FRITZ!Box 6850 LTE

Configuration and Operation

Table of Contents

General Information on the FRITZ!Box

Safety Instructions

Overview

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

Fires and Electrical Shocks

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

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

Overheating

Heat accumulation can cause the FRITZ!Box to overheat. This can result in damage to the FRITZ!Box.

- Provide for sufficient air circulation around the FRITZ!Box.
- Make sure that the ventilation slits on the FRITZ!Box housing are always unobstructed.
- The FRITZ!Box should not be placed on carpets or upholstery.
- Do not cover the FRITZ!Box.

Damage to Heat-Sensitive Surfaces

The base of the FRITZ!Box heats up during normal operation. This heat can cause damage to heat-sensitive surfaces.

- Do not place the FRITZ!Box on overly heat-sensitive surfaces.

Power Surges Caused by Lightning

During electrical storms, electrical surges caused by lightning present a danger to connected electrical devices.

- Do not install the FRITZ!Box during an electrical storm.
- During a storm, disconnect the FRITZ!Box from the power supply.

Moisture, Liquids and Vapors

Moisture, liquids and vapors that find their way into the FRITZ!Box can cause electric shocks or short circuits.

- Only use the FRITZ!Box indoors.
- Never let liquids get inside the FRITZ!Box.
- Protect the FRITZ!Box from vapors and moisture.

Improper Cleaning

Improper cleaning with strong detergents, 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.avm.de/guide

Radio and Electromagnetic Interference

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

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

Potentially Explosive Environments

Under unfavorable conditions, radio waves in the vicinity of explosive environments can cause fires or explosions.

- Do not install and operate your FRITZ!Box in the vicinity of explosive environments, flammable gases, areas in which the air contains chemicals or particles like grain, dust or metal powder, or in the vicinity of detonation grounds.
- In locations with potentially explosive atmospheres, and in the vicinity of detonation grounds, follow the instructions to switch off electronic devices in order to prevent interference with detonation and ignition systems.

Package Contents

Package Contents

Amt.	Supplied Part	Details
1	FRITZ!Box 6850 LTE	
2	Mobile communications antennas	Detachable mobile communications antennas
1	Power adapter	white
1	Network cable	also “LAN cable”, white-yellow
1	Quick guide	Connecting the FRITZ!Box

Instructions and Help

Instructions and Help

Use the comprehensive customer documentation to connect, configure and operate your FRITZ!Box.

The latest information on products, important developments and updates is presented on social media.

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

Medium	Contents	City
Manual	• FRITZ!OS version release 07.20 • Connecting, configuration and operation • Range of FRITZ!Box Functions	en.avm.de/service/manuals
Quick guide	Connecting and configuration	Provided in print with your FRITZ!Box
Online help	• Instructions on configuration and operation • Help on the functions and settings options in the user interface	http://fritz.box /
Knowledge Base	Solutions for common problems during connection, configuration and operation	en.avm.de/service
Social media	The latest about the FRITZ!Box, your FRITZ!Box home network, and your FRITZ! device	Facebook Instagram Twitter YouTube

Symbols Used

Symbols Used

The following symbols are used in this manual:

	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

Information on Cleaning

Rules

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

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

Functions and Structure

Functions

Internet Router

The FRITZ!Box 6850 LTE is an internet router for mobile network connections.

Using a SIM card the internet connection can be established via a connection to the mobile network. The following mobile communications standards are supported:

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

Telephone System

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

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

- 6 cordless (DECT) telephones
- 1 analog device (telephone, answering machine, fax)
- 10 IP telephones (FRITZ!App Fon, for instance)

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

Via the integrated fax function you can also send and receive faxes without an external fax machine.

Wireless Access Point

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

- notebooks
- tablets
- smartphones
- wireless printers

Hub in the Home Network

The FRITZ!Box is the hub in the home network. All of the devices connected with the FRITZ!Box make up the home network. With the FRITZ!Box you can keep track of all devices. The functions available for the home network include:

- A media server for transmission of music, pictures and video to playback devices in the home network
- MyFRITZ! makes access to your own FRITZ!Box possible even from the internet
- FRITZ!NAS, for easy access to all files in the network.

USB Port

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

- USB storage devices (for example, flash drives, external hard drives, card readers)
- USB printers, USB all-in-one printers, USB scanners
- USB hubs

DECT Base Station

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

- up to 6 cordless (DECT) telephones
- Smart Home devices

Smart Home

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

Type of Device	Number	Features
Smart plugs • FRITZ!DECT 210 • FRITZ!DECT 200	up to 10	• Control the power supply to connected devices. • Measure the power consumption of connected devices.
Radiator controls • FRITZ!DECT 301 • FRITZ!DECT 300 • Comet DECT	up to 12	Control the room temperature automatically and save energy costs.
Switches • FRITZ!DECT 440 • FRITZ!DECT 400	up to 10	Switch and control FRITZ!DECT devices.
FRITZ!DECT 500 LED light	up to 10	Control white and color lighting.
Smart Home devices via HAN FUN	up to 10	Connect Smart Home devices from other manufacturers with the FRITZ!Box.

Device Data on the Type Label

Overview

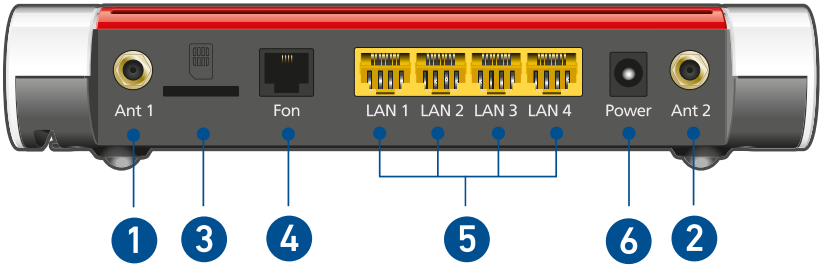
Important device data on your FRITZ!Box are presented on the type label on the bottom of the housing. There you find the preset network key for Wi-Fi connections with the FRITZ!Box, the preconfigured FRITZ!Box password for the user interface, the serial number for support queries, and additional data.

Device Data on the Type Label

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

Connection Sockets

Connector Panel

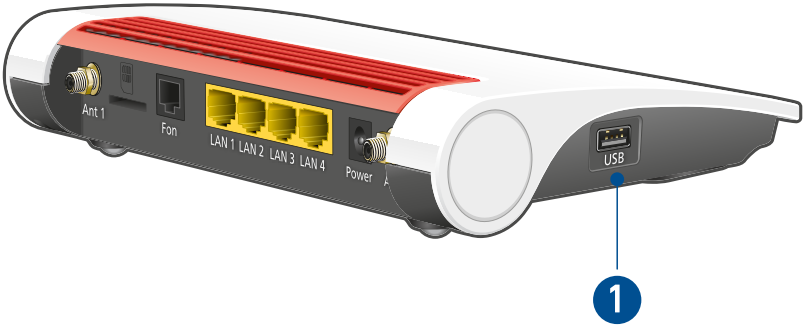


No.	Name	Function
1	Ant 1	SMA antenna socket for connecting a mobile communications antenna for sending and receiving a mobile network signal
2	Ant 2	SMA antenna socket for connecting a mobile communications antennafor sendingand receivinga mobile network signal
3	SIM card (symbol)	card slot for SIM card for mobile commications (Mini-SIM)
4	Fon	RJ11 socket for connecting an analog telephone, fax machine, answering machine or door intercom system
5	LAN 1 to LAN 4	RJ45 sockets for connecting computers and other network-compatible devices like hubs and game consoles
6	Power	socket for connecting the plug-in power adapter

Connectors on the Sides: FON

No.	Name	Function
1	FON	TAE socket for connecting analog telephones, fax machines and answering machines

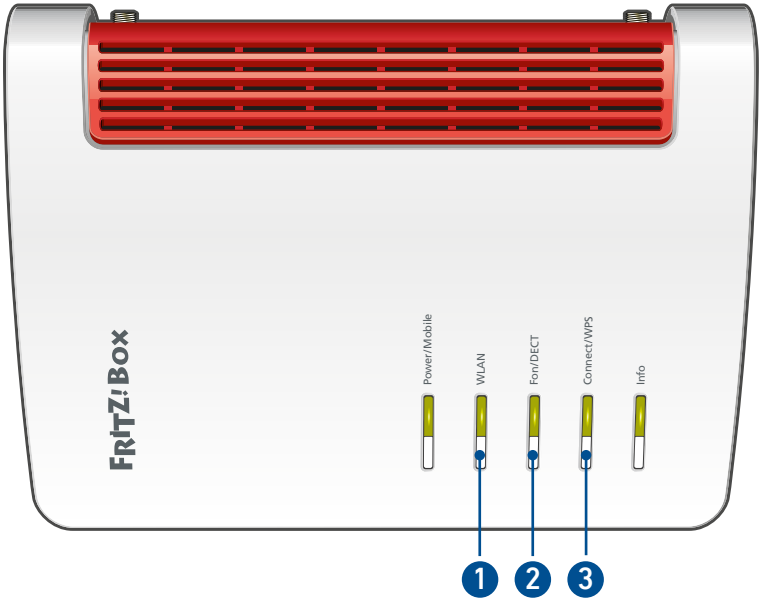
Connectors on the Sides: USB



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

Buttons

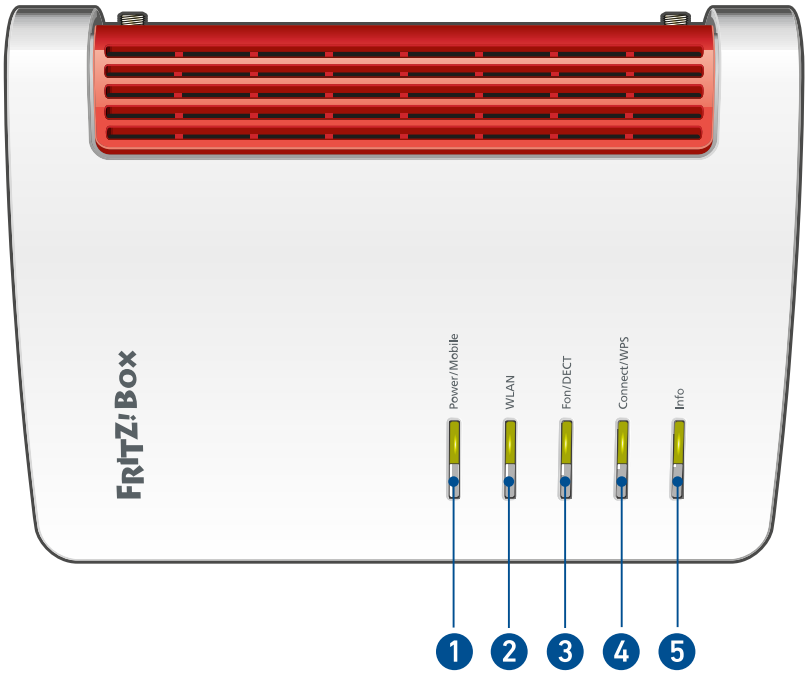
Button Functions



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 40 • Register wireless devices with the FRITZ! Box via WPS; see page 38

LEDs

Meaning of the LEDs



No.	LED	Condition	Meaning
1	Power/Mobile	off	The device has no electrical power.
		on	Device has electric power and the LTE connection is established. The FRITZ!Box is ready for operation.
		flashing	Device has electric power and the mobile network connection is being established or has been interrupted.

No.	LED	Condition	Meaning
2	WLAN	off	Wi-Fi is disabled.
		on	Wi-Fi is enabled.
		flashing	• Switching Wi-Fi on or off. • Applying changes to the Wi-Fi settings. • Performing WPS: Registration of a wireless device in progress.
3	Fon/DECT	off	No telephone call is being conducted.
		on	Active telephone connection.
		flashing	• Registration of a DECT device in progress. • Registration of a Smart Home device in progress. • 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 of a wireless, DECT, SmartHome, or powerline device in progress.
		on	Registration of a wireless, DECT, Smart Home, or powerline device was successful.
		flashing fast	Registration procedure aborted: more than 1 device registering with the FRITZ!Box. Repeat registration: 1 registration procedure per device.

No.	LED	Condition	Meaning
5	Info	off	None of the following processes is active:
		green	• AVM Stick & Surf with FRITZ!WLAN Stick concluded. • Adjustable; see page 161
		flashing green	• Updating FRITZ!OS. • AVM Stick & Surf with FRITZ!WLAN Stick in progress. • Time budget for online time has been exhausted. • Adjustable; see page 161
		red or flashing red	Error: 1. Open the user interface; see page 46. 2. Follow the instructions on the "Overview" page in the user interface.

Requirements for Operation

Requirements

- For internet access via mobile network: LTE/UMTS SIM card or UMTS SIM card
- Computer with network connection (to connect with the internet connection of the FRITZ!Box via LAN cable)
- Computer, tablet or smartphone with support for Wi-Fi (to establish a Wi-Fi connection with the internet connection of the FRITZ!Box)
- An up-to-date web browser

For comprehensive technical information about your FRITZ!Box, see page 237.

Connecting

Overview: Connecting the FRITZ!Box

Overview

Connecting the FRITZ!Box entails the following steps:

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

Placement

Overview

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

Rules for Optimum Mobile Reception

- Use the alignment aid of the FRITZ!Box to determine the best possible position of the FRITZ!Box for mobile network reception.

  The alignment aid is located in the FRITZ!Box user interface (see page 46) under “Internet / LTE Information / Reception”.

Rules for Optimum Wi-Fi Reception

Radio wave propagation during Wi-Fi operation is strongly dependent on the position of your FRITZ!Box. Keep the following rules in mind for good reception:

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

By slightly shifting the position of the FRITZ!Box it is often possible to improve the Wi-Fi connection significantly. If these measures are not sufficient, then you can extend the range of your Wi-Fi network with a wireless repeater and Mesh with FRITZ!; see page 63.

Instructions: Positioning the FRITZ!Box

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. Mark the spots for drilling at the desired location using the drilling template (see page 248).
3. Mount the FRITZ!Box on the wall with the socket strip down.

Connecting to the Internet Access: Mobile Network

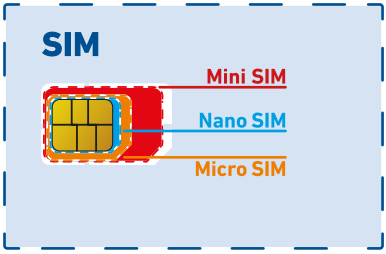
Overview

The FRITZ!Box 6850 LTE establishes the internet connection via the mobile network. For a mobile network connection a SIM card is required.

The FRITZ!Box receives the mobile network signal via screw-on mobile radio antennas.

Rules for Using SIM Cards

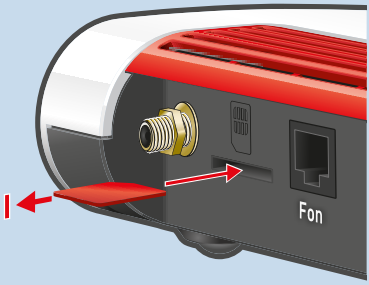
- Only use original mini-SIM cards (red frame in the illustration below) for mobile connections, and pull out only the mini-SIM card from the SIM card.
- Do not use any cut-out micro or nano SIM cards in mini SIM card holders. Card holders and adapters can get jammed and do permanent damage to the SIM slot.



Instructions: Inserting the SIM Card

1. Pick up the FRITZ!Box so that the side with the slot is facing you and you can see the slot.

2. Insert the SIM card into the slot with the slanted edge of the card on the left and the contacts facing downwards.



3. Push the SIM card carefully into the SIM card slot with slight pressure until the SIM card clicks into place.

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

Pressing the SIM card again releases the SIM card from the slot.

