

G4201C

InHome

G.hn Wave2 Bridge
for home network
over coaxial cable

Instruction manual

Version 1.6
September 2023

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

2. Packing

- G4201C Bridge
- DC-12V/1A Power Adapter
- Bracket for wall mounting (*production date from 2023/02*)
- 1.5m coax connection cable, F-plug/ F-plug
- IEC TV/F jack adapter

3. Specifications

- Dimensions: 111.5*83*24.5mm
- Weight: 0,19kg
- Operating temperature: 0°C - 40°C
- Power consumption: < 3 watts

4. G.hn specification

- G.hn Wave2, 2-200 MHz
- Physical bandwidth (PHY): approx. 1800 Mbit/s
- Net width: approx. 1600Mbps
- Maximum allowable attenuation of the cable connection: 75dB

1. Introduction

With the G.hn Bridge G4201C you can easily set up a **local network** over existing coaxial cables.

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.

The G4201C Bridge is also suitable for **forwarding the fiber optic connection from the ONT to the router** over existing coaxial cable. Two modems are required.

5. Connections



Panel and LED description

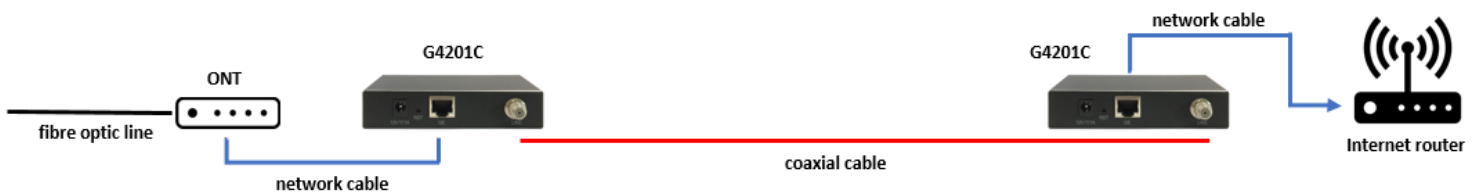
Lettering	Description
Rear	
12V DC	Power supply
LED on/off	All LEDs in front turn on/off (<i>from serial no. R3A0272752</i>)
RST	Recessed reset button (15 sec.)
LINE	G.hn connection
GE	Gigabit Ethernet Port
Front	
PWR LED	Indicates power availability
LINE LED	Status of the G.hn connection (green – OK, yellow – weak signal, off – no connection)
GE LED	Status of the Ethernet connection

6. Compatible modems

Models G4201C (1x GE), G4204C (4x GE), G4202TCP (2x GE with PoE/PoE+) and G4204C-W (4x GE and WLAN) are compatible with each other, they can be combined in the network as desired.



7. Use for the distribution of a fiber optic connection (ONT -> router)



For devices from serial no. R3A0268952:

By default, DHCP Client is enabled, which allows the modem to obtain an IP address from the DHCP server. Disable the DHCP client in the modem before connecting to the ONT. To do this, log in to the modem's web interface (see point 11), set "IP / DHCP enabled" to "NO", enter an IPv4 from a private range (e.g. 192.168.9.252, netmask 255.255.255.0, default gateway 192.168.9.1, DNS 192.168.9.1) and confirm with OK.

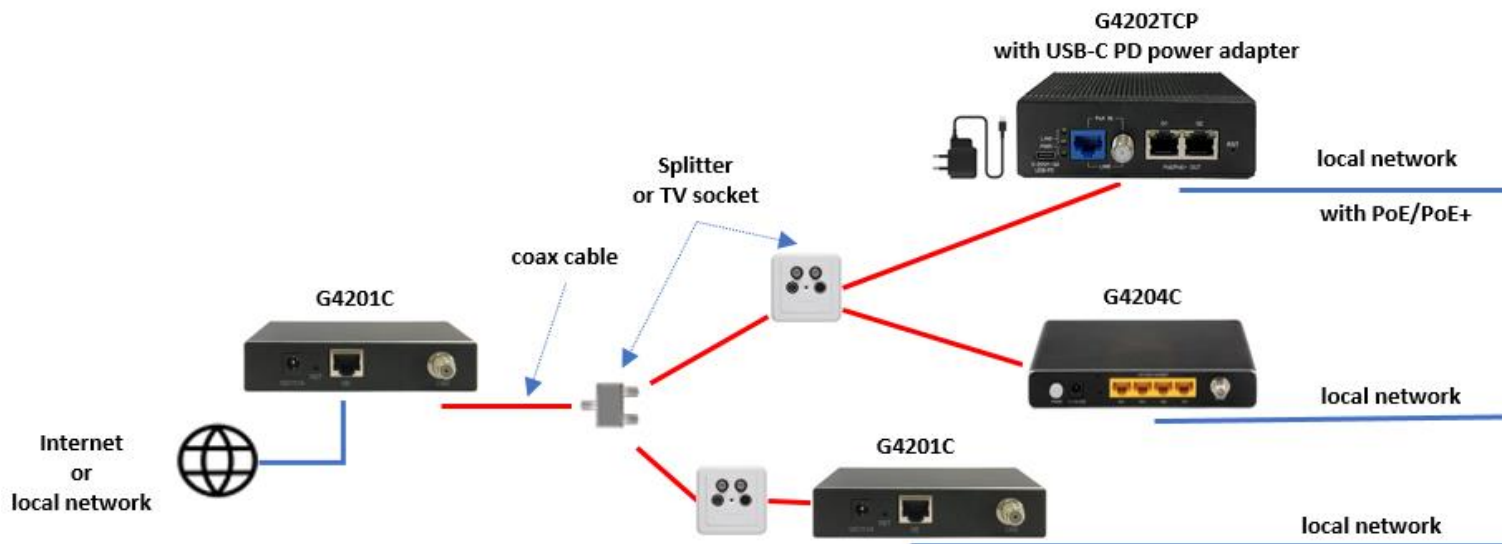
IPv4 configuration*	
DHCP enabled	NO <input type="button" value="v"/>
IPv4 address / netmask	<input type="text" value="192.168.9.252"/> <input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="192.168.9.1"/>
DNS	<input type="text" value="192.168.9.1"/>
Additional address #1	<input type="text" value="192.168.10.253"/> <input type="text" value="255.255.255.0"/>
Additional address #2	<input type="text" value="0.0.0.0"/> <input type="text" value="0.0.0.0"/>
*All changes except the DNS server will have effect after system boot	
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

