



Application Note

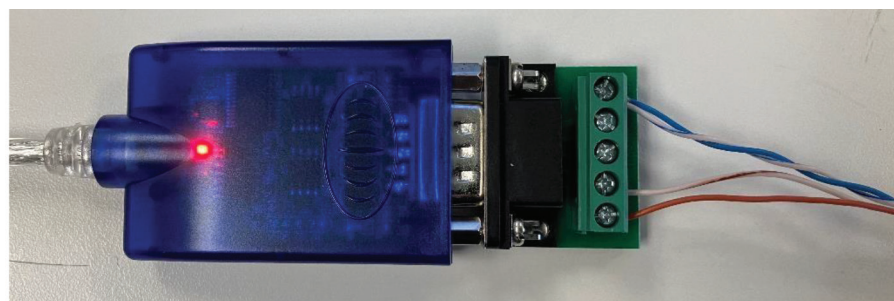
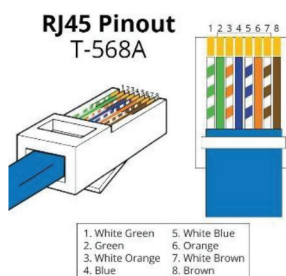
How can I connect TOD out of the Qg2 to my laptop or other PC?

TOD / 1 PPS is available from the front panel of the Qg2. The electrical format is differential signaling as described by ITU G.703 and requires a RS-422 / RS-485 to USB adapter. This electrical format is not compatible with the more common RS-232 format.

Qty	Desc	Ref Pic	Amazon Link
1	RS485 to USB convert		https://www.amazon.com/Gearmo5ft-RS-485-Serial-Adapter/dp/B005CPLOVW/
1/2	Ethernet patch cable		https://www.amazon.com/MonopriceCat6-Ethernet-PatchCable/dp/B003L1AET2
1	Small screwdriver		
1	Wire cutter / stripper		
1	PC with terminal program		

1.0 HW Procedure:

- 1.1 Cut Ethernet patch cable to desired length
- 1.2 Remove 1.5" of the outer sheath exposing the individual conductors
- 1.3 Select wire for pins 4, 7 and 8, strip 3/16 of insulation from wires. Blue, brown stripe, brown in attached pinout diagram.
- 1.4 Connect pin 4 to "gnd" terminal strip position
- 1.5 Connect pin 7 to "T/R+" terminal strip position
- 1.6 Connect pin 8 to "T/R-" terminal strip position
- 1.7 Connect DB9 terminal strip to USB converter



2.0 Qg2 Setup:

- 2.1 Log into Qg2 configuration webpage
- 2.2 Click "Interface => ToD/1 PPS Output" tab
- 2.3 Set "1 PPS ToD State" to "Start"
- 2.4 Note "ToD OUT Baud Rate", Terminal program will need to match this setting.
- 2.5 Click "Apply"

3.0 PC setup

- 3.1 Open "Device Manager", click on "Ports (COM and LPT)"
- 3.2 Connect USB cable to your PC. Depending on your system you may need to install USB to serial VCP driver. The above adapter uses FTDI chip set.
- 3.3 Observe the new serial port number in Device Manager.
- 3.4 Open terminal emulator program.
- 3.5 Start a new connection to the com port above.
- 3.6 Configure for the baud rate set on the Qg2
- 3.7 You should see data added to the screen once a second. In addition, an LED should blink on the converter when data is present.