Rules for Using Mobile Radio Antennas

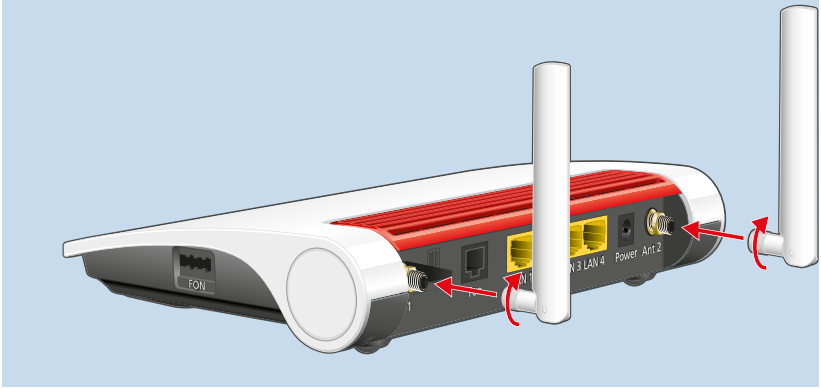
- Use the mobile radio antennas provided on delivery if they are included in the package.
- If you use your own mobile radio antennas, they must not exceed the permitted signal power of 3 dBi antenna gain.

Instructions: Screwing in Mobile Communications Antennas

1. Pick up the two mobile communications antennas included in the package.

   If no mobile communications antennas are included with delivery, then you can use your own mobile communications antennas.

2. Screw the antennas to the antenna sockets “Ant 1” and “Ant 2” on the FRITZ!Box.



Connecting an Outdoor Antenna

Overview

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

Requirements

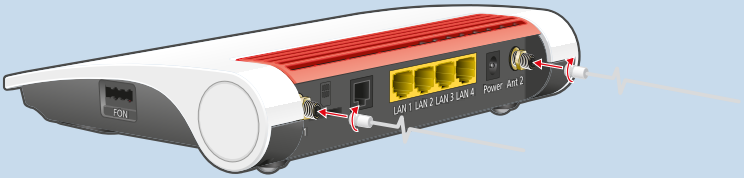
- The outside antenna fits with SMA connectors.
- The antenna cable has an SMA connector.
- The outdoor LTE antenna is suitable for the mobile network frequency band being used, see page 240.

Rules

- The FRITZ!Box receives on both antenna sockets and transmits on one.
- The transmission socket is labeled “Ant 1”.

Instructions: Connecting Outdoor Antenna

1. Connect the antenna cable connectors to the antenna sockets “Ant 1” and “Ant 2” on the FRITZ!Box.



If your outdoor antenna has only one connector, then connect the connector of the antenna cable to the transmitting socket “Ant 1” on the FRITZ!Box.

Connecting to Electrical Power

Overview

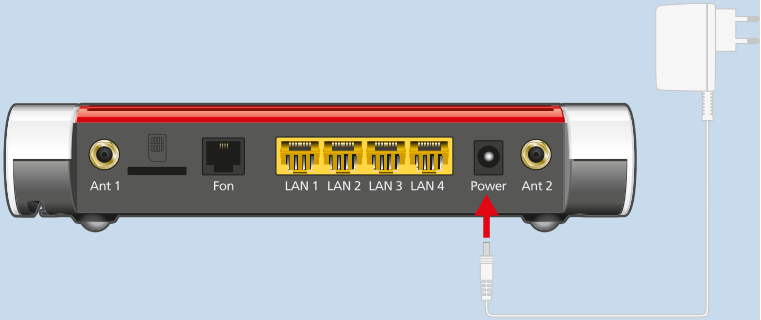
Connect the FRITZ!Box to the power supply.

Rules

- If possible, avoid using any power strips or extension cords.
- If it is not possible to avoid using socket strips and extension cords, 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. Connect the power adapter to the socket labeled “Power” on the FRITZ!Box.



2. Plug the other end into a electrical outlet.

Connecting a Computer Using a Network Cable

Overview

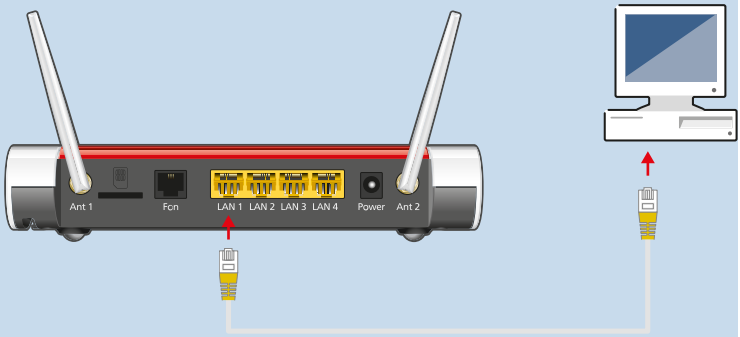
You can connect computers and other network devices with the FRITZ! Box using a network cable. This is recommended especially for the initial configuration of your FRITZ!Box. The way a computer is connected is the same regardless of the computer's operating system.

Rules

- The network cable used to connect a computer or another network device to the FRITZ!Box may be no longer than 100 m.

Instructions: Connecting a Computer Using a Network Cable

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



Instructions: Connecting a Network Hub or Network Switch

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

Connecting to Computers via Wi-Fi

Overview

You can connect computers and other network devices to the FRITZ!Box without cables via Wi-Fi.

Secure Wi-Fi Connections

Wi-Fi connections can be secured using encryption. Two things are required for this:

- An encryption method
- A key

The encryption method WPA2 and a network key (see the type label on the bottom of the housing) are preconfigured in the FRITZ!Box. A wireless device that would like to connect with the FRITZ!Box must register with the FRITZ!Box using the network key. This can be done in the following ways:

- by entering the network key manually
- by transmitting the Wi-Fi network key via WPS

Encryption

The FRITZ!Box supports connections with the WPA (Wi-Fi Protected Access) standard for encryption and authentication in Wi-Fi networks. In this standard, WPA3 mode offers the highest security. The FRITZ!Box supports WPA3 in combination with the common WPA2 mode, since there are still only a few wireless devices that support WPA3. The following settings are available in the FRITZ!Box:

Encryption / WPA Mode	Function
WPA2+WPA3	If a wireless device supports WPA3, the FRITZ!Box uses WPA3; otherwise, WPA2.
WPA2 (CCMP)	Preconfigured in the FRITZ!Box. The FRITZ!Box uses WPA2 for all connections.

Comprehensive information about how to protect your FRITZ!Box and the Wi-Fi network from access by strangers is presented in the internet at en.avm.de/guide.

Requirements

- Wi-Fi is enabled in the FRITZ!Box (the "WLAN" LED is on).

Instructions: Entering the Network Key Manually

1. With the wireless device, search for the Wi-Fi network of the FRITZ!Box. For more information, see the documentation of your wireless device.

   The preconfigured name of the FRITZ!Box's Wi-Fi network is composed of "FRITZ!Box 6850" and two random letters, and is printed on the type label on the bottom of the housing.
2. Click on "OK".
3. Enter the network key of the FRITZ!Box. The network key is printed on the type label on the bottom of the housing; see page 19.

The Wi-Fi connection will be established.

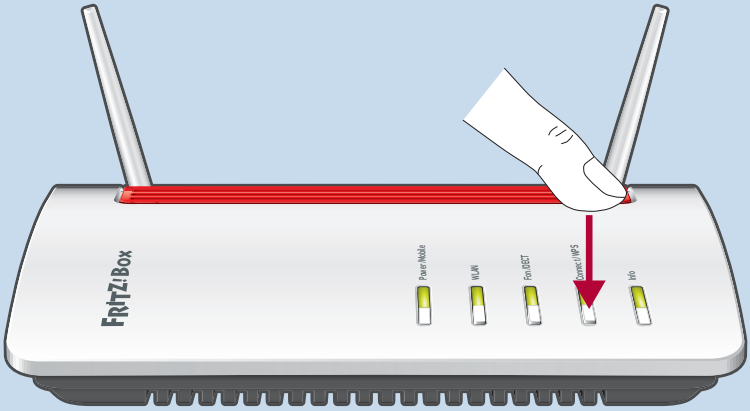
Instructions: Transferring the Network Key Using WPS

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

1. With the wireless device, search for the Wi-Fi network of the FRITZ!Box. For more information, see the documentation of your wireless device.

   The preconfigured name of the FRITZ!Box's Wi-Fi network is composed of "FRITZ!Box 6850" and two random letters (for instance, "XY") and is printed on the type label on the bottom of the housing.
2. Start the connection procedure via WPS (see the documentation of your wireless device).

3. On the FRITZ!Box: Hold the “Connect/WPS” button down until the “Connect/WPS” LED starts flashing.



The Wi-Fi connection will be established.

Connecting Telephones

Overview

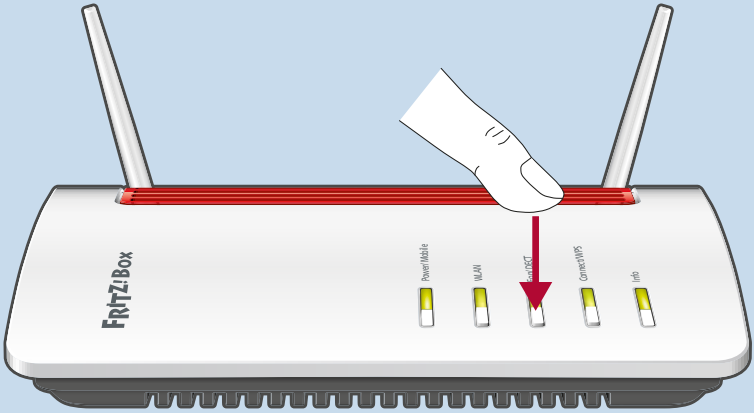
You can connect telephones, fax machines, answering machines, and telephone systems to your FRITZ!Box.

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

Instructions: Registering a Cordless Telephone

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

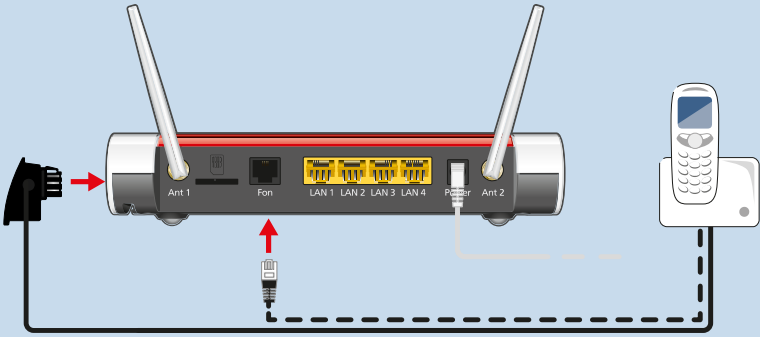
1. On a cordless telephone: Start registration with a base station.
2. On the FRITZ!Box: Hold the “Fon/DECT” button down until the “Fon/DECT” LED starts flashing.



3. On a cordless telephone: Enter the PIN of the FRITZ!Box on the telephone (preset value: 0000).
4. In the user interface of your FRITZ!Box: Configure the telephone; see page 57.

Instructions: Connecting an Analog Telephone

1. Connect the telephone, the answering machine or the fax machine to a “Fon” socket. Use only one “Fon” socket at a time. One of the two sockets must remain free.



2. In the user interface of your FRITZ!Box: Configure the connected device; see page 57.

Instructions: Connecting an IP Telephone

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

1. Connect the IP telephone to the FRITZ!Box via a network cable or Wi-Fi.
2. In the user interface of your FRITZ!Box: Configure the telephone; see page 57.

Connecting Smartphones

Overview

You can register your iPhone or Android smartphone with the FRITZ!App Fon using the FRITZ!Box. Then you can make calls with the smartphone at home, using the telephone numbers configured in the FRITZ!Box. The smartphone can also 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”)

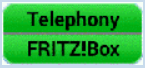
Instructions: Connecting a Smartphone

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 FRITZ!App Fon. FRITZ!App Fon is now automatically configured as an IP telephone in the FRITZ!Box.
4. In the user interface of your FRITZ!Box: Configure the IP telephone “FRITZ!App Fon”; see page 57.

Connection Status of FRITZ!App Fon

The icon in the FRITZ!App Fon title bar shows the state of the connection with the FRITZ!Box:

Icon	Meaning
	A Wi-Fi connection to the FRITZ!Box is active.

Icon	Meaning
	You can make calls via the FRITZ!Box with your smartphone.

Connecting a Door Intercom System

Overview

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

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

Supported Door Intercom Systems

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

Instructions: Connecting a Door Intercom System with an a/b Interface

1. Connect the door intercom system to a “Fon” socket. Note: One “Fon” socket must remain free (not allocated).
2. In the user interface of your FRITZ!Box: Configure the door intercom system; see page 59.

Instructions: Connecting an IP Door Intercom System

1. Connect the IP door intercom system to the FRITZ!Box via network cable or Wi-Fi.
2. In the user interface of your FRITZ!Box: Configure the door intercom system; see page 59.

User Interface

Opening the User Interface

Overview

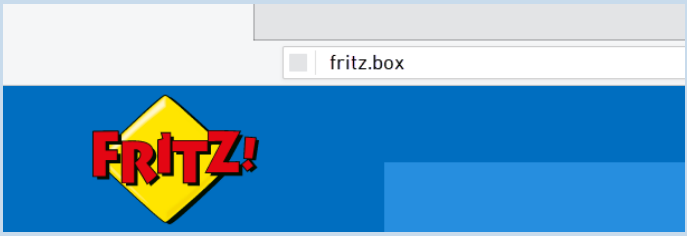
The FRITZ!Box has a user interface you can open in a web browser on your computer or on mobile devices like a tablet or smartphone. In the user interface you configure the FRITZ!Box, and view information on connections, interfaces, and on the entire home network. You can also configure whether and how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

Requirements

- Your computer, tablet or smartphone is connected with the FRITZ! Box via Wi-Fi or the network cable.

Instructions: Opening the User Interface

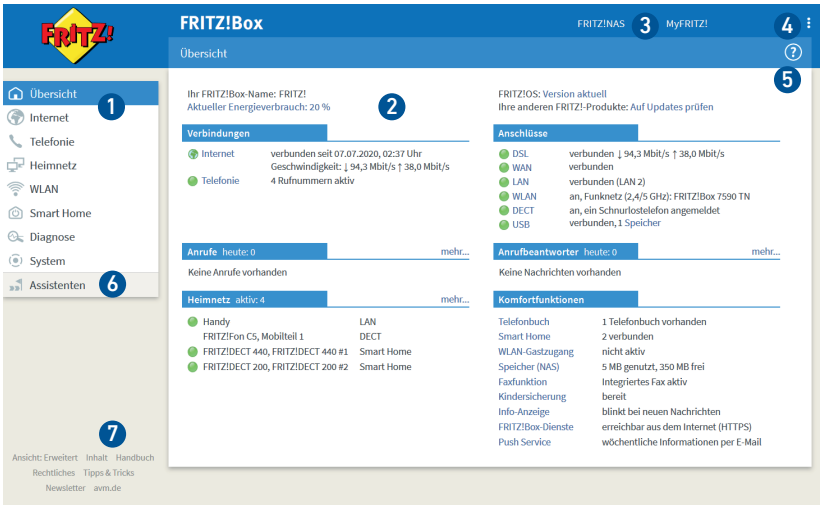
1. Start a web browser on your computer or mobile device and enter http://fritz.box in the address bar.



2. Enter the preset FRITZ!Box password and click on “Log In”. The preset password is printed on the type label on the bottom of the housing and on the FRITZ! Notes service card.

The FRITZ!Box user interface opens to display the “Overview” page.

