

**IEEE 802.3af**  
**Power over Ethernet Injector**

**POE-152**  
**User's Manual**



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## Revision

PLANET IEEE 802.3af Power over Ethernet Injector User's manual

**FOR MODEL:** POE-152

**REVISION:** 1.0 (DECEMBER.2006)

**Part No.:** EM\_POE152v1 (2080-A31120-001)

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# 1. INTRODUCTION

## 1.1 Checklist

Thank you for purchasing our POE-152 IEEE 802.3af Power over Ethernet Injector, your Power over Ethernet Injector package shall contains following contents:

**Check the contents of your package for following parts:**

- Power over Ethernet Injector x1
- User's manual CD x1
- Power Adapter x1
- Power cord x 1

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

## 1.2 About the Power over Ethernet Injector

The POE-152 is an IEEE 802.3af Power over Ethernet Injector that provides DC 48V over Ethernet cables. The POE-152 IEEE 802.3af Power over Ethernet Injector inserts DC Voltage into Cat.5 cable, allowing the cable between the Injector (POE-152) and Splitter (POE-152S-5V/12V) to transfer data and power simultaneously. The maximum distance between the Injector (POE-152) and Splitter (POE-152S-5V/12V) is 100 meters. With POE-152 being installed, it combines the Ethernet digital data with power over the twisted pair cables as an IEEE 802.3af Power over Ethernet Injector. And the IEEE 802.3af Power over Ethernet splitter shall separate the digital data and the power into two outputs.

Unlike existing Power over Ethernet Injector, except the 10/100Mbps Fast Ethernet connection ability, the POE-152 also provide 1000Mbps Gigabit Ethernet connection ability.

With IEEE 802.3af Power over Ethernet devices being installed, the system administrator only has to use a single RJ-45 Ethernet cable to carry both power and data to each device. Besides, to connect through POE-152 and POE-152S-5V/12V, you could also have benefits including cost saving, easy for networking planning and higher reliability. What's more, upon any IEEE 802.3af devices being installed, the POE-152 or together with POE-152S-5V/12V can make the connection while migrating or splitting the power and the Ethernet digital packets, such as connecting the POE-152 to an IEEE 802.3af complied devices, AP or IP phone.

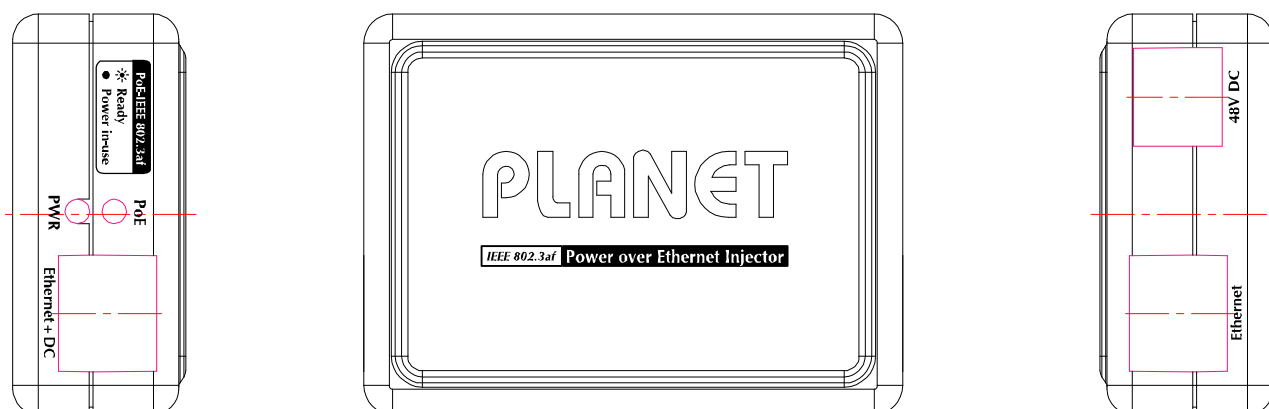
## 1.3 Features

- ◆ Complies with IEEE 802.3af Power over Ethernet, IEEE 802.3/802.3u /802.3ab 10/100/1000Base-T
- ◆ Provides DC 48V power over RJ-45 Ethernet cable to device with Ethernet port
- ◆ LED indicators power input indication
- ◆ Distance up to 100 meters
- ◆ Auto-detect of POE IEEE 802.3af equipment, protect devices from being damaged by incorrect installation
- ◆ Works with EIA568, category 5, 5e or 6 ,2/4-pair cables for 10Base-T or 100Base-TX and 1000Base-T
- ◆ EMI standards complies with FCC, CE class B

