LANTRONIX®

XPort Direct
Embedded Device Gateway

- Affordable network connectivity gateway for any device with a serial interface on its microcontroller
- Integrated module with RJ45 featuring dedicated networking SoC
- Complete TCP/IP protocol stack and Windows deployment software
- Up to 230 Kbps data rate
- Compact low profile (<12 mm)
- 2 x 12 pin, 2 mm headers
- Two GPIO pins
- RS-232/RS-485 ready

Network-enable Your Products - Quickly, Easily and Affordably

The compact XPort® Direct™ Embedded Device Gateway module delivers network connectivity to virtually any electronic product with a serial interface on its host microcontroller. Manufacturers can now affordably offer network connectivity as a standard feature, greatly enhancing product value, and enabling a host of applications such as remote monitoring, networked control, data acquisition and Internet content streaming.

XPort Direct increases profitability by reducing the cost, development time and risk associated with a chip-based solution.

Turnkey Ethernet Module with Market-proven Technology

The XPort Direct offers powerful network connectivity at a very affordable price. This ready-to-use solution is built on the same time-tested and market-proven technology offered in the successful XPort. It includes all the necessary networking hardware and standards-compliant software for situations where advanced web services are not required.

Ideal for High-Volume Device Deployments

With its low cost and powerful functionality, XPort Direct is ideal for high-volume product deployments where low-cost, limited functionality microcontrollers traditionally create a barrier to network-enablement. Examples include:

- Building automation (lighting, etc.)
- Consumer electronics
- Energy/metering applications
- Home automation (high-end audio, alarm panels, etc.)
- Point of sale (POS) products
- RFID readers
- Sensors and controllers
- Vending machines
- White/durable goods

Powerful Network Information Conduit

XPort Direct acts as a dedicated co-processor module to optimize network activities, permitting the device's host microcontroller to function at maximum efficiency.

Serial data from the device microcontroller's CMOS logic-level serial port is packetized and delivered over an Ethernet network via TCP or UDP data packets. Similarly, incoming TCP or UDP packets are unbundled and presented to the attached device over its microcontroller's serial interface.

The XPort Direct includes an x86 class 16-bit network processor SoC, 256 KB of zero wait-state SRAM, an Ethernet 10/100 MAC/PHY along with Flash memory, and an RJ45 jack that incorporates LEDs for link and network activity indication.

Feature-Rich Software, Easy Configuration and Deployment

The XPort Direct's comprehensive software suite includes all Layer 3 to Layer 7 (of the OSI 7 layer reference model) software needed for a feature-rich network-enabling solution. The suite includes the actual application software that packs serial data into an Ethernet stream for network transmission. Device deployment and network initiation are simplified with Dynamic Host Protocol Support (DHCP) support and additional IP configuration methods via the included Windows®-based Lantronix DeviceInstaller™ software.

The supported Com Port Redirector™ (CPR) software maps 'virtual COM' ports on a PC platform and redirects application data destined to an attached device. Rather than going out the local COM port, the data is transmitted across the Ethernet network to/from XPort Direct using TCP/IP. CPR is also licensed as an API to OEMs for incorporation into their applications on non-PC platforms such as a web pad or PDA.

XPort Direct's parameters are highly configurable prior to network deployment:

- Baud Rate
- Flow Control
- Port Number
- Connect Mode
- Modem Mode
- Data Packing Control Intervals
- Inactivity Timeout
- MTU Size

Versatile Applications

With limited engineering effort, XPort Direct can make any electronic product a smart device with embedded network intelligence, enabling capabilities such as:

- Remote diagnostics and upgrades
- Networked remote control
- Asset tracking/replenishment
- Remote data acquisition
- Ethernet bridging (RFID to Ethernet, for example)
- Personalized content delivery

Features and Specifications

Serial Interface
Interface: CMOS (Asynchronous, 5V tolerant)
Data Rates: 300 bps to 230,400 bps
Characters: 7 or 8 data bits
Parity: odd, even, none
Stop Bits: 1 or 2
Control Signals: RTS, CTS, DTR
Flow Control: XON/XOFF, RTS/CTS