Areas of the User Interface



No.	Function / Display
1	Menu of the FRITZ!Box user interface
2	Functions and settings for the given menu command
3	Links to FRITZ!NAS and MyFRITZ! areas
4	3 vertical dots menu • Log off the user interface • Change password • Switch between Standard and Advanced view • Links to FRITZ!NAS and MyFRITZ! areas
5	Question mark symbol for opening the online help
6	Wizards for configuration of the FRITZ!Box

No.	Function / Display
7	Related links • View: Switches between Standard and Advanced view • Contents: Overview of all pages in the user interface • Manual: FRITZ!Box 6850 LTE (PDF) • Tips & Tricks: Link to the FRITZ!Box Knowledge Base • avm.de : AVM website

Using the Wizard for Basic Configuration

Overview

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

The wizard can be restarted at any time via “Wizards” menu in the FRITZ!Box user interface.

Requirements

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

Instructions: Using the Wizard for Basic Configuration

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

You can also choose whether you would like to use the AVM services for diagnostics and maintenance of your FRITZ!Box; see page 72.

1. Enter the preset FRITZ!Box password and click on “Log In”. The preset password is printed on the type label on the bottom of the housing.
2. Choose whether you would like to use the AVM services for diagnostics and maintenance. We recommend leaving this option enabled. You can always change the setting later.
3. Click on “Next”.
4. Follow the wizard’s instructions.

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

Logging Out of the User Interface

Overview

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

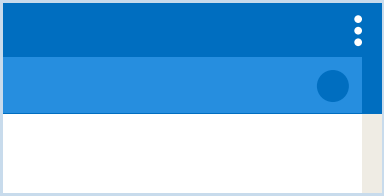
Use push services to have yourself notified each time someone logs into or out of your FRITZ!Box; see page 155.

Automatic Logout when Idle

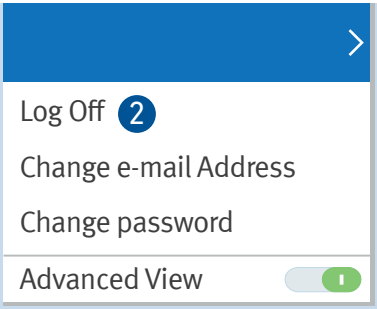
If you have not logged out of the FRITZ!Box user interface, and have not been active in the browser for 20 minutes, you will be logged out automatically.

Instructions: Manual Logout

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



2. Click on “Log Off” in the menu.



You have logged out of the FRITZ!Box user interface.

Configuring

Overview: Configuring the FRITZ!Box

Overview

Configuration of the FRITZ!Box entails the following steps:

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

Requirements

- The FRITZ!Box is connected directly with the internet access.
- You have connected all of the telephones you want to use with the FRITZ!Box.

Configuring Internet Access via Mobile Network

Overview

The internet connection for the mobile telephone network has to be set up once in the FRITZ!Box. The first time you open the FRITZ!Box user interface, you will automatically be prompted to configure the internet connection.

Requirements

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

Instructions: Configuring the Internet Connection

1. Open the user interface; see page 46.
2. If the wizard does not start automatically, select the “Wizards” menu.
3. Click on the “Set Up Internet Connection” wizard.
4. Start your web browser and enter a web address, for instance en.avm.de.

   The requested internet page is displayed.

Configuring Your Telephone Numbers

Overview

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

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

Instructions: Configuring Your Own Telephone Numbers

1. Open the user interface; see page 46.
2. Select “Wizards / Manage Telephone Numbers”.
3. Click on “Add Telephone Number” and follow the wizard’s instructions.

Configuring Telephones

Overview

Once you have connected your telephones, answering machines and fax machines, 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.

For IP telephones you can also enable international calls. IP telephones are configured in the FRITZ!Box such that only domestic calls and calls to emergency numbers are possible.

Requirements

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

Instructions: Configuring Telephones and Other Devices

1. Open the user interface; see page 46.
2. Select “Telephony / Telephony Devices”.
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 on the “Edit” button of the device. 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 46.
2. Select “Telephony / Telephone Numbers”.
3. Switch to the “Line Settings” tab.
4. Under “Security”, click on “Change Selection”.
5. Disable the checkbox next to the desired IP telephone and click on “OK”.
6. Click on “Apply”.

Configuring a Door Intercom System

Overview

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

Requirements

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

Instructions: Setting up a Door Intercom System

1. Open the user interface; see page 46.
2. Select “Telephony / Telephony Devices”.
3. Click on “Configure New Device”. With the “Edit” button you can also change the settings of a door intercom system that has already been configured.

Saving Power with the FRITZ!Box

Overview

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

Viewing Information on Energy Consumption

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

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

Using Savings Potential

What	How to	Where
Wi-Fi	configure a schedule; see page 135	“Wi-Fi / Schedule” menu
	switch off Wi-Fi; see page 135	• “ WLAN ” button • “Wi-Fi / Wi-Fi Network” menu
	reduce the maximum transmitter power	“Wi-Fi / Wi-Fi Channel / Wi-Fi Channel Settings / Additional settings” menu
LAN	use the LAN port in energy-saving (green) mode	“Home Network / Network / Network Settings / LAN Settings” menu
USB	use the USB port in energy-saving (Green) mode; see page 130	“Home Network / USB/Storage / USB Settings” Menu

Saving Power with Smart Home

With intelligent Smart Home devices like FRITZ!DECT, electrical appliances are integrated into the home network. This way they can be switched on and off by schedule. At the same time, they inform the FRITZ!Box about consumption, energy costs incurred, and the CO_2 footprint.

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

1. Open the user interface; see page 46.
2. Select “Smart Home / Device Management / Edit Socket / Automatic Switching”.
3. For instructions, open the online help .

Mesh with FRITZ!

Expanding a Wi-Fi Network with Mesh

Overview

If the Wi-Fi network of the FRITZ!Box does not reach all of your rooms, then you can extend it with a FRITZ!Repeater, a FRITZ!Powerline with Wi-Fi functionality, or with an additional FRITZ!Box. Mesh combines the individual Wi-Fi networks of the FRITZ! devices into a single powerful Wi-Fi network.

Mesh is available in FRITZ!OS version 7.00 or later.

Only FRITZ! devices can be integrated into the FRITZ!Box Mesh. If you expand the Wi-Fi network with a wireless repeater from another manufacturer, the Mesh functions are not available.

FRITZ! Devices with Mesh

With the following FRITZ! devices you can expand the Wi-Fi network of the FRITZ!Box:

FRITZ! Product	Type of Connection to the FRITZ!Box
FRITZ!Repeater	• Wi-Fi • LAN cable (only for FRITZ!Repeaters with a LAN socket) More information at en.avm.de/products/fritzwlan.
FRITZ!Powerline	• electrical wiring For more information, see avm.de/products/fritzpowerline.

Features in the Mesh

The FRITZ!Box is the hub of the Mesh, the Mesh Master. Other FRITZ! devices in the Mesh are Mesh Repeaters. The following features provide for high-performance connections between the devices and for convenience in the Mesh:

- Consistent Wi-Fi settings: Mesh Repeaters adopt from the Mesh Master the network name (SSID), network key, Wi-Fi guest access and Wi-Fi schedule.
- Mesh overview in the user interface of the Mesh Master: Here you can perform updates for all FRITZ! devices in the Mesh.
- Improved information exchange among FRITZ! devices provides for faster Wi-Fi connections.
- Mesh Wi-Fi Steering (access point steering, FRITZ!OS 7.10 or later): The Mesh Master can select the best FRITZ! device for each wireless device to use to access the home network.

Enabling Mesh for FRITZ!Repeaters and FRITZ!Powerline

Overview

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

Requirements

- FRITZ!OS 7.00 or later is installed on the FRITZ!Box.
- FRITZ!OS 7.00 or later is installed on the FRITZ!Repeater or FRITZ!Powerline.
- Add your FRITZ!Repeater or FRITZ!Powerline adapter to the home Wi-Fi network of the FRITZ!Box (Mesh).

Instructions: Enabling Mesh for FRITZ!Repeaters

1. Open the FRITZ!Box user interface; see page 46.
2. Select “Home Network / Mesh”.
3. The FRITZ!Box is displayed in the overview with the “Mesh enabled” icon. If the icon is also displayed for the FRITZ!Repeater, then Mesh is already enabled for the FRITZ!Repeater. If the icon 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” icon.

Instructions: Enabling Mesh for FRITZ!Powerline

1. Open the FRITZ!Box user interface; see page 46.
2. Select “Home Network / Mesh”.
3. The FRITZ!Box is displayed in the overview with the “Mesh enabled” icon. If the icon is also displayed for FRITZ!Powerline, then Mesh is already enabled for FRITZ!Powerline. If the icon is missing next to FRITZ!Powerline, continue with the next step.
4. Press the connection button on FRITZ!Powerline:

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” icon.

Using Telephony in the Mesh

Overview

In a Mesh with more than one FRITZ!Box, you can configure your telephone numbers in one FRITZ!Box (the Mesh Master) and adopt them automatically on every other FRITZ!Box in the Mesh.

Whenever you add or change telephone numbers in the Mesh Master, the changes are automatically applied to the other FRITZ!Boxes.

Requirements

- Your telephone numbers are registered in the FRITZ!Box that is configured as the Mesh Master.
- All FRITZ!Boxes on which you would like to adopt the telephone numbers are configured as Mesh Repeaters.

Instructions: Setting up Telephony in the Mesh

1. Open the user interface; see page 46.
2. Select “Home Network / Mesh / Mesh Settings”.
3. For instructions, open the online help ?.

User Interface: Overview Menu

Overview Menu: Home Page of the User Interface

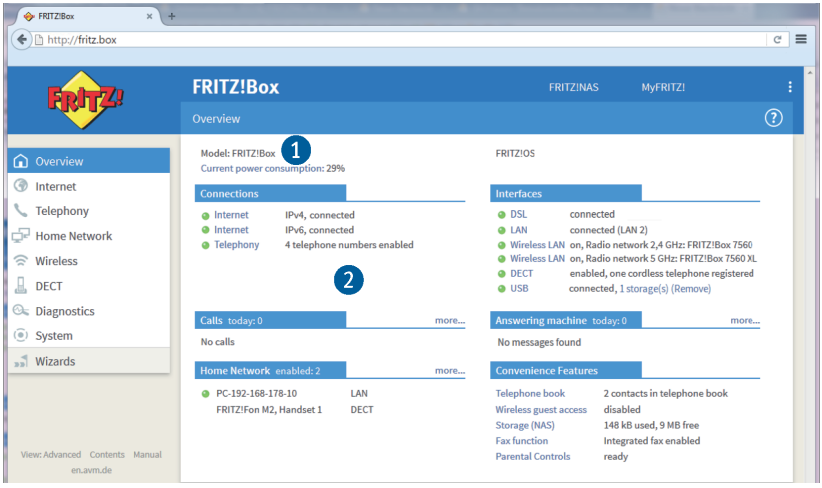
Overview

When the FRITZ!Box user interface is opened, the home page of the user interface appears in the “Overview” menu.

The home page displays all of the basic information on the status of your FRITZ!Box and an overview of all FRITZ!Box functions and devices in the home network. The home page also presents important notifications for secure, reliable operation of your FRITZ!Box. Links route you directly to the pages in the user interface where you can configure FRITZ!Box functions and receive further information. The link next to a FRITZ! device in the home network opens its user interface in a separate browser tab.

Information on the FRITZ!Box at a Glance

The illustration below shows you the information areas on the “Overview” page:



No.	Function / Display
1	System information • product name or individually assigned name of the FRITZ!Box • FRITZ!OS installed • current power consumption • important notifications for secure, reliable operation of your FRITZ!Box
2	Information about connections and interfaces • information on internet and telephony connections and on all FRITZ!Box interfaces • information on telephone calls and voice messages on the integrated answering machine • connected devices like computers, smartphones, network storage, printers, and Smart Home devices • configured convenience features

For a comprehensive description of the FRITZ!Box user interface, see page 45.

User Interface: Internet Menu

Using AVM Services for Diagnostics and Maintenance

Overview

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

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

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 Privacy

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 46.
2. Select “Internet / Account Information / AVM Services”.
3. For instructions, open the online help .

Configuring Parental Controls

Overview

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

Example

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

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

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

Profiles for Internet Use

The specifications for temporal and content-related restrictions are generated and saved as profiles. These profiles are called access profiles. The time limits can be set separately for each day of the week. You can create multiple different access profiles; see page 76. You assign these access profiles to the network devices.

Blocking a Network Device

Internet access can also be blocked completely for network devices. This is not done with an access profile. The device block is applied immediately with a click; see page 75.

Instructions: Configuring Parental Controls for a Network Device

1. Open the user interface; see page 46.
2. Select "Internet / Filters / Access Profiles".

3. If there is no access profile with the restrictions you want, then create an access profile:
   – For instructions, open the online help.
4. Select “Internet / Filters / Parental Controls”.
5. Click on the “Change Access Profile” button.
6. Assign to the network device the access profile with the desired restrictions:
   – For instructions, open the online help.

Instructions: Blocking a Device

1. Open the user interface; see page 46.
2. Select “Internet / Filters / Parental Controls”.
3. Select the network device in the device overview and click on the “Block” link.

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

Creating and Assigning Access Profiles

Overview

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

Access Profile: Definition

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

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

Example

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

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

Preconfigured Access Profiles

The following access profiles are preconfigured in the FRITZ!Box:

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

Instructions: Creating an Access Profile

1. Open the user interface; see page 46.
2. Select “Internet / Filters / Access Profiles”.
3. For instructions, open the online help.

Instructions: Assigning an Access Profile

1. Open the user interface; see page 46.
2. Select “Internet / Filters / Parental Controls”.
3. For instructions, open the online help.

Editing Filter Lists

Overview

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

Types of Lists

Access to websites with inappropriate content can be blocked using the blocked websites list or permitted websites list.

Filter List	Function and Use
Blocked websites list	• Access is blocked to websites included in the blocked websites list. • Use the blocked websites list if access to most websites is allowed and just a few are to be blocked.
Permitted websites list	• Access is allowed to websites included in the permitted websites list. • Use the permitted websites list if access to most websites is blocked and only a few are allowed to be accessed.

Instructions: Editing Filter Lists

1. Open the user interface; see page 46.
2. Select “Internet / Filters / Lists”.
3. For instructions, open the online help ?.

Configuring Priorities for Internet Use

Overview

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

Prioritization Categories

There are three prioritization categories for network applications:

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

Instructions: Configuring Priorities

1. Open the user interface; see page 46.
2. Select “Internet / Filters / Prioritization”.
3. For instructions, open the online help ?.

Configuring Port Sharing

Overview

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

Port Sharing

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

Port Sharing on Protocols

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

Protocol	Internet Protocol	Explanation
PING	IPv6	The FRITZ!Box responds to ping queries from the internet that are directed to the IPv6 address of the FRITZ!Box. Additionally, you can set up PING6 port forwarding rules for each computer in the home network since each computer has its own globally valid IPv6 address.
TCP UDP	IPv4	Within IPv4 networks you can open the FRITZ!Box firewall for the TCP and UDP protocols when entering the port range. One port can be opened for exactly one computer.

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

Instructions: Configuring Port Sharing

1. Open the user interface; see page 46.
2. Select “Internet / Permit Access / Port Sharing”.
3. For instructions, open the online help.

Enabling Dynamic DNS

Overview

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

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

Dynamic DNS and MyFRITZ!

MyFRITZ! can be used as an alternative to dynamic DNS. The two services can also be used in parallel. For more information on MyFRITZ!, see page 189.

Requirements

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

Instructions: Enabling Dynamic DNS

1. Open the user interface; see page 46.
2. Select “Internet / Permit Access / DynDNS”.
3. For instructions, open the online help.

Remote Access to the FRITZ!Box

Overview

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

HTTPS, FTP and FTPS

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

Requirements

- Access to the user interface: Every user who would like to access the FRITZ!Box externally from the internet requires a FRITZ!Box user account which is authorized for access from the internet.

