

The following FAQs are questions most frequently asked of our technical support people. After reading these, if you need additional help please feel free to contact us at:

www.lantronix.com/support

support@lantronix.com

1-800-422-7044 domestic

1-949-453-7198 international

To contact Lantronix Sales, call 1-800-526-8764.

List of XPort™ FAQ's

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- What do I need in order to access the configurable pins control web applet?

I am trying to telnet to a serial port. When I use Microsoft's telnet application in Windows 95 or NT I get strange results. What should I do?

Is it possible to change my web page remotely or do I have to be at the equipment?

Will XPort support video transfers (spy cameras or security cameras)?

Can I put XPort on a PCB with pin headers and use it instead of my Micro?

Can I have "dynamic" web pages instead of static web pages in XPort (if yes, how)?

Can I add external memory to the XPort?

What about custom applications? Is Lantronix offering training classes or design assistance?

What is the sense of the serial data: is MARK/IDLE=0V & SPACE/BREAK=3.3V, or vice-versa?

Is there some specific serial protocol utilized, or to what extent can a developer specify the serial commands, data and algorithms?

Are "status LED 1" and "status LED 3" (optional usage of CP1 & CP3) different from the LED's visible at the front of the XPort? If so, what is their significance?

The environmental specifications listed on the XPort data sheet state that the operating temperatures and storage temperatures both range from -40°C to $+85^{\circ}\text{C}$. Is this correct? Are both temperatures the same?

What are the details of the OEM firmware licensing agreement? Are there any other fees or costs associated with utilizing the XPort, either one-time or recurring? Are firmware upgrades provided free of charge?

Q. What tools do I need to use the XPort?

A. You need the following tools:

1. The XPort product.
2. The XPort Installer. XPort Installer is a configuration utility for server settings and port parameters. It is available
 - a. On the CD provided with your product
 - b. At our ftp site <ftp://ftp.lantronix.com/pub/XPort/>
 - c. To download the release notes using HTTP, go to <http://www.lantronix.com/support/download/index.html>
3. A straight-through cable, DB9M to DB9F when connecting the evaluation board to a PC. (Provided with the development kit.)
4. A straight-through cable, DB9M to DB25F when connecting the evaluation board to a dumb terminal. (Provided with the development kit.)
5. Evaluation board or device. Evaluation boards come with the XPort™ Development Kit and can be purchased from Lantronix, part number XP100100K-01

Q. What network protocols are supported?

A. The following protocols are supported:

- 1) The XPort uses the Internet Protocol (IP) for network communications and the Transmission Control Protocol (TCP) to assure that no data is lost or duplicated, and that all data sent to the connection arrives correctly at the target.
- 2) ARP, UDP, TCP, ICMP, Telnet, TFTP, AutoIP, DHCP, HTTP, and SNMP (read only) for network communications.
- 3) TCP, UDP, and Telnet for connections to the serial port.
- 4) TFTP for firmware updates.

Q. Do I need a compiler for XPort?

A. You only will need a compiler for XPort if you are using the development kit to create custom firmware. The code is written to use a standard Borland Compiler. For more information on Borland please visit their website at <http://www.borland.com>

Q. Does the XPort support encryption?

A. Yes, there are two versions of the XPort™ product, one with and one without encryption. To obtain XPort products with encryption you must order model number XPort-SE.

Q. What type of encryption is supported?

A. XPort currently supports Rijndael encryption. The XPort implementation of Rijndael is 128-bit.

Q. What is the latest version of the XPort Installer?

A. As of this writing (Feb 2003) the latest version of the XPort Installer is v3.2. To verify you have the most current version, check our ftp site at <ftp://ftp.lantronix.com/pub/XPortInstaller>. Or check our web site <http://www.lantronix.com/support/download/index.html>

The file name is XPort Installer.exe.

Q. How do I find information on firmware features, bug fixes, known bugs, etc?

A. Information on features, bug fixes, and known bugs can be found in the release notes. Release notes are located on our ftp site at

Release Notes (<ftp://ftp.lantronix.com/pub/XPort/>)

Q. What is the latest firmware version for the XPort?

A. Clarify you have the latest version please check our WEB & FTP sites. Download information is as follows:

XPort (non-encrypted) via ftp

Download Binary Firmware File via FTP (<ftp://ftp.lantronix.com/pub/XPort/>)

XPort-SE (with encryption)

Contact your sales representative

To download the files via HTTP,

Click on <http://www.lantronix.com/support/download/index.html>

Q. How do I assign an IP Address to the XPort?

A. XPort will accept both dynamic and static IP addresses. DHCP and Auto IP are enabled by default.

There are three ways to assign static IP Address. They are:

- 1) XPort Installer – the easiest method
- 2) ARP - recommended for those familiar with Address Resolution Protocol
- 3) Through a serial connection – this is the fastest method for those using the evaluation board and familiar with menu and hex configurations.

