



## Multi Port Passive POE injector

Using your WS-POE-12-48v  
power injector for 802.3af or 48v devices



Before plugging in your device – please check a few things.

- Is the device you will power 802.3af or otherwise able to handle 48 volts? If the spec of the devices shows "12v, PoE" this means it need 48 volt in PoE mode and 12v if you use a local transformer.
- Still not sure? Please see <http://wifi-texas.com> "Find a PoE" – you can enter your device and we will show you the PoE you need.
- Do not use with a PoE switch unless you disable PoE on switch ports used
- This device is for 10/100 mbit installations, disable gigabit switch ports, or use our gigabit injectors. Note that cameras do not require gigabit speeds.
- Connect each LAN port to your 10/100 switch, and each POE port to the device you wish to power. If you have 6 PoE devices you will need 6 LAN to Switch jumpers.
- Full technical specs are at <http://wifi-texas.com/datasheets>

### Notes:

VOIP phones, cameras and WiFi AP's need from 3 to 15 watts each, with this injector, you can provide remote power up to 328 ft from the power source. If your device data sheet shows "48v 350ma" please understand that this is not the power your device needs, but the max power that is available according to the 802.3af spec. For example, a Polycom VOIP phone is 802.3af compatible, but needs about 4.5 watts to operate. Therefore, one 12 port injector and a 60watt power supply can power 12 phones at low cost.

## How PoE works

A device needs power to operate. Not volts or amps – power expressed as watts.

That power can be supplied at different voltages. The electronics inside the device needs usually about 3.3 or 5 volts. But at low voltages, the wires from power supply have a lot of loss beyond about 5 feet. So for short distance power, most IP phones and Cameras are shipped with a 12v or 24v power supply because 12v supplies are cheap. But these same devices, when powered via the Ethernet cable, use 48 volts. This is the 802.3af standard voltage.

So a 12v 1 amp power supply for local power – when using PoE at 48v – translates to 48v .25 amps for the same power

## Here is why 48v is used on Ethernet cables

The device needs power – a phone needs about 4 watts. So at 12 volts – that is .35 amps. The power cord in the 12v supply is very short – say 6 feet. The loss in 6 ft of power cord is about 20 milliwatts – not a problem. Power loss is the current squared times the distance.

If we use 48 volts – the power is the same, but the current is lower – about 80 milliamps. But an ethernet wire can be up to 328 ft – so the loss is 50 times greater than at 6 ft, but since the current is 4 times lower – the power loss ( a square of the current) is 16 times lower – the loss in the cable is about 70 milliwatts. A 15 watt device will lose 16x more power in the wire – about 1 watt at 48 volts. At 12 volts – the cable loss for a 15 watt device would be 16 watts!

## Is 60 or 120 watts going to damage my device?

No. High **Voltage** can damage a device, because if the **voltage** is higher than allowed, the circuitry in the device “breaks down” **drawing** a lot of **power**, and that power will melt things. But at any allowed voltage – the device takes only the power it needs to operate - you cannot “push” power.

## Other Products from WiFi-Texas



12 and 16 port rack mount



6 and 12 port gigabit



5v, USB and 12 volt active splitters

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