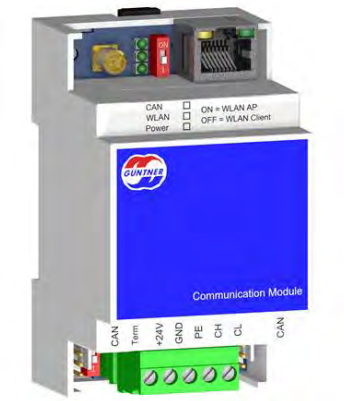
Operating instructions
GCM (W)LAN Rail.1



ERP no. 5206123

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1 General notes

1.1 Safety information

In order to prevent serious physical injuries or major material damage, work on or with the unit may be performed only by authorised persons with appropriate training and qualifications who are familiar with the setup, installation, commissioning and operation of . These persons must read the installation instructions carefully before the installation and commissioning. In addition to the instructions and national accident prevention regulations, all recognised technical rules (safety and professional work under UVV, VBG, VDE etc.) must be followed.

Repairs to the device may only be made by the manufacturer or a repair centre authorised by the manufacturer.

UNAUTHORISED AND IMPROPER INTERVENTIONS WILL INVALIDATE THE WARRANTY!

The applicable national accident prevention regulations must be followed when working on control units under voltage.

1.2 Use according to the intended purpose

The unit is intended only for the purposes agreed in the order confirmation. Any other application or use for any additional purpose, is not a proper intended use. The manufacturer accepts no liability for any injury or damage arising from unintended use. Use according to the intended purpose is also contingent on compliance with the installation, operating and maintenance procedures described in these instructions. The technical data and the details of the connection assignments can be found on the type plate and in the instructions, and must be complied with.

Electronic equipment is not fundamentally failsafe! The user must therefore ensure that his system reverts to a safe condition in the event of failure of the equipment. The manufacturer accepts no responsibility for any damage to life and limb or to material goods and assets in the event of failure to comply with this provision and in the event of improper use.

The electrical installation must be performed in accordance with the relevant regulations (e.g. cable cross-sections, fuses, earth conductor connections, etc.). Additional information is included in the documentation. If the control unit is used in a particular area of application, the required standards and regulations must be complied with.

1.3 Transport and storage, copyright notice

The controllers are packaged appropriately for transport and may only be transported in their original packaging. Avoid any impacts and collisions. Unless otherwise noted on the packaging, the maximum stacking height is 4 packs. When you receive the equipment, check for any damage to the packaging or the controller.

Store the equipment in its original packaging and protected from the weather, and avoid extremes of heat and cold.

Subject to technical changes in the interests of further development. Therefore no claims may be derived from information, images and drawings; errors excepted!

1.4 Warranty and liability

The current General Terms and Conditions of Sales and Delivery of Güntner AG & Co. KG apply.

See the homepage at http://www.guentner.com

1.5 Manufacturer and delivery address

Should you have a problem with any of our equipment, or any questions, suggestions or special requests, simply contact

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Hans-Güntner-Strasse 2-6
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0800 48368637
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2 Functional description

The **GCM (W)LAN Rail.1** module is used to connect the Güntner control units of the GMM and GHM series to a WLAN and LAN network. Depending on the selected mode of operation, you can read out individual parameters from the control unit via the communication module or modify parameters from outside.

There is an app available for mobile devices (smartphone/tablet with Android or IOS operating system) that can be used to read and modify the parameters and operating status of the GMM. This app can be downloaded from the appropriate app store.

The parameters can also be displayed and modified via the integrated web interface.

The module has an antenna connector for an external antenna (not supplied), so it can also be used in switch cabinets made of conductive material. The external antenna is essential for use in a WLAN.

3 Connections

Connections for GCM (W)LAN Rail.1

Label	Description
Upper row of connections	
	RP-SMA plug for an external antenna
	Ethernet customer interface
Lower row of connections	
CAN	Connector for the ribbon cable of the CAN interface. When this interface is used it also serves as a power supply
+24V	Supply voltage 24V
GND	Ground potential of the supply voltage
PE	Connection to potential equaliser (PE) **Always absolutely essential!**
CH	CAN high signal of the CAN interface
CL	CAN low signal of the CAN interface
CAN	Connector for the ribbon cable of the CAN interface. When this interface is used it also serves as a power supply

4 LEDs

LED name	LED state	Description
All LEDs	on	Boot sequence
CAN active	off	No telegrams are being received from the CAN bus
	flashing	Telegrams are being received from the CAN bus
WLAN active	off	No active connection
	on	WLAN active in client mode
	flashing	WLAN active in access point mode
Power	off	No supply voltage
	on	Supply voltage is connected
Ethernet green	on	Ethernet connection is present
	flashing	Data packets are being exchanged via Ethernet
Ethernet orange	on	When the speed is 100 Mbit

5 Slide switch

Position	State	Description
Upper row of connections	off	Module operates as WLAN client
	on	Module operates as WLAN access point
Lower row of connections (termination)	off	CAN termination on the Güntner bus is switched off (the module is in the middle of the bus cabling).
	on	CAN termination on the Güntner bus is 120Ω (the module is at the beginning or end of the bus cabling).

6 Electrical properties of

	Min	Type	Max	Unit
Power supply	20	24	28	V
Current consumption	0.110	0.125	0.145	A
Power loss	2.9	3.0	3.1	W
CAN bus				
Dielectric strength	-24		24	V
Transmission rate		125		kbit/s
Connection resistance (CAN termination = ON)	open	120	–	**Ω**

6.1 Connection properties

	Min	Type	Max	Unit
WLAN				
Standards	IEEE 802.11a/b/g/n			
Safety	WPA2			
Frequency range	2.4GHz			
Transmission rate	6.5 to 72.2 Mbit/s			
Antenna	external			
Range as built in	5	20	100	m
SSID	GUENTNER <serial number> (uses the last five digits of the serial number)			
Channel	1-11			
Network key	guentnerpwd (standard)			
Mode	Access point/client			
Default IP address	192.168.0.1			
DHCP server address range:	192.168.0.1 - 192.168.0.24			
LAN				
Transmission rate	10	100	100	Mbit/s
Default IP address:	192.168.1.1			
Default subnet mask	255.255.255.0			

	Min	Type	Max	Unit
The module is configured by default in the LAN network as a DHCP client. A fixed IP address, a corresponding subnet mask as well as the standard gateway have to be configured via the browser configuration in IP networks without DHCP servers.				
Login on web server				
User		admin (standard)		
Password		guentnerpwd (standard)		

7 Types of access

Communication with the heat exchanger (GMM – Güntner Motor Management) can be carried out in two ways. In access point mode, direct communication is established between the terminal (smartphone, laptop, tablet) and the GMM. The device settings can be specified either using the downloadable app or with a standard browser (Internet Explorer, Mozilla Firefox, Chrome, etc.). Direct access via Internet Explorer is set up using the default IP address: 192.168.0.1 This IP address is entered into the address field of the Explorer.

In client mode a connection is set up between the heat exchanger (GMM – Güntner Motor Management) and the corporate network. The system data is accessed from the terminal device (PC, laptop, etc.) via a standard browser (Internet Explorer, Mozilla Firefox, Chrome, etc.). For this type of access the server needs to assign the module a fixed IP address. In networks that possess a DHCP server, this IP address is assigned automatically. The unit can be uniquely identified within the network by the MAC address printed on the GCM module, and this MAC address can be seen in the mapping table of the DHCP server. For networks **without** DHCP servers, the IP address has to be assigned manually in the router settings.

Direct access (access point)

Indirect access (client)

8 Commissioning

Direct access (access point)

1.Direct access can use either an Ethernet cable or WLAN. You will need to have the right settings on your GCM (W)LAN module.

→ Slide switches: the upper slide switch must be set to “ON”. The setting for the lower slide switch depends on how the module is wired to the bus. If the Rail module is in the middle of the bus cabling, then the switch must be set to “OFF”. If the module is at the beginning or the end of the bus cabling, then the slide switch must be set to “ON”.

→ The LED “WLAN” or “Ethernet” (depending on what access mode you are using) should flash green; if it doesn’t then there is no connection to the terminal device. The Ethernet LED is right next to the Ethernet socket.

