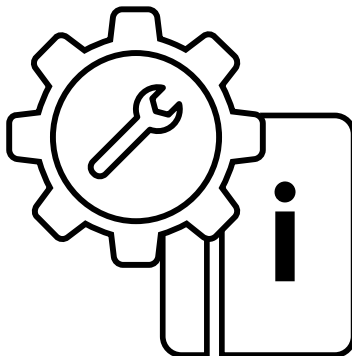


Installation Guide
LCOS devices



Copyright

© 2022 LANCOM Systems GmbH, Wuerselen (Germany). All rights reserved. While the information in this manual has been compiled with great care, it may not be deemed an assurance of product characteristics. LANCOM Systems shall be liable only to the degree specified in the terms of sale and delivery. The reproduction and distribution of the documentation and software supplied with this product and the use of its contents is subject to written authorization from LANCOM Systems. We reserve the right to make any alterations that arise as the result of technical development.

Windows® and Microsoft® are registered trademarks of Microsoft, Corp. LANCOM, LANCOM Systems, LCOS, LANcommunity and Hyper Integration are registered trademarks. All other names or descriptions used may be trademarks or registered trademarks of their owners. This document contains statements relating to future products and their attributes. LANCOM Systems reserves the right to change these without notice. No liability for technical errors and / or omissions.

Products from LANCOM Systems include software developed by the “OpenSSL Project” for use in the “OpenSSL Toolkit” (www.openssl.org).

Products from LANCOM Systems include cryptographic software written by Eric Young (eyay@cryptsoft.com).

Products from LANCOM Systems include software developed by the NetBSD Foundation, Inc. and its contributors.

Products from LANCOM Systems contain the LZMA SDK developed by Igor Pavlov.

The product contains separate components which, as so-called open source software, are subject to their own licenses, in particular the General Public License (GPL). If required by the respective license, source files for the affected software components are made available on request. To do this, please send an e-mail to gpl@lancom.de.

LANCOM Systems GmbH
Adenauerstr. 20/B2
52146 Wuerselen, Germany
www.lancom-systems.com
Wuerselen, 08/2022

Introduction

Thank you for purchasing an LCOS-based LANCOM device. This installation guide describes how to put your LANCOM device into operation and its initial setup.

Installation includes:

- Positioning and mounting
- Safety advice

The initial setup includes:

- Configuration via LANconfig

LANconfig is the free-of-charge and user-friendly software for the configuration of LANCOM devices on Microsoft Windows. LANconfig has a huge spectrum of applications, from the user-friendly commissioning of a single device with installation wizards to the comprehensive management of large-scale installations.

You can find the download free of charge on our website:

www.lancom-systems.com/downloads/

- Configuration via WEBconfig

WEBconfig is the browser-based configuration user interface that is available on the LANCOM device and can be used on any operating system.

- Configuration via the LANCOM Management Cloud

The LANCOM Management Cloud is the management system that intelligently organizes, optimizes, and controls your entire network architecture. (licence and working Internet access required)

You can find out more about the LANCOM Management Cloud at:

www.lancom-systems.com/lmc/

The document continues with further information about operating the device, the documentation, and LANCOM Service & Support.

Safety instructions and intended use



In order to avoid harming yourself, third parties or your equipment when installing your LANCOM device, please observe the following safety instructions. Operate the device only as described in the accompanying documentation. Pay particular attention to all warnings and safety instructions. Use only those third-party devices and components that are recommended or approved by LANCOM Systems.

Before commissioning the device, be sure to study the Quick Reference Guide supplied with the hardware. These can also be downloaded from the LANCOM website (www.lancom-systems.com).

Any warranty and liability claims against LANCOM Systems are excluded following any usage other than that described below.

Environment

LANCOM devices should only be operated when the following environmental requirements are met:

- Ensure that you comply with the temperature and humidity ranges specified in the Quick Reference Guide for the LANCOM device.
- Do not expose the device to direct sunlight.
- Ensure that there is adequate air circulation and do not obstruct the ventilation slots.
- Do not cover devices or stack them on top of one another
- The device must be mounted so that it is freely accessible (for example, it should be accessible without the use of technical aids such as elevating platforms); a permanent installation (e.g. under plaster) is not permitted.
- Only outdoor equipment intended for this purpose is to be operated outdoors.

