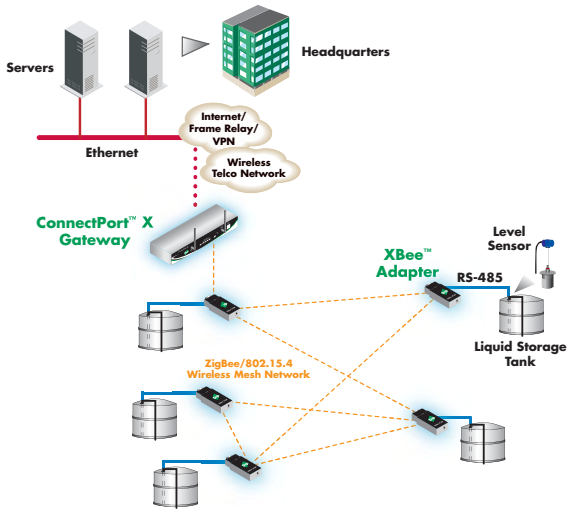
ConnectPort™ X8

Wireless Mesh Gateway

The ConnectPort X8 provides reliable IP connectivity to ZigBee®/802.15.4 mesh networks over a secure cellular, Wi-Fi or Ethernet connection. It makes Drop-in Networking a reality by facilitating remote device connectivity where no wired network infrastructure exists or where access to an existing infrastructure is limited.



Features/Benefits

- Multiple configuration options for high performance Drop-in Networking
- Full network flexibility
  - ZigBee/802.15.4 for PAN connections
  - Cellular for WAN connections
  - Wi-Fi (802.11b/g) and Ethernet for WAN or LAN connections
- Python development environment
- Optional GPS or local storage up to 1 GB
- Security
  - IPsec and SSL VPNs on WAN connections with DES, 3DES or AES encryption
  - 128-bit AES on mesh network
- Commercial/Industrial grade
  - Enclosed PCIe module to reduce breakage/theft
  - Extended operating temperature (-20° C to 60° C)
  - Hardened metal enclosure with integrated mounting slots
  - Real-time clock

Overview

Companies across many vertical markets are increasingly discovering the value of networking remote electronic devices such as sensors, alarms and controllers using low-cost, low-power ZigBee/802.15.4 wireless mesh technology. Such networks make it simple and cost-effective to poll, monitor, adjust and control systems that previously required laborious and expensive manual processes or extensive wiring.

Digi's ConnectPort X8 mesh gateway provides IP backhaul of mesh network traffic to a central monitoring hub on a LAN/WAN via a secure cellular, Wi-Fi or Ethernet connection. By doing so, devices connected within the mesh network can be monitored and managed remotely, thereby minimizing, or even eliminating, the need to visit each device manually to collect data and verify its operating health.

The ConnectPort X8 is a key element of Digi's Drop-in Networking solutions – a collection of products that also includes our XBee™ adapters, modules and bridges for connecting assorted electronic devices to mesh networks. Together, these products provide the ability to network devices or groups of devices where no wired networking infrastructure exists or where access to an existing network is prohibited.

The ConnectPort X8 provides integrated ZigBee/802.15.4 support and features two onboard PCIe modules that can be configured for cellular (3G and 2.5G options), Wi-Fi (802.11b/g), GPS or local storage (1 Gigabyte, user-defined). Configuration of the PCIe modules is flexible and can be defined as needed for the desired application. In addition, the ConnectPort X8 ships with one Ethernet port, one RS-232 port for connecting serial devices, two USB ports for additional device connectivity (e.g., camera, keyboard, memory stick, PDA) and a Sensor port to accept Digi's Watchport environmental sensors.

The ConnectPort X8 also features an embedded Python® engine, giving users a powerful software tool to develop custom applications to run on the gateway. The Python environment is noted for its simplicity and can be used to automate many monitoring, notification and device management tasks.

Managing Devices on the ZigBee Network

The Digi Connectware® Manager software platform allows you to manage the entire Drop-in Networking infrastructure from one central management console. It largely automates device discovery and initial network configuration while providing a window to monitor all gateways and networked devices, set alarms and update firmware.

Digi Connectware Manager provides centralized management of each gateway as well as all nodes associated with a gateway, so you can monitor battery life and signal strength, and remotely control device properties and settings. Digi Connectware Manager will also provide the ability to upgrade firmware on mesh nodes once ZigBee support for over-the-air upgrades is established.

ConnectPort X2

Single-Function Gateway
ZigBee/802.15.4 to Ethernet or Wi-Fi
Available October 2007

ConnectPort X4

Multi-Function Gateway
ZigBee/802.15.4 to Cellular or Wi-Fi and Ethernet
Available September 2007

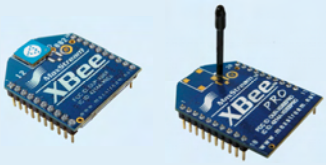
ConnectPort X8

Premium Multi-Function Gateway
ZigBee/802.15.4 to Cellular and Wi-Fi and Ethernet
Available now

Related Drop-in Networking Products from Digi

XBee™ Adapters

Can be used to retrofit legacy devices with ZigBee/802.15.4 connectivity. Available in a range of interface options including RS-232, RS-485, USB, Sensor as well as digital and analog I/O.



XBee-PRO™ and XBee Module

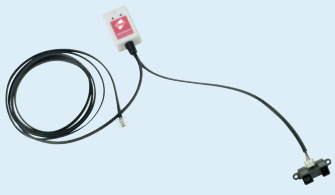
Can be used to embed ZigBee/802.15.4 networking capability in stand-alone end-point devices such as sensors, controllers and displays.

XBee™ XTender RF Bridge

Enables ZigBee/802.15.4 mesh networks outside the range of a ConnectPort X gateway to be bridged to the gateway over the longer range 900 MHz band (up to 40 miles line-of-sight with high gain antenna).

Watchport® Camera

Can be connected to the USB port on the ConnectPort X to provide video or still-frame images from a chosen physical location (e.g., a gate or security access point).



Watchport® Sensors

Can be connected to XBee Sensor adapters to provide environmental data from end-point nodes. Available for temperature, humidity, moisture, distance/proximity and acceleration/tilt.

Features/Specifications

FEATURES

- Network protocols: UDP/TCP, DHCP
- LEDs: Ethernet status, power, cellular link/activity, signal strength (4 bars), ZigBee link/activity, Wi-Fi link/activity
- Security - SSL tunnels, SSHv2, FIPS 197 (serial port)
- Real-time clock

Router/Security Features

- NAT
- Port forwarding
- Access control lists (IP filtering)

VPN Features

- IPsec with IKE/ISAKMP
- Multiple tunnel support
- DES, 3DES and up to 256-bit AES Encryption
- VPN pass-through, GRE forwarding

Management

- HTTP/HTTPS web interface
- Password access control
- IP service port control
- Optional secure enterprise management via Digi Connectware Manager

DIMENSIONS

- Width: 4.11 in (10.40 cm)
- Height: 1.30 in (3.30 cm)
- Length: 7.7 in (19.5 cm)
- Weight: 1.50 lb (0.68 kg) with one PCIe module

INTERFACES

Serial

- 1 RS-232 DB-9M serial port
- Throughput up to 230 Kbps
- Full signal support for TXD, RXD, RTS, CTS, DTR, DSR and DCD
- Hardware and software flow control

USB

- 2 powered USB Type A connectors (Host)

Ethernet

- 1 RJ-45 port
- Standard: IEEE 802.3
- Physical Layer: 10/100Base-T
- Data rate: 10/100 Mbps (auto-sensing)
- Mode: full or half duplex (auto-sensing)

Sensor

- 1 RJ-45 port

Cellular

- EV-DO/1xRTT or HSDPA/EDGE/GPRS PCI Express Module

ZigBee/802.15.4

- XBee-PRO (Freescale and Ember supported)

Optional (via PCIe Module)

- Global Positioning System (GPS)
- Wi-Fi (802.11b/g)
  - Ad-hoc & AP Client Modes only; Access Point Mode not supported
- Local storage (up to 1 GB)

MODEL.....PART NUMBERS

Model	North America	International
Series 1		
ConnectPort X8, Ethernet	X8-A11-E-A	X8-A11-E-W
ConnectPort X8, Ethernet and Wi-Fi 802.11b/g	X8-A11-W-A	X8-A11-W-W
ConnectPort X8, Ethernet and Cellular (AT&T 3G HSDPA)	X8-A11-C02-A	N/A
ConnectPort X8, Ethernet and Cellular (Sprint 3G EV-DO-A)	X8-A11-C10-A	N/A
ConnectPort X8, Ethernet and Cellular (Verizon 3G EV-DO-A)	X8-A11-C11-A	N/A
ConnectPort X8, Ethernet and Cellular (EU 3G HSDPA)	N/A	X8-A11-C09-W
ConnectPort X8, Ethernet and Cellular (Generic 3G HSDPA)	N/A	X8-A11-C01-W
Series 2		
ConnectPort X8, Ethernet	X8-B11-E-A	X8-B11-E-W
ConnectPort X8, Ethernet and Wi-Fi 802.11b/g	X8-B11-W-A	X8-B11-W-W
ConnectPort X8, Ethernet and Cellular (AT&T 3G HSDPA)	X8-B11-C02-A	N/A
ConnectPort X8, Ethernet and Cellular (Sprint 3G EV-DO-A)	X8-B11-C10-A	N/A
ConnectPort X8, Ethernet and Cellular (Verizon 3G EV-DO-A)	X8-B11-C11-A	N/A
ConnectPort X8, Ethernet and Cellular (EU 3G HSDPA)	N/A	X8-B11-C09-W
ConnectPort X8, Ethernet and Cellular (Generic 3G HSDPA)	N/A	X8-B11-C01-W

Series 1 and Series 2 gateways are based on different and incompatible ZigBee/802.15.4 platforms. Series 1 gateways must be used with Series 1 XBee modules and adapters and Series 2 gateways with Series 2 XBee modules and adapters.

REGULATORY APPROVALS

- Safety: UL 60950, CSA 22.2 No. 60950, EN60950
- Emissions/Immunity: CE, FCC Part 15 (Class A), AS/NZS CISPR 22, EN55024, EN55022, Class A
- Mobile Certifications - CDMA/EV-DO: CDG, TIA/EIA-690, TIA/EIA-98-E
- Mobile Certifications - GSM/UMTS: PTCRB, NAPRD.03, GCF-CC, R&TTE, EN 301 511

POWER REQUIREMENTS

- Power input: 9-30VDC
- 12VDC power supply for 0° C to 60° C (32° F to 140° F) with locking barrel connector included; extended temperature power supply available separately
- Power consumption: Idle: 3.1 W, Max: 9 W
- Surge protection (with included power supply): 4 kV burst (EFT) per-4-4, 2 kV surge per EN61000-4

ANTENNAS

Antenna Type

- ZigBee/802.15.4 - 4" dipole with 2' cable, tabletop mountable (same type antenna is used for Wi-Fