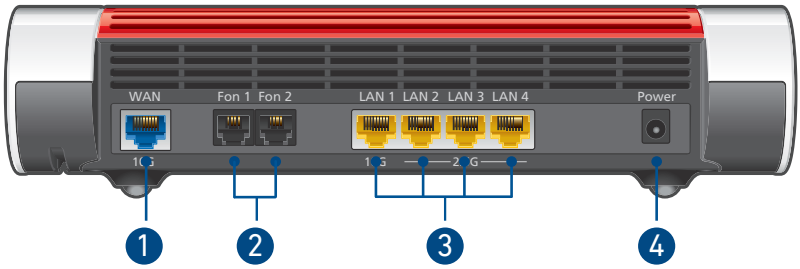
Device Data on the Type Label



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

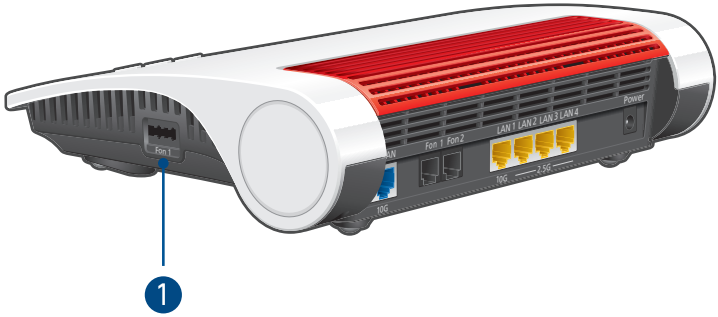
Connection Sockets

Connector Panel



No.	Name	Function
1	WAN	RJ45 socket for connecting to a modem or a router for internet access.
2	FON 1 - FON 2	RJ11 sockets for connecting analog telephones, fax machines, answering machines or a door intercom system
3	LAN 1 - LAN 4	Ports for connecting computers and other network-compatible devices like hubs and game consoles
4	Power	Socket for plugging in the power adapter

Connectors on the Sides: FON



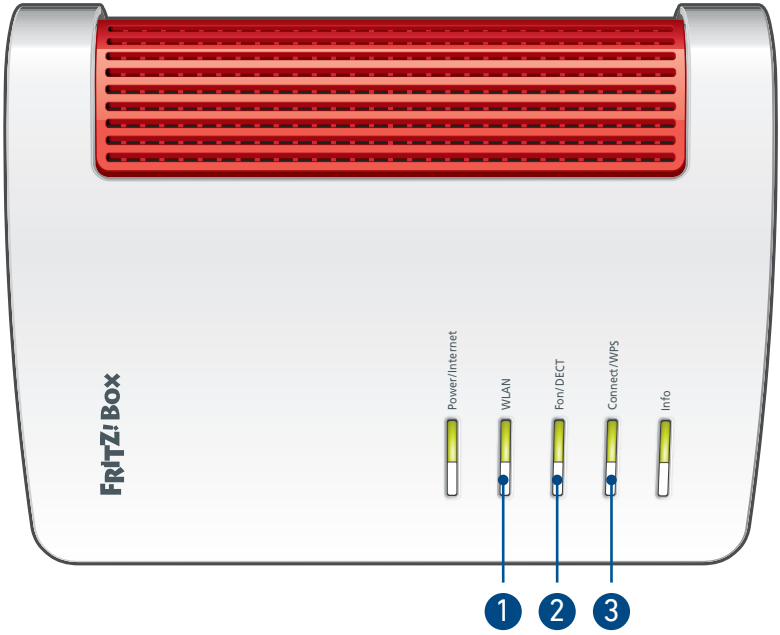
No.	Name	Function
1	FON 1	RJ11 socket for connecting analog telephones, fax machines, answering machines or a door intercom system.

Connectors on the Sides: USB

No.	Name	Function
1	USB	USB 3.0 sockets for connecting USB devices like printers or storage media

Buttons

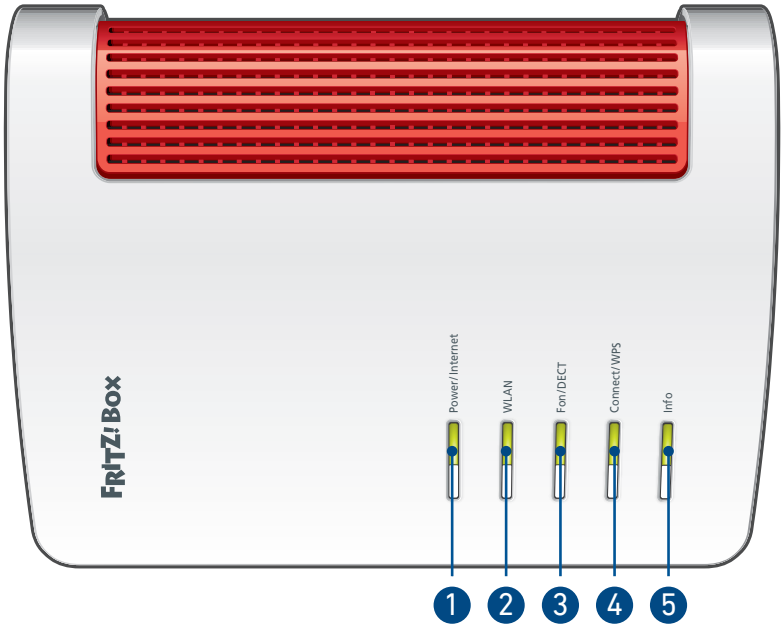
Button Functions



No.	Button	Function
1	WLAN	Switch Wi-Fi on and off
2	Fon/DECT	Search for cordless telephones (paging call)
3	Connect/WPS	• Register cordless telephones with the FRITZ!Box; see page 56 • Register wireless devices with the FRITZ!Box via WPS; see page 38 • Register smart home devices with the FRITZ!Box

LEDs

Meaning of the LEDs



No.	LED	Condition	Meaning
1	Power/ Internet	off	The device has no electrical power.
		on	Connected to power adapter, connected to the internet
		flashing	The device has electrical power The internet connection is not established or is being established now.

No.	LED	Condition	Meaning
2	WLAN	off	Wi-Fi is disabled.
		on	Wi-Fi is enabled.
		flashing	• Switching Wi-Fi function on or off. • Applying changes to the Wi-Fi settings. • WPS in progress: Registration of a wireless device in progress.
3	Fon/DECT	off	No telephone call is being conducted.
		on	A telephone connection via the internet is active.
		flashing	Messages in your voice mailbox. (Function must be supported by the telephony provider.)
4	Connect/ WPS	off	No devices registering with the home network.
		flashing	Registration in progress for a wireless, DECT, smart home or powerline device.
		on	Registration of a wireless, DECT, smart home or powerline device was successful.
		flashing fast	Registration aborted: more than 1 device registering with the FRITZ!Box. Repeat the registration: 1 device per registration.

No.	LED	Condition	Meaning
5	Info	off	None of the following processes is active:
		green	• AVM Stick & Surf procedure with FRITZ!WLAN Stick concluded. • Adjustable; see page 167.
		flashing green	• FRITZ!OS update in progress • AVM Stick & Surf procedure with the FRITZ!WLAN Stick in progress. • Time budget for online time has been reached. • Adjustable; see page 167.
		on or flashing red	Error. Details on errors and tips for resolving them are presented in the FRITZ!Box user interface under **Overview**.

Connecting

Connecting FRITZ!Box: Steps

Connect the FRITZ!Box in by performing the following steps:

	Instructions
	Place or hang up the FRITZ!Box in a suitable location.
	Connect the FRITZ!Box to the power adapter.
	Connect the FRITZ!Box to your internet connection.
	Connect a computer to the FRITZ!Box via LAN cable, or connect a computer, smartphone, or tablet to the FRITZ!Box via Wi-Fi.

Placing or Attaching to the Wall

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

Ideal operating conditions are achieved when you mount the FRITZ!Box on a wall.

Rules for Setting Up the FRITZ!Box

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

Rules for Optimum Wi-Fi Reception

- Place the FRITZ!Box in a central location. A raised location like a shelf is ideal.
- The fewer walls and ceilings between the FRITZ!Box and your wireless devices, the better.
- Do not place the FRITZ!Box in, behind, or under a cabinet.
- Do not place the FRITZ!Box near metallic objects or objects containing water, like radiators, a refrigerator, or a houseplant.
- Make sure there is enough distance from potential sources of interference like microwaves, wireless speakers, and Bluetooth devices.

Instructions: FRITZ!Box Placement

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

Instructions: Mounting FRITZ!Box on the Wall

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

1. In compliance with the rules mentioned above, select a suitable location for mounting the FRITZ!Box on the wall.
2. Measure the distance between the centers of the hanging holes on the FRITZ!Box.
   The hanging holes are located on the back of the housing.
3. Mark two spots for drilling at the distance you measured at the desired location on the wall.
4. Drill two holes and insert screws.
5. Hang the FRITZ!Box on the wall with the socket strip down.

Connecting to Electric Power

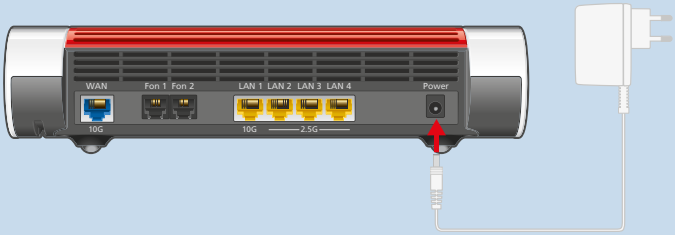
Connect the FRITZ!Box to the power supply.

Please Note

- If at all possible, do not use any power strips or extension cords.
- If it is not possible to avoid using a socket strip or an extension cord, then do not connect multiple extension cords or socket strips to each other.
- Use only the power adapter included with delivery.

Instructions: Plugging In to Electrical Power

1. Plug the power adapter into an electrical outlet.
2. Connect the power adapter to the socket on the FRITZ!Box labeled **Power**.

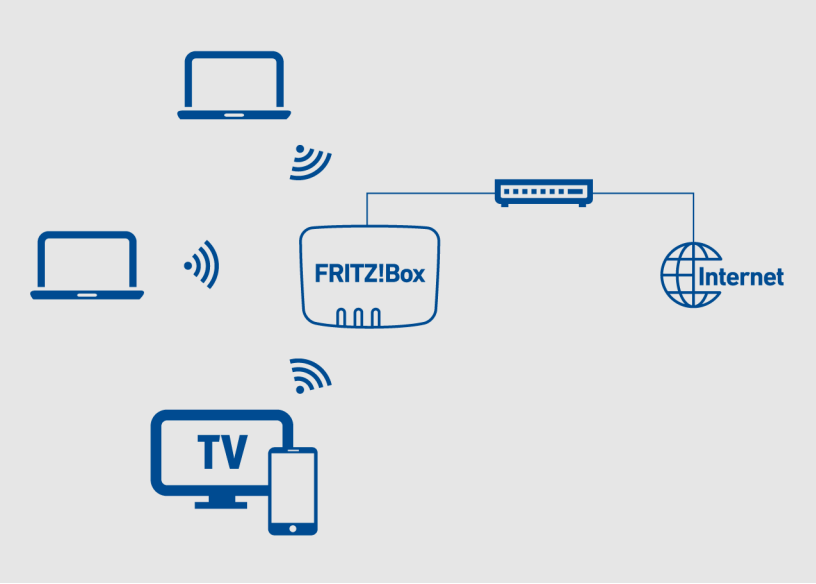


Connecting to the Internet: Possibilities

You can connect the FRITZ!Box to a modem or to another router and use it on the following internet connections:

- DSL or VDSL line with a DSL or VDSL modem
- Fiber optic connection with fiber optic modem (FTTH-ONT)
- Cable connection with cable modem
- Any internet connection with an internet router

Example Configuration



Connecting to a DSL/VDSL Modem

You can connect the FRITZ!Box with your DSL line using a DSL modem. Then the FRITZ!Box establishes the internet connection via the DSL connection.

Requirements

- A DSL modem is connected to your DSL line.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

You need

- a LAN cable (for instance, from your FRITZ!Box package)

Instructions: Connecting to a DSL Modem

1. Insert the LAN cable into the **WAN** socket on the FRITZ!Box.
2. Insert the other end of the cable into the LAN socket on the DSL modem.
3. Set up the internet connection via DSL in the FRITZ!Box; see page 47.

Connecting to a Fiber Optic Modem

You can connect the FRITZ!Box with your fiber optic connection using a fiber optic modem (ONT). Then the FRITZ!Box establishes the internet connection via the fiber optic connection.

Requirements

- A fiber optic modem is connected to your fiber optic connection.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

You need

- a LAN cable (for instance, from your FRITZ!Box package)

Instructions: Connecting to a Fiber Optic Connection

1. Insert the LAN cable into the WAN socket on the FRITZ!Box.
2. Insert the other end of the cable into the LAN socket on the fiber optic modem.
3. Set up the internet connection via the fiber optic connection in the FRITZ!Box; see page 48.

Connecting to a Cable Modem

You can connect the FRITZ!Box with your cable junction via a cable modem. Then the FRITZ!Box establishes the internet connection via the cable connection.

Requirements

- A cable modem is connected to your cable junction.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

You need

- a LAN cable (for instance, from your FRITZ!Box package)

Instructions: Connecting to a Cable Modem

1. Insert the LAN cable into the LAN socket of the cable modem.
2. Insert the other end of the cable into the **WAN** socket on the FRITZ!Box.
3. Set up the internet connection via the cable connection in the FRITZ!Box; see page 50.

Connecting to a Router

You can connect the FRITZ!Box to a router that is connected with the internet. Then the FRITZ!Box uses the internet connection of the router.

The FRITZ!Box can be operated as a router on another router or as an IP client. As a router, the FRITZ!Box creates its own IP network. As an IP client, the FRITZ!Box becomes part of the IP network of the other router.

Requirements

- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

You need

- a LAN cable (for instance, from your FRITZ!Box package)

Instructions: Connecting to the Router via LAN Cable

1. Connect the LAN cable to the FRITZ!Box:
   If the FRITZ!Box is to be operated as a router, insert the LAN cable into the **WAN** socket.
   If the FRITZ!Box is to be operated as an IP client, insert the LAN cable into a LAN socket.
2. Insert the other end of the cable into the LAN socket on the internet router.
3. Set up the internet connection in the FRITZ!Box; see page 42.

Connecting Computers and Other Devices Using a LAN Cable

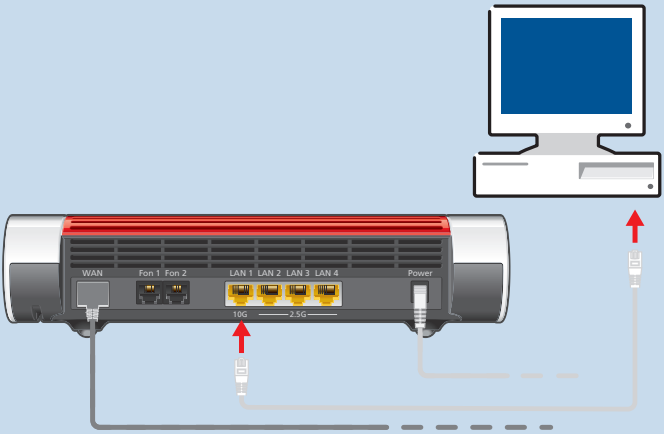
You can connect laptops, PCs, and other network devices with the FRITZ!Box using a LAN cable.

Please Note

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

Instructions: Connecting a Computer with a LAN Cable

1. Insert the LAN cable into the LAN port of the computer.
2. Insert the free end of the cable into a LAN port on the FRITZ!Box.



Instructions: Connecting a Network Hub or Network Switch

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

Connecting 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.

Finding the Wi-Fi QR Code of the FRITZ!Box

The QR code with the preconfigured Wi-Fi access information of the FRITZ!Box is found on the FRITZ! Notes and on the type label on the outside of the FRITZ!Box housing.

If you changed the Wi-Fi settings, use the QR code from the FRITZ!Box user interface. There the QR code is found in the **Wi-Fi** > **Wi-Fi Network** menu.

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

1. Open the camera app or a QR code app on your smartphone or tablet.

   Many smartphones and tablets can scan QR codes using the camera app. If your camera app does not recognize the QR code, use a QR code app instead.
2. Scan the Wi-Fi code of the FRITZ!Box.

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

1. Select the Wi-Fi network of the FRITZ!Box.

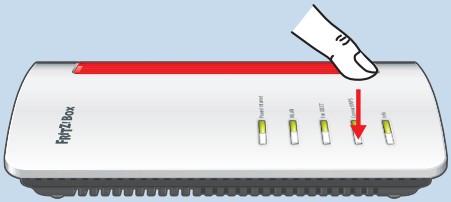
The preconfigured name of the Wi-Fi network (SSID) is printed on the type label attached to the FRITZ!Box housing.

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/WPS** button briefly.



The **Connect/WPS** LED flashes while the Wi-Fi connection is being established.

Option: Configuring Internet via Mobile Network

Configuring Internet via Mobile Broadband Dongle or Smartphone

The FRITZ!Box can use a mobile broadband dongle for internet access, or share the internet connection of a smartphone.

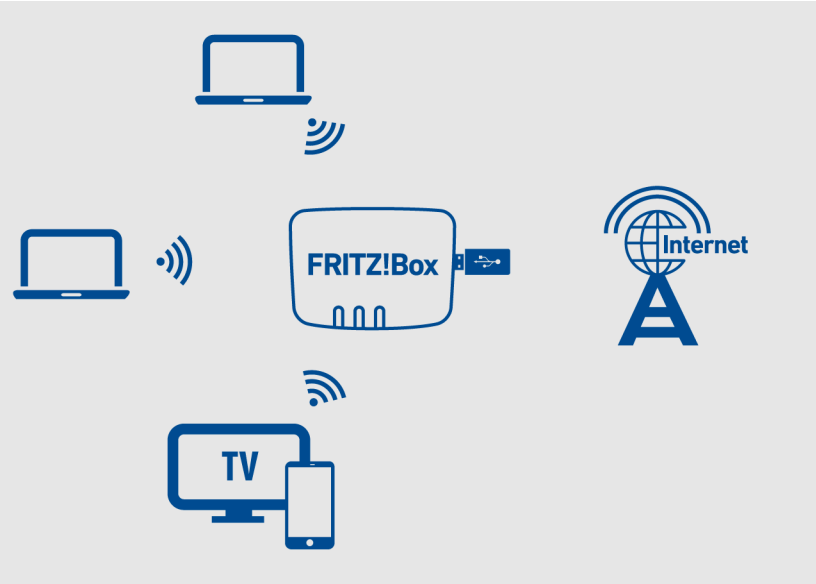
Requirements

- The mobile broadband dongle or smartphone supports USB tethering.

Please Note

- Internet telephony and other functions that require a public IP address (for example, receiving incoming VPN connections) may not be available, or available only to a limited extent. This depends on the mobile network operator.

Example Configuration



Instructions: Connecting the Mobile Broadband Dongle

1. Insert the mobile broadband dongle into the **USB** port of the FRITZ!Box.

Instructions: Connecting an Android Smartphone to the USB Port

1. Connect the smartphone to the "**USB**" port on the FRITZ!Box using a USB cable.

Instructions: Configuring the Internet Connection in FRITZ!Box

1. Open the user interface; see page 45.
2. Click on **Internet** > **Mobile Network** in the menu.
3. For instructions, open the online help ?.

Configuring

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.

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 phone numbers.

If you do not want to use the wizard, or would like to change settings later, you can configure the internet connection and phone numbers separately.

You need

For initial configuration with the wizard, you need the following:

- The preconfigured FRITZ!Box password.

  The FRITZ!Box password is printed on the FRITZ! Notes service card included with the FRITZ!Box and on the type label on the outside of the FRITZ!Box housing.
- If you received account information from your internet service provider, keep this information handy.
- If you received phone numbers from your internet or phone provider, keep these phone numbers handy.

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. Configure the FRITZ!Box in the user interface.

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 or LAN 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. The next time it is opened, the **Overview** page appears.

Configuring Your Phone Numbers

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

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

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

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

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

Instructions: Configuring Your Own Phone Numbers

1. Open the user interface; see page 45.
2. Click on **Wizards** in the menu.
3. Click on **Manage Phone Numbers**.
4. Click on **Add Phone Number** and follow the wizard's instructions.

Configuring Internet Access via DSL Modem

If you connected the FRITZ!Box to a DSL modem, configure the FRITZ!Box for internet access via the DSL modem.

Operating Mode of the FRITZ!Box

The following apply when the FRITZ!Box is connected with the internet access via DSL modem:

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

Requirements

- You connected the FRITZ!Box to a DSL modem that is connected with the DSL line.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

Instructions: Configuring Internet Access on the DSL Connection

1. Open the user interface; see page 45.
2. Click in the menu on **Internet** > **Account Information** and on the **Internet Connection** tab.
3. Select the **DSL or fiber optic modem** entry from the **Internet connection via** list.
4. For further settings, use the FRITZ!Box help.

Configuring Internet Access via Fiber Optic Modem

If you connected the FRITZ!Box to a fiber optic modem, configure the FRITZ!Box for internet access via the fiber optic modem.

Operating Mode of the FRITZ!Box

The following apply when the FRITZ!Box is connected with the internet access via a fiber optic modem:

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

Requirements

- You connected the FRITZ!Box to a fiber optic modem that is connected with the fiber optic connection.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

Instructions: Configuring the Internet Connection on a Fiber Optic Modem

1. Open the user interface; see page 45.
2. Click in the menu on **Internet** > **Account Information** and on the **Internet Connection** tab.
3. Select the **DSL or fiber optic modem** entry from the **Internet connection via** field.
4. Select your fiber optic network provider.
   If your fiber optic network provider is not included in the drop-down list, select the **other internet service provider** entry.

5. Enter the name of your fiber optic network provider in the **Name** field (optional).
6. If you received account information from your fiber optic network provider, select the **Yes** option under **Account Information** and enter the account information.
7. Enable **Check Internet connection after "Apply" has been clicked**.
8. Save your settings with **Apply**.

Your internet connection has been configured and successfully checked. For further settings, use the FRITZ!Box help.

Configuring Internet Access via Cable Modem

If you connected the FRITZ!Box to a cable modem, configure the FRITZ!Box for internet access via the cable modem.

Operating Mode of the FRITZ!Box

The following apply when the FRITZ!Box is connected with the internet access via a cable modem:

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

Requirements

- You connected the FRITZ!Box to a cable modem, which is connected with the cable junction.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

Instructions: Setting Up Internet Access on the Cable Connection

1. Open the user interface; see page 45.
2. Click in the menu on **Internet** > **Account Information** and on the **Internet Connection** tab.
3. Select the **Cable modem or internet router** entry in the **Internet connection via** field.
4. For further settings, use the FRITZ!Box help.

Configuring Internet Access via Another Router (Cascading)

If the FRITZ!Box is connected to another router via LAN cable, the FRITZ!Box can share the internet connection of the other router.

For this, configure the FRITZ!Box as a cascaded router if the FRITZ!Box is to set up its own IP network.

Operating Mode of the FRITZ!Box

The following applies when the FRITZ!Box has 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 works as a router and generates its own IP network.
- The firewall of the FRITZ!Box is enabled.
- The Wi-Fi network of the FRITZ!Box with its own security settings can be used in addition to the Wi-Fi network of the other router.
- You can use the FRITZ!Box as a telephone system and make telephone calls using the internet connection of the other router.

Requirements

- The FRITZ!Box is connected via LAN cable to the router that provides the internet connection.
- The **WAN** socket of the FRITZ!Box is configured as a WAN port for internet access; see page 118.

Instructions: Configuring as a Router on Another Router

1. Open the user interface; see page 45.
2. Click in the menu on **Internet** > **Account Information** and on the **Internet Connection** tab.
3. Select the **Cable modem or internet router** entry in the **Internet connection via** field.

4. Under **Data Throughput**, enter the speed of your internet connection in the fields **Downstream** and **Upstream**.
5. Click on **Connection Settings**:
6. If the other router provides a DHCP server, enable the **Obtain the IP address automatically (DHCP)** option.
7. If the other router does not provide a DHCP server, enable the **Configure the IP address manually** option and enter the following:

Entry Field	Your Entry
IP address	unused IP address from the IP network of the router
Subnet mask	subnet mask of the router
Default gateway	IP address of the router
primary DNS server	IP address of the router

8. Save your settings with **Apply**.

The FRITZ!Box now functions as a router itself and provides a network with its own network address range.

Configuring Internet Access via LAN Connection to Another Router (IP Client)

If the FRITZ!Box is connected to another router via LAN cable, the FRITZ!Box can share the internet connection of the other router.

For this configure the FRITZ!Box as an IP client if the FRITZ!Box is to be part of the other router's IP network.

Operating Mode of the FRITZ!Box

The following apply when the FRITZ!Box uses the internet connection of another router as an IP client:

- In the default setting, the FRITZ!Box receives an IP address from the other router via DHCP.
- The FRITZ!Box becomes part of the other router's IP network.
- The network devices connected to the FRITZ!Box receive their IP addresses from the other router.
- The firewall of the FRITZ!Box is disabled.
- 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 FRITZ!Box is connected via LAN cable to a router that provides the internet connection. There are two possibilities for connecting the FRITZ!Box with the router:
  - Via the **WAN** socket. The socket must be configured as a LAN port; see page 118.
  - Via one of the LAN sockets.

Instructions: Configuring the Internet Connection

1. Open the user interface; see page 45.

2. Click on **Home Network** > **Network** in the menu.
3. Click on the **Network Settings** tab.
4. Enable the **IP client** option in the **Operating Mode in the Home Network** area.
5. Save your settings with **Apply**.

Connecting Telephones

Connecting Telephones, Fax Machines, and Answering Machines

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

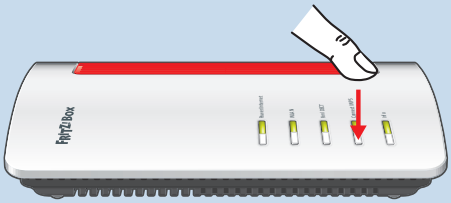
Please Note

- During operation, only one of the two **FON 1** sockets on the FRITZ!Box may be used. The other **FON 1** socket must remain free.
- During a power outage you cannot make any phone calls with the connected phones.

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/WPS** button.

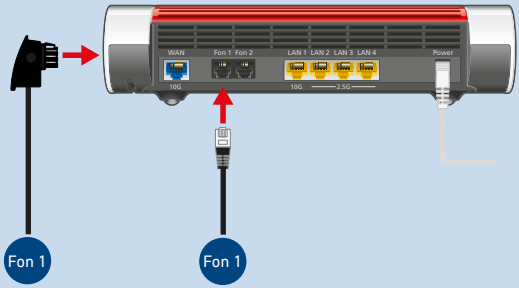


   The **Connect/WPS** LED flashes.
3. On a cordless telephone: Enter the PIN of the FRITZ!Box on the telephone (preset value: 0000).
4. Configure the telephone in the FRITZ!Box user interface; see page 60.

Instructions: Connecting a Phone

1. Connect the phone to the approprate **FON 1** socket.

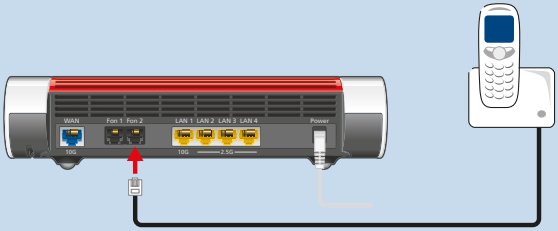
In countries with country-specific phone plugs, the FRITZ!Box package may include an adapter for connecting phones.



2. Configure the phone in the FRITZ!Box user interface; see page 60.

Instructions: Connecting a Second Analog Telephone

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



2. In the user interface of your FRITZ!Box: Configure the connected device; see page 60.

Instructions: Connecting an IP Telephone

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 60.

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 60.

Configuring Telephones, Fax Machines, and Answering Machines

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 61.
- 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 45.
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 45.
2. Click in the menu on **Telephony** > **Telephone Numbers** and on the **Line Settings** tab.
3. Under **Security**, click on **Limit the number of calls to foreign numbers**.
4. Disable the checkbox next to the desired IP telephone and click on **OK**.
5. Save your settings with **Apply**.

Expanding a Wi-Fi Network with Mesh

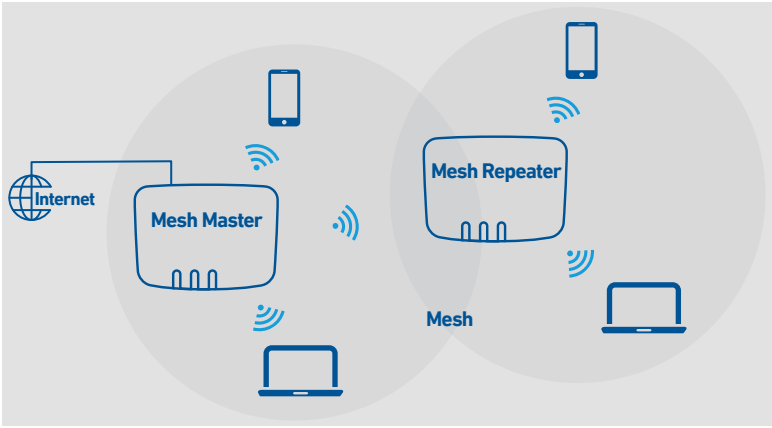
Mesh with FRITZ!

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

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! devices 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; for FRITZ!Repeater devices with a LAN port, also option to connect via LAN cable
FRITZ!Powerline	Connection to the FRITZ!Box over electrical wiring

FRITZ! Device	Details
second FRITZ!Box	The second FRITZ!Box must support the **Mesh Repeater** and **IP client mode** functions. Connection to the Mesh Master via LAN cable; many FRITZ!Box devices can also be connected via Wi-Fi

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 45.
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/WPS** button until the **Info** LED starts flashing.

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 45.
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 FRITZ!Powerline, then Mesh is already enabled for FRITZ!Powerline. If the symbol is missing next to 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/WPS** button until the **Info** LED starts flashing.

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

Using the FRITZ!Box as a Mesh Repeater

You can use your FRITZ!Box 4690 as a Mesh Repeater. As a Mesh Repeater, the FRITZ!Box 4690 expands the Wi-Fi network of another FRITZ!Box which is connected to the internet connection.

Instructions: Configuring FRITZ!Box as a Mesh Repeater

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Mesh** in the menu and then on the **Mesh Settings** tab.
3. For instructions, open the online help ?.

User Interface: Internet Menu

Using AVM Services for Diagnostics and Maintenance

The AVM services for diagnostics and maintenance support the security and further development of your FRITZ!Box 4690 and keep the FRITZ!OS up to date.

We recommend leaving the use of all AVM services enabled.

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 45.

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 the internet use of devices in the home network. You can limit online time, restrict access to only certain websites, or block certain websites.

Rules for restricting internet use are saved in access profiles. Each access profile can be assigned to one or multiple devices in the home network; see page 74.

The following functions are also available:

- With the device block you can block the internet use of a device in the home network without using a special access profile; see page 72
- You can distribute tickets with which users in the home network can extend online time for individual devices; see page 73.
- For devices with restricted online time, the remaining online time permitted can be queried; see page 73.

Please Note

- Child protection is not available if the FRITZ!Box is configured as an IP client or Mesh Repeater. In this case configure the parental controls in the router or Mesh Master.

Instructions: Configuring Parental Controls for a Device in the Home Network

1. Open the user interface; see page 45.
2. Click on **Internet** > **Filter** in the menu and then on the **Access Profiles** tab.
3. If there is no access profile with the settings you want, then create a new 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** and assign the desired access profile to the device in the home network.
6. Save with **Refresh**.

Instructions: Blocking a Device

1. Open the user interface; see page 45.
2. Click on **Internet** > **Filter** in the menu and then on the **Parental Controls** tab.
3. Click in the table on **Block** next to the device to be blocked from internet access.

The device no longer has access to the internet.

Instructions: Distributing a Ticket for Extended Use Time

One ticket extends the online time for 45 minutes. The ticket can be redeemed before the online time runs out to allow internet use to be prolonged without a break.

1. Open the user interface; see page 45.
2. Click on **Internet** > **Filter** in the menu and then on the **Access Profiles** tab.

   Ten tickets for additional online time will be displayed.
3. If you want to distribute multiple tickets, print them out and distribute the tickets to users of devices in the home network.

   If you want to distribute only one single ticket, click on **Share Ticket**. A single ticket is saved to the clipboard and can be sent to the user of the device in the home network however you like.

Instructions: Querying the Remaining Online Time on the Device in the Home Network

Devices in the home network that have their online time restricted can query how much online time they have left.

1. In the browser on the device, enter the address **http://fritz.box**.

   The remaining online time is displayed 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 restrict online time for devices in the home network, block websites, or permit access only to certain websites.

You can create different access profiles and assign each access profile to one or multiple devices in the home network.

Function of an Access Profile

An access profile specifies what is allowed during internet use. An access profile takes into consideration three aspects of internet use:

Aspect	Description
Time limit	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 and which are blocked.
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 two children and would like to control internet use for each child individually:

- Create an access profile for each child.
- Specify in each access profile the restrictions to internet use intended for the given child.

Preconfigured Access Profiles

Name	Properties
Standard	• Default access profile for devices registering in the home network for the first time • Internet use not restricted • Can be changed
Guest	• Access profile possible for devices that register with the guest network • Can be changed
Unrestricted	• Internet use not restricted • Cannot be changed

Instructions: Creating and Assigning an Access Profile

1. Open the user interface; see page 45.
2. Click on **Internet** > **Filter** in the menu and then on the **Access Profiles** tab.
3. For instructions, open the online help ?.

Editing Filter Lists

For devices in the home network whose internet use is not to be restricted by parental controls, you can block websites.

You do this using filter lists, which either allow only certain websites, or block certain websites. These lists can then be used as filters in the access profiles.

Filter Lists

The following filter lists are available:

Filter List	Function and Use
Permitted Websites	This list can be edited and applies only to devices in the home network to which an access profile with this list is applied in the parental controls. Use this list if most websites are to be blocked and only a few websites are to be permitted.
Blocked Websites	This list can be edited and applies only to devices in the home network to which an access profile with this list is applied in the parental controls. Use this list if access to most websites is to be permitted and only a few websites are to be blocked.
Permitted IP Addresses	This list is created automatically and applies only to devices in the home network to which an access profile with the **Blocked Websites** list is applied in the parental controls. If you call up a blocked website with its IP address, this address is automatically entered in the list of **Permitted IP Addresses**. You can release the IP address in the list individually to allow access to these IP addresses.

Filter List	Function and Use
IP Block List	With this list you can block incoming connections from specific IP addresses. IP addresses entered in the list cannot establish connections to the FRITZ!Box.

Requirements

- Filter lists are not available if the FRITZ!Box is configured as an IP client or Mesh Repeater.

Instructions: Editing Filter Lists

1. Open the user interface; see page 45.
2. Click on **Internet** > **Filter** in the menu and then on the **Lists** tab.
3. For instructions, open the online help ?.

Prioritizing Internet Access for Important Devices and Applications

In the FRITZ!Box, you can specify devices and applications in the home network that are to be prioritized when the internet connection is working to capacity.

If you use the guest network of the FRITZ!Box, you can reserve bandwidth for the home network.

Prioritization Categories

Three categories can be selected for prioritization:

Real-Time Applications: intended for applications with high demands on transmission speed and reaction times, for example, internet telephony, IPTV, or video on demand. When a real-time application is using the internet connection to full capacity, no other data will be transmitted.

Prioritized Applications: intended for applications that require fast reaction times, for example, company access, terminal applications, games. These applications will be granted higher priority. When a prioritized application uses the full capacity of the internet connection, the data of other applications will be transferred with lower priority.

Background Applications: 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 or peer-to-peer services.

Reserving Bandwidth for the Home Network

All devices in the home network and the guest network have to share the bandwidth available on the internet connection. You can reserve bandwidth for the home network. Whenever the bandwidth reserved for the home network is not needed, it can be used by the devices in the guest network.

Instructions: Configuring Prioritization Rules for a Device or Application

1. Open the user interface; see page 45.
2. Click on **Internet** > **Filter** in the menu and then on the **Prioritization** tab.
3. For instructions, open the online help ?.

Configuring Port Sharing

The firewall of the FRITZ!Box protects all of the devices in the home network from incoming connections and unwanted data from the internet.

With port sharing you can make applications in the home network accessible for other internet users, for instance, online games or file-sharing programs. With port sharing you can also allow internet users to access server services in the home network, for instance, an HTTP, FTP, VPN, terminal, or remote maintenance server.

Port sharing grants other internet users controlled access to devices and applications in the home network.

Port Sharing on Protocols

In the FRITZ!Box port sharing is possible on the following protocols:

Protocol	Internet Protocol	Explanation
PING	IPv6	The FRITZ!Box responds to pings from the internet addressed to the IPv6 address of the FRITZ!Box. In addition, you can set ping6 sharing for each individual computer in the home network. Every 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.
	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.

Protocol	Internet Protocol	Explanation
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 45.
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

With dynamic DNS, the FRITZ!Box can be reached in the internet under a fixed name. This way you can access a NAS system in the home network, for instance, or perform remote maintenance on a computer.

The domain name does not change even if the FRITZ!Box receives a new public IP address after the internet connection is interrupted.

With dynamic DNS, the FRITZ!Repeater can be reached in the internet under a fixed name. This way you can access a NAS system in the home network, for instance, or perform remote maintenance on a computer.

The domain name does not change even if the FRITZ!Repeater receives a new public IP address after the internet connection is interrupted.

In order to use dynamic DNS, you must be registered with a dynamic DNS provider and have configured a domain name.

Alternative MyFRITZ!

With the free AVM service MyFRITZ!, too, you can access your FRITZ!Box and the home network at any time over the internet; see page 192.

Instructions: Enabling Dynamic DNS

1. Open the user interface; see page 45.
2. Click on **Internet** > **Permit Access** in the menu and then on the **DynDNS** tab.
3. For instructions, open the online help ?.

Accessing the FRITZ!Box from the Internet

You can also access the FRITZ!Box user interface via the internet from on the go.

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

HTTPS, FTP and FTPS

Protocol	Function
HTTPS (Hypertext Transfer Protocol Secure)	Internet protocol for secure communication between the web server and the browser in the internet Enable HTTPS in order to access the FRITZ!Box securely from the internet.
FTP (File Transfer Protocol)	Network protocol for transmitting files in IP networks. Enable FTP in order to access the storage media on the FRITZ!Box from the internet.
FTPS (FTP over SSL)	Method for encrypting the FTP protocol Enable FTPS to secure transmission over FTP.

Requirements

- For access to the user interface: In the FRITZ!Box at least one user has been configured with access rights from the internet.
- For changing 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.
- 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, FTP, and FTPS in the FRITZ!Box

1. Open the user interface; see page 45.
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

The FRITZ!Box supports the two VPN solutions IPSec and WireGuard.

A VPN (Virtual Private Network) allows bug-proof encrypted connections over the internet. Via VPN you can:

- Establish connections to your FRITZ!Box and to devices in the home network on a smartphone, tablet, or computer.
- Connect two or more FRITZ! home networks at different locations with each other via VPN (LAN-LAN linkup).
- Connect your FRITZ! home network with the VPN server at your company (via IPSec).

Additional information on VPN with FRITZ! is presented at en.avm.de/vpn.

Requirements

- The FRITZ!Box is **not** configured as an IP client.

VPN with MyFRITZ!App for Android

You can establish MyFRITZ!App IPSec VPN connections to the FRITZ!Box on smartphones and tablets with Android.

Install the MyFRITZ!App on your mobile device and register with the FRITZ!Box. Then configure the VPN connection in the settings of the MyFRITZ!App.

When you now establish a VPN connection to your FRITZ!Box in the MyFRITZ!App, all your Android device's internet communication takes place over VPN.

IPv4 and IPv6 Network Traffic over VPN

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

Only IPv4 data are transmitted within the VPN tunnel. It is not possible to access internet services or devices in the remote network over the VPN connection if they are only available via IPv6.

Maximum Number of Concurrent VPN Connections

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 used, and the utilization of the FRITZ!Box. We recommend using no more than 10 to 20 VPN connections at any given time.

IPSec connections can be configured for up to 20 users.

Instructions: Configuring VPN in the FRITZ!Box

1. Open the user interface; see page 45.
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)**.
   If you would like to configure a VPN connection with WireGuard, click on **VPN (WireGuard)**.
4. For instructions, open the online help ?.

Configuring IPv6

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

Services that Support IPv6

Services in the home network that support IPv6:

- FRITZ!NAS access via SMB or FTP/FTPS
- Access to the user interface with HTTP or HTTPS over IPv6
- The DNS resolver of the FRITZ!Box supports queries for IPv6 addresses (AAAA records) and can query the upstream DNS resolver of the internet service provider over IPv6.
- The globally valid prefix is distributed via router advertisement.
- For guest access to the Wi-Fi network, the home network and Wi-Fi guests are separated by IPv6 subnetworks.
- UPnP, UPnP AV media server

IPv6-capable services in the internet:

- FRITZ!NAS access via FTPS
- Completely closed firewall to protect against unsolicited data from the internet (Stateful Inspection Firewall)
- Voice over IPv6
- Automatic provisioning (TR-069)
- Time synchronization over NTP (Network Time Protocol)
- Remote access via HTTPS
- Dynamic DNS via dyndns.org or namemaster.de

Instructions: Configuring IPv6 in the FRITZ!Box

1. Open the user interface; see page 45.
2. Click in the menu on **Internet** > **Account Information** and on the **IPv6** tab.
3. For instructions, open the online help ?.

User Interface: Telephony Menu

Configuring and Using the Phone Book

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

- FRITZ!Fon: Phone book available in the menu, separate phone books for multiple FRITZ!Fons, quick-dial numbers, Click to Dial
- Cordless phone with CAT-iq 2.0 support: Phone book available in the menu, quick-dial numbers, Click to Dial
- FRITZ!App Fon : Phone book available in FRITZ!App Fon
- IP phone: FRITZ!Box phone book not available
- Others: quick-dial numbers, Click to Dial

Quick-dial numbers can be configured only in the first local phone book.

Instructions: Setting Up a New Phone Book in the FRITZ!Box

1. Open the user interface; see page 45.
2. Click in the menu on **Telephony** > **Phone Book** and on the **Phone 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 phone book.

1. Open the user interface; see page 45.
2. Click on **Telephony** > **Phone 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 phone 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 phone number for personal contacts and a second phone number for business contacts. You can set up a separate answering machine for each phone 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 phone 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 45.
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.fritz.com/service/manuals.
- By voice menu using any connected phone. Instructions are included in this manual; see page 216.
- By pressing a button on your FRITZ!Smart Control 440. Instructions for configuring the buttons are presented in the current manual at en.fritz.com/service/manuals.

Picking Up a Call from the Answering Machine on the Phone

Calls that have already been accepted by the answering machine can be picked up on your phone. For more information, see page 218.

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 phone number.
2. When the answering machine answers: Press the ✱ (star) key on the phone and then enter the remote playback PIN.
3. Follow the voice menu.

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 phone number or a certain contact in the phone book
- all calls from phone numbers not included in the phone book
- all calls without a phone number (anonymous calls)
- for multiple phone numbers: all calls for a certain phone number or a certain phone

Destination Numbers

You can divert calls to:

- another phone number (a different phone line or mobile phone 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 phone.

Instructions: Configuring Call Diversion

1. Open the user interface; see page 45.
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 phone 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 phone numbers or certain ranges of phone numbers	Blocked phone numbers can no longer be called from the FRITZ!Box You can also block ranges of phone numbers like mobile networks or all phone numbers that start with 0180.
Incoming calls from certain phone numbers or certain ranges of phone numbers	The FRITZ!Box does not accept calls from blocked phone numbers. Call blocks for incoming calls only work when the caller transmits their phone number.
Calls from phone numbers not in the phone book	You can block all phone numbers that are not entered in a FRITZ!Box phone book. The phone book is then your positive list for phone numbers: You can only be reached by contacts from a FRITZ!Box phone book.
Calls without a phone number (anonymous calls)	The FRITZ!Box will not accept any calls from callers who suppress their phone number.

Example 1

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

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

Example 2

You would like to block sales calls from a certain phone number. For this you can set up a call block for incoming calls from this phone number.

Instructions: Configuring a Call Block

1. Open the user interface; see page 45.
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 phones in the FRITZ!Box. Do Not Disturb ensures that a phone does not ring when an incoming call arrives. If no other phone 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 phones (connected via LAN port/Wi-Fi).

Example

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

Please Note

- Calls from **important persons** in the phone 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 45.
2. Click on **Telephony** > **Telephony Devices** in the menu.
3. Click on the **Edit** button for the desired phone.
4. Switch to the **Do Not Disturb** tab.
5. For instructions, open the online help ?.

Setting an Alarm

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

Example

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

Instructions: Configuring an Alarm

1. Open the user interface; see page 45.
2. Click on **Telephony** > **Alarm** in the menu.
3. For instructions, open the online help ?.

Configuring a Dialing Rule

If you have multiple phone numbers, you can configure dialing rules. A dialing rule determines which phone 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 phone 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 45.
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 phones are in standby mode. The radio network is switched back on when a call arrives or you press a key on a cordless phone.

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

Requirements

- All registered cordless phones support DECT Eco:

  In the **Telephony** > **DECT** > **DECT Monitor** of the FRITZ!Box user interface, **DECT Eco supported** is displayed for each phone.
- The following devices are not registered with the FRITZ!Box:
  - FRITZ!Smart devices with a smart plug
  - FRITZ!DECT Repeater
  - other FRITZ!Boxs in DECT Repeater mode.

Instructions: Reducing DECT Transmission Power

1. Open the user interface; see page 45.
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 45.
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, and playback of music files by the FRITZ!Box media server

Instructions: Allowing Non-Encrypted DECT Connections

1. Open the user interface; see page 45.
2. Click on **Telephony** > **DECT** in the menu and then on the **Base Station** tab.
3. For instructions, open the online help ?.

User Interface: Home Network Menu

Overview of the Devices in the Home Network (Mesh Overview)

The Mesh Overview in the FRITZ!Box user interface displays all active devices in the home network and the guest network.

For FRITZ! devices with their own user interface, the user interface can be opened via a link.

You can perform updates for FRITZ! devices and enable Mesh for FRITZ! devices that support Wi-Fi.

You can also rename devices, select symbols that match the device type for devices from other manufacturers, and see at a glance which devices currently have internet access blocked by parental controls.

Instructions: Performing Updates for FRITZ! Devices

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Mesh** in the menu and then on the **Mesh Overview** tab.
3. Scroll down to the list of devices connected in the home network.
4. If an update is available for a FRITZ! device, click on **Perform update**.
5. Click on **Start Update**.

FRITZ! Devices in the Mesh

The symbol **Mesh enabled** identifies the FRITZ! devices for which Mesh is enabled. If a FRITZ!Box, a FRITZ!Repeater, or a FRITZ!Powerline device with Wi-Fi functionality is displayed without the Mesh symbol, enable Mesh for this device; see page 65.

Instructions: Renaming Device and Changing Symbol

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Mesh** in the menu and then on the **Mesh Overview** tab.

3. Move the mouse in the overview over the device you would like to rename and click on the **Edit** button.

4. Enter a new device name for the device.
5. FRITZ! devices are automatically assigned the symbol for their device type. You can select an appropriate symbol for devices from other manufacturers: Click on the symbol with a blue background next to the device name, select a symbol, and click on **Apply**.
6. Save your settings with **Apply**.

Blocked Devices

The symbol **Device block enabled** identifies devices in the home network for which internet access is currently blocked by parental controls.

The **Mesh Overview** does not show any blocked devices that are currently switched off or in use outside the home network. All blocked devices are displayed in the user interface under **Internet** > **Filter** on the **Parental Controls** tab. There you can also block and unblock devices by mouse click.

Managing Network Devices

Under **Home Network** > **Network** > **Network Connections** in the FRITZ!Box user interface there is a table with all network connections of the FRITZ!Box. You can edit the properties of connections and add or remove devices.

Network Connections

The Network Connections table contains:

- Devices in the home network that are connected with the FRITZ!Box by LAN cable or via Wi-Fi.
- VPN connections to the home network

To find devices quickly, you can sort the table columns:

- ▲▼ to sort in alphabetical order
- ▲▼ to sort in reverse alphabetical order

Adding a Device

You can include in the table even network devices that are not yet 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 will not be listed in the table until the device is physically connected with the FRITZ!Box.

Removing Devices

Devices with unused connections can be removed from the network connections table.

You can remove an individual device using the delete symbol: 🗑

With the **Remove All Connections** button you can remove all unused connections for which no settings have been configured.

Connections with individual settings, for instance port sharing, parental controls, or fixed IP addresses, remain intact.

Changing the IPv4 Settings of the FRITZ!Box

Two IPv4 networks are preconfigured in the FRITZ!Box: the home network and the guest network. You can change the IPv4 settings for the home network. The IPv4 settings for the guest network cannot be changed.

Preconfigured IPv4 Values

IPv4 Setting	Preconfigured Values
IPv4 address of the FRITZ!Box in the home network	192.168.178.1
Subnet mask	255.255.255.0
IPv4 network address	192.168.178.0
DHCP server	enabled
Validity of IPv4 addresses assigned by DHCP server	10 days
Address range of the DHCP server	192.168.178.20 - 192.168.178.200
Local DNS server	192.168.178.1 You can enter the IP address of a different DNS server.

The preconfigured values yield the following addresses and address ranges:

Address / Address Range	Preconfigured Values	Use
Address range for the network devices:	192.168.178.2 - 192.168.178.254	
Addresses below the DHCP address range	192.168.178.2 - 192.168.178.19	The addresses can be assigned as fixed IPv4 addresses.

Address / Address Range	Preconfigured Values	Use
Addresses above the DHCP address range	192.168.178.201 - 192.168.178.254	The addresses can be assigned as fixed IPv4 addresses and are used when VPN users are configured.
Broadcast address	192.168.178.255	The address will be used to send messages within the network.

Preconfigured IPv4 Values for the Guest Network

You cannot change these values.

IPv4 Setting	Preconfigured Values
IPv4 address of the FRITZ!Box in the guest network	192.168.179.1
Subnet mask	255.255.255.0
IPv4 network address	192.168.179.0
Address range available for network devices	192.168.179.2 - 192.168.179.254
DHCP server	enabled
Validity of IPv4 addresses assigned by DHCP server	6 hours

Fallback IPv4 Address

With this additional IPv4 address, which cannot be changed, the FRITZ!Box can always be reached: **169.254.1.1**

Application Cases

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

- VPN connection: The network of the FRITZ!Box is connected with another FRITZ!Box network (LAN-LAN linkup). The IPv4 settings of both of the networks must not be identical.
- The FRITZ!Box is integrated in an existing FRITZ!Box or FRITZ!Repeater network and both FRITZ! devices are used as routers. The IPv4 settings of both of the networks must not be identical.
- You want to integrate network devices into your home network that have fixed IP addresses specified by the manufacturer, for example TVs, speakers.