- Access to storage: Every user who would like to access the storage of the FRITZ!Box externally from the internet requires a FRITZ!Box user account with the rights to access from the internet and to access contents on the storage media.
- The protocols for the desired access must be enabled in the FRITZ!Box.

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

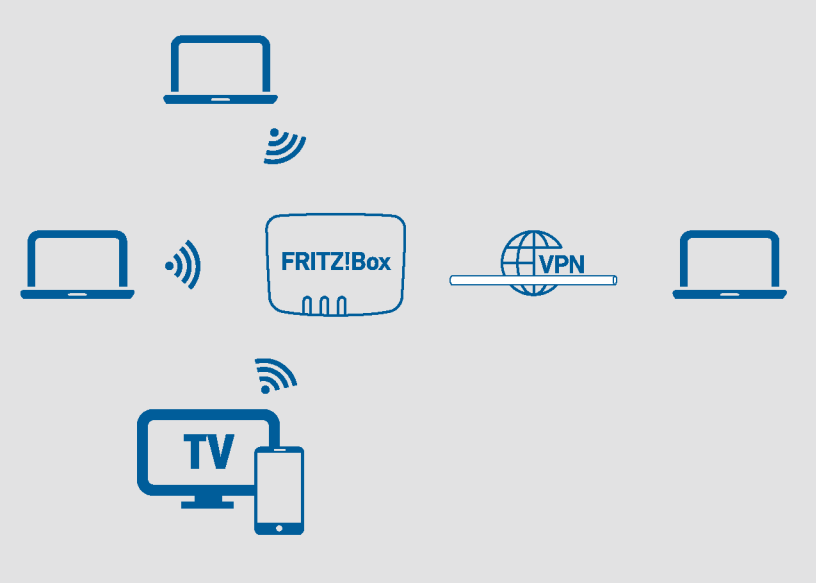
1. Open the user interface; see page 46.
2. Select “Internet / Permit Access / FRITZ!Box Services”.
3. For instructions, open the online help .

Configuring VPN Remote Access

Overview

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

Example Configuration



Alternative

As an alternative to VPN, you can use the MyFRITZ! service. For more information, see page 189.

VPN Service Portal

Under en.avm.de/vpn, the AVM website presents comprehensive information on VPN in general and in connection with the FRITZ!Box.

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

Instructions: Configuring VPN in the FRITZ!Box

1. Open the user interface; see page 46.
2. Select “Internet / Permit Access / VPN”.
3. For instructions, open the online help.

Configuring IPv6

Overview

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

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

Services that Support IPv6

Home Network / Internet	Services that Support IPv6
IPv6-capable services in the home network	• 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 to IPv6 addresses (AAAA records) and can submit queries over IPv6 to the upstream DNS resolver of the internet service provider. • 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

Home Network / Internet	Services that Support IPv6
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

Requirements

- IPv6 must be installed and enabled on the computers in your home network (standard in Windows since Windows Vista and Windows 7, in Mac OS X since macOS 10).

Instructions: Configuring IPv6 in the FRITZ!Box

1. Open the user interface; see page 46.
2. Select “Internet / Account Information / IPv6”.
3. For instructions, open the online help.

User Interface: Telephony Menu

Configuring and Using the Telephone Book

Overview

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

Telephone	Available Functions
FRITZ!Fon	• Telephone book available in the FRITZ!Fon menu • Option for separate telephone books for multiple FRITZ!Fon telephones • Quick-dial numbers • Click to Dial
Cordless telephone with support for CAT-iq 2.0	• Telephone book available in the telephone menu • Quick-dial numbers • Click to Dial
Others	• Quick-dial numbers • Click to Dial

Kinds of Telephone Books

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

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

Telephone Book	Description
Online telephone book	You can set up the following contacts as an online telephone book:
	Google Contacts
	iCloud contacts (Apple)
	Contacts from email accounts with 1&1, GMX, WEB.DE and Telekom (Telekom Mail)
	Contacts in CardDAV format
	Once an online telephone book has been configured, its contacts are available on your FRITZ!Fon cordless telephones. The online telephone book is synchronized with your contacts in the internet at regular intervals.

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

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

1. Open the user interface; see page 46.
2. Select “Telephony / Telephone Book / New telephone book”.
3. For instructions, open the online help.

Instructions: Creating a New Telephone Book Entry

1. Open the user interface; see page 46.
2. Select “Telephony / Telephone Book”.
3. For instructions, open the online help.

Instructions: Enabling and Using “Click to Dial”

1. Open the user interface; see page 46.
2. Select “Telephony / Telephone Book / Click to Dial”.

3. For instructions, open the online help .

Configuring and Using the Answering Machine

Overview

You can configure up to 5 answering machines in the FRITZ!Box, including multiple answering machines for the same telephone number.

Features

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

Example 1

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

Example 2

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

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

Instructions: Configuring the Answering Machine

1. Open the user interface; see page 46.
2. Select “Telephony / Answering Machine”.
3. For instructions, open the online help.

Operating Answering Machines by Telephone

Using a voice menu you can operate the answering machine on any telephone connected with the FRITZ!Box. You can listen to new messages, for instance, or switch the answering machine on and off. For more information, see page 209.

Picking Up a Call from the Answering Machine on the Telephone

Calls that have already been accepted by the answering machine can be picked up on your telephone. For more information, see page 211.

Instructions: Listening to the Answering Machine via Remote Playback

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

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

Using the Fax Function

Overview

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

Maximum Fax Length

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

Instructions: Configuring the Fax Function

1. Open the user interface; see page 46.
2. Select “Telephony / Telephony Devices”.
3. For instructions, open the online help.

Instructions: Sending Faxes

1. Open the user interface; see page 46.
2. Select “Telephony / Fax”.
3. For instructions, open the online help.

Configuring Call Diversion

Overview

In the FRITZ!Box you can set up call diversion for incoming calls.

Incoming Calls

Call diversion can be set up for the following calls:

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

Destination Numbers

You can divert calls to:

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

Example

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

Instructions: Configuring Call Diversion

1. Open the user interface; see page 46.
2. Select "Telephony / Call Handling / Call Diversion".
3. For instructions, open the online help.

Configuring Call Blocks

Overview

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

Kinds of Call Blocks

You can configure various kinds of call blocks:

Call Block for	Function
Outgoing calls	The blocked telephone number can no longer be called from the FRITZ!Box. Ranges of telephone numbers can also be blocked, for instance, mobile networks, or all telephone numbers that begin with 0180.
Incoming calls	The FRITZ!Box does not pick up calls from the blocked telephone number. However, the call block only works if the caller allows transmission of their telephone number.
Calls without a telephone number (anonymous calls)	The FRITZ!Box will not accept any calls from callers who withhold their telephone number.

Example 1

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

Example 2

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

Instructions: Configuring a Call Block

1. Open the user interface; see page 46.
2. Select “Telephony / Call Handling / Call Blocks”.
3. For instructions, open the online help .

Configuring Do Not Disturb

Overview

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

Example

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

Instructions: Setting Up Do Not Disturb

1. Open the user interface; see page 46.
2. Select “Telephony / Telephony Devices / Edit / Do Not Disturb”.
3. For instructions, open the online help .

Setting an Alarm

Overview

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

Example

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

Instructions: Configuring the Alarm

1. Open the user interface; see page 46.
2. Select “Telephony / Alarm”.
3. For instructions, open the online help .

Configuring a Dialing Rule

Overview

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

Example

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

Instructions: Configuring Dialing Rules

1. Open the user interface; see page 46.
2. Select “Telephony / Call Handling / Dialing Rules”.
3. For instructions, open the online help.

Reducing the Radiation of DECT Emissions

Overview

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 also reduces the range of the DECT radio network.
- DECT Eco: When DECT Eco is enabled, the FRITZ!Box switches off the DECT radio network as soon as all cordless telephones are in standby mode. When a call arrives or you press a key on a cordless telephone, the radio network is switched back on.

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

Requirements

- All registered cordless telephones support DECT Eco: Under “Telephony / DECT / DECT Monitor” in the FRITZ!Box user interface, “DECT Eco supported” is displayed for each telephone.
- The following devices are not registered with the FRITZ!Box: FRITZ! DECT devices with an outlet switch, FRITZ!DECT Repeater, another FRITZ!Box in DECT repeater mode.

Instructions: Reducing DECT Transmission Power

1. Open the user interface; see page 46.
2. Select “Telephony / DECT / Base Station”.
3. Enable the checkbox “Reduce DECT transmission power”.
4. Click on “Apply”.

Instructions: Enabling DECT Eco

1. Open the user interface; see page 46.
2. Select “Telephony / DECT / Base Station”.

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. Click on “Apply”.

Allowing Non-Encrypted Connections

Overview

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.

Rules

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

- Registration of FRITZ!DECT Repeater or FRITZ!Box in DECT repeater mode
- DECT Eco
- HD telephony
- 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 Connections

1. Open the user interface; see page 46.
2. Select “Telephony / DECT / Base Station”.
3. For instructions, open the online help ?.

User Interface: Home Network Menu

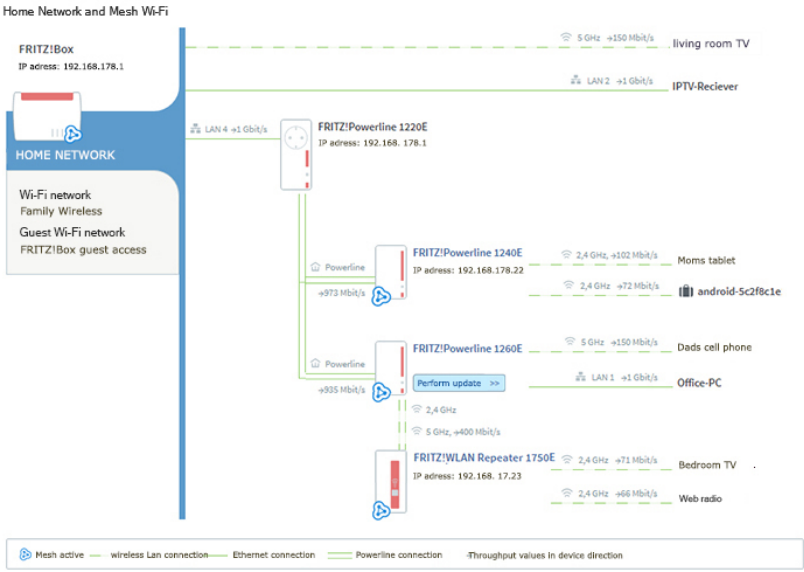
Managing the Home Network

Overview

The overview of your FRITZ!Box home network in the “Mesh Overview” menu notifies you which devices are currently active in the home and guest networks, how they are connected with each other, and what throughput rates are available over the individual connections. And from here you can update all FRITZ!Box products in your home network and integrate them into the FRITZ!Box Mesh.

Home Network and Mesh

An overview diagram shows all of the devices connected with the FRITZ!Box along with all Mesh Repeaters.



The overview diagram displays the following information:

- The FRITZ!Box: the IP address of the FRITZ!Box in the home network, the SSID of the Wi-Fi network and the SSID of the guest network, if it is enabled.

- All devices that are connected with the FRITZ!Box.
- Mesh enabled: the “Mesh enabled” icon marks the devices that are repeaters in the Mesh.
- Perform update: the Perform update >> button indicates whether a new FRITZ!OS is available (only for FRITZ! products).
- Connection technology: Wi-Fi, Ethernet cable, DECT, USB, powerline
- Connection path of the devices to the FRITZ!Box: direct connection or via a repeater or access point
- Throughput values in device direction
- Guest access: devices that are connected with the FRITZ!Box via the guest network

Active Connections and Current Software Version

All devices connected with the FRITZ!Box are displayed in the “Active-Connections in the Home Network and Current Software Version” table:

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

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

Column Name	Contents / Advantages
Device / Name	The name or the designation with which the device is registered with the FRITZ!Box.

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

Managing Network Devices

Overview

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

Explanation of Terms: Network and Other Terms

Term	Explanation
Network device	Network devices are devices that are connected with the FRITZ!Box in one of the following ways: • with a network cable to a LAN port on the FRITZ!Box • via Wi-Fi • via the internet with a VPN connection (see page 85)
Network	All network devices on the FRITZ!Box comprise a network.
Internet protocol (IP)	Communication within the network takes place using the internet protocol, IP for short. The internet protocol is the language that all network devices speak and understand.
IP network	A network based on the internet protocol is also known as an IP network. Connections within an IP network are known as IP connections.

Term	Explanation
Network interface	A network interface is the interface used to connect a network device with a network. This can be a wireless module for Wi-Fi connections or a network port for cabled connections.

Properties and Benefits

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

- Overview: The table offers an overview of the entire IP network of the FRITZ!Box.
- All connections: Every connection any network device has to the FRITZ!Box is displayed. A connection can be established with a network cable, via Wi-Fi, or over VPN. A network device that is connected sometimes with a network cable, and sometimes via Wi-Fi, has two entries in the table, one for each connection.
- Idle connections: Even connections that are currently not active are displayed.
- Only shown here: VPN connections are displayed only in this table.
- Guest network overview: Connections to the guest network are displayed.
- Connection properties: Properties are displayed for every connection.
- Find devices quickly:
  - Show and hide table columns: ⊕
  - Sort table columns: ▲ for ascending and ▼ for descending
- Adjustable connection properties: A detailed view can be opened for each connection. Connection properties can be changed in the detailed view.

Add Device

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

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

Example

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

Removing Devices

Unused connections can be removed individually or all at once, as long as they do not have any special settings. When a single unused connection is removed, all of the settings configured for this device are also deleted.

A click on the “Remove” button removes all inactive connections for which properties were never assigned. This function is useful in the following situations:

- in environments with walk-in customers (for example, hotels, cafés, betting offices)
- in households with children who often invite their friends to use the Wi-Fi

Changing IPv4 Settings

Overview

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

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

Application Example

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

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

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

IPv4 Factory Settings

The following values are preconfigured in the FRITZ!Box:

IPv4 Setting	Preset Value
IPv4 address of the FRITZ!Box	192.168.178.1
Subnet mask	255.255.255.0
IPv4 network address	192.168.178.0
Address range available for network devices	192.168.178.2 - 192.168.178.254
DHCP server	enabled

IPv4 Setting	Preset Value
Address range of the DHCP server	192.168.178.20 - 192.168.178.200
Local DNS server	192.168.178.1

Reserved IPv4 Addresses

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

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

IPv4 Address in Case of Emergency

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

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

For instructions on using the emergency IPv4 address, see page 229.

IPv4 Network

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

Instructions: Changing the IPv4 Settings

1. Open the user interface; see page 46.

2. Select “Home Network / Network / Network Settings”.
3. For instructions, open the online help .

Distributing IPv4 Addresses

Overview

Every network device in the IPv4 home network of the FRITZ!Box has an address from the IPv4 address range of the FRITZ!Box. 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

Rules

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

Preparing Network Devices for DHCP

For the IP address to be assigned by the DHCP server, the "Obtain an IP address automatically" option must be enabled in the IPv4 settings of the network devices; see page 121.

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

Overview

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 settings for the IPv6 network of the FRITZ!Box are preset upon delivery:

Topic	Setting
Unique Local Addresses (ULA)	As long as there is no IPv6 internet connection, the FRITZ!Box assigns unique local addresses to the network devices so that they can communicate with each other.
Additional IPv6 routers in the home network	This FRITZ!Box provides the default IPv6 connection. Other IPv6 routers are disregarded.
DNSv6 server in the home network	Also announce the DNSv6 server via router advertisement.
DHCPv6 server in the home network	The DHCPv6 server is enabled. Only the DNS server is announced via DHCPv6.

You can change the settings. For more information on this subject, see the online help of the FRITZ!Box.

Instructions: Changing the IPv6 Settings

1. Open the user interface; see page 46.

2. Select “Home Network / Network / Network Settings”.
3. For instructions, open the online help .

Configuring a Static IP Route

Overview

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

Application Example

Static IP routes are intended for the following situation:

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

How Static IP Routes Work

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

Instructions: Configuring a Static IPv4 Route

1. Open the user interface; see page 46.
2. Select “Home Network / Network / Network Settings”.
3. In the “Static Routing Table” area, click on the “IPv4 Routes” button.
4. For instructions, open the online help ?.

Instructions: Configuring a Static IPv6 Route

1. Open the user interface; see page 46.
2. Select “Home Network / Network / Network Settings”.
3. In the “Static Routing Table” area, click on the “IPv6 Routes” button.
4. For instructions, open the online help .

Obtaining an IP Address Automatically

Overview

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

Obtaining an IP Address Automatically in Windows

1. In Windows 10, click on “Start”.

   In Windows 8, press the Windows key and the Q key at the same time.
2. Enter “ncpa.cpl” in the search field and press Enter.
3. Click on the network connection between the computer and the FRITZ!Box with the right mouse button and select “Properties”.
4. Under “This connection uses the following items”, select “Internet Protocol Version 4 (TCP/IPv4)”.
5. Click on the “Properties” button.
6. On the “General” tab, enable the options “Obtain an IP address automatically” and “Obtain DNS server address automatically”.
7. Click on “OK” to save the settings.
8. Enable the options “Obtain an IP address automatically” and “Obtain DNS server address automatically” for the internet protocol version 6 (TCP/IPv6) as well.

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

Obtaining an IP Address Automatically in Mac OS X

1. Select the “System Preferences” in the Apple menu.
2. In the “System Preferences” window, click on “Network”.
3. In the “Network” window, select the “Ethernet” entry from the “Show:” list.

4. Click on the “Advanced...” button. The “TCP/IP” settings page opens. Select the “Using DHCP” option from the “Configure IPv4:” drop-down list.
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 LAN Guest Access

Overview

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 a user account for temporary users. A guest access can also be made available wirelessly via Wi-Fi.

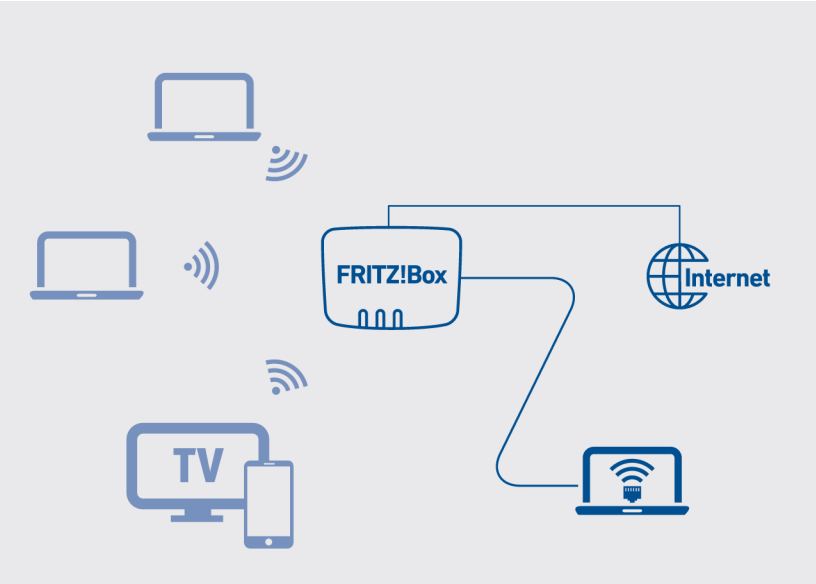
Criteria

Only the “Guest” access profile can be used at the LAN guest access. You can edit the “Guest” access profile in the “Internet / Filters / Access Profiles” menu.

The preconfigured “Guest” access profile allows and prohibits the following activities on the guest access:

Allowed	Not Allowed
Surfing the web (according to the filters specified in the blocked websites list or permitted websites list)	Accessing contents of the home network
Sending and receiving email	Changing FRITZ!Box settings

Example Configuration



Requirements

- You have a network cable.

Instructions: Configuring LAN Guest Access

1. Open the user interface; see page 46.
2. Select “Home Network / Network / Network Settings”.
3. For instructions, open the online help.

Configuring Wake on LAN

Overview

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

Requirements

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

Instructions: Configuring Wake on LAN

1. Open the user interface; see page 46.
2. Select “Home Network / Network / Network Connections / Edit Device Details”.
3. For instructions, open the online help.

Configuring USB Devices

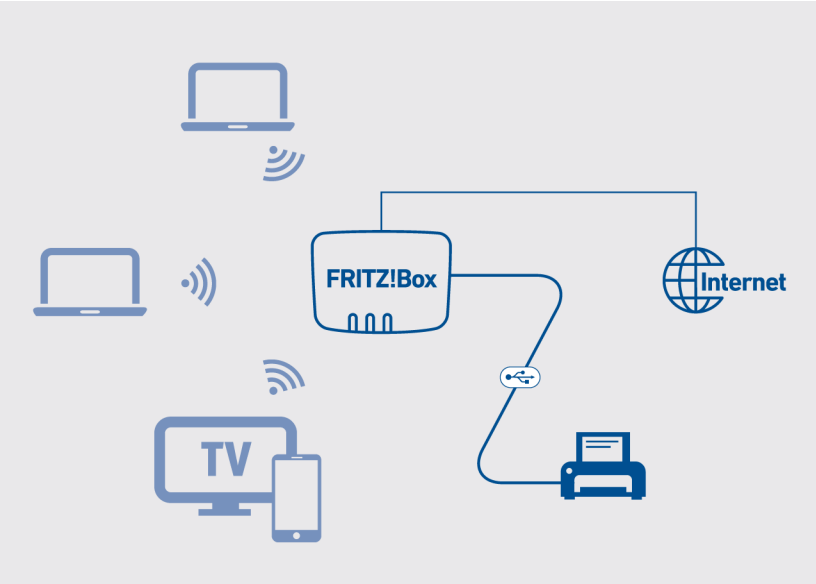
Overview

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

Compatible USB Devices

- USB storage media compatible with EXT2/3/4, FAT, FAT32 or NTFS
  - flash drives
  - external hard drives
  - card readers
- USB printers
- USB all-in-one printers
- USB scanners
- USB hubs

Example Configuration



Rules

- If more than one USB device without its own power supply is connected to the FRITZ!Box, the total current consumption may not exceed a value of 900 mA. Otherwise errors on the USB devices and even damage to the FRITZ!Box may occur.
- Do not conduct any updates for USB devices that are connected with the computer via the FRITZ!Box USB remote connection.
- The FRITZ!Box cannot defend connected USB storage media from external influences. Voltage peaks or drops during an electrical storm can result in the loss of data. Therefore you should back up the contents of the USB storage media on a regular basis.
- Place USB hard drives as far away from the FRITZ!Box as possible in order to prevent interference with Wi-Fi transmission.

Instructions: Attaching and Configuring USB Storage

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

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

Configuring Access Rights for USB Storage Media

Under “System / FRITZ!Box Users” in the FRITZ!Box user interface you can specify which contents on a connected USB storage media can be accessed by each user account.

Instructions: Configuring a USB Printer as a Network Printer (Windows 8)

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

1. Press the keyboard shortcut “Windows key + X” and select “Control Panel” from the context menu.
2. Click on “Hardware and Sound” and select “Devices and Printers”.
3. In the menu bar, click on “Add a printer”.
4. In the “Add Printer” window, select “The printer that I want isn’t listed” and then “Next”.
5. Enable the option “Add a printer using TCP/IP address or hostname” and click on “Next”.
6. Enter the address http://fritz.box in the “Hostname or IP address” field.
7. Click on “Next”.
8. Click on “Next” and confirm with “Finish”.

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

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

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

1. Press the keyboard shortcut Windows key + i.
2. Click on “Devices” and select “Devices and Printers” in the menu.
3. Click on “Add a printer or scanner”.

   The “Searching for printers and scanners” search is started.
4. Click on “The printer that I want isn't listed".”
5. Enable the option “Add a printer using TCP/IP address or hostname” and click on “Next”.
6. Enter the address http://fritz.box in the “Hostname or IP address” field.
7. Click on “Next”.
8. If the “Printer Sharing” window appears, select “Do not share this printer” and click on “Next”.
9. Click on “Finish”

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

Instructions: Configuring a USB Printer as a Network Printer (Mac OS X 10.5 or Higher)

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

1. In the dock, click on “System preferences”.
2. Click on “Print & Fax”.
3. Click on “+”.
4. Click on “IP Printer”.
5. In the “Protocol:” list, select the entry “HP Jet Direct – Socket”.
6. Enter the address “fritz.box” in the “Address” field.

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” or “Add Port...”.

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

Instructions: Configuring a USB Printer in Other Operating Systems

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

1. As the port type, select “Raw TCP”.
2. Enter the port “9100”.
3. Enter “fritz.box” as the printer name.

Configuring USB 3.0 or 2.0 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 During operation of USB devices, slow data transmission in the 2.4-GHz Wi-Fi network and poor voice quality on calls with DECT telephones can occur. This depends on the quality of the USB cable used. To correct such deficiencies, switch to the 5-GHz Wi-Fi network or set “Green Mode”.
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

Overview

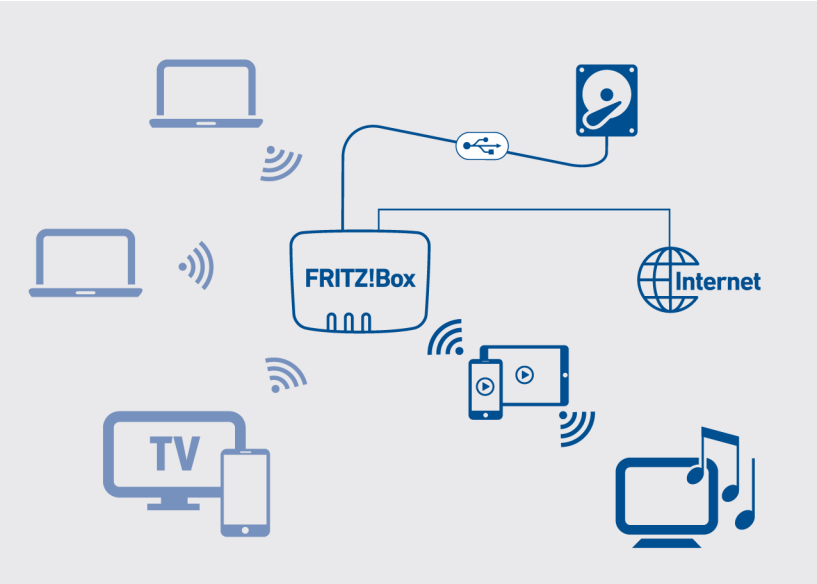
With the media server of the FRITZ!Box you can make photos, videos and music available to compatible playback devices. The media server can be expanded using USB storage media or USB hard disks. You can also use the media server of the FRITZ!Box to listen to web radio.

Criteria

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

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

Example Configuration



Requirements

- The playback devices must support the UPnP AV standard.

Instructions: Configuring and Using the Media Server

1. Open the user interface; see page 46.
2. Select “Home Network / Media Server / Settings”, “Home Network / Media Server / Web Radio” or “Home Network / Media Server / Podcast”.
3. For instructions, open the online help.

Assigning a FRITZ!Box Name

Overview

You can assign an individual name for your FRITZ!Box in the FRITZ!Box user interface. This name is then adopted as the name of the 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 Wi-Fi guest network (SSID)
- Name of the working group released for home network sharing
- Name of the media server
- Name of the DECT base station
- Push service sender name
- Name of your FRITZ!Box in the MyFRITZ! device overview

Instructions: Assigning a FRITZ!Box Name

1. Open the user interface; see page 46.
2. Select “Home Network / FRITZ!Box Name”.
3. For instructions, open the online help.

User Interface: Wi-Fi Menu

Switching the Wi-Fi Network On and Off

Overview

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

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

Switching the Wi-Fi Network On and Off Manually

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

- with the “WLAN” button (press briefly)
- in the “Home Network / Wi-Fi” menu of a connected FRITZ!Fon cordless telephone
- in the “Convenience / Wi-Fi” menu of the MyFRITZ!App
- by keypad code using a connected telephone; see page 208

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

1. Open the user interface; see page 46.
2. Select “Wi-Fi / Schedule”.
3. For instructions, open the online help.

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

Selecting the Wi-Fi Channel

Overview

Wi-Fi uses the frequency ranges at 2.4 and 5 GHz for transmission. In the default setting, the FRITZ!Box automatically checks the Wi-Fi environment and selects the optimum Wi-Fi channel settings. In some cases it may be necessary to adjust the Wi-Fi channel settings.

Comparison of the 2.4 and 5 GHz Frequency Ranges

	2.4 GHz	5 GHz
Advantages	• Greater range • Supported by all wireless devices	Less busy, therefore less interference
Disadvantages	Busier, therefore more interference	• Lower range • Only supported by newer wireless devices
Recommendation	Use for applications with a low to normal throughput rate (for instance, reading and writing email).	Use for applications with a steadily high throughput rate (for instance, streaming).

Automatic Configuration of the Wi-Fi Channel Settings by the FRITZ!Box

With the “Set Wi-Fi channel settings automatically” setting, the FRITZ!Box automatically searches for a channel subject to minimal interference. This process takes into consideration adjacent Wi-Fi networks and other sources of interference (for instance baby monitors, microwave ovens). Should problems with interference in the Wi-Fi network persist despite this setting, try to identify the source of interference and eliminate it.

Controlling Wireless Devices Automatically to Improve Data Transmission (Mesh Wi-Fi Steering)

Mesh Wi-Fi steering is available starting with FRITZ!OS 7.10 and comprises two features to improve data transmission:

Band steering: For a dual-band compatible wireless device, the FRITZ!Box can select the frequency range that is currently more suitable. Dual-band compatible devices support the 2.4 and the 5 GHz frequency ranges.

AP steering (Access Point steering): For a wireless device in the Mesh Wi-Fi, the FRITZ!Box can select the FRITZ! device which is currently the best access point to the Mesh Wi-Fi.

Disable Mesh Wi-Fi steering only if a wireless device experiences problems with Wi-Fi connections. There are a few wireless devices that are incompatible with Mesh Wi-Fi steering.

Instructions: Adjusting the Wi-Fi Channel Settings

1. Open the user interface; see page 46.
2. Select “Wi-Fi / Wi-Fi Channel”.
3. For instructions, open the online help.

Configuring Wi-Fi Guest Access

Overview

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

Private Wi-Fi Guest Access and Public Wi-Fi Hotspot

The Wi-Fi guest access can be configured as a private or public hotspot.

With a private Wi-Fi guest access you can provide houseguests with an internet connection of their own. The guest access receives its own Wi-Fi network key and guest network name (SSID). You can provide the access information to your guests via QR code or print it out for them.

With a public hotspot you can make Wi-Fi access available to guests in a public space, such as a restaurant or a medical practice. The public hotspot receives its own Wi-Fi hotspot name (SSID), but remains non-encrypted so that no Wi-Fi network key is required.

The “Guest” Access Profile

Wireless devices registered with the Wi-Fi guest network are automatically assigned the “Guest” access profile.

With this access profile your guests have the following possibilities at your private guest access and public hotspot:

Allowed	Not Allowed
Surfing the web (according to the filters specified in the blocked websites list or permitted websites list	Accessing contents of the home network
Sending and receiving email	Changing FRITZ!Box settings

The “Guest” access profile can be edited in the “Internet / Filters / Access Profiles” menu; see page 76.

The configured filters determine which websites your guests are allowed to visit. The filters can be edited in the “Internet / Filters / Lists”; see page 78.

