FAQ – PoE Extenders

PANDUIT™

Introduction

The Panduit Power over Ethernet (PoE) Extenders are the simplest and most cost-effective method to extend data and power beyond the 100-meter limitation of a traditional PoE switch or injector using standard twisted-pair cabling. This document will answer frequency asked questions (FAQ) about these new devices.

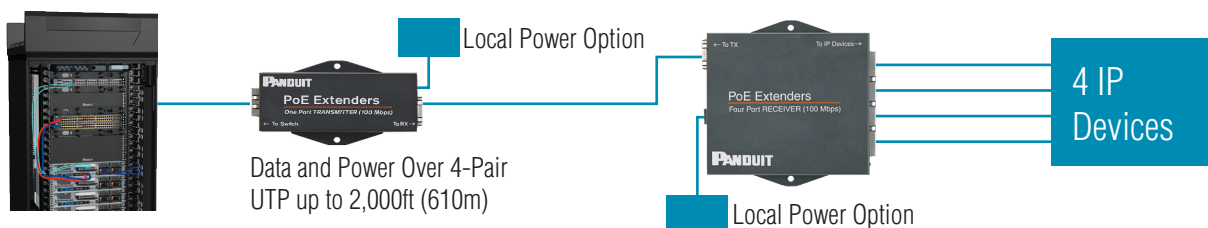### Q: What problems do the Panduit PoE Extenders solve?

A: Panduit PoE Extenders overcome the 100-meter distance limitation of standard Power over Ethernet. With these PoE Extenders, PoE devices can be deployed up to 2000 ft. away (distance will depend on power level needed) from a given switch using standard copper twisted-pair cabling. This reduces the cost of an installation because they eliminate the need for running additional power supply outlets and associated AC power cabling to the powered device, eliminate the need to locate and install Intermediate Distribution Frames(IDFs), that may only support a few devices, or using a proprietary copper/fiber cable design that can extend the reach of PoE.

Q: How are the Panduit PoE Extenders deployed?

A: Switch -> PoE transmitter box -> PoE receiver box -> IP powered device.

1. Connect a patch cord from a port on the switch to the "To switch" port in the PoE transmitter box (POEXTX1)
2. Connect a RJ45 terminated horizontal cable from the "To RX" port in POEXTX1 to the "To TX" port in the PoE Receiver box (POEXRX1 or POEXRX4)
3. Connect a patch cord from the "To IP device" port in POEXRX1 or POEXRX4 to the end IP device that requires to be powered

Please refer to the Installation Instructions document for more detailed information.

Local Power Option

Data and Power Over 4-Pair
UTP up to 2,000ft (610m)

Local Power Option

4 IP Devices

Q: Can I use the Panduit PoE Extenders with any category of cable and wire gauge?

A: Panduit PoE Extenders are compatible with any standard compliant twisted four-pair cable that is Category 5e and higher. Panduit recommends the backbone cable used between the PoE Transmitter and PoE Receiver be at least a 23 AWG Category 6 cable.

Q: How much power is available for the Powered Device (PD)?

A: The amount of power available for the powered device will depend on several factors including:

- Distance and wire gauge of the cable used between the PoE Transmitter and PoE Receiver.
- How the PoE Transmitter and Receiver are powered (using PoE or locally at the transmitter or locally at the receiver)
- The distance from the PoE Receiver and PD can also have an influence on the power available.

Q: What data rate is supported by the Panduit PoE Extenders?

A: The Panduit PoE Extenders will support up to 100Mbps, which can support applications like cameras, phones, access card readers, biometric scanners, lights, and sensors.

Q: What type of IP devices can I connect to the PoE Extender modules?

A: Endpoint device should be PoE or PoE+ compliant (IEEE 802.3 – af or IEEE 802.3 – at) compliant. Ensure that the endpoint devices will function properly with a data rate of 100 Mb/s (100BASE-TX or Fast Ethernet)

Q: Can I connect Wireless Access Points (APs) to these PoE Extender modules?

A: Yes, one can connect APs or any normal PoE compliant Ethernet device to the Panduit PoE Extenders. However, keep in mind that these extenders only provide data of 100Mbps which may limit the performance of some wireless access points. If 100Mbps is suitable for the application, the Panduit PoE Extenders can be used to power APs at the end of the extended channel.

Q: What are common environments where the PoE Extenders can be used?

