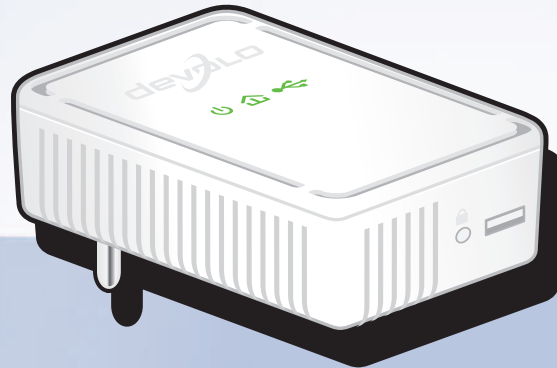
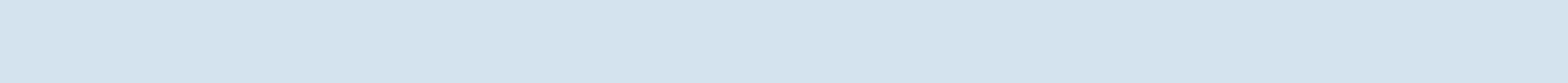




dLAN[®] 200 AV USB extender



devolo dLAN[®] 200 AV USB extender



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1 Preface

The dLAN 200 AV USB extender makes it easy to share the use of USB devices intelligently, as this adapter is the first product to enable terminal devices with USB connection to be connected via the powerline. The dLAN 200 AV USB extender is the ideal solution if USB cables are simply not long enough – dLAN works up to 300 metres. Every power outlet in the house becomes a USB port. It is as easy as child's play to connect USB products such as hard drives or (multifunctional) printers to the dLAN 200 AV USB extender. This saves space and money: one printer is enough for the whole family, and the USB hard drive with music, photos, movies and documents becomes the centralised data store for all.

To ensure high security of your home network, the dLAN 200 AV USB extender has an encryption button. This ensures an encrypted connection to the network at the touch of a button.

1.1 About this manual

After a brief introduction to the subject of "dLAN" as well as illustrations of sample applications in **chapter 2**, **chapter 3** shows you how to operate the dLAN 200 AV USB extender successfully. **Chapter 4**

explains how to configure your dLAN network and how to operate the dLAN 200 AV USB extender. Information about product safety and environmental compatibility of the device and our warranty terms can be found in **chapter 5** and conclude the manual.

Description of the symbols

Here we briefly describe the meaning of the symbols used in this manual.



Very important note. Failure to observe this note may result in damage.



Important note that should be observed.



Additional information, background material and configuration tips for your device.

If you have any further ideas or suggestions related to our products, we would be delighted to hear from you at support@devolo.com!

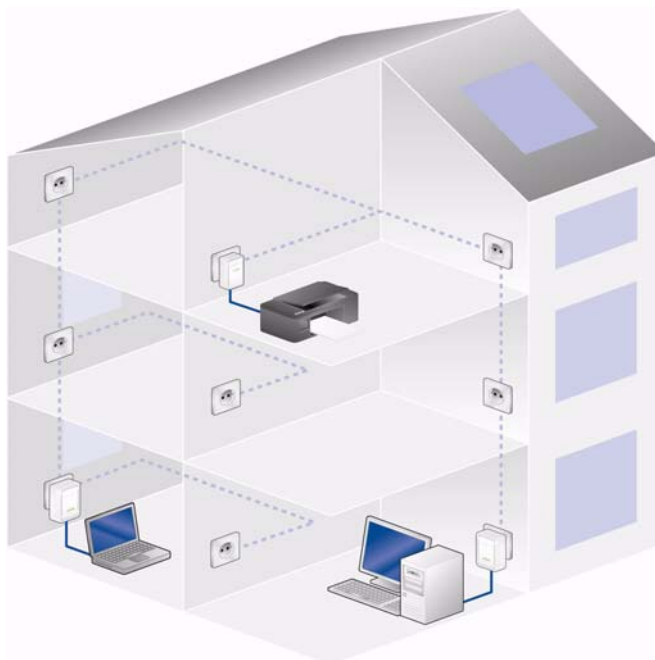
devolo on the Internet

For detailed information on our products, visit www.devolo.com. The **Service centre** area not only contains product descriptions and documentation, but also updates of devolo software and your device's firmware.

2 Introduction

dLAN is an intelligent, secure technology that lets you set up a home network easily, quickly and economically via your household electrical wiring, without the need for complex and expensive dedicated cabling.

The available performance and effort required for the installation also compares favourably to traditional methods—dLAN technology now attains speeds you would expect from other LAN technologies, and installing it is a breeze!



