

Quick Installation Guide

INJ-G90

Multi-Gigabit Ethernet IEEE802.3bt PoE++ Injector



Version 1.1

July, 2025

CTC Union Technologies Co., Ltd.

Far Eastern Vienna Technology Center
(Neihu Technology Park)
8F, No. 60 Zhouzi St.,
Neihu, Taipei 114, Taiwan

T +886-2-26591021

F +886-2-26590237

E sales@ctcu.com



2025 CTC Union Technologies Co., LTD.

All trademarks are the property of their respective owners.

Technical information in this document is subject to change without notice.

Table of Contents

Introduction	4
Package List	4
Features	4
Specifications	5
STANDARDS.....	5
INTERFACES	5
POWER OVER ETHERNET (PoE).....	5
POWER.....	5
NETWORK CABLE.....	6
MECHANICAL	6
ENVIRONMENTAL.....	6
CERTIFICATIONS.....	6
MTBF	6
Panel	7
RJ-45 Ethernet Port Pinouts	8
RJ-45 Ethernet & PoE Pin Assignments	8
LED Indicators	8
Grounding	9
Wall-Mounting Installation	9
Installation	10
Application	11

Introduction

INJ-G90 is the next generation Multi-Gigabit PoE++ injector that is designed to transmit power (PoE) and data over the cable to the connected powered device (PD). PoE describes a standardized system to pass electrical power along with data on Ethernet cabling, eliminating the need for extra and often expensive electrical power wiring. INJ-G90 PoE++ injector complies with IEEE 802.3af, IEEE 802.3at and IEEE 802.3bt standards that allows maximum 90W power budget to be used by the PD.

Housed in a rugged wall mountable enclosure, INJ-G90 is able to be mounted on the wall using the wall-mounting bracket. INJ-G90 requires absolutely no configuration whatsoever. Just connect the Ethernet UTP cables and use AC power cord to connect the PoE++ injector to the AC power source.

Package List

- INJ-G90 device
- AC power cord

Features

- Supports IEEE802.3af/at/bt PoE++ standards
- Maximum 90W PoE power budget
- Bundled with CTCU EXT-G104P extender to offer distance extension up to 100M for PoE feeding applications
- Compact size and wall mountable
- PoE short circuit protection to guard the remote PD device
- CE, FCC certified

Specifications

Standards

- IEEE Standards: IEEE 802.3 (10Base-T Ethernet), IEEE 802.3u (100Base-TX Fast Ethernet), IEEE 802.3ab (1000Base-T Gigabit Ethernet), IEEE 802.3bz (2.5/5G Base-T Ethernet), IEEE 802.3an (10G Base-T Ethernet)
- PoE Standards: IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt

Interfaces

- 1 x RJ-45 Port for Ethernet data
- 1 x RJ-45 Port for Ethernet data with PoE output power
- Speed: 10M/100M/1000M/2.5G/5G/10G
- Cables: Category 3, 4, 5e (10Base-T), Category 5, 5e (100/1000Base-T) or above

Power over Ethernet (PoE)

- Supports IEEE 802.3af (15.4W)
- Supports IEEE 802.3at (30W)
- Supports IEEE 802.3bt (90W)
- RJ-45 Pin Assignment:
 - Positive (+): pin 1, 2, 4, 5
 - Negative(-): pin 3, 6, 7, 8
- PoE Power Budget: 90W (Maximum)
- PoE Output Voltage: 53VDC (Minimum)

Power

- Built-in Power Supply Input 100~240VAC
- Power Consumption: 90W

Network Cable

- The total transmission distance supported is 100 meters
- Cat.5e UTP/STP cable or above for 10/100/1G/2.5GBase-T
- Cat.6 UTP/STP cable or above for 5GBase-T
- Cat.6A UTP/STP cable or above for 10GBase-T

Mechanical

- Dimensions: 155 mm (H) x 111.4 mm (W) x 40 mm (D)
- Installation Method: Wall-Mounting
- Net Weight: 610g

Environmental

- Operating Temperature: 0°C~50°C
- Storage Temperature: -10°C~70°C
- Humidity: 10%~90% (Non-condensing)