1) Using XPort Installer:

- Start the XPort Installer program.
- Click on the Assign IP Icon.
- Enter the hardware address of the XPort™ IE: 00-20-4A-xx-xx-xx in the hardware field
- Enter the IP Address you want to assign the XPort™ IE: 192.168.xxx.xxx (example IP) in the IP Address field.
- Click OK

2) Using ARP:

- Open a windows command prompt (Start, Run, enter command or CMD depending on your operating system)

- From the dos command prompt enter the ip address and MAC address as shown below:
C:\ARP -S 192.168.xxx.xxx 00-20-4A-xx-xx-xx
- Hit return
- At the next command prompt telnet to the same ip address using port 1 e.g.
C:\Telnet 192.168.xxx.xxx 1
- Hit return. (message 'failed to connect' will appear')
- At the next command prompt telnet to the same ip address using port 9999
C:\Telnet 192.168.xxx.xxx 9999
- Hit return. You will be prompted to "Press Enter to go into Setup Mode"
- Hit return again as soon as you see the prompt to access the configuration choices. The prompt will time out after ~ 3 seconds.
- Select 0 for server configuration.
- Manually enter the IP Address. This permanently assigns the IP address,
- Manually enter the gateway address.
- Manually enter the host bits for the subnet mask (refer to XPort™ User Manual, section 4.5, Table 11 – Netmask Examples)
- Select 9 to save and exit

3) Using a serial connection from an evaluation board:

- A straight through modem cable is required to connect the DB9 serial port of the evaluation board from a comm port on a PC.
- Open a terminal emulation session with 9600 baud, 8-Bit character size, 1 stop bit, no parity (9600, 8N1) and no flow control.
- Reboot the XPort power and hold the x key (lower case) down on your keyboard.
- When you see the prompt "Press Enter to go into Setup Mode", hit the return key to access the configuration choices.
- Select 0 for server configuration.
- Manually enter the IP Address. This permanently assigns the IP address,
- Manually enter the gateway address.
- Manually enter the host bits for the subnet mask (refer to XPort™ User Manual, section 4.5, Table 11 – Netmask Examples)
- Select 9 to save and exit

(More detailed information can be found in the XPort User Manual provided on your CD)

Q. How do I configure the XPort?

A. There are four ways to configure the XPort.

1. XPort Installer - This is easiest method and the only method for setting/changing the configurable pins
2. Telnet – Provided for those who prefer telnet and menu mode
3. Serial connection – this is the fastest method for those using the evaluation board and familiar with menu and hex configurations.
4. Using the Web Interface – Limited to server properties and port properties

1) Using XPort Installer:

- Start the XPort Installer program.
- Click on the search icon.
- Select and highlight the XPort you want to configure.
- You can choose to configure server or port settings listed to the right of the selected XPort as well as upgrade firmware or web pages by clicking on the upgrade icon.
- Click on 'Update' icon to save

2) Using Telnet:

- Open a windows command prompt (Start, Run, enter command or CMD depending on your operating system)
- From a DOS command prompt, telnet to the ip address of the XPort and port 9999 e.g. C:\Telnet 192.168.xxx.xxx 9999.
- Hit return.
- Hit return again when you see the prompt to access the configuration choices. You can configure the server settings (select 0) or channel port settings (select 1).
- Remember to select 9 to save and exit

3) Using a serial connection from an evaluation board:

- A straight through cable is required to connect the DB9 serial port of the evaluation board from a comm port on a PC or terminal.
- Open a terminal emulation session with 9600 baud, 8-bit character size, 1 stop bit, no parity (9600, 8N1) and no flow control.
- Apply power to the XPort and hold the x (lower case) key down on your keyboard.
- Hit return when you see the prompt to access the configuration choices. You can configure the server settings (select 0) or channel port settings (select 1).
- Remember to select 9 to save and exit

4) Using the Web Interface

- Open a web browser to the IP address of the XPort
- Select server or port properties to configure your changes
- Click on update settings

(More detailed information can be found in the User Manual provided on your CD)

Q. I need to load the Internal Web Pages onto my XPort. How do I do this?

A. The web page file must be loaded over the network. To load the .cob file over the network you'll need the XPort Installer or a TFTP client application that can "put" a file onto the XPort in Binary mode.

