ST- POE-WTP

Waterproof Power Over Ethernet Extender

User Manual

MAN408   REV 6/30/21
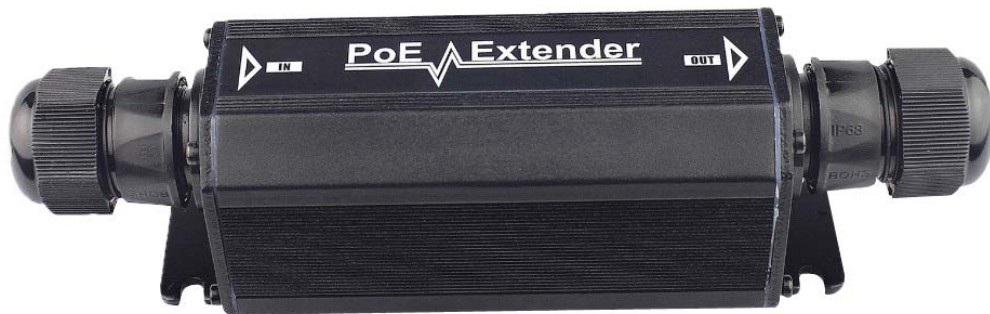
Certification	$\mathsf{C}\,\mathsf{E}$
FCC compliance	**Class A:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
ACMA compliance	**Notice!** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
European Union directives	**2004/108/EC (EMC directive)**: Hereby, UTC Fire & Security declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC
	2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

Contents

Package Contents

Thank you for purchasing the ST- POE-WTP Waterproof Gigabit Power over Ethernet Extender.

Product Features

- Complies with IEEE 802.3af /802.3at (POE+) Power over Ethernet

- Extends the range of PoE an additional 100 meters (328ft.)

- Forwards both Ethernet data and PoE power to a remote device

- Auto-detection of POE IEEE 802.3at (POE+) equipment and devices to prevent damage caused by incorrect installation.

- Multiple units can be daisy-chained for extended distance (max. 4 units)

- No external power required

- Compact size, Wall-mountable design

- Waterproof (IP66) design-
    CATx cable with a 6mm-7mm O.D. is recommended for waterproofing.

Port Connections

In Port

Connect the PoE IN port from following 802.3af PSE type devices through a CAT-5e/6 UTP/STP cable:

- PoE injector

- PoE Injector Hub

- PoE Ethernet Switch

- Another ST-POE-WTP

Out Port

Connect the PoE OUT port to following 802.3af PD type devices through a CAT-5e/6 UTP/STP cable:

- PoE IP Camera

- PoE VoIP Phone

- PoE Wireless AP

- PoE Splitter

- Another ST-POE-WTP

Note: To pass the cable through the seal, squeeze the seal to expose the split. The seal is pre-split to allow pre-terminated patch cables to be used.

Hardware Installation

The ST-POE-WTP operates at three different data rates – 10Mbps,100Mbps and 1000Mbps in the same device and automatically adjusts based on the speed of incoming connection.

The following section describes the hardware features of the ST-POE-WTP. Carefully read this section before connecting any network device to this unit.

Before Installation

It is recommended to check the network environment before the installation. The ST-POE-WTP conveniently extends the distances in an installation base by transferring power to the remote PDs. (Powered Devices).

The ST-POE-WTP is installed between the PSE (Power Source Equipment) and the PD (Powered Device); it is powered by PSE and forwards the Ethernet data and remaining POE power to the PD. The ST-POE-WTP doesn't require an external power supply and it can be installed easily just plug and play; that means the operator does not need to configure the ST-POE-WTP. The ST-POE-WTP injects power to the PDs without affecting the data transmission performance. It offers a cost effective and quick solution to extend power and data for an additional 328 ft. (100m).

Note: The ST-POE-WTP can be installed with third-party devices as long as the connected device complies with the IEEE 802.3af or IEEE 802.3at (POE+) standards.

Power Source Equipment (PSE) Installation

1. Remove the liquid-tight restraint cap and connect a standard Cat5e/6 cable from Power Source Equipment (PSE), such as PoE Switch, PoE Injector hub or a single port PoE injector, to the "IN" port of ST-POE-WTP.

2. The PSE delivers both Ethernet Data and PoE power over the UTP cable to the ST-POE-WTP.

Note: When re-applying the cap of the liquid-tight restraint to the retraint body, be sure to tighten securely to squeeze the seal against the cable.

