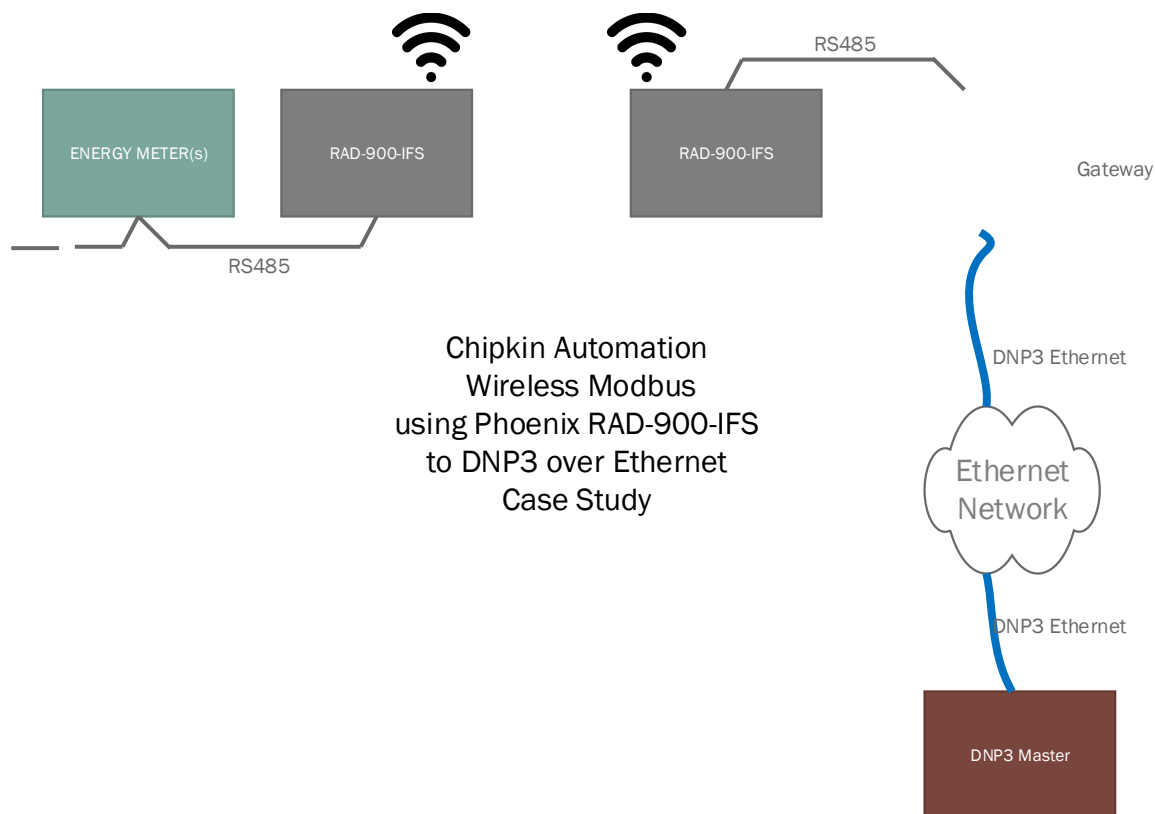


Case Study Wireless Modbus using Phoenix RAD-900-IFS to DNP3 over Ethernet

In this project - the customer could not bring an Ethernet access point to the location where the power meters were installed. A wireless solution was required as per the block diagram below.



Introduction

Running new conduit and cable was impossible but getting the data was essential.

In this application the inconvenience of a location without a network drop was overcome using a wireless solution from Phoenix Contact. RS485 Modbus RTU power meters located in a location where running new conduit would have been expensive and possibly disruptive.

The problem arises because you have limited choices when you install new power meters on existing equipment.

Chipkin Automation Systems

Protocol to protocol – Enabling the IOT Internet of Things

Products that support approx. 140 major protocols. If we don't have a solution for you, we will make you one. More than a dozen customers a year have a custom driver developed for them.

