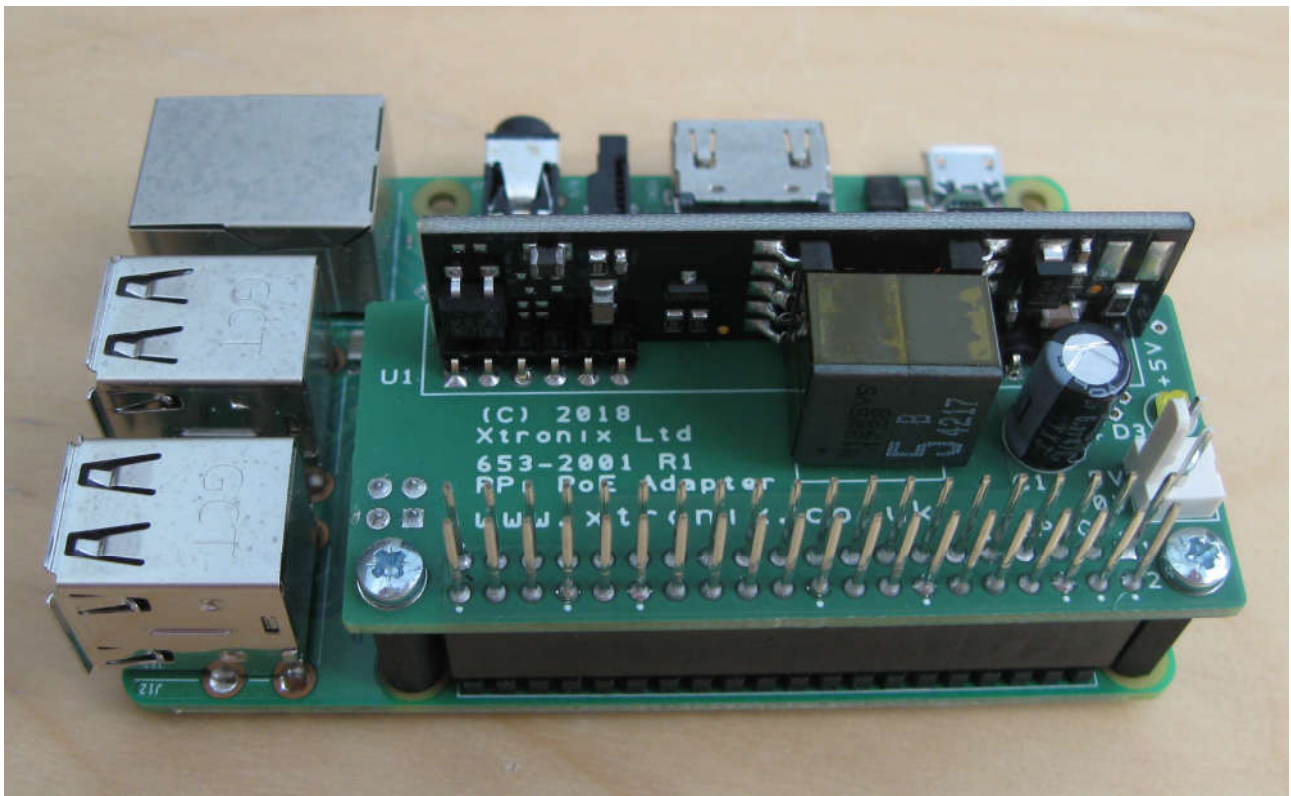


# Raspberry Pi 3 Model B+ Power Over Ethernet

## Adapter 653-9001 R1

### User Manual



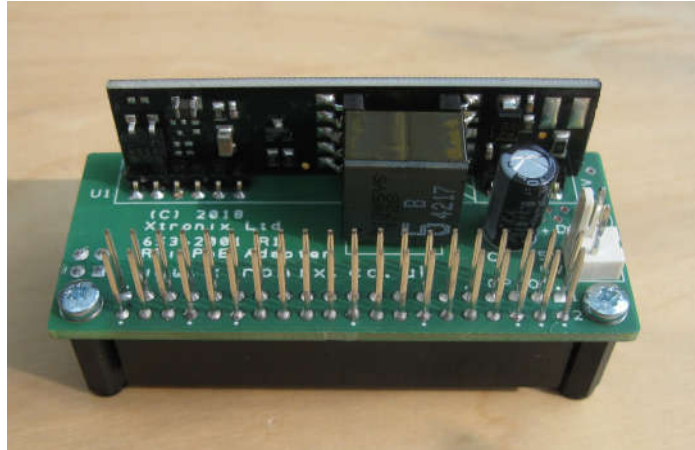
***Xtronix Ltd***

# Raspberry Pi 3 Model B+ Power Over Ethernet (PoE) Adapter

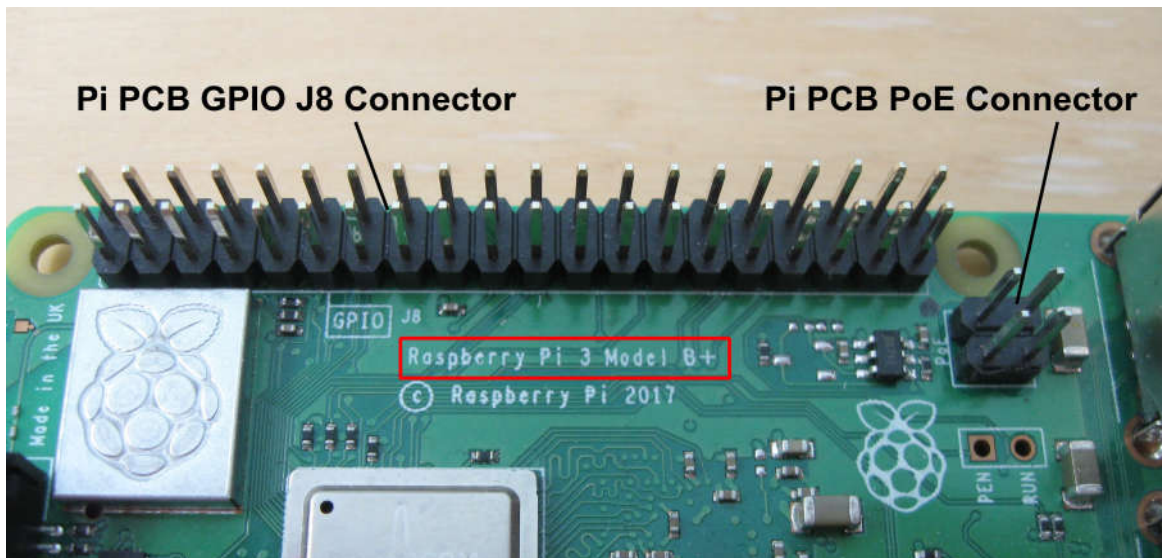
## Overview

The Xtronix 'Power Over Ethernet' (PoE) adapter 653-9001 (R1) is designed to be plugged directly on to a Raspberry Pi Model 3B+ printed circuit board and to supply +5 Volts to the Raspberry Pi PCB. The adapter conforms to the IEEE 802.3af Power over Ethernet standard. It is intended to be powered by an IEEE 802.3af compatible ethernet switch where power is supplied over the Ethernet Cable.

Please note that the Xtronix 653-9001 PoE Adapter is only intended to be used with the Raspberry Pi 3 Model B+. it is not compatible with previous Raspberry Pi Printed Circuit Boards



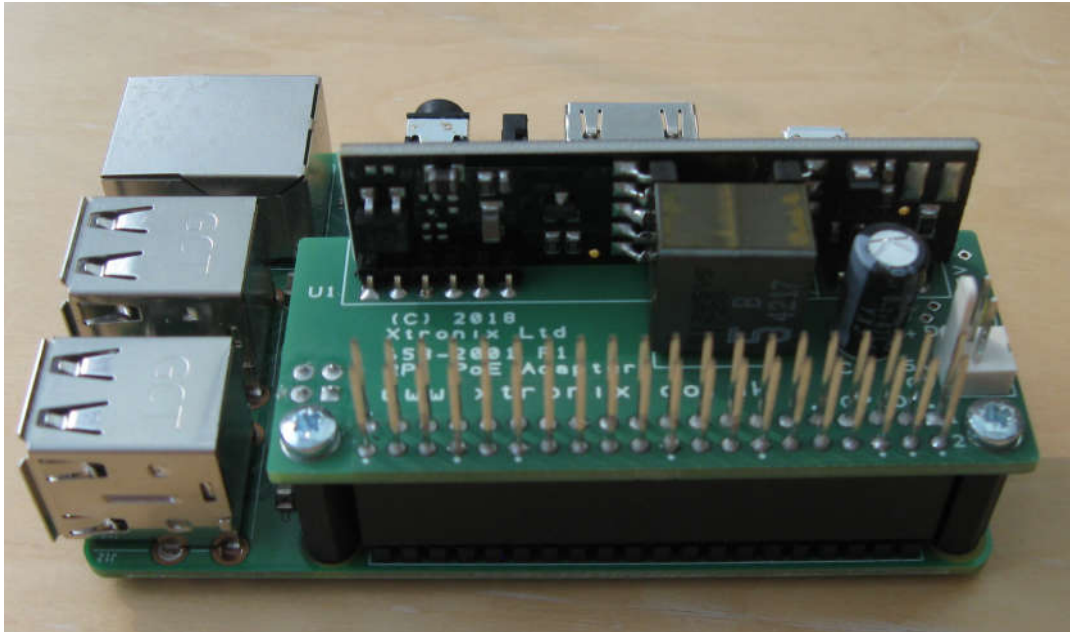
**Safety Note: Only use an IEEE 802.3af compatible Ethernet Switch with this adapter**



**Note:** The Pi 3B+ printed circuit board has a 40 Way GPIO connector labelled J8 and an additional 4 Way connector labelled PoE adjacent to one of the USB connector blocks. This connector is **NOT** present on previous models of the Raspberry Pi printed circuit board.

## Installation to the Pi 3 Model B+

- 1) Check that no power supply is connected to the Raspberry Pi printed circuit board (PCB).
- 3) Unplug all cables from the Raspberry Pi PCB.
- 2) Carefully plug the Xtronix PoE adapter PCB into the Raspberry Pi PCB 40 Way connector (J8) and the 4 Way PoE connector by mating the Pi PCB connector (labelled GPIO 'J8' on the Pi PCB) with the 40 Way PoE adapter PCB connector (labelled PoE on the Pi PCB), aligning the PoE adapter PCB such that it covers the Pi PCB. (see photograph on next page).



- 3) Check that the Raspberry Pi PCB and the Xtronix PoE PCB connectors are correctly aligned.
- 4) Check that the plastic pillars fitted to the PoE adapter PCB line up with the fixing holes in the Pi PCB.
- 5) Fix the PoE Adapter PCB to the Pi PCB by using the two M3 screws, these are to be screwed into the plastic pillars from the underside of the Pi PCB.

**NOTE: Take care not to over tighten the screws and strip the thread of the plastic pillars**

- 6) Plug in an Ethernet cable (not supplied) into the Pi PCB Ethernet Connector, plug the other end of this cable to the IEEE 802.3af compatible ethernet switch (not supplied).
- 7) Apply power to the IEEE 802.3af compatible ethernet switch, this causes the Yellow LED on the Xtronix adapter PCB to light and +5V to be supplied to the Pi PCB.

## Cooling

Please note that the voltage converter on the adapter PCB generates some heat. Forced cooling is not normally required, but if the adapter PCB and Pi PCB are to be mounted in a sealed box, some method of removing the heat generated by the adapter and the Pi PCB should be provided, such as a small fan.

## GPIO Connector

The 40 Way GPIO connector on the PoE adapter PCB (marked GPIO) allows the user to connect to the Pi PCB GPIO. The pin out of this connector is the same as the Pi PCB GPIO connector J8.

**Note: The user is responsible for correctly interfacing to these signals. Damage caused by the user interface to these signals is not covered by the Xtronix warranty of the Adapter or Pi PCBs.**

## +5V Connector

The 2 Way connector (Labelled 'J5') on the adapter PCB allows the user to plug in a suitable +5V take off lead, to power external equipment. A suitable mating connector is a Molex KK series (0.1") shell and crimps.

Note that the total loading of the adapter should not exceed 1.0 amps which includes the power supplied to the Raspberry Pi via the 40 Way connector.

The connector is marked with 0V and 5V.

## Xtronix PoE Adapter Specifications

Nominal Voltage Output	5 Volts DC
Maximum Output Current	1.00 Amps Continuous (assumes suitable PoE Switch) @ 40°C ambient
Minimum Output Current	250 mA (Note that the adapter may not function if load current is less)
Nominal Input Voltage	48 Volts DC via Ethernet Cable (38 to 57 Volts DC)
Power Injector	IEEE 802.3af compatible Injector (i.e. a PoE Ethernet Switch)
Temperature Range	0 to +40°C (ambient air temperature around the adapter)
Humidity	+5 to +80% Non-Condensing
GPIO Connector	40 Way 2 Row 0.1 Header – pin out as per Raspberry Pi 3 Model B+
+5V Auxiliary Connector	2 Way Molex KK Series 0.1” Pitch Header
Power Indicator	Yellow LED indicating +5 Volt Power is present on the adapter
CE Marked	Yes – Safety, EMC, ROHS and WEEE
Compatibility	Raspberry Pi Models 3 Model B+
Ordering Information	Xtronix Part Number 653-9001 R2
Items Supplied	PCB Assy. P/N 653-9001 R1 fitted with 2 plastic pillars and 2 M3 screws.

**Note:** Description and specifications may be changed without notice.

### EMC Directive

The unit is sold as a component for incorporation into equipment or apparatus along with other items. It has been shown that the unit complies with the European Union EMC directive when it is mounted on a Raspberry Pi that is enclosed in a metal enclosure with the other equipment or apparatus connected to the Pi PCB and PoE PCB using suitable screened cables.

### WEEE Directive (Waste Electronic and Electrical Equipment)

The adapter PCB comes under the European Union WEEE Directive and must be disposed of in an appropriate collection point and not be placed in the normal domestic waste stream.



Xtronix Ltd      Web: [www.xtronix.co.uk](http://www.xtronix.co.uk)      Email: [sales@xtronix.co.uk](mailto:sales@xtronix.co.uk)  
22, Orchard Coombe, Whitchurch Hill, Reading, Berks. RG8 7QL, UK  
Company Registered in England, Number 4450219

Xtronix Ltd is a registered WEEE producer - WEEE Producer Registration Number - WEE/EK3326WV