

dLAN® 550 duo+



devolo
The Network Innovation

devolo dLAN[®] 550 duo+

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1 Preface

Thank you for placing your trust in this dLAN 550 duo+.

The dLAN 550 duo+ allows you to set up your own home network with almost no effort. Because the clever dLAN technology transmits the data over the household electrical wiring, you do not have to lay any new cables.





1.1 About this manual





Carefully read all instructions before setting up the device and store the manual and/or installation guide for later reference.





After a brief introduction to "dLAN" basics and a presentation of the dLAN 550 duo+ in **Chapter 2**, **Chapter 3** will cover successfully setting up your dLAN 550 duo+. **Chapter 4** explains how to configure your dLAN network. Tips for bandwidth optimization, information of environmental compatibility of the device and our warranty conditions can be found in **Chapter 5** and conclude the manual.

Description of the icons

This section contains a brief description of the icons used in this manual and/or on the rating plate, the device connector, as well as the icons used on the package:

Icon	Description
	Very important safety symbol that warns you of hazardous electrical voltage which if not avoided can result in serious injury or death.
	Very important safety symbol that warns you of a potentially dangerous situation which if not avoided can result in serious injury or death.
	An important safety symbol that warns you of a potentially burn hazard which if not avoided can result in minor injuries or damage to property.
	An important safety symbol that warns you of a potentially dangerous situation involving a tripping hazard which can result in injuries.

Icon	Description
	An important note that should be observed which can potentially lead to material damages.
	The device may only be used indoors in dry conditions.
	The device is a Class I product. All electrically conductive (made of metal) housing parts where a voltage can be applied during operation or maintenance in the event of an error must be continuously connected to the earth wire.
	The manufacturer/distributing company uses the CE marking to declare that the product meets all applicable European regulations and has been subjected to the prescribed conformity assessment procedures.

Icon	Description
	The manufacturer/distributing company uses the UKCA marking to declare that the product meets all applicable regulations of Great Britain and has been subjected to the prescribed conformity assessment procedures.
	It is used to prevent the occurrence of waste electrical and electronic equipment and to reduce this type of waste through reuse, recycling and other forms of utilisation. The WEEE Directive establishes minimum standards for handling waste electrical and electronic equipment in the EU, EFTA and UK.
	Additional information, background material and configuration tips for your device.
	Indicates a completed course of action

1.2 Intended use

Use devolo devices, devolo software and the provided accessories as described to prevent damage and injury.

Products

devolo devices are communication devices designed for indoors.* Depending on the product, they are equipped with a **PLC** - (**P**ower**L**ine **C**ommunication) and/or a Wi-Fi module and/or a broadband module. The devices communicate with each other by means of, depending on the product, PLC, data and telephone line (e.g. coaxial or twisted pair) and/or Wi-Fi.

devolo devices do not replace the existing router. They enable transmission of the existing Internet/data signal over the in-house wiring and via Wi-Fi and integrate Internet-compatible terminal devices into the home network.

Under no circumstances may devolo devices be used outdoors, because large temperature fluctuations and moisture can damage both the device and the power line*. devolo devices may not be installed at a height above **two metres** unless an additional fastening mechanism is available. The

products are intended for operation in: EU, EFTA and UK.

* This does not include devolo outdoor devices, which are suitable for outdoor applications based on their IP classification.

Software

devolo devices can be used only with the free, downloadable programs approved and available on devolo AG's website (www.devolo.global) and in app stores (iOS and Google Play). Any modifications to the product-specific firmware or software could damage the products and, in the worst-case scenario, render them unusable, negatively affect conformity and cause the warranty claims to become void.

Always use the most up-to-date software version to make sure you have the latest security functions and device updates. The installed devolo software notifies you automatically if a new software version is available.

Accessories

Use only the provided accessories.

1.3 CE conformity

CE This product complies with the technical requirements of the directives **2014/35/EU, 2014/30/EU, 2011/65/EC** and **2009/125/EC**.