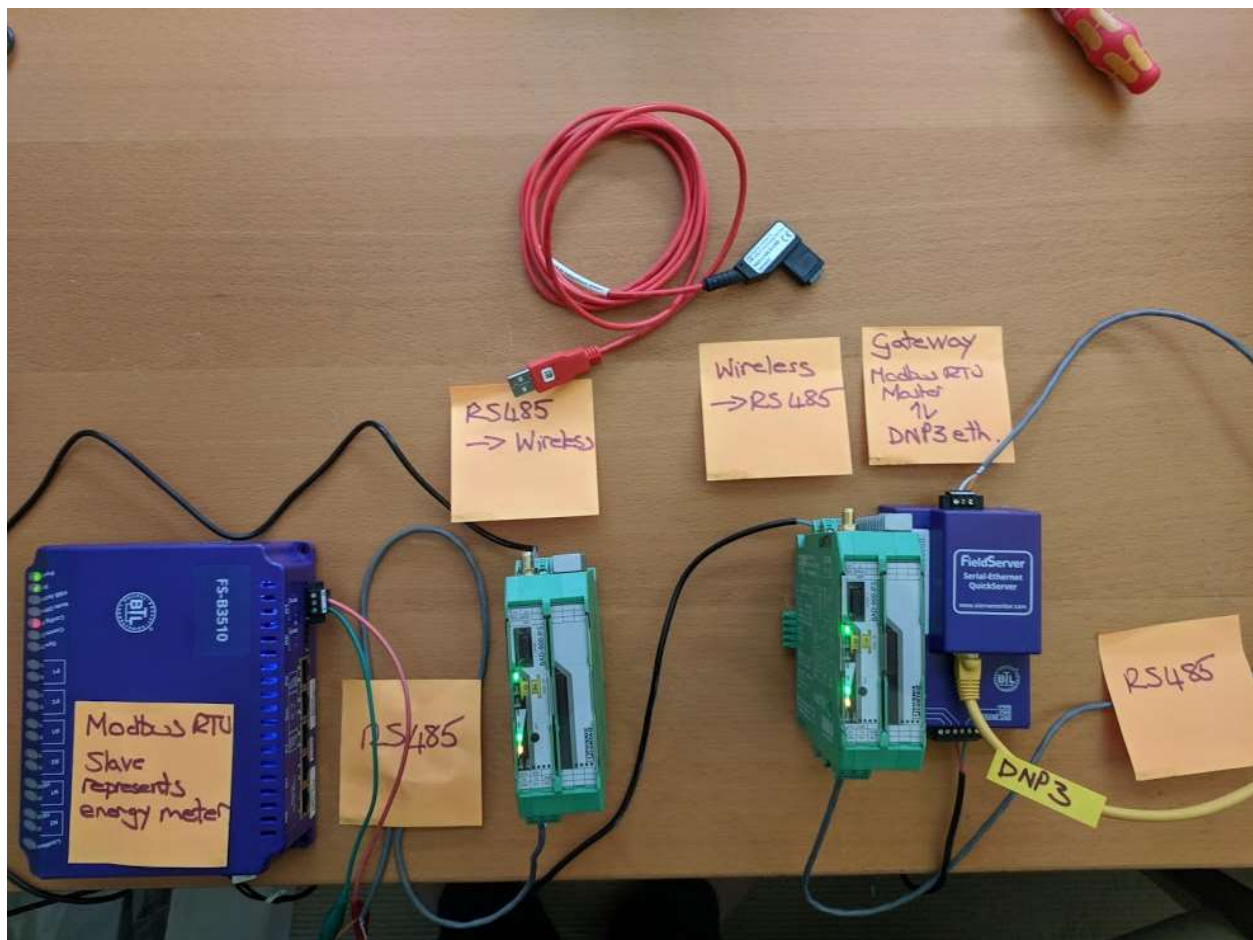
Chipkin are highly regarded for their outstanding support. System integration isn't always trivial even if that is what they tell you.

The Chipkin BACnet stack comes with a 100% copyright infringement indemnity to make corporate lawyers happy. Customers get direct access to the stack developers for coaching and problem solving.

Lab Setup

Purple unit on left is a Modbus RTU server device. In this case a gateway has been programmed to be a Modbus Server, emulating a series of Power Meters with the same set of registers and points as the installed energy meters at the customer's site.

The purple unit on the right is a gateway configured to read Modbus data from a series of RS485 connected Energy meters and to serve the data to a remote monitoring station that uses DNP3.0 Ethernet over TCP/IP.