2.1 What exactly is dLAN?

dLAN (**d**irect **L**ocal **A**rea **N**etwork) 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 easy interception by third parties.

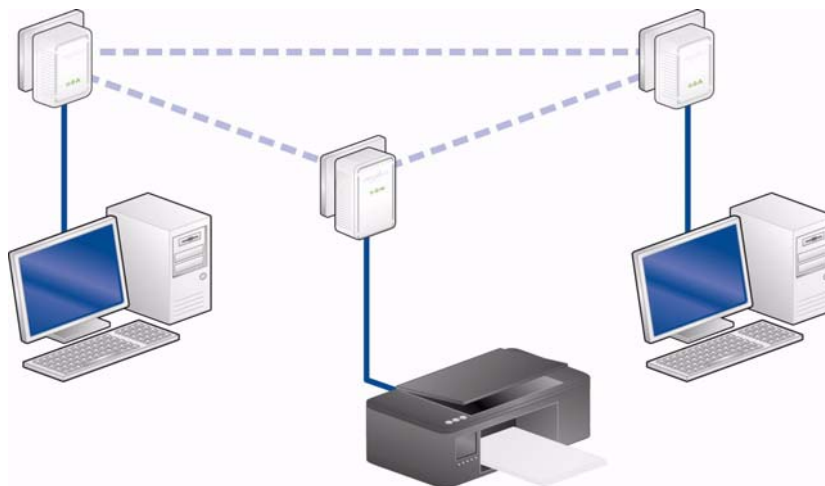
- Works with USB devices such as (multifunctional) printers or hard drives
- Easy installation and integration into any dLAN 200 AV home network
- Encryption at the touch of a button directly on the adapter—for a fast and secure connection
- "Device sharing" in the dLAN 200 AV home network saves procurement costs
- Easy monitoring and configuration of the dLAN 200 AV home network via the intuitive dLAN Cockpit software

2.2 Highlights of the dLAN 200 AV USB extender

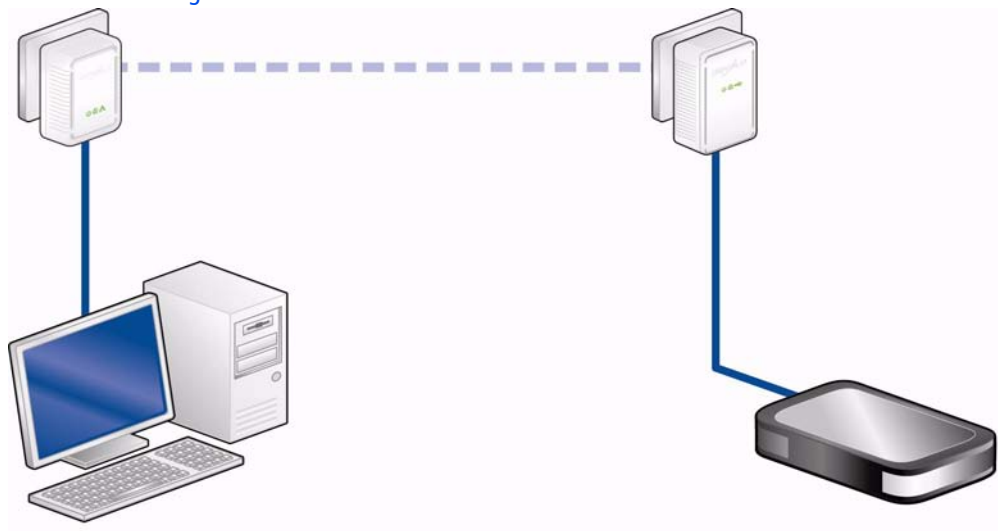
- For the first time, you can connect and control USB devices via the powerline; dLAN uses the powerline as if it were a long USB cable—up to a length of 300 metres
- Versatile placement of devices in the household. Independent of cable lengths. The printer is now placed where it should be, not where the USB cable ends.
- Store music, photos and videos on a USB hard drive and retrieve them from everywhere in the home.

2.3 Sample applications

Access to a printer



Central data storage on an external USB hard drive



3 Initial use

This chapter covers everything you need to know to set up your dLAN 200 AV USB extender. It will explain connecting the dLAN 200 AV USB extender and its functions. We will also briefly introduce the included devolo software and then guide you through its installation.



3.1 Package contents

Please ensure that the delivery is complete before beginning with the installation of your dLAN 200 AV USB extender.