This product is designed for use in the EU, EFTA and Northern Ireland.

A printout of the simplified CE declaration of this product is separately included.

The CE declaration can be found under www.devolo.global/support/ce.

1.4 UKCA conformity

UKCA This product complies with the technical requirements of the following regulations:

- Electromagnetic Compatibility Regulations 2016 (**SI 2016 No. 1091**)
- Electrical Equipment (Safety) Regulations 2016 (**SI 2016 No. 1101**)
- Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2010 (**2010 No. 2617**)

- Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (**SI 2012 No. 3032**)

This product is designed for use in UK.

A printout of the simplified UKCA declaration of this product is separately included.

The UKCA declaration can also be found under www.devolo.global/support/UKCA.

1.5 Safety notes

It is essential to have read and understood all safety and operating instructions before the devolo device is used for the first time; keep them safe for future reference.



DANGER! Electrical shock caused by electricity

Do **not** reach into the electrical socket.

Do **not** open the device.

Do **not** insert any objects into the electrical socket or into the ventilation openings



DANGER! Electric shock caused by electricity

Device must be plugged into a power socket with a connected earth wire

devolo devices may be operated only on a **mains power supply** as described on the **rating plate**.



CAUTION! Tripping hazard

Lay the network cable in a barrier-free manner; ensure that the electrical socket and the connected network devices are easily accessible

To disconnect devolo devices from the mains supply, unplug the device from the electrical socket.



CAUTION! Damage to the device caused by ambient conditions

Only use device indoors in dry conditions



CAUTION! Heat development during operation

Certain housing components can become very hot in certain situations. Attach device so that it is touch-proof, observing optimal positioning

devolo devices should only be installed at locations that guarantee adequate ventilation. Slots and openings on the housing are used for ventilation:

- Do **not** cover devolo devices during operation.
- Do **not** place **any objects on** devolo devices.

- Do **not** insert **any objects into** the **openings** of devolo devices.
- devolo devices must **not** be placed directly **next to** a naked **flame** (such as fire or candles).
- devolo devices must **not be exposed to direct heat radiation** (e.g. radiator, direct sunlight).

Users do **not** need to carry out any **maintenance** on devolo devices. In the event of damage, disconnect the devolo device from the mains supply by pulling it or its plug out of the electrical socket. Then contact qualified specialist personnel (after-sales service) exclusively. **Damage** is deemed to have occurred, for example,

- if a button is damaged.
- if the power plug is damaged.
- if the devolo device has been showered with liquid (such as rain or other water).
- if the devolo device is inoperable.
- if the housing of the devolo device is damaged.



CAUTION! Damage to housing from cleaning agents containing solvents

Clean only electroless and with dry cloth



Do not plug devolo devices directly into each other. Devices that are plugged into each other can experience a decrease in transmission rate.

1.6 devolo on the Internet

For detailed information on our products, visit www.devolo.global.

There you will find product descriptions and documentation, and also updates of devolo software and your device's firmware.

If you have any further ideas or suggestions related to our products, please don't hesitate to contact us at support@devolo.global!

2 Introduction

dLAN is an intelligent, secure technology that lets you set up a home network easily, quickly and eco-

nomically via your household electrical wiring, without the need for complex and expensive dedicated cabling.

