LANTRONIX®

CONNECT SMART. DO MORE.

INDUSTRIAL DEVICE NETWORKING

Industrial Device Networking

In the industrial environment conditions can be harsh. Whether it's on the factory floor, an oil platform, locomotive, weather station or a warehouse, you have to depend on your equipment. And in the quest to stay competitive through greater efficiency, productivity and quality control, you also need the ability to remotely access, manage and control that equipment. *That's where Lantronix comes in.*

With a Lantronix industrial device server, you can quickly and reliably connect virtually any piece of factory equipment to a network or the Internet to interactively access, manage, control, evaluate and utilize data from the equipment. This powerful, yet amazingly simple-to-implement technology provides the ability to perform real-time remote diagnostics and repair, automate data capture, and automatically and immediately receive notification of a problem.

Leading Networking Innovation and Expertise

With 20+ years of networking innovation, Lantronix is a pioneer in Industrial Device Networking and a clear leader in Ethernet and 802.11 wireless technology.

With millions of devices networked worldwide across widely diverse applications, Lantronix has provided more network-enablement solutions than any vendor in the industry. And Lantronix is the only company offering a total *Device Network Architecture* that includes enablement and management and control solutions. *Device enablement* makes it possible to connect previously non-networked equipment to the Net so it can be monitored and managed remotely. The convergence of enterprise and edge networks, our *management control solutions* give companies the power of a single point of access to manage everything from industrial equipment to enterprise IT and data center assets from a central location.

Imagine the ability to access, monitor and manage remote industrial equipment from virtually anywhere over an Internet connection!

Industrial-Strength Products for Harsh Environments

Built to withstand harsh environments, our DeviceLinx™ family of rugged device servers offer the ability to connect factory-floor or field devices to enterprise systems without disturbing existing control networks or requiring dedicated wiring. From Ethernet to wireless, Lantronix has solutions for end users, integrators and OEMs alike. Our robust line of products includes options for:

- Ethernet 10Base-T or 100Base-TX or wireless connectivity
- Flexible serial support – RS-232, RS-422, RS-485
- Modbus protocol support (Modbus ASCII/RTU, Modbus TCP)
- Class 1, Div 2 Certification
- Broad 9-30 VDC through 9-24 VAC input power range to accommodate varying industrial requirements
- Convenient terminal block connections for communications and power
- DF1 Multi-Master protocol support
- Wide industrial-grade temperature range
- Isolated serial and Ethernet ports
- Ruggedized casings
- DIN-rail mounting
- Protection against shock and vibration
- ESD and EMI protection

THE LANTRONIX APPROACH TO NETWORK-ENABLEMENT

Our approach to network-enabling devices is transparent to your attached equipment and software, so you won't need to change the way you work. Easy to set up and transparent to users, Lantronix device servers create virtual serial connections that can extend across the globe. Using a method called "serial tunneling," they encapsulate serial data into packets and transport it over Ethernet in one of two ways:

⋯⟩ Using Lantronix-supplied Com Port Redirector™ software, Windows® device applications that are not designed for network communications are re-directed to connectivity to devices connected to the attached Lantronix device server

⋯⟩ Configuring two device servers to talk to each other over the network creates virtual serial connections that can extend serial communications across a facility or around the world
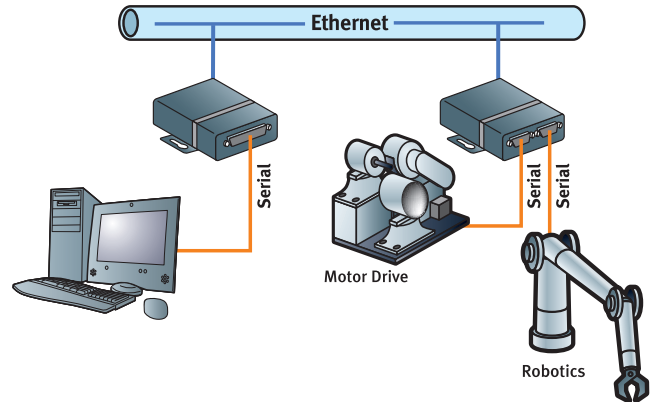
Built-in Web Server