Instructions: Changing the IPv4 Settings

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Network** in the menu and then on the **Network Settings** tab.
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 116.

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	Meaning
Router advertisement enabled in the LAN	enabled	Router advertisement is a procedure with which a router offers services and information in the local network. The FRITZ!Box offers IPv6 prefixes and IPv6 information in the home network and the guest network through router advertisements.
Assign unique local addresses (ULAs)	enabled	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.

IPv6 Property	Setting	Meaning
This FRITZ!Box provides the standard internet connection	enabled	This FRITZ!Box provides the default IPv6 connection. Other IPv6 routers are disregarded.
Also announce DNSv6 server via router advertisement (RFC 5006)	enabled	
Enable DHCPv6 server in the FRITZ!Box for the home network	enabled	The DHCPv6 server is enabled.
Only assign DNS server	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 45.
2. Click on **Home Network** > **Network** in the menu and then on the **Network Settings** tab.
3. For instructions, open the online help ?.

Configuring a Static IP Route

You can configure a static IP route in the FRITZ!Box and assign a fixed IP address as the gateway.

In a network with multiple IP networks (subnets), a static IP route allows all devices to access the internet via the FRITZ!Box.

Instructions: Configuring a Static IPv4 Route

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Network** in the menu and then on the **Network Settings** tab.
3. In the **Table for Static Routes** 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 45.
2. Click on **Home Network** > **Network** in the menu and then on the **Network Settings** tab.
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 the WAN Connection Socket

The **WAN** connection socket can be configured and used as a WAN port or as a LAN port.

Functions of the WAN Connection Socket

Configuration	Function
WAN port	**WAN** is the factory setting. The socket functions as a WAN port. This setting is necessary if the FRITZ!Box is connected to an access device in order to connect to the internet and works as a router. This is the case when: • The FRITZ!Box is connected to a modem. • The FRITZ!Box is connected to a router. The FRITZ!Box works as a router and generates its own local network.
LAN Port	When the **LAN** setting is selected, the socket functions as a LAN port. This setting is necessary in the following cases: • Network devices are connected to the **WAN** socket. • The FRITZ!Box is operated via the **WAN** socket as an IP client on a router.

Instructions: Configuring the WAN Connection Socket

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Network** in the menu and then on the **Network Settings** tab.
3. Scroll to the **WAN Setting** area.
4. Select the WAN setting you need.
5. Save your settings with **Apply**.

Configuring LAN Guest Access

With a LAN guest access you can provide houseguests with an internet connection of their own via network cable (LAN cable). A guest access is designed for temporary use by your guests. A guest access can also be made available wirelessly via Wi-Fi.

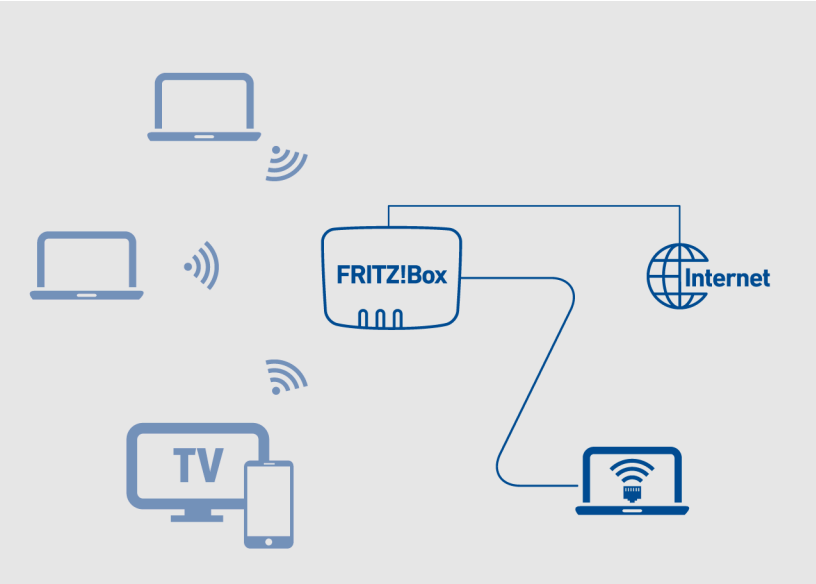
The Guest Access Profile

Only the **Guest** access profile can be used at the LAN guest access. You can edit the **Guest** access profile in the **Internet** > **Filter** > **Access Profiles** menu.

The preconfigured **Guest** access profile defines the following for the guest access:

Allowed/Not Allowed	Activities
allowed	• Surfing the web (according to the filters specified in the **Permitted websites** list or the **Blocked websites** list) • Sending and receiving email
not allowed	• Accessing contents of the home network • Changing the settings of the FRITZ!Box

Example Configuration



Requirements

- The FRITZ!Box establishes its own connection to the internet. It is not configured as an IP client.
- You have a network cable.

Instructions: Configuring LAN Guest Access

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Network** in the menu and then on the tab **Network Settings**.
3. For instructions, open the online help ?.

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 mode.

Instructions: Configuring Wake on LAN

1. Open the user interface; see page 45.
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 ?.

Using USB Storage and USB Devices on the FRITZ!Box

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

Supported USB Devices

The following USB devices can be operated on the FRITZ!Box as network devices:

- USB storage formatted for EXT2/3/4, FAT, FAT32, exFAT or NTFS
  - flash drives
  - external hard drives
  - card readers
- USB printers, USB all-in-one printers, USB scanners
- USB mobile broadband modems
  - Android smartphones (USB tethering)
  - USB mobile broadband dongles
- USB hubs

Please Note

- USB devices with power consumption of no more than 900 mA can be connected directly to the FRITZ!Box. If the power consumption of the USB device is higher, connect the device to the FRITZ!Box via an active USB hub.
- The FRITZ!Box cannot protect itself from voltage peaks and drops during an electrical storm, which can result in data loss on USB storage media. You should back up the contents of your USB storage media on a regular basis.
- Place USB hard drives far away from the FRITZ!Box in order to prevent interference with Wi-Fi transmission.

Configuring USB Storage Media as Network Storage

You can connect USB storage media to the FRITZ!Box and make them available as network storage. Connected USB storage media are also available for FRITZ!NAS; see page 186.

Instructions: Configuring USB Storage Media on the FRITZ!Box

1. Connect a USB storage medium to the USB port on the FRITZ!Box.
2. Open the user interface; see page 45.
3. Click on **Home Network** > **USB / Storage** in the menu and on the **Device Overview** tab.
4. For instructions, open the online help ?.

Integrating USB Storage in the Computer as a Network Drive

You can integrate the USB storage media on the FRITZ!Box as a network drive in the file manager of a computer in the home network. The storage then receives a drive letter and can be used on the computer just like a local drive or a USB storage medium connected directly to the computer, for instance in the Windows Explorer or macOS Finder.

Steps

Configure the USB storage media as a network drive by performing the following steps:

	Instructions
	Configure the USB storage medium for network access in the FRITZ!Box user interface.
	Integrate the USB storage medium into the computer as a network drive.

Requirements

- A FRITZ!Box user with **Access to NAS contents** rights is configured.

Instructions: Configuring USB Storage for Network Access

1. Open the user interface; see page 45.
2. Click on **Home Network** > **USB / Storage** in the menu and on the **Device Overview** tab.
3. Enable the **NAS storage function of [FRITZ!Box name] enabled**.
   The available storage media are displayed (internal FRITZ!Box storage, USB storage media and/or cloud storage).
4. Switch to the **Devices and Network Sharing** tab.
5. Enable **Access via network drive (SMB)**.
   Access with SMBv2 and SMBv3 is enabled.

6. Accept the name **FRITZ.NAS** as the name for sharing, or enter a different name.
   The name for sharing will be displayed in file managers like Windows Explorer or macOS Finder.
   For older devices that do not support SMBv2/v3, you can also **Enable support for SMBv1**.
7. Accept the name **WORKGROUP** for the workgroup.
   WORKGROUP is the default name for workgroups in computer operating systems. All computers that are to be able to access the USB storage must be located in the same workgroup.
   If you assigned a name of your own for the workgroup, enter this name here.

For older devices that do not support SMBv2/v3, you can also **Enable support for SMBv1**.

8. Save your settings with **Apply**.

Instructions: Integrating USB Storage as a Network Drive (Windows 11)

1. Enter **\\fritz.box** in the search box in the Windows taskbar and press Enter.
   If the FRITZ!Box is configured as a Mesh Repeater or an IP client: Enter the IP address at which the FRITZ!Box can be reached in the home network, for example **\\192.168.178.20**.
   The IP address is displayed in the FRITZ!Box user interface in the **Home Network** > **Network** menu on the **Network Connections** tab.
2. If you are prompted to enter account information: Enter the name and the password of a FRITZ!Box user who has the **Access to NAS contents** right.
   User notifications can be adjusted under **System** > **FRITZ!Box Users** in the FRITZ!Box user interface.
3. Enable **Remember my credentials** and click on **OK**.
   The folder called **FRITZ!NAS** or the name you assigned it is displayed in the Windows Explorer.
4. If you want to configure the entire FRITZ!Box storage as a network drive:

- Right-click on the **FRITZ!NAS** folder and click in the context menu on **Show more options** and then on **Map Network Drive...**.
- From the drop-down list, select a free drive letter and click on **Finish**.

  Leave the **Reconnect at login** setting enabled to keep the network drive mapped permanently.

The internal FRITZ!Box storage and the connected USB data storage are connected as network drive **FRITZ.NAS**.

5. If you only want to set up a specific data medium (USB memory or internal FRITZ!Box memory) or a subfolder as a network drive:
   - Click on **This PC** in the navigation area of Windows Explorer.
   - In the menu bar, click on the three-dot menu and then on **Map Network Drive...**.
   - In the **Folder** field, enter the path to the data storage you want to connect as a network drive.

     Example: To connect a connected USB storage device named **Backup** as a network drive, enter **\\fritz.box\FRITZ.NAS\Backup**.

     You can also find the path to the data storage by clicking on **Browse**.
   - From the drop-down list, select a free drive letter and click on **Finish**.

     Leave the **Reconnect at login** setting enabled to keep the network drive mapped permanently.

   The desired storage or subfolder is mounted as a network drive with the volume name.

The data storage or subfolder is now displayed in Windows Explorer as a folder with the drive letter you selected.

Instructions: Integrating USB Storage as a Network Drive (Windows 10)

1. Enter **\\fritz.box** in the search box in the Windows taskbar and press Enter.

If the FRITZ!Box is configured as a Mesh Repeater or an IP client: Enter the IP address at which the FRITZ!Box can be reached in the home network, for example **\\192.168.178.20**.
The IP address is displayed in the FRITZ!Box user interface in the **Home Network** > **Network** menu on the **Network Connections** tab.

2. If you are prompted to enter account information: Enter the name and the password of a FRITZ!Box user who has the **Access to NAS contents** right.
   User rights can be adjusted under **System** > **FRITZ!Box Users** in the FRITZ!Box user interface.
3. Enable **Remember my credentials** and click on **OK**.
   The folder called **FRITZ!NAS** or the name you assigned it is displayed in the Windows Explorer.
4. If you want to configure the entire FRITZ!Box storage as a network drive:
   - Right-click on the **FRITZ!NAS** folder and click in the context menu on **Map Network Drive...**.
   - From the drop-down list, select a free drive letter and click on **Finish**.
     Leave the **Reconnect at login** setting enabled to keep the network drive mapped permanently.

   The internal FRITZ!Box storage and the connected USB data storage are connected as network drive **FRITZ.NAS**.
5. If you only want to set up a specific data medium (USB storage media or internal FRITZ!Box memory) or a subfolder as a network drive:
   - Click on **This PC** in the navigation area of the Windows Explorer.
   - In the menu bar, click on **Computer** and then **Map Network Drive**.
   - In the **Folder** field, enter the path to the data storage you want to connect as a network drive.

Example: To connect a connected USB storage device named **Backup** as a network drive, enter **\\fritz.box\FRITZ.NAS\Backup**.

– From the drop-down list, select a free drive letter and click on **Finish**.

Leave the **Reconnect at login** setting enabled to keep the network drive mapped permanently.

The desired storage or subfolder is mounted as a network drive with the volume name.

The data storage or subfolder is now displayed in Windows Explorer as a folder with the drive letter you selected.

Instructions: Integrating FRITZ!Box StorageUSB Storage as a Network Drive (macOS)

1. Right-click on the Finder symbol to open the context menu of the macOS Finder.
2. Click on **Connect to Server...**.
3. Enter the following address in the **Server Address:** field: **smb://fritz.box**.

   If the FRITZ!Box is configured as a Mesh Repeater or an IP client: Enter the IP address at which the FRITZ!Box can be reached in the home network, for example **smb://192.168.178.20**.

   The IP address is displayed in the FRITZ!Box user interface in the **Home Network** > **Network** menu on the **Network Connections** tab.
4. Click on **Connect**.
5. If you are prompted to enter account information: Enter the name and the password of a FRITZ!Box user who has the **Access to NAS contents** right.