● **Single Kit:**

- dLAN 200 AV USB extender
- Hard copy of installation guide
- CD containing software and online documentation

or

● **Starter Kit:**

- dLAN 200 AV USB extender
- dLAN 200 AVmini
- Network cable
- Hard copy of installation guide
- CD containing software and online documentation

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

3.2 System requirements

- **Operating systems:** Windows XP (32-bit), Windows Vista Home Premium (32-bit/64-bit), Win-

dows 7 Home Premium (32-bit/64-bit) and all operating systems with network support

- **Network connection**



To set up a dLAN 200 AV network using additional devolo dLAN 200 AV adapters, your PC or the respective device must have a network card or a network adapter with a network port.

- **USB port**

The dLAN 200 AV USB extender is intended for connection to USB devices such as (multifunctional) printers or hard drives.



The adapter only ever supports one USB device.

3.3 Functions

The dLAN 200 AV USB extender has three control lamps (LEDs) as well as a USB port and the encryption button.



Power

Flashes **green** during start-up of the dLAN 200 AV USB extender; lights up **green** when the dLAN 200 AV USB extender is ready for operation.



dLAN

Lights up **green** when there is a dLAN connection; flashes during data transfer.



USB

Lights up **green** when there is a connection to the USB device; flashes during data transfer.

USB connection

This is where you connect the dLAN 200 AV USB extender to a USB device using a USB cable.

Encryption button

Network encryption at the touch of a button; for a functional description of the encryption button, please continue reading in chapter **4.2.2 Encrypting a network at the touch of a button**.

3.4 Software installation

3.4.1 Software for Windows

Use the installation wizard to install the devolo software **dLAN Cockpit** for using the dLAN 200 AV USB extender with the Windows operating system:

dLAN Cockpit finds all reachable dLAN adapters in your dLAN 200 AV network, displays information about these devices and encrypts your dLAN 200 AV network individually. In addition, you control access to the shared USB devices in your dLAN network using the dLAN Cockpit.

- ① To install the software, insert the included CD-ROM in the CD drive of your computer. If auto-play is installed on your computer, the installation will start automatically. Otherwise, open the folder with the Windows Explorer by right-clicking on **Start** (or the **Windows logo**) and selecting **Explorer** from the context menu. Double-click to start the installation wizard manually. Then select the option **Install dLAN 200 AV USB extender**.
- ② You can find the installed software applications in the **Start** ▾ **All Programs** ▾ **devolo** program group.



If not already detected by your operating system, install the relevant driver for your USB device in accordance with the respective manufacturer's instructions.

- ③ After you have successfully installed the complete software, continue by installing the dLAN 200 AV USB extender hardware. (see **3.5 Connecting the dLAN 200 AV USB extender**)

3.5 Connecting the dLAN 200 AV USB extender

This section describes how to connect your dLAN 200 AV USB extender to a USB device in your dLAN 200 AV network.



The dLAN 200 AV USB extender is intended for connection to devices such as (multifunctional) printers or hard drives. The adapter only ever supports one USB device.

- ① Connect the dLAN 200 AV USB extender to the USB device to be connected within your dLAN 200 AV network using a USB cable at the USB port.



- ② Plug the dLAN 200 AV USB extender into an available power outlet.



When connecting an external USB hard drive, delayed hardware detection may occur depending on the manufacturer, due to the automatic hard drive test. This may take a few minutes.

- ③ Once you have connected a dLAN 200 AV USB extender and another devolo dLAN 200 AV adapter, your dLAN 200 AV network has been set up.



You can find information on the respective devolo dLAN 200 AV adapter on our website www.devolo.com.

In chapter **4 dLAN network** you can find out

- how to **protect your dLAN 200 AV network individually** and
- how to control **access** to the USB devices connected via the dLAN 200 AV USB extender.

4 dLAN network

4.1 Security in the dLAN

Before you can use the dLAN 200 AV USB extender in your dLAN network, first you have to connect it to other dLAN 200 AV devices as a home network. Two specific pieces of information are especially important for this:

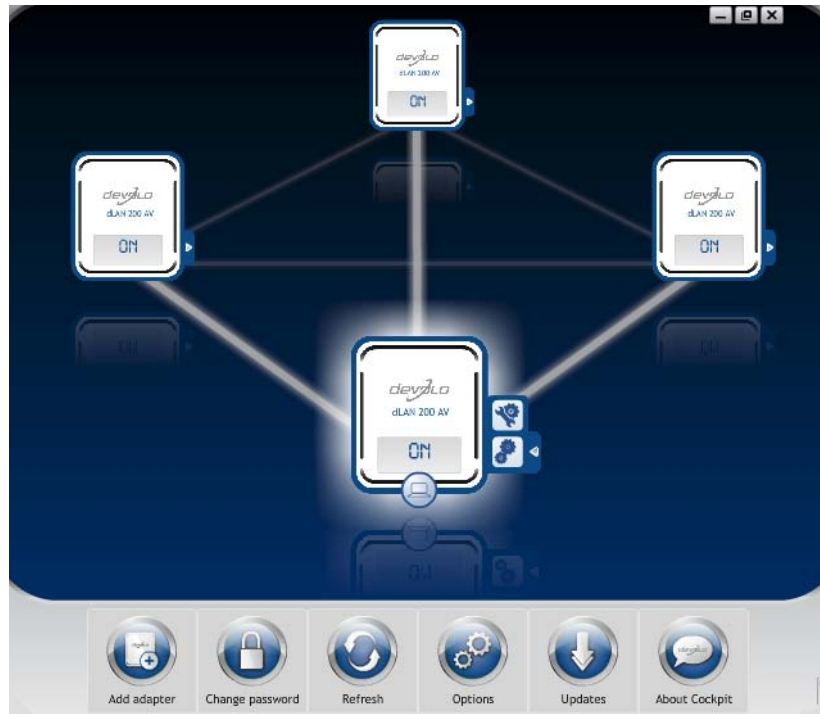
- Shared use of a dLAN password results in a delimited dLAN network.
- Shared use of the dLAN password serves as access control to the dLAN network as well as the encryption, and thereby the interception protection, of the transmitted data.

The dLAN password can be specified automatically via the **encryption button** or manually using the **dLAN Cockpit** program. Please note the following basic principle when choosing your encryption method:

- In dLAN 200 AV networks, data encryption is as **simple as touching a button**, since **all corresponding dLAN 200 AV devices are equipped with an encryption button**.
- For dLAN 200 AV networks that include devices **with and without encryption buttons**, data encryption must be set up using the **dLAN Cockpit**.

4.2 dLAN Cockpit

devolo **dLAN Cockpit** is a monitoring and encryption program that detects all reachable dLAN 200 AV devices in your home network and combines them in a secure network. Due to its logical graphic design, the dLAN Cockpit is easy and intuitive to operate. After installing the devolo software, it can be found in the **Start** ▾ **Programs** ▾ **devolo** program group.



After starting the dLAN Cockpit, all reachable dLAN devices in your home network will appear. This may take a moment.



All adapters found in the network appear with as adapter icon with a corresponding product name. The adapter in the middle of the dLAN network identified with the symbol shown here symbolises your locally connected device. If you have multiple dLAN devices connected locally, you can jump back and forth between them. Clicking an adapter icon with the mouse enables the corresponding dLAN 200 AV device and highlights it.

The coloured connecting lines of the adapters illustrate the current transmission quality:

- **Green:** the network connection is suitable for HD video streaming.
- **Orange:** the network connection is suitable for SD video streaming and online gaming.
- **Red:** the network connection is suitable for simple data transfer and Internet access.

If data transmission from one device to another is actually taking place, the data rate is displayed on the respectively highlighted adapter.

Settings and functions

You can configure settings for the respectively highlighted device or for the network

- via the buttons at the bottom edge of the screen
- or via tabs arranged at the side of each adapter.

You can always use the **Refresh** button to display the current status of devices that have been found (if this hasn't happened automatically).

By means of the **Options** button or the corresponding tabs of the respective adapter, you can learn device information such as the firmware version used and the individual MAC address.

Options are given like assigning an **additional name**, resetting the respective device to the **factory default settings** or **removing a device** from the existing dLAN network.



The above-mentioned setting options vary depending on the function and features of your device.

You can also specify whether information on the performance of your dLAN adapters will be transferred to devolo.



The data sent to devolo pertains only to the performance values of your dLAN devices. The data is anonymised and will be used exclusively for statistical purposes. By providing it, you can help us improve our products.

The **Troubleshooting Guide** includes installation instructions and information about how to connect your devices optimally with one another.

4.2.1 Encrypting a network with dLAN Cockpit

If you use dLAN 200 AV devices **without an encryption button**, data can be encrypted only via **dLAN Cockpit**.



Before the networking procedure, note the security IDs of all dLAN 200 AV adapters. This unique identifier of each dLAN device is located on the label on the housing. It consists of 4 x 4 letters separated by dashes (e.g. ANJR-KMOR-KSHT-QRUV). Ensure that all dLAN adapters are connected to the power grid and computers or other network components as appropriate.

Scan for local adapter

After dLAN Cockpit is started, it searches for the dLAN adapter connected directly to your computer first.

Adding an adapter

Add all the dLAN devices you want to your dLAN network by selecting the **Add adapter** button. You will need the **16**-character security IDs of the adapters

from the label on the housing. Enter it now in the **Security ID** field and confirm with **OK**. If a security ID is correct and the device can be reached in the dLAN network, it will be added to your network of configured adapters and also displayed in the program.

