

Product Specifications

Single-Port Multi-Gigabit 802.3bt PoE++ Injector (60 Watts)

POE-171A-60

Version 3.0

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Change History:

Revision	Date	Author	Change List
Version 1.0	2017/12/15	Keithy Lin	Initial release
Version 2.0	2019/6/10	Keithy Lin	Remove Ultra PoE. Supports 802.3bt standard
Version 3.0	2019/11/7	Keithy Lin	Add PoE Force mode. Support 2.5G/5G Ethernet.

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Reviewed by:	Jonas Yang	Approved by:	Kent Kang

1. PRODUCT DESCRIPTION



Advanced Multi-Gigabit and 802.3bt PoE++ Network Solution

PLANET POE-171A-60 is a **Single-Port, 802.3bt Power over Ethernet Injector** with a maximum of up to **60 watts** of power output over Ethernet cables. It is also equipped with two 10M/100M/1G/2.5G/5GBASE-T RJ45 copper interfaces to handle extremely large amounts of data transmission.



POE-171A-60 is designed specifically to meet the demand for growing higher power required network equipment such as:

- ▶ PTZ speed dome
- ▶ AIO (All-in-One) touch PC
- ▶ Remote digital signage display
- ▶ Other network devices that need higher power to work normally



The POE-171A-60 delivers the Ethernet digital data with DC power over the twisted-pair cables as a 60-watt Power over Ethernet Injector, and the connected ultra Power over Ethernet splitter, the POE-172S, will separate the digital data and the power into three optional outputs (12V/19V/24V DC) with distance up to 100 meters.

Intelligent LED Indicator for PoE Mode and Real-time PoE Usage

The POE-171A-60, when switched to the legacy mode, provides power to those PD devices which do not fully follow the IEEE 802.3af/at/bt standard. The Legacy LED will turn on when the Legacy mode is enabled. If the Legacy mode can't power on the PD, the Force mode will be enabled automatically to provide PD with a maximum of 60 watts.

Moreover, the POE-171A-60 helps users to monitor the current status of PoE power usage easily and efficiently via its advanced LED indication. "PoE Power Usage" displayed on the front panel of the POE-171A-60 has three LED indicators of different power usages. Via the power usage LED, the POE-171A-60 enables the administrator to monitor the status of the power usage of the connected PDs in real time.

PoE Power Usage Display



60 watts of Power over 4-pair UTP

Instead of delivering power over 2-pair twisted UTP – be it end-span (Pins 1, 2, 3 and 6) or mid-span (Pins 4, 5, 7 and 8), the POE-171A-60 provides the capability to source up to 60 watts of power by using all the four pairs of standard Cat. 5e/Cat. 6 Ethernet cabling.

PoE Standard	IEEE 802.3af (802.3at Type 1)	IEEE 802.3at (802.3at Type 2)	IEEE 802.3bt (802.bt Type 3)
Maximum Power delivered by PSE	15.4 watts	30 watts	60 watts
Power Available at PD	12.95 watts	25.5 watts	51 watts
Voltage Range	48V	50~57V	52~57V
Twisted-pair Used	2-pair		4-pair
Supported Modes	End-span or Mid-span		End-span + Mid-span
Supported Cabling	Cat. 3/5/5e/6		Cat. 5e/6

All-in-One and Compact Size Design

It is easy to install the PoE injector by way of **Plug and Play** and comes with simple troubleshooting, making it easy for business and home users to own it. Besides, the POE-171A-60 comes in compact housing, and provides one 52~56V DC input power jacket, one power LED, PoE-in-use LED and legacy LED. Two RJ45 ports -- Ethernet port and Ethernet + DC port – are on the side panel. Simply plug in the Ethernet cables and DC power cord, and the POE-171A-60 is ready to provide high-speed network communication and the 802.3bt PoE injector functions simultaneously with no need of software configuration.

Quick and Easy Cabling Installation for PoE Network Deployment

Backward compatible with both 802.3af/at PoE standards, the POE-171A-60 allows users to flexibly deploy standard and high powered devices to transfer data and power simultaneously through one Ethernet cable for up to 100 meters. The POE-171A-60 frees the security IP camera and wireless AP deployment from restrictions of power outlet locations and the additional AC wiring. It thus reduces cables and eliminates the need for electrical outlets on the wall, ceiling or any unreachable place, and most of all, it reduces installation time.

2. PRODUCT FEATURES

➤ **Interface**

- 2 RJ45 interfaces
 - 1-port **Data + Power** output
 - 1-port **Data** input
- 1 DC 52~56V input power socket
- 1 PoE mode (standard/legacy and force) via DIP switch

➤ **Power over Ethernet**

- Complies with IEEE 802.3at/bt PoE end-span/mid-span PSE
- Supports PoE power up to 95 watts for PoE port
- Auto-detection of PoE IEEE 802.3af/at/bt equipment and devices from being damaged by incorrect installation
- Monitor the status of the total PoE usage in real time
- Remote power feeding up to 100m
- Auto-detection of DC input voltage

➤ **Hardware**

- All-in-one compact size design
- LED indicators for Power LED, PoE-in-Use LED, Legacy LED and PoE Usage LED
- Wall-mount design
- Metal case
- Supports 6KV DC Ethernet ESD protection

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

MCU	NUVOTON W78E054D	x 1
PoE Controller	PD69200C	x 1
PoE PSE	PD69204T4I	x 1

3.2 FUNCTION SPECIFICATIONS

Product	POE-171A-60	
Hardware Specifications		
Interface	Input Port	1 x RJ45 STP Data In
	Output Port	1 x RJ45 STP PoE (Data + Power) Out
	DC Socket	1 x 52~56V DC input socket
Network Cable	Twisted-pair cable up to 100 meters (328ft) 10BASE-T: 4-pair UTP Cat. 3, 4, 5, 5e, 6, 6A 100BASE-TX: 4-pair UTP Cat. 5, 5e, 6, 6A 1G/2.5G: 4-pair UTP Cat. 5e, 6, 6A 5G: 4-pair UTP Cat. 6, 6A	
LED Indicators	System: Power x 1 (Green) PoE Port: PoE-in-Use x 1 (Amber) Legacy mode: Legacy x 1 (Amber) PoE Usage: PoE Usage x 3 (Amber)	
Data Rate	10M/100M/1G/2.5G/5Gbps	
ESD Protection	6KV DC	
Enclosure	Metal case	
Dimensions (W x D x H)	94 x 70.3 x 26.2 mm	
Weight	200g	
Power Requirements	DC 52~56V, 1.4A max.	
Power Consumption	72 watts max.	
No. of devices that can be powered	1	
Power over Ethernet		
PoE Standard	IEEE 802.3at/bt PSE	
PoE Power Output Budget	DC 52~56V / 60-watt PoE via 4-pair	
PoE Power Output	Max. 60W@1m cable Max. 52W@100m cable	
PoE Power Supply Type	End-span + Mid-span	
Power Pin Assignment	Pair 1 End-span: 1/2 (-), 3/6 (+) Pair 2 Mid-span: 4/5 (+), 7/8 (-)	
PoE mode	Standard mode Legacy and Force mode	
Standards Conformance		
Standards Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet	

