User Manual

nanoET

Revision 1b

Contents

Overview and Installation

Overview

The nanoET is a Ethrnet communication module that allows the labZY devices to connect to local area networks (LAN). The nanoET module weighs 50 g and has dimensions approximately 46x218x18 mm^3. A 15cm cable with USB mini B connector is attached to the module. .Fig. 1.1 shows the nanoET seen from the label side of the module. The label displays the part number (NA0523) and the 12 digit serial number of the module.

Figure 1.1 nanoET module, label side.

The nanoET is designed to work with labZY devices with firmware versions greater than 30 and having an even last digit. For example nanoET will work fine with firmware versions 30.20 or 50.22 but will not work with versions 30.19 or 40.15.

Hardware Installation

The nanoET must be connected to the IO ports of the labZY devices. The labZY devices must be powered by external power supply delivering enough current to power both the labZY device and the attached nanoET module. Fig. 1.2 shows the IO port and the port to connect external power (POWER) of different labZY devices. Note that the external power to nanoPSD and nanoTDCR is supplied through the USB port, while for the other devices the external power is supplied through a dedicated port. **In the later case it is IMPORTANT that the external power is NOT APPLIED when the IO port is connected to a USB port of a computer!.**

Figure 1.2 IO port and the POWER connector; a) nanoPSD and nanoTDCR, b) nanoMCA-II (SP), c) nanoMCA (SP), nanoXRS, and nanoDPP

Follow these steps to connect the nanoET to labZY device.

    1. If the labZY device is powered, turn it off either using the power switch or unplugging the cable supplying power (e.g. USB cable).

    2. Plug the nanoET cable into the labZY device.

    3. Apply power to the labZY device using an external power supply.

    4. Connect Ethernet cable to the nanoET module.

Upon powering and connecting to the LAN the nanoET Link LEDs will indicate the status of the Ethernet connection (Fig. 1.3).
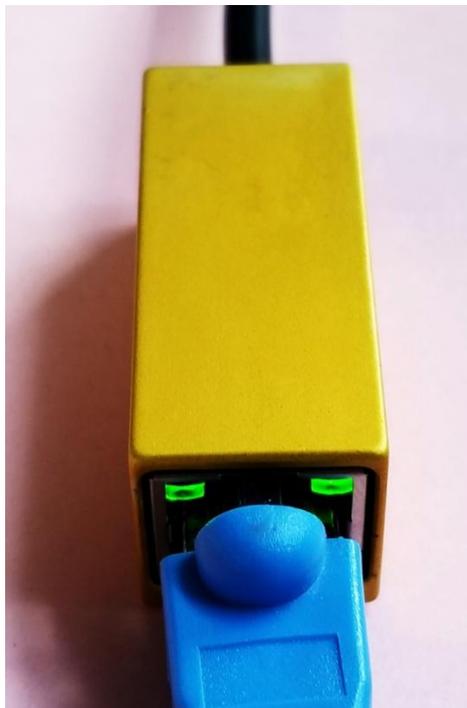
Link LED (Left Side)		Activity LED (Right Side)	
Color	Meaning	Color	Meaning
Off	No Link	Off	No Activity
Amber	10 Mbps	Amber	Half-Duplex
Green	100 Mbps	Green	Full-Duplex

(Table from Lantronix data sheet)

Figure 1.3 Link LEDs..

The nanoET module is shipped ready to be connected to the host computer. The nanoET is configured to obtain its IP address from the LAN DHCP server.

This IP address is dynamic and may change every time the nanoET connects to your LAN.The IP address of the nanoET is used to create a com port through which the labZY devices communicate with the computer. If the IP of the nanoET changes from session to session the com port associated with the nanoET must be reconfigured. This is time consuming operation which can be avoided if your LAN allows the use of **static IPs**. If nanoET is configured with a static IP than only once a com port will be set to work with the static IP. The nanoWF if connected to your WLAN will always be available at the corresponding com port. To set static IP you need first to set up your computer so that the nanoET can be discovered on the network.

