FRITZ!WLAN Repeater DVB-C

Installation and Operation

Table of Contents

Symbols and Highlighting

Symbols and emphasized text are used to designate certain information in this manual.

Symbols

This symbol designates hints and tips that are useful in operating your product.

This symbol indicates important instructions that must be observed to avoid malfunctions.

Highlighting

Highlighting	Function	Examples
Quotation marks	Buttons Menus	“Help” “System / “Info” Display”
Blue and underlined text	Address to be entered in the web browser	http://fritz.repeater
Blue text	Links and references within this manual	For instructions on connecting the FRITZ!WLAN Repeater with your wireless access point, see page 15.

1 FRITZ!WLAN Repeater DVB-C

This chapter presents an overview of the FRITZ!WLAN Repeater DVB-C.

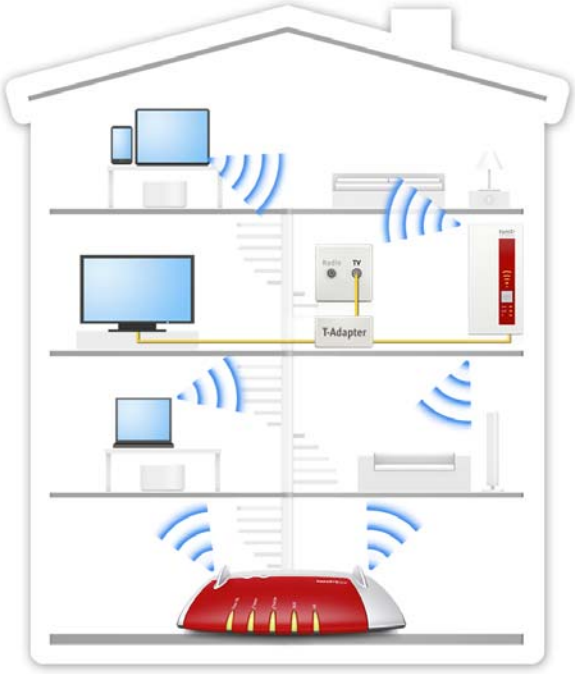
1.1 Features

Extending the Wireless Radio Network

The FRITZ!WLAN Repeater increases the range of your wireless network simply and securely.

PCs, notebooks, tablets and other wireless devices that are not located too far from the wireless access point can be registered with the FRITZ!WLAN Repeater.

The wireless network devices receive access to the radio network and to the wireless access point's Internet connection.



FRITZ!WLAN Repeater DVB-C in a radio network

Distributing Cable Television in the Home Network

The FRITZ!WLAN Repeater distributes the TV signal of your cable connection throughout the home network. With FRITZ!App TV or other software you can receive free-to-air digital television channels on a PC, notebook, tablet or smartphone.

Integrating the Network Device in the Wireless Network via LAN Cable

At the LAN port of the FRITZ!WLAN Repeater you can connect a network device without wireless LAN support, like a Blu-ray player, satellite/TV receiver, or network storage.

The connected device is integrated into the wireless radio network and has access to the Internet.

Integrating the Internet Router in the Wireless Network via LAN Cable

You can also connect an Internet router to the FRITZ!WLAN Repeater's LAN port.

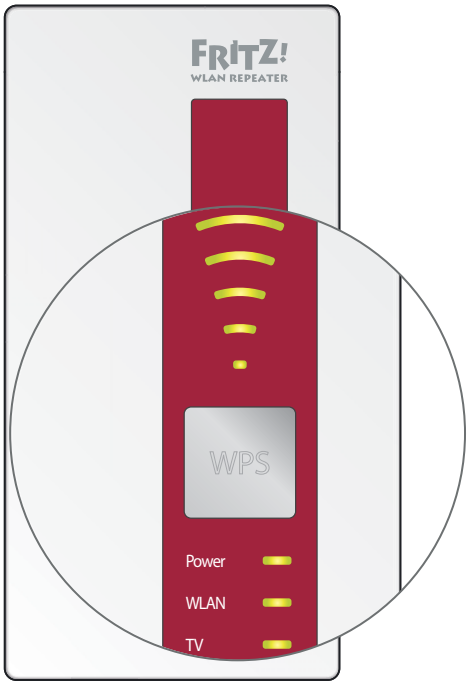
The wireless network devices receive access to the Internet router's Internet connection via the FRITZ!WLAN Repeater.

1.2 Package Contents

- FRITZ!WLAN Repeater DVB-C
- 1 LAN cable (network cable)
- 1 coaxial cable
- 1 T-adapter
- 1 printed quick guide

1.3 Button and LEDs

The FRITZ!WLAN Repeater has a button and various LEDs on the front panel.