Certifications

- CE
- FCC

MTBF

- 97,569 Hours

Panel

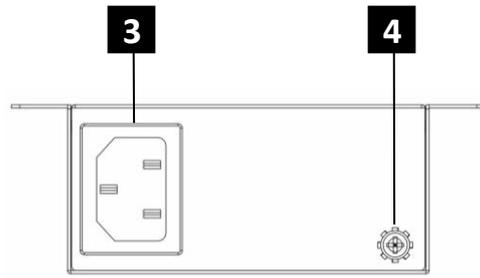
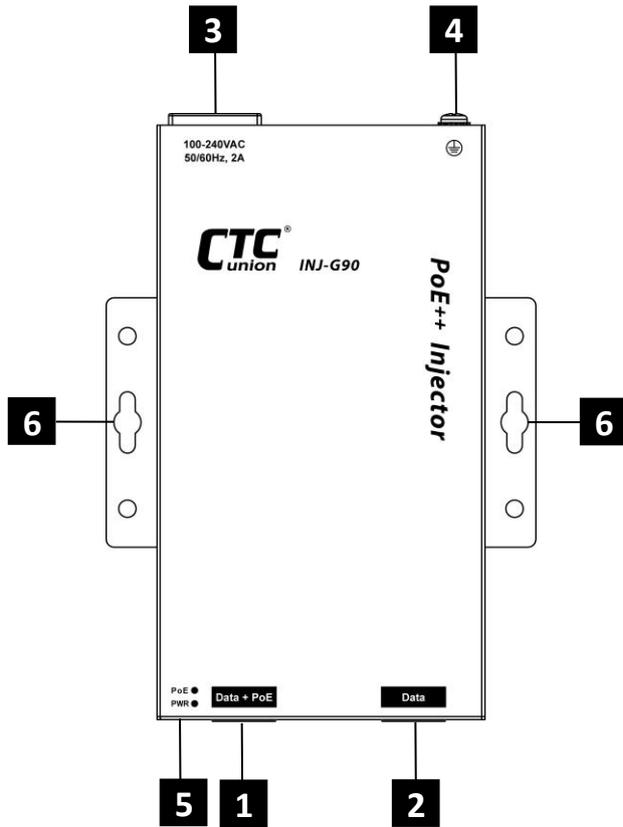


Figure 2. Top Panel

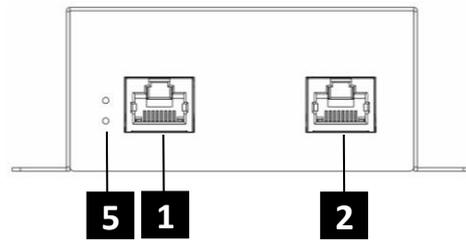


Figure 3. Bottom Panel

Figure 1. Front Panel

Index No.	Descriptions
1	“Data+PoE” RJ-45 port
2	“Data” RJ-45 port
3	AC power socket
4	Earth grounding screw
5	LED indicators
6	Wall-mounting bracket

Table 1. Panel Index Reference

RJ-45 Ethernet Port Pinouts

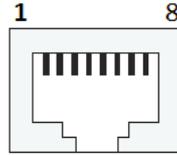


Figure 4. RJ-45 Ethernet Port Pinouts

RJ-45 Ethernet & PoE Pin Assignments

Pin No.	RJ-45 Ethernet		PoE Output
	100M	1G/2.5G/5G/10G	
1	RX+	TRD 0+	V+
2	RX-	TRD 0-	V+
3	TX+	TRD 1+	V-
4	-	TRD 2+	V+
5	-	TRD 2-	V+
6	TX-	TRD 1-	V-
7	-	TRD 3+	V-
8	-	TRD 3-	V-

LED Indicators

LED	Color	Status	Definition
PWR	Green	On	Power LED indicator is lit and remains steady on when power is connected and active.
		Off	Power is not connected.
PoE	Green	On	PoE LED indicator is lit and remains steady on when the LAN port has successfully negotiated PoE and is supplying output power to the remote connected PD.
		Blinking	PoE LED indicator blinks when errors occur such as overload, short circuit, port failed at startup.
		Off	No PoE power output.

Grounding

An earth grounding connection hole is provided on the top panel with an earth ground sign near to it. Grounding the device can help to release leakage of electricity to the earth safely so as to reduce injuries from electromagnetic interference (EMI).

Prior to connecting to the power, it is important to connect the ground wire to the earth. Follow steps below to install ground wire:

Step 1. Make sure you have the grounding screw and grounding cable at hand.

Step 2. Unfasten the ground screw on the top panel.

Step 3. Attach the grounding screw to the ring terminal of the grounding cable. Make sure that the grounding cable is long enough to reach the earth.

Step 4. Use a screwdriver (or other tools) to fasten the grounding screw on the earth ground hole securely.