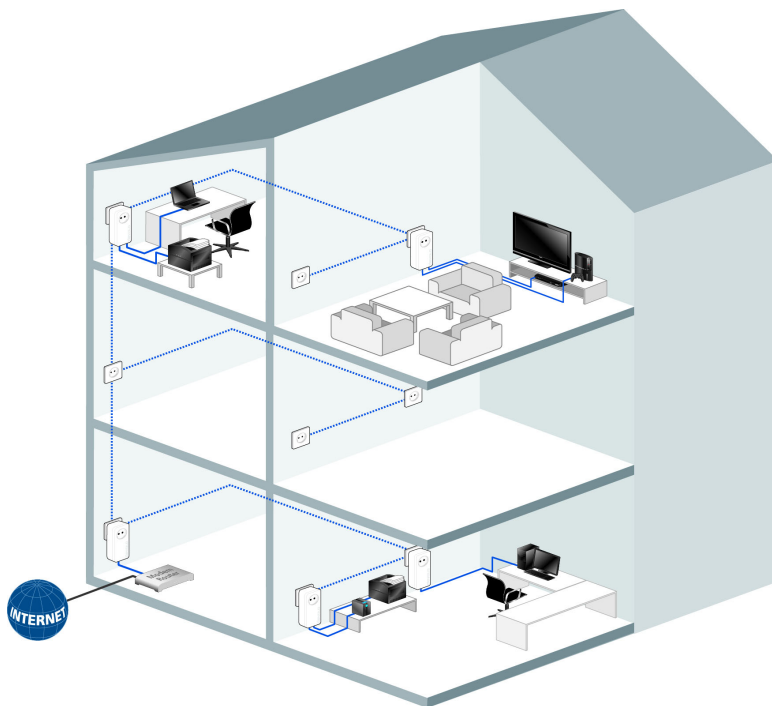


Fig. 1

2.1 What exactly is dLAN?

dLAN (direct Local Area Network) uses the household power grid to transfer data between computers equipped with suitable adapters and other network components. As a result, any power outlet can be used as a network access point. The data is modulated prior to transfer and sent as a signal via household power lines. State-of-the-art technology ensures that the power and data networks do not interfere with one another. Networking via dLAN is fast and secure. The data is encrypted using a key to prevent interception by third parties.

2.2 dLAN 550 duo+

- **Your home network from the power socket.** Unpack. Plug it in. Get started. The easy way to connect using your home's power lines. Turn any power socket into an Internet access point
- The **fast transfer rate** and dLAN speeds up to **500 Mbps** allow you to experience entertainment at the highest level. The **range+ technology** provides an even more stable Internet connection with significantly longer range.
- The "Quality of Service" function and transfer rates of up to 500 Mbps are enough for bandwidth-hungry applications. Automatic data pri-

oritisation ensures interference-free reproduction of voice and video data.

- The integrated electrical socket enables additional terminal devices or multiple sockets to be connected to the adapter just as a normal wall socket—no power supply is lost.
- The two Fast Ethernet LAN ports allow you to connect two Internet-compatible devices (e.g. a game console, television or media receiver) to the Internet at any time via network cable.
- Easy data encryption at the touch of a button or via devolo Cockpit.
- Minimal energy consumption with devolo's innovative PowerSave technology
- Compatible with all devolo dLAN adapters (200 Mbps, 500 Mbps, 600 Mbps and 1000 Mbps).
- Long range of up to 300 m between the adapters and reliable network speed for setting up a home network.