A: Panduit PoE Extenders have a wide operating temperature range of -40°C to + 70°C. They can be used in indoor or outdoor applications. For outdoor applications, they need to be protected in any outdoor rated NEMA enclosure.

Q: How do I power the PoE Extenders?

A: There are multiple ways to provide power to the PoE Extenders.

- Using a PoE switch: If the transmitter is connected to a PoE switch capable of providing up to 50W to the PoE Transmitter, the PoE switch can power the transmitter, receiver and powered device attached to the receiver.
- Local power option: The transmitter or receiver boxes can also be powered using 48V-56VDC AC/DC Power Adapter. Panduit sells a PoE Extender kit with only one box. If local power is used at the PoE Receiver, the PoE Transmitter must be connected to a PoE switch or injector. The reason to use local power at the receiver is that for certain distances, more power can be provided to the powered device.

Distances can change based on how the device is powered and by what type of cabling is used. Refer to the Specification Sheet or Installation Instructions for detailed information.

Q: I do not have an existing PoE switch. Can I use the Panduit PoE Extenders to inject power into the channel?

A: Yes. The PoE Transmitter must be locally powered by the 48V-56VDC AC/DC Power Adapter if a non-PoE switch is used. By providing the local power, the PoE Transmitter injects power into the channel and powers the PoE Receiver and end device through PoE.

Q: How do I configure the PoE switch to work with Panduit PoE Extenders?
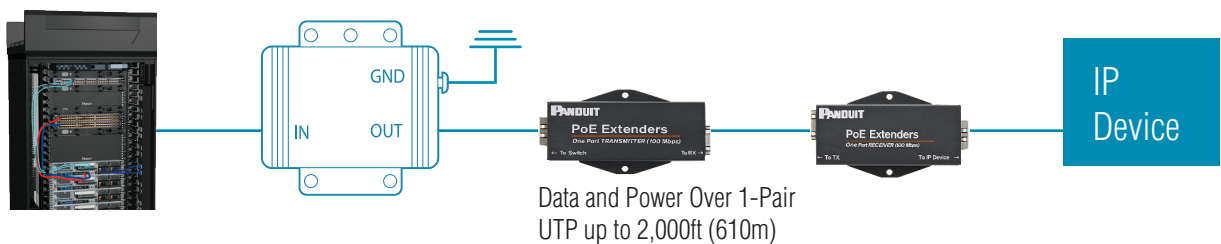
A: No configuration needed for a switch to work with a Panduit PoE Extender. Simply plug in the PoE transmitter like you would connect any IP device.

Q: What kind of lightening protection is recommended while using these devices for outdoor application?

A: If a lightning strike hits within 300 ft. of a copper cable, it can produce a surge of 5000 volts and 6 million watts. Without the proper protection, this can seriously damage or destroy networking equipment.

To prevent damaging networking equipment, Panduit recommends using the guidance of Article 800 of the NEC. The article recommends using a UL 497 Listed primary protector for all conductive communications paths entering or leaving a building as close as possible from the cable's point of entrance.

The below diagram outlines a POEXKIT1 installation using an Ethernet UL 497 approved lightning protection device (such as DTK-MRJEXTS) with an outdoor camera.

GND

IN   OUT

PoE Extenders
One Port TRANSMITTER (100 Mbps)
To Switch   To RX

PoE Extenders
One Port RECEIVER (100 Mbps)
To TX   To IP Device

IP
Device

Data and Power Over 1-Pair
UTP up to 2,000ft (610m)

Q: How do you recommend running copper cable to outdoor environments?

A: Panduit recommends running outdoor rated OSP cable (PUO6C04BL-U) in a conduit buried under the ground. Conduit must be used because the above mentioned OSP cable is not moisture resistant.

Q: Does Panduit offer 2000 ft. reel of cables for use with these PoE Extenders?

A: Yes. In addition to the standard 1000 ft. reels, the following 2000 ft. reels are cable part numbers that are set up and stocked:

- PUO6C04BL-UQ : Category 6 Outside plant (OSP), 2000 ft. Reel
- PUP6C04BU-UQ : Category 6 Plenum (CMP), 2000 ft. Reel
- PUR6C04BU-UQ : Category 6 Riser (CMR), 2000 ft. Reel

Q: What type and size of screws do you recommend for installing the Extender boxes?

A: M3 screws should be used

Q: What are the warranty terms on this product?

A: Panduit Poe Extenders are covered by Panduit's One Year Limited Product Warranty which is available for review at www.panduit.com/warranty.