First, download the template WEB pages from the Lantronix FTP site (<ftp://ftp.lantronix.com/pub/>). Click on the XPort folder. Find the directory corresponding to your device, and click on the link with the revision number. Then click on the file with the .cob extension to begin downloading the file.

The web configuration page should be loaded into WEB6. The CP (configurable pin) Applet should be loaded into WEB1. The example below uses WEB6.

Using XPort Installer

The XPort Installer automates most of this procedure. Install XPort Installer on your PC. You can download XPort Installer from: <ftp://ftp.lantronix.com/pub/XPortInstaller/>

Open XPort Installer and use the search function to add the XPort to the device list. Highlight the XPort in the device list and click on the 'upgrade' icon. From there you can choose to update the Web page. Do the following:

- Click on the line for WebPage6.
- Once highlighted, an icon with three dots will appear. Click on this icon and navigate to the .cob file.
- Click OK. Now the filename and its path should show up next to WebPage6.
- Click on the 'Load' button.

Using a TFTP client

If you do not have a TFTP client, there is a demo TFTP client application available at www.weird-solutions.com. A Users Guide is included and can be used as reference for using the weird-solutions tftp client.

Use the following parameters:

- XPort IP address for the TFTP server
- Select Upload for the operation
- Select Binary for the Format
- The name of the .cob file downloaded from the Lantronix FTP server as the Local file name
- X1 for the Remote File Name

Click the Upload Now button to start the operation. Note: Be very careful to set the TFTP application to do a binary transfer when upgrading over the network.

Q. What does e-mail notification do?

A. E-mail notification alerts users when specific predefined events occur. XPort uses triggers to identify such events by recognizing serial data, state change of 1 or more configurable pins, or any combination of these conditions.

Q. Can I have an e-mail list (distribution list) of people to send an alert to from XPort (if yes, how)?

A. Yes. All e-mail addresses defined on the XPort must be on the same domain as the SMTP server defined on the XPort. The configured e-mail address needs to be an alias for a distribution list in your mail system.

Q. How do I set up e-mail notification on my XPort?

A. E-mail notification can be set up in two ways, 1) using the XPort™ Installer or 2) Menu mode. Both methods are very straightforward and detailed below.

XPort Installer

First you will need to get information to set up the e-mail server:

- **Mail Server** - The IP address of your smtp e-mail server
- **Unit name** - The user name used by the XPort to send e-mail messages
- **Domain name** - The Domain name of your e-mail server
- **Recipient 1** - The full e-mail address receiving the e-mail notification
- **Recipient 2** - If applicable, the second full e-mail address receiving the e-mail notification

Then open the XPort Installer program.

- In the window on the left, highlight the XPort device you want to configure.
- In the window on the right, enter mail server, unit name, and domain name.
- Click on 'Recipient'. A new window will open to configure the e-mail addresses. Highlight Recipient 1 or 2 and enter e-mail address.
- Click on 'Triggers'. A new window will open to configure the trigger settings. Highlight Trigger 1, 2, or 3 and enter settings (see Trigger Information below for details).
- When finished, click on the 'update' icon to save your settings.

Menu Mode:

First you will need to get the same information to set up the e-mail server as in the XPort™ Installer procedure above:

- **Mail Server** - The IP address of your e-mail server
- **Unit name** - The user name used by the XPort™ to send e-mail messages
- **Domain name** - The Domain name of your e-mail server
- **Recipient 1** - The full e-mail address receiving the e-mail notification
- **Recipient 2** - If applicable, the second full e-mail address receiving the e-mail notification

Then open a telnet session to the ip address and port 9999 of the XPort™.

A menu will be displayed. Select 'e-mail notification'. Follow the prompts to enter information above.

After Recipient 2, the system will prompt you for Trigger 1, Trigger 2, and Trigger 3. See Trigger Information section below for details.