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

"Point-to-point": in pairs



Multi-point-to-multipoint: up to 16 modems



9. Installation Notes

- The G.hn modem can be connected both directly to a coaxial cable and 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 feed-in points 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 cable (8dB attenuation at 200MHz): maximum G.hn bandwidth of 1600Mbit/s is up to approx. 300 meters possible, the G.hn connection - up to about 1000meters.
- In the web interface of each modem, the negotiated bandwidths can be queried to all other G.hn bridges in the network (see points 1,2).
- 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.

10. 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.

Factory settings for devices up to serial no. R3A0268951:

- IPv4 DHCP client is deactivated, the modem does not obtain an IP address from the local DHCP server. If desired, a static IP address can be configured or the DHCP client can be activated (menu "IP" in the web interface)
- First IP address: 192.168.10.253

Factory settings for devices from serial no. R3A0268952:

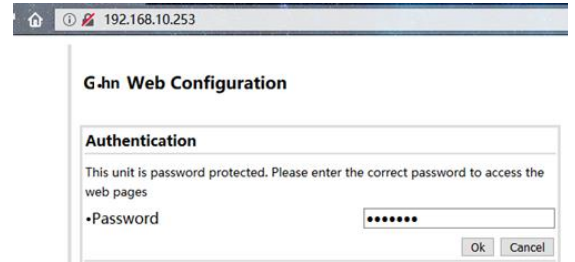
- IPv4 DHCP client is enabled, the modem obtains an IP address from the local DHCP server
- Second IP address: 192.168.10.253

11. Administration

Login to the Web Interface

For devices up to serial no. R3A0268951:

- Connect your computer to the G.hn modem through the GE 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.
- Log in with the default password: paterna



For devices from Serial No. R3A0268952:

- 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. Procedure as for devices before serial no. R3A0268951.*

12. Query the negotiated bandwidth

The bandwidths negotiated from one G.hn bridge 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.

192.168.10.253

Log Out

G4201C Web Configuration

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

Basic settings

- 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
- G.hn profile: COAX 200MHz

Neighboring Domain Interference Mitigation (NDIM)

- NDIM mode: AUTOMATIC
- Domain ID (DOD): 11

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 suppression

- Broadcast xput limit (Mbps): 2

Ok Cancel

14. 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.

15. 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):

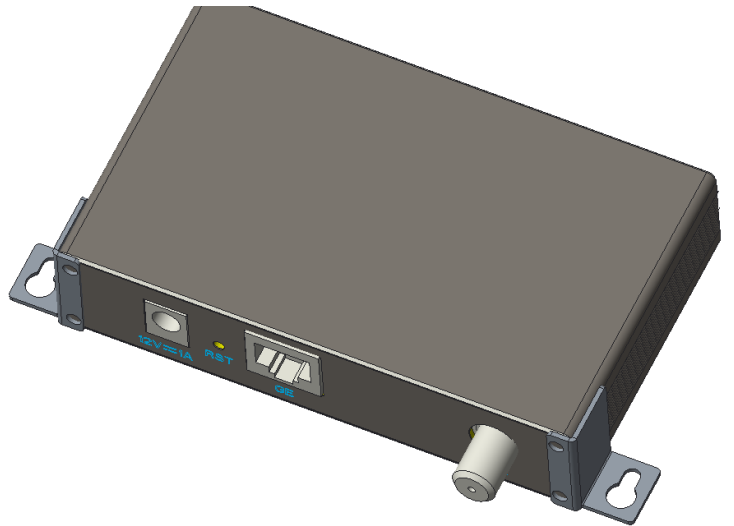
Ok Cancel

16. Wall mount

There are 4 small black screws in the corners on the back of the device.

To attach the brackets for wall mounting, first loosen 2 screws on one side, place the bracket and fix it with these screws.

Repeat the step on the other side.



17. 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/>