Power supply

Please observe the following before installation, as improper use can lead to personal injury and damage to property, as well as voiding the warranty:

- Use only the power adapter / IEC power cable mentioned in the Quick Reference Guide.
- Some models can be powered via the Ethernet cable (Power-over-Ethernet, PoE). Please observe the relevant instructions in the Quick Reference Guide for the device.
- Never operate damaged components.
- Turn the device on only if the housing is closed.
- The device must not be installed during thunderstorms and should be disconnected from the power supply during thunderstorms.
- In emergency situations (e.g. in the case of damage, ingress of liquids or objects, for example through the ventilation slots), the power supply must be disconnected immediately.
- Only operate the device with a professionally installed power supply at a nearby socket that is freely accessible at all times.

Applications

- The devices may only be used in accordance with the relevant national regulations and under consideration of the legal situation applicable there.
- The devices must not be used for the actuation, control, and data transmission of machinery that, in case of malfunction or failure, may present a danger to life and limb, nor for the operation of critical infrastructures.
- The devices with their respective software are not designed, intended or certified for use in: the operation of weapons, weapons systems, nuclear facilities, mass transportation, autonomous vehicles, aircraft, life support computers or equipment (including resuscitators and surgical implants), pollution control, hazardous materials management, or other hazardous applications where failure of the device or software could lead to a situation in which personal injury or death could result. The customer is aware that the use of the devices or software in such applications is entirely at the customer's risk.

General safety

- Under no circumstances should the device housing be opened and the device repaired without authorization. Any device with a case that has been opened is excluded from the warranty.
- The antennas are only to be attached or swapped out while the device is powered off. Mounting or demounting antennas while the device is powered on may cause the destruction of the radio module.
- Notes on the individual interfaces, switches, and displays on your device are available in the supplied Quick Reference Guide.
- Mounting, installation, and commissioning of the device may only be carried out by qualified personnel.

Initial setup

A LANCOM device can be configured conveniently by TCP/IP. The following configuration paths are available for this:

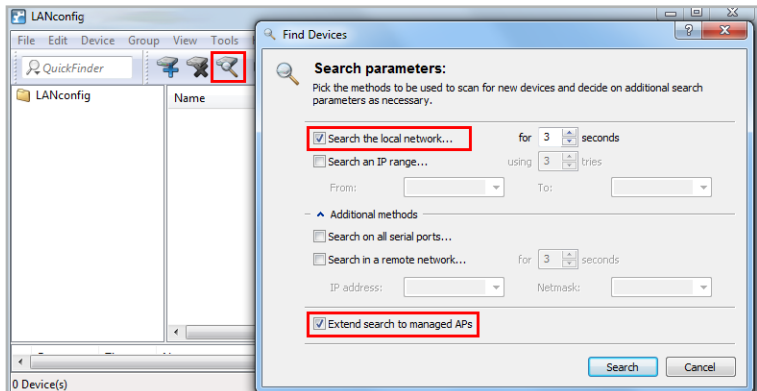
- LANconfig
- WEBconfig
- LANCOM Management Cloud



For devices with a serial interface, the configuration can be conducted with LANconfig or a terminal program.

Configuration via LANconfig

Unconfigured LANCOM devices in local networks (LAN) are detected automatically. It is very easy to search the LAN for new devices. Click the button **Search now**.



In the dialog box that follows, you further specify the settings for the device search.



If LANconfig does not find the device you should check the network connection and update the IP address of the configuration PC.



LANCOM access points start in managed mode and can only be detected by the search if the option **Extend search to managed APs** is selected.

The setup wizard for configuring the basic settings starts automatically after the new LANCOM device is added. This setup wizard configures basic parameters such as the master device password, device name, IP address, etc.

You continue with the device configuration, such as setting up Internet access or the WLAN, by means of the other setup wizards or directly with LANconfig.

Configuration via WEBconfig

Configuration via web browser is an easy and fast variant, since no additional software is required on the computer used for configuration.

For configuration via TCP/IP, the IP address of the device in the local network (LAN) is required. Following power-on, an unconfigured LANCOM device first checks whether a DHCP server is already active on the LAN.

Local network without DHCP server

If no DHCP server is available on the LAN, the LANCOM device switches on its own DHCP server and assigns an IP addresses, subnet mask and a DNS server to itself and any other devices on the LAN that are set up to obtain IP addresses automatically (auto-DHCP). In this situation, the device can be accessed from any computer with the auto-DHCP function enabled under the IP address **172.23.56.254**.