Powered Device (PD) Installation

1. Connect one side of the CAT5e/6 cable to the "OUT" port of the ST-POE-WTP, and the other side to the PD.

2. The "OUT" port injects power and transfers data to the PD.

Figure 2: Extender connection diagram
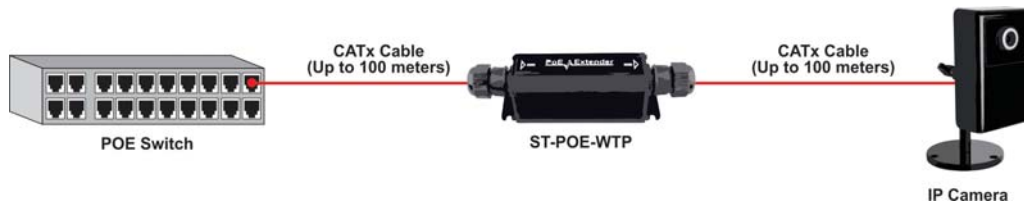
Note: The ST-POE-WTP will not inject power to a PD that doesn't comply to the IEEE 802.3af standard.

Multiple PoE Extender Installation

The ST-POE-WTP PoE Extender supports daisy-chain installation of multiple units Based on the power requirements of the PD, multiple ST-POE-WTP devices can be used to increase the installation distance.

1. Connect one end of the CAT5e/6 cable to the "OUT port of the first ST-POE-WTP and the other end to the "IN" port of the next ST-POE-WTP.

2. Connect one side of the CAT5e/6 cable to the "OUT" port of the ST-POE-WTP, and the other side to the PD.
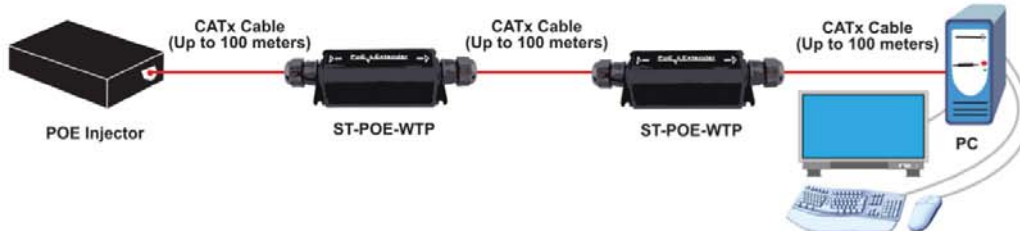
Cascade a maximum of four ST-POE-WTP units to extend POE signal up to 1,640 ft. (500m).

Note: Each ST-POE-WTP device will consume a maximum of 1.2 watts of the total overall PoE budget for itself. It is recommended to check the power requirements of the PD and the ST-POE-WTP in your system daisy-chain design before installation. If the overall power consumption is overloaded, the local PSE could shutdown the whole PoE power suppllied by that port on the PSE.

Each connection between ST-POE-WTP devices is limited to up to 328 ft (100m) with CAT 5e/6 cable (minimum 24AWG).

Specifications

Ethernet

Data Rate	10/100/1000Mbps
EIA/TIA 568 Standards	Category 5e/6 cable, 24 AWG Min.

Power Over Ethernet (PoE)

PoE Standard	IEEE 802.3af (POE)
	IEEE 802.2at (POE+)
PoE Power Supply Type	Mid-Span / Type B (no external adapter required)
PoE Output Pin Assignment	4/5(+), 7/8(-)

Connectors

Ethernet + PoE In	1 x RJ-45 connector
Ethernet + PoE Out	1 x RJ-45 connector

Electrical and Mechanical

Input Power	Powered by 48VDC from PoE switch or Mid-Span Injector @ IEEE 802.3af /IEEE 802.3at (POE+)
PoE Output Power	22 watts
Maximum Powered Devices	1
Enclosure	Metal
Dimensions (H x W x D)	7.28 x1.77 x 1.77 in.
Weight	0.6128g

Environmental

Operating Temperature	-25°C~55°C
Storage Temperature	-30°C~70°C
Relative Humidity	5%–90% (non-condensing)

Maximum Distances for Power Sources

Multiple PoE Extenders can be connected every 100 meters to obtain greater distances. The actual figure depends on operating conditions. The range is over 24 AWG or heavier CAT5e or CAT6 cable except where specified.

PoE Device (PD)	PoE Injector or Switch IEEE802.3af (max 15.4W)	PoE Plus Injector or Switch IEEE802.3at (PoE+)(max 30W)
IEEE802.3af class 1 Power consumption < 4W	400m (3pcs PoE Extender)	500m (4pcs PoE Extender)
IEEE802.3af class 2 Power consumption < 6W	300m (2pcs PoE Extender)	400m (3pcs PoE Extender)
IEEE802.3af class3 Power consumption < 12W	200m (1pcs PoE Extender)	300m (2pcs PoE Extender)
IEEE802.3at Power consumption < 22W	Not applicable	200m (1pcs PoE Extender)