G4202TCP

**InHome
with coax firmware**

G.hn Wave2 Bridge
for home networkover coaxial cable

with PoE/PoE+ supply of end devices

Instruction manual

Version 1.3
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For more information and purchase requests
contact info@gigacopper.net

1. Introduction

With the G.hn Bridge G4202TCP you can easily set up a **local network** over existing coaxial cables and at the same time supply the **PoE/PoE+** compatible end devices (access points, IP cameras, IP telephones, etc.) with power according to the 802.3af/at standard (2x 30W).

The G4202TCP modem is powered by a USB-C PD3.0 power supply with up to 90W power.

The modems are "multipoint" capable. Up to 16 devices can be used in coaxial cabling. Each modem communicates directly with all others in the G.hn network ("peer-to-peer").

The models G4201C, G4204C, G4202TCP (with PoE/PoE+) and G4204C-W (with WLAN) are compatible with each other, they can be combined in the network as desired.

Any type of coaxial cable can be used for data transmission. Depending on the cable length and attenuation, the bandwidth is up to approx. 1600 Mbit/s. This bandwidth is shared between all connected modems.

2. Scope of delivery

- G4202TCP Bridge
- Bracket for wall mounting
- 1.5m coax connection cable, F-plug/ F-plug
- IEC TV/F jack adapter

3. Specifications

- Dimensions (WxDxH): 107 x 77 x 38 mm
- Weight: 0.38 kg
- Operating temperature: -10°C - 45°C
- Enclosure Rating: IP30
- PoE/PoE+: 802.3af/at, PSE power 2x 15.4/30W
- Power consumption: <4W (without PoE output)

4. G.hn specification

- G.hn Wave2, 2-200 MHz
- Connectiontype: 1 wire pair (SISO), 2-200 MHz
- Physical bandwidth (PHY): approx. 1800 Mbit/s
- Net width: approx. 16 00 Mbit/s
- Automatic distribution of bandwidth between all connected G.hn modems
- Maximum allowable attenuation of the cable connection: 75dB

5. Connections

Panel and LED description

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

6. Compatible modems

Models G4201TM (1x GE), G4202T (2x GE + analog phone), G4202TCP (2x GE with PoE/PoE+) and G4204T-W (4x GE and WLAN) are compatible with each other, they can be combined in the network as desired.
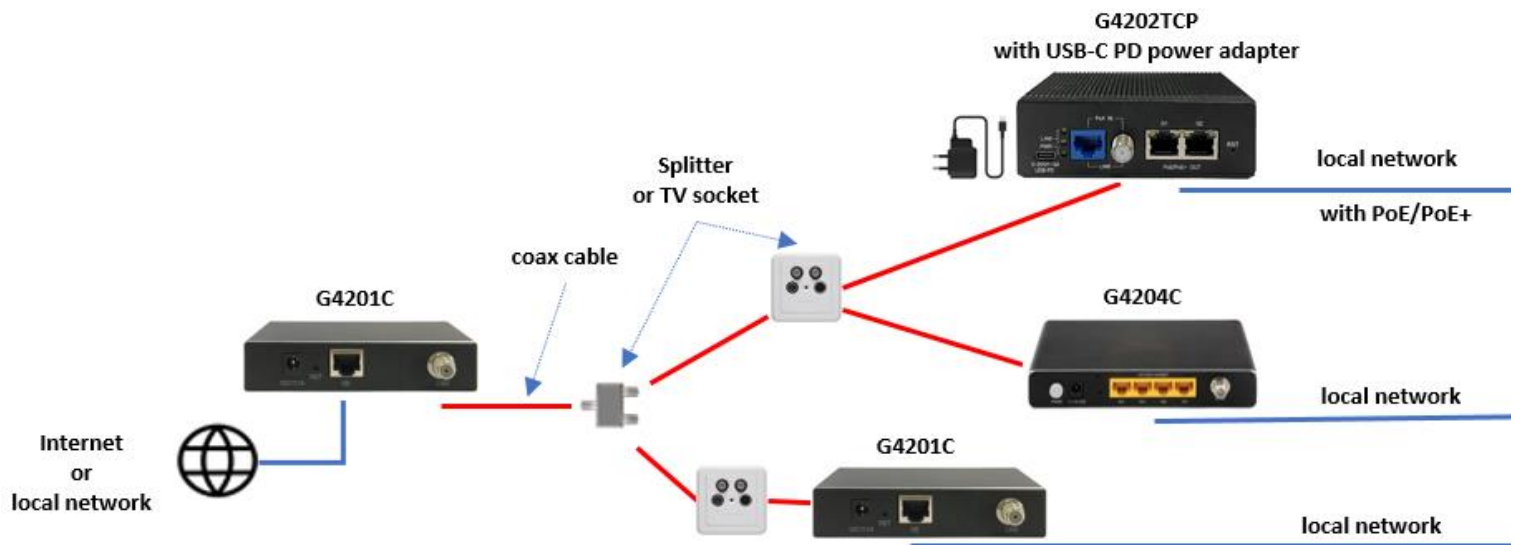

G4201C   G4204C   G4202TCP   G4204C-W

7. Use for home networking (local network after the router)

"Point-to-point":
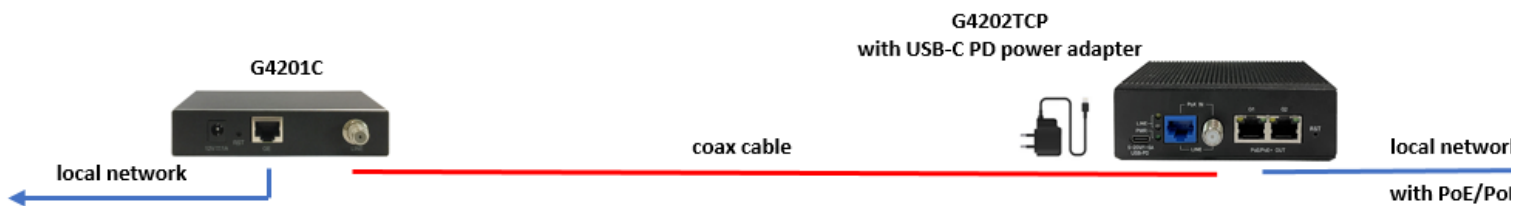
"Multipoint-to-multipoint": up to 16 modems

8. Installation Notes

- The G.hn modem can be connected directly to a coaxial cable as well as to an antenna socket. When connecting to an antenna socket, use the "DATA" connector (5-862MHz). Other connections (TV, radio, SAT) are only suitable if they are open in the frequency range 5-862MHz. Please refer to the information in the data sheet.
- The coax cables can be connected to each other via splitters/distributors, pass-through sockets, SAT feeders and multiswitches - creating a common network between the modems.
- The maximum range of the G.hn connection depends largely on the type of cable used . Typical values for RG-6 coax cables (8dB attenuation at 200MHz): maximum G.hn bandwidth of 1600 Mbit/s is possible up to approx. 300 meters, the G.hn connection - up to approx. 1000 meters.
- In the web interface of each modem, the negotiated bandwidths can be queried to all other G.hn bridges in the network (see point 12).

- Parallel operation with SAT-TV (950-2150MHz) and with DVB-T2 (470-690MHz) on a coaxial line is possible without restriction. Parallel operation with cable TV (DVB-C) is possible in the frequency range 258-862MHz and requires a 5-258MHz high-pass filter to avoid interference in the cable network.
- Parallel operation with cable Internet (DOCSIS, 5-862MHz) is not possible.

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

9. IP address

Themodem does not require an IP address from the local network segment during operation, because it conveys the data traffic via the MAC addresses.

Factory:
- IPv4 DHCP client is enabled, the modem obtains an IP address from the local DHCP server
- Second IP address: 192.168.10.253

10. Administration

Login to the Web Interface
- On your computer, open a web browser and connect to the IP address of the modem.
- To do this, use the IP address assigned by the local DHCP server.
- Log in with the default password: paterna

The connection via the second IP address (192.168.10.253) is possible even if the modem has not yet received an IP address from the local DHCP server:
- *Connect your computer to the G.hn modem using 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 192.168.10.253.*
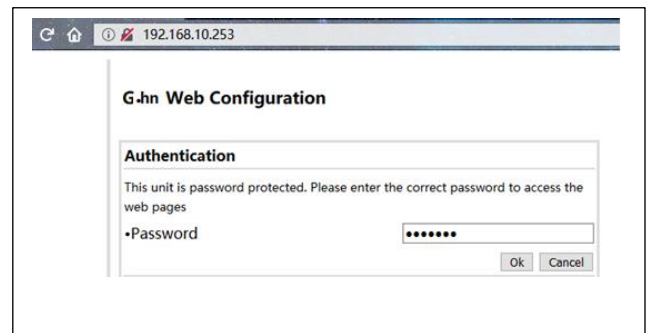
11. VLAN usage in the network

The devices are compatible with VLANs according to the 802.1Q standard.

The VLAN tags are forwarded transparently. External Ethernet switches must be used for the formation of VLANs.

12. Query the negotiated bandwidth

The bandwidths negotiated from the G.hn modem to all other G.hn bridges in the network can be queried via the web interface. 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.

Basic settings

G.hn
IP
Ethernet
Device
Multicast
QoS

G.hn spectrum

Log file

Advanced

•MAC address	00:1e:6e:03:ab:e1
•Device ID	2
•Domain Name	Ghn
•Force node Type	AUTOMATIC
•Node type*	END_POINT

* Node type change can take some time, please refresh page to update state

Ok Cancel

•G.hn profile   COAX 200MHz

Ok Cancel

Neighboring Domain Interference Mitigation (NDIM)

•NDIM mode	AUTOMATIC
•Domain ID (DOD)	11

Ok Cancel

Available Connections

Device ID	MAC Address	Phy Tx (Mbps)	Phy Rx (Mbps)
1	00:1e:6e:03:ab:ed	1951	1988
3	00:1e:6e:03:ab:e0	1696	1701

13. 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.

Multicast Configuration*

•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			Maximum IP address		
224	0	0.0	239	254	.255.255
0	0	0.0	0	0	.255.255
0	0	0.0	0	0	.255.255
0	0	0.0	0	0	.255.255

Ok Cancel

Broadcast supression

•Broadcast xput limit (Mbps)	2

Ok Cancel

14. Notching

For compatibility with other signals in the frequency range 2-200MHz, a reduction of up to 40dB or complete blocking (100dB) of the required frequencies can be made in the G.hn spectrum.

The setting must be configured in each modem.

Notches Configuration

Notch index	Start freq (KHz)	Stop freq (KHz)	Depth (dB)	Type
0 0	1954	100	Regulation	

Add new user notch
- Index (0..9)
- Start frequency (KHz)
- Stop frequency (KHz)
- Depth (0..40dB, 100 removes notch)

Ok Cancel

Remove user notch
- Index (0..9)

Ok Cancel

15. 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/