Settings for the Wi-Fi Guest Access

You can configure the following settings for the Wi-Fi guest access as a private or public hotspot:

Setting	Content and Function
FRITZ!Box push service	Notification by email about devices registering with and deregistering from your FRITZ!Box; see page 155.
Restrict use	Guests are restricted to surfing the internet, and sending and receiving email.
Captive portal	With a captive portal you can inform guests about the terms of use you defined and then route them to your website.
Visibility in the guest network	Specify whether or not the users’ wireless devices can reach each other in the Wi-Fi guest network.
Switch off automatically	The Wi-Fi guest access is disabled automatically after a time range you specify, or whenever the last guest has logged off.
QR Code	The FRITZ!Box automatically generates a QR code for the Wi-Fi guest access. Then your guests can log in conveniently by scanning this code.

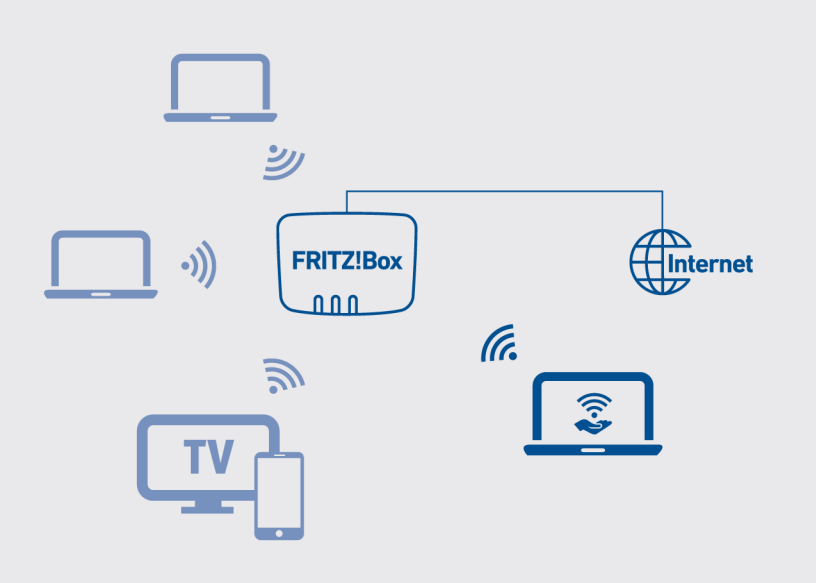
Switching the Wi-Fi Guest Access On and Off

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

- by smartphone or tablet: MyFRITZ!App (Android and iOS)
- FRITZ!Fon: “Home Network / Wi-Fi” menu
- FRITZ!Box user interface

- http://myfritz.box : “Convenience”
- http://fritz.box : “Wi-Fi / Guest Access” menu and time limit in the “Guest” access profile.

Example Configuration



Instructions: Configuring Wi-Fi Guest Access

1. Open the user interface; see page 46.
2. Select “Wi-Fi / Guest Access”.
3. For instructions, open the online help.

User Interface: Smart Home Menu

Smart Home Devices

Overview

With Smart Home devices you can switch the power supply to electric devices, measure their energy consumption, control your radiators, or create color lighting for every situation. In the “Smart Home” menu you can configure and operate your Smart Home devices.

Compatible Smart Home Devices

The following Smart Home devices can be registered with the FRITZ!Box via DECT radio (DECT ULE):

- up to 10 FRITZ!DECT 210/200 outlet switches
- up to 12 FRITZ!DECT 301/300 or Comet DECT radiator controls
- up to 10 FRITZ!DECT 440/400 switches
- up to 10 ten FRITZ!DECT 500 LED lights
- up to 10 devices from other manufacturers that support the HAN FUN (Home Area Network FUNctional) Smart Home standard

FRITZ!DECT 210/200 Switchable Sockets

With the FRITZ!DECT 210/200 switchable sockets, you can control the power supply to lights and other electric devices, manually or by schedule. You can also measure the power consumption of these devices. You operate the sockets in the FRITZ!Box user interface with a FRITZ!DECT 440/400 switch, with FRITZ!App Smart Home, or with a FRITZ!Fon.

FRITZ!DECT 301/300 Radiator Controls

With the FRITZ!DECT 301/300 radiator controls you can control the room temperature automatically and save heating costs. In combination with a FRITZ!DECT 440/400 switch, the FRITZ!App Smart Home, or a FRITZ!Fon, you can display the measured temperature, set the normal and cool-down temperature, and change the desired temperature until the next scheduled switching point.

The FRITZ!DECT 440/400 Switch

With the FRITZ!DECT 440/400 switches, you can switch and control the FRITZ!DECT 210/200 switchable sockets, the FRITZ!DECT 301/300 radiator controls, and the FRITZ!DECT 500 LED light.

The FRITZ!DECT 500 LED Light

FRITZ!DECT 500 is an LED bulb for white and color lighting. With the FRITZ!DECT 440 and 400 switches you can switch the LED light. With FRITZ!App Smart Home you can also dim the LED light and change its color. FRITZ!DECT 500 requires an E-27 lighting fixture.

HAN FUN Devices

You can also connect Smart Home devices from other manufacturers to the FRITZ!Box and configure and operate them in the FRITZ!Box user interface, for instance, motion sensors and door and window contacts. The devices must support the HAN FUN (Home Area Network FUNctional) Smart Home standard.

Configuring a Group of Switchable Sockets and LED Lights

Overview

Using groups you can combine similar Smart Home devices to control them simultaneously. A group can contain multiple switchable sockets, LED lights, or both types of devices. The Smart Home devices can be switched on and off and controlled automatically as a group. You can configure automatic switching for a group and specify one Smart Home device that switches the entire group on and off together.

Instructions: Configuring a Group of Switchable Sockets and LED Lights

1. Open the user interface; see page 46.
2. Select “Smart Home / Groups and Templates”
3. For instructions, open the online help ?.

Setting Up a Group of Radiator Controls

Overview

Using groups you can combine similar Smart Home devices to control them simultaneously. For a group of radiator controls, you can configure heating periods with 2 temperatures (schedule), heating periods with one temperature (vacation switching) and periods when heating is off.

Instructions: Setting Up a Group of Radiator Controls

1. Open the user interface; see page 46.
2. Select “Smart Home / Groups and Templates”
3. For instructions, open the online help ?.

Configuring a Template for Switchable Sockets and LED Lights

Overview

In a template you can combine several groups and multiple switchable sockets and LED lights so that they are switched on and off at the same time.

Rules

- In a template you can only combine similar Smart Home devices: Either radiator controls, or switchable sockets and LED lights.

Example

You have switchable sockets and LED lights in operation in your home. In one room you have floor lamps connected to two switchable sockets, which have been configured as a group. In another room you have three different LED lights connected.

To switch all switchable sockets and LED lights, you can configure one or more templates:

- one template to enable automatic switching (schedule)
- one template to switch all sockets/LED lights on or off
- one template to delete automatic switching for the sockets/LED lights

Instructions: Configuring a Template for Switchable Sockets and LED Lamps

1. Open the user interface; see page 46.
2. Select “Smart Home / Groups and Templates”
3. For instructions, open the online help ?.

Configuring a Template for Radiator Controls

Overview

In a template you can combine several groups and several radiator controls so that they are controlled at the same time.

Rules

- In a template you can only combine similar Smart Home devices: Either radiator controls, or switchable sockets and LED lights.

Example

You have several radiator controls operating in various rooms of your home. In one room you configured a group for several radiator controls. The other rooms have only one radiator control each. To control all radiator controls in all rooms together, you can configure one or more templates:

- one template to preheat the entire home (for instance, with boost mode or a schedule)
- one template to maintain the same temperature on all radiators while you are gone (vacation switching)
- one template to turn off all radiators

Instructions: Configuring a Template for Radiator Controls

1. Open the user interface; see page 46.
2. Select “Smart Home / Groups and Templates”
3. For instructions, open the online help ?.

User Interface: Diagnostics Menu

Starting Function Diagnostics

Overview

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

Function Diagnostics Checkpoints

Area	Checkpoint / Status
FRITZ!Box 6850 LTE	• Name of the FRITZ!Box • FRITZ!Box version • FRITZ!OS up to date
Login	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
Mobile network connection	• Status of the mobile connection • Download and upload rate

Area	Checkpoint / Status
Internet connection	• IPv4 connection active since/not active • IPv6 connection active since/not active • Current IP address
Telephone numbers	How many and which numbers are assigned
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 46.
2. Select “Diagnostics / Function”.
3. For instructions, open the online help .

Starting Security Diagnostics

Overview

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

Security Diagnostics Test Points

Area	Checkpoint / Status
FRITZ!OS	• FRITZ!Box version • FRITZ!OS up to date
Login	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

Area	Checkpoint / Status
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
Telephony	• Mesh Repeater with telephony On a Mesh Repeater (FRITZ!Box) enabled for telephony in the Mesh, all of the telephone numbers configured in the Mesh Master are available. • Functions and properties of the DECT base station of the FRITZ!Box • Call handling like call diversion settings, premium numbers, settings for international calls and security-relevant connection settings • IP telephone settings: connected with the FRITZ!Box directly or via FRITZ!App Fon • 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 at which the FRITZ!Box last logged in and the IP address it used to do so

Area	Checkpoint / Status
FRITZ!NAS	Access rights to the FRITZ!Box storage media with the following details: • 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 46.
2. Select “Diagnostics / Security”.
3. For instructions, open the online help ?.

User Interface: System Menu

Configuring Push Services

Overview

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

Available Push Services

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

Push Service	Function
FRITZ!Box info	Sends you regular email messages with data on FRITZ!Box usage and connections
Smart Home	Sends you the status of a Smart Home device regularly or when important events occur
Wi-Fi guest access	Sends a message whenever devices register with or deregister from the Wi-Fi guest access
Calls	Sends you email about telephone calls and calls from door intercom systems (including camera images). You have the option of receiving email for all incoming calls, or only for missed calls.
Answering machine	Forwards messages recorded on the FRITZ!Box answering machines to the specified email address
Fax function	Forwards your faxes by email and also saves them to a storage location you defined
SMS reception	Forwards texts that arrive at the FRITZ!Box via the mobile network by email

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

Instructions: Enabling Push Service

1. Open the user interface; see page 46.
2. Select “Overview / Wizards”.
3. For instructions, open the online help.

Instructions: Configuring Push Service

1. Open the user interface; see page 46.
2. Select “System / Push Service”.
3. For instructions, open the online help.

Configuring FRITZ!Box Users and FRITZ!Box Password

Overview

When you open the user interface of your FRITZ!Box, you will be prompted to log in. This login serves to keep your FRITZ!Box secure and protects access to the user interface. You have two options for logging in to your FRITZ!Box:

- Login with a general FRITZ!Box password that grants general access to all areas of the FRITZ!Box. This login method is the default setting in the FRITZ!Box.
- Login with a personalized FRITZ!Box user account, with which access to the FRITZ!Box can be configured differently for each user.

FRITZ!Box Password

A general FRITZ!Box password is already configured for your FRITZ!Box upon delivery. The preconfigured FRITZ!Box password for your FRITZ!Box is printed on the FRITZ!Box service card “FRITZ! Notes” and on the type label on the bottom of the housing of your FRITZ!Box.

With the FRITZ!Box password you can specify the following:

- You can replace the preconfigured password with a FRITZ!Box password you choose yourself.
- Every user who logs in with the FRITZ!Box password has the right to access all contents and settings on the FRITZ!Box.
- Login using the FRITZ!Box password is possible only within the FRITZ!Box home network.

FRITZ!Box Users

In order to control access to your FRITZ!Box for each person individually, you can set up FRITZ!Box users. FRITZ!Box users are individual authorizations to access and use the FRITZ!Box that are linked with a personalized user account.

A FRITZ!Box user account is set up with a username and a password. An email address is not required for a FRITZ!Box user account, but is recommended for notifications.

With FRITZ!Box user accounts you have the following options:

- If you create a FRITZ!Box user account for a person, then that person is granted rights for selected areas and functions of the FRITZ!Box.
- Every FRITZ!Box user logs in with their own username and a unique password.
- Login using a FRITZ!Box account is possible from the home network of the FRITZ!Box and, with the appropriate rights, also via the internet.
- You can set up as many as 18 FRITZ!Box user accounts.

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

- Access the FRITZ!Box from the internet
- View and edit FRITZ!Box settings
- View/listen to voice messages, faxes, FRITZ!App Fon and call list
- Control Smart Home devices
- Access selected network storage (NAS)
- Establish a VPN connection to the FRITZ!Box

FRITZ!Box Password or FRITZ!Box Users?

You can log in to the user interface of your FRITZ!Box with a FRITZ!Box password or via a FRITZ!Box user account. Here is an overview of the differences:

	FRITZ!Box password	FRITZ!Box Users
Login	For login you use a preconfigured FRITZ!Box password or specify a FRITZ!Box password yourself.	There are personalized user accounts. Every FRITZ!Box user logs in with their own username and a unique password.

	FRITZ!Box password	FRITZ!Box Users
Scope of access	Every user who logs in with the FRITZ!Box password has the right to access all contents and settings on the FRITZ!Box.	The user account specifies which contents and settings of the FRITZ!Box each FRITZ!Box user is allowed to access.
Kind of access	Login to the user interface is permitted from devices located in the home network of the FRITZ!Box.	Login is possible from the home network of the FRITZ!Box and, with the appropriate rights, also via the internet.

Rules for Usernames and Passwords

Comply with the following rules for creating usernames and setting 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 160.
- Select a password with at least twelve characters, which includes capitals and lower-case letters as well as numerals and special characters; see page 160.
- Configure the “Forgot Password” push service. When you have forgotten a password, the FRITZ!Box sends an access link to the email address you specified. Using this link you can set a new password.

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

Characters Allowed for Passwords and Usernames

Characters	In Usernames	In Passwords
Letters of the Latin alphabet in upper case (A-Z) and in lower case (a-z)	allowed	allowed
Numerals (0-9)	allowed	allowed
Spaces	allowed	allowed
Umlauts (ä, ö, ü)	not allowed	not allowed
The letter ß	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 a FRITZ!Box Password

1. Open the user interface; see page 46.
2. Select “System / FRITZ!Box Users / Login to Home Network”.
3. For instructions, open the online help.

Instructions: Configuring FRITZ!Box Users

1. Open the user interface; see page 46.
2. Select “System / FRITZ!Box Users / Users”.
3. For instructions, open the online help.

Selecting Signaling of the “Info” LED

Overview

The “Info” LED signals various events. Some events are preset and configured permanently; see page 23. In addition to this, the “Info” LED can be assigned to display another event of your choice.

Example 1

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

Example 2

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

Instructions: Selecting the Signaling of the “Info” LED

1. Open the user interface; see page 46.
2. Select “System / Buttons and LEDs / "Info" Display.”
3. For instructions, open the online help ?.

Locking and Unlocking Buttons

Overview

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

Instructions: Locking the Buttons on the FRITZ!Box

1. Open the user interface; see page 46.
2. Select “System / Buttons and LEDs / Keylock”.
3. Enable the checkbox “Buttons locked”.
4. Click on “Apply”.

The buttons are locked.

Instructions: Unlocking the Buttons on the FRITZ!Box

1. Open the user interface; see page 46.
2. Select “System / Buttons and LEDs / Keylock”.
3. Disable the “Buttons locked” checkbox.
4. Click on “Apply”.

The button lock is disabled.

Setting the User Interface Language

Overview

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

Rules

- FRITZ!Fon cordless telephones automatically adopt the new language of the FRITZ!Box. You can prevent this: Within 2 minutes after you changed the language setting in the FRITZ!Box, click on “Cancel” on the FRITZ!Fon.

Instructions: Setting the User Interface Language

1. Open the user interface; see page 46.
2. Select the “System / Region and Language / Language” menu.
3. Select the desired language from the “Language Settings” drop-down list.
4. Click on “Apply”.

   The FRITZ!Box will now restart. After restarting, the user interface appears in the language you selected.