Computer Setup

COM Port Redirector

 The communication between the labZY software (labZY-MCA, labZY-PSD and labZY-TDCR) and the labZY devices is through COM ports. The COM ports map different interfaces (USB, Ethernet, WiFi, Bluetooth) . Using COM ports eliminates the need to install drivers specifically tailored for the labZY software. The COM port implementation in Windows based computer is robust and well established.

The COM Port Redirector is a software application that allows the creation of COM ports and their mapping to nanoET and nanoWF. The CPR setup files and a Quck Start Guide are located in the subfolder "COM_PORT_REDIRECTOR_4303" located in the folder "innanoET+nanoET". Alternatively, the latest version of the software and the documentation can be downloaded from www.lantronix.com. To install the CPR follow the instruction in the CPR Quick Start guide.

COM Port Setup

Before setting the COM port make sure that the computer and nanoET are connected to the same LAN.

Launch the CPR application and create a COM Port as outlined in the CPR Quick Start guide. Select the newly created port, e.g. Com 180. The selection of the port will be

indicated with a green arrow on the left of the COM Port name. All parameters of the COM Port settings will be displayed in red (Fig. 2.1.1).

Execute the "Search For Devices" command of the CPR application. The CPR will list all found devices in the "Device List" window (Fig. 2.1.2). To identify the nanoET module take a note of the number in the field "HW Address". The number (Ignoring ":") should match the serial number of the nanoET, e.g. 00204Af119a8.

Double click the IP Address of the nanoET device to set up the COM port (Fig. 2.1.3). The "Host" field of the COM Port (e.g. Com 180) will be filled with the IP of the nanoET. The TCP Port will be set to 10001 which is the preset port for nanoET and nanoWF. Press the "Save" button of the CPR. Close the CPR software application. The settings of the newly created port will be saved and the port will be available for use by the labZY software applications. The settings of the port will be memorized by the computer and will be available after reboot of the computer.
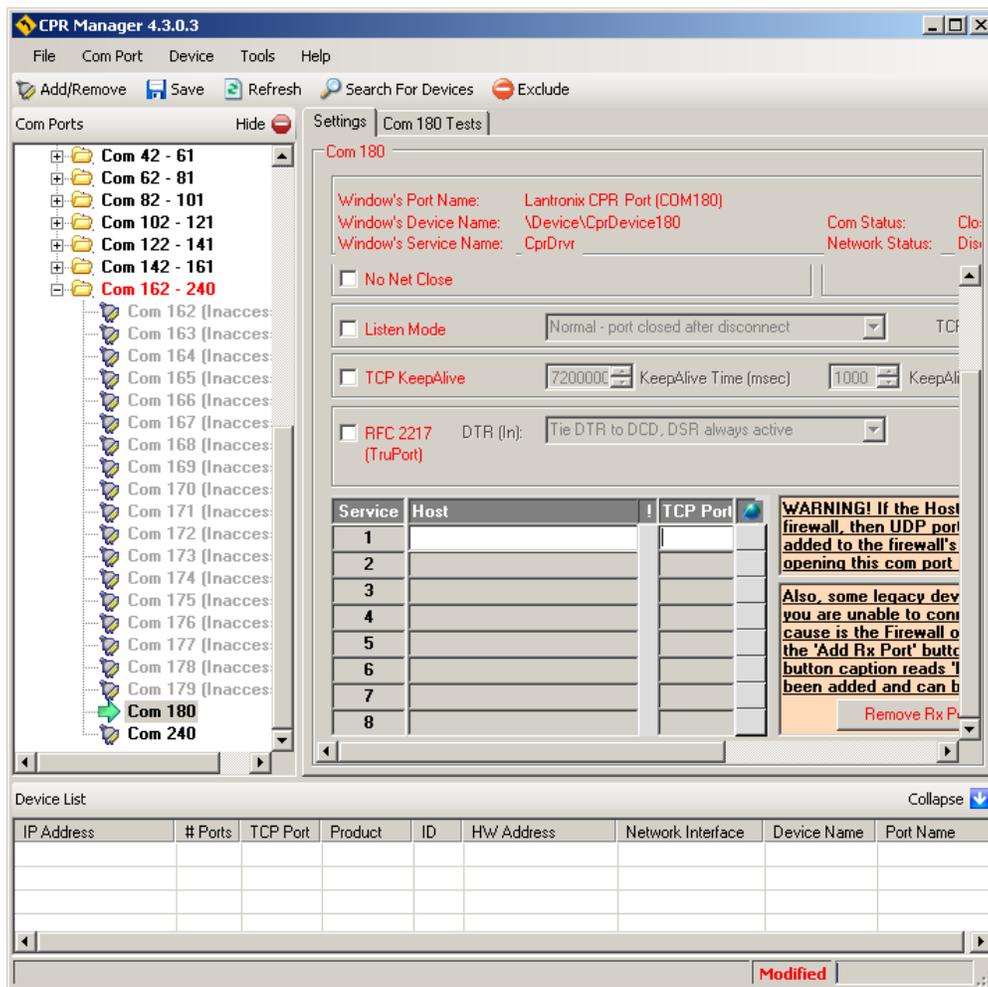
Figure 2.1.1. Setting a new COM Port.