   The folder called FRITZ.NAS or the name you assigned it is displayed in the Finder.
6. Double-click on the folder.
7. Select the folder you want to permanently add to the Finder.
8. Select **Make Alias** from the Finder **File** menu.

9. Drag the new alias to the **Favorites** area in the Finder.

The folder is now displayed in the Finder under **SHARED**.

Configuring Cloud Storage in the FRITZ!Box

Cloud storage is generally made available by storage service providers. Cloud storage is memory in the internet, in which you can save photos, music, and other data. You can access the data in cloud storage from anywhere via the internet. You can configure your cloud storage in the FRITZ!Box. Then data are always available in both the internet and in the home network.

Please Note

- The access information for the cloud storage is stored in the FRITZ!Box.
- When data are saved to cloud storage, the data are cached on a USB storage medium connected to the FRITZ!Box. This way uploads of large amounts of data are possible even when the computer is switched off.
- You can then use the cloud storage like a local drive on the computers in the home network. Then you can access the cloud storage in the Windows Explorer or macOS Finder; see page 189.

Requirements

- A USB storage device is connected to the FRITZ!Box. The storage space available on the USB storage device must equal at least the volume of data to be copied to or from the cloud storage (cache).
- The online storage supports access via the WebDAV protocol.
- A FRITZ!Box user with **Access to NAS contents** rights is configured; see page 165.

Instructions: Configuring Online Storage (Cloud Storage)

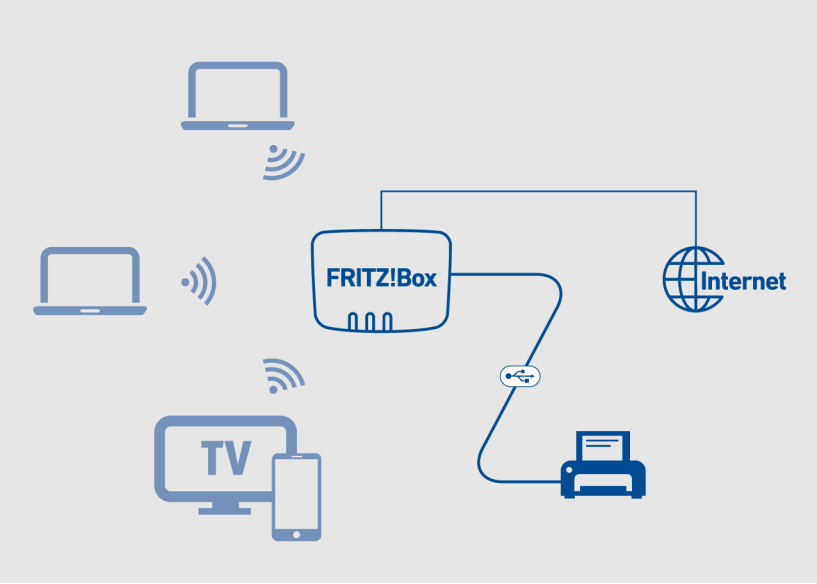
1. Open the user interface; see page 45.
2. Click on **Home Network** > **USB / Storage** in the menu and on the **Device Overview** tab.

3. For instructions, open the online help ?.

Configuring a USB Printer as a Network Printer

You can connect USB printers, USB all-in-one printers, and USB scanners to the FRITZ!Box and operate them as network devices.

Example Configuration



Instructions: Configuring a USB Printer as a Network Printer (Windows 11, Windows 10)

1. Connect the printer to the FRITZ!Box using a USB cable and switch on the printer.
2. On your Windows computer: Click on the magnifying glass icon in the Windows task bar and enter the search term **Printers**.
3. From the search results, select **Printers & scanners**.

   The **Printers & scanners** window opens.

4. Click next to **Add a printer or a scanner** on **Add device**.

   The connected printers and scanners are searched for and then displayed.

5. If your printer is displayed: Click on the name of your printer and then on **Add device**.

6. If your printer is not displayed: Click next to **The printer that I want isn't listed** on **Add a local printer or network printer with manual settings**.

7. Enable **Add a printer using TCP/IP address or hostname** and click on **Next**.

8. Enter the address **http://fritz.box** in the **Hostname or IP address** field.

   If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached in the network.

9. Click on **Next**.

10. If the **Printer Sharing** window appears, select **Do not share this printer** and click on **Next**.

11. Click on **Finish**.

The selected printer is configured as a network printer with the standard Windows 10 or Windows 11 drivers and can be used via the Windows print dialog.

Instructions: Configuring a USB Printer as a Network Printer (macOS)

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

The USB printer has been configured and can be used as a network printer.

Instructions: Configuring a USB Printer in Other Operating Systems

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

Setting	Value
Connection Type	Raw TCP
To Port	9100
Printer Name	**fritz.box** or the IP address of the FRITZ!Box in the network Use the IP address when the FRITZ!Box is configured as a wireless repeater or IP client, or when a VPN connection is active.

Configuring USB 3.0 or 2.0 (Power Mode / Green Mode)

In the FRITZ!Box user interface, the following settings for the USB port are located under **Home Network** > **USB/Storage** > **USB Settings**:

Setting	Function
Power Mode (USB 3.0)	Full transmission capacity
Green mode (USB 2.0)	During operation of devices with USB 3.0 • Reduced power consumption • Reduced transmission capacity

Configuring and Using the Media Server

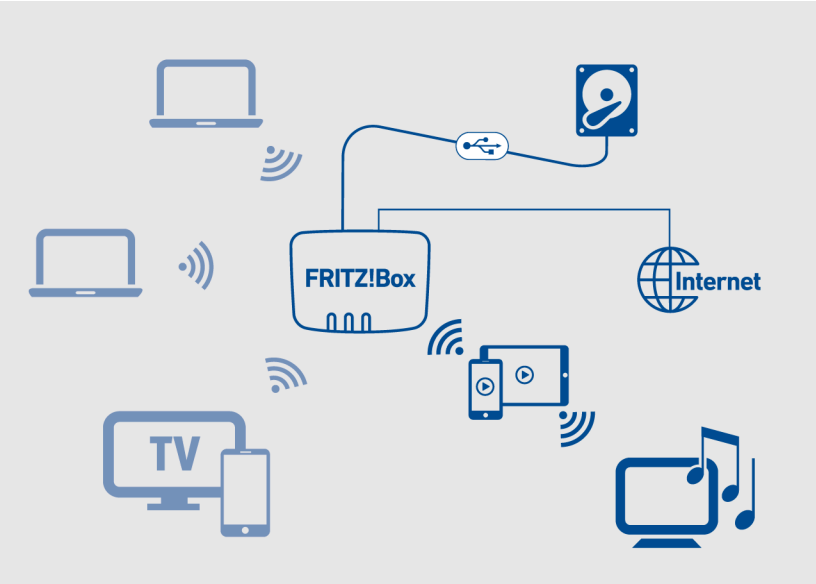
As a media server in the home network, the FRITZ!Box can transmit images, music, and videos as well as web radio stations and podcasts to compatible playback devices like televisions, smartphones, Wi-Fi music systems, and streaming software (media streaming).

How It Works

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

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

Example Configuration



Requirements for Playback Devices

- The playback devices support the UPnP AV standard.

Instructions: Configuring and Using the Media Server

1. Open the user interface; see page 45.
2. Click on **Home Network** > **Media Server** in the menu.
3. 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 media server
- 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 45.
2. Click on **Home Network** > **FRITZ!Box Name** in the menu.
3. For instructions, open the online help ?.

User Interface: Wi-Fi Menu

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 Wi-Fi 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 switched 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:

- Press the **WLAN** button on the FRITZ!Box
- 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 phones; see page 215

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

1. Open the user interface; see page 45.
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 45.
2. Click on **Wi-Fi** > **Wi-Fi Channel** in the menu.
3. For instructions, open the online help ?.

Configuring Wi-Fi Guest Access

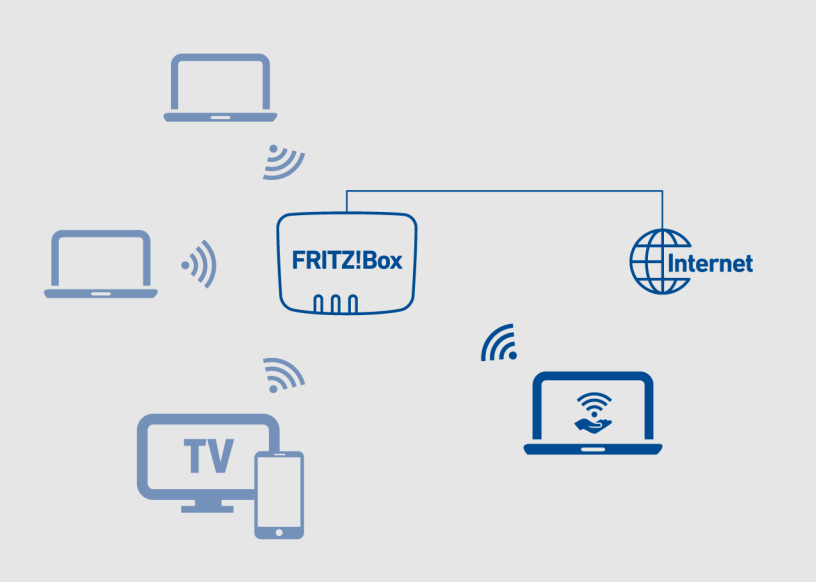
With the Wi-Fi guest access you can make an internet connection available to guests which is separate from your home network. Guests cannot access shared files or printers in the FRITZ!Box home network.

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



Requirements

- The FRITZ!Box is not configured as an IP client.

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 Agency for Child and Youth Protection in the Media (German BPjM module) will be blocked.

Instructions: Configuring Wi-Fi Guest Access

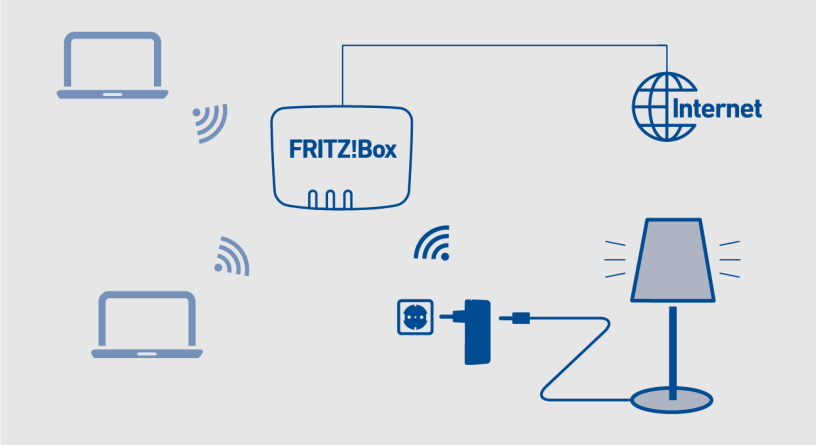
1. Open the user interface; see page 45.
2. Click on **Wi-Fi** > **Guest Access** in the menu.
3. For instructions, open the online help ?.

User Interface: Smart Home Menu

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 plugs and LED lights
- FRITZ!Smart switches and door/window contacts
- 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, smart 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 Zigbee. 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 45.
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 Control 440
- At home with the FRITZ!Smart Control 400 switch for FRITZ!Smart 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.
- You can use door/window contacts to turn smart home devices on and off. You can configure door/window contacts in the FRITZ!Box so that other smart home devices are switched on or off when a door or window is opened.

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. 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

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

Area	Checkpoint/Status
FRITZ!Box 4690	• 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
USB devices	• Number of storage media connected • Number of partitions • Connected printers
Internet connection	• IPv4 connection active since/not active • IPv6 connection active since/not active • Current IP address
Phone numbers	How many and which numbers assigned

Area	Checkpoint/Status
MyFRITZ!	• Status of MyFRITZ! activation • MyFRITZ! account email address
Home network	• Number of network devices connected with the FRITZ!Box at present or at an earlier point in time • Number of network devices online
Smart home	Number of smart home devices
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 45.
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

Area	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

Area	Checkpoint/Status
Telephony	• Mesh Repeater with telephony On a Mesh Repeater (FRITZ!Box) enabled for telephony in the Mesh, all of the phone 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 phone settings: connected with the FRITZ!Box directly or via FRITZ!App Fon • CAPIoverTCP driver function CAPI drivers install virtual modem drivers so that analog services like faxing can be used digitally. With CAPIoverTCP 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 access rights to FRITZ!Box contents, to the FRITZ!Box home network, and to access from the internet • Time of the last login to the FRITZ!Box and the IP address used to do so
FRITZ!NAS	Access rights to the FRITZ!Box storage media with the following details: • which user has access to which storage media • which rights (write and read) are included • whether access is permitted only via the home network, or also from the internet

Instructions: Starting Security Diagnostics

1. Open the user interface; see page 45.
2. Click on **Diagnostics** > **Security** in the menu.
3. For instructions, open the online help ?.