## 1.4 Specification

Model	POE-152
Ethernet Connector	2 x RJ-45( 1 for data + DC out, 1 for Data in)
Ethernet Data rate	10/100/1000Mbps( vary on Ethernet device attached)
Input voltage	DC 48V, 0.4A
Number of device can be powered	1
Ethernet cable	TIA/EIA-568, Category 5/5e/6 cable
LED indicator	1 x power, 1 x POE ready / in-use
Operating environment	0~50 Degree C, 5%~90%RH
Storage environment	-20~70 Degree C, 5%~90%RH
Dimension (W x D x H)	73 x 55 x 24 mm
Weight	50g
Emission	FCC Class B, CE mark
Standard Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3af Power over Ethernet

## 1.5 Product Outlook



### LED definition:

LED	Color	Function
Power	Yellow	Lights to indicate that the POE-152 has power.
PoE ready / in-use	Green	Lights to indicate the port is providing 48VDC in-line power.

## 2. HARDWARE INSTALLATION

This product provides three different running speeds – 10Mbps, 100Mbps, 1000Mbps in the same device and automatically distinguishes the speed of incoming connection.

This section describes the hardware features of POE-152. Before connecting any network device to the POE-152, read this chapter carefully.

### 2.1 Before Installation

Before your installation, it is recommended to check your network environment. If there is any IEEE 802.3af devices need to power on, the POE-152 can provide you a way to supply power for this Ethernet device conveniently and easily. The POE-152 equips with an AC-DC adapter with DC 48V input and injects, this DC power into the pin of the twisted pair cable (pair 1, 2 and pair 3, 6 for Fast Ethernet) and (pair 4, 5 and pair 7, 8 for Gigabit Ethernet).

If there is very difficult to find a power socket for AC-DC Adapter of your non-IEEE 802.3af networked device, the POE-152 and POE-152S can provide you a way to supply DC power for this Ethernet device conveniently and easily.

The 10/100/1000Mbps speed duplex mode from Ethernet port of POE-152 depends on which Ethernet device attached.

#### **Notice:**

The POE-152 and POE-152S can be installed in pair. However, the use of third-party device is allowed if the device complied with IEEE 802.3af standard.

## 2.2 POE-152, the Injector installation

1. Connect a standard network cable from Switch/workstation to “Ethernet” port of POE-152.
2. Connect the long cable that will be used to connect to the remote device to the port “Ethernet + DC”. The screen in Figure 1 appears.
3. Connect the AC adapter to “DC 48V” of POE-152. The power LED will be steady on.