2.Set up a connection from your terminal equipment to the module. You do this by connecting to the network “Güntner-<xxxxx>”. This will be one of the available networks offered by the network configuration. For a WLAN connection you will also need the network key. This is “guentnerpwd” as standard and will need to be changed after successful commissioning in order to prevent any unauthorised access to the system. The network name and network key can subsequently be changed under “Settings”.

3.Now open the app or your web browser (Internet Explorer, Mozilla Firefox, Google Chrome, etc.).

→ In the app, select “Direct Access (Access Point)” and confirm the controller type (EC, phase cut, ...) and your language.

→ In your browser, enter the default IP address 192.168.0.1 in the address bar. Next you will be prompted to enter the user name and password.
For commissioning, enter the **default user name: “admin”** and the **default password** “guentnerpwd”.
Both will need to be changed later under “Settings”.

NOTICE

The password (network key) needs to be changed after commissioning in order to avoid any unauthorised external intervention.

4.You should now see the Home menu.

Indirect access (client):

1.Indirect access operates via the (corporate) network, which is connected via WLAN or Ethernet to the GCM (W)LAN module. For this you will need the correct settings on your GCM (W)LAN module:

→ Slide switches: the top slide switch must be set to “ON”. The setting for the lower slide switch depends on how the module is wired to the bus. If the Rail module is in the middle of the bus cabling, then the switch must be set to “OFF”. If the module is at the beginning or the end of the bus cabling, then the slide switch must be set to “ON”.

→ The LED “WLAN” or “Ethernet” (depending on what access mode you are using) should flash green; if it doesn’t then there is no connection to the terminal device. The Ethernet LED is right next to the Ethernet plug.

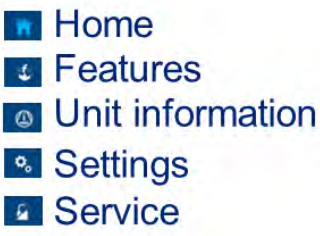
You can now access the GMM from the network.

2.Before any of the PCs, tablets, laptops, etc., in the network can access the GMM, it will have to be assigned a fixed IP address by the server.

If there is a DHCP server, the module can be identified within the network by the MAC address printed on its case. For networks without DHCP servers, IP addresses are assigned in the router settings.

9 Menus

The app functions are laid out in five menus. The menus Home, Features, Device Info, Settings and Service give you a clear overview and make for a control unit that is quick and easy to use.



The **Home** menu gives you a concise overview of the current status of your heat exchanger. Among other things, it shows you fault reports, actual values, control values of fans and the activated functions.

Under **Features** you will find functions that are especially geared to the features of refrigeration engineering, such as night limiter, low capacity motor management, cleaning run or the tear-off function, in order to configure your heat exchanger for your particular application.

The menu **Device Info** is your primary information panel. Here you can view actual values and status information at a glance, such as the condensing temperature and the power consumption and speed of the fans.

Under **Settings** you can carry out specific configuration functions for your system, such as specifying setpoints, activating manual operation (inverse or normal) or changing threshold settings.

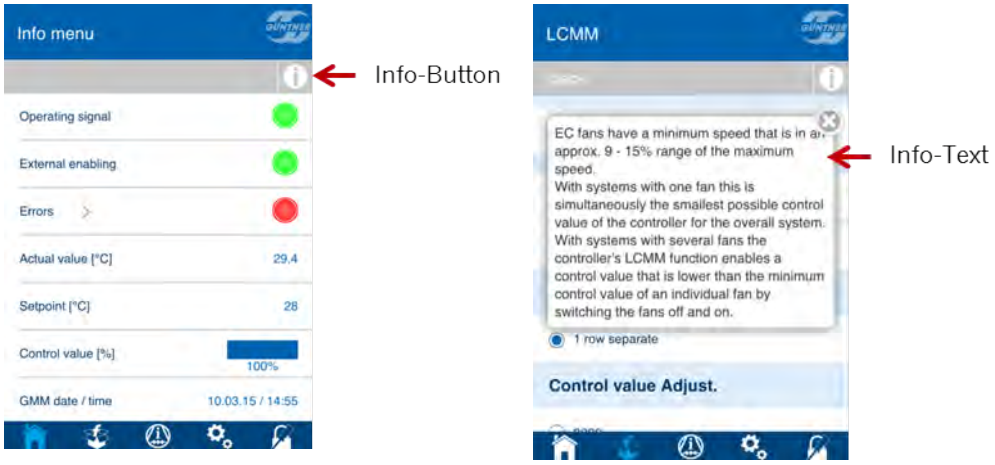
In the **Service Menu** you can modify other settings, for example to configure the PID controller, specify the refrigerant or reset the controller to its factory settings.

Password Service Menu =	guentnerpwd

10 Other

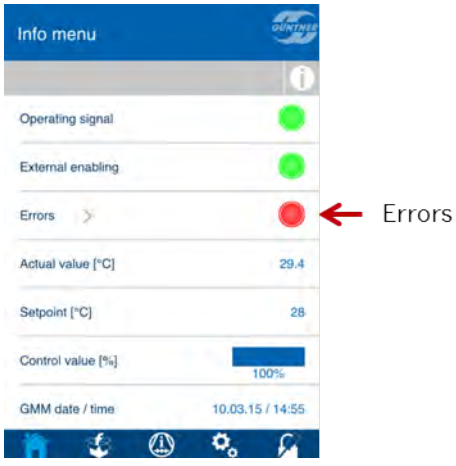
10.1 Info Button

The Info button provides information about all the app's functions and settings. In the app you will find the Info button at top right; click on it to open it. It is indicated by a grey "i" in a circle.



10.2 Fault reports

If there is any malfunction in the heat exchanger, the fault report lamp in the Home menu will appear red. You can call up the current fault and the alarm history by clicking on the arrow (after the faults) for detailed information about the cause of the problem and how to resolve it.



10.3 Upload/Download Parameters

The functions for uploading and downloading parameters may be found under "Settings". You can store all the settings – for instance to protocol the initial commissioning – on your smartphone. The saved parameter files can be uploaded to the GMM again at a later date or transferred to other units.

11 LAN and WLAN configuration

A number of steps are needed to integrate the GCM (W)LAN optimally in a network. You need to know the IP address of the unit in order to access it in the network.
You will need the IP address for the following actions:

-Configuration of the actual LAN IP address, i.e. assignment via DHCP or fixed IP address
-Configuration of the parameters of the connected GMM
-WLAN configuration
-Configuration of the GMM and GHM BACnet server
-Configuration of the GMM and GHM Modbus TCP/IP server

The GCM (W)LAN is configured in the delivery settings as a DHCP client. In other words, it expects a DHCP server in the LAN network, which will assign it a valid IP address for participating in the LAN network.

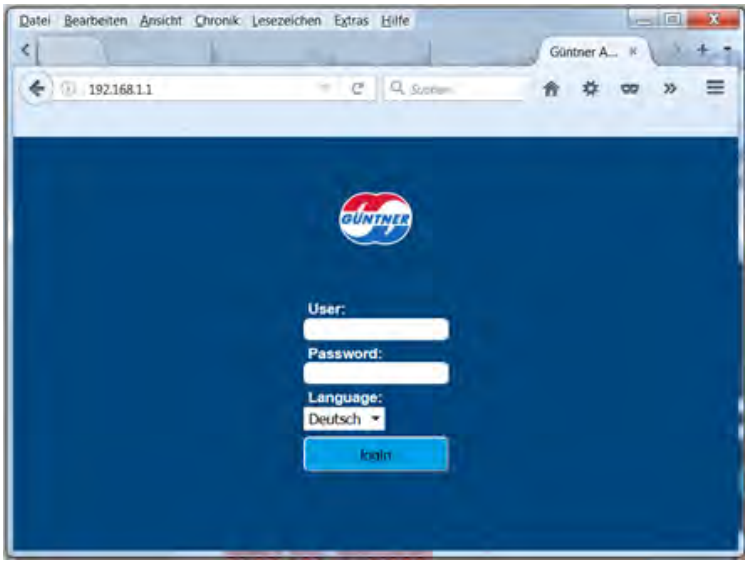
This LAN IP address can then be used to access the unit in the network, for example with the aid of a standard browser. Because this IP address is dynamic, in other words it can change every time the unit is switched on and off, or there is no DHCP server available in the network, it is advisable to assign a fixed IP address to the module. The first step required to perform this configuration, however, is to connect to the unit in the network. Various options are illustrated in the further course of this manual to show you how to do this.