Requirements

Wireless module - RAD-900-IF



<https://goo.gl/j6VyAS>

PSI-CONF Software

<https://goo.gl/9gTKAz>

PSI-CONF USB Cable – Proprietary cable is required

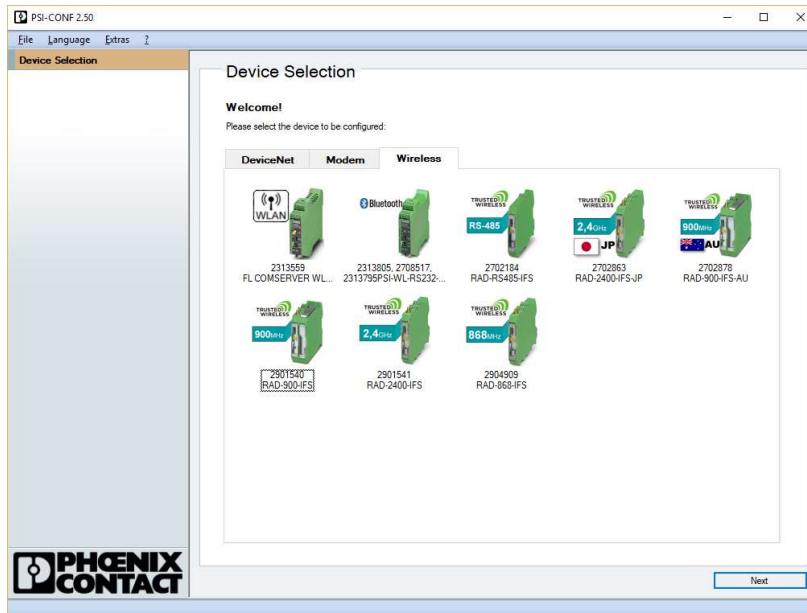
<https://goo.gl/na78QX>

QS-1010 Dual RS485 gateway

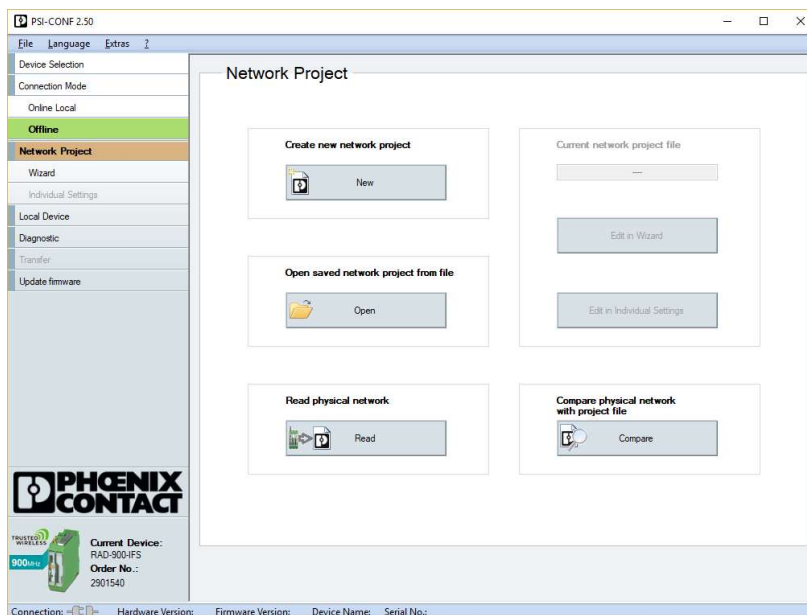
<http://store.chipkin.com/products/fieldserver-devices/quickserver-gateways>