Changing Regional Options

Overview

The FRITZ!Box is optimized to make telephone calls in various countries. With the regional options you specify the country in which you use your FRITZ!Box for telephone calls. This way you ensure that the FRITZ!Box adapts optimally to the telephony functionality of the country in which it is used.

Instructions: Changing Regional Options

1. Open the user interface; see page 46.
2. Select “System / Region and Language / Regional Options”.
3. For instructions, open the online help.

Adjusting the Time Zone

Overview

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 46.
2. Select “System / Region and Language / Time Zone”.
3. For instructions, open the online help.

Saving Settings

Overview

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

- You can restore the saved settings to 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 a different model.

Instructions: Saving Settings Automatically

1. Open the user interface; see page 46.
2. Select “System / Push Service / Push Services”.
3. For instructions, open the online help.

Instructions: Saving Settings Manually

1. Open the user interface; see page 46.
2. Select “System / Backup / Save”.
3. For instructions, open the online help.

Loading Settings

Overview

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

- You can restore saved settings to 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 a different model.

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

Instructions: Loading Settings

1. Open the user interface; see page 46.
2. Select “System / Backup / Restore”.
3. For instructions, open the online help.

Restarting the FRITZ!Box

Overview

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

Consequences of Restarting

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

Instructions: Restarting the FRITZ!Box

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

Restarting the FRITZ!Box takes about 2 minutes.

Instructions: Restarting the FRITZ!Box from the User Interface

1. Open the user interface; see page 46.
2. Select "System / Backup / Restart".
3. For instructions, open the online help ?.

Restoring Factory Settings

Overview

You can restore factory settings to the FRITZ!Box.

Application Example

Resetting makes sense in the following cases:

- You forgot your password and can no longer access the user interface of your FRITZ!Box.
- The FRITZ!Box 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 settings you made in the FRITZ!Box are deleted.
- The internal memory of the FRITZ!Box will be deleted! In addition to contents on FRITZ!NAS, messages received on the answering machine and faxes are discarded.
- The network key from the factory settings will be activated again.
- The name of the Wi-Fi network (SSID) will be reset.
- The IP configuration of the factory settings will be 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 166.

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 46.
2. In the FRITZ!Box user interface, select the “System / Backup” menu.
3. Select the “Factory Settings” tab.
4. Click on the “Load Factory Settings” button.

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

If you intend to restart operation of the FRITZ!Box, we recommend updating the FRITZ!OS of the FRITZ!Box; see page 174.

Performing a FRITZ!OS Update Automatically

Overview

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

With the automatic update function of the FRITZ!Box you will never miss a software update for your FRITZ!Box and will be able to use new features right away. A new version of FRITZ!OS can contain improvements, bug fixes and important security updates, as well as important new functions.

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

Properties of Automatic Updates

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

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

Procedure	Description
Level I: Notify me about new FRITZ!OS versions	• The FRITZ!Box indicates on the “Overview” page that a new version of FRITZ!OS is available. • You start the update yourself; see page 176.

Procedure	Description
Level II: Notify me about new versions of FRITZ!OS and install necessary updates automatically (recommended)	• The FRITZ!Box indicates on the "Overview" page that a new version of FRITZ!OS is available. You start the update yourself; see page 176. • Updates that AVM regards as necessary for continued secure and reliable operation (for instance, security updates) will be installed automatically. • The FRITZ!Box selects a suitable time for the update, generally at night. • During installation all internet and telephony connections will be interrupted briefly.
Level III: Notify me about new versions of FRITZ!OS and install new versions automatically	• The FRITZ!Box indicates on the "Overview" page that a new version of FRITZ!OS is available. • Every new version of FRITZ!OS will be installed automatically. • The FRITZ!Box selects a suitable time for the update, generally at night. • During installation all internet and telephony connections will be interrupted briefly.

The FRITZ!Box is preconfigured for automatic updates, generally at night. During installation all internet and telephone connections will be briefly interrupted. If you require a stable internet connection without interruption at night, for instance for working on servers, large downloads or updates, then select a time period that works better for you with the "Time Range for Updates" option in the "System / Update / Auto Update" menu of the FRITZ!Box.

Instructions: Configuring Automatic Updates

1. Open the user interface; see page 46.
2. Select “System / Update / Auto Update”.
3. For instructions, open the online help.

Instructions: Disabling Automatic Updates

If you do not wish to have updates installed or searched for automatically, you can disable this function.

We recommend keeping the search for updates and the automatic installation of updates enabled. This way you benefit from further developments of existing and new features for your FRITZ!Box.

1. Open the user interface; see page 46.
2. Select “Internet / Account Information / AVM Services”.
3. For instructions, open the online help.

Performing a FRITZ!OS Update in the Mesh Overview

Overview

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

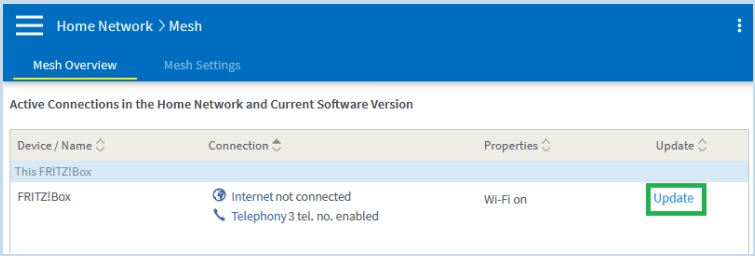
You can update the FRITZ!OS in the user interface of your FRITZ!Box, in the “Mesh Overview”.

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

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

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

1. Open the user interface; see page 46.
2. Select “Home Network / Mesh”.
3. When a new update is available, the “Active Connections in the Home Network and Current Software Version” table displays the Update link next to the “FRITZ!Box” entry.



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

Performing a FRITZ!OS Update with the Wizard

Overview

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

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

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

Instructions: Performing a FRITZ!OS Update with the Wizard

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

1. Open the user interface; see page 46.
2. On the "Overview" page, select the "Wizards" menu.
3. Start the "Update" wizard.
   The "System / Update / FRITZ!OS Version" page is opened.
4. Click on the "Find New FRITZ!OS button."
   The wizard checks whether a FRITZ!OS update is available for your FRITZ!Box.
   If the wizard finds an update, the version number of the new FRITZ!OS is displayed. Click on the link under the FRITZ!OS version to view information about further developments and new functions contained in the FRITZ!OS update.

5. To install an update, click on the “Start Update” button.

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

Performing a FRITZ!OS Update Manually

Overview

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

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

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

Instructions: Performing a FRITZ!OS Update Manually

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

1. Enter the following address in the web browser: ftp.avm.de/fritzbox.
2. Switch to the folder for your FRITZ!Box model, then to the subfolder “other”, and then to the folder “fritz.os”.

   The complete model name of your FRITZ!Box is shown in the user interface on the “Overview” page and on the bottom of the housing.
3. Download the file with the file extension “.image” to your computer.
4. Open the user interface; see page 46.

5. Select “System / Update / FRITZ!OS File”.
6. If you did not configure the “Save Settings” push service: Back up the settings on your FRITZ!Box before the update. Using this file you can restore the settings of your FRITZ!Box as needed.
   - Enable the option “Create a backup file before the update”.
   - Assign a password for the encryption of your backup file.
   - Perform the additional confirmation and click on “OK”.
   - Save the backup file.
7. Click on the “Browse...” button and choose the file with the new FRITZ!OS you already downloaded and saved on your computer.
8. Click on “Start Update”.

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

User Interface: Wizards Menu

Using the Wizards

Overview

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

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

Range of Functions

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

Wizard	Function
Manage Telephony Devices	Connects and configures the following devices: • telephones • answering machine • fax machines • cordless (DECT) telephones
Manage Telephone Numbers	Adds and edits telephone numbers
Configure Internet Connection	Configures and check your internet connection via the mobile network
Check the Status of the FRITZ!Box	Performs diagnostics of the functional status of your FRITZ!Box, its internet connection and the home network connection to the FRITZ!Box

Wizard	Function
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 FRITZ!Box settings
Update	Checks whether a new version of FRITZ!OS is available for your FRITZ!Box
Configure Push Service	Sets up push services (automatic email sent with status and usage data)
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 46.
2. Click on the “Wizards” menu.
3. Start the wizard of your choice with a mouse click.
4. Follow the instructions the wizard displays on the screen.

FRITZ!NAS

FRITZ!NAS Features

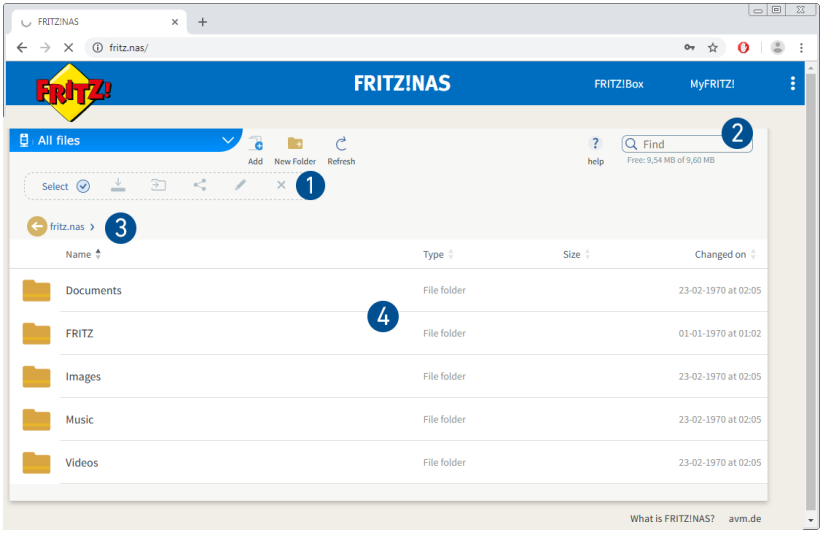
Overview

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

The FRITZ!Box storage is composed of:

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

Areas of the FRITZ!NAS User Interface



No.	Number Range	Function
1	Selection bar	• Enable selection and mark folders and files for editing • Upload and download files • Edit folders and folder contents • Permit access (folders and files released for sharing from the internet)
2	Search mask	Search for file names
3	Path	Shows name of the path
4	Display area	View all folders and folder contents

Requirements

- Web browser that supports HTML5, for instance Internet Explorer version 9 or higher, Firefox version 17 or higher, or Google Chrome version 23 or higher.

Instructions: Starting FRITZ!NAS in the Home Network

1. Open a web browser.
2. Enter “fritz.nas” in the address bar of the browser.
3. If password protection is configured: Log in to your FRITZ!Box.

FRITZ!NAS opens and displays the storage media enabled in the FRITZ!Box.

Instructions: Starting FRITZ!NAS in the Internet

1. Open a web browser.
2. Enter “myfritz.net” in the address field of the browser.
3. Log in with your email address and MyFRITZ! password.
4. Click on “FRITZ!NAS” in the user interface.

FRITZ!NAS opens and displays the storage media enabled in the FRITZ!Box.

Expanding FRITZ!NAS Storage

Overview

The FRITZ!Box storage is composed of:

- internal memory
- Online storage
- USB Storage Media

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

Access Rights

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

Instructions: Configuring Online Storage

1. Open the user interface; see page 46.
2. Select “Home Network / USB/Storage”.
3. For instructions, open the online help.

Instructions: Configuring USB storage

1. Open the user interface; see page 46.
2. Select “Home Network / USB/Storage / Devices and Network Sharing”.
3. For instructions, open the online help.

Displaying FRITZ!NAS in a File Manager

Overview

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

Requirements

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

Instructions: Displaying FRITZ!NAS in Windows Explorer

1. Open Windows Explorer.
2. Enter “fritz.nas” in the address bar 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!NAS in OS X Finder

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

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

Saving FRITZ!NAS Storage

Overview

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

Instructions: Saving Data from Internal Memory

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

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

This concludes the saving of your data from the internal memory of the FRITZ!Box.

MyFRITZ!

What Is MyFRITZ!?

Overview

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

MyFRITZ! Components

MyFRITZ! includes the following components:

	MyFRITZ! Account / myfritz.net	MyFRITZ!App	MyFRITZ! / myfritz.box
Function	MyFRITZ! in the internet	MyFRITZ! mobile	MyFRITZ! in the home network
Access to...	a personal FRITZ!Box overview portal and, depending on the user rights, to FRITZ!Box functions	FRITZ!Box functions from on the go	FRITZ!Box functions in the home network
Accessed via...	login with the MyFRITZ! account on the http://www.myfritz.net website	a mobile device (with MyFRITZ!App installed)	MyFRITZ! link in the FRITZ!Box user interface or via http://myfritz.box address in the browser

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

With the MyFRITZ! account you can log in to the FRITZ!Box "Overview" page http://www.myfritz.net via web browser and access your FRITZ!Box from there, for instance, to retrieve information on calls or access photo, music, or video files on home network storage. The FRITZ!Box sends important information about the home network to the email address of the MyFRITZ! account.

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

FRITZ!Box Web Address

When it is registered with the MyFRITZ! account, the FRITZ!Box receives a web address at which it can always be reached.

If internet access to the FRITZ!Box is enabled and a FRITZ!Box user has been configured with "Access from the internet allowed" rights, then you can access your FRITZ!Box directly with a web browser, for instance via http://www.myfritz.net. You can also use the address to establish VPN connections to your FRITZ!Box or to access server services and network devices in the home network for which you configured port sharing in the FRITZ!Box; see page 80.

In the following cases, the assigned address cannot be reached from the internet:

- Your internet service provider did not assign a public IPv4 address to your FRITZ!Box, for instance for connections with the dual-stack lite protocol. The FRITZ!Box does not have a public IPv4 address if the message "FRITZ!Box uses a DS Lite tunnel" is displayed in the "Connections" section of the "Overview" menu in the user interface.

MyFRITZ! from a Mobile Device: MyFRITZ!App

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

- Messages: View the FRITZ!Box call list and listen to messages on the answering machine
- Home network: Access the FRITZ!Box user interface and connected home network devices securely
- Smart Home: Control smart plugs and radiator controls
- FRITZ!NAS: access home network storage, for instance, for photo, music, or video files
- Convenience functions: control answering machines and call diversion settings

To use the MyFRITZ!App with iOS, a MyFRITZ! account and a FRITZ!Box user account must be configured; see page 157.

MyFRITZ! in the Home Network: myfritz.box

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

- Call list: View calls and listen to messages
- FRITZ!NAS: Access home network storage, for instance, for photo, music, or video files
- Convenience functions: Display and switch Wi-Fi, WPS, guest access, answering machines on and off
- Smart Home: Switch and control smart plugs and radiator controls

Which functions you can access depends on the rights configured for the FRITZ!Box users logged in. If you logged in with a general FRITZ!Box password, you have access to all areas; see page 157.

Creating a New MyFRITZ! Account

Overview

In order to be able to use MyFRITZ! via the http://www.myfritz.net website or via the MyFRITZ!App for iOS, a MyFRITZ! account is required. When the FRITZ!Box account is created, the FRITZ!Box from which the account is created is registered with the MyFRITZ! account.

If you would like to use MyFRITZ! only via the MyFRITZ!App for Android, then you do not need a MyFRITZ! account.

MyFRITZ! Account and FRITZ!Box

You only have to set up a MyFRITZ! account once. It exists no matter which FRITZ!Box was used to create it. Once an account has been created you can register any number of FRITZ!Box models with your 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 46.
2. Select “Internet / MyFRITZ! Account”.
3. For instructions, open the online help ?.

Configuring MyFRITZ!App in Android

Overview

With the MyFRITZ!App you can access your FRITZ!Box from anywhere using your Android device.

The MyFRITZ!App from AVM can be downloaded free from the Google Play Store.