As soon as you have established the IP address of your unit, you can enter it in the browser and access the web configuration:

To do this, open your browser and enter this IP address in the address bar.

You should then see the homepage of the configuration interface.

The default user name is “**admin**” and the default password is “**guentnerpwd**”.



The website password can be changed subsequently under “Settings” → with the “Change website password” option.

NOTICE

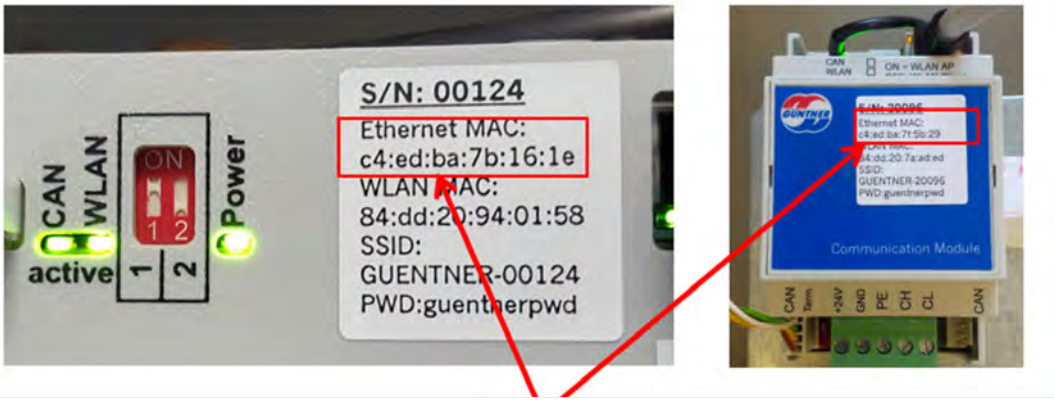
Make sure that you can also access this password later on.

11.1 MAC address

The GCM (W)LAN label contains important information, which you will need below. The Ethernet MAC address is important to note in this respect.

Every network device has a unique Ethernet MAC address.

The Ethernet MAC is for the LAN interface.



11.2 Establishing access options and the IP address

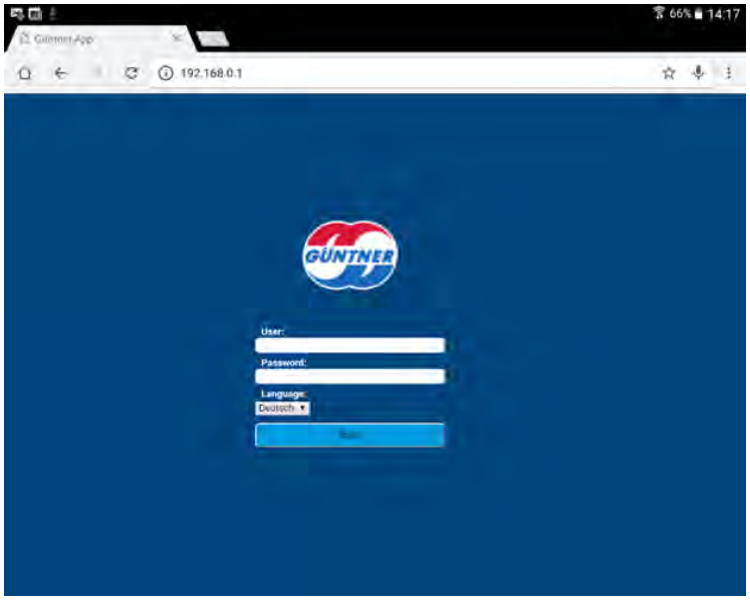
11.2.1 Option 1: Connection via WLAN

The WLAN wireless network is enabled by default in the delivery settings.

Make sure also that the small slide switch on the GCM (W)LAN is set to “**WLAN AP**” or “**Hotspot**”. The GCM (W)LAN will then operate as an access point.

You now have to: Connect the PC with WLAN or a mobile device, for example a smartphone or tablet, to the WLAN wireless network, which should now be visible. See also Commissioning, page 14.

Now open a browser on your device and enter 192.168.**0**.1 in the address bar. You can now log in and make further settings.



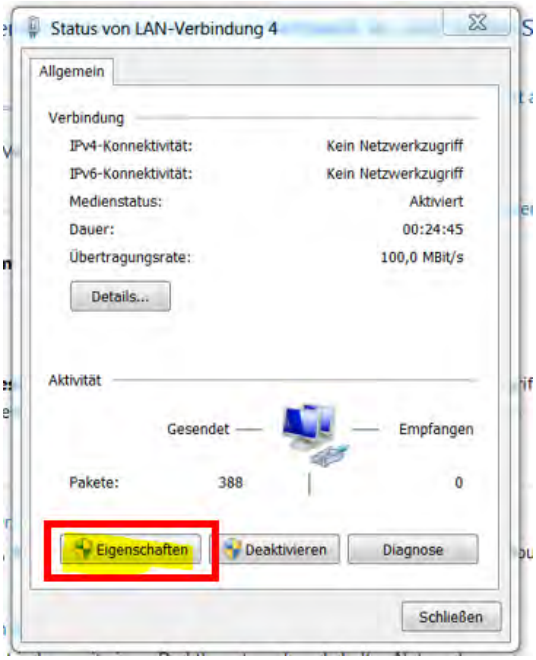
11.2.2 Option 2: Direct connection to a standard PC

A very simple way to access GCM (W)LAN is to establish a direct network connection between a standard PC and the GCM (W)LAN module. The computer's network card or any additional network card (e.g. a USB/LAN adapter) has to be configured for this purpose however. In other words, appropriate admin rights are required on the computer.

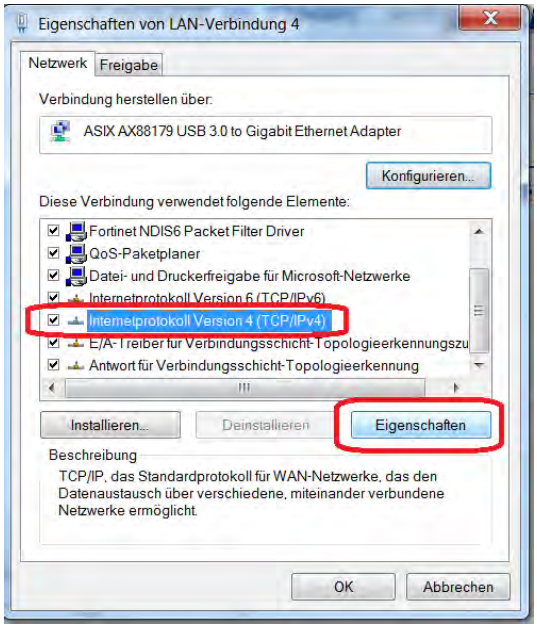
The next example shows a computer connected directly to the GCM (W)LAN in a GMM EC via a separate USB/Ethernet adapter and a network cable.

Alternatively, however, you can also use the existing network interfaces on your computer. Establish a direct connection between the computer and GCM (W)LAN for this purpose.
Caution! A standard (untwisted) patch cable can be used on most computers nowadays, since current network components automatically establish the correct wire pair for communication when switched on.
In the case of older network interfaces, it may be necessary to use a twisted network cable.

Now open the relevant interface configuration in your network configuration. You may be asked at this point to enter your administrator name and password.