LEDs and button

Button

The following functions are operated using the button:

Function	Press for at least ...
Switches wireless LAN on and off	1 second
Starts a WPS Quick Connection	6 seconds
Restores the repeater to factory settings	15 seconds

LEDs

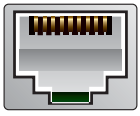
LED	Condition	Meaning
Signal strength 	flashing	• Searching for wireless access point • No connection with the wireless access point
	on	The more LEDs are lit up, the stronger the connection with the wireless access point In the “LAN Bridge” mode: signal strength of the connection with the first registered wireless LAN device
Power	flashing	• FRITZ!WLAN Repeater starting • Updating the firmware of the FRITZ!WLAN Repeater
	on	FRITZ!WLAN Repeater is ready for operation
WLAN	flashing	• FRITZ!WLAN Repeater adopts wireless LAN settings • Switching wireless radio network on or off • Performing WPS
	flashing rapidly	WPS aborted. More than two wireless devices are performing WPS at the same time. Restart WPS.
	on	Wireless LAN is enabled
TV	flashing	Performing channel search
	on	TV signal found
	off	No TV signal
All	flashing	Loading factory settings

1.4 Connections

The bottom edge of the FRITZ!WLAN Repeater has two sockets:

Features

The sockets have the following functions:

Socket		Features
LAN		• Connects network devices to the FRITZ!WLAN Repeater with a LAN cable • Connects FRITZ!WLAN Repeater to the Internet router with a LAN cable
DVB-C		• Connects FRITZ!WLAN Repeater to a cable or multimedia socket using a coaxial cable

2 Before You Connect the FRITZ!WLAN Repeater

Read this chapter before connecting the FRITZ!WLAN Repeater to the power supply and the wireless access point.

2.1 Requirements for Operation

In order to operate the FRITZ!WLAN Repeater DVB-C, you must have the following:

- DVB-C signal (cable connection)
- The wireless access point must support the IEEE 802.11ac, 802.11n, 802.11g, 802.11b or 802.11a standard
- The wireless access point must support automatic IP address assignment (DHCP)
- The wireless access point must support forwarding of IP-based protocols/Address Resolution Protocol
- For configuration of the wireless LAN: The radio network name (SSID) of the wireless access point must be visible and the MAC address filter of the wireless access point must be disabled. Both of these settings are configured in a FRITZ!Box upon delivery.
- For wireless LAN configuration with WPS: WPS-compliant wireless access point with up-to-date firmware
- For wireless LAN configuration: Wireless LAN client that supports the WPA or WPA2 encryption standard

2.2 Security and Handling

When working with the FRITZ!WLAN Repeater, be sure to observe the following security instructions in order to protect yourself and the FRITZ!WLAN Repeater from harm.

- The FRITZ!WLAN Repeater has no On/Off switch. This means it must be possible to disconnect the FRITZ!WLAN Repeater from the power supply at any time.
  - Insert the the FRITZ!WLAN Repeater into an electrical outlet that is easy to reach.

- Moisture and liquids that find their way into the FRITZ!WLAN Repeater can cause electric shocks or short circuits.
  - Only use the FRITZ!WLAN Repeater indoors.
  - Never let liquids get inside the FRITZ!WLAN Repeater.
- The device contains hazardous components and should only be opened by authorized repair technicians.
  - Do not open the FRITZ!WLAN Repeater housing.
  - If the FRITZ!WLAN Repeater needs to be repaired, please take it to a specialized vendor.
- During electrical storms, lightning and electrical surges present a danger to connected electrical devices.
  - Do not install the FRITZ!WLAN Repeater during an electrical storm.
  - During a storm, disconnect the FRITZ!WLAN Repeater from the power supply.
- Heat accumulation can lead to overheating of the FRITZ!WLAN Repeater and subsequently damage the FRITZ!WLAN Repeater.
  - Provide for sufficient air circulation around the FRITZ!WLAN Repeater.
  - Make sure that the ventilation slits on the FRITZ!WLAN Repeater housing are always unobstructed.
  - Do not cover the FRITZ!WLAN Repeater.
  - Insert the FRITZ!WLAN Repeater in an outlet that is protected from direct sunlight.
- Electronic devices like baby monitors, mobile telephones, microwave devices, DECT base stations, cordless telephones, devices with large metal housings like

washing machines or radiators, as well as other wireless LAN devices can cause interference in your wireless network.

  – When installing your FRITZ!WLAN Repeater be sure to maintain enough distance from potential interference sources.

- Dust, moisture and vapors as well as caustic cleaners or solvents can damage the FRITZ!WLAN Repeater.

  – Protect the FRITZ!WLAN Repeater from dust, moisture and steam.

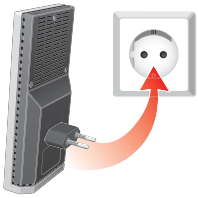
  – Remove the FRITZ!WLAN Repeater from the mains before cleaning.

  – Clean the FRITZ!WLAN Repeater with a slightly moist, lint-free cloth.

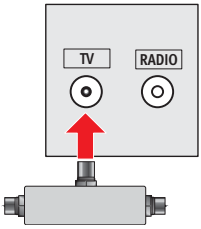
3 Installing at the Cable Connection

Connect the FRITZ!WLAN Repeater to your cable junction.

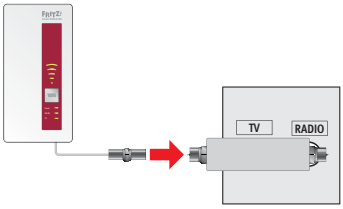
1. Insert the FRITZ!WLAN Repeater into an electrical outlet near the cable junction.



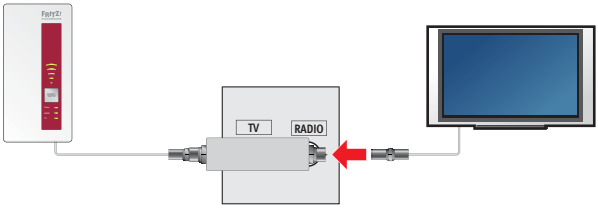
2. Insert the T-adapter into the TV socket on your cable junction.



