

# Support Note - 245/945U-E Modbus TCP to RTU

## Support Note

### PURPOSE

The purpose of this document is to show the configuration to setup Modbus TCP to RTU via a back to back pair of 245U-E or 945U-E Ethernet modems.

### MATERIALS USED

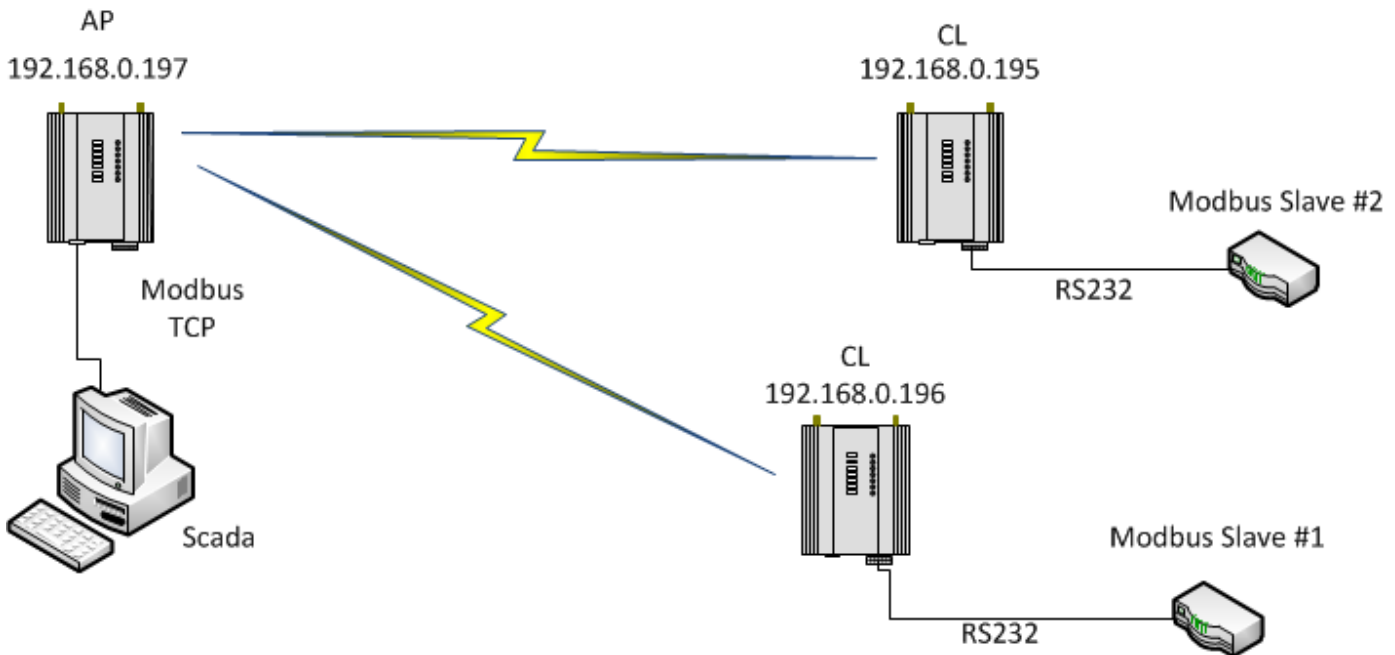
2 x 245U-E / 945U-E Ethernet modems.  
Laptop or PC to configure

### APPLICATION

Set modems up as a communicating pair. If you are unsure how this is done please consult the user manual or contact Support for a document on how this can be done.

(245-945\_Back to back connection\_1.0.pdf).

The Application below shows an Access Point connected to two Clients.



The Scada needs to communicate via Modbus TCP to the two Remote Modbus Slave devices using Modbus RTU.

Firstly we setup the Client radios serial ports that are communicating to the Modbus Slave device to have the "Modbus TCP/RTU) selected on the "Serial" page.

## ELPRO 245U-E Serial Configuration

Reset is required to activate settings.