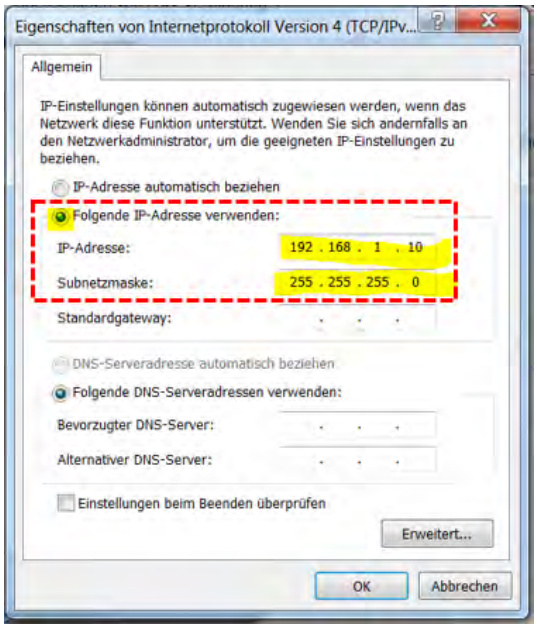


Choose the Internet protocol 4 (TCP/IPv4) and choose “Properties”.



The GCM (W)LAN uses the default IP address 192.168.1.1 in the LAN. In other words, you have to assign your computer an IP address from the same segment.

You could configure 192.168.1.10 as the fixed IP address, for example, and 255.255.255.0 as the subnet mask.

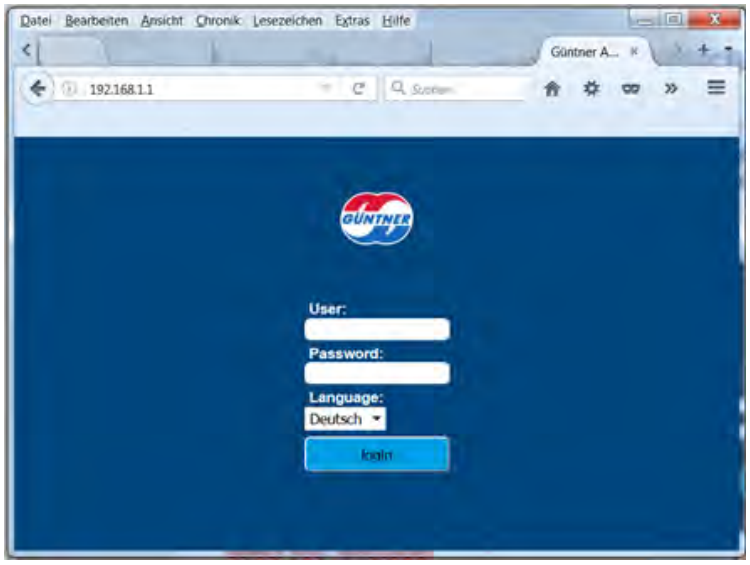


Confirm all input with OK.

Establish the network connection using a patch cable, if this has not already been done, and switch on the GMM.

CAUTION! It can take up to 120 seconds before the GCM (W)LAN can be accessed with the default IP address 192.168.1.1 in the LAN.

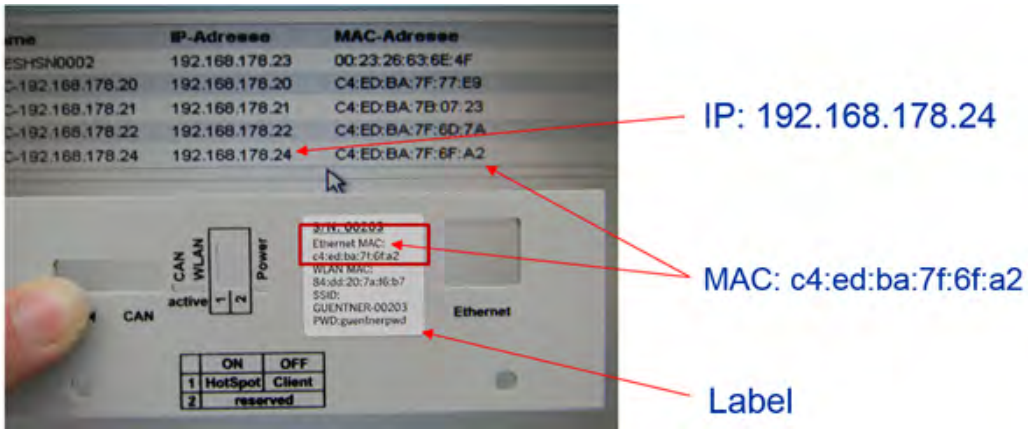
Enter 192.168.1.1 in the address bar of your browser.



11.2.3 Option 3: Identify the IP address via the DHCP table of the connected router

If you have access and the appropriate rights for your network router, you can check the IP address of the GCM (W)LAN in the overview. Search for the MAC address of the unit. Next to this you will find the IP address that the DHCP server assigned to the unit.

If possible, configure this subscriber in the router such that it is always assigned the same IP address.



Enter 192.168.178.24 in the address bar of your browser in this specific case.

11.2.4 Option 4: Identify the IP address based on the MAC address and your company's IT department

Inform your IT department of the Ethernet MAC address (see label).

Your IT department can assign an IP address to this unit in the DHCP server, which it is assigned every time it restarts. Please take note of this IP address at the unit.

Now enter the IP address in your browser.

11.2.5 Option 5: Identifying the IP address using a network sniffer

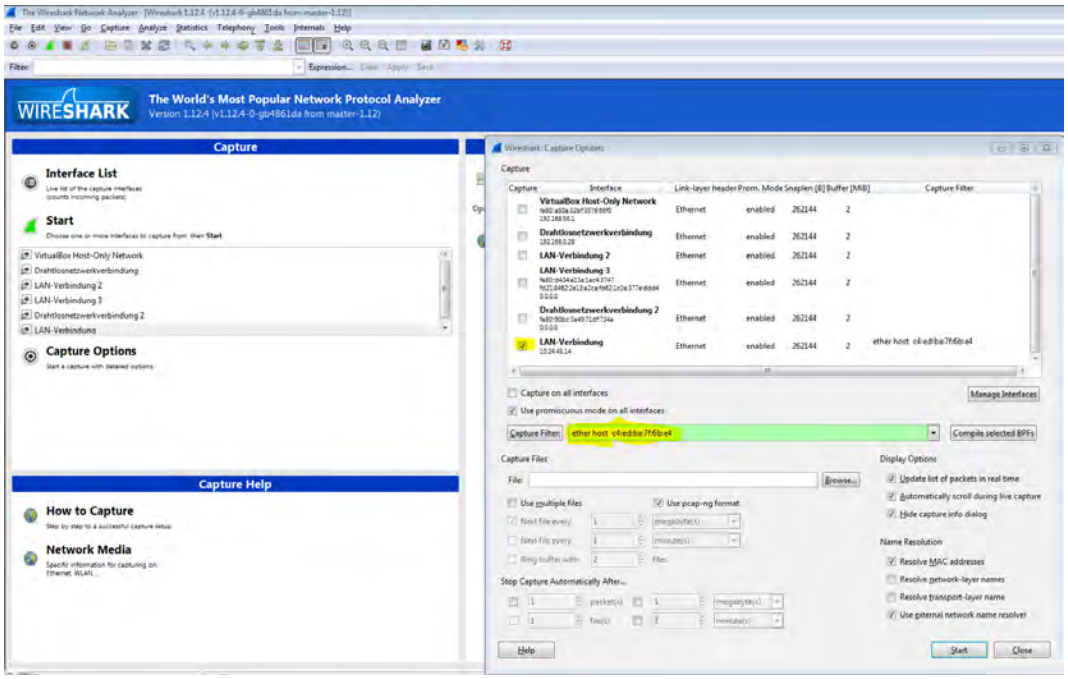
Use of a network sniffer tool is a somewhat more complex method and more suitable for an experienced network user. The GCM (W)LAN must be connected in the same network phase as your computer in this case.

The freely available tool “Wireshark” can be used as the network sniffer. You can use it to check the network trace to see which IP address is assigned to the GCM (W)LAN.

Install and start the Wireshark tool.

Select the network interface via which the network traffic is to be exchanged.