All Lantronix device servers include a built-in web server. This powerful feature enables users to access and configure the device server from a standard web browser. Web pages enabling the device server to be customized for unique applications can be built using Lantronix development tools. On-board Flash memory provides room for future system software upgrades and maintenance-free, nonvolatile web page storage.
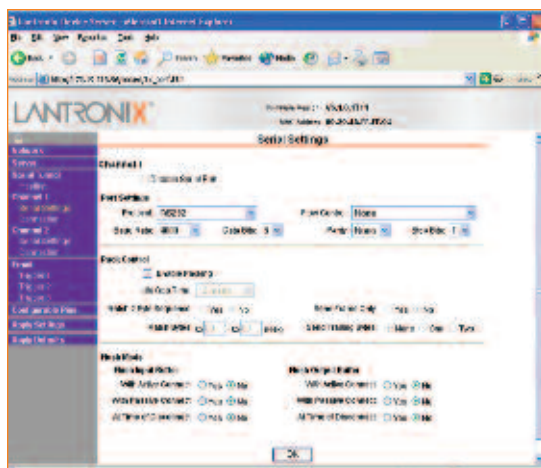
DeviceInstaller software makes configuration quick and easy.

Ease of Deployment

Lantronix device servers are easy to set up and configure. They can be set up locally through their serial ports, or remotely using Telnet or a web browser. The included DeviceInstaller™ Windows-based configuration software simplifies setup and provides an easy way to:

⋯⟩ Assign IP and other network-specific addresses
⋯⟩ Load custom web pages
⋯⟩ Enable web-based configuration of the device server
⋯⟩ Ping or query networked device(s)
⋯⟩ View specific device data files
⋯⟩ Upgrade firmware
⋯⟩ Simplify the process of installing industrial protocols

Reduce costs by replacing dial-up modems – Maintaining a dedicated phone line to reach remote equipment is inefficient and costly, and can present security risks. In modem emulation mode, Lantronix device servers can be used to replace dial-up modems, saving the expense of a dedicated line, and increasing security and reliability. The device server accepts modem AT commands on the serial port. It then establishes a network connection to the attached equipment, leveraging network connections and bandwidth to replace dedicated modems and phone lines.

INDUSTRIAL DEVICE SERVERS

Lantronix offers a full range of industrial-strength external device servers designed for use with manufacturing or assembly equipment such as programmable logic controllers (PLCs), motion controllers, barcode scanners and power monitoring equipment at manufacturing sites, automated distribution centers and refinery plants.

XPress-DR+ Family RUGGED, DIN-RAIL MOUNT ETHERNET AND WIFI NETWORKING

XPress-DR+™ DIN-rail mounted device servers are all you need to put your industrial equipment on an Ethernet or WiFi network quickly and easily. With two serial ports and two 10/100 Ethernet switch ports, the XPress-DR+ family enables Ethernet cascading from one network drop. Using SwitchPort+™, Lantronix onboard Ethernet switching technology, XPress-DR+ expands network connectivity by allowing multiple devices to connect to a single network backbone connection. This unique feature saves money by eliminating cable runs and simplifies adding or moving a network device.

- Ethernet and 802.11 b/g
- Modbus TCP, Modbus ASCII/RTU and DF1 Multi-Master protocol support
- 15 Kv ESD serial port protection
- 2.5 Kv Ethernet isolation
- -40° to 70ºC operating temperature range
- 9-30 VDC and 9-24 VAC power input range
- RS-232, RS-422 or RS-485 screw terminal connection with a configurable interface

SwitchPort+™
Ethernet Switching Technology

XPress
Industrial Device Servers

Our XPress family of industrial device servers is equipped with isolated serial and Ethernet ports, ruggedized casings, and screw terminal connectors for serial and power. They support industrial protocols such as Modbus TCP, Modbus ASCII, Modbus RTU and DF1, and are FM-approved for hazardous locations Class 1, Div 2.

