G4202T

G.hn Master / Client Set

Instruction manual

Version 1.5
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For more information and purchase requests
contact info@gigacopper.net

1. Introduction

With the G.hn modem G4202T you can easily **extend** your **network** over existing telephone cables.

The devices are also suitable for **forwarding fiber optic connections from the ONT to the router** via telephone line.

The modem supports both SISO (2-wire) and **MIMO (4-wire)** operation for higher bandwidth on long cables and increasing the range of the connection.

Any type of cable can be used for data transmission – both twisted pair and non-twisted pair, the net bandwidth is up to approx. 1500 Mbit/s (total download and upload) depending on the cable length.

The devices are used in pairs – a master and a client. Master determines the distribution of bandwidth towards the client and back (download / upload).

In a network with multiple clients, one G.hn switch must be used instead of multiple master modems. It enables central administration of the G.hn network and multiple parallel data connections through vectoring.

2. Packing

- G4202T Master or Client
- DC-12V/1A Power Adapter
- Bracket for wall mounting *(produced after 2023/05)*
- RJ11/RJ11 telephone cable 1. 5m, 4-wire (SISO and MIMO)
- *Only in DE*: TAE-F/RJ11 adapter, 4-pin (SISO and MIMO)

3. Specifications

- Dimensions: 103 * 66 * 27mm
- Weight: 0.19 kg
- Operating temperature: 0°C - 40°C
- Power consumption: < 3 watts

4. G.hn specification

- G.hn Wave2, 2-200 MHz
- Connectiontype: SISO (1 wire pair, 2-200 MHz) and MIMO (2 wire pairs, 2-100 MHz)

- Physical bandwidth (PHY): approx. 1800 Mbit/s
- Net width: approx. 1500 Mbit/s (download + 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

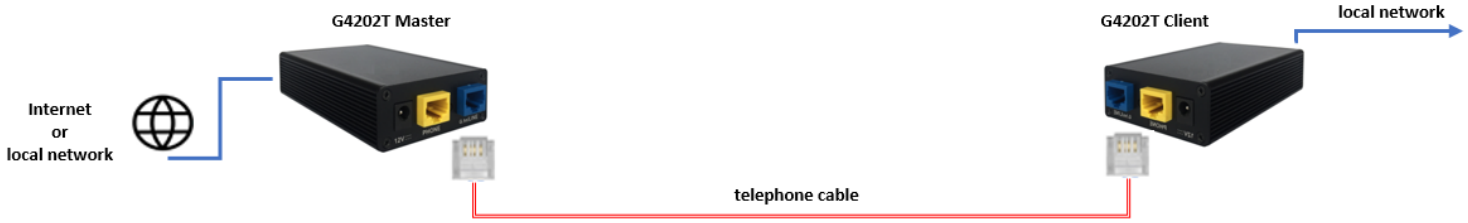
5. Connections

Panel and LED description

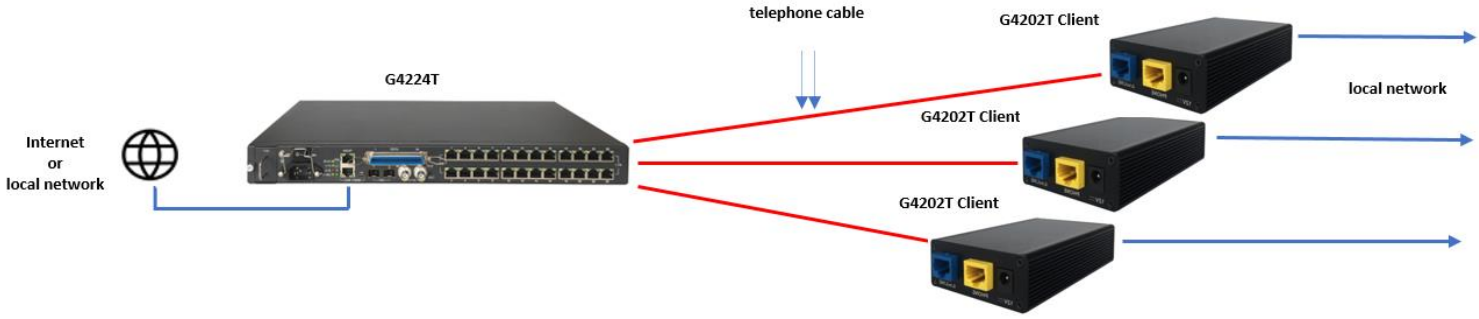
Lettering	Description
12V DC	Bus bar
G.hn/LINE	G.hn connection
G1, G2	2x 1 Gigabit Ethernet port
PHONE	Connection for analogue telephone
PWR LED	Indicates power availability
G.hn LED	Status of the G.hn connection (green – OK, yellow – weak signal, off – no connection)
G1/G2 LED	Status of the Ethernet connection
	Recessed reset button (15 sec.)