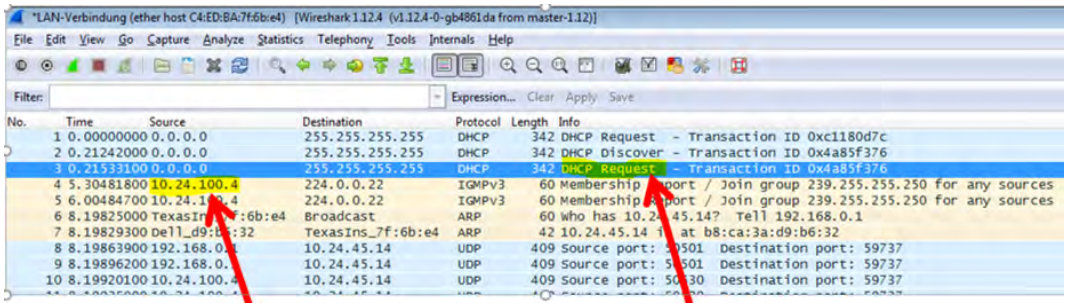
As the filter enter: ether host: <MAC address of your unit>
e.g.: ether host c4:ed:ba:7f:6b:e4



Start the recording.

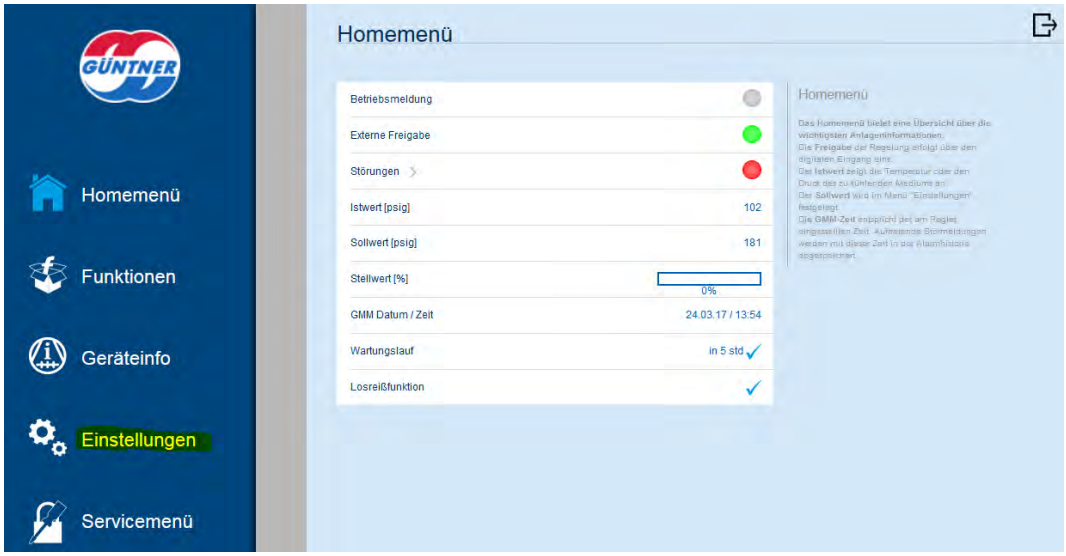
Now switch on the GMM/GHM on which the GCM (W)LAN is installed.

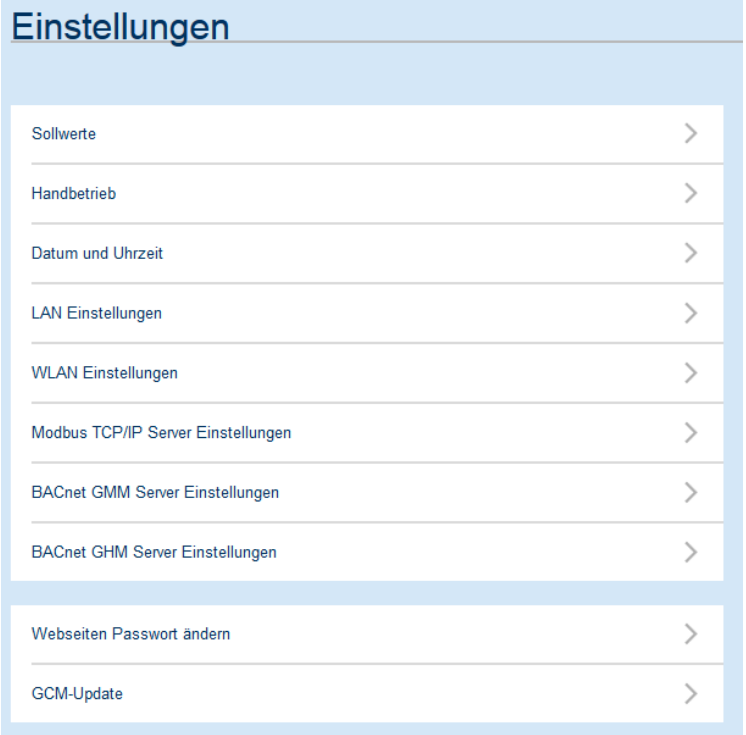
In a few seconds you will be able to see the DHCP request in the trace and from the response establish which IP address is assigned to the unit. In this case it is 10.24.100.4.



11.3 Performing the network configuration

You will find the network configuration under “Settings”.





11.3.1 LAN settings

IP address

If you want the unit to be assigned an IP address automatically every time it restarts, then select “Obtain an IP address automatically”. The subnet mask and standard gateway are likewise assigned in this case to the GCM (W)LAN. If you want the unit to be assigned a fixed IP address, then select “Use the following IP address”.

The **IP address** is a 4-digit number sequence with values from 0-255. An IP address may only be used once throughout the entire network.

The subnet mask determines the local IP subnet. An IP subnet is a sub-network in which all computers can access each other directly, so in other words without the mediation of routers, gateways, etc.

If a network subscriber wants to send an IP packet to another IP address, it will first examine the destination IP address. If it establishes that the destination IP address is located in its own subnet, it sends the packet directly. In case of all other destination IP addresses, it sends the IP packet to the standard gateway. The standard gateway host generally knows what to do now.

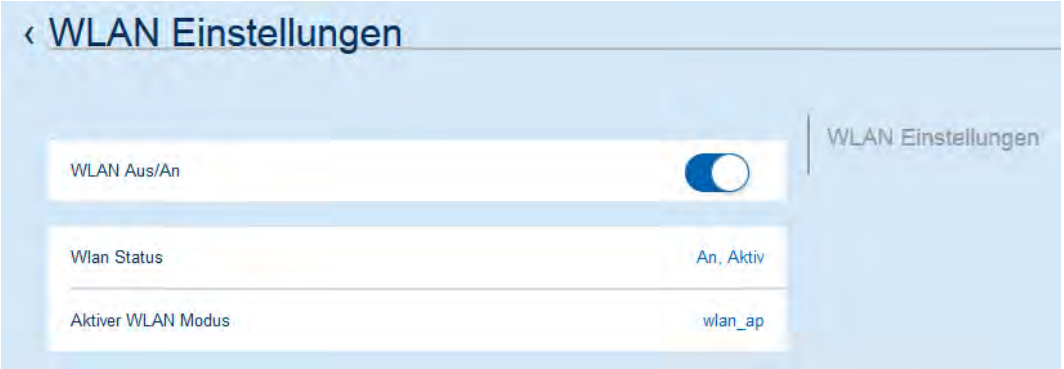
11.3.2 WLAN settings

WLAN off/on

The WLAN wireless network is enabled in the delivery settings. It can be disabled if needed using the symbolic slide switch.

The WLAN status indicates whether the wireless network is *active* or *not active* .

If *WLAN mode is active,* a distinction is made between access point = *wlan_ap* (also referred to as a hotspot) and client mode = *wlan_client* . The mode can be changed using a small slide switch on the unit itself. (See also Slide switch, page 10)



WLAN wireless channel

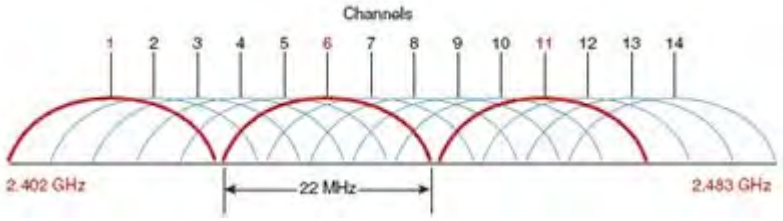
The WLAN wireless channel is an important factor in determining the speed and thus the reliability of the wireless connection. If connections are very slow or impaired, this may be because there are too many devices active in the **same** WLAN wireless channel or **adjacent** frequency ranges. There is a very simple solution to this problem. The WLAN channel simply has to be changed.