Entering a network password

After you have added all the dLAN devices you want to your dLAN network, select the **Change password** button to assign a shared network password that will apply for all registered adapters in your personal home network.

You can choose between your own password, a random password and the default password. To define your own password with a length of at least eight characters, enter this into the **Network password** (min. 8 characters) text field. Alternatively, you can have a randomly selected, highly secure password assigned using the **Generate secure password** button. Use the **Factory default password** button to reset the dLAN adapter to the default password. Normally, the display of the password is hidden for security reasons. If you enable the option **Show characters**, the current password is displayed in legible form in the text field.

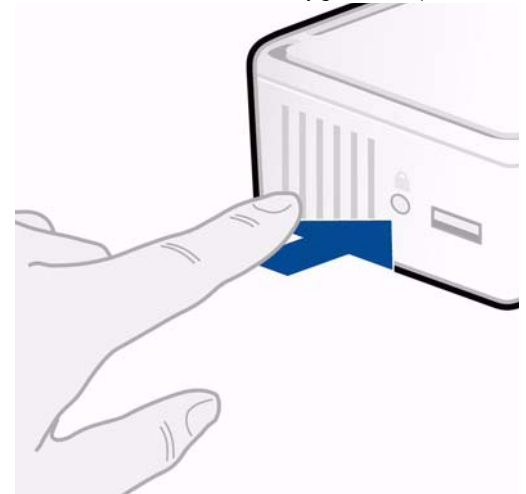


The factory default password is HomePlugAV. Assigning a specific password to a single adapter will exclude it from the remaining dLAN network.

If **dLAN Cockpit** is called up again later after a successful initial installation, for example to **integrate a new adapter** into a network, the application remembers the devices that were entered earlier. Enter the new device as described in the **Adding an adapter** section. The **current network password** is assigned **automatically** to the newly added device.

4.2.2 Encrypting a network at the touch of a button

To encrypt a dLAN 200 AV 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 200 AV network with a randomly generated password.

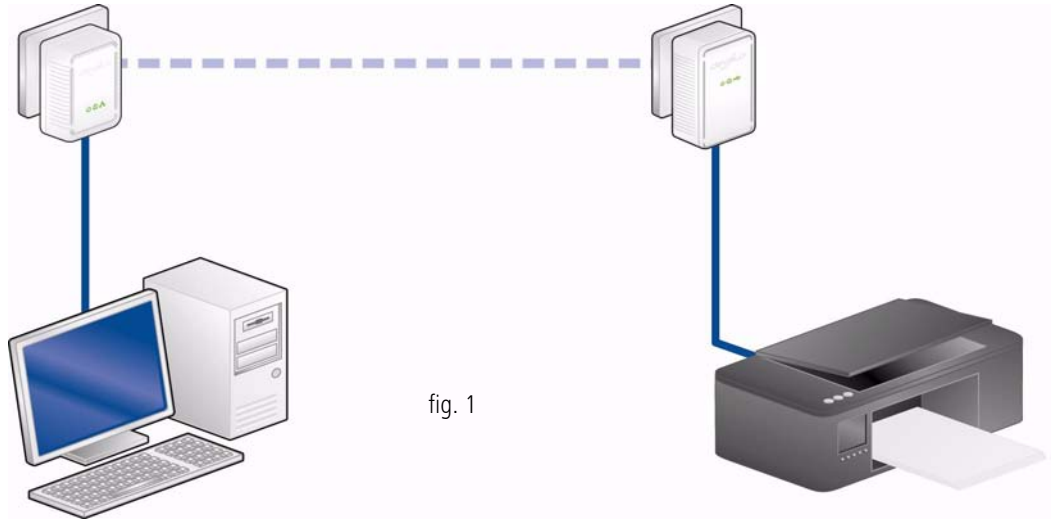


The following section contains exact instructions on the basis of possible network scenarios:

Encrypting a new network with a dLAN 200 AV USB extender and a devolo dLAN 200 AV adapter (Fig. 1)

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

That's it! Your dLAN 200 AV network is now protected against unauthorised access.



Expanding an existing dLAN 200 AV network by adding a new dLAN 200 AV USB extender (Fig. 2)

If you have already secured your existing dLAN 200 AV network using the encryption button, use the same method to integrate further adapters. Once you have successfully connected the new dLAN 200 AV USB extender, first press the encryption button (approx. **one second**) of one of your network's

existing adapters, then press the encryption button (approx. **one second**) of your new dLAN 200 AV USB extender **within two minutes**.

That's it! The new dLAN 200 AV USB extender is now integrated in your network. To integrate additional adapters in your network, repeat the above steps.