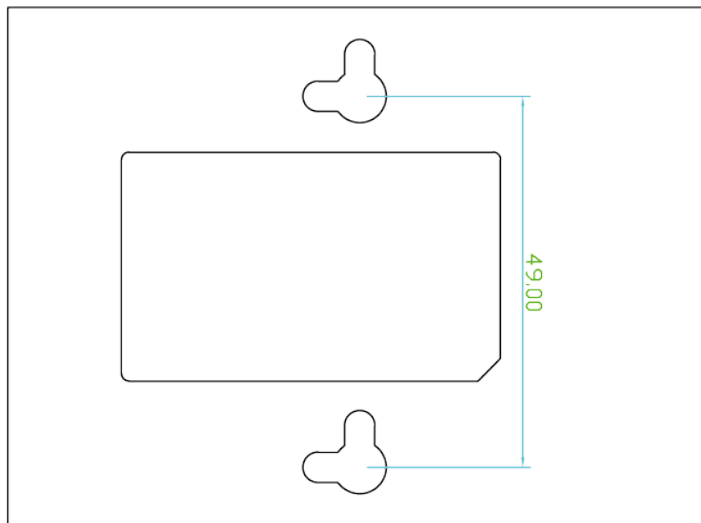
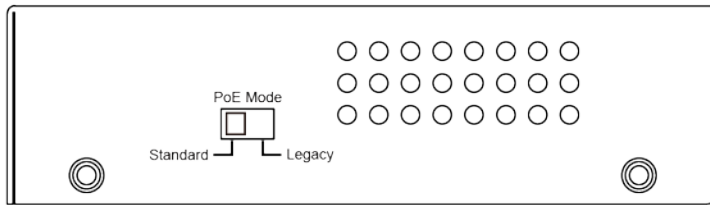
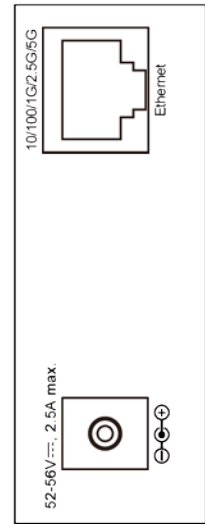
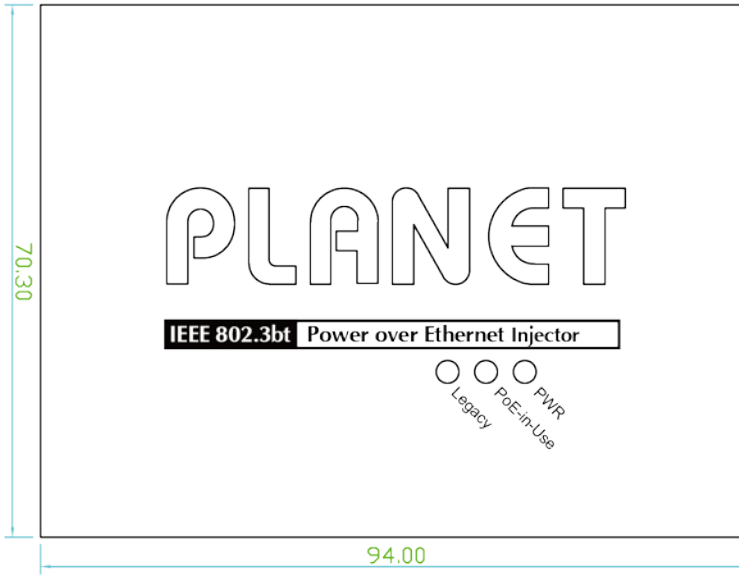
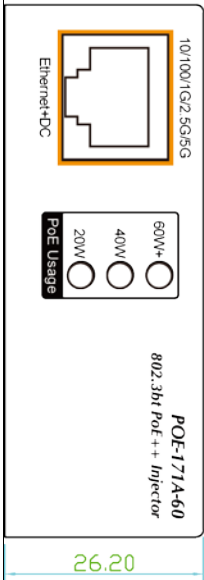
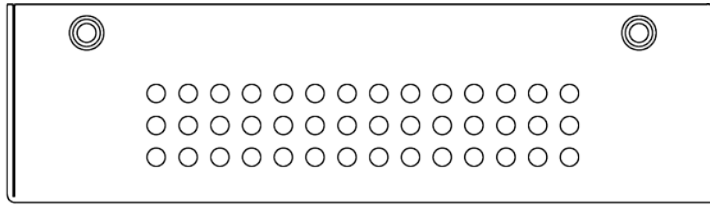
	IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.3bz 2.5G/5GBASE-T IEEE 802.3bt 4-pair Power over Ethernet Type 3 IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet
Regulatory Compliance	FCC Part 15 Class A, CE
Environment	
Operating Temperature	0 ~ 50 degrees C
Storage Temperature	-10 ~ 70 degrees C
Operating Humidity	5 ~ 90%, relative humidity, non-condensing
Storage Humidity	5 ~ 90%, relative humidity, non-condensing