The given IP address can be modified at any time.

Local network with DHCP server

If the local network has a DHCP server that actively assigns the IP addresses, an unconfigured LANCOM device switches its own DHCP server off and goes into DHCP client mode. It obtains an IP address from the DHCP server on the LAN.

You can access your **unconfigured** device via web browser typing the URL `https://LANCOM-DDEEFF`. Replace the characters „DDEEFF“ with the last six characters of the device's MAC address, which you can find on its type label. As appropriate, attach the domain name of your local network (e.g. “.intern“). This procedure requires the DNS server in your network to be able to resolve the device's hostname which was announced by DHCP. When using a LANCOM device as DHCP- and DNS server this is the default case.

Configuration via the LANCOM Management Cloud

In order to configure a LANCOM device via the LANCOM Management Cloud (LMC), it must first be integrated into the LMC.



Integrating the device into the LMC requires the device to be connected to the Internet and able to reach cloud.lancom.de. If a router that is intended to provide Internet access is to be integrated into the LMC, the first step is to perform a basic configuration and to configure an Internet connection.

There are several different methods of integrating a LANCOM device into the LANCOM Management Cloud:

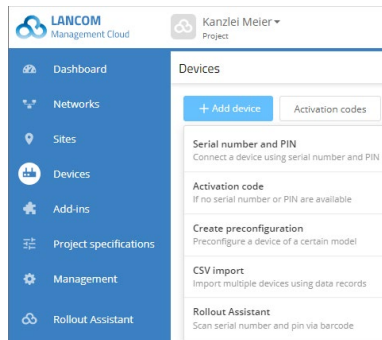
- Integration into the LANCOM Management Cloud by serial number and Cloud PIN
- Integration into the LMC by LMC Rollout Assistant
- Integration into the LANCOM Management Cloud by activation code

Integration into the LMC by serial number and Cloud PIN

You can easily add your new device to a project in the LANCOM Management Cloud (Public). You will need the serial number of the device and the associated Cloud PIN. You can find the serial number on the bottom of the device or in LANconfig or WEBconfig. The Cloud PIN can be found on the Cloud-ready flyer, supplied with the device.



In the LANCOM Management Cloud, open the **Devices** view and click **Add new device**, then select the desired method, here **Serial number and PIN**.



In the next window, enter the serial number and Cloud PIN of the device. Then confirm with the button **Add new device**.

Add new device

Please enter here the serial number and PIN of your LANCOM device. The serial number is located on the bottom side of the device. The PIN is printed on a sheet which is enclosed with the original box. You can use the printed LAN MAC address of the device on this sheet to identify the correct device if sheet and device have been separated.

Serial number

PIN

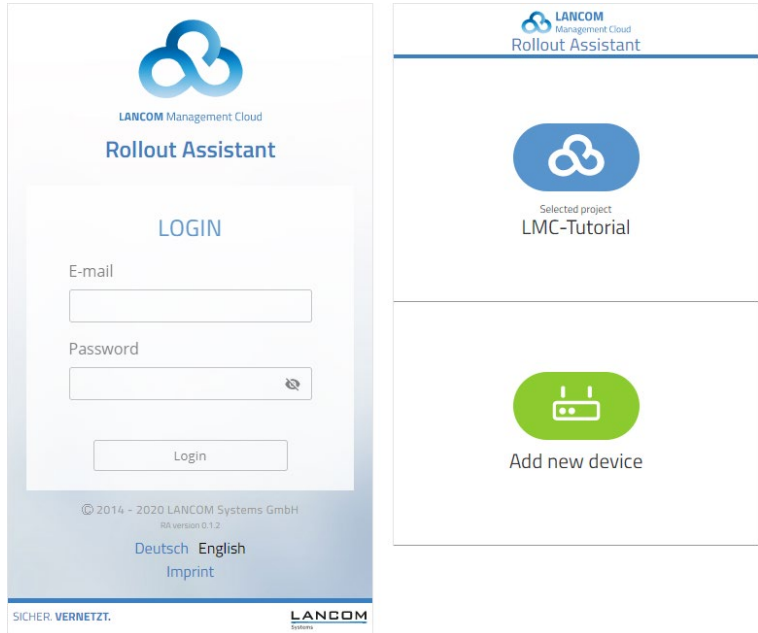
Assign a site to use its software-defined configuration on this device.