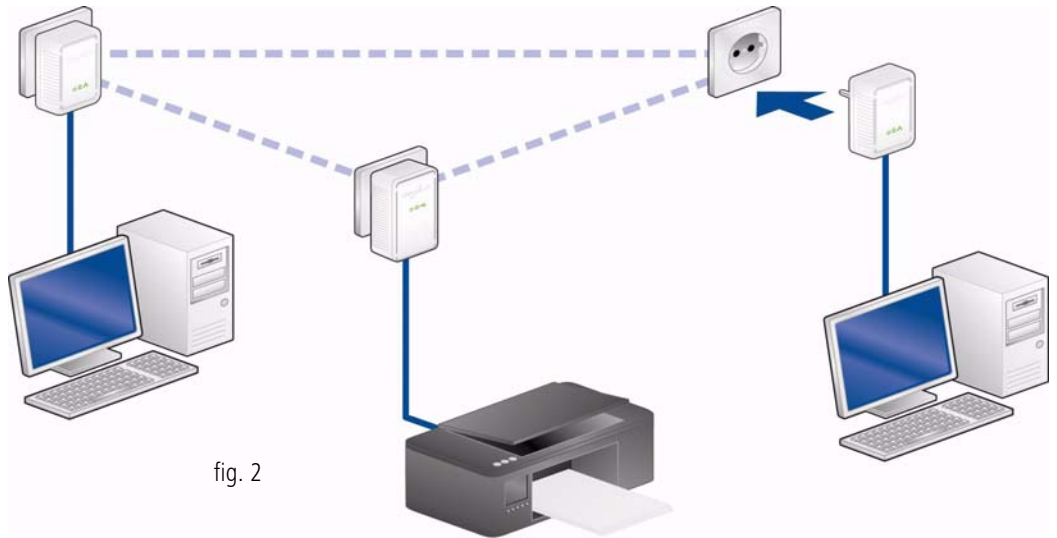


fig. 2

Removing a dLAN 200 AV USB extender from a network (Fig. 3)

To remove a dLAN 200 AV USB extender adapter from an existing network, press its encryption button for **at least 10 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 device into a different dLAN 200 AV network, follow the steps described above, depending on whether you are setting up a new network or adding the adapter to an existing one.

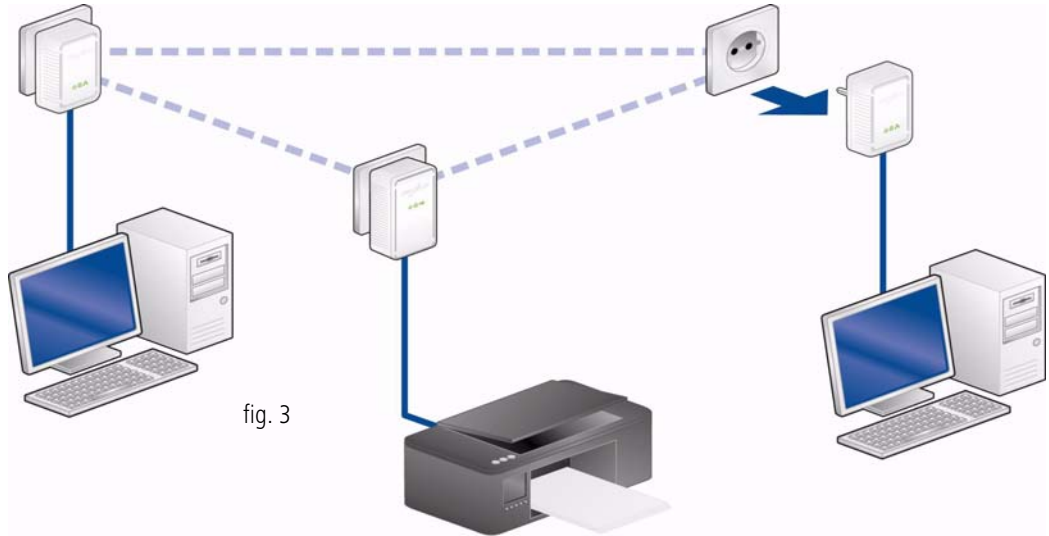


fig. 3

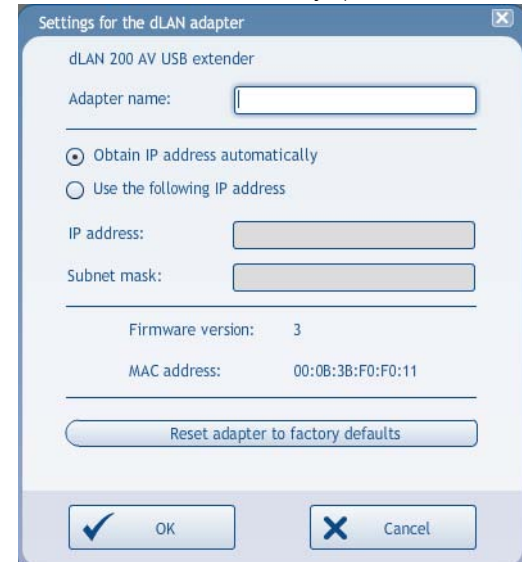
4.3 dLAN Cockpit and dLAN 200 AV USB extender