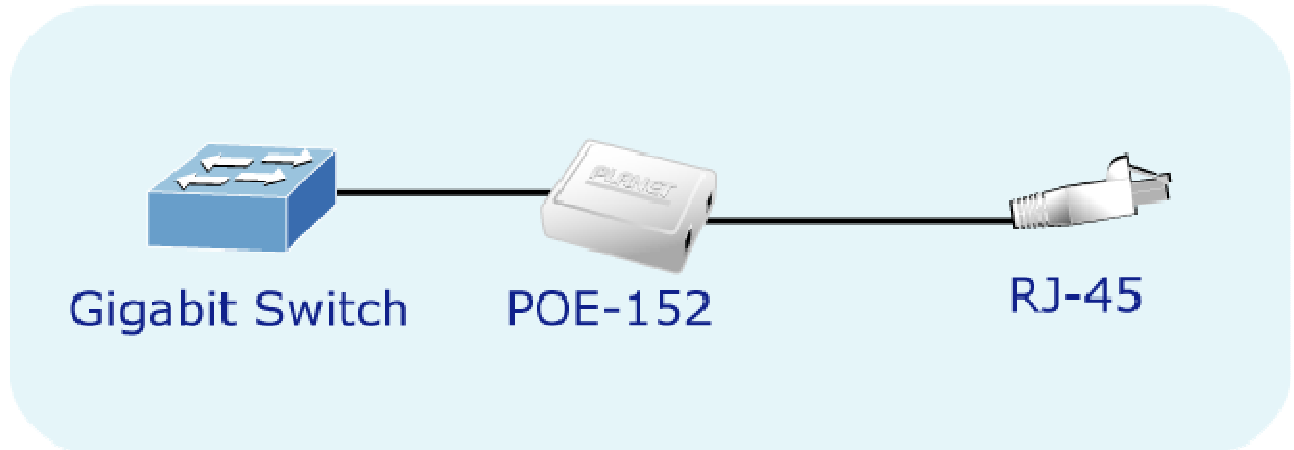


Figure 1: the Injector installation

## 2.3 POE-152 and POE-152S, the IEEE 802.3af Injector and Splitter installation

1. Connect a standard network cable from “Ethernet+DC” of POE-152 to “Ethernet+DC” of POE-152S. The POE LED of POE-152 / POE-152S will light on continuance. The screen in Figure 2 appears.

