GIGA COPPER NETWORKS

G4202TCP

Quick Installation Guide

GIGA Copper Networks GmbH

1. Package List

G4202TCP*1 pcs	Screw kits*2 pcs	Installation tag*1 pcs
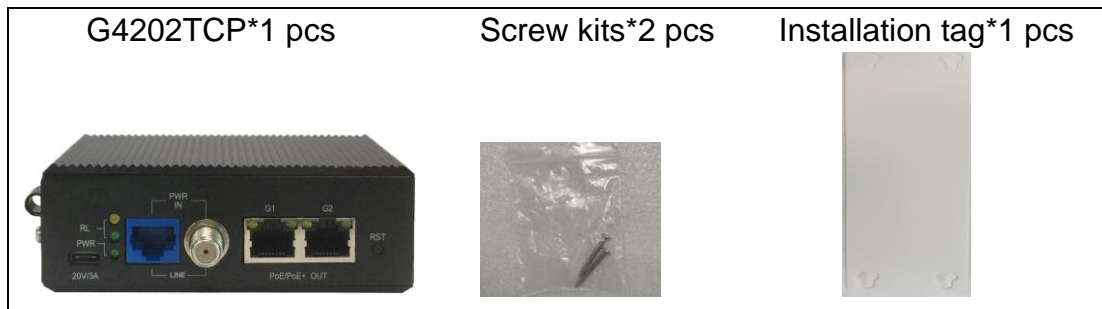
2. Hardware Introduction

2.1 Physical and Environmental

- Dimension: 107mm (L)*77mm (W)*38mm (H)
- Weight: 340g
- Operating temperature: 0~50℃
- Storage temperature: -25℃ ~ 70℃
- Humidity: 10% ~ 90% RH Non-condensing
- Maximum power consumption: <5w （Without PoE load）

2.2 Front Panel

The front panel of the G4202TCP contains 1 *RJ45/F-Type coaxial connector of G.hn port with PoC, 2 *10/100/1000Base-T RJ45 Ethernet port and a USB Type-C connector for extra power supply.

2.3 Rear Panel

2.4 LED Indicators

Label	Type	Color	State	Description
PWR	Power Status	Yellow	On	Lights to indicate the power is on
			Off	Indicate the power is off
LINE	G.hn link status	Green	On	Lights to indicate the coaxial/UTP link is established
			Off	Indicates that the coaxial/UTP link is down
		Yellow	On	Lights to indicate the coaxial/UTP link status is poor
			Off	Indicates that the coaxial/UTP link status is normal or indicates the coaxial/UTP is link down (it can be judged from the G.hn green LED status)
G1/G2	Ethernet link status	Green	On	Lights to indicate the port is link up and the rate is 1000Mbps
			Off	Indicates that the port is link down or the port is link up but connect rate is 10/100 Mbps
		Yellow	On	Lights to indicate the port is link up
			Off	Indicates that the port is link down
			Blink	The port is up and has data transmission

3. Hardware Specifications

Label		Description
20V/3A		A Type-C connector for USB-PD 20V/3A DC input
PWR IN / LINE		G.hn combo port, 1* RJ45 connector and 1*F-type coax connector alternative, and both of them support PoC
G1/G2		2 *10/100/1000Base-T RJ45 Ethernet ports with 802.3af/at PoE+ MDI/MDI-X selection: automatic Cable specification: CAT5 or CAT6 UTP
RST		Press and hold the RST button on the front panel beyond 15s to reset G4202TCP to factory default configuration

4. Application and Installation

Long Reach POE solution is designed to extend IP Ethernet transmission and inject power into a remote 8.2.3af/at PoE compliant power device (PD) beyond the 100 meters limit of Ethernet.

The G4202TCP supports 2 ways as power source to inject 802.3af/at PoE to remote standard PDs (power Devices)

● Remote G4202TCP power supplied from Headend G4224 switch over coaxial cable or UTP cable.
● Local DC power from power supply through G4202TCP's USB Type-C connector.

Note	Before installation, please consider the distance and watts value demand for PD devices. The G4202TCP output capacity and upload/download performance depends on the length of the UTP and coaxial cable
Note	The G4202TCP has two power input options. Only one mode is available at the same time, when both local DC power and remote G.hn power provide power for G4202TCP, it is recommended to connect the local DC power first, and then remote G.hn power.

Typical Application 1:

The G4202TCP is powered via PoC, power supply from G4224, the IEEE 802.3af/at compliant PoE PD will automatically be powered by the G4202TCP via UTP/Coaxial

Remote Power from G4224 over UTP Cable:
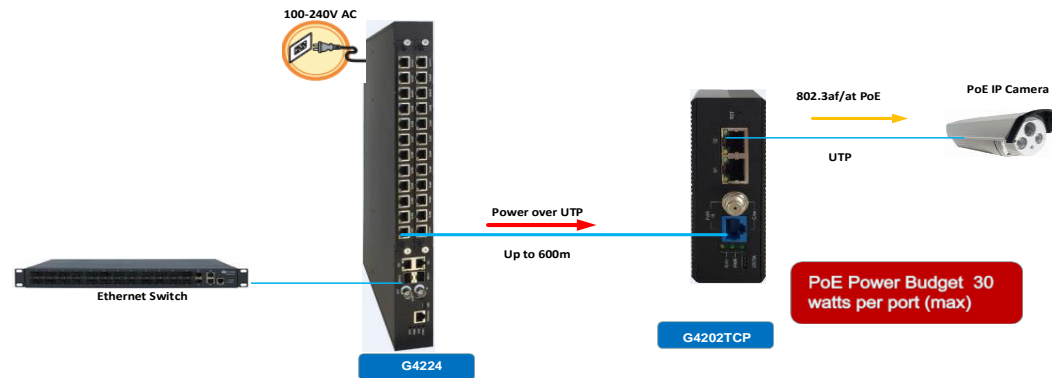
Functions	PoE+ Extender	
	G4202TCP	
Power Input	G.hn port with IEEE 802.3af/at/bt PoE input over UTP	
Power Output	G1/G2 RJ45 port with IEEE 802.3af/at PoE output	

Installation Instruction:
Step1. Connect 100-240V AC to the PoC Injector (G4224)

Step2. Connect the PoC injector (G4224) and PoE+ extender (G4202TCP) to ends of RJ45 terminated UTP cable, then the G4202TCP will be powered on and the PWR LED will lit up accordingly.

Step3. Connect Cat5/Cat6 UTP cable to G4202TCP and IEEE 802.3af/at complied PoE IP camera or other PD devices.

Remote Power from G4224 over Coaxial Cable:

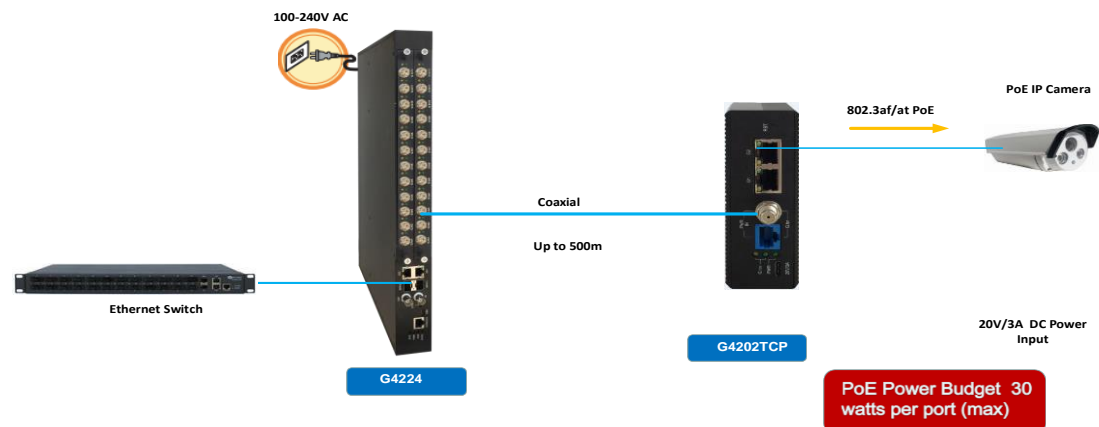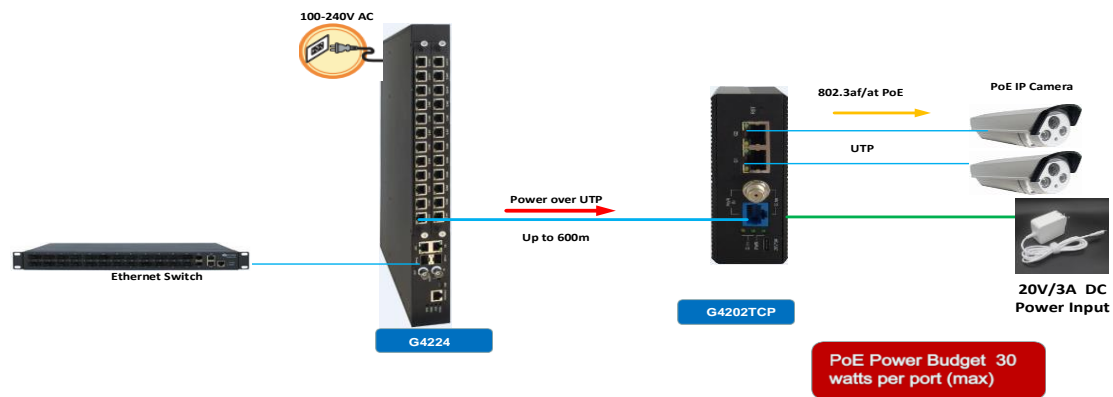| Functions	PoE+ Extender
	G4202TCP
Power Input	G.hn port with PoC power input over Coaxial
Power Output	G1/G2 RJ45 port with IEEE 802.3af/at PoE output

Installation Instruction:

Step1. Connect 100-240V AC to the PoC Injector (G4224)

Step2. Connect the PoE+ injector (G4224) and PoE+ extender (G4202TCP) via coaxial cable, then the G4202TCP will be powered on and the PWR LED will lit up accordingly.

Step3. Connect Cat5/Cat6 UTP cable to G4202TCP and IEEE 802.3af/at complied PoE IP Camera or other PD devices.

Typical Application 2:

The G4202TCP is powered via the external power. An IEEE 802.3af/at compliant PoE PD will automatically be powered by the G4202TCP via UTP/coaxial (connect to G4224)

Local DC Power through G4202TCP's USB Type-C Connector (UTP Application), Connect to G4224:

Functions	PoE+ Extender
	G4202TCP
Power Input	20V/3A DC power input via USB Type-C connector
Power Output	G1/G2 RJ45 port with IEEE 802.3af/at PoE output

Installation Instruction:

Step1. Connect 100-240V AC to the PoC Injector (G4224)

Step2. Connect a 20V/3A DC power to the USB Type-C connector, the G4202TCP will power on and the PWR LED will lit up immediately.

Step3. Connect the PoE+ injector (G4224) and PoE+ extender (G4202TCP) to ends of RJ45 terminated UTP cable.

Step4. Connect Cat5/Cat6 UTP cable to G4202TCP and IEEE 802.3af/at complied PoE IP camera or other PD devices.

Local DC Power through G4202TCP's USB Type-C Connector (Coax Application), Connect to G4224:

Functions	PoE+ Extender
	G4202TCP
Power Input	20V/3A DC power input via USB Type-C connector
Power Output	G1/G2 RJ45 port with IEEE 802.3af/at PoE output

Step1. Connect 100-240V AC to the PoC Injector (G4224)

Step2. Connect a 20V/3A DC power to the USB Type-C connector, the G4202TCP will power on and the PWR LED will lit up immediately.

Step3. Connect the PoE+ Injector (G4224) and PoE+ Extender (G4202TCP) via coaxial cable.

Step4. Connect Cat5/Cat6 UTP cable to G4202TCP and IEEE 802.3af/at complied PoE IP camera or other PD devices.