Using the dLAN Cockpit you can control access to the dLAN 200 AV USB extender and thus to the connected USB device. After the installation, the dLAN Cockpit can be found in the **Start** ▾ **Programs** ▾ **devolo** program group.

4.3.1 Settings and functions

Click on the **Options** button or tab page to find information on **IP address assignment**. The dLAN 200 AV USB extender communicates via the TCP/IP protocol as a component of your home network. The IP address required for this can either be entered manually as a static address or obtained **automatical-**

ly from a **DHCP server**. In the delivery status, the **Otain IP address automatically** option is activated.



If a DHCP server is already available in the network for assignment of IP addresses (e.g. a PC), you should leave the **Obtain IP address automatically** option activated so that the dLAN 200 AV USB extender automatically receives and is found an address by this server.



When assigning fixed IP addresses, please note that they must be in the same IP address range, since you will otherwise exclude devices from your dLAN network (unintentionally).

4.3.2 Highlights of the dLAN 200 AV USB extender

dLAN Cockpit only ever displays the symbols for possible actions which can be performed logically as a result of the current connection status. The statuses of a dLAN 200 AV USB extender are described below.

[The dLAN 200 AV USB extender is free.](#)

The device connected to the dLAN 200 AV USB extender is currently being used by **no subscribers** in the dLAN network. This status is illustrated by the **blue USB symbol** in the top left-hand corner of the dLAN 200 AV USB extender.





Click on the **Connect USB device** tab page to access the dLAN 200 AV USB extender directly. The **green USB symbol** in the top left-hand corner of the dLAN 200 AV USB extender **signals** the now **existing connection** to the USB device.



The dLAN 200 AV USB extender is occupied by your own PC and is released for use.



To release the dLAN 200 AV USB extender for use by the other subscribers in the dLAN network, click on the **Disconnect USB device** tab page. The **blue USB symbol** in the top left-hand corner of the

dLAN 200 AV USB extender **now signals** that the USB device has been released.



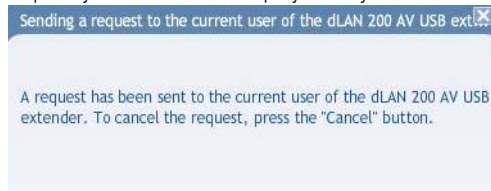


The dLAN 200 AV USB extender is already occupied by another computer in the network.

The dLAN 200 AV USB extender is currently being used by another subscriber in the dLAN network. The **red USB symbol** in the top left-hand corner of the dLAN 200 AV USB extender **signals** this **occupied connection** to the USB device.



Request another user to release the USB device by clicking on the **Take over USB device** tab page. The request you have sent is displayed on your screen:



The other user now has the opportunity to accept or decline your request:



- If the other **user accepts** your request, you will automatically be connected with the dLAN 200 AV USB extender. The **green USB symbol** in the top left-hand corner of the dLAN 200 AV USB extender **signals** the now **existing connection** to the USB device.



- If the other **user** declines your request, you will receive a negative message on your PC.



- If the other **user** does **not respond** to your request, you can cancel your request prematurely or it will be cancelled automatically after 2 minutes.



5 Appendix



For the permitted voltage range for operating the device and the power consumption, refer to the label on the rear side of the device.



For the CE declaration for this product, refer to the accompanying product CD under CE. Additional technical information is available at www.devolo.com.

5.1 Important safety instructions

All safety and operating instructions should be read and understood before using the device, and should be kept for future reference.

- Never open the device. There are no user-serviceable parts inside the device.



Do not try to service this product yourself! Contact qualified technicians each and every time your device needs maintenance. There is a risk of electric shock!

- Use the device in a dry location only.
- Do not insert any objects into the openings of the device.