When finished, remember to select 9 to save and exit

Trigger Information

Trigger 1

Serial Sequence - The XPort can send an e-mail message upon recognition of a 2-byte sequence received from the serial port. Type the ACSII Hex value of the 2-byte sequence at this prompt. Example: A 2-byte sequence of "12" would be represented as "31,32" in ASCII Hex. If both bytes are 00, the serial sequence trigger will be disabled and will not send the e-mail message.

CP1 [A/I/X] () - To send an e-mail message when CP1 is asserted choose **A**. To send an e-mail message when CP1 is de-asserted or inactive choose **I**. If you do not want the XPort™ to watch CP1 for e-mail notification choose **X**.

CP2 [A/I/X] () - To send an e-mail message when CP2 is asserted choose **A**. To send an e-mail message when CP2 is de-asserted or inactive, choose **I**. If you do not want the XPort to watch CP2 for e-mail notification choose **X**.

CP3 [A/I/X] () - To send an e-mail message when CP3 is asserted then choose **A**. To send an e-mail message when CP3 is de-asserted or inactive, choose **I**. If you do not want the XPort to watch CP3 for e-mail notification choose **X**.

Message () - This will be the subject line of the e-mail message sent up to 22 characters.

Priority () - **H** will flag e-mail messages as High Priority. **L** will leave the e-mail message at normal priority.

Minimal notification interval () - The minimal time allowed between individual triggers. If a trigger event occurs quicker than the minimal interval after the previous trigger, it will be ignored. For example, assuming you set this field for 5 seconds and the e-mail trigger is when CP1 is asserted, then if you assert and de-assert CP1 every 2 seconds, you will only be sent an e-mail message at every other trigger.

Re-notification interval () - If a single trigger event never stops, then you will be sent e-mail messages at the time interval set here. For example, if you set this field for 5 seconds and the e-mail trigger is when CP1 is asserted, then if you keep CP1 asserted you will be sent an e-mail message every 5 seconds.

Trigger 2 - Same as directions for Trigger 1 above.

Trigger 3 - Same as directions for Trigger 1 above.

Each trigger is its' own event. All 3 are handled separately. This is to allow you to have 3 completely separate e-mail trigger events.

Each condition within an individual trigger must be met before the e-mail message will be sent. For instance, if you set Trigger 1 for the following conditions...

Serial sequence = 31, 32
CP1 = A
CP2 = X
CP3 = I
Message = Hello
Priority = H
Minimal notification interval = 5 seconds
Re-notification interval = 10 seconds

Then the XPort must see the characters 12, CP1 must be active, and CP3 inactive when the second character '2' is received, before you will get an e-mail message. If this happens again under 5 seconds, the second event will be ignored.

Q. I can't send an e-mail message to an address outside my local network. Why?

A. The mail server needs to be configured to allow e-mail messages for certain external address in order to be routed to the outside.

Q. How can I change the settings for the configurable I/O (input/output) pins?

A. First open XPort Installer. Highlight the XPort you wish to change in the device list on the left side of the window. Under the OEM Configurable Pins on the right side of the window, highlight the pin you wish to configure. Click the dropdown icon. Then select the desired function for that pin. Click the 'Update' icon.

Q. How can I view the state of the configurable I/O (input/output) pins?

A. The state of input/output pins can be viewed through the configurable pins control web applet provided with the XPort. This applet is in the file xptcpctl102.cob located on your CD. Load this .cob file into WEB1. (Use the same procedures provided above for ' Q. I need to load the Internal Web Pages onto my XPort. How do I do this?')

Once the applet is installed, use your internet browser and type the following in the address field where X.X.X.X is the IP address of your XPort. Type X.X.X.X\cp_ctl.html

The current pin status will be displayed when the user clicks on the 'Update States' button. This Java applet is not a real time application, so changes in state will only display after the 'Update States' button is clicked.

If a pin is set up to be input, then 'Input' will be displayed below that Configurable Pin (CP).

If a pin is set up to be output, then 'Output' will be displayed below that CP. If a pin is set up as a serial control signal then "Unavailable" will be displayed below that CP.

You can choose "On" or "Off" for a specific pin to assert or de-assert accordingly. Click on "Update states".

On the evaluation board signal levels are:

Asserted (or active low) = zero Vdc.

De-asserted (or active high) = +3.3Vdc.

In the final configuration, the OEM determines whichever service level is active.

