



ETMBTCP Installation And User Guide

Device Description

Connectors:

Input / Output	
<i>Power</i>	9-32 VDC (100mA) or 12-24VAC (100mA)
<i>Bottom Connector</i>	RJ-45 10/100mbit half/full duplex Ethernet (auto-sensing) connection
<i>Top Connector</i>	Two-Wire RS-485 connection

Indicators:

Name	Color	Description
<i>PWR</i>	Green	Illuminated when proper power supply is applied to the device
<i>RX</i>	Yellow	Flashes when data is received via the RS-485 port
<i>TX</i>	Yellow	Flashes when data is transmitted via the RS-485 port
<i>Ethernet (Left) "Link"</i>	Off	No Link
	Amber	10 Mbps
	Green	100 Mbps
<i>Ethernet (Right) "Activity"</i>	Off	No Activity
	Amber	Half Duplex
	Green	Full Duplex

Defaults:

Ethernet	
<i>IP Address</i>	Automatically obtained via DHCP/BOOTP/Auto IP
<i>Subnet Mask</i>	255.0.0.0
<i>Gateway</i>	0.0.0.0
<i>Telnet</i>	Enabled, port 9999
<i>Modbus TCP Port</i>	502 (fixed)
RS-485	
<i>Baud</i>	9600
<i>Parity/Stop/Data</i>	N, 8, 1

Connection/Wiring:

1. Connect the RS-485 wires to the A- / B+ terminal. Observe the wiring polarity to conform with the conventions of other manufactures devices.

For the Elkor WattsOn product, the A- of the ETMBTCP should be wired to the WattsOn RS-485 "-" terminal, and B+ should be wired to the RS-485 "+" terminal.

2. Connect the RJ-45 Ethernet connector to the bottom input.
3. Connect a DC power supply (9-32VDC) to the +/- PWR terminals

Network Configuration:

By default, the ETMBTCP is configured to automatically obtain its IP address via DHCP/BOOTP or AutoIP. To discover the assigned address, or to change the parameters, the Lantronix Device Installer software should be installed. This software is available from Lantronix:

http://ltxfaq.custhelp.com/cgi-bin/ltxfaq.cfg/php/enduser/std_adp.php?p_faqid=644

(If the link becomes inactive or changes, simply search for "Device Installer" on the Lantronix website: <http://www.lantronix.com>)

After downloading and installing the Device Installer package, run the program. The program will automatically search for any devices on the network. If found, the ETMBTCP will be shown as an "XPort-IAP". If no devices are found, press the "Search" button. If the ETMBTCP detected a DHCP server, and it was assigned an address, it should have an IP address matching the network subnet. If it was unable to obtain an IP address, it will typically display a value of "169.254.44.166". If this is the case, ensure that your network has a properly configured DHCP server, and that the ETMBTCP was powered on AFTER plugging in the Ethernet cable.

Figure 1. shows a ETMBTCP with an assigned IP address detected on the network.

