

**G4202TCP-RPF Master
G4202TCP Client**

G.hn Wave2 PoX/PoE Master/Client Set

Twisted-Pair Firmware

Instruction manual

Version 1.2
May 2023

For more information and purchase requests
contact info@gigacopper.net

1. Packing

- G4202TCP-RPF Master or G4202TCP Client
- RJ11/RJ11 telephone cable 1.5m, 4-wire (SISO and MIMO)
- *Only in DE:* TAE-F/RJ11 adapter, 4-pin (SISO and MIMO)
- Bracket for wall mounting

2. Specifications

- Dimensions: 103 * 78 * 32mm
- Weight: 0.36 kg
- Operating temperature: -10°C - 45°C
- Enclosure Rating: IP30

For full specification, see G4202TCP-RPF and G4202TCP datasheets

3. G.hn specification

- G.hn Wave2, 2-200 MHz
- Connection type: SISO (1 wire pair, 2-200 MHz) and MIMO (2 wire pairs, 2-100 MHz)
- Physical bandwidth (PHY): approx. 1800 Mbit/s
- Netwidth: approx. 1500 Mbit/s (total download and upload)
- Bandwidth distribution – variable, ex works: 70% download (direction master to client) 30% upload (direction client to master)
- Maximum allowable attenuation of the cable connection: 75dB

1. Introduction

With the G.hn modem set G4202T CP-RPF and G4202TCP you can easily expand your network and at the same time supply the PoE/PoE+ compatible end devices (access points, IP cameras, IP phones etc.) with power.

Both modems can be powered locally via a USB-C PD power supply (max. 90W) or via the G.hn connection. G4202TCP-RPF can also inject power into the G.hn connection.

The modems can use any type of cable – both twisted-pair and non-twisted-pair – for data and power transmission. The bandwidth is up to 1500Mbit/s, the range up to 600m. Connected end devices are supplied with power via another 100m long Ethernet cable according to the 802.3af/at standard.

The G4202TCP client can also be combined with a non-PoX/PoE-capable G.hn master modem (such as G4201TM or G4202T).

If there are multiple parallel connections via telephone cables, the G4224 Master Switch must be used. It offers automatic G.hn vectoring (VectorBoost) and central administration of all G4202TCP clients.

4. Connections

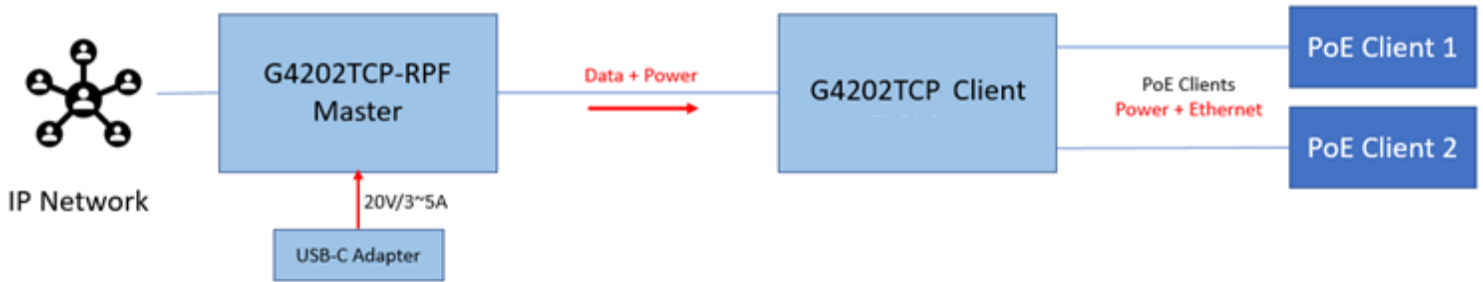


Panel and LED description

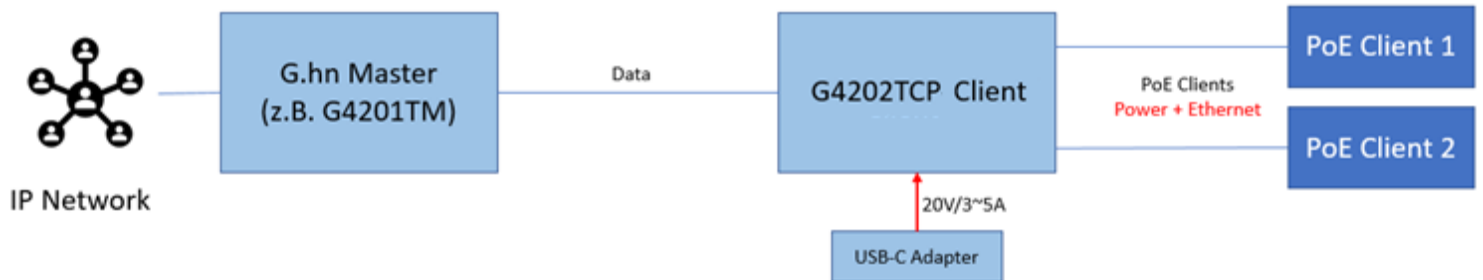
Lettering	Description
5-20V/1-5A USB-PD	USB-C Power Delivery 3.0 power connector, max. 90W
PoX/RPF LINE	G.hn connection, telephone or coax, use according to firmware
G1, G2	2x 1 Gigabit Ethernet port with PoE/PoE+
PWR LED	Indicates power availability
LINE LED	Status of the G.hn connection (green – OK, yellow – weak signal, off – no connection)
RPF LED	G4202TCP-RPF only: Status Power output over G.hn port
G1/G2 LED	Right: Status Ethernet connection Left: Status PoE supply
	Recessed reset button (15 sec.)

5. Typical applications

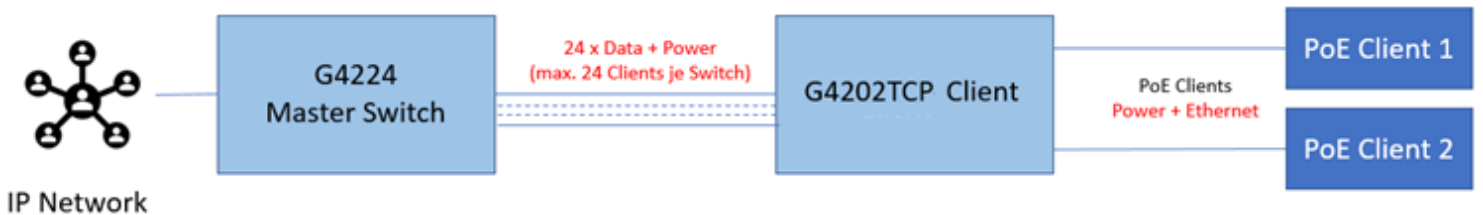
Variante 1: G4202TCP-RPF Master + G4202TCP Client. Master draws power from the USB-C adapter, client - via G.hn link.



Variante 2: G4202TCP as client together with G4201TM master. G4202TCP draws power from the USB-C adapter.



Variante 3: G4202TCP as client on the G4224 switch. Each switch can power up to 24 clients, 4 of which are 90W.



6. G.hn Connection type and wire assignment on the device (RJ45 plug)

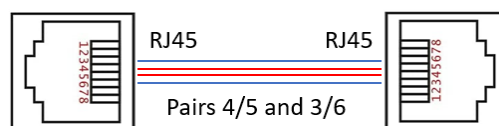
The G.hn connection can be established either via a pair of wires (connection type SISO = G.hn profile "PHONE 200MHz") or via two pairs of wires (connection type MIMO = G.hn profile "PHONE 100MHz MIMO"). The corresponding G.hn profile must be configured via the web interface in both modems or via the G.hn switch.

Factory setting: G.hn "PHONE 200MHz" profile.

Core assignment SISO



Core assignment MIMO



7. Installation Notes

- The veins of a pair can be laid straight or crossed.
- Maximum range of the G.hn connection depends on the type of cable used, the type of connection and the environment. Typical values for a 0.5 mm twisted-pair cable: Connection possible up to approx. 600/800 meters (SISO/MIMO), maximum bandwidth of 1500 Mbit/s – up to approx. 100/200 meters (SISO/MIMO).
- For longer cables (from approx. 100-150m), the bandwidth can be increased by up to 15% (SISO) or up to 25% (MIMO) by adjusting the signal level. To do this, the "Range optimization model" must be set to "Long" in the web interface of both modems or the "LongRangeMode" setting must be activated in the G.hn switch. After the change, both devices must be restarted.
- The negotiated bandwidth can be queried via the web interface of the devices (see point 11).
- The distribution of the bandwidth of the G.hn connection is variable. It can be set between 80/20% and 20/80%. By default, 70% of the bandwidth is reserved for download (from master to client) and 30% for upload (from client to master). The split can be configured via the web interface of the master modem (menu item G.hn DownStream / UpStream Ratio) or via the G.hn switch.

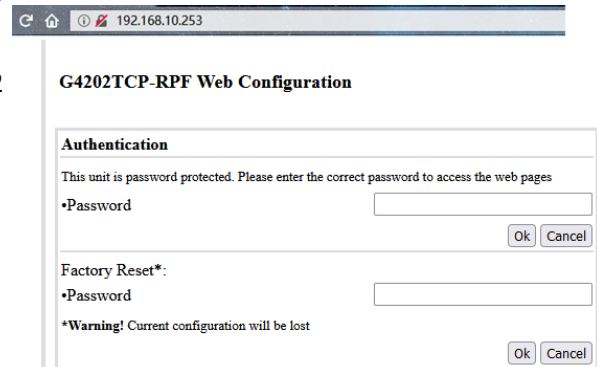
Further information and recommendations can be found on our homepage www.gigacopper.net under the heading **Support**.

8. Administration

IP-Address: 192.168.10.252 (master), 192.168.10.253 (client). Login Password: PaternaWork-Reset Password: betera

Registration via web interface

- Connect your computer to the G.hn modem via the G1 or G2 port.
- Assign your computer a fixed IP address, e.g. 192.168.10.100 (netmask 255.255.255.0).
- Open a web browser and connect to 192.168.10.252 or 192.168.10.253.
- Log in with the default password: Paterna



The screenshot shows a web browser window with the address bar displaying "192.168.10.253". The main content area is titled "G4202TCP-RPF Web Configuration". It contains two sections:

- Authentication:** A message states "This unit is password protected. Please enter the correct password to access the web pages". Below this is a "Password" field with an "Ok" button and a "Cancel" button.
- Factory Reset*:** A "Password" field with an "Ok" button and a "Cancel" button. A warning message below reads: "*Warning! Current configuration will be lost".

9. IP address

The modems do not require IP addresses from the local network segment during operation, because they mediate data traffic via the MAC addresses. By default, they do not obtain addresses from the local DHCP server.

If desired, static IP addresses can be configured or the DHCP client can be activated (menu "IP" in the web interface).

10. VLAN usage in the network

The devices support VLANs according to the 802.1Q standard.

In the factory setting, the VLAN tags are forwarded transparently. External Ethernet switches can be used for the formation and use of VLANs.

Instead of external Ethernet switches, VLAN configuration can be done by the manageable G.hn switch G4224. Both Ethernet ports of the G4202TCP-RPF and the G4202TCP modem can be configured independently of each other.

11. Query the negotiated bandwidth

The bandwidths negotiated by the devices for both transmission directions can be queried via the web interface of each device. The reported values are gross data transfer rates at the physical layer (PHY). The transfer speed at the application level is about 15-20% lower.

The screenshot shows the web configuration interface for a G4202TCP-RPF device. The browser address bar shows the IP address 192.168.10.252. The page title is "G4202TCP-RPF Web Configuration" with a "Log Out" button in the top right corner. On the left side, there is a navigation menu with links: [G.hn](#), [IP](#), [Ethernet](#), [Device](#), [Multicast](#), [QoS](#), [G.hn spectrum](#), [Log file](#), and [Advanced](#).

The main configuration area is divided into several sections:

- Basic settings:** Includes fields for MAC address (00:1e:6e:03:db:eb), Device ID (1), Domain Name (Gnow), Force node Type (DOMAIN_MASTER), and Node type* (DOMAIN_MASTER). There are "Ok" and "Cancel" buttons for each section.
- G.hn profile:** Set to PHONE 200MHz.
- Range optimization model:** Set to Short.
- G.hn DownStream/UpStream Ratio:** Set to 70%.
- Neighboring Domain Interference Mitigation (NDIM):** NDIM mode is set to MANUAL and Domain ID (DOD) is 0.
- Available Connections:** A table with the following data:

Device ID	MAC Address	Phy Tx (Mbps)	Phy Rx (Mbps)
2	00:1e:6e:03:db:fa	1849	1827

12. Use of Multicast IP-TV

For the transmission of multicast IP-TV (e.g. Telekom MagentaTV) in the network, "IGMP Snooping" must be activated in the multicast configuration.

The screenshot shows the "Multicast Configuration" web interface. It includes the following settings:

- IGMP Snooping: YES
- MLD snooping: NO
- IGMP/MLD broadcast report: NO
- IGMP/MLD broadcast report mode: 0
- Filter unknown multicast traffic: NO
- IGMP Multicast ranges: Minimum IP address (224.0.0.0) and Maximum IP address (239.254.255.255).
- Broadcast suppresion: Broadcast xput limit (Mbps) set to 2.

13. Notching, compatibility with DSL/VDSL

The G.hn modems can also be used in parallel with DSL/VDSL connections with unshielded telephone cables as well as via double wires of a common cable.

In the case of DSL and VDSL50, the G.hn modems usually do not require any settings.

For compatibility with VDSL100 (profile 17a) and VDSL250 (profile 35b), the G.hn level in the range 2-17MHz and 2-30MHz must normally be lowered by 10dB. The setting is to be configured in Master Modem.

[G.hn](#)
[IP](#)
[Ethernet](#)
[Device](#)
[Multicast](#)
[QoS](#)
[G.hn spectrum](#)
[Log file](#)
[Advanced](#)

Notches Configuration

Notch index	Start freq (KHz)	Stop freq (KHz)	Depth (dB)	Type
0	0	3516	100	Regulation

Add new user notch

•Index (0..9)

•Start frequency (KHz)

•Stop frequency (KHz)

•Depth (0..40dB, 100 removes notch)

Remove user notch

•Index (0..9)

14. Warranty

We offer a 12-month warranty on all products purchased from us. Full warranty terms can be found at <https://www.gigacopper.net/wp/en/warranty/>