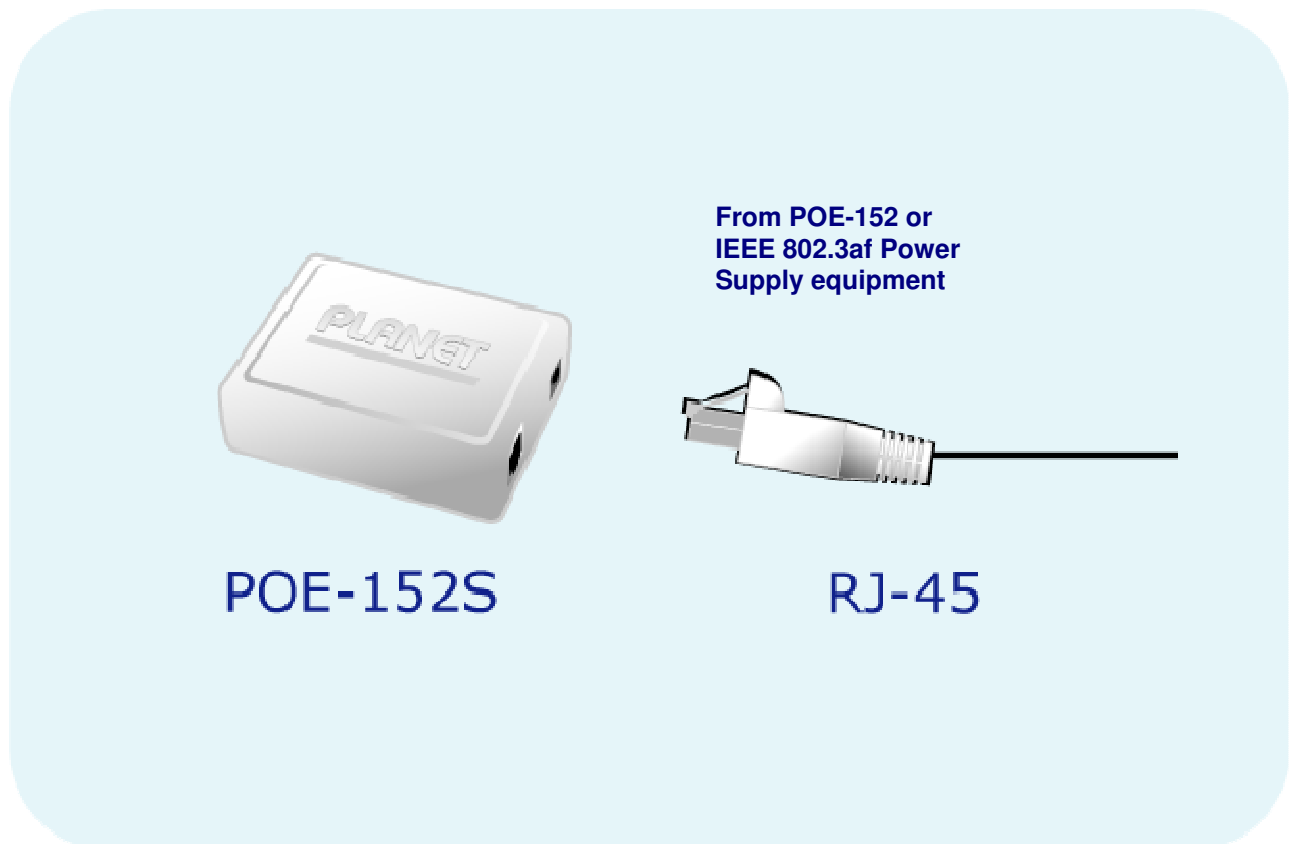
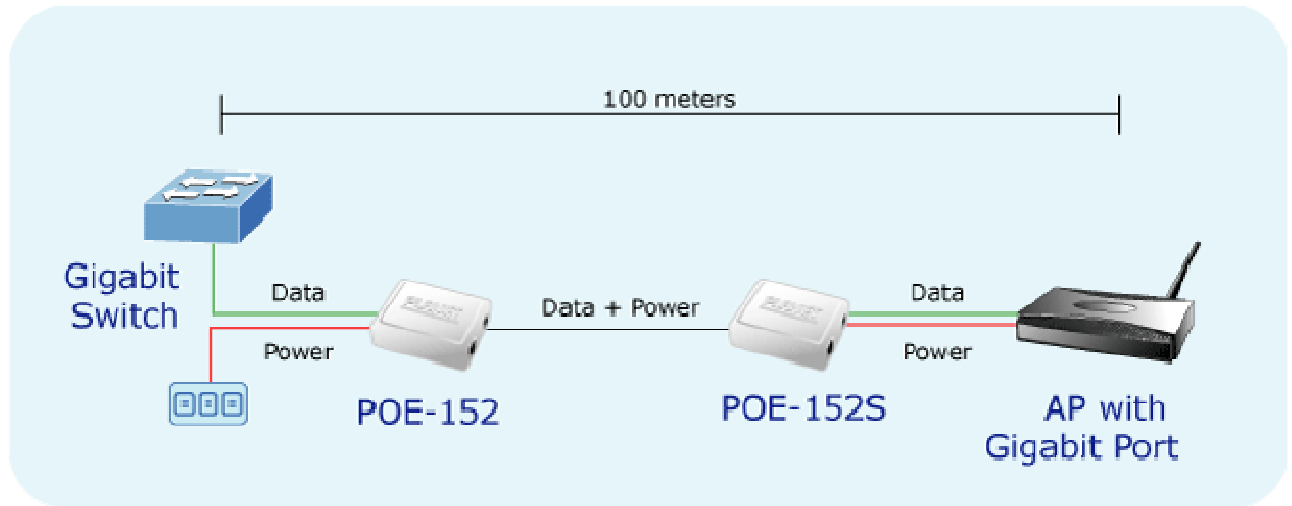


Figure 2: Connection to POE-152S

2. Connect the UTP cable in the package from “Ethernet” of POE-152S to the RJ-45 port of remote device.
3. Connect proper DC plug from “DC OUT” of POE-152S to remote device.
4. Power on the remote device and the LED indicator on POE-152S will remains on, the screen in Figure 3 appears.



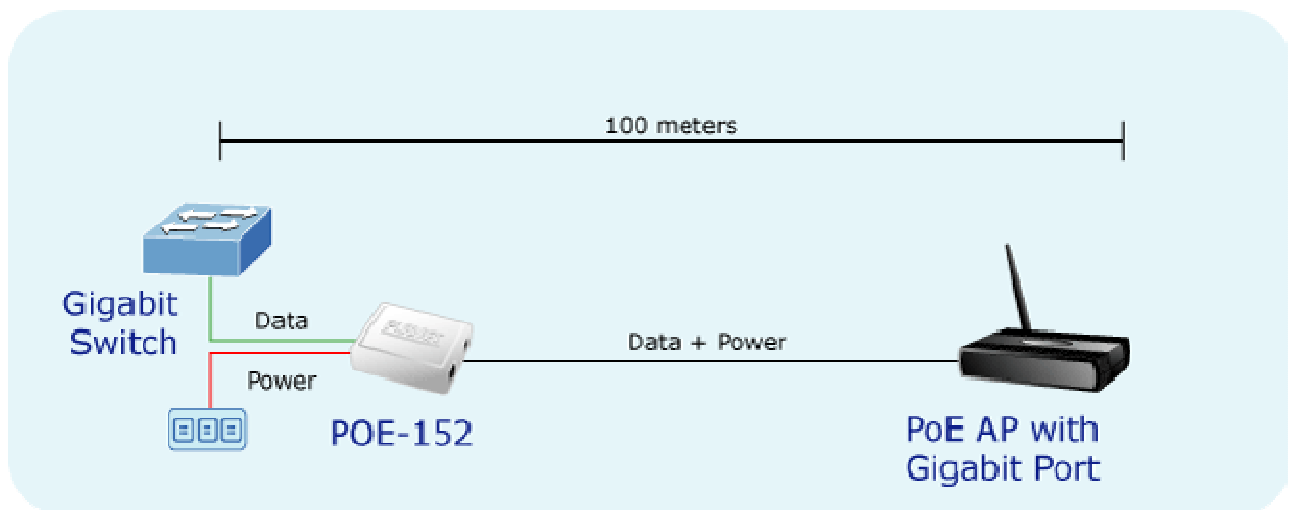
**Figure 3: Connection architecture over POE-152/152S**

**Notice:**

1. According to IEEE 802.3af standard, the POE-152 will not inject power to the cable if not connecting to IEEE 802.3af devices.
2. Please ensure the output voltage is correct before applying power to remote device.

## 2.4 Connect with IEEE 802.3af devices

Due to the capability of IEEE 802.3af standard, the POE-152 can directly connect with any IEEE 802.3af end-nodes like wireless access point, VoIP phones and Internet camera where support IEEE 802.3af In-line Power over Ethernet port. The screen in Figure 4 appears.



**Figure 4: Connection to IEEE 802.3af device**

Once POE-152 detects the existence of an IEEE 802.3af device, the LED indicator will be steady, ON to shows it is providing power.

**Notice:**

If the connected device is not fully complying with IEEE 802.3af standard or in-line power device, the LED indicator of POE-152 will not be steady on.



## 3.TROUBLESHOOTING

This chapter contains information to help you solve issues. If the POE-152 is not functioning properly, make sure the POE-152 was set up according to instructions in this manual.

### **The PoE LED is not lit**

Solution:

Check the cable connection between POE-152 and IEEE 802.3af device.

### **Why I connect my PoE device to POE-152 and it cannot power on?**

Solution:

1. Please check the cable type of the connection from POE-152 to the other end. The cable should be an 8-wire UTP, Category 5/5e/6, EIA568 cable within 100 meters. A cable with only 4-wire, short loop or over 100 meters, all will affect the power supply.
2. Please check and assure the device that fully complied with IEEE 802.3af standard.

### **10/100/1000Base-T port link LED is lit, but the traffic is irregular**

Solution:

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

# APPENDIX A NETWORKING CONNECTION

## A.1 Switch's RJ-45 Pin Assignments

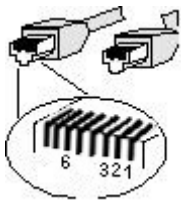
1000Mbps, 1000Base T

Contact	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

10/100Mbps, 10/100Base-TX

RJ-45 Connector pin assignment		
Contact	MDI Media Dependant Interface	MDI-X Media Dependant Interface -Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not used	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not used	

## A.2 RJ-45 cable pin assignment



The standard RJ-45 receptacle/connector

There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:



**Figure A-1: Straight-Through and Crossover Cable**

Please make sure your connected cables are with same pin assignment and color as above picture before deploying the cables into your network.

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