The next time the LANCOM device has contact with the LANCOM Management Cloud (Public), it will be paired automatically.

Integration into the LMC by LMC Rollout Assistant

The Rollout Assistant is a web application. It uses a device equipped with a camera and Internet access, such as a smartphone, tablet or notebook, to read the serial number and PIN. It offers an extremely easy way to connect the device to the LMC.

To start the Rollout Assistant, just enter the URL cloud.lancom.de/rollout into a browser. The Rollout Assistant opens with this login screen:



You select the desired language and login to the LMC using your credentials. On the next page, you select the project that new devices are added to. Do this by tapping the green button and scanning the serial number. The Rollout Assistant may request access to the camera on the device to do this. You scan the serial number either on the underside of the device or alternatively from the barcode on the packaging box. Otherwise, you can enter the serial number manually.

Next, scan the cloud PIN from the information sheet enclosed with the device. Here, too, you have the option of entering the PIN manually. Now you can select one of the locations available in the project, or optionally use **No location** to leave this item open. Bear in mind that the location is an important setting for the configuration by SDN (Software-defined Networking).

In the next step, you assign various properties to the device. You give the device a name, enter an address, and take a photo of the installation. The address can be determined with the GPS information from your device. In the final step, the information is displayed once again for checking. If you find any errors, simply go back and correct the corresponding entry.

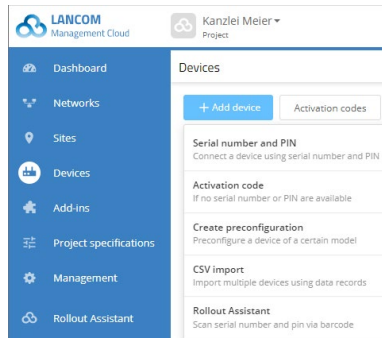
Click or tap **add device** to pair the device with the LMC. You will immediately see it in your project and can make other settings if necessary. As soon as you connect the device and it connects with the LMC, it is provisioned with an initial operating configuration based on the SDN settings, and the status changes to “online”.

Integration into the LMC by activation code

This method uses LANconfig and just a few steps to integrate one or more LANCOM devices simultaneously into the LANCOM Management Cloud.

Create an activation code

In the LANCOM Management Cloud, open the **Devices** view and click **Add new device**, then select the desired method, here **Activation code**.



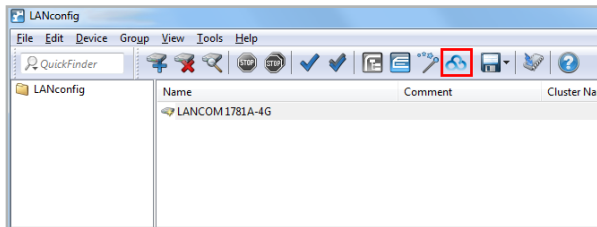
Create an activation code by following the instructions in the dialog. This activation code allows you to integrate the LANCOM device into this project at a later time.



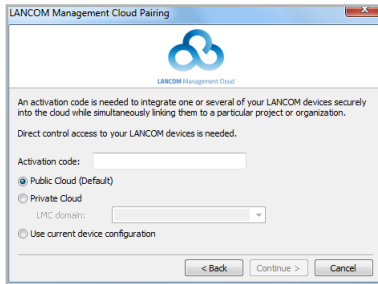
The **Activation code** button displays all of the activation codes for this project in the Devices view.

Using the activation code

Open LANconfig and select the desired device or devices and click the Cloud icon in the menu bar.



In the dialog window that opens, enter the activation code that you generated previously and click the button **OK**.



If you copied an activation code to the clipboard, it is automatically entered into the field.

Once the device is paired with the LANCOM Management Cloud, it is available in the project for further configuration.

Zero-touch & auto configuration

A LANCOM device in its factory settings will initially try to contact the LMC. If it succeeds, i.e. the device has Internet access, then the LMC can check whether the device is already assigned to a project. In this case, it rolls out the auto-configuration created by software-defined networking (SDN) to the device.

If the location has an upstream Internet router with an activated DHCP server, a gateway with a dedicated WAN Ethernet port, such as a LANCOM 1900EF, can be connected to this and automatically has access to the LMC. Another possibility here are the xDSL connections from certain providers that provide dial-in without authentication (BNG).