Problem 1: Other wireless networks are using the same channel

If other devices are using the same channel, they do not disrupt each other in any way. However, they do slow each other down. The reason for this is that every channel or transmission path can only allow one transmission to be active at a time. Therefore, if the data link is currently occupied, the next request is queued. The rule of thumb therefore is: The more devices transmitting at the same time in the same channel, the slower the data rate.

Problem 2: Other wireless networks are transmitting using adjacent wireless channels

First of all, the second scenario sounds less dramatic, but in reality has a more extreme impact on the speed. The problem in this case is the frequency range, primarily in the 2.4 GHz range. Every WLAN channel is located at a distance of 5 MHz to its neighbour. However, fast data transmission requires at least 20 MHz (= 4 channels). If devices are occupying the adjacent wireless channel, for example, they do not recognise each other initially and transmit at the same time, as a result of which however both transmission rates deteriorate.



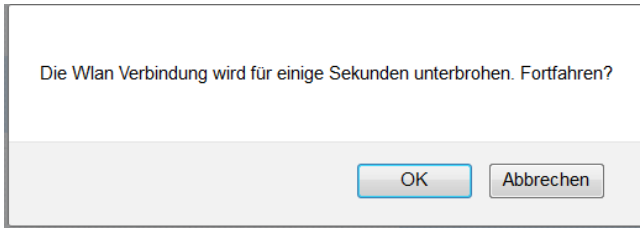
Changing the WLAN channel, but properly

It is therefore not sufficient to simply change the WLAN channel, the frequency range is likewise important. If there are only three subscribers in the network, for example, these should be assigned as follows. Channels 1, 6 and 11, since these do not overlap at all. Alternatively, the unit should operate in the wireless channel that is used by the fewest networks.

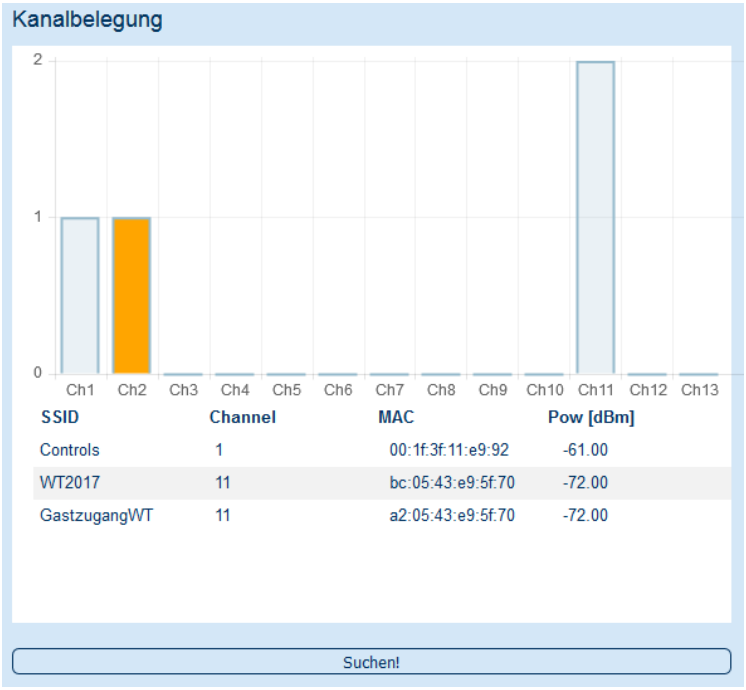
The wireless network can be browsed to check which channels are occupied by which units. To do this simply click “Search” .

NOTICE

Any existing wireless connection will be interrupted for the period of the network scan.

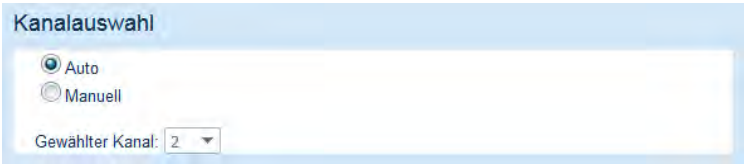


You will be shown the result of the network scan after a few seconds. The next example shows that the channel (Channel 1) is occupied by the wireless channel “Controls”. The GCM (W)LAN itself (identified by an **orange** bar) occupies Channel 2 in this case. Wireless channel 11 is occupied by two wireless networks (WT2017 and “GastzugangWT” (guest access)).



In this specific case, therefore, the GCM-WLAN should be configured to operate in Channel 6 instead of Channel 2.

The GCM (W)LAN can be configured to search for a wireless channel itself. To do this, set the channel selection to "*Auto*". The unit now searches for a free channel but does not take account of the frequency distance. Alternatively, it selects the wireless channel with the fewest units in this channel, in ascending order from Channel 1.



Alternatively, select "*Manual*" and then choose a suitable wireless channel (see description above).

The GCM (W)LAN is defined in the delivery settings so that the channel selection is set to "Manual" and wireless channel 2 is selected.

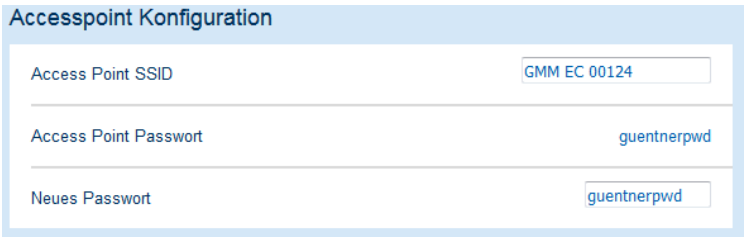
Access point configuration

The small slide switch on the module must be set to WLAN AP (or hotspot) so that the GCM (W)LAN operates as an access point.

You can configure the SSID (**S**ervice **S**et **I**dentifier), i.e. the name of the wireless network, in the “Access Point SSID” input field and confirm with OK.

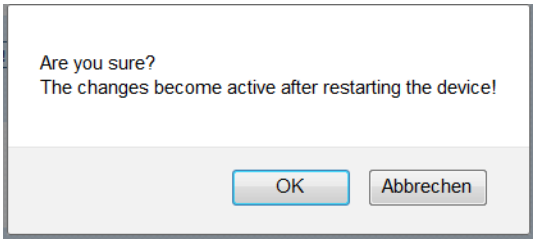
This name is required so that the unit obtains a name in the wireless network and can then be selected. The network key (access point password) has to be entered then to connect to the wireless network. You can likewise configure this here.

In the delivery settings, SSID = GUENTNER-xxxxx (xxxxx=serial number, see label) and access point password = guentnerpwd



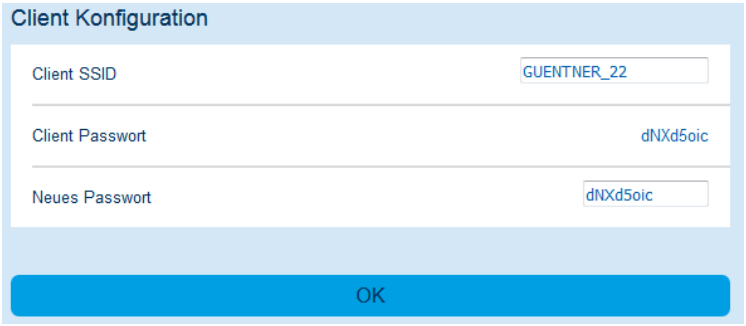
NOTICE

The changes will only be effective following a restart (Power OFF/ON).