PART NUMBER	DESCRIPTION
XSDR22000-01	XPRESS-DR+ TWO PORT INDUSTRIAL DEVICE SERVER WITH DUAL SWITCHED ETHERNET PORTS AND INDUSTRIAL PROTOCOLS
XSDR22W00-01	XPRESS-DR+W TWO PORT 802.11 WIRELESS INDUSTRIAL DEVICE SERVER, REMOVABLE SCREW TERMINAL PORT, 9-30VDC AND 9-24VAC

XPress-DR and XPress-DR-IAP

The XPress-DR and XPress-DR-IAP (industrial automation protocol) device servers enable virtually any serial device to be connected to a new or existing Ethernet network. Packaged in a rugged DIN-rail mount case and featuring 2000V galvanic isolation, 1500V Ethernet isolation, a wide 0° to 60ºC operating range, and a 9-30VDC/9-24VAC power input, the XPress-DR and XPress-DR-IAP are ideal for any industrial application. The XPress-DR-IAP installable communication drivers allow specific support for various industrial communication protocols, so equipment that previously allowed only one connection can now support multiple connections simultaneously.

- Configurable serial interface supports RS-232, RS-422, or RS-485
- 10Base-T/100Base-TX Ethernet (RJ45)
- Isolated serial and Ethernet ports
- FM-approved for hazardous locations Class I, Div. 2

PART NUMBER	DESCRIPTION
XSDRSN-02	XPRESS-DR: STANDARD PART INDUSTRIAL DEVICE SERVER,DIN-RAIL MOUNTING, SERIAL INTERFACE (RS-232, RS-422, RS-485 - TERMINAL BLOCK OR RJ45), 10BASE-T/100BASE-TX ETHERNET,DIAGNOSTIC LEDS, 9VDC TO 30VDC POWER INPUT, CD-ROM WITH CONFIGURATION TOOLS, AND INSTALLATION GUIDE. (RoHS)
XSDRSN-02	XPRESS-DR-IAP: WITH INSTALLABLE INDUSTRIAL PROTOCOLS INDUSTRIAL DEVICE SERVER,DIN-RAIL MOUNTING, SERIAL INTERFACE (RS-232, RS-422, RS-485 - TERMINAL BLOCK OR RJ45), 10BASE-T/100BASE-TX ETHERNET,DIAGNOSTIC LEDS, 9VDC TO 30VDC POWER INPUT, CD-ROM WITH CONFIGURATION TOOLS, INSTALLABLE COMMUNICATION DRIVERS, AND INSTALLATION GUIDE.

IntelliBox Truly Automated Control of Remote Equipment

Powered by Lantronix EventTrak™ technology (see page 2), the revolutionary IntelliBox®-I/O 2100 connects equipment to an IP network and proactively monitors events at specified intervals. When an event occurs, the rugged IntelliBox can automatically send predetermined, user-defined command(s) to the equipment, causing it to take appropriate corrective actions – without any user intervention. IntelliBox can send email notification that the event was detected and handled accordingly. For example, Intellibox can identify an unresponsive piece of equipment, automatically perform the corrective action such as a reboot, and notify the administrator. This can save time and money on service trips.

- Proactively monitors attached equipment
- Takes automatic actions based on user-defined settings
- Automated reporting and notification via email or RSS
- Secure remote access and control of digital I/O and relays
- 10/100 Ethernet interface with 1.5 Kv isolation (802.3 standard)

Featuring Lantronix Evolution OS™, our powerful real-time networking operating system, IntelliBox provides an unprecedented level of intelligence and security to networked equipment. See page 2 for more information on Evolution OS™.