Typical Application 3:

The G4202TCP is powered via the external power, and the IEEE 802.3af/at compliant PoE PD will automatically be powered by the G4202TCP via UTP/Coaxial (connect to G4202TCP)

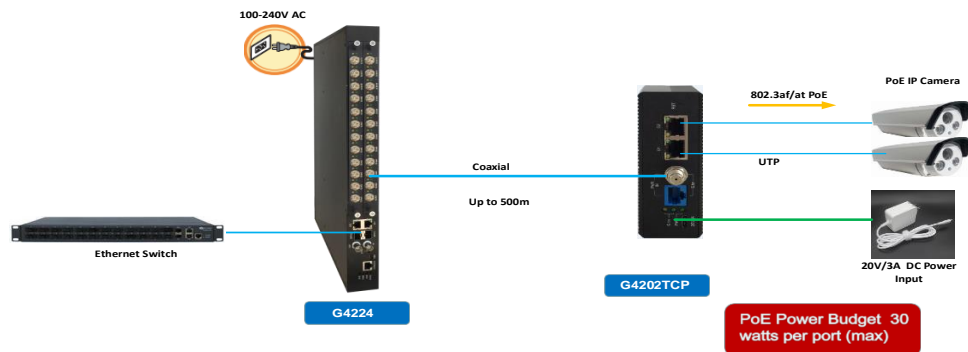**Local DC Power through G4202TCP's USB Type-C Connector (UTP Application), Connect to G4202TCP (Local):**

Functions	PoE+ Extender
	G4202TCP
Power Input	20V/3A DC power input via USB Type-C connector
Power Output	G1/G2 RJ45 port with IEEE 802.3af/at PoE output

Installation Instruction:

Step1. Connect a 20V/3A DC to the USB Type-C connector (G4202TCP local)

Step2. Connect a 20V/3A DC power to the USB Type-C connector (G4202TCP remote), the G4202TCP remote will power on and the PWR LED will lit up immediately.

Step3. Connect the G4202TCP (local) and G4202TCP (remote) via UTP cable.

Step4. Connect Cat5/Cat6 UTP cable to G4202TCP (remote) and IEEE 802.3af/at complied PoE IP Camera or other PD devices.

**Local DC Power through G4202TCP's USB Type-C connector (Coaxial Application), Connect to G4202TCP (Local):**

Functions	PoE+Extender
	G4202TCP
Power Input	20V/3A DC power input via USB Type-C connector
Power Output	G1/G2 RJ45 port with IEEE 802.3af/at PoE output

Installation Instruction:

Step1. Connect a 20V/3A DC to the USB Type-C connector (G4202TCP local)

Step2. Connect a 20V/3A DC power to the USB Type-C connector (G4202TCP remote), the G4202TCP remote will power on and the PWR LED will lit up immediately.

Step3. Connect the G4202TCP (local) and G4202TCP (remote) via coaxial cable.

Step4. Connect Cat5/Cat6 UTP cable to G4202TCP (remote) and IEEE 802.3af/at complied PoE IP Camera or other PD devices.

5. Mounting Procedures

The G4202TCP can be mount installed on a chassis/wall, there are 2 hangers on the rear panel of G4202TCP with shipment for mount installation as following picture shows:
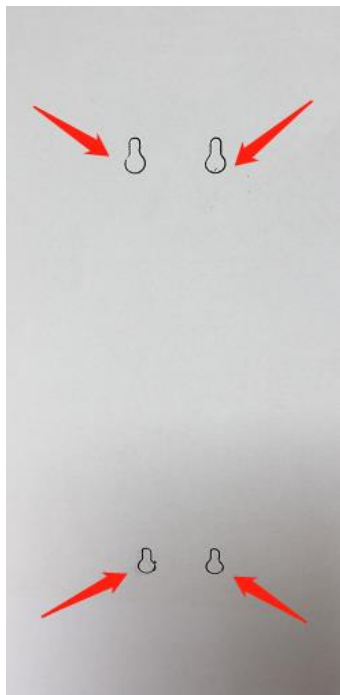
Rear Panel