Q. What do I need in order to access the configurable pins control web applet?

A. You need Netscape 4.8 or higher or IE 5 or higher. Your internet browser must be using Java version 1.4.1 or greater. The pins control web applet will prompt you with a pop-up to easily install the java plugin if required when accessing the applet for the first time. Or you can download the plugin directly from the SUN website at:

<http://java.sun.com/j2se/downloads.html>

Q. I am trying to telnet to a serial port. When I use Microsoft's telnet application in Windows 95 or NT I get strange results. What should I do?

A. Workarounds for this problem are available. You can use one of the following four options:

1. CRT - an inexpensive terminal application that resolves this problem. CRT is available from Van Dyke Technologies, <http://www.vandyke.com>, support@vandyke.com.
2. Hummingbird's Exceed v6.2
3. Winsock application - if you are writing an application of your own, you can use a sample application at ftp://ftp.lantronix.com/priv/misc_tools/winsoc. This example can be used to set up a TCP socket connection to a port on a Lantronix server. Source code is included in that directory so the Winsock routines may be included in your applications.
4. TeraTerm – a shareware telnet application found at <http://hp.vector.co.jp/authors/VA002416/teraterm.html>

Q. Is it possible to change my web page remotely or do I have to be at the equipment?

A. You can change the web page remotely as long as the XPort is configured with a gateway address and routers are not filtering protocols or port numbers. If you can ping the XPort you should be able to change the web pages remotely.

Q. Will XPort support video transfers (spy cameras or security cameras)?

A. XPort may be used to network enable serial cameras. Quality will depend on the serial speed of the camera and traffic level on the network. (Note: XPort supports serial speeds up to 230400 baud).

Q. Can I put XPort on a PCB with pin headers and use it instead of my Micro?

A. No. Not without adding extra components. The XPort is 3.3V and not 5V tolerant. Thus, a level shifter and a power regulator to 3.3V are needed.

Q. Can I have "dynamic" web pages instead of static web pages in XPort (if yes, how)?

A. Yes, you can create dynamic web pages using Java Applets and load them in the XPort. A sample applet is in the file xptcpctl102.cob located on your CD.

Q. Can I add external memory to the XPort? What about custom applications? Are you offering training classes or design assistance?

A. No, the XPort is not designed to allow external memory to be added. However, please note that the XPort contains 512K bytes of flash and 256K bytes of Ram that should cover the needs of most embedded applications.

Q. What about custom applications? Is Lantronix offering training classes or design assistance?

A. For custom applications, please contact your Lantronix representative for details on how to obtain a CPK (Programmer's Kit) and information on training programs and classes.

Q. What is the sense of the serial data: is MARK/IDLE=0V & SPACE/BREAK=3.3V, or vice-versa?

A. Because RS232 level shifters are all inverting (like the MAX232), the logic level signals from the XPort are as follows:

Logical 1 = on = mark = +3.3V (idle)
Logical 0 = off = space = 0V

Q. Is there some specific serial protocol utilized, or to what extent can a developer specify the serial commands, data and algorithms?

A. In its basic configuration, the XPort takes raw serial data, packs it into TCP packets and sends them to the host. The host then sends raw data packed in TCP packets to the XPort where the data is extracted and presented at the serial port. It is a 'transparent' pipe. We also as an option support packing the data into UDP datagrams. The structure of these datagrams is defined and available.

Q. Are "status LED 1" and "status LED 3" (optional usage of CP1 & CP3) different from the LED's visible at the front of the XPort? If so, what is their significance?

A. The LED's on the front of the XPort show PHY status (Ethernet connection information) as defined in the XPort user's manual (10 or 100mb, half / full duplex). The LED functionality available on the GPIO's is different. It shows whether a connection (tunnel) is active or not, provides diagnostic information, etc.

Q. The environmental specifications listed on the XPort data sheet state that the operating temperatures and storage temperatures both range from -40°C to +85°C. Is this correct? Are both temperatures the same?

A. Yes. Lantronix has conducted thermal shock testing between a temperature range of -40°C and +85°C.

Q. What are the details of the OEM firmware licensing agreement? Are there any other fees or costs associated with utilizing the XPort, either one-time or recurring? Are firmware upgrades provided free of charge?

A. The licensing agreement is essentially a non-exclusive, non-transferable, fully paid and royalty-free license, without the right of sublicense, to use the product solely in the form of the binary firmware image provided, only to the extent necessary to use the XPort hardware. The customer is prohibited from reverse engineering, decompiling, or disassembling the product and cannot copy the product or transfer it to other devices without the express prior written consent of Lantronix.