



Multi Port Passive POE injector

Using your WS-GPOE-12-24v Gigabit power injector for Mikrotik, Ubiquiti and other 24v devices



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

- is the power supply in the box 24 volts?
- is the device you will power able to handle 24 volts?
- notice that there are two power inputs – mode A and mode B. See below
- All VOIP phones, most cameras and WiFi AP's need 48 volts via Ethernet – not 24 volts.
- If the device shows "12v, PoE" on the data sheet – this usually means that the device uses 12v when powered from a transformer – and 48v when powered via CAT-5. You need a 48 volt power supply – contact us for that.

We can answer your questions if you are not sure. Skype: wifiqos or Phone 512-479-0317 We also offer 802.3at (56 volt) solutions, and 48, 18, 15 and 12 volt power supplies – so if you need something else, please call.

LAN connection – gigabit data rates

Connect the LAN port to your Ethernet switch. This device does 1000 mb max – so all gigabit Ethernet switches are compatible. Vlans, IGMP and all other data frames pass unaffected by the injector.

POE connection – gigabit data plus power

The WS-GPOE-12 has 2 power supply connectors – each is 2.1mm x 5.5mm. One is marked Mode A, the other is marked Mode B. Tech details are at

[https://en.wikipedia.org/wiki/Power over Ethernet](https://en.wikipedia.org/wiki/Power_over_Ethernet)

- Mode A - Power is provided on the POE ports on pins 1 and 2 (minus) and 3 and 6 (plus).
- Mode B - Power is provided on the POE ports on pins 7 and 8 (minus) and 4 and 5 (plus).

For Mikrotik, and UBNT, Mode B should be used. Mode A is provided for special applications (802.3af, 802.3at, dual 24v / 48v operation) see our web site for more info. The WS-GPOE-12-AB data sheet explains these options.

Connect the POE side to your device – it will power up and connect – and you are all set.

LED power usage indicators

The Master LED shows green if there is power – more than 12 volts. Each socket has two 650 ma current limiters –one for each Mode – so in 802.3at operation 60 watts per device can be delivered. This device will shut down the socket if power exceeds 1.3 amps for more than a few seconds. It will restore power if the load is less than 650 ma per mode. Groups of 4 sockets share one “current sensor” LED. This LED is off if there is no load, is GREEN if there is less than 400 ma on the 4 sockets total, and RED if there is more than 400 ma. It should be GREEN for fully loaded IP phones, and RED for fully loaded WiFi Access Points. There are three LED’s – one for each group of 4 sockets.

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.

Here is why 24v is used on Ethernet cables

The device needs power – maybe only need 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 24 volts – the power is the same, but the current is lower – about 180 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 2 times lower – the power loss (a square of the current) is 4 times lower – the loss in the cable is about 500 milliwatts.

Is 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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