Requirements

- Android smartphone or Android tablet with Google Android 4 (or newer)
- Your Android mobile device is located in the Wi-Fi network of your FRITZ!Box.
- For registration with FRITZ!Box users: The user has “FRITZ!Box Settings” rights.
- For the connection to the home network: The “Allow access for applications” option is enabled in the “Access Settings in the Home Network” section of the “Home Network / Network / Network Settings”.

Instructions: Configuring MyFRITZ!App

1. Install the MyFRITZ!App from the Google Play Store on your mobile device.
2. Open the MyFRITZ!App.
3. If multiple FRITZ!Box models are displayed, select the FRITZ!Box you want to connect with.
4. To register with the FRITZ!Box, enter the required data.

   The MyFRITZ!App connects with the FRITZ!Box.
5. To configure secure access to the FRITZ!Box user interface and the connected home network devices, tap on “Home Network” and follow the instructions for configuring the home network connection.

Configuring the MyFRITZ!App in iOS

Overview

With the MyFRITZ!App you can access your FRITZ!Box from anywhere using your Apple mobile device.

The MyFRITZ!App from AVM is available for free download in the Apple App Store.

Requirements

- iPhone (model 4GS or later) or iPod touch (5th generation or higher) or iPad with iOS 9.0 (or later).
- Your Apple mobile device is located in the Wi-Fi network of your FRITZ!Box.
- You configured a MyFRITZ! account and your FRITZ!Box is registered with this MyFRITZ! account.
- An account as a FRITZ!Box user has been set up for you in your FRITZ!Box, and the FRITZ!Box user has the rights “Access-from the internet allowed” and “FRITZ!Box settings”.

Instructions: Configuring MyFRITZ!App

1. Install the MyFRITZ!App on your mobile Apple device.
2. Open the MyFRITZ!App.
3. If multiple FRITZ!Box models are displayed, select the FRITZ!Box you want to connect with.
4. To register with the FRITZ!Box, enter the required data.

   The MyFRITZ!App connects with the FRITZ!Box.

Controlling FRITZ!Box with Keypad Codes

Information on Keypad Codes

Overview

Various FRITZ!Box functions can be configured and operated using a connected telephone without opening the user interface. These include not only telephony functions like the alarm, Do Not Disturb and call diversion, but also other functions. For instance, you can switch 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, #81*1*), which you enter on the telephone keypad.

Requirements

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

Rules

- 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 telephones: internal calls, call transfer, using keypad sequences, suppressing telephone number once, call diversion on/off (international calls must be allowed for the IP telephone; see page 58)

Entering Keypad Codes

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

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

Configuration on the Telephone

Instructions: Disabling Outside Line Access for the Fon Port

If you make a lot of internal calls, you can disable outside line access on the “Fon” port. 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: #11*00* (Fon)	
	
Wait for acknowledgment tone	
	

Instructions: Enabling Outside Line Access for the Fon Port

Telephone without Call Button	Telephone with Call Button
	
Enable outside line access: #❶❶✱❶✱ (Fon)	
	
Wait for acknowledgment tone	
	

Instructions: Switching On Call Diversion for All Calls

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

Telephone without Call Button	Telephone with Call Button
	
Configure immediate call diversion to destination call number <DCN>: ✱21✱<DCN>✱# Configure call diversion after 20 seconds to destination call number <DCN>: ✱61✱<DCN>✱# Configure call diversion on busy to the destination call number <DCN>: ✱67✱<DCN>✱#	
	
Wait for acknowledgment tone	
	

Instructions: Switching Off Call Diversion for All Calls

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

Instructions: Switching On Call Diversion for One Telephone Number

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

Telephone without Call Button	Telephone with Call Button
	
Switch on immediate call diversion to destination call number <DCN>: ✱21✱<DCN>✱<TN># Switch on call diversion after 20 seconds to destination call number <DCN>: ✱61✱<DCN>✱<TN># Switch on call diversion on busy to the destination call number <DCN>: ✱67✱<DCN>✱<TN>#	
	
Wait for acknowledgment tone	
	

Instructions: Switching Off Call Diversion for One Telephone Number

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

Instructions: Switching On Call Diversion for the Fon Port

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

Instructions: Switching Off Call Diversion for the Fon Port

Telephone without Call Button	Telephone with Call Button
	
Switch off call diversion for the Fon port: #401**	
	
Wait for acknowledgment tone	
	

Instructions: Configuring a Telephone as a Baby Monitor

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

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

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

Instructions: Switching Wi-Fi On

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

Telephone without Call Button	Telephone with Call Button
	
Switch Wi-Fi on: #9641*	
	
Wait for acknowledgment tone	
	

Instructions: Switching Wi-Fi Off

Telephone without Call Button	Telephone with Call Button
	
Switch Wi-Fi off: #9640*	
	
Wait for acknowledgment tone	
	

Operating on the Telephone

Instructions: Operating the Answering Machine with the Telephone

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

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

Telephone without Call Button	Telephone with Call Button
	
Establish a connection to the answering machine: ✱✱6001 (answering machine 1) ✱✱6011 (answering machine 2) ✱✱6012 (answering machine 3) ✱✱6013 (answering machine 4) ✱✱6014 (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 Telephone

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

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

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

Instructions: Making Internal Calls

You can conduct free internal calls between connected telephones.

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

Instructions: Starting a Broadcast Call

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

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

Instructions: Transferring Calls with Consultation

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

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

<table>
<tr><th>Telephone without Call Button</th><th>Telephone with Call Button</th></tr>
<tr><td colspan="2">During the call with the party 1, press the hold button:
R
The call is on hold.</td></tr>
<tr><td colspan="2">Enter the telephone number of party 2. This can be an external telephone number or an internal number from the FRITZ!Box telephone 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 telephones:
*4
Others:
  </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 telephone or to an external telephone number.

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

<table>
<tr><th>Telephone without Call Button</th><th>Telephone 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 telephone number of party 2. This can be an external telephone number or an internal number from the FRITZ!Box telephone book.</td></tr>
<tr><td>  </td><td>On cordless telephones:
✱4
Others:
  </td></tr>
</table>

Instructions: Picking Up from Call Waiting

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

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

Instructions: Suppressing Telephone Number Once

For a call on the “Fon” port you can suppress identification of your telephone number once (for one call). Then your telephone number will not be transmitted to the other caller during this call.

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

Instructions: Setting Up a Three-Party Conference

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

Telephone without Call Button	Telephone with Call Button
During the call with the party 1, press the hold button: Ⓡ Call 1 is on hold.	
To establish the call with party 2, enter an internal or external telephone number.	
When party 2 accepts the call, establish the three-party conference: Ⓡ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 telephone rings and pick up	

Instructions: Holding/Consultation/Toggling

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

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

Instructions: Using Keypad Shortcuts

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

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

Instructions: Enabling an Alarm

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

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

Instructions: Disabling an Alarm

Telephone without Call Button	Telephone with Call Button
	
Switch alarm off: #8810#	
	
Wait for acknowledgment tone	
	

Restoring Factory Settings with the Telephone

Overview

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

Consequences of Resetting

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

Instructions: Loading Factory Settings

Telephone without Call Button	Telephone with Call Button
	
Restore the FRITZ!Box to its factory settings: #991*1590159090*	
	
Wait for acknowledgment tone	

Telephone without Call Button	Telephone with Call Button
	

Malfunctions

Troubleshooting Procedures

Overview

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

Error Scenario	Help
• LEDs not on • No access to the user interface • Wi-Fi connection cannot be established or is interrupted	Troubleshooting chart; see page 226
Problem with: • connecting • configuration • telephony • internet • Wi-Fi • etc.	Knowledge Base; see page 231
Troubleshooting chart and Knowledge Base do not offer a solution	Support, see page 232

Troubleshooting Chart

Overview

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

Troubleshooting Chart

Error Scenario	Cause	Solution
LEDs not on	Power supply interrupted	• Make sure the power supply unit is connected properly. • Try plugging in a different device to make sure that the electrical outlet is active.
Cannot establish a Wi-Fi connection	Computer's wireless adapter not ready for operation	Switch on your computer's wireless adapter. 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.
	Computer cannot find the Wi-Fi network of the FRITZ!Box.	Enable the "Name of the Wi-Fi network visible" function ("Wi-Fi / Wi-Fi Network") in the FRITZ!Box user interface.
	Incorrect network key	Enter the correct network key ("Wi-Fi / Security").

Error Scenario	Cause	Solution
User interface does not open	Path name incorrect	Open the user interface by entering its complete address (http://fritz.box instead of fritz.box).
	FRITZ!Box has crashed	Remove the FRITZ!Box from the power mains and restart the FRITZ!Box again after about five seconds.
	Cache is full	Empty the cache of your web browser. For more information on this, see the help of your web browser.
	Proxy configuration does not allow the FRITZ!Box address	If a proxy server is enabled in your web browser, the address of the FRITZBox 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 the FRITZ!Box to its factory settings (see page 169).

Error Scenario	Cause	Solution
	Combination of various settings in the “Internet” and “Home Network” menus.	Attempt to open the user interface with the emergency IP address; see page 229. If this does not work, restore factory settings to the FRITZ!Box (see page 169).
Wi-Fi connection interrupted	Wi-Fi connection between FRITZ!Box and wireless device interrupted	Change the positions of the FRITZ!Box and the wireless devices: • 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	Configure automatic selection of the Wi-Fi channel in the FRITZ!Box user interface. Then the FRITZ!Box will automatically select a Wi-Fi channel with the least interference possible (“Wi-Fi / Wi-Fi Channel”).

Opening the User Interface with the Emergency IP Address

Overview

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

Information on the Emergency IP Address

- The emergency IP address is: 169.254.1.1
- The emergency IP address cannot be changed.

Requirements

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

Instructions: Opening the User Interface with the Emergency IP Address

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

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

Knowledge Base

Overview

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

If the problem cannot be resolved using the Knowledge Base, then contact the Support team; see page 232.

AVM Knowledge Base

The AVM Knowledge Base is available online at:

en.avm.de/service

Support

Overview

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

Preparations

Keep the following device information handy:

- Model
- Serial number
- FRITZ!OS Version
- Country
- Internet service provider
- Information on the operating system, network (LAN or Wi-Fi), any error messages displayed

Instructions: Support by Email

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

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

Instructions: Support by Telephone

Send a fax to the Support team. The Support team can be reached at the following fax number:

Country	Telephone number
From Germany	030 39 00 43 90
From Austria	0041 44 242 86 04
From Switzerland	0043 1 267 56 02

Decommissioning and Disposal

Decommissioning

Deleting Private Data

Before you decommission your FRITZ!Box and dispose of it, delete your personal settings and data from the FRITZ!Box. To do this, restore the factory settings to the FRITZ!Box; see page 169.

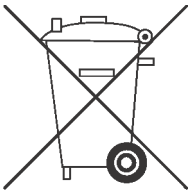
Removing the SIM Card

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

Disposal

Disposal of Used Devices

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



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

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

Technical Specifications

Technical Specifications

Device Properties

Property	Value
Dimensions (W x H x D)	approx. 200 × 45 × 152 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

Property	Value
Maximum active power	18 W
Intermediate active power, determined with the following load: • Mobile network connection enabled • Wi-Fi on; no devices registered via Wi-Fi • DECT on; one telephone registered via DECT; no active calls • one network device connected to a LAN port; no data transfer; other LAN ports not in use	6 W

Ports and Interfaces

Connected via	Interface
Mobile	LTE modem compliant with 3GPP Standard, Release 8, LTE Category 4 UE
FON	1 a/b port with a RJ11 and TAE socket for connecting an analog terminal device
DECT	DECT base station: • up to 6 handsets • up to 10 FRITZ!DECT 200/210 outlet switches • up to 10 FRITZ!DECT 440/400 switches to switch/control FRITZ!DECT devices • up to 12 FRITZ!DECT 300/301/Comet DECT radiator controls • up to 10 Smart Home devices by other manufacturers with the FRITZ!Box via HAN-FUN
LAN	four LAN ports via RJ45 sockets (standard Ethernet, 10/100/1000 base-T), 1 Gbit/s
USB	1 USB host controller (USB version 3.0)
Wi-Fi – 2.4 and 5 GHz range	Wireless access point with support for Wi-Fi networks. Wi-Fi standards supported: • IEEE 802.11a – transmission rates of up to 54 Mbit/s • IEEE 802.11g (Wi-Fi 3) – transmission rates of up to 54 Mbit/s • IEEE 802.11n (Wi-Fi 4) – transmission rates of up to Mbit/s (including 256QAM) • IEEE 802.11ac (Wi-Fi 5) – transmission rates of up to 866 Mbit/s

Mobile Networks: Bands and Radio Frequencies

Band	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)	max. uplink transmitter power (mW)
1	2110 - 2170	1920 - 1980	200
3	1805 - 1880	1710 - 1785	200
5	869 - 894	824 - 849	200
7	2620 - 2690	2500 - 2570	200
8	925 - 960	880 - 915	200
20	791 - 821	832 - 862	200
28	758 - 803	703 - 748	200
38	2570 - 2620	2570 - 2620	200
40	2300 - 2400	2300 - 2400	200
41	2496 - 2690	2496 - 2690	200

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 use. 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.

DECT Radio Frequencies

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

UMTS Radio Frequencies

Band	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)	Maximum Transmitter Power (mW) Uplink
1	2110 - 2170	1920 - 1980	250
5	869 - 894	824 - 849	250
8	925 - 960	880 - 915	250

Electromagnetic Fields

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

- The FRITZ!Box was designed and constructed to comply with the threshold values for the exposition of radio waves recommended by the International Commission on Non-ionizing Radiation Protection (ICNIRP).
- This directive was formulated by independent scientific organizations after regular and careful evaluation of scientific studies. It includes a large safety margin in order to ensure the safety of all persons, regardless of their age and health.
- For devices mounted in a fixed position that have their own power connection, like the FRITZ!Box, compliance with the minimum distance of 20 cm defined in the ICNIRP guideline has been certified. The measurements were conducted in accordance with the European EN 50385 standard.

Audio Tones

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

Legal

Legal Notice

Manufacturer's Warranty

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

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

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

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

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CE Declaration of Conformity

AVM hereby declares that the device is compliant with the Directive 2014/53 / EU.

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

UKCA Declaration of Conformity

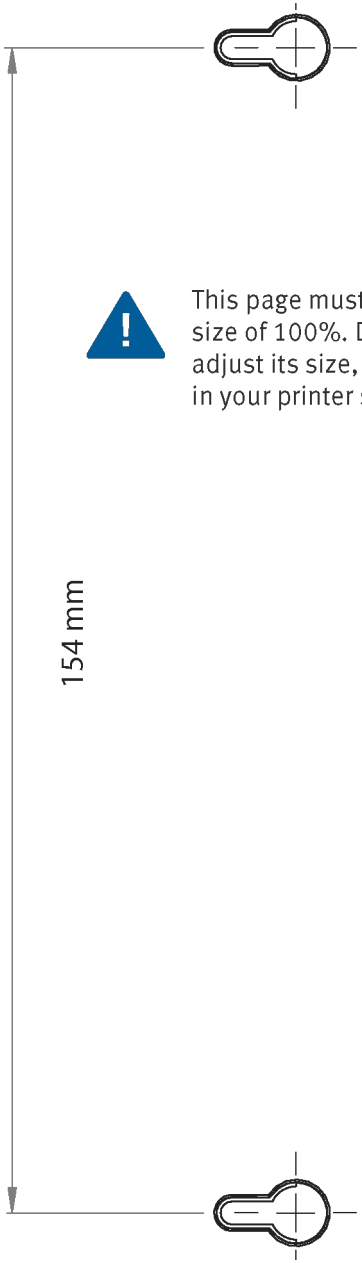
AVM hereby declares that the device is compliant with the Radio Equipment Regulations 2017 (S.I. 2017/1206).

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

Drilling Template

See the next page for a drilling template for your FRITZ!Box 6850 LTE. The drilling template assists you in marking the holes needed to mount the FRITZ!Box on a wall.

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



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