3. Connect the FRITZ!WLAN Repeater to the T-adapter with the coaxial cable.



4. Connect your television to the free socket on the T-adapter.



4 Connecting with the Internet Router Wirelessly

You can connect the FRITZ!WLAN Repeater with a FRITZ!Box or other wireless access point (Internet router) over a wireless radio network.

You can establish the wireless connection using WPS or the configuration wizard.

4.1 Establishing a Wireless LAN Connection Using WPS

Using WPS (Wi-Fi Protected Setup), you can establish a secure wireless LAN connection at the push of a button.

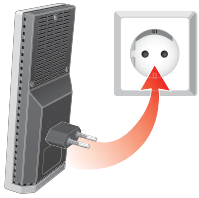
Requirements

- The wireless access point must support WPS and WPS must be enabled.
- The “WLAN Bridge” operating mode must be set in the FRITZ!WLAN Repeater (preconfigured upon delivery of the FRITZ!WLAN Repeater).
- The SSID (radio network name) of the wireless access point must be set to “visible” (announced).
- If the MAC address filter of the wireless access point is enabled, the MAC address of the FRITZ!WLAN Repeater must be entered as an exception.

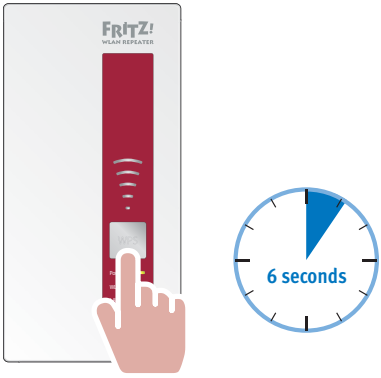
In the presettings of the latest FRITZ!Box models WPS is enabled, the SSID is visible and the MAC address filter is disabled.

Establishing a Wireless Connection

1. Connect the FRITZ!WLAN Repeater to an electrical outlet in the vicinity of the FRITZ!Box.

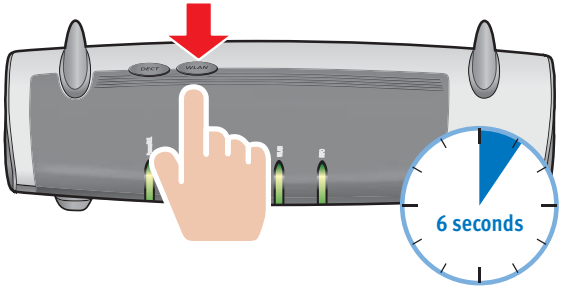


2. Press the “WPS” button on the FRITZ!WLAN Repeater. Hold the button down until the “WLAN” LED flashes.



3. You have two minutes for the next step: Start WPS on the wireless access point.

   On a FRITZ!Box, press the button labeled “WLAN/WPS”, “WPS” or “WLAN” until the “WLAN” LED on the FRITZ!Box flashes.



4. Wait until the LEDs displaying signal strength light up on the FRITZ!WLAN Repeater.

   The connection is established.

5. Select the best location for expanding the wireless radio network; for more information, see page 18.

   Insert the FRITZ!WLAN Repeater into an electrical outlet at that location.

The connection with the wireless access point is re-established automatically.

4.2 Connecting Wirelessly Using the Configuration Wizard

If you cannot use WPS, establish the wireless connection using the configuration wizard.

The configuration wizard is started in the web browser.

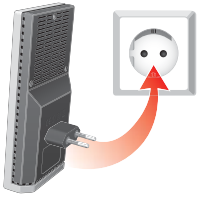
Requirements

- The “WLAN Bridge” operating mode must be set in the FRITZ!WLAN Repeater (preconfigured upon delivery of the FRITZ!WLAN Repeater).
- DCHP must be enabled on the computer; see Obtaining an IP Address Automatically on page 41.
- The SSID (radio network name) of the wireless access point must be set to “visible” (announced).
- If the MAC address filter of the wireless access point is enabled, the MAC address of the FRITZ!WLAN Repeater must be entered as an exception.

In the presettings of the latest FRITZ!Box models the SSID is visible and the MAC address filter is disabled.

Establishing a Wireless Connection

1. Connect the FRITZ!WLAN Repeater to an electrical outlet in the vicinity of the FRITZ!Box.



2. Connect the FRITZ!WLAN Repeater to a computer using the network cable included with delivery.
3. Start a web browser on the computer.
4. Enter the address http://fritz.repeater.

   The configuration wizard starts.

5. Click “Next” and follow the instructions.

   A secure wireless LAN connection is established between the FRITZ!WLAN Repeater and the wireless access point.

6. Select the best location for expanding the wireless radio network; for more information, see below.

   Insert the the FRITZ!WLAN Repeater into an electrical outlet at that location.

The connection with the wireless access point is re-established automatically.

4.3 The Best Location for the FRITZ!WLAN Repeater

The best location for the FRITZ!WLAN Repeater can be a compromise between the accessibility of the cable connection and the best possible extension of the wireless radio network.