3.3 PHYSICAL SPECIFICATIONS:

- **Dimensions (W x D x H)**
94 x 70.3 x 26.2 mm

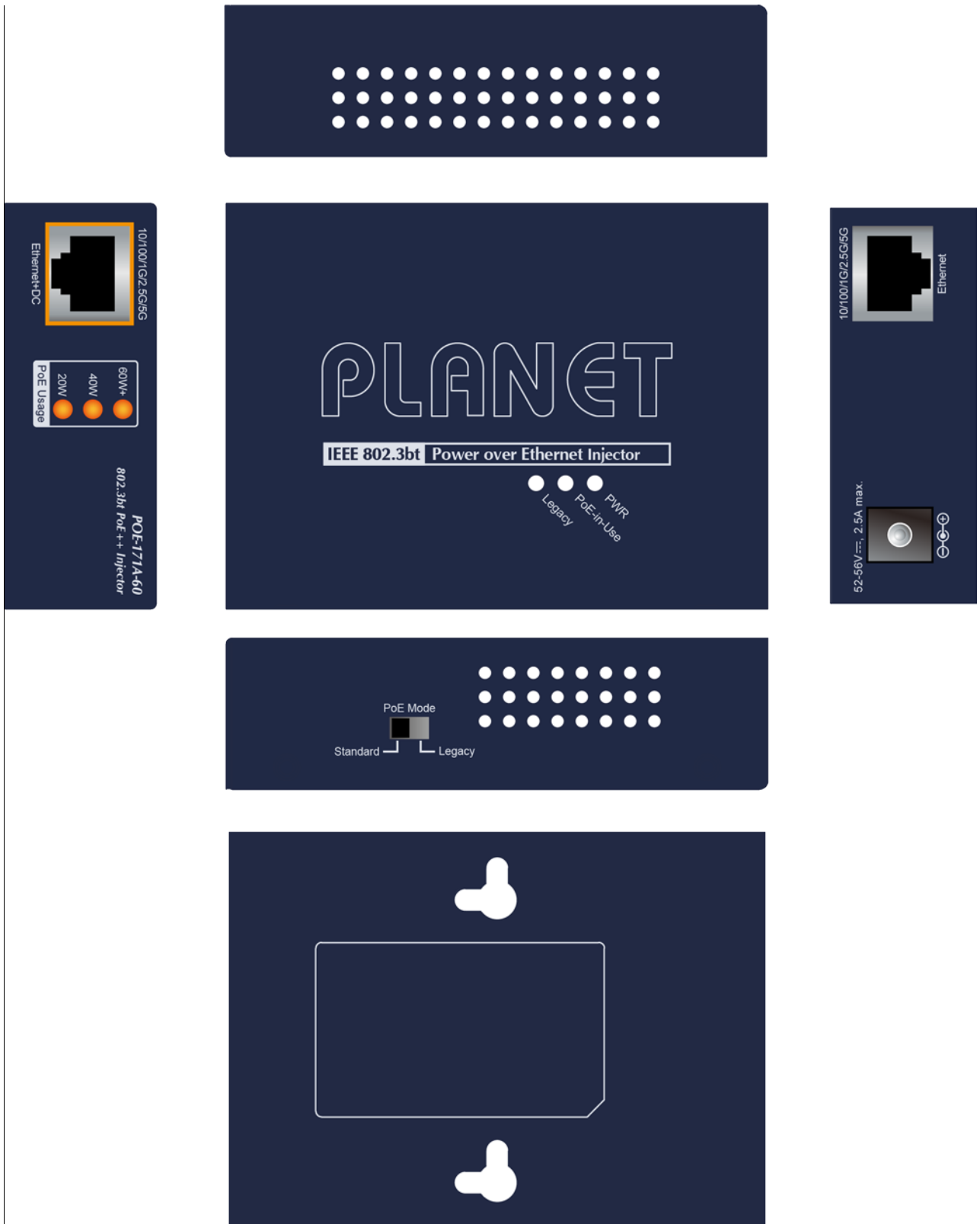
- **Weight**
200g

■ **Diagram**



Unit: mm

■ **Product Outlook**



■ **LED Indicators**

LED	Color	Function
PWR	Green	Lights to indicate the 802.3bt PoE injector has power.
PoE-in-Use	Amber	Lights to indicate the device is providing PoE power.
Legacy	Amber	Lights to indicate the device is working in legacy mode.
PoE Usage	Amber	<ul style="list-style-type: none"> ● 20W: <ol style="list-style-type: none"> 1. Off to indicate the PoE usage is less than 9W. 2. Blinks to indicate that the PoE usage is around 10W to 19W. 3. Lights to indicate the PoE usage is more than 20W. ● 40W: <ol style="list-style-type: none"> 1. Blinks to indicate that the PoE usage is around 30W to 39W. 2. Lights to indicate the PoE usage is more than 40W. ● 60W+: <ol style="list-style-type: none"> 1. Blinks to indicate that the PoE usage is around 50W to 59W. 2. Lights to indicate the PoE usage is maximum.

■ **PoE Mode**

PoE Mode	Description
Standard	Fully conforms to the IEEE 802.3af/at/bt standard.
Legacy	The legacy detection is to identify the valid current signature of the PDs that do not fully follow the IEEE 802.3af/at/bt standard. This protects against damage to the PDs as the right PoE mode is applied.
Force	If the output power of injector is less than 1 watt when it works as Legacy mode, after 20 seconds, the Force mode will be enabled. When the Force mode is enabled, it will provide PD with a maximum of 60 watts. If the output power of injector is less than 1 watt when it works as Force mode, after 2 seconds, the Legacy mode will be enabled.

3.4 ENVIRONMENTAL SPECIFICATIONS

- **Operating:**
 - Temperature:** 0~50 degrees C
 - Relative Humidity:** 5% ~ 90% (non-condensing)
- **Storage:**
 - Temperature:** -10~70 degrees C
 - Relative Humidity:** 5% ~ 90% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Power over Ethernet Capability

- **Power Requirement:**
 - 100-240V AC@50/60Hz, 2A max.

- **Input Voltage:**
DC 52-56V, 1.4A max.

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 50,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

- POE-171A-60 x 1
- User's Manual x 1
- 100 ~ 240V AC-DC Power Adaptor x 1
- AC Power Cord x 1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	229 x 197 x 70 mm
Weight:	890g
Carton Dimensions (W x D x H):	480 x 420 x 370 mm
Carton Weight:	17.8kg
Quantity:	20pcs in one carton