2.2.1 Sample applications

Fig. 2

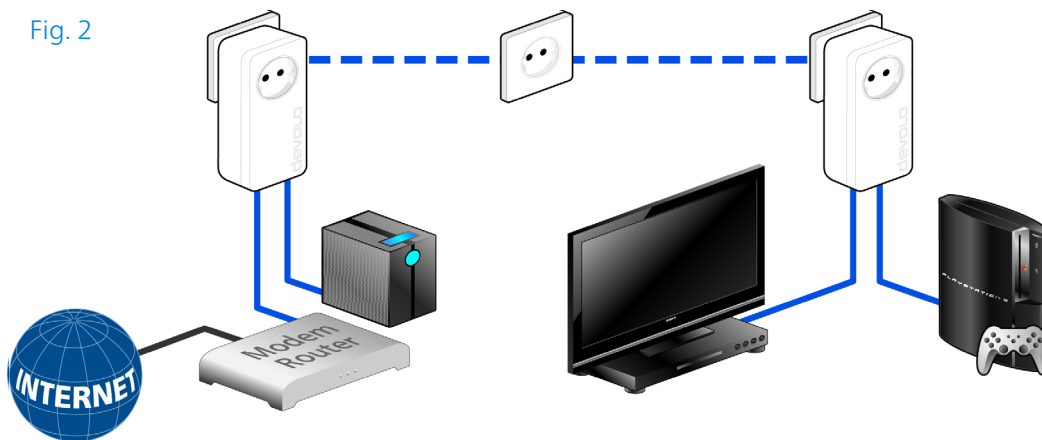
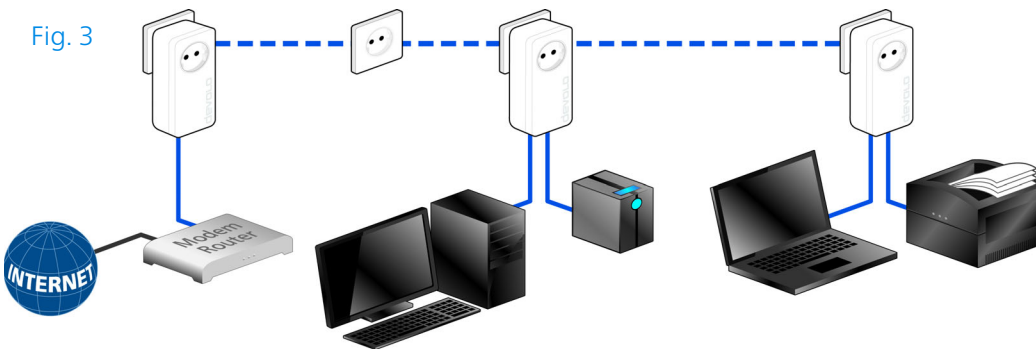


Fig. 3



3 Installation

This chapter covers everything you need to know to set up your dLAN 550 duo+. It will explain connecting the dLAN 550 duo+ and its functions. We will also briefly introduce the devolo software and guide you through its installation.



Fig. 4 is country-specific

3.1 Package contents

Please ensure that the delivery is complete before beginning with the installation of your dLAN 550 duo+:

- **Single Kit:**
 - dLAN 550 duo+
 - Network cable
 - Hard copy of installation guide
 - Hard copy of security flyer
 - Simplified UKCA/CE declaration

or

- **Starter Kit:**
 - Two dLAN 550 duo+
 - Two network cables
 - Hard copy of installation guide
 - Hard copy of security flyer
 - Simplified UKCA/CE declaration

devolo AG reserves the right to change the package contents without prior notice.

3.2 System requirements

- **Operating systems supported by devolo Cockpit:**

- from Windows 7 (32-bit/64-bit),
- from Ubuntu 13.10 (32-bit/64-bit),
- from Mac (OS X 10.9)
- **Gigabit network connection**
- **Network connection**



Please note that your computer or other device must have a network card or network adapter with a network interface.

To set up a devolo network, you need at least two devolo adapters.

3.3 Functions

The dLAN 550 duo+ has a monitoring light (LED), two network jacks and an encryption button.

3.3.1 Monitoring light

The monitoring light (LED) shows all of the statuses for the dLAN 550 duo+ by illuminating and/or flashing in different ways:

- The LED **flashes at uniform intervals** (of 2 s) if the dLAN 550 duo+ is connected to the **mains supply** but there is **no dLAN connection**.

- The LED **lights up in white** if the dLAN 550 duo+ **is ready to operate** and there is a **dLAN connection**.
- The LED **flashes quickly** if the encryption process (**pairing**) is being performed in the dLAN network.
- The LED **flashes at irregular intervals** (1 s/ 15 s) if the dLAN 550 duo+ is in **PowerSave mode**.
- The LED **lights up in red** if the data transmission rate of the dLAN 550 duo+ is not optimal. For information to improve the data transmission rate, please see the chapter **5.1 Bandwidth optimization**.

3.3.2 Network connections

These are the connection points on the dLAN 550 duo+ for connecting it to a computer and/or another network device with the network cable (included).

3.3.3 Encryption button

Data encryption at the touch of a button; For more information on the functions of the encryption button, please see the chapter **4.2 dLAN network encryption at the touch of a button**.

3.3.4 Integrated electrical socket

If you connect additional network devices using a multiple socket, plug this multiple socket into the electrical socket of the dLAN 550 duo+. The integrated mains filter eliminates any noise of connected devices and significantly improves data transmission in the home network.



Please note that all dLAN devices to be connected to your network are also connected to your household electrical wiring. A dLAN device switches to Standby mode after a short while if no active network device such as a computer is connected to the network port. In Standby mode, the dLAN device cannot be accessed via the power supply grid. As soon as the network device (e.g. computer) connected to the network interface is switched on again, your dLAN device can also be reached again via the electrical wiring.

3.4 Connecting the dLAN 550 duo+



CAUTION! Damage to the device caused by ambient conditions
Only use device indoors in dry conditions

This section describes how to connect your dLAN 550 duo+ to a computer and/or other network device.



For the permitted voltage range for operating the device and the power consumption, refer to the label on the rear side of the device. Additional technical information is available in the download area at www.devolo.global.

- 1 Use the included network cable to connect the dLAN 550 duo+ to the network port of your running computer and/or other network device.



CAUTION! Tripping hazard
Lay the network cable in a barrier-free manner and ensure that the electrical socket and the connected network devices are easily accessible

- 2 Plug the dLAN 550 duo+ into a free electrical outlet.



Additional network devices that are connected via a multiple socket are connected to the mains power supply by plugging the multiple socket into the integrated electrical socket of the dLAN 550 duo+.

- 3 Once you have connected at least two dLAN adapters as described above, your dLAN network has been set up. To secure your dLAN network, continue with the configuration as described in chapter **4 dLAN network**.

3.5 Installation of devolo software

Installing devolo Cockpit software

devolo Cockpit finds all accessible dLAN adapters in your dLAN network, displays information about these devices and encrypts your dLAN network individually. You can use the software to navigate to the integrated web interface.

Operating systems supported by devolo Cockpit (Version 5.0 or later):

- from Windows 7 (32-bit/64-bit) or later,
- from Ubuntu 13.10 (32-bit/64-bit),

- from Mac (OS X 10.9)



You can find the product manual, software and additional information on devolo Cockpit online at www.devolo.global/devolo-cockpit.

Downloading the devolo Home Network App

The devolo Home Network App is devolo's **free app** also for checking and configuring WiFi, PLC and LAN connections for the dLAN adapter (using a smartphone or tablet). The smartphone or tablet connects to the dLAN adapter at home over Wi-Fi.

- 1 Download the devolo Home Network App to your smartphone or tablet computer from the corresponding store.
- 2 The devolo Home Network App is placed in your smartphone's or tablet's app list as usual. Tapping on the devolo Home Network App icon brings you to the start menu.



You can find more information about the devolo Home Network App online at www.devolo.global/home-network-app.

4 dLAN network

4.1 Security in the dLAN

Before you can use the dLAN 550 duo+ in your dLAN network, first you have to connect it to other dLAN devices as a home network. Two specific pieces of information are especially important for this:

- Shared use of a dLAN password results in a delimited dLAN network.
- Shared use of the dLAN password serves as access control to the dLAN network as well as the encryption, and thereby the interception protection, of the transmitted data.

The dLAN password can be set in different ways:

- Automatically using the **encryption button** (see **4.2 dLAN network encryption at the touch of a button**)
- Manually using the **devolo Cockpit** program (see **3.5 Installation of devolo software**).

4.2 dLAN network encryption at the touch of a button

To encrypt a dLAN network, in which all associated devices are equipped with an encryption button, simply press the encryption button that is located on the device. Pressing this button will encrypt your dLAN network with a randomly generated password.