Note the following to find the best location for extending the wireless network:

- The best location is halfway between the wireless access point and the wireless devices the FRITZ!WLAN Repeater is to use.
- Be sure to keep a safe distance from walls and objects made out of metal, like radiators and electric appliances with metal housings.
- The more signal strength LEDs are lit up (see page 8), the better the radio signal received and forwarded.

5 Connecting to the Internet Router via LAN Cable

You can use a LAN cable to connect the FRITZ!WLAN Repeater to your wireless access point or to an Internet router without wireless LAN functionality.

Use this connection option in the following cases:

- The Internet router does not support wireless LAN.
- The wireless access point (Internet router) and the FRITZ!WLAN Repeater are too far away from each other for a wireless LAN connection.
- Sources of interference, for instance concrete ceilings, prevent establishing a wireless LAN connection.

5.1 Connecting via LAN Cable or Power Lines

If you do not want to lay any long LAN cables, you can extend your LAN cable via the home's own internal wiring using FRITZ!Powerline.

For more information on FRITZ!Powerline, go to en.avm.de.

5.2 Connecting an Internet Router

1. Connect the FRITZ!WLAN Repeater to a computer using the LAN cable included with delivery.
2. Open the FRITZ!WLAN Repeater user interface (see page 22).
3. Select "System / Operating Mode".
4. Click the "Change Operating Mode" button.
5. Select the "LAN bridge" operating mode.
6. Click "Next" and follow the instructions.
7. Connect the Internet router to the FRITZ!WLAN Repeater with a LAN cable.

6 Integrating Wireless Devices in the Wireless Network

This chapter describes how to integrate notebooks, tablets, smartphones and other wireless devices into the wireless network extended by the FRITZ!WLAN Repeater.

6.1 Instructions for a Wireless Connection with the Internet Router

Proceed as follows if the FRITZ!WLAN Repeater is connected with a FRITZ!Box or another wireless access point via wireless radio:

1. Open the wireless LAN software on the wireless device.
2. Search for wireless networks in your vicinity.
3. Select the wireless network of the wireless access point.

   The FRITZ!WLAN Repeater is preconfigured to use the same network name (SSID) as the wireless access point.

   The wireless network name often appears only once in the list of radio networks. If it appears twice, select one of the two entries.

   The wireless device automatically connects with the device (access point or repeater) whose signal is stronger.
4. Start the connection procedure and enter the network key of the wireless access point.

   The FRITZ!WLAN Repeater is preconfigured to use the same network key as the wireless access point.

The wireless LAN connection will be established.

The wireless device now has access to the wireless network and to the Internet connection of the Internet router.

6.2 Instructions for a LAN Connection with the Internet Router

If the FRITZ!WLAN Repeater is connected by LAN cable to the Internet router, you can establish wireless connections to your wireless devices using WPS or the devices' own wireless LAN software.

Establishing a Wireless LAN Connection Using WPS

1. Use your wireless device to search for wireless networks.
2. Select the wireless network of the FRITZ!WLAN Repeater.
3. Start the connection procedure on the wireless device via WPS.
4. Press the “WPS” button on the FRITZ!WLAN Repeater. Hold the button down until the “WLAN” LED flashes.

The wireless LAN connection will be established.

The wireless device now has access to the Internet connection of the Internet router.

Establishing a Wireless LAN Connection Using Wireless LAN Software

1. Open the wireless LAN software on the wireless device.
2. Search for wireless networks in your vicinity.
3. Select the wireless network of the FRITZ!WLAN Repeater.
4. Start the connection procedure.

   The network key of the FRITZ!WLAN Repeater is found in the user interface under “WLAN / Security”.

The wireless LAN connection will be established.

The wireless device now has access to the Internet connection of the Internet router.

7 The FRITZ!WLAN Repeater User Interface

The FRITZ!WLAN Repeater has a user interface you can open in a web browser on your computer.

In the user interface, you can edit the FRITZ!WLAN Repeater's settings, enable or disable features and perform firmware updates.

Detailed descriptions of and instructions for settings and features of the FRITZ!WLAN Repeater are presented in the user interface's Online Help.

7.1 Opening the User Interface

The user interface can be opened on every computer connected with the FRITZ!WLAN Repeater or the wireless access point.

1. Start a web browser on your computer.
2. Enter http://fritz.repeater in the address field of the browser.

The user interface appears.

If the user interface does not appear, read The User Interface Is Not Displayed on page 33.

7.2 Protecting the User Interface with a Password

To protect the settings of your FRITZ!WLAN Repeater from unauthorized access, you can set up a password for the user interface.

We strongly recommend setting up and using password protection.

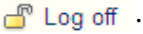
Configuring Password Protection

1. Open the user interface of the FRITZ!WLAN Repeater; see page 33.
2. Go to the "System / Password" menu.

3. Enter a password and click “Apply”.

Password protection is enabled.

Log off the User Interface.

When password protection is enabled, you can log off the user interface at any time. To do so, click 

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7.3 Performing a FRITZ!OS Update

AVM provides free FRITZ!OS updates. FRITZ!OS is the device software (firmware) of the FRITZ!WLAN Repeater.

1. Open the FRITZ!WLAN Repeater user interface (see page 33).
2. Click “Wizards” and start the “Update FRITZ!OS” wizard.

   The wizard checks whether a new FRITZ!OS update is available for your FRITZ!WLAN Repeater.
3. To transfer a new FRITZ!OS to the FRITZ!WLAN Repeater, click “Start Update”.