User Interface: System Menu

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 141.
- You can reduce the maximum transmitter power in the FRITZ!Box user interface in the **Wi-Fi** > **Wi-Fi Network** menu.

USB

- You can use USB hard drives in energy-saving (green) mode; see page 136.

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

The following push services are available in your FRITZ!Box:

Push Service	Function
FRITZ!Box Info	Sends you regular emails with data on FRITZ!Box usage and connections.
Wireless guest access	Sends you 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.
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

Push Service	Function
Current IP address	Sends the IP address assigned by the internet provider every time the internet connection is established.
Calls	Sends you email about calls from phones and door intercom systems (including camera images). You have the option of receiving email for all incoming calls, or only for missed calls. You can configure the **Calls** push service individually for up to nine different phone numbers.
Answering machine	Forwards messages recorded on the FRITZ!Box answering machines to the specified email address.
Smart Home	Sends you the status of a smart home device regularly or when important events occur.

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 45.

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 45.
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

For the first login to the FRITZ!Box user interface, a FRITZ!Box password is preconfigured that can be used without a username.

The FRITZ!Box password is printed on the FRITZ! Notes service card and on the type label on the outside of the FRITZ!Box housing.

Please Note

- Login using the FRITZ!Box password is possible only within the FRITZ!Box home network.
- With the FRITZ!Box password you have access to the FRITZ!Box settings.
- You can change the preconfigured FRITZ!Box password.
- The FRITZ!Box automatically creates a FRITZ!Box user for the FRITZ!Box password. The username consists of **fritz** and four numerals, for example **fritz1234**.

  Do not change this username; otherwise you will always have to enter the username for the FRITZ!Box password when logging in to the FRITZ!Box.
- The preconfigured FRITZ!Box password is restored if you restore the factory settings to the FRITZ!Box.

Instructions: Changing the FRITZ!Box Password

1. Open the user interface; see page 45.
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 165.

Push Service for a Forgotten Password

After changing the FRITZ!Box password, configure the Forgotten Password push service. If you forget your password, the FRITZ!Box sends you an email with a link which you can use to assign a new password.

If you lose your FRITZ!Box password and did not configure the Forgot password push service, you will have to restore the factory settings to the FRITZ!Box and then reconfigure it.

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

FRITZ!Box Users

A FRITZ!Box user is a user account for accessing the functions and settings of the FRITZ!Box.

Every FRITZ!Box user receives a username and password for logging in to the FRITZ!Box.

You can configure up to 18 FRITZ!Box users and assign different rights to different users. Users with the corresponding rights can also access the FRITZ!Box from the internet.

Rights for FRITZ!Box Users

You can assign different rights to FRITZ!Box users to control access to the FRITZ!Box. The following rights are available:

- 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
- Access selected network storage (NAS)
- Establish a VPN connection to the FRITZ!Box

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. If you forget your password, the FRITZ!Box sends you an email with a link which you can use to assign a new password.

If you lose your FRITZ!Box password and did not configure the Forgot password push service, you will have to restore the factory settings to the FRITZ!Box and then reconfigure it.

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 45.
2. Click on **System** > **FRITZ!Box Users** in the menu and then on the **Users** tab.
3. For instructions, open the online help ?.

Specifying Functions of the Info LED

The **Info** LED signals various events. Some events are preset; see page 23. You can also assign signaling of an additional event to the **Info** LED.

Example 1

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

Example 2

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

Instructions: Selecting the Signaling of the Info LED

1. Open the user interface; see page 45.
2. Click on **System** > **Buttons and LEDs** in the menu and then on the **"Info" Display** tab.
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 45.
2. Click on **System** > **Buttons and LEDs** in the menu and then on the **LED Display** tab.
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 45.
2. Click on **System** > **Buttons and LEDs** in the menu and then on the **Button Lock** tab.
3. Enable or disable **Button Lock**.
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 45.
2. Click on **System** > **Region and Language** in the menu and then on the **Language** 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 45.
2. Click on **System** > **Region and Language** in the menu and then on the **Region** tab.
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 45.
2. Click on **System** > **Region and Language** in the menu and then on the **Time Zone** tab.
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.

If you have saved data on the internal storage of your FRITZ!Box, you should back them up as well. Instructions are included in this manual: see page 190.

Instructions: Saving Settings Manually

1. Open the user interface; see page 45.
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 45.
2. Click on **System** > **Push Service** in the menu and then on the **Push Services** tab.
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 45.
2. Click on **System** > **Backup** in the menu and then on the **Restore** tab.
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. Unplug the FRITZ!Box from the electrical outlet.
2. Wait 5 seconds.
3. Insert the plug 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 45.
2. Click on **System** > **Backup** in the menu and then on the **Restart** tab.
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 internal memory of the FRITZ!Box is deleted. In addition to contents on FRITZ!NAS, messages received on the answering machine and faxes are discarded.
- The Wi-Fi 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 173.
- Back up your data from the internal memory, for instance, using the download function in FRITZ!NAS; see page 190.

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 45.
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.

Configuring Automatic FRITZ!OS Updates

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.

Available Auto Update Settings

With the **Auto Update** feature you can specify whether and which updates are installed automatically. You will always be informed about new FRITZ!OS updates in the overview of the FRITZ!Box user interface.

Auto Update Setting	Function
Level I: Notify me about new FRITZ!OS versions	You start installation of the updates yourself; see page 183.
Level II: Install necessary (security) updates automatically	Updates that AVM has identified as necessary for continued secure and reliable operation will be installed automatically.
Level III: Install new versions automatically (recommended)	All new FRITZ!OS updates will be installed automatically.

In the default setting, the FRITZ!Box generally installs automatic updates at night. This interrupts the internet connection briefly. If you require an uninterrupted internet connection at night (for instance for working on servers), select a suitable time period in the **System** > **Update** > **Auto Update** menu of the FRITZ!Box user interface.

Instructions: Configuring Automatic Updates

1. Open the user interface; see page 45.
2. Click on **System** > **Update** in the menu and then on the **Auto Update** tab.
3. For instructions, open the online help ?.

Performing a FRITZ!OS Update Manually

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.

If there is no other way to perform an update, you can perform a manual update with a FRITZ!OS file. For this the FRITZ!Box does not need an internet connection.

Instructions: Updating FRITZ!OS without an Internet Connection

1. On a computer with an internet connection, enter in the browser the address: 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 and on the type label on the outside of the housing.
3. Download the file with the file extension **.image**. Save the file on a storage medium which you can access from the FRITZ!Box user interface.
4. Open the FRITZ!Box user interface; see page 45
5. Click on **System** > **Update** in the menu and then on the **FRITZ!OS File** tab.
6. Click on the Browse button and select the downloaded file.
7. Click on **Start Update**.

   Important

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

User Interface: Wizards Menu

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: • phones • answering machines • fax machines • cordless (DECT) phones
Manage Phone Numbers	Adds and edits phone numbers
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

Wizard	Function
Configure Push Service	Sets up push services (automatic email sent with status and usage data)
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 45.
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

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.

The **Update** wizard checks whether a new version of FRITZ!OS is available and guides you step by step through installation.

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 45.
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 **Info** LED starts flashing. The FRITZ!OS update is complete when the LED stops 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 the smart home. Devices in the home network like FRITZ!Repeaters, cordless telephones, and radiator controls can be connected directly with the new FRITZ!Box.

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 45.
2. Click on **Wizards** in the menu.
3. Click on **Tranfer Your Settings to a New FRITZ!Box**.
4. Follow the wizard's instructions.

FRITZ!NAS

Using FRITZ!NAS Functions

The FRITZ!Box can provide central storage (NAS) for music, pictures, videos, and other files in the home network. NAS is short for Network Attached Storage.

With FRITZ!NAS you can access your files from all computers, smartphones, and other devices in the home network.

The FRITZ!Box storage is composed of:

- connected USB storage media
- configured online storage (cloud storage)

Requirements

- Network storage is configured on the FRITZ!Box (USB storage or online storage); see page 124
- For access to the FRITZ!NAS portal: A web browser that supports HTML5, for instance Microsoft Edge, Mozilla Firefox version 17 or later, Google Chrome version 23 or later, or Safari version 5 or later.
- For login with the FRITZ!Box from the home network: The FRITZ!Box user has **Access to NAS contents** configured; see page 165. Login only with the FRITZ!Box password without a username has all rights by default.

For login via the intenret, the following prerequisites must also be met:

- A MyFRITZ! account has been set up; see page 195.
- The FRITZ!Box can be reached from the internet; see page 193.
- A FRITZ!Box user with the rights **Access from the internet allowed** and **Access to NAS contents** has been set up; see page 165.

Opening FRITZ!NAS in the FRITZ!Box

You can open the FRITZ!NAS portal in the FRITZ!Box.

On this portal the following file administration functions are available: adding, sorting, saving, moving, renaming, splitting, and deleting.

Opening FRITZ!NAS	Location
Opening FRITZ!NAS in the home network	Enter **fritz.nas** in the address bar of a web browser. Log in with your FRITZ!Box using the FRITZ!Box password if prompted to do so.
Opening FRITZ!NAS from the internet	Enter **myfritz.net** in the address bar of a web browser. Log in with the email address and the password of your MyFRITZ! account.

Displaying FRITZ!NAS in the File Manager

You can display the contents of the FRITZ!Box data storage in the file manager of a computer in the home network. The storage can be used on the computer just like a local drive or a USB drive connected directly to the computer, for instance in the Windows Explorer or macOS Finder.

Requirements

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

Displaying Instructions: FRITZ!Box in Windows Explorer

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

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

Instructions: Displaying FRITZ!Box Storage in the macOS Finder

1. Right-click on the Finder symbol to open the context menu of the macOS Finder.
2. Click on **Connect to Server...**.
3. Enter the server address smb://fritz.nas.

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

Backing Up Data from Internal FRITZ!Box Storage

When you restore the factory settings to the FRITZ!Box, all data stored in the internal memory of the FRITZ!Box are deleted. These can include, for instance, received faxes and answering machine messages. With FRITZ!NAS you can download the data from the internal FRITZ!Box memory and back them up.

Instructions: Saving Data from Internal FRITZ!Box Memory

1. Open the user interface; see page 45.
2. Click on FRITZ!NAS in the header of the user interface.
   The file manager of FRITZ!NAS opens.
3. Click on **Select** in the header of the file manager.
   Markable selection fields are displayed next to the folders and files.
4. Mark the data to be saved by clicking on the adjacent selection fields.
   Click on **All** to mark the selection fields for all data.
5. Click on **Download** in the toolbar in the header of the file manager.
   The selected files are packed into a ZIP file and the browser dialog opens for saving the file opens.
6. Save the file on your computer with the *.zip suffix.
   You can unzip the zip file using Windows Explorer or macOS Finder, for instance, or other standard software.

Instructions: Saving Data from Internal Memory

1. Open a web browser.
2. Enter **fritz.nas** in the address bar of the browser.
3. Select on the FRITZ!NAS page the data you would like to save.

4. Click in the toolbar on the symbol for downloading and select a storage location for the data.
5. Save with **OK**.

The selected data are copied to a ZIP file in the download folder you specified.

MyFRITZ!

What Is MyFRITZ!?

With MyFRITZ! you can access your FRITZ!Box from anywhere over the internet.

MyFRITZ! Account and MyFRITZ!Net

If you configure a MyFRITZ! account (see page 195), you can access your FRITZ!Box from the internet at any time via http://www.myfritz.net :

- On FRITZ!NAS you can upload or download files and play multimedia contents.
- You can open the call list of the FRITZ!Box and check for messages on the answering machine.
- You can change settings or control smart home devices in the FRITZ!Box user interface.

You also receive regular information on updates and the status of the FRITZ! devices in your home network at the email address of your MyFRITZ! account.

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 is then available at this address even when the public IP address of the FRITZ!Box changes.

With the FRITZ!Box web address you can access your home network from the internet:

- This allows you to open the FRITZ!Box user interface in a web browser.
- You can establish VPN connections to your FRITZ!Box.
- You can access server services and network devices in the home network for which you configured port sharing in the FRITZ!Box.

MyFRITZ!App

With MyFRITZ!App you have secure access to your FRITZ!Box and your home network at home and on the go.

- You can open the call list of the FRITZ!Box and listen to messages on the answering machine.
- You can enable and disable the FRITZ!Box answering machine and call diversion settings.
- You can block and unblock internet access for individual devices in the home network.
- You can access FRITZ!NAS and upload or download files, view pictures, and play music.

Downloading MyFRITZ!App

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

Google Play Store (Android)	App Store (iOS)

Configuring a 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 45.
2. Click on **Internet** > **MyFRITZ! Account** in the menu.
3. For instructions, open the online help ?.

FRITZ!Apps

MyFRITZ!App

The MyFRITZ!App offers fast access to your FRITZ!Box and your home network, even over the internet when you're on the go.