- To disconnect the device from the power supply grid, pull the power plug.
- Do not keep the device in direct sunlight.
- Slots and openings on the case serve as ventilation. Never block or cover them.
- Never set up the device near a heater or radiator.
- The device should be located only where sufficient ventilation can be ensured.
- Disconnect the device from the power supply grid before cleaning. Use a moist towel to clean the device. Never use water, paint thinner, benzene, alcohol or other strong cleaning agents when cleaning the device, as these could damage the case.
- Never use the device with a power supply that does not meet the specifications provided on the rating plate. If you do not know what type of power supply you have at home, contact your dealer or energy supplier.
- In the event of damage, disconnect the device from the power supply grid and contact customer service. This applies, for example, if
 - the power cable or plug is damaged.
 - liquid has been spilled on the device or objects have fallen into the device.
 - the device has been exposed to rain or water.



- the device does not work, even though the operating instructions have been followed properly.
- the device's case is damaged.

5.2 Disposal of old devices

The icon with crossed-out wastebasket on the device means that this adapter is an electrical or electronic device that falls within the scope of application of the German Electrical and Electronic Equipment Act. Since 24 March 2006, these types of devices may no longer be disposed of with household waste. Rather, in Germany, 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

The devolo AG warranty is given to purchasers of devolo products in addition to the warranty conditions provided by law and in accordance with the following conditions:

1 Warranty coverage

- a) The warranty covers the equipment delivered and all its parts. Parts will, at devolo's sole discretion, be replaced or repaired free of charge if, despite proven proper handling and adherence to the operating instructions, these parts became defective due to fabrication and/or material defects. Alternatively, devolo reserves the right to replace the defective product with a comparable product with the same specifications and features. Operating manuals and possibly supplied software are excluded from the warranty.
- b) Material and service charges shall be covered by devolo, but not shipping and handling costs involved in transport from the buyer to the service station and/or to devolo.
- c) Replaced parts become property of devolo.
- d) devolo is authorized to carry out technical changes (e.g. firmware updates) beyond repair and replacement of defective parts in order to bring the equipment up to the current technical state. This does not result in any additional charge for the customer. A legal claim to this service does not exist.

2 Warranty period

The warranty period for this devolo product is three years. This period begins at the day of delivery from the devolo dealer. Warranty services carried out by devolo do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with the warranty period of the device as a whole.

3 Warranty procedure

- a) If defects appear during the warranty period, the warranty claims must be made immediately, at the latest within a period of 7 days.
- b) In the case of any externally visible damage arising from transport (e.g. damage to the housing), the person carrying out the transportation and the sender should be informed immediately. On discovery of damage which is not externally visible, the transport company and the sender are to be immediately informed in writing, at the latest within 3 days of delivery.
- c) Transport to and from the location where the warranty claim is accepted and/or the repaired device is exchanged, is at the purchaser's own risk and cost.
- d) Warranty claims are only valid if a copy of the original purchase receipt is returned with the device. devolo reserves the right to require the submission of the original purchase receipt.

4 Suspension of the warranty

All warranty claims will be deemed invalid

- a) if the label with the serial number has been removed from the device,
- b) if the device is damaged or destroyed as a result of acts of nature or by environmental influences (moisture, electric shock, dust, etc.),
- c) if the device was stored or operated under conditions not in compliance with the technical specifications,
- d) if the damage occurred due to incorrect handling, especially to non-observance of the system description and the operating instructions,
- e) if the device was opened, repaired or modified by persons not contracted by devolo,
- f) if the device shows any kind of mechanical damage, or
- g) if the warranty claim has not been reported in accordance with 3a) or 3b).

5 Operating mistakes

If it becomes apparent that the reported malfunction of the device has been caused by unsuitable hardware, software, installation or operation, devolo reserves the right to charge the purchaser for the resulting testing costs.

6 Additional regulations

The above conditions define the complete scope of devolo's legal liability.

- a) The warranty gives no entitlement to additional claims, such as any refund in full or in part. Compensation claims, regardless of the legal basis, are excluded. This does not apply if e.g. injury to persons or damage to private property are specifically covered by the product liability law, or in cases of intentional act or culpable negligence.
- b) Claims for compensation of lost profits, indirect or consequential detriments, are excluded.
- c) devolo is not liable for lost data or retrieval of lost data in cases of slight and ordinary negligence.
- d) In the case that the intentional or culpable negligence of devolo employees has caused a loss of data, devolo will be liable for those costs typical to the recovery of data where periodic security data back-ups have been made.
- e) The warranty is valid only for the first purchaser and is not transferable.
- f) The court of jurisdiction is located in Aachen, Germany in the case that the purchaser is a merchant. If the purchaser does not have a court of jurisdiction in the Federal Republic of Germany or if he moves his domicile out of Germany after conclusion of the contract, devolo's court of jurisdiction applies. This is also applicable if the purchaser's domicile is not known at the time of institution of proceedings.
- g) The law of the Federal Republic of Germany is applicable. The UN commercial law does not apply to dealings between devolo and the purchaser.

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