   The FRITZ!OS update begins and the “Power” LED on the FRITZ!WLAN Repeater starts flashing.

Interrupting the FRITZ!OS update can damage the FRITZ!WLAN Repeater. Do not interrupt the power supply to the FRITZ!WLAN Repeater during the update!

The Power update is complete when the “FRITZ!OS” LED stops flashing.

8 Television in the Home Network

The FRITZ!WLAN Repeater distributes the TV signal of your cable connection throughout the home network. With FRITZ!App TV or other software you can receive free-to-air digital television channels on a PC, notebook, tablet or smartphone.

8.1 What the FRITZ!WLAN Repeater Makes Available

The FRITZ!WLAN Repeater makes two TV programs available concurrently, along with a program guide (EPG) and other functions.

Two Programs Concurrently

With the FRITZ!WLAN Repeater you can receive two TV programs at the same time.

Multiple devices can receive two TV programs at the same time and select between them.

Program Guide and Other Functions

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

In order to use these features you will need a TV software that supports the desired functions.

8.2 Installing TV Software

Suitable TV software must be installed on devices with which you would like to receive TV programs.

Installing TV Software for Tablets and Smartphones

➡ Install FRITZ!App TV or a comparable TV app on tablets and smartphones.

FRITZ!App TV for Android is available for free from Google Play; FRITZ!App TV for iOS from the App Store.

Installing TV Software for PC and Notebook

➡ Install the VLC media player or a comparable TV app on PCs and notebooks.

The VLC media player is available for free at http://www.videolan.org/vlc or from other websites.

8.3 Television with FRITZ!App TV

FRITZ!App TV receives all free-to-air channels available at the cable junction which your FRITZ!WLAN Repeater found during its channel search.

The channel search starts automatically once the FRITZ!WLAN Repeater has been connected.

Playing Back TV Programs

1. Start FRITZ!App TV on your tablet or smartphone.

   The channel list appears in FRITZ!App TV.

2. Select a station.

   The program will be played.

Operating FRITZ!App TV

Here is how to operate the basic functions of FRITZ!App TV for iOS and FRITZ!App TV for Android:

Function	iOS	Android
Switch channels	Wipe	wipe
Exit program	Pinch fingers	Back
Back to channel list	Exit	Back

Reloading the Channel List

The channel list will be reloaded when you completely end FRITZ!App TV and then restart it:

1. Open the list of the apps last used on your smartphone or tablet:

   Android: Tap the  key or tap the “Home” key twice.

   iOS: Tap the Home key twice.

2. Close the FRITZ!App TV:

   Android: Wipe the app off the top or the right of the screen.

   iOS: Wipe the app off the top of the screen.

3. Restart FRITZ!App TV.

8.4 Watching Television with the VLC Media Player

With the VLC media player you can receive all free-to-air channels available at the cable connection which your FRITZ!WLAN Repeater found during its channel search.

The channel search starts automatically once the FRITZ!WLAN Repeater has been connected.

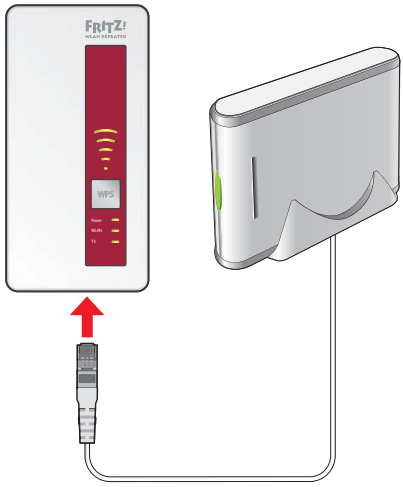
1. Start the VLC media player.
2. Open the user interface of the FRITZ!WLAN Repeater; see page 22.
3. Select the “DVB-C / Channel List” menu and click “Generate channel list” with the right mouse button.
4. Select the command “Save destination to ...” and enter a storage location.
5. Drag the TV channel list tvsd.m3u and drop it into the window of the VLC media player.
6. Select a station.

   The program will be played.

8.5 Restarting the Channel Search

1. Open the user interface of the FRITZ!WLAN Repeater; see page 22.
2. Select “DVB-C / Channel Search”.
3. Click “Start Channel Search”.

9 Integrating in the Wireless LAN via LAN Port



Connecting a device to the LAN port

The FRITZ!WLAN Repeater DVB-C has a LAN port for a network device, for instance a Blu-ray player, television, satellite/TV receiver, printer, or network storage device.

The connected device is then integrated into your wireless network and can use the Internet connection of the wireless access point.

A LAN cable for connecting a network device is included with delivery of the FRITZ!WLAN Repeater.

Example

You can connect a network storage device to the FRITZ!WLAN Repeater's LAN port. All computers connected wirelessly with the FRITZ!WLAN Repeater or the wireless access point can then download files from the network storage or save files to the network storage.

10 Changing the Name of the Wireless Network (SSID)

If you change the name (SSID) of the FRITZ!WLAN Repeater wireless network, you can specify the wireless network of the FRITZ!WLAN Repeater for selection on wireless devices (for example, notebooks, tablets).

When you connect a wireless device directly with the FRITZ!WLAN Repeater, the run time of the DVB-C signal for television is shorter than for a connection via the wireless access point. This has advantages for picture quality.