Wireless Module Configuration

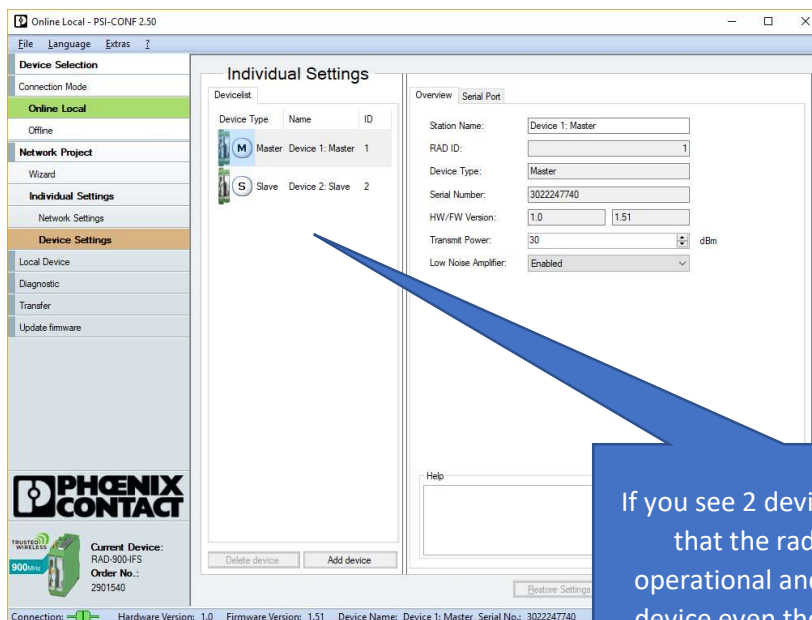
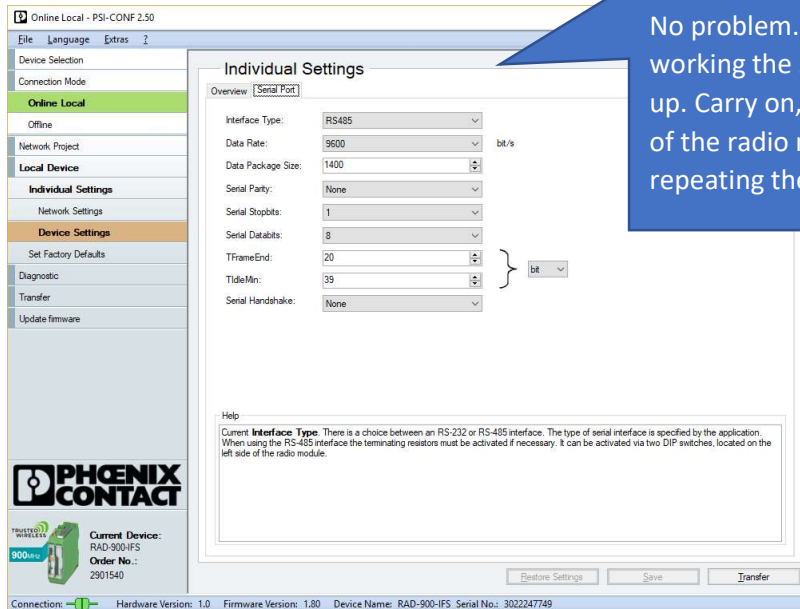
Step 1 – Launch the software



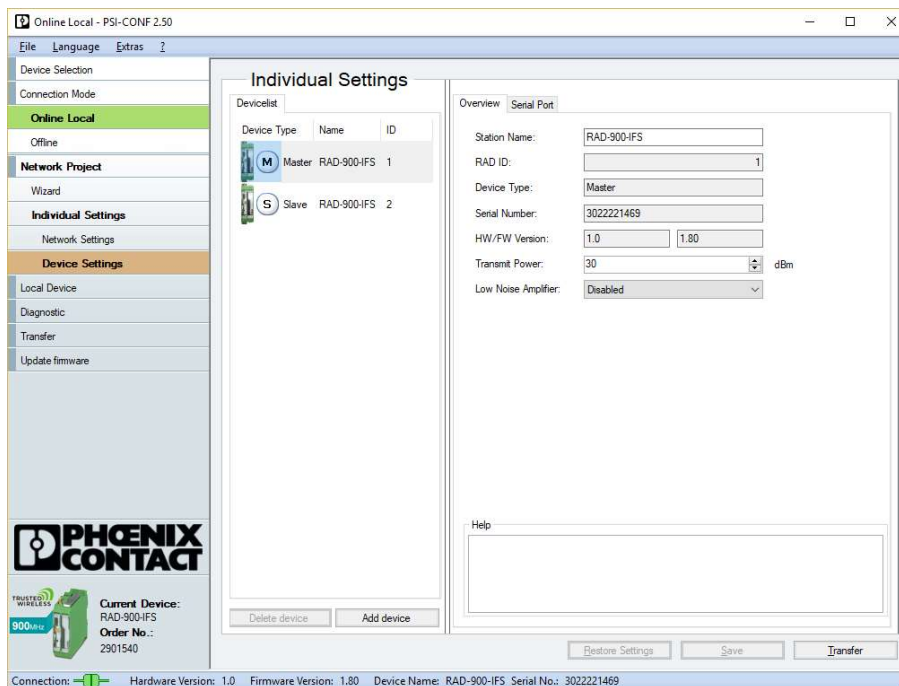
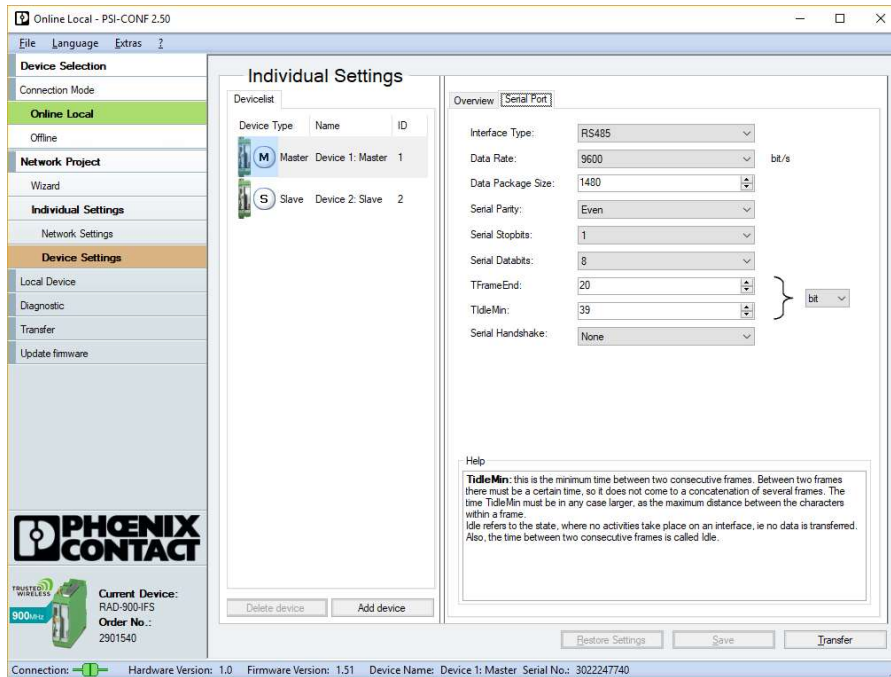
Step 2 – Connect the cable. Read from the Devices

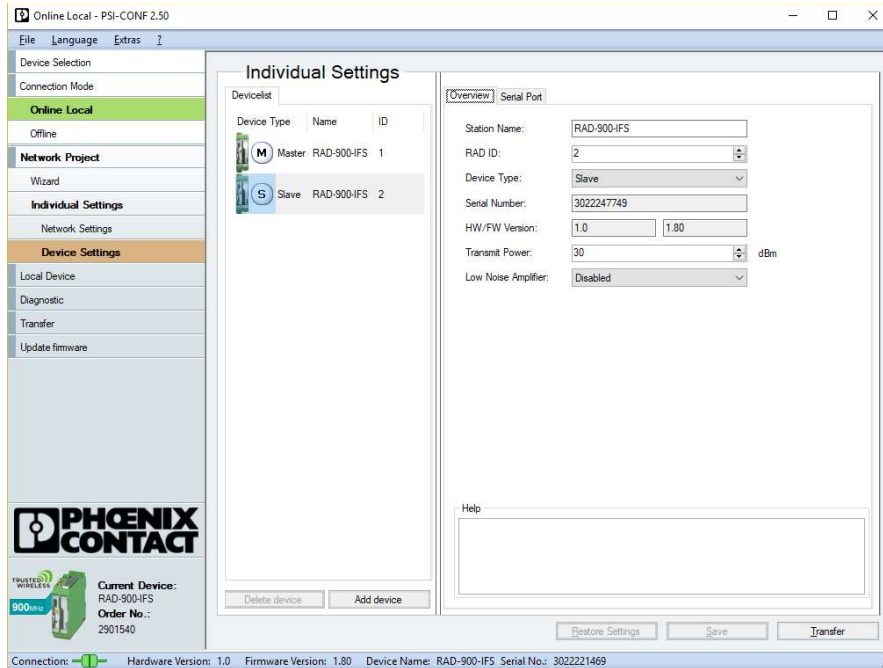
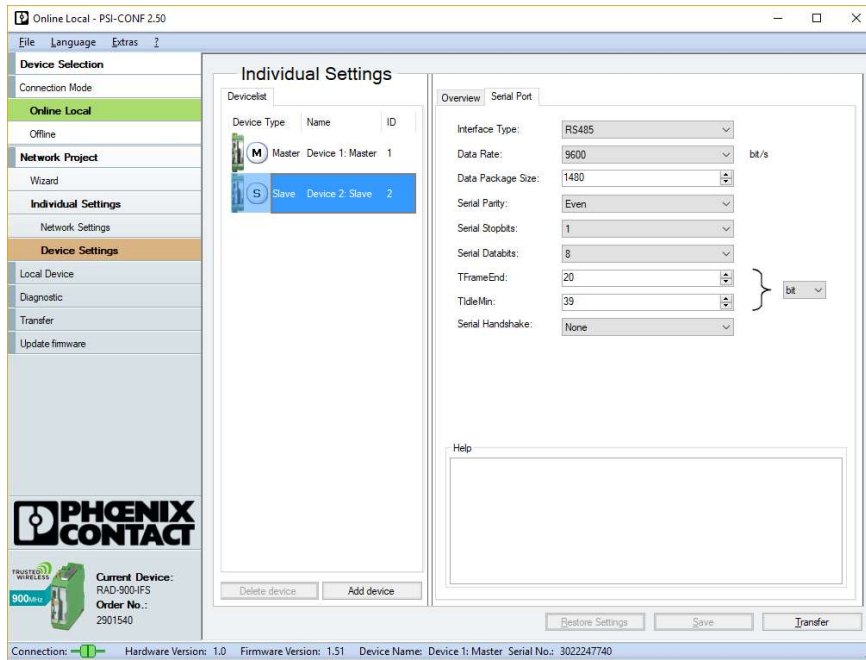


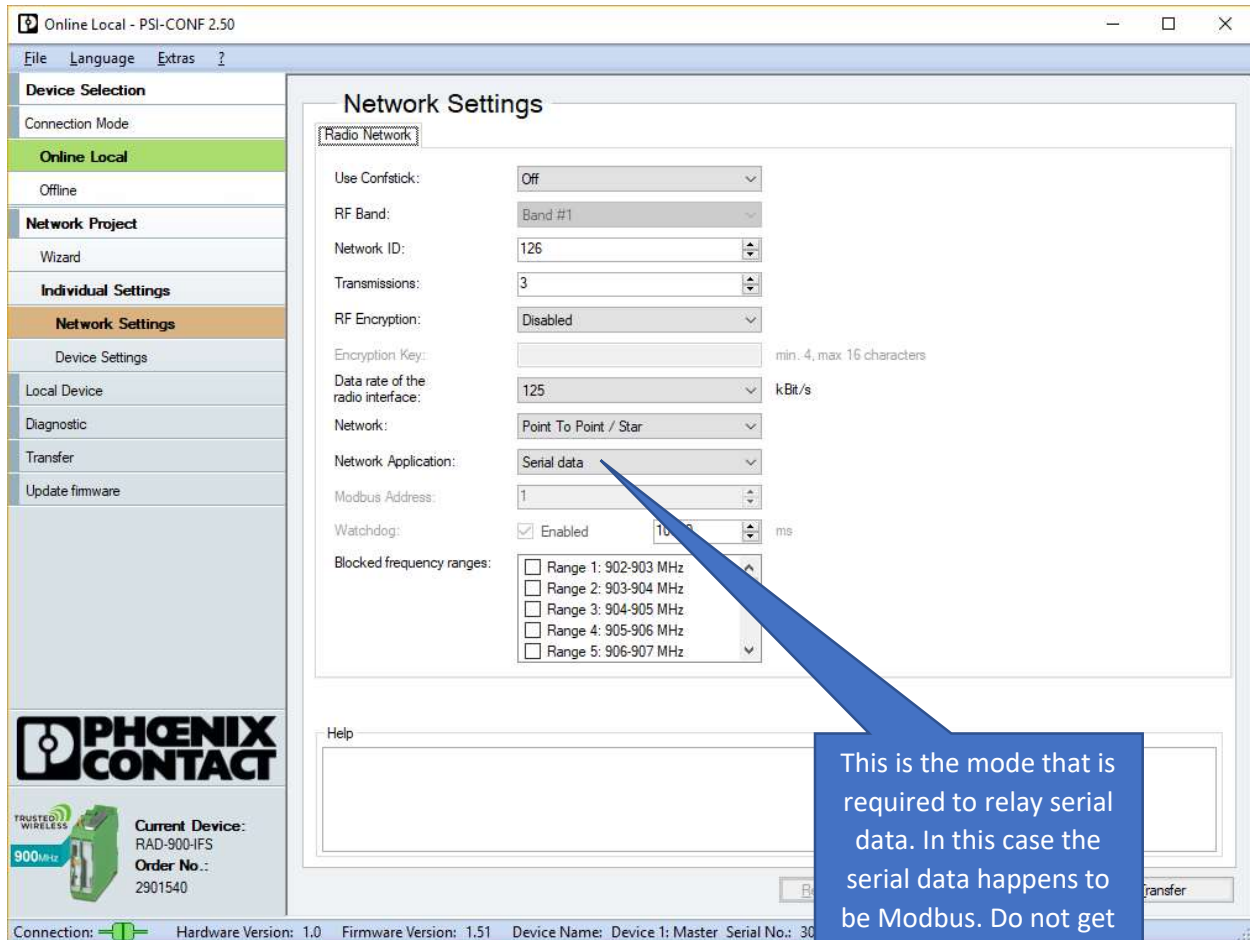
Step 3 : Edit Individual Settings



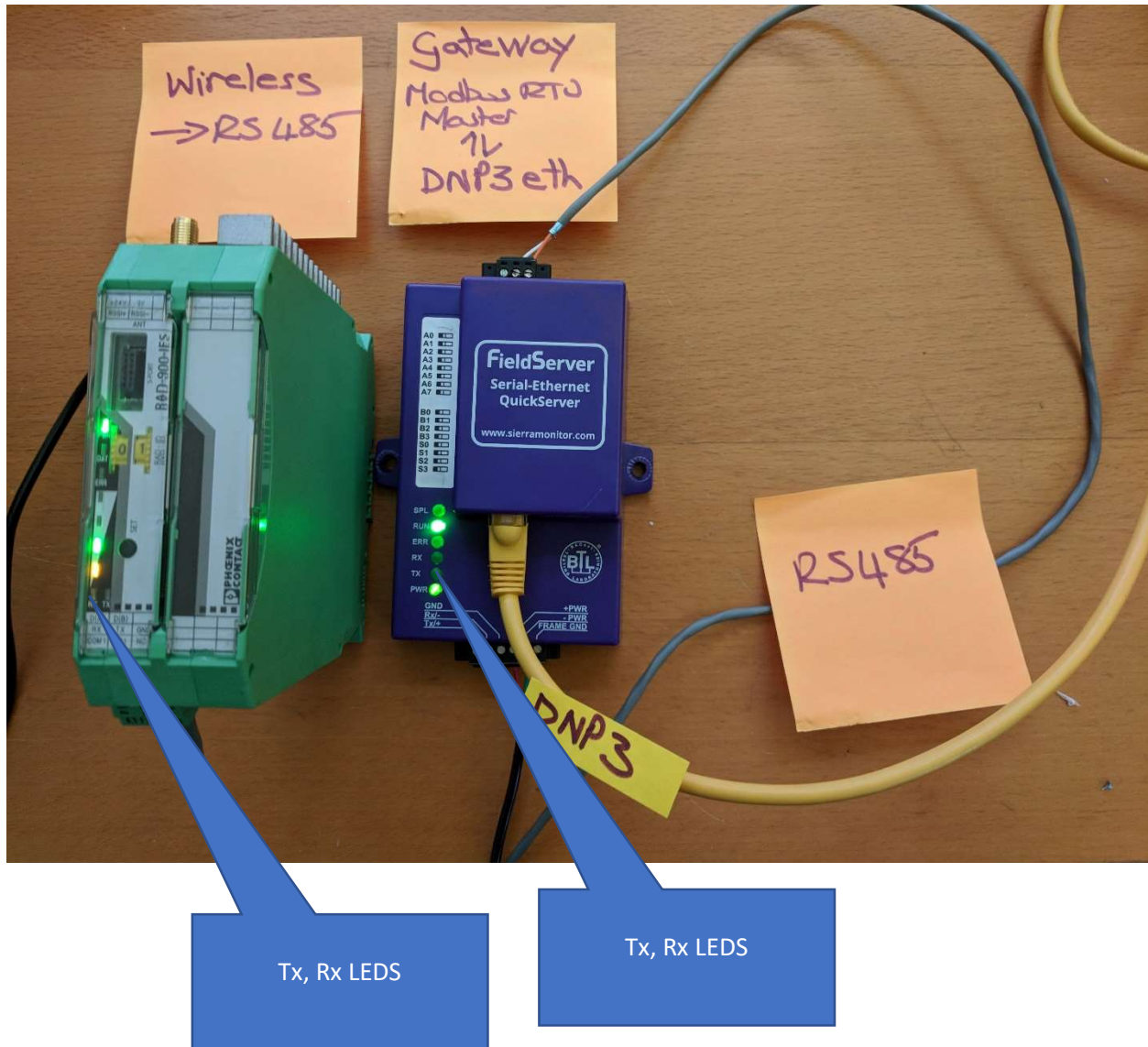
Step 4: Make Sure the RS485 settings match the settings for the Energy Meters and The Gateway.





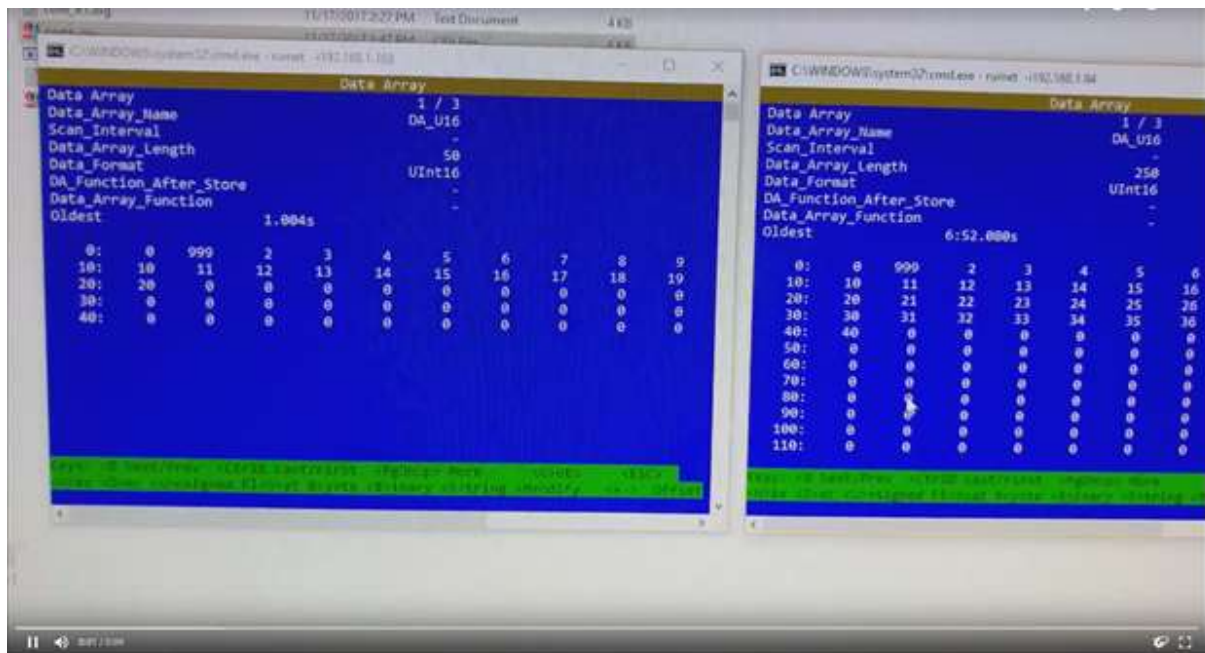


Step 5 – Check for communications



Step 6 : Check for Data Transfer

The one screen represents the server data (right) and the other screen represents the data inside the gateway.



Images and Videos

<https://photos.app.goo.gl/f6pM6OVaSWsgib4j2>

All Vid file names to begin with Chipkin - Wireless Modbus using Phoenix RAD-900-IFS to DNP3 over Ethernet and Quickserver protocol gateway

VID_20171117_163155

Data Transfer as indicated by the Tx,Rx LEDS and the number of message and bytes sent and received by the gateway.

VID_20171117_163116

Data Transfer as indicated by the Tx,Rx LEDS

VID_20171117_155333

Data transfer shown by displaying server (energy Meter) data and the data in the Modbus master of the gateway.

VID_20171117_155300

VID_20171117_153331

Data Transfer as indicated by the Tx,Rx LEDS

Keywords

Wireless Modbus

Phoenix RAD900IFS Modbus

Phoenix RAD900IFS DNP3

Phoenix RAD900IFS protocol

Phoenix RAD900IFS integration

Wireless Energy Data

Energy meter integration using wireless

Remote monitoring Modbus DNP3