Fig. 5

i Adapters cannot be configured while in Standby mode.

The following section contains exact instructions on the basis of possible network scenarios:

Encrypting a new dLAN network consisting of two adapters

Once both adapters have been successfully connected, press each encryption button for 1 second within two minutes of one another.



Your dLAN network is now protected against unauthorized access.

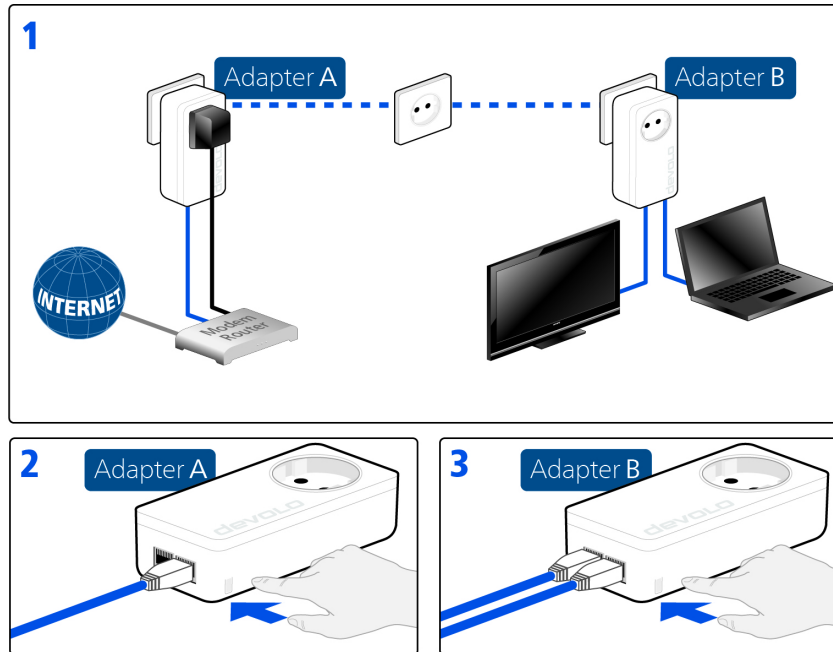


Fig. 6

Expanding an existing dLAN network with a new dLAN 550 duo+

If you have already secured your existing dLAN network using the encryption button, use the same method to integrate other adapters. Once you have successfully connected the new dLAN 550 duo+, first press the encryption button of one of your network's existing adapters (1 second), then press the encryption button of your

new dLAN 550 duo+ (1 second) within two minutes.



The new dLAN 550 duo+ is now integrated in your network. To integrate additional dLAN adapters in your network, repeat the above steps.

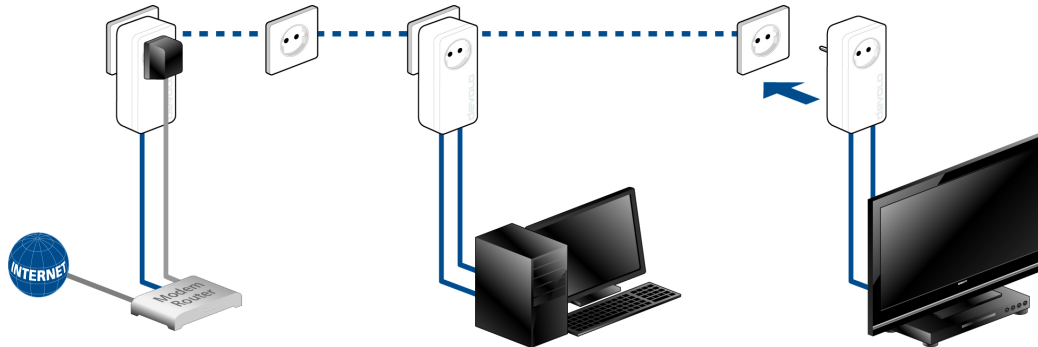


Fig. 7

Excluding a dLAN 550 duo+ from your network

To exclude a dLAN 550 duo+ adapter from an existing network, press its encryption button **for at least ten seconds**. The device will be assigned a new randomly generated password and will thus

no longer be able to access the network. To integrate the adapter in a different dLAN network, follow the steps described above, depending on whether you are setting up a new network or adding the adapter to an existing one.

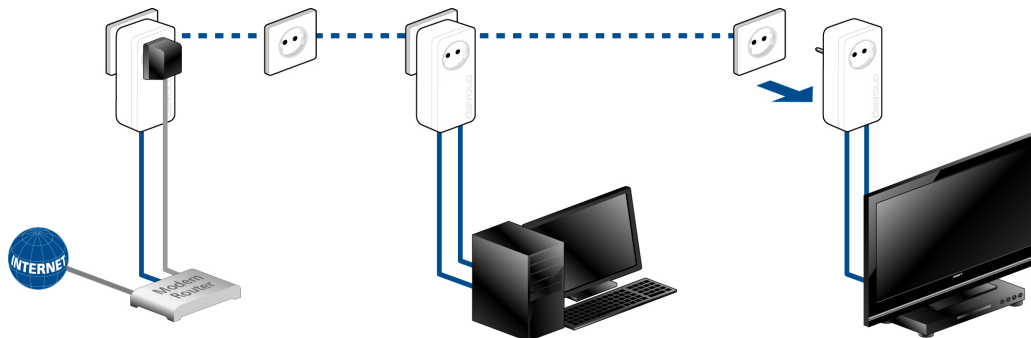


Fig. 8

5 Appendix

5.1 Bandwidth optimization

To significantly improve the transmission capacity of the network, we recommend that you comply with the following "connection rules":

- Plug the device directly into a wall socket. Avoid multiple sockets.
- You should connect all additional network devices that are connected to a multiple socket to the mains power supply via the electrical socket integrated into the dLAN 550 duo+.
- To take full advantage of the **filter function** of the dLAN 550 duo+ and to improve data transmission in the network, **always** plug the multiple socket into the **electrical socket** of the dLAN 550 duo+.

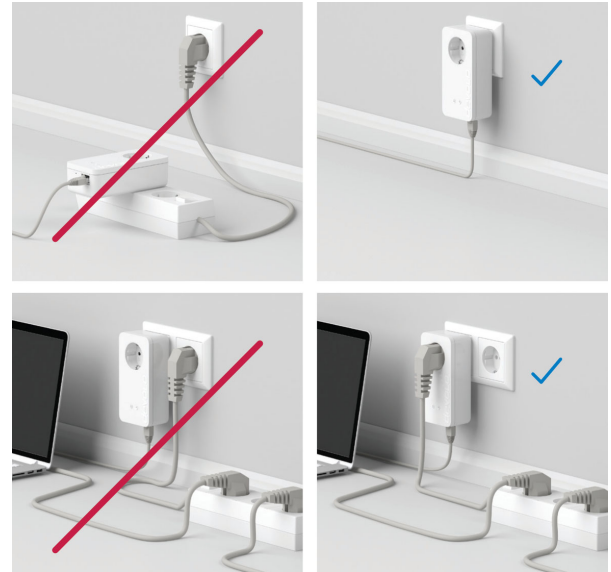


Fig. 9: Bandwith optimization

5.2 Disposal of old devices

To be used in the countries of the European Union and other countries with a separate collecting system:



The icon with crossed-out waste-basket on the device means that this product is an electrical or electronic device that falls within the scope of application of the WEEE Directive. These types of devices may no longer be disposed of with household waste. Rather they can be given to a municipal collection point free of charge. Contact your municipal government to find out the address and hours of the nearest collection point.

5.3 Warranty conditions

If your devolo device is found to be defective during initial installation or within the warranty period, please contact the vendor who sold you the product. The vendor will take care of the repair or warranty claim for you. The complete warranty conditions can be found at www.devolo.global/support.

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