nanoET
Serial Number

Figure 2.1.2. Identifying nanoET module.

Figure 2.1.3. Setting the TCP Port.

Managing nanoET

Network

To manage nanoET connected to your LAN use the CPR application to identify the nanoET. Make note of the nanoET IP address. Open a Web browser and in the address field type the IP address of the nanoET (e.g. 192.168.1.59), press ENTER (Fig. 3.1.1).

Figure 3.1.1. nanoET IP address.

The browser connects to the nanoET server and the Authentication dialog will be displayed as shown in Fig. 3.1.2. Do not enter user name and password, just press the OK button.
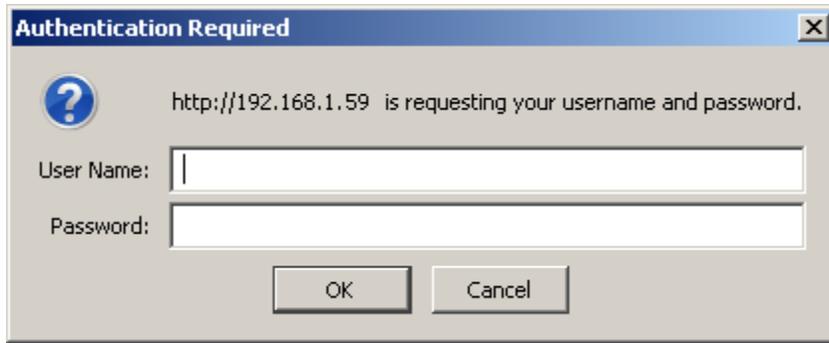
Figure 3.1.2. Authentication dialog.