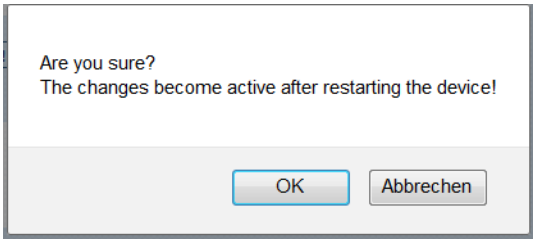
Client configuration

The GCM (W)LAN can also be integrated as a client in an existing wireless network, similar to a mobile phone, which you register on your WLAN point at home. Use the slide switch in this case to set the GCM (W)LAN to WLAN client. Configure the required access credentials for the access point under “Client SSID” (i.e. the name of the network to which you want to establish the connection) and “New password” and then choose OK.



NOTICE

The changes will only be effective following a restart (Power OFF/ON).



11.3.3 Modbus TCP/IP server settings

The GCM-WLAN provides a Modbus TCP/IP server for connected GMMs and GHMs. The parameters can be exchanged using the Modbus TCP/IP protocol by means of this server.

A GCM (W)LAN provides a Modbus TCP/IP connection each for at most one GMM and one GHM.

Refer to the relevant Modbus TCP/IP interface specification to determine which parameters are supplied as well as their structure. You can download these from the http://www.guentner.eu/products/controls/ website.

The Modbus TCP/IP server is enabled in the delivery settings.

You can disable the server or change the port number here if required. The port number can only be changed if the Modbus TCP/IP server is disabled.

To make contact with the Modbus server, you need to know the following parameters and configure them on the Modbus master.

1. The IP address of the unit (see Section “IP address”)
2. The port number (in this case 502)
3. The unit identifier of the unit you wish to address.

The following unit identifiers are defined for this purpose:

Unit	Unit identifier
GMM EC	1
GMM HDU	2
GMM sincon	3
GMM step	4
GMM phasecut	5
GMM spray	6
GHM Pad	7
GHM pump	8

4. Please configure the **timeout** as 2 seconds

To connect to a GMM EC, for example, please configure the following on the Modbus master:

Remote host IP:	e.g. 192.168.1.1
Port:	502
Slave address:	1
Timeout:	2000 ms

11.3.4 BACnet settings

The GCM-WLAN provides a BACnet IP server each for connected GMMs and GHMs. The parameters can be exchanged using the BACnet IP protocol by means of this server. The two BACnet servers for the respective GMM and GHM can be configured and addressed independently of each other.

Refer to the relevant BACnet EDE description to determine which parameters are supplied as well as their structure. You can download these from the http://www.guentner.eu/products/controls/ website.

11.3.4.1 BACnet GMM server settings

The BACnet IP server can be configured here for the connected **GMM** (**G**üntner **M**otor **M**anagement).

The GMM BACnet IP server is enabled in the delivery settings.

You can disable the server here if required or change the configuration data. The data can only be changed if the BACnet server is disabled.

To make contact with the BACnet server, you need to know the following parameters and configure them on the BACnet master or in Explorer.

1. The **IP address** of the unit (see Section “IP address”)
2. The **port number** (in this case 47808)
3. The **device ID** of the BACnet server
4. The **device name** (optional) of the BACnet server

For further information on the BACnet server, refer to Section **BACnet IP and Modbus TCP/IP with the Güntner Wireless Communication Module**

11.3.4.2 BACnet GHM server settings

The BACnet IP server can be configured here for the connected **GHM** (**G**üntner **H**ybrid **M**anagement).

The GMM BACnet IP server is enabled in the delivery settings.

You can disable the server here if required or change the configuration data. The data can only be changed if the BACnet server is disabled.

To make contact with the BACnet server, you need to know the following parameters and configure them on the BACnet master or in Explorer.

1. The **IP address** of the unit (see Section “IP address”)
2. The **port number** (in this case 47809)
3. The **device ID** of the BACnet server
4. The **device name** (optional) of the BACnet server

For further information on the BACnet server, refer to Section **BACnet IP and Modbus TCP/IP with the Güntner Wireless Communication Module**

12 BACnet IP and Modbus TCP_IP with the Güntner Wireless Communication Module

The Güntner GCM Wireless Communication Module can be used with the BACnet IP and **Modbus TCP/IP** network protocols to access the **G**üntner **M**otor **M**anagement (**GMM EC, GMM sincon, GMM step, GMM phasecut**) and **G**üntner **H**ybrid **M**anagement (**GHM spray, GHM pad, GHM pump**) parameters. A GCM (W)LAN establishes the connection to a GMM, a GHM or a combination of at most one GMM and one GHM.

The following requirements must be fulfilled for BACnet IP or Modbus TCP/IP:

Control unit type	Control unit software version (min.)	GCM module type	GCM (W)LAN software version (min.)
GMM EC	044	GCM (W)LAN GMM EC.1, ERP No: 5206083	3.0.18
GMM sincon	007	GCM (W)LAN Rail.1, ERP No.: 5206123	3.0.18
GMM step	005	GCM (W)LAN Rail.1, ERP No.: 5206123	3.0.18
GMM phasecut	004	GCM (W)LAN Rail.1, ERP No.: 5206123	3.0.18
GHM spray	014	GCM (W)LAN Rail.1, ERP No.: 5206123	3.0.18
GHM Pad	011	GCM (W)LAN Rail.1, ERP No.: 5206123	3.0.18
GHM pump	003	GCM (W)LAN Rail.1, ERP No.: 5206123	3.0.18

Refer to the relevant **Modbus TCP/IP interface specification** or **BACnet EDE file** to determine which parameters are supplied as well as their structure.

You can download these from the http://www.guentner.eu/products/controls/ website.

12.1 BACnet service

The following BACnet services are supported:

- Unconfirmed Who Is
- Unconfirmed Who Has
- Unconfirmed I Am
- Confirmed Read Property
- Confirmed Read Property Multiple
- Confirmed Write Property
- Confirmed Write Property Multiple
- Confirmed Subscribe COV
- Unconfirmed COV Notification

12.2 BACnet objects and properties

The following objects and properties are supported:

Device Object
Object_Identifier
Object_Name
Object_Type
System_Status
Vendor_Name
Vendor_Identifier
Model_Name
Firmware_Revision
Application_Software_Version
Max_APDU_Length_Accepted
Segmentation_Supported
APDU_Timeout
Number_Of_APDU_Retries
Device_Address_Binding
Database_Revision

Analog Value	
Object_Identifier	Units
Object_Name	Property List
Object_Type	Description
Present_Value	High_Limit
Status_Flags	Low_Limit
Event_State	Resolution
Out_Of_Service	

Analog Input	
Object_Identifier	Units
Object_Name	Property List
Object_Type	Description
Present_Value	High_Limit
Status_Flags	Low_Limit
Event_State	Resolution
Out_Of_Service	

Binary Input	
Object_Identifier	Polarity
Object_Name	Property List
Object_Type	Description
Present_Value	
Status_Flags	
Event_State	
Out_Of_Service	

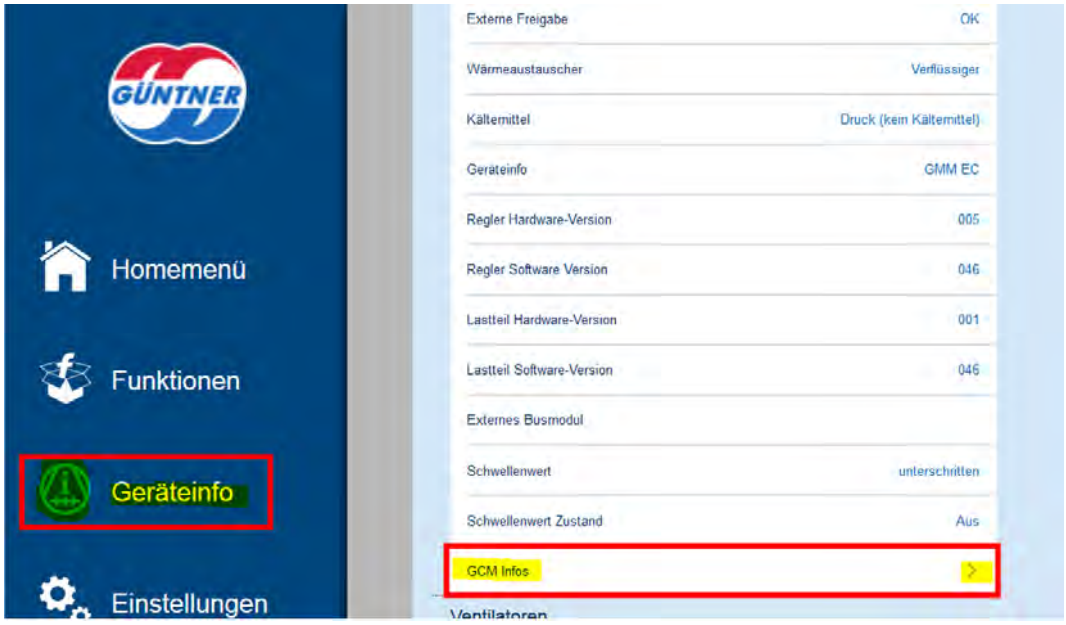
Binary Input	
Object_Identifier	Property List
Object_Name	Description
Object_Type	
Present_Value	
Status_Flags	
Event_State	
Out_Of_Service	