Hangers for Installation
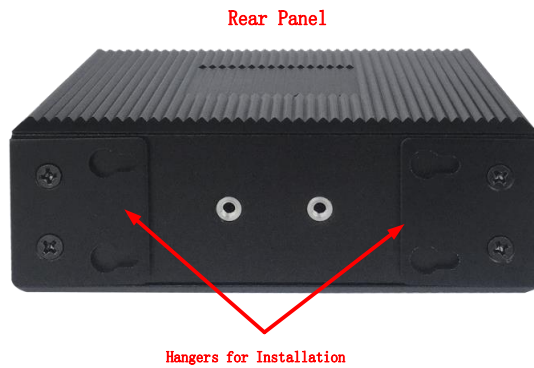
Step1. Remove four mounting fin screws on the back panel as shown below.

Step2. Turn over the fins and restore the four screws back to the back panel as shown below

Step3. For brick and cement wall, place the G4202TCP to the proper location where it is going to be installed, use a marker or pen to identify the hole locations

Step4. Follow the marked hole location, drill four holes using 6mm drill tip and nail in four plastic wall-mount nuts into the holes, then mount the G4202TCP on the wall with four wall-mount screws.

For the wall or location where the screws can be screwed in directly, the G4202TCP can be mounted with four wall-mount screws without the need of plastic wall-mount.

⚠️ **Warming**	Must use the M3*4 standard screws to tighten the hangers

6. Performance

6.1 Test Condition:

Items	Description
UTP Cable	0.5mm 25pair F/S cable
Coaxial Cable	SYV 75-4 100m, SYV 75-5 200m
Test Tool	Big Tao 200 Tester

6.2 Performance

Following charts show the performance and PoE output capability test results in different cable length

	Distance (meter)	Throughput(Download/Upload): Mb/s Packet Length:512Bytes		802.3af/at/bt PoE Output Capability	
Coaxial Performance		Remote power through F-type coax connector	Local DC power through USB Type-C connector	Remote power through F-type coax connector	Local DC power through USB Type-C connector
	1	990/440	990/440	30w	30w
	100	990/440	990/430	30W	30w
	200	860/390	740/320	18W	30w
	300	560/290	540/270	11W	30w
	400	370/220	220/140	9W	30w
	500	170/130	160/130	7W	30w
UTP Performance (MIMO)	Distance (meter)	Throughput(Download/Upload): Mb/s Packet Length:512Bytes		802.3af/at/bt PoE Output Capability	
		Remote power through UTP connector	Local DC power through USB Type-C connector	Remote power through UTP connector	Local DC power through USB Type-C connector
	1	990/440	990/440	30w	30w
	100	990/440	990/440	30w	30w
	200	980/410	980/410	21w	30w
	300	760/250	740/190	13w	30w
	400	500/150	490/140	9w	30w
	500	310/80	300/80	6w	30w
	600	210/40	200/40	4w	30w
UTP Performance (SISO)	Distance (meter)	Throughput(Download/Upload): Mb/s Packet Length:512Bytes		802.3af/at/bt PoE Output Capability	
		Remote power through UTP connector	Local DC power through USB Type-C connector	Remote power through UTP connector	Local DC power through USB Type-C connector

	1	990/450	990/450	30w	30w
	100	990/430	990/430	18w	30w
	200	650/250	630/250	9w	30w
	300	270/130	250/130	5w	30w
	400		140/80		30w
	500		80/50		30w
	600		40/30		30w

The above PoE output capability results is measured on Ghn11/Ghn12 or Ghn23/Ghn24 of the G4224 which support 802.3bt PoE output, also the G4202TCP support 802.3bt PoE input.

Note: The actual data rate will vary on the quality of the copper wire and environment factors.

Depending on what the DC/PoE Power Input and the length of coaxial/UTP cable

7. Appendix A: RJ45 Pin Assignments

RJ45 Pin Assignments	
Contact	POE
1	Positive(VCC+)
2	Positive(VCC+)
3	Positive(VCC+)
4	Positive(VCC+)
5	Negative(VCC-)
6	Negative(VCC-)
7	Negative(VCC-)
8	Negative(VCC-)