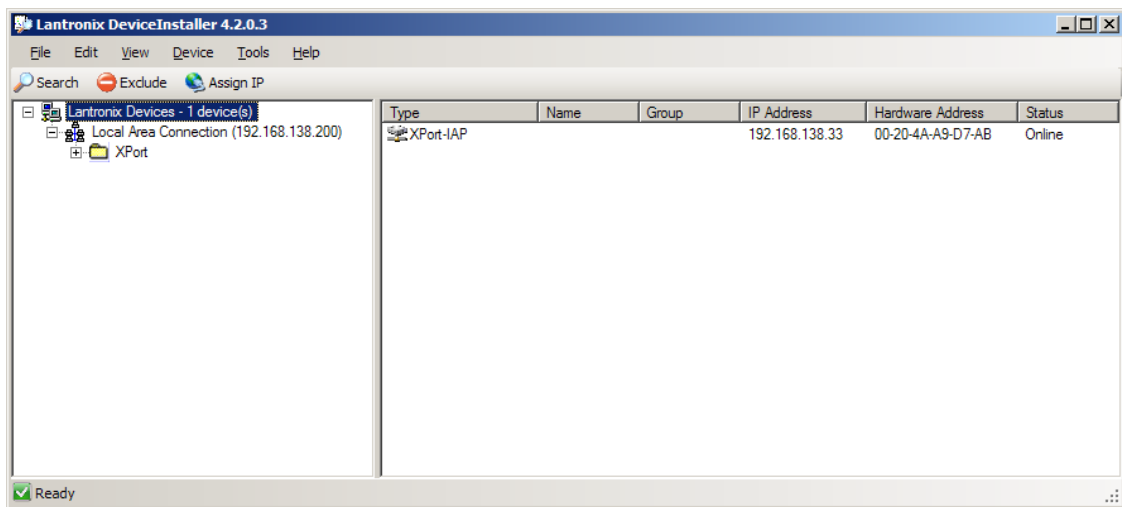


Figure 1

Upon successful detection of the XPort Module, a static IP address may be assigned, or the method of IP address assignment may be changed. This may be accomplished by selecting the device in the right window, and clicking *Device > Assign IP Address* (or by pressing F7 after selecting the XPort-IAP).

In the case where a DHCP server does not exist or the ETMBTCP was not able to automatically obtain an IP address, it is still possible to assign a static using the same method as described above.

Once a valid IP address is assigned, double click on the XPort-IAP name in the right window. An extended detail screen should appear as shown in Figure 2.