Multi State Value	
Object_Identifier	Number of states
Object_Name	Property List
Object_Type	Description
Present_Value	
Status_Flags	
Event_State	
Out_Of_Service	

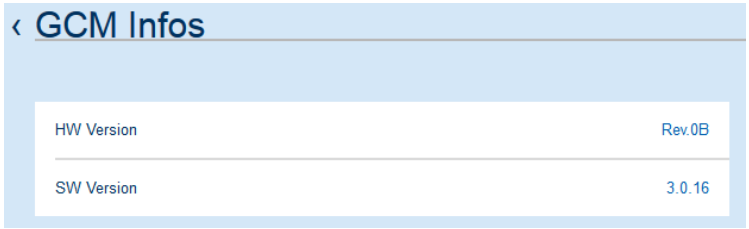
13 Software version and software update

13.1 Software version

To establish the software version of the GCM (W)LAN, select the menu option*Device Info*and then*GCM Infos*.



The GCM (W)LAN has software version 3.0.16 in this specific instance.



13.2 Software update

In order to install new software on the GCM (W)LAN, the unit must on one hand be connected to the LAN network, and the PC or network drive on which the firmware is located must likewise be located in the same LAN network.

NOTICE

Please do not perform an update from the WLAN network.

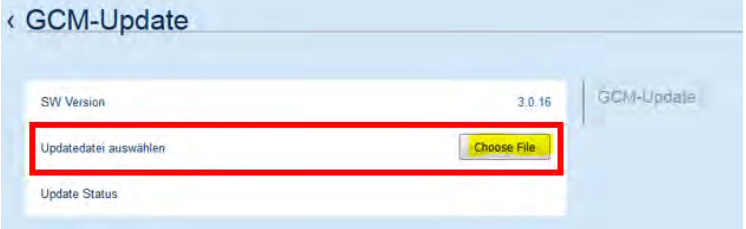
New firmware can be obtained, if required, from the Güntner service department.

The new firmware can be installed using the GCM update menu option.

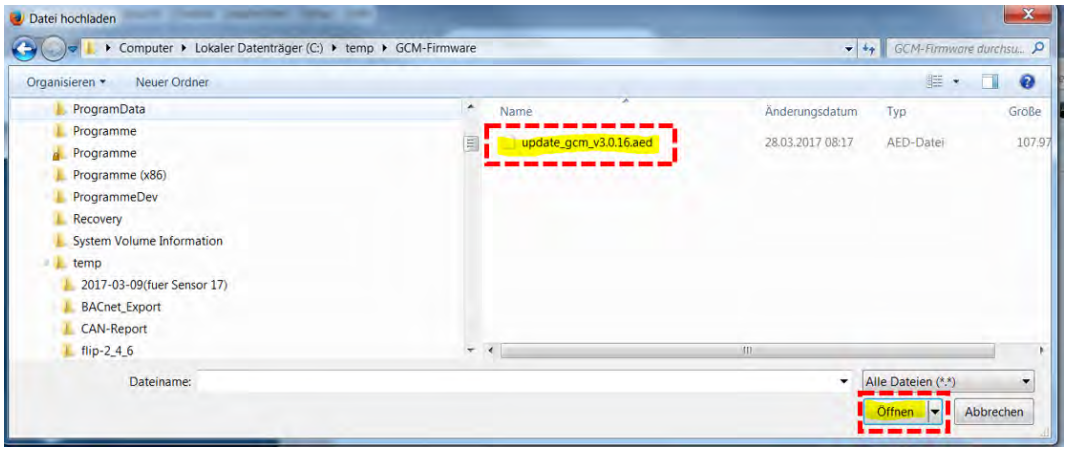
NOTICE

The update process may take a few minutes.
Please do not switch off the unit during this time.

Next select the update file by selecting “Choose File”....

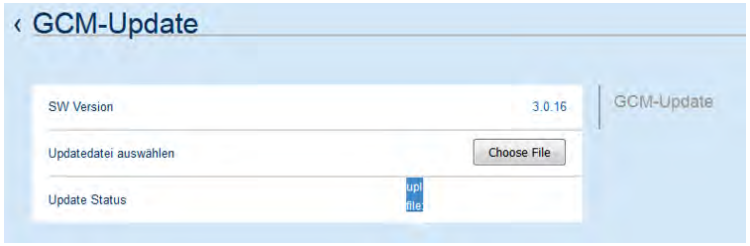


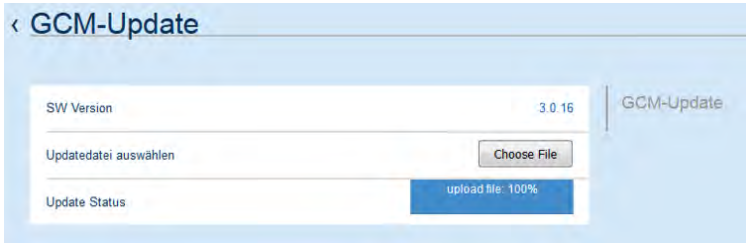
... navigate to the location where the update file is stored...



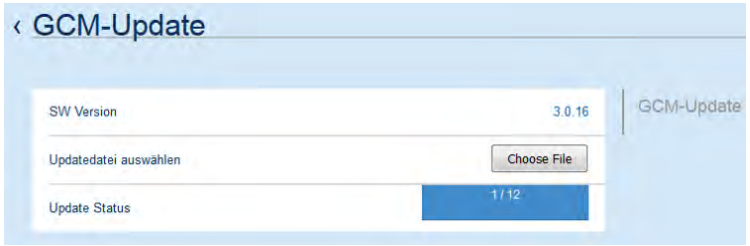
... and confirm by choosing “Open”.

The file is now installed on the GCM (W)LAN. You can verify this from the upload status, which starts at 0% and increases to 100 %.



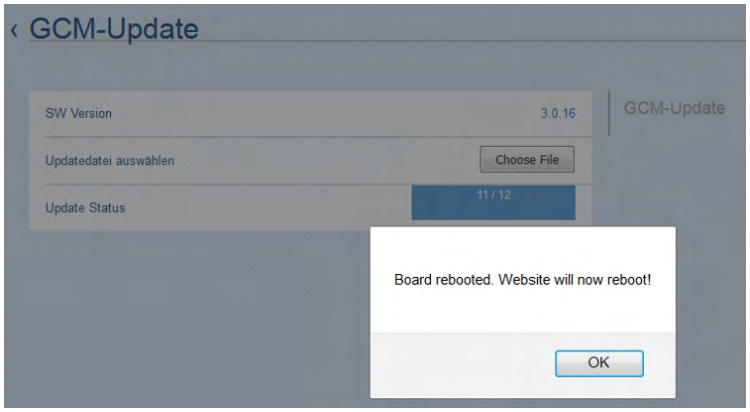


The new software is now installed automatically.



The unit will restart, possibly several times, when the installation is complete.

The web page must then be reloaded.



The unit is now ready again. You can check the software version under “Device Info”→ “GCM Infos”.

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