10.1 Why the Name of the Radio Network (SSID) Has To Be Changed First

The FRITZ!WLAN Repeater is preconfigured to adopt the same network name (SSID) as the wireless access point (FRITZ!Box) in the WLAN Bridge operating mode.

So wireless devices find a radio network with the SSID of the wireless access point, but no radio network that belongs only to the FRITZ!WLAN Repeater.

When you select the radio network, the wireless device automatically connects with the device (access point or repeater) with the stronger wireless signal.

10.2 Configuring a Separate Radio Network Name for the FRITZ!WLAN Repeater

To select the FRITZ!WLAN Repeater directly, assign a different name for the radio network of the FRITZ!WLAN Repeater.

1. Open the FRITZ!WLAN Repeater user interface (see page 22).
2. Select “WLAN / Radio Settings”.
3. Disable the checkbox “Take on the same radio network name as the wireless access point (FRITZ!Box)”.
4. Enter a name for the wireless radio network of the FRITZ!WLAN Repeater.
5. Click “Apply”.

11 Switching the Operating Mode

11.1 Operating Modes

Upon delivery, the “WLAN bridge” operating mode is preconfigured in the FRITZ!WLAN Repeater.

You can also deploy the FRITZ!WLAN Repeater in the “LAN Bridge” operating mode.

Which operating mode to be used depends on how the Internet router (FRITZ!Box) is to be connected with the FRITZ!WLAN Repeater.

Operating Mode	How to connect the Internet router:	How to connect network devices:
WLAN bridge (preset)	via wireless LAN	• via wireless LAN • via LAN cable
LAN bridge	via LAN cable	via wireless radio

Network devices include, for instance, PCs, notebooks, tablets and smartphones.

11.2 Changing the Operating Mode

1. Open the FRITZ!WLAN Repeater user interface (see page 22).

   If you cannot open the user interface, connect the computer to the FRITZ!WLAN Repeater using the LAN cable included with delivery. Enter the address http://192.168.178.2 in the web browser.

2. Select “System / Operating Mode”.
3. Click the “Change Operating Mode” button.
4. Select the desired operating mode.
5. Click “Next” and follow the instructions.

12 Switching Off LEDs

You can completely switch off the LEDs on the FRITZ!WLAN Repeater:

1. Open the FRITZ!WLAN Repeater user interface (see page 22).
2. Go to the “System / LEDs” menu.
3. Select the “LED display off” option.
4. Click “Apply”.

The LEDs turn off.

If you insert the FRITZ!WLAN Repeater into an outlet when the LED display is switched off, the LED display will light up initially and then turn off automatically.

13 Configuring a Switching Schedule for the Wireless Radio Network

You can configure a schedule for times at which the wireless network of the FRITZ!WLAN Repeater is to be turned on and off automatically.

Switching off the wireless network reduces power consumption.

1. Open the FRITZ!WLAN Repeater user interface (see page 22).
2. Select “WLAN / Schedule”.
3. Enable the “Use schedule for wireless network” checkbox.
4. To set up a switching schedule only for the FRITZ!WLAN Repeater, disable the “Adopt schedule settings from the FRITZ!Box” checkbox.
5. Set up the switching schedule.
6. Click “Apply”.

14 Help in Case of Errors

14.1 LEDs Not On

The LEDs on the FRITZ!WLAN Repeater do not light up.

Cause

The FRITZ!WLAN Repeater has no electricity.

Help

- Make sure that the FRITZ!WLAN Repeater is connected to electrical power.
- Make sure that the electrical outlet is active.

Cause

The LEDs have been disabled.

Help

Open the user interface (see page 22). In the “System / LEDs” menu, enable the “LED display on” option and click “Apply”.

14.2 The User Interface Is Not Displayed

The user interface of the FRITZ!WLAN Repeater is not displayed in the web browser.

Cause

The address “fritz.repeater” cannot be reached.

Help

Open the network overview of your wireless access point. Make note of the IP address of your FRITZ!WLAN Repeater. Enter this address in the address field of your browser.

If the connection to the wireless access point is interrupted, connect your computer to the FRITZ!WLAN Repeater using the LAN cable included with delivery. Then enter the IP address http://192.168.178.2 in the address line of your browser.

14.3 Problems with an App

Problems occur with FRITZ!App TV or another app. For instance, the app exhibits skips or dropouts.

Cause

The app must be restarted.

Help

Close the app completely:

In Android, open the list of the apps last used by pressing the  key or tapping twice on the Home key. To close an app, drag the app out of the top or the right edge of the screen.

In iOS, open the list of the apps last used by tapping twice on the “Home” key. To close an app, drag the app out of the top edge of the screen.

14.4 Poor Picture Quality in Television Reception

The picture quality is disrputed during television reception.

Cause

FRITZ!WLAN Repeater and the wireless access point are too close to each other. This can result in overlapping radio networks.

Help

Reduce the distance between the two devices or connect the FRITZ!WLAN Repeater to the wireless access point with a LAN cable.

Cause

The device on which you are receiving the TV program is connected with the wireless access point and not with the FRITZ!WLAN Repeater. This makes the runtime of the DVB-C signal quite long.

Help

Configure a different radio network name (SSID) in the FRITZ!WLAN Repeater than in the wireless access point; see page 29. Then establish a wireless connection with the radio network of the FRITZ!WLAN Repeater on the device you use to receive the TV program.