Network Interface
Interface: Ethernet 10Base-T or 100Base-TX (Auto-Sensing)
Connector: RJ45
Protocols: TCP/IP, UDP/IP, ARP, ICMP, TFTP, Telnet, Auto IP, DHCP

Indicators (LED)
Link and activity indicator

Management
Telnet, serial, and Microsoft Windows®-based utility for configuration

Security
Password protection

Hardware and Firmware
CPU: Based on the DSTni-EX enhanced 16-bit, 48MHz x86 architecture with integrated 10/100 MAC/PHY
Memory: 256 KB SRAM and 128 KB flash
Power Input Voltage: 3.3 VDC, 200mA Typical (240mA max)
Firmware: upgradeable via TFTP and serial port

Environmental
Operating: 0° to 70°C
Non-operating: -40° to 85°C

Packaging
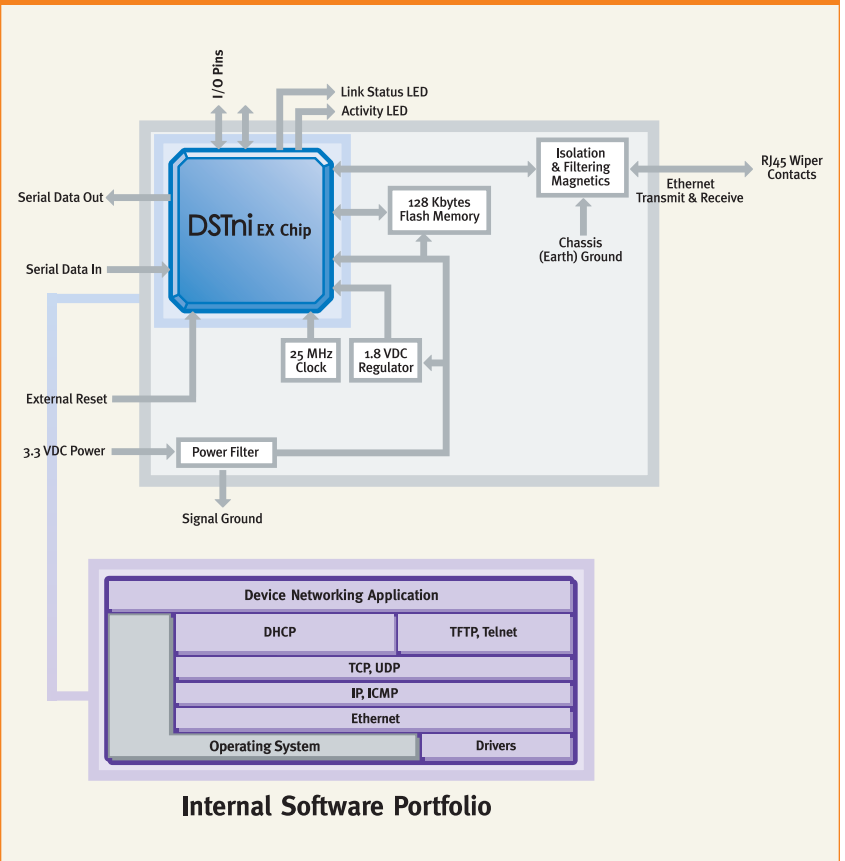Dimensions: 43.3 x 31.75 x 11.76 mm (.702 x 1.25 x .463 in)
Weight: 9.6 g (0.34 oz)

Warranty
2-year limited warranty

Patents
4,972,470 and others

XPort Direct Block Diagram

Internal Software Portfolio

Ordering Information

Part Number	Description
XD1001000-01	XPort Direct Embedded Device Gateway Module, Bulk, ROHS
XD100100K-01	XPort Direct Embedded Device Gateway Module, Demo Kit, ROHS
XD100100S-01	XPort Direct Embedded Device Gateway Module, Sample, ROHS
XD1001000-01-AP	XPort Direct Embedded Device Gateway Module, Bulk, APAC, ROHS

Dimensions

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