EventTrak™

LANTRONIX® EVOLUTION OS™

Part Number	Description
IBIO21002-01	**IntelliBox-I/O 2100** - 2 port IA device and I/O server with EventTrak, worldwide power supply with regional adapters.
ACDIN3001-01	DIN-rail mounting kit for IntelliBox

UDS IAP Family Value and Performance in our Best-Selling Device Servers

With UDS device servers, virtually any piece of equipment with a serial port can be added to an Ethernet network in a matter of minutes! In Modem Emulation mode, the UDS is used to replace dial-up modems. The unit accepts modem AT commands on the serial port. It then establishes a network connection to the end device, leveraging network connections and bandwidth to eliminate dedicated modems and phone lines.

- 1- and 2-port models
- 2 MB of Flash
- Software-selectable between RS-232, RS-422 RS-485
- 15,000 Kv protection (galvanic ESD protection)
- Wide range of protocols supported – ARP, UDP, TCP, ICMP, Telnet, TFTP, AutoIP, DHCP, HTTP, SNMP, TCP, UDP and Telnet
- Power-over-ethernet (PoE) models available

Part Number	Description
UD1100IA2-01	**UDS1100-IAP Device Server** 100-240 VAC International power supply with regional adapters, includes 500-163 cable and ACDIN1001-01 Din rail mount
500-163	DB25M to DB9F serial cable
ACDIN1001-01	Optional DIN-rail mount
500-171-R	DB25M to RS485 and power input screw terminal adapter (order separately)

Features	UDS1100-IAP	XPress DR/XPress DR-IAP	XPress DR+	XPress DR+ W	IntelliBox - I/O 2100
Connectivity	Serial-to-Ethernet	Serial-to-Ethernet	Serial-to-Ethernet	Serial-to-WiFi	Serial-to-Ethernet
Operating System	CoBos	CoBos	CoBos	CoBos	Evolution OS™
DHCP, BOOTP, and AutoIP	●	●	●	●	●
FTP/TFTP	-/●	-/●	-/●	-/●	●
Telnet	●	●	●	●	●
SSH/SSL					●
SNMP	●	●	● (read only)	● (read only)	●
Web Manager	●	●	●	●	●
Hostlist (Sequential-host)	●	●	●	●	
Hostlist (Multi-host)					
Tunneling	●	●	●	●	●
Modem Emulation	●	●	●	●	●
Wireless 802.11 b/g					
802.11 bridging				●	
Serial Interface (# of ports)	RS-232/422/485 (1)	RS-232 or RS-422/485 (1)	RS-232 (2) RS-422/485 (1)	RS-232 (2) RS-422/485 (1)	RS-232 (1) RS-422/485 (1)
Connector Type	DB25, Female, DCE	RJ45 (terminal block)	RJ45 (screw block)	RJ45 (screw block)	RJ45 (terminal block)
Network Interface	10/100Base-T	10/100Base-T	10/100Base-T	10/100Base-T	10/100Base-T
Data Rate (bps)	300 - 230400	300 - 115200	300 - 230400	300 - 230400	300 - 230400
Flash/RAM	2MB / 256KB	512KB/256KB	2MB / 256KB	2MB / 256KB	4MB / 256KB
Required Input Power	9-30 VDC or 9-24 VAC (Barrel Connector)	9-30 VDC or 9-24 VAC (Screw Terminal)	9-30 VDC or 9-24 VAC	9-30 VDC or 9-24 VAC	9-30 VDC or 9-24 VAC
Serial Interface Transient Protection	15 KV ESD	15 KV ESD	15 KV ESD	15 KV ESD	15 KV ESD
Max. Power Use (Watts)	1.5	3	2.3	2.6	2.3
Dimensions (LxWxH)	9.0 x 6.4 x 2.3 cm 3.5 x 2.5 x .9 in	6.1 x 3.6 x 8.8 cm 2.4 x 1.4 x 3.5 in	18.7 x 22.9 x 11.1 cm 7.375 x 9.0 x 4.375 in	18.7 x 22.9 x 11.1 cm 7.375 x 9.0 x 4.375 in	11.5 x 10.9 x 2.3 cm 4.54 x 4.3 x 0.9 in
Operating Temperature C°/F°	-40C to 70C -40F to 167F	0C to 60C 32F to 140F	-40C to 70C -40F to 158F	-40C to 70C -40F to 158F	-40C to 75C -40F to 167F
Wireless Security				WEP, WPA-PSK, 802.11i	