14.5 No Connection with the Wireless Access Point

Cannot establish a wireless LAN connection between the FRITZ!WLAN Repeater and your wireless access point.

Cause

The FRITZ!WLAN Repeater is located outside the wireless LAN range of your access point.

Help

Reduce the distance between the two devices. Connect the FRITZ!WLAN Repeater to an outlet in another location.

Cause

The wireless LAN function of your wireless access point is disabled.

Help

Enable the wireless LAN function.

Cause

You are attempting to register the FRITZ!WLAN Repeater at your wireless access point using WDS (Wireless Distribution System).

Help

The FRITZ!WLAN Repeater does not support WDS. For instructions on connecting the FRITZ!WLAN Repeater with your wireless access point, see page 15.

Cause

Another wireless radio network in the vicinity is causing interference.

Help

Test a different radio channel. If possible, set automatic radio channel selection in the wireless access point.

Cannot establish a wireless LAN connection between the FRITZ!WLAN Repeater and the wireless LAN access point via WPS.

Cause

The connection via WPS failed.

Help

Start the connection procedure again (see Establishing a Wireless LAN Connection Using WPS from page 15).

Cause

The “LAN Bridge” operating mode is set in the FRITZ!WLAN Repeater. In this mode the wireless LAN access point can only be connected using a LAN cable. In this operating mode you can use WPS only to connect wireless devices like notebooks and smartphones with the FRITZ!WLAN Repeater.

Help

Switch the operating mode to “WLAN bridge” in the “System / Operating Mode” menu in the user interface.

Cause

WPS is disabled on the wireless access point.

Help

Install the latest firmware for your wireless access point and then enable the WPS function in the access point.

Cause

The encryption of your wireless access point is set to “WEP” or “non-encrypted”. WPS can only be used with WPA/WPA2 encryption.

Help

Configure encryption with WPA/WPA2 in the user interface of your wireless access point.

Cause

The radio network name (SSID) at your wireless access point is set to “not visible”.

Help

Set the SSID to “visible”.

The SSID must be visible to establish a connection using WPS. Once the connection has been established you can reset the SSID of the wireless access point back to “not visible”.

Cause

The MAC address filter of the wireless access point is enabled and the FRITZ!WLAN Repeater is not entered as an exception in the MAC address list of the wireless access point.

Help

Enter the MAC address of the FRITZ!WLAN Repeater as an exception in the MAC address filter of the wireless access point.

14.6 No Wireless LAN Connection with a Computer

No wireless LAN connection can be established between the FRITZ!WLAN Repeater and a computer.

Cause

The computer's wireless LAN adapter is not ready for operation.

Help

On some notebooks the wireless LAN adapter must be activated by flipping a switch on the notebook. Make sure that the wireless LAN adapter is switched on.

Cause

The computer is located beyond the wireless LAN range of the FRITZ!WLAN Repeater.

Help

Reduce the distance between your computer and the FRITZ!WLAN Repeater.

Cause

The FRITZ!WLAN Repeater is not yet connected with the wireless access point.

Help

Follow the instructions in the section Connecting with the Internet Router Wirelessly from page 15.

Cause

The encryption method set in the FRITZ!WLAN Repeater is different from the one in your computer's wireless LAN software.

Help

Set the same encryption method in your computer's wireless LAN software as in the FRITZ!WLAN Repeater. To find out which encryption method is set in the FRITZ!WLAN Repeater,

check the user interface (see page 22).

For connections to the wireless access point the FRITZ!WLAN Repeater applies the encryption method and network key of the access point. If the connection was established using WPS, the access point has WPA/WPA2 encryption configured.

Cause

Another wireless radio network in the vicinity of the FRITZ!WLAN Repeater and the wireless access point is causing interference.

Help

Test a different radio channel. If possible, set automatic radio channel selection in the wireless access point. Your FRITZ!WLAN Repeater then will use the same channel automatically.

14.7 Throughput Too Slow for Wireless AC or Wireless N

A wireless device (for instance, a computer) connected with the FRITZ!WLAN Repeater should use the 802.11ac (Wireless AC) or 802.11n (Wireless N) standard for high data transmission speeds. The throughput achieved by this device, however, is too low for Wireless AC or Wireless N.

Cause

In the FRITZ!WLAN Repeater or in the wireless access point an encryption method other than WPA2 has been configured.

Help

The high transmission speeds of Wireless AC and Wireless N can be used only with the encryption method WPA2. Enable WPA2 in the wireless access point and in the FRITZ!WLAN Repeater.

You can also use Wireless AC and Wireless N in non-encrypted (open) wireless networks. However, an open wireless radio network is a security risk. Therefore we strongly recommend encrypting all wireless networks!

14.8 Cannot Access Devices in the Network

No other devices in the network can be accessed.

Cause

A firewall is running on the devices.

Help

Configure the firewall to allow access to the network.

Cause

The devices are not configured to receive their IP addresses automatically.

Help

Set up the devices as directed in the section Obtaining an IP Address Automatically from page 41.

Cause

The devices are not bound to TCP/IP.

Help

Check the network connection of the network adapter in the device in question. See the documentation of your operating system for more information.

14.9 Obtaining an IP Address Automatically

This section describes how to set automatic IP address assignment in the computers in the network.

Obtaining an IP Address Automatically in Windows

1. In Windows 7 and Vista click “Start”.

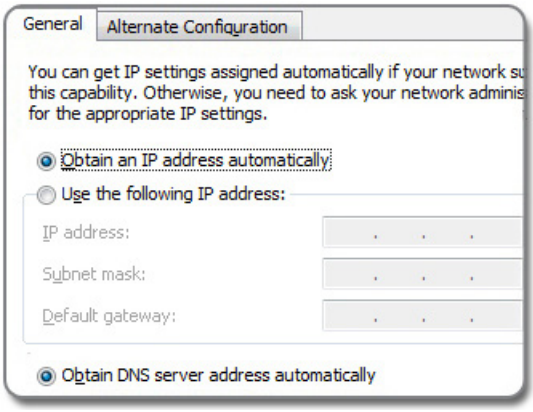
   In Windows 8 and 8.1, press the Windows key and the Q key at the same time.

   In Windows 7 and Vista, the Start menu with the “Search” field appears. In Windows 8 and 8.1 the “Search” menu for apps appears.

2. Enter “ncpa.cpl” in the search field and press Enter.

Entering “ncpa.cpl” in Windows 8

3. Click the network connection of the computer with the right mouse button and select “Properties”.
4. Under “This connection uses the following items”, select “Internet Protocol Version 4 (TCP/IPv4)”.
5. Click the “Properties” button.
6. On the “General” tab, enable the options “Obtain an IP address automatically” and “Obtain DNS server address automatically”.



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

The computer receives an IP address from the wireless access point.

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 the “Network” icon.
3. In the “Network” window, select the “Ethernet” entry from the list.
4. Click the “Advanced...” button. The “TCP/IP” settings page opens. Select the “Using DHCP” option from the “Configure IPv4:” drop-down list.
5. Click “OK”.

Now the computer receives an IP address from the wireless access point.

15 Technical Specifications

15.1 Physical Specifications

- Dimensions (W x D x H): approx. 125 x 76.5 x 62.6 mm
- Supply voltage: 230 V / 50 Hz
- Total power consumption: approx. 5.5 W
- Average power consumption: approx. 3.3 W
- Dual tuner for cable TV (DVB-C)
- Weight: approx. 161 g
- 3 dual-band antennas
- LAN port over RJ45 socket (gigabit Ethernet, 10/100/1000 Base-T)
- Wireless LAN: IEEE 802.11 ac/n/g/b/a
- Wireless LAN: WPA, WPA2 (802.11i)
- WLAN: 2.4 GHz max. 100 mW/5 GHz max. 200 mW
- Wireless transmission rate (gross) up to 1300 (5 GHz) / 450 (2.4 GHz) Mbit/s

  The user data rate that can actually be achieved is somewhat below this value.
- Operating temperature: 0 °C to +40 °C

15.2 User Interface and Display

- Configuration and status messages in a web browser on a connected computer
- “WPS” button to control wireless LAN and WPS and to restore settings
- LED display for information on the connection, activity and status

16 Customer Service Guide

Here you will find the important information you need, in the form of frequently asked questions (FAQs), manuals, updates and support.

16.1 Documentation on the FRITZ!WLAN Repeater

Help in the User Interface

In the user interface (see page 22), click the Help button to view information on the settings and features of the FRITZ!WLAN Repeater.

Latest manual

The latest manual is available in PDF format on our website at en.avm.de/service/manuals/fritzwlan.

16.2 Information in the Internet

On its website AVM presents comprehensive information on your AVM products as well as new product announcements and new product versions.

AVM Knowledge Base

In our AVM Knowledge Base you can find precise solutions to your problems. The AVM Knowledge Base is located in the “Service” area of the AVM website:

en.avm.de/service

16.3 Assistance from the Support Team

If you have problems with the FRITZ!WLAN Repeater, proceed as follows:

1. If you have any problems, for instance in establishing connections, read the section Help in Case of Errors from page 33.

2. Search for a solution in the AVM Knowledge Base.

   en.avm.de/service

   This site contains answers to questions frequently posed to our Support team.

Support by E-mail

You can send us an English-language e-mail request at any time using the “Service” area of our website. You can reach the service area at en.avm.de/service/support-request/your-support-request.

1. Select the product group and your product for which you need support.

   You will receive a selection of FAQs.

2. If you need more help, click the “Submit support request” link to open the e-mail support form.

3. Fill out the form and send it to AVM by clicking the “Submit support request” button.

Our Support team will respond by e-mail as quickly as possible.

Manufacturer's Warranty

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

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

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

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

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The information in this documentation and the software are subject to change without notice for the purpose of technical improvement.

We offer a manufacturer’s warranty for this original product. The warranty conditions are presented from page 46 of this manual.

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Declaration of CE Conformity

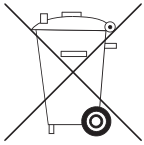
AVM declares herewith that the device is compliant with the basic requirements and the relevant rules in directives 2014/53/EU, 2009/125/EC and 2011/65/EU.

The declaration of CE conformity is available at http://en.avm.de/ce.

Disposal Information

In accordance with European regulations and the Waste Electrical and Electronic Equipment Directive (WEEE), the FRITZ!WLAN Repeater DVB-C, as well as all devices and electronic components contained in the package, may not be disposed with household waste.

After use, please dispose of FRITZ!WLAN Repeater DVB-C 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.



Symbol for the separate collection of electric and electronic devices

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