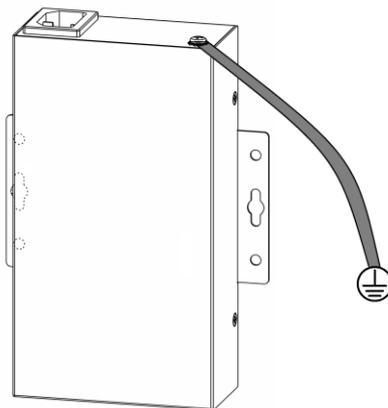


Figure 5. Grounding the Device

Wall-Mounting Installation

The PoE++ injector has an attached and non-removable wall-mounting bracket with it. If the PoE++ injector needs to be wall-mounted, there are two methods to install the PoE++ injector. First, users can use four appropriate screws to fix the PoE++ injector on the wall as shown in the figure below.

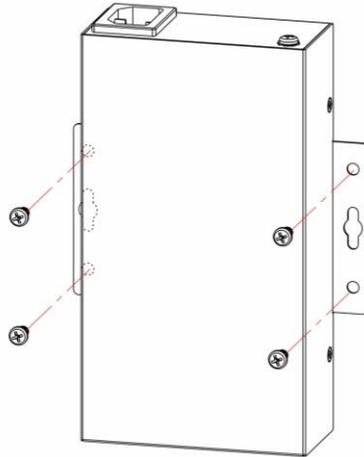


Figure 6. Using Screws to Fix the Device on the Wall

The other wall-mounting installation method is to use two appropriate screws and hang the PoE++ injector on these two screws. Before hanging the device, you have to install two appropriate screws into the wall leaving less than 0.5cm or 1/4 inch exposed. Then, hang the PoE++ injector on the inserted screws. The PoE++ injector can be hung either in horizontal or vertical direction depending on your actual environment needs. See the figure below for illustration.

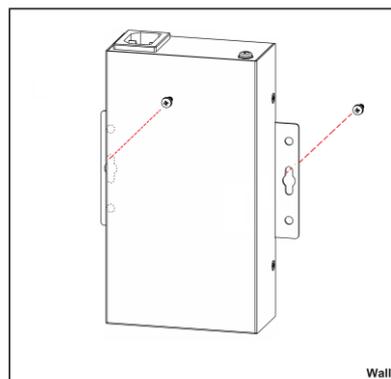


Figure 7. Hanging the Device

Installation

INJ-G90 has two RJ-45 connectors for Ethernet cables. Connect a UTP cable from your non-PoE Ethernet switch to the port labeled "Data". Connect another UTP cable from your IEEE802.3af/at/bt compliant PD device to the port labeled "Data+PoE".

Using the AC power adapter provided, connect one end to the INJ-G90 AC power input and the other end of the cable to an AC outlet. Ensure that the power LED on the INJ-G90 is lit. Then, installation is complete.

Application

The PoE++ injector can be used with the PoE++ extender to feed power to the connected powered devices (PD) such as IP camera, Wireless AP, surveillance camera in a plug & play manner. For more detailed information about PoE++ extender, please contact your sales representative.

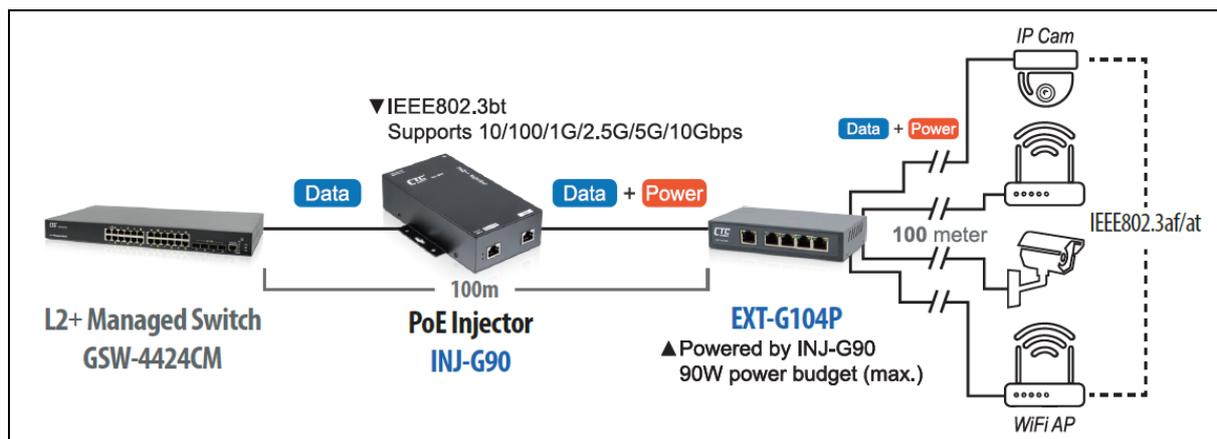


Figure 8. Injector Application