This eliminates the basic configuration and the router immediately receives the correct configuration. What this means is that you do not actually have to carry out any on-site configuration of the access points, switches and (if applicable) the router, i.e. "zero touch" for the administrator.

If necessary, switch off the automatic contact attempts to the LMC in LANconfig or WEBconfig under **Management > LMC**.

Further information

Resetting the device

It is possible to reset the device to its factory settings if you need to reconfigure the device irrespective of any existing settings, or if it is impossible to connect to the device.

The position of the reset button on your device is illustrated in the supplied Quick Reference Guide.

The reset button offers two basic functions—boot (restart) and reset (to the factory settings)—which are called by pressing the button for different lengths of time.

- Press for less than 5 seconds to reboot.
- Press for more than 5 seconds until all LEDs on the device light up for the first time to restart while deleting the user-defined configuration. Customer-specific default settings will be loaded if the device contains them, otherwise the LANCOM factory settings will be loaded.
- Press for more than 15 seconds until all LEDs on the device light up for the second time to restart while deleting the user-defined configuration. A rollout configuration will be loaded if the device contains one, otherwise the LANCOM factory settings will be loaded.



After resetting, the device starts completely unconfigured and all settings are lost. If possible be sure to backup the current device configuration before resetting.

Documentation

The full documentation for the LANCOM device consists of the following:

- This Installation Guide offers an easy introduction for readers with knowledge of installing network components and routers and who are familiar with the workings of the basic network protocols.
- The LCOS Reference Manual fully addresses issues concerning the LANCOM operating system LCOS for this and all other models.
- The LCOS Menu Reference describes all of the parameters of LCOS in full.
- The Quick Reference Guide details the main technical specifications for your device and the connectors it provides.

The full documentation and the latest firmware and software are available from the download area of the LANCOM website:

www.lancom-systems.com/publications/

Recycling notice

At the end of its useful life, this product should be properly disposed of in accordance with applicable electronic waste disposal regulations in your district, state and country.

LANCOM Service & Support

You have chosen a LANCOM or AirLancer product with highest reliability. If you still encounter a problem, you are in best hands! The most important information regarding our Service and Support is summarized below, just in case.

LANCOM Support

Installation Guide / Quick Reference Guide

If you encounter any problems when installing or operating your product, the included installation guide resp. quick reference guide may help you in many cases.

Support from reseller or distributor

You can contact your reseller or distributor for support:

www.lancom-systems.com/how-to-buy/

Online

The LANCOM Knowledge Base is always available via our website:

www.lancom-systems.com/knowledgebase/

In addition you can find explanations of all features of your LANCOM device in the LCOS reference manual:

www.lancom-systems.com/publications/

We offer free end-customer support for selected devices:

www.lancom-systems.com/supportrequest

Firmware

The latest LCOS firmwares, drivers, tools, and documentation can be downloaded free of charge from the download section on our website:

www.lancom-systems.com/downloads/

Partner support

Our partners get additional support access according to their partner level.

More information can be found on our website:

www.lancom-systems.com/mylancom/

LANCOM Service

Warranty

LANCOM Systems provides a voluntary manufacturer warranty on all products. For more information, please refer to the General Warranty Conditions at: www.lancom-systems.com/warranty-conditions

The warranty period depends on the device type:

- 2 years for all LANCOM unmanaged switches as well as accessories
- 3 years for all routers, gateways, Unified Firewalls, WLAN controllers, and access points
- 5 years for all LANCOM managed switches (except switches with Limited Lifetime Warranty)
- Limited Lifetime Warranty for switches (for suitable switches see www.lancom-systems.com/infopaper-llw)

Within the EU: To apply for warranty you need an RMA number (Return of Material Authorization). In this case please contact our support team. More information can be found under the following link: www.lancom-systems.com/repair/

Outside EU: Please contact your reseller or distributor.

Lifecycle

The LANCOM lifecycle applies to the support of products. For more information please visit the LANCOM website: www.lancom-systems.com/lifecycle/

Options for your individual requirements

LANCOM offers individually tailored value-added services according to your needs. Little money provides best protection for your investment. Warranty extensions for additional safeguarding for your devices: www.lancom-systems.com/warranty-options/

Individual support contracts and service vouchers for best possible support with guaranteed response times: www.lancom-systems.com/support-products/

Your LANCOM team

LANCOM Systems GmbH
Adenauerstr. 20/B2
52146 Würselen | Germany
info@lancom.de
www.lancom-systems.com