The Software Behind the Device

The power behind Lantronix industrial device networking is our software technology. Nearly 20 years of experience in network-enabling equipment is built into our robust TCP/IP stack, bulletproof security and diverse applications. Lantronix device servers include a fully integrated stack including support for PPP, HTTP, CGI, SNMP and FTP/TFTP. With years of ongoing development, our hardened TCP/IP stack is resistant to hostile attack.

Our most powerful device servers include the Evolution OS™ operating device system and/or EventTrak™ technology, which provide even greater security, advanced web features and an unprecedented level of autonomy and intelligence.

LANTRONIX® EVOLUTION OS™

Evolution Operating System

Evolution OS is the next-generation Lantronix network operating system for device servers. It provides extraordinary power, flexibility and advanced security features. It uses industry-standard tools for configuration, communication and control, such as a Cisco-like command line interface (CLI) with syntax that is very similar to that used by data center equipment.

Without the need to disable any features or functionality, the hardened Evolution OS provides the highest levels of security. With built-in SSH/SSL, Evolution OS has robust defenses against hostile Internet attacks such as denial of service (DoS) and port mapping that can be used to take down the network. Device servers with this operating system also cannot be used to bring down other devices on the network.

Evolution OS supports XML, a standard tool for web services, data transfer and rich-content management that encapsulates data into a text-based format. XML makes device configuration transparent to users and administrators and easily to edit with a standard text or XML editor.

RSS support enables the device server to automatically send real-time device information to a remote database. More powerful than simple email alerts, RSS uses XML as an underlying transport and adds intelligence to the networked device while not taxing already overloaded email systems.

EventTrak™

EventTrak Technology

Lantronix EventTrak software enables the device server to query equipment at timed intervals, then depending on the results, take pre-specified action(s). Fluid-level monitoring is a simple example – if the software notices a digital float sensor drop to a low level, it can trigger a relay to start the fluid pump. When the level is restored, the relay is triggered to stop the pump. The EventTrak-enabled device server then sends an email to the user notifying them of the situation and the actions taken. Instead of reacting to an event or problem, users are proactively notified that an event occurred and the appropriate response automatically took place. This capability also enables users to control networked equipment directly through the serial or I/O port rather than depending on a PLC or SCADA server.

In some instances, several events should occur before action is taken. EventTrak allows "chain definitions" (series of events/actions) to be defined. They can be saved, stored and transferred from one device server to another, providing a great deal of flexibility for large-scale deployment.

Lantronix provides smart connectivity solutions to customers worldwide. Our solutions, comprised of embedded and external device servicers, software, and services, ensure success so organizations can accomplish more with less.

You need connectivity solutions that do more than just connect machines to machines (M2M). Why shouldn't your solution make new revenue streams possible, save money, and allow you to allocate resources more effectively? Lantronix does.

With over 20 years of thoughtful and insightful design, paired with unparalleled technical support, short implementation times, and easy integration, choosing Lantronix is the only viable choice for any forward-thinking organization. Founded in 1989, Lantronix has been manufacturing high quality products serving some of the largest medical, security, industrial and building automation, energy, transportation, retail/POS, financial, government, consumer electronics/appliances, and IT/data center entities in the world.

Visit **lantronix.com** or call our sales support team at **(800) 422-7055** to schedule a demonstration and find out how quickly and easily SecureLinx can add an unprecedented level of reliability to your business-critical equipment.

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