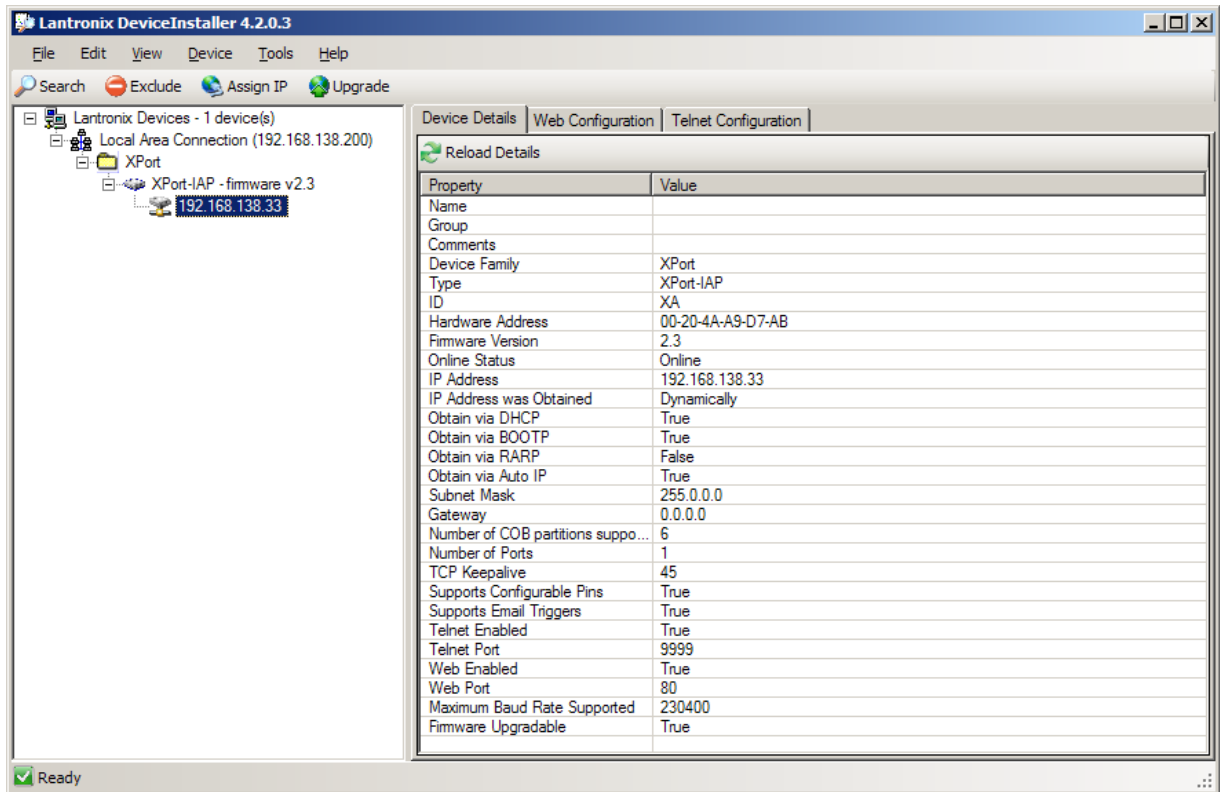


Figure 2

Here, the device network parameters are shown. If all of the network parameters are configured to your satisfaction, simply note the IP address of the device.

It is recommended to either assign a unique static IP address to the module, or to configure the DHCP server to automatically assign a fixed address. This will simplify finding the device on the network in the future. You may need to contact your network administrator for more assistance.

Serial Configuration

By default, the ETMBTCP is shipped pre-configured to work with Elkor's Modbus/RTU devices. That is, the port configuration and Modbus type are pre-set for 9600,N,8,1, communicating with Modbus RTU Slave devices.

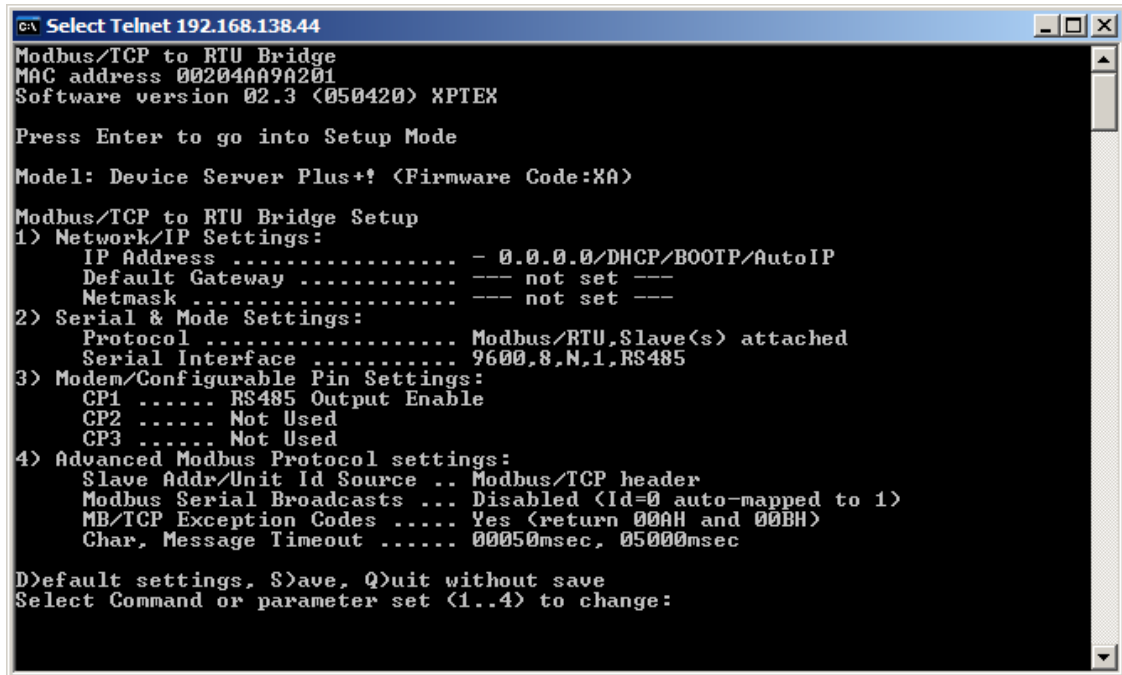
If it is desired to change the device serial communication parameters, this must be done via a telnet connection to port 9999. The "Device Installer" software may be used, as well as any telnet client.