- Open call list and listen to messages on the answering machine
- Access home network storage with FRITZ!NAS, for instance, for photo, music, or video files
- Change FRITZ!Box settings and view information
- Manage telephony settings
- Switch Wi-Fi and Wi-Fi guest access on and off
- Share the Wi-Fi using a QR code

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 phone numbers:

- Make outgoing calls and accept incoming calls
- Access your smartphone contacts and the contacts in the FRITZ!App Fon phone 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)

Controlling the FRITZ!Box with Keypad Codes

Information on Keypad Codes

Various FRITZ!Box functions can be configured and operated using a connected phone 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 phone keypad.

Requirements

- For analog phones and DECT phones with their own base station: The phone is configured such that special characters (* and #) can be dialed; see the manual of your phone.

Please Note

- Keypad codes do not work with smartphones.
- Keypad codes do not work with FRITZ!App Fon ; exception: internal calls.
- Only the following keypad codes work with IP phones: internal calls, call transfer, using keypad sequences, suppressing phone number once, and call diversion on/off (international calls must be allowed for the IP phone; see page 61)

Entering Keypad Codes

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

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

Configuration on the Phone

Instructions: Disabling Outside Line Access for the FON 1 or FON 2 Port

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

Telephone without Call Button	Telephone with Call Button
	
Disable outside line access: #1100* (FON 1) #1200* (FON 2)	
	
Wait for acknowledgment tone	
	

Instructions: Enabling Outside Line Access for the FON 1 or FON 2 Port

Phone without Call Button	Phone with Call Button
	
Enable outside line access: #11*10 (FON 1) #12*10 (FON 2)	
	
Wait for acknowledgment tone	
	

Instructions: Switching On Call Diversion for All Calls

Call diversion automatically diverts incoming calls to a previously specified external phone 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 calling plan.

Telephone without Call Button	Telephone with Call Button
	

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

Phone without Call Button	Phone with Call Button
	
Switch off immediate call diversion: ✱2✱# Switch off delayed call diversion: ✱61✱# Switch off call diversion on busy: ✱67✱#	
	
Wait for acknowledgment tone	
	

Instructions: Switching On Call Diversion for One Phone Number

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

Phone without Call Button	Phone with Call Button
	
Switch on immediate call diversion to destination call number <DCN>: ✱21✱<DCN>✱<PN># Switch on call diversion after 20 seconds to destination call number <DCN>: ✱61✱<DCN>✱<PN># 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 Phone Number

Phone without Call Button	Phone with Call Button
	
Switch off immediate call diversion: ✱21✱✱<PN># Switch off delayed call diversion: ✱61✱✱<PN># Switch off call diversion on busy: ✱67✱✱<PN>#	
	
Wait for acknowledgment tone	
	

Instructions: Switching On Call Diversion for the FON 1 Port

Phone without Call Button	Phone with Call Button
	
Switch on immediate call diversion for the FON 1 port without ringing to destination call number <DCN>: #❹❶❶✱<DCN>✱ Switch on immediate call diversion for the FON 1 port with ringing to destination call number <DCN>: #❹❺❶✱<DCN>✱ Switch on call diversion for the FON 1 port after 20 seconds to destination call number <DCN>: #❹❷❶✱<DCN>✱ Switch on call diversion for the FON 1 port on busy to the destination call number <DCN>: #❹❸❶✱<DCN>✱ Switch on immediate call diversion for FON 1 on busy, otherwise delayed, to the destination call number <DCN>: #❹❹❶✱<DCN>✱	
	
Wait for acknowledgment tone	
	

Instructions: Switching Off Call Diversion for the FON 1 Port

Phone without Call Button	Phone with Call Button
	
Switch off call diversion for the FON 1 port: #401**	
	
Wait for acknowledgment tone	
	

Instructions: Switching On Call Diversion for the FON 2 Port

Phone without Call Button	Phone with Call Button
	
Switch on immediate call diversion for the FON 2 port without ringing to destination call number <DCN>: #❹❶❷✱<DCN>✱ Switch on immediate call diversion for the FON 2 port with ringing to destination call number <DCN>: #❹❺❷✱<DCN>✱ Switch on call diversion for the FON 2 port after 20 seconds to destination call number <DCN>: #❹❷❷✱<DCN>✱ Switch on call diversion for the FON 2 port on busy to the destination call number <DCN>: #❹❸❷✱<DCN>✱ Switch on immediate call diversion for FON 2 on busy, otherwise delayed, to the destination call number <DCN>: #❹❹❷✱<DCN>✱	
	
Wait for acknowledgment tone	
	

Instructions: Switching Off Call Diversion for the FON 2 Port

Phone without Call Button	Phone with Call Button
	
Switch off call diversion for the FON 2 port: #4022**	
	
Wait for acknowledgment tone	
	

Instructions: Configuring a Phone as a Baby Monitor

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

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

Phone without Call Button	Phone with Call Button
	
Press the following keys: #4<level>*<PN># <Level> specifies the sensitivity. Permitted values: 1 (highest) – 8 (lowest) <TP> is the internal or external phone number that the baby monitor is supposed to call. Internal numbers should also be entered without **.	
	
The baby monitor is enabled. Hang up to disable it.	

Instructions: Switching Wi-Fi On

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

Phone without Call Button	Phone with Call Button
	
Switch Wi-Fi on: #9064	
	
Wait for acknowledgment tone	
	

Instructions: Switching Wi-Fi Off

Phone without Call Button	Phone with Call Button
	
Switch Wi-Fi off: #9060	
	
Wait for acknowledgment tone	
	

Operating on the Phone

Instructions: Operating the Answering Machine with the Phone

You can operate the answering machine with the phone 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:

Phone without Call Button	Phone 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
❷ Delete all messages		
❸ Answering machine on/off		
❹ Record a greeting	❶ Greeting message ❷ Greeting for announcement mode ❸ Closing message	❶ Listen to all greetings, select greeting with ❷ ❺ Delete greeting/announcement ❽ Record greeting, end with ❶
❺ Enable recording/announcement mode (no messages recorded in announcement mode)		

Instructions: Picking Up a Call from the Answering Machine or Phone

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

- 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 phone (the other phone rings).

Phone without Call Button	Phone with Call Button
	
Press the following keys: ✪09	
	

Instructions: Making Internal Calls

You can conduct free internal calls between connected phones.

Phone without Call Button	Phone with Call Button
	
Enter an internal phone number from the FRITZ!Box phone book	
	

Instructions: Starting a Broadcast Call

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

Phone without Call Button	Phone with Call Button
	
Press the following keys for a broadcast call: ✪✪⑨	
	
All phones on the FRITZ!Box ring. You will be connected to the phone that picks up the call first.	

Instructions: Transferring Calls with Consultation

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

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

<table>
<tr><th>Phone without Call Button</th><th>Phone with Call Button</th></tr>
<tr><td colspan="2">During the call with party 1, press the hold button:
R
The call is on hold.</td></tr>
<tr><td colspan="2">Enter the phone number of party 2. This can be an external phone number or an internal number from the FRITZ!Box phone book.</td></tr>
<tr><td colspan="2">When party 2 accepts the call, you can consult with others in the room.</td></tr>
<tr><td colspan="2">Connect party 1 and party 2 with each other:</td></tr>
<tr><td>  </td><td>On cordless phones:
*4
Others:
 
or R4</td></tr>
<tr><td colspan="2">If party 2 cannot be reached or does not wish to speak with party 1, go back to party 1:
R1</td></tr>
</table>

Instructions: Transferring Calls without Consultation

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

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

<table>
<tr><th>Phone without Call Button</th><th>Phone with Call Button</th></tr>
<tr><td colspan="2">During the call with the party 1, press the hold button:
®
The call is on hold.</td></tr>
<tr><td colspan="2">Enter the phone number of party 2. This can be an external phone number or an internal number from the FRITZ!Box phone book.</td></tr>
<tr><td>  </td><td>On cordless phones:
✱4
Others:
</td></tr>
</table>

Instructions: Picking Up from Call Waiting

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

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

Instructions: Suppressing Phone Number Once

For a call on the **FON 1** or **FON 2** port you can suppress identification of your phone number once (for one call). Then your phone number will not be transmitted to the other caller during this call.

Phone without Call Button	Phone with Call Button
	
Press the following keys: ✱31#	
Enter the external phone 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.

Phone without Call Button	Phone with Call Button
During the call with the party 1, press the hold button: Ⓡ Call 1 is on hold.	
To establish the call with party 2, enter an internal or external phone number.	
When party 2 accepts the call, establish the three-party conference: Ⓡ❸	
If party 2 cannot be reached, go back to party 1: Ⓡ	
During the three-party conference call you can: Interrupt the conference (you speak with party 1, call 2 is on hold): Ⓡ❷ Switch back and forth between parties 1 and 2 (alternate): Ⓡ❷ Restore an interrupted conference: Ⓡ❸ End call 2 and continue with call 1: Ⓡ❶ End the active call and continue the other call: Hang up, wait until your phone rings, and pick up	

Instructions: Holding/Consultation/Toggling

During a phone 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.

Phone without Call Button	Phone 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 phone number.	
When party 2 accepts the call, you can: Toggle back and forth between the calls: R2 End the active call and continue the other call: Hang up, wait until your phone 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 phone. 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.

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

Instructions: Enabling an Alarm

You can use connected phones as an alarm clock. 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 phone keys.

Phone without Call Button	Phone with Call Button
	
Switch on the alarm: #8810**	
	
Wait for acknowledgment tone	
	

Instructions: Disabling an Alarm

Phone without Call Button	Phone with Call Button
	
Switch alarm off: #8801#	
	
Wait for acknowledgment tone	
	

Restoring Factory Settings by Phone

You can restore factory settings to the FRITZ!Box by phone. 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. Contents on FRITZ!NAS, messages on the answering machine and received faxes will be discarded.
- The preconfigured FRITZ!Box password is restored.
- The preconfigured Wi-Fi network key and the preconfigured name of the Wi-Fi network (SSID) are reactivated.
- The preconfigured IP configuration is restored.

Instructions: Loading Factory Settings

Phone without Call Button	Phone with Call Button
	
Restore factory settings to FRITZ!Box: #991*1590159 00*	
	
Wait for acknowledgment tone	
	

Malfunctions

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 233
Problem with: • connecting • configuration • telephony • internet • Wi-Fi • etc.	Knowledge Base; see page 237
Troubleshooting chart and Knowledge Base do not offer a solution	Support, see page 238

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	Enable Wi-Fi 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, press the WLAN button on the FRITZ!Box. Hold the button down until the **WLAN** LED begins flashing.
	Incorrect Wi-Fi network key	Enter the correct Wi-Fi 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 236.
	Restart required FRITZ!Box has crashed	Disconnect the FRITZ!Box from electrical power 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 176).

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.

Requirements

- This computer is not connected with the FRITZ!Box via LAN guest access.

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 2** socket of the FRITZ!Box using a LAN cable.
4. Restart your computer.
5. Enter the fallback address **169.254.1.1** in the browser.
6. 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 238.

AVM Knowledge Base

The AVM Knowledge Base is available online at:

en.fritz.com/service

Support

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

Preparations

Keep the following information handy for a support request:

- FRITZ!Box model
- article number, see page 18
- 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 238).
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

Taking Out of Service

Deleting Private Data

As the final user of a FRITZ! device, 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 176.

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

Technical Specifications

Device Properties

Property	Value
Dimensions (W x H x D)	approx. 250 x 69 x 184 mm
Supply voltage	230 V / 50 Hz

Ambient Conditions

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

Active Power (power consumption)

Property	Value
Maximum active power (power consumption)	30 W
Average active power (power consumption)	13 W – 14 W

Ports and Interfaces

Connect via	Interface
WAN	10-Gbit/s WAN port for connecting to a cable, fiber optic, or DSL modem or a router
FON	• 1 a/b port with a RJ11 and TAE socket for connecting an analog terminal device • 1 a/b port with a RJ11 socket for connecting an analog terminal device
DECT	DECT base station for up to 6 cordless phones

Connect via	Interface
LAN	four LAN ports via RJ45 sockets • LAN 1: standard Ethernet, 10/100/1000/2500/5000/10000 Base-T, 10 Gbit/s • LAN 2, LAN 3, and LAN 4: standard Ethernet, 10/100/1000/2500 Base-T, 2.5 Gbit/s
USB	1 USB host controller (USB version 3.0)
2.4-GHz Wi-Fi	• Wi-Fi 6 (IEEE 802.11ax), transmission rates of up to 1200 Mbit/s • Compatible with IEEE 802.11g and n • 4 x 4 MIMO
5-GHz Wi-Fi	• Wi-Fi 7 (IEEE 802.11be), transmission rates of up to 5760 Mbit/s • Compatible with IEEE 802.11a/n/ac/ax • 4 x 4 MIMO

Wi-Fi Frequencies

Frequency	Frequency Range	Max. transmitter power
2.4 GHz	2400 – 2483 MHz	100 mW
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 standard EN 50385.

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):

fritz.com/service/schnittstellen

Legal Notice

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-

moval 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).

Legal Notice

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

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