In the nanoET home page (Fig. 3.1.3) click on the Network command in the left vertical menu to enter the Network Settings page(Fig. 3.1.4).
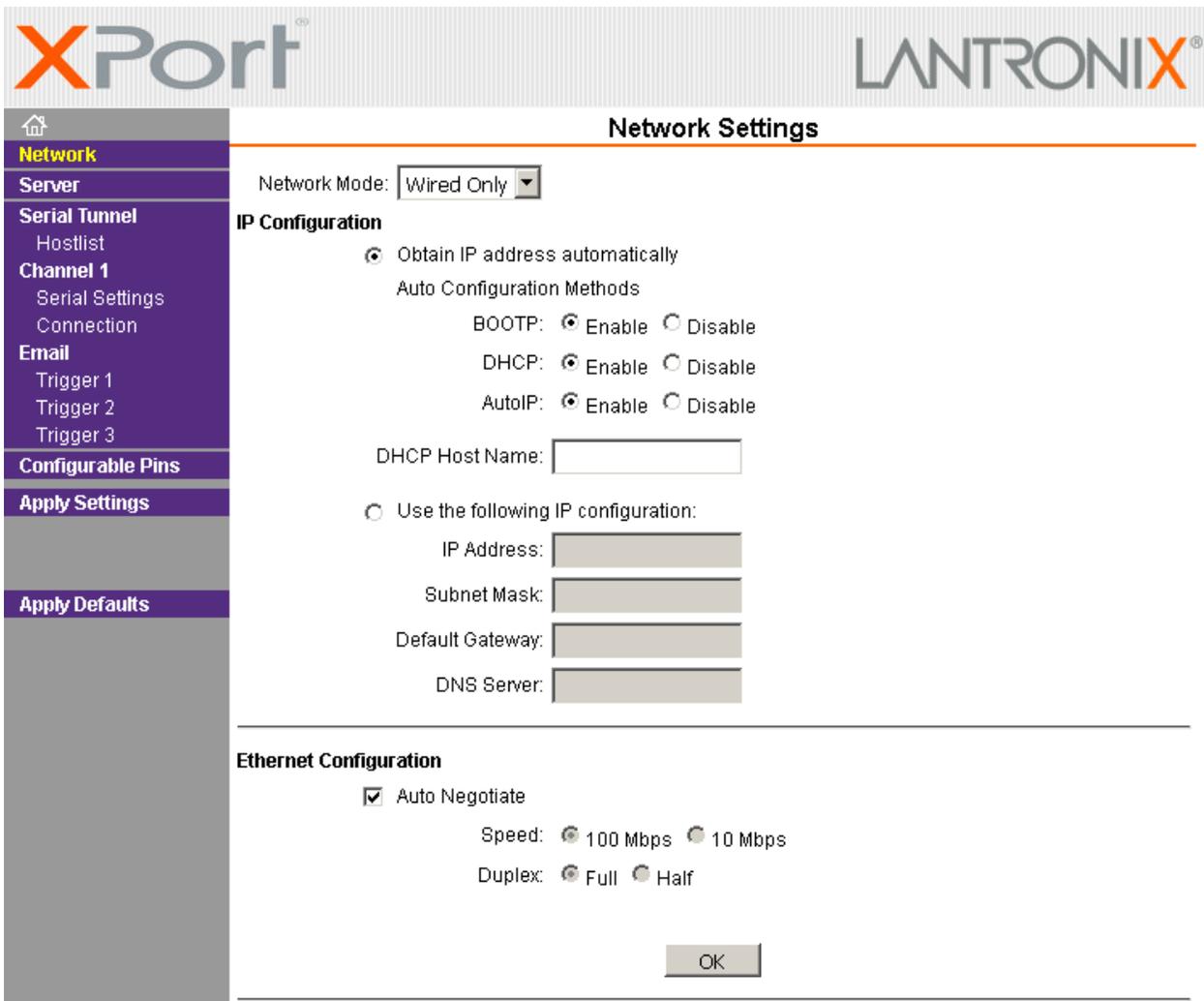

Figure 3.1.3. nanoET Home (Status) Page.

Figure 3.1.4. nanoET Network Settings Page.

The nanoET module is shipped from the factory with the IP Configuration set to automatically obtain IP addresses (DHCP). This settings can be modified by the user to set a static IP address. To disable DHCP and setup static IP it is first necessary for the user to obtain from the administrator of user's LAN an available static IP address. To enter the static IP address select "Use the following IP configuration". Enter the static IP address and the Subnet Mask as shown in Fig. 3.1.5. Pressing the OK button will display a short messages "Done!". The "Done!" however does not store the new configuration for subsequent use. To save the Network Settings in the non-volatile memory of the nanoET press the Apply Settings in the left vertical menu. The nanoET will save the settings and reboot. If the static IP address is different than the addressing the browser address bar it may be necessary to enter the static IP address in the browser address bar to return to the management page.

Figure 3.1.5. Setting static IP address.

Server

In the server page the user can enter password which will be required to open the management pages. When connecting to the server and the password is set the password is the only entry needed in the Authentication dialog (Fig. 3.1.2).

To setup the password (Fig. 3.1.6) Enable the Enhanced Password and then enter the password in the password field. Press OK and then Apply Settings. The password will be required at next connection to the server.

Figure 3.1.6. Server Settings.

All other settings of nanoET are set for compatibility with the labZY devices. These settings should not be modified. The Lantronix web site www.lantronix.com has more information about the XPort which is the main component of nanoET

If you need help, please, contact support@labzy.com.

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Other Settings

The settings in the following pages are specific for the proper operation of the nanoET interface module.

Important - these settings may differ from the default settings of the XPort device.

XPort®   LANTRONIX®

Serial Settings

Channel 1

☐ Disable Serial Port

Port Settings

Protocol: [RS232 ▼]   Flow Control: [CTS/RTS (Hardware) ▼]

Baud Rate: [921600 ▼]   Data Bits: [8 ▼]   Parity: [None ▼]   Stop Bits: [1 ▼]

Pack Control

☐ Enable Packing

Idle Gap Time: [12 msec ▼]

Match 2 Byte Sequence: ○ Yes ◉ No   Send Frame Immediate: ○ Yes ◉ No

Match Bytes: 0x[00]   0x[00]   (Hex)   Send Trailing Bytes: ◉ None ○ One ○ Two

Flush Mode

Flush Input Buffer   **Flush Output Buffer**

With Active Connect: ○ Yes ◉ No   With Active Connect: ◉ Yes ○ No

With Passive Connect: ○ Yes ◉ No   With Passive Connect: ○ Yes ◉ No

At Time of Disconnect: ◉ Yes ○ No   At Time of Disconnect: ◉ Yes ○ No

[OK]

Navigation menu:
- Network
- Server
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  - Hostlist
- Channel 1
  - Serial Settings
  - Connection
- Email
  - Trigger 1
  - Trigger 2
  - Trigger 3
- Configurable Pins
- Apply Settings
- Apply Defaults

XPort
LANTRONIX®

Connection Settings

Channel 1
Connect Protocol

Protocol: [TCP ▼]

Connect Mode

Passive Connection:

Accept Incoming: [Yes ▼]

Password Required: ○ Yes ◉ No

Password: [   ]

Modem Escape Sequence Pass Through: ◉ Yes ○ No

Active Connection:

Active Connect: [None ▼]

Start Character: 0x[0D] (in Hex)

Modem Mode: [None ▼]

Show IP Address After RING: ◉ Yes ○ No

Endpoint Configuration:

Local Port: [10001]

☐ Auto increment Local Port for active connect

Remote Port: [0]

Remote Host: [0.0.0.0]

Common Options:

Telnet Com Port Cntrl: [Disable ▼]

Terminal Name: [   ]

Connect Response: [None ▼]

Use Hostlist: ○ Yes ◉ No

LED: [Blink ▼]

Disconnect Mode

On Mdm_Ctrl_In Drop: ○ Yes ◉ No

Check EOT(Ctrl-D): ○ Yes ◉ No

Hard Disconnect: ◉ Yes ○ No

Inactivity Timeout: [0] : [0] (mins : secs)

[OK]

XPort

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Configurable Pin Settings

CP	Function	Direction	Active Level
1	HW Flow Control Out ▼	◉ Input ○ Output	◉ Low ○ High
2	General Purpose I/O ▼	◉ Input ○ Output	◉ Low ○ High
3	General Purpose I/O ▼	◉ Input ○ Output	◉ Low ○ High

OK

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