In the Device Installer software, find the ETMBTCP, double click on XPort-IAP and select the "Telnet Configuration" tab. Select "Connect" to connect to the ETMBTCP. A prompt will appear asking to hit ENTER to go into Setup mode. Once in setup mode, a screen will appear as in Figure 3 showing the current device configuration.

The serial mode settings may be changed for use with other devices such as Modbus Masters, Modbus ASCII, and other COM settings (baud, parity, etc).

Other Mode settings are out of the scope of this document, and not directly supported by Elkor Technologies Inc.. More information may be found from the Lantronix website, and more specifically, their "Modbus Protocol User Guide"

http://www.lantronix.com/pdf/UDS1100-IAP_Modbus-UG.pdf



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c:\ Select Telnet 192.168.138.44
Modbus/TCP to RTU Bridge
MAC address 00204AA9A201
Software version 02.3 (050420) XPTEX

Press Enter to go into Setup Mode

Model: Device Server Plus+! (Firmware Code:XA)

Modbus/TCP to RTU Bridge Setup
1) Network/IP Settings:
   IP Address ..... - 0.0.0.0/DHCP/BOOTP/AutoIP
   Default Gateway ..... --- not set ---
   Netmask ..... --- not set ---
2) Serial & Mode Settings:
   Protocol ..... Modbus/RTU,Slave(s) attached
   Serial Interface ..... 9600,8,N,1,RS485
3) Modem/Configurable Pin Settings:
   CP1 ..... RS485 Output Enable
   CP2 ..... Not Used
   CP3 ..... Not Used
4) Advanced Modbus Protocol settings:
   Slave Addr/Unit Id Source .. Modbus/TCP header
   Modbus Serial Broadcasts ... Disabled (Id=0 auto-mapped to 1)
   MB/TCP Exception Codes .... Yes (return 00AH and 00BH)
   Char, Message Timeout ..... 00050msec, 05000msec

D)efault settings, S)ave, Q)uit without save
Select Command or parameter set (1..4) to change:

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Figure 3

In any case, it is imperative that the "Interface Type" settings not be changed. The "Interface Type" should be set to option #3 (RS485 2-wire). Additionally, the "Modem/Configurable Pin Settings" must be set such that CP1=RS485 Output Enable & CP2/CP3=Not Used. See figure 3 for an example of the proper configuration.

Troubleshooting:

Problem	Suggestion
Device keeps resetting	<ul style="list-style-type: none">• Check input power supply. It must be between 9-32 VDC, with a minimum output rating of 400mA• Measure voltage at power supply input terminal with device powered up.
Cannot obtain IP Address via DHCP	<ul style="list-style-type: none">• Device may have been powered up before network cable was plugged in.• Make sure DHCP/BOOTP/AutoIP is configured by using Device Installer
Cannot communicate with Slave	<ul style="list-style-type: none">• Confirm that the Interface Type is set to "RS485 2-wire" and that CP1 is configured as "RS485 Output Enable" (not inverted)• Confirm that the connection (wire continuity, polarity) to the slave device is correct• Confirm that the slave Modbus address is properly set• Confirm that the application is polling the correct Slave Modbus address• Confirm that the Serial settings (baud, stop bits, parity, etc) are correctly set on the Slave and/or ETMBTCP
Only Slave ID #1 can be polled	<ul style="list-style-type: none">• Your application is setting the Modbus/TCP Unit ID field to 0. This causes the ETMBTCP to automatically map this to 1.
Other	More detailed problems and solutions are outlined in the Lantronix "Modbus Protocol User Guide"

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