6. Use in the local network

Variant 1 – "Point-to-P points": one master and one client



Variant 2 – Connect to Switch G4224T or G4200-8T/4T



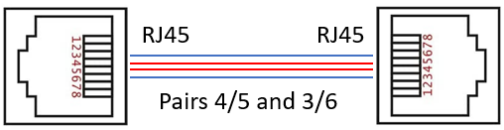
7. Use for the distribution of a fiber optic connection ("point-to-point")

8. 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



9. 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 13).
- 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.
- It is also possible to loop through an analogue telephone line on the same line parallel to the G.hn signal. To do this, connect the telephone line and the telephone to the PHONE connections on the G.hn master and G.hn client.

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

10. 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 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 192.168.10.252 or 192.168.10.253.
- Log in with the default password: paterna

11. 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 switches G4200-8T/4T and G4224T. Both Ethernet ports of the G4202T modem can be configured independently of each other.

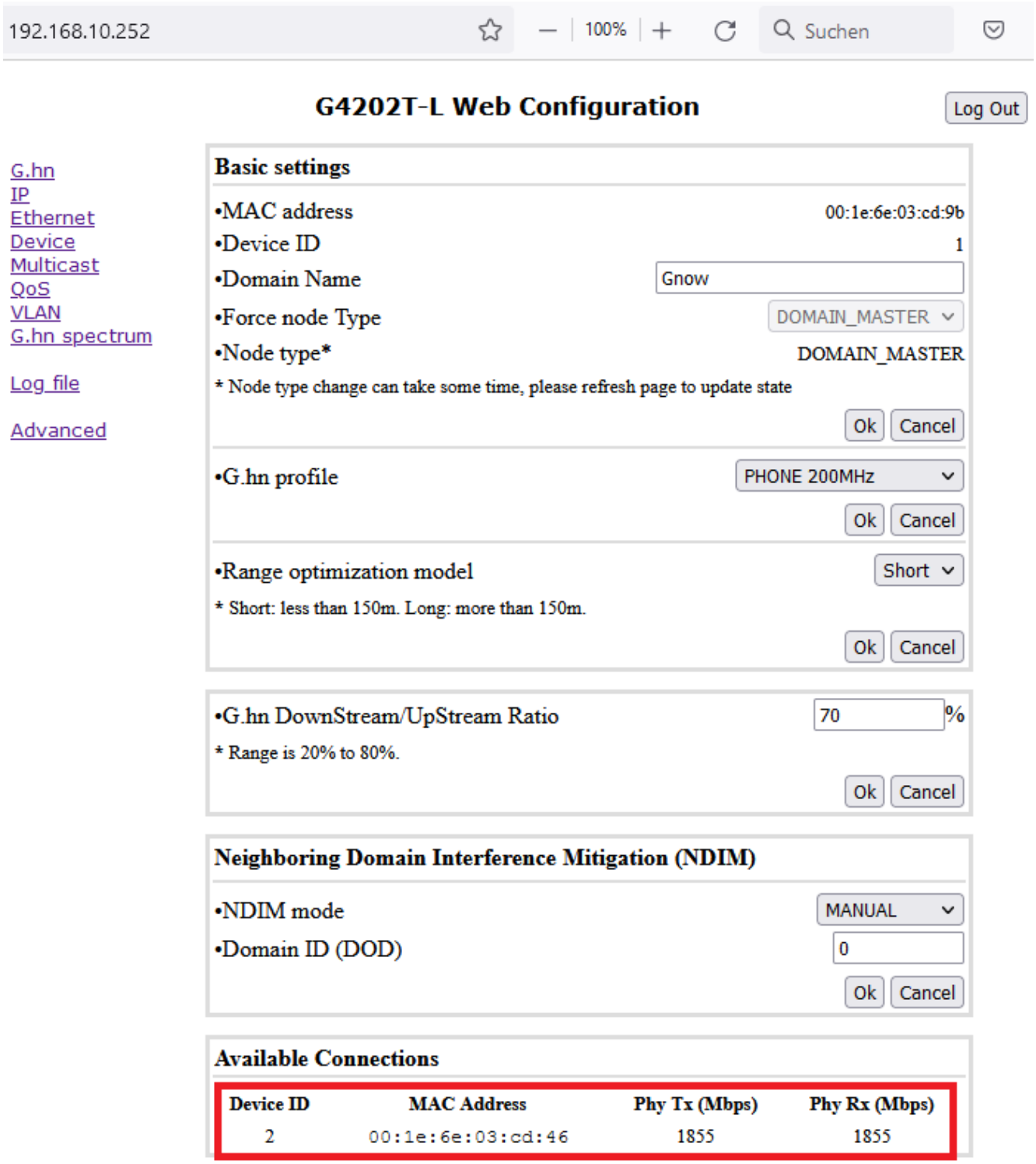
12. IP address

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).

13. 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 atthe application level is about 15-20% lower.

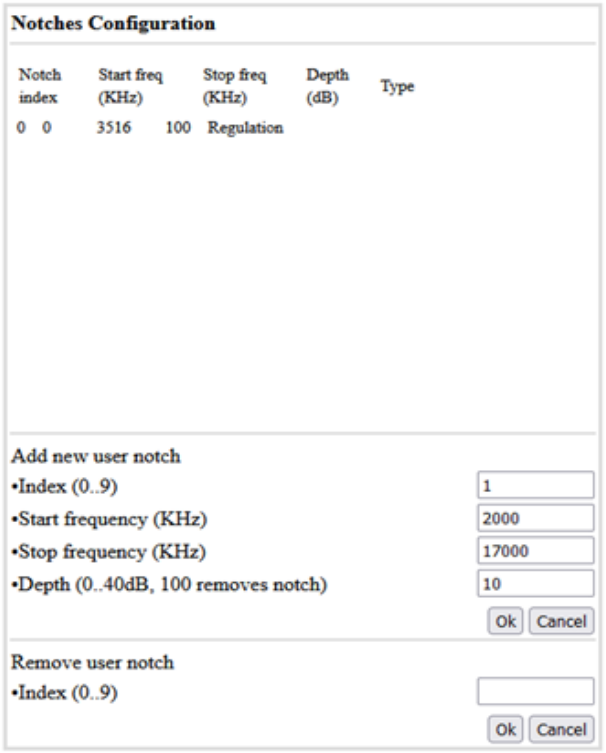


14. Notching, compatibility with DSL/VDSL

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.

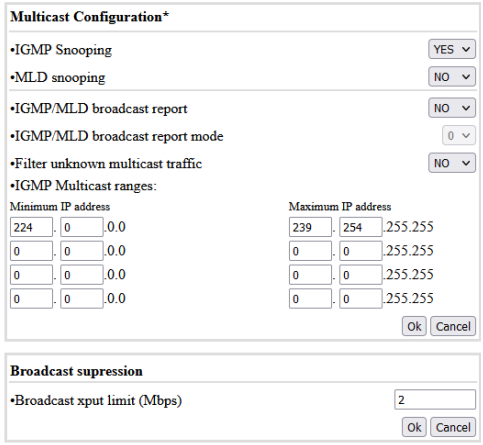
In the case of DSL and VDSL50, the G.hn modems usually do not require any settings.

For compatibility with VDSL100 (profile 17a) andVDSL250 (profile 35b), the G.hn level in the range 2-17MHz or 2-30MHz must normal be lowered by 10dB. The setting must be configured in the master modem (menu item G.hn Spectrum) or in the switch.



15. 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.



16. Wall mount

There are 4 small black screws in the corners on both connection panels 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/