### RS-232 Serial Port Configuration:

RS-232 Port Type	Modbus TCP/RTU ▼
Data Rate	9600 ▼
Data Format	8N1 ▼
Flow Control	None ▼

### RS-232 Modbus TCP / RTU Converter:

Modbus Server TCP Port	502
Pause Between Requests (msec)	10
Response Timeout (msec)	100
Connection Timeout (sec)	60
Maximum Request Retries	1
Maximum Connections	32

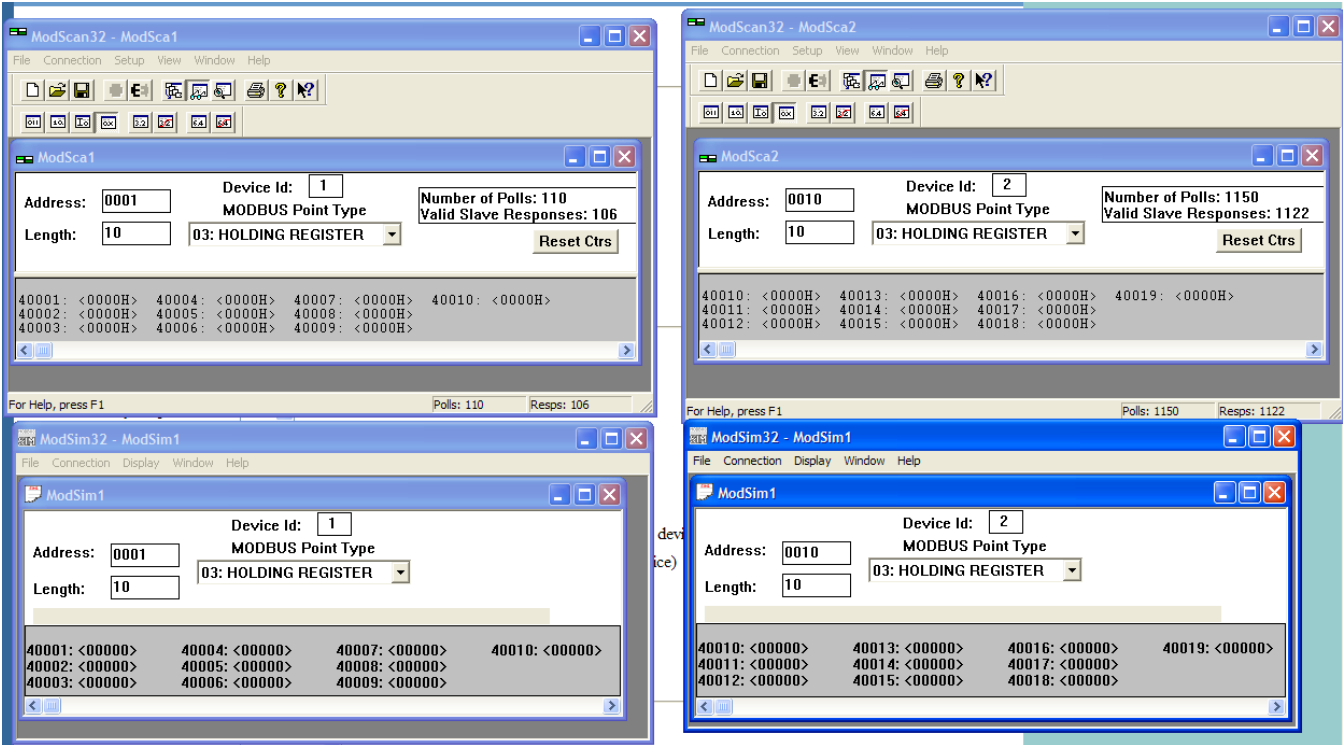
Configure the Serial parameters to match that of the Modbus Slave device, all other Parameters can be left at the default, Save changes.

Then configure the Scada to poll the Modbus Slave Address, i.e. #1 for Modbus slave Address #1 via the IP Address of the Remote Client Radio, i.e. "192.168.0.196".

In the example below we are using Modscan32 a Modbus Master simulator and Modsim a Modbus Slave simulator.

We have setup the Modbus Slaves as RS232 serial devices with Slave addresses 1 & 2 and they also have 10 x Holding registers available to be read.

We then set Modscan as the TCP Master and have it poll the "Remote Modbus TCP Servers at their IP addresses, i.e. 192.168.0.195 & 192.168.0.196 and read 10 x Holding registers starting at register location 40001 from each Slave address, i.e. Device ID is #1 from IP address 192.168.0.196 and Device ID #2 from 192.168.0.195.



You should now be able to successfully poll each Remote Modbus RTU device from the Modbus TCP Master.

**Amendment Register:**

Issue No.	Date	Details of Amendment
1.0	8/9/16	Draft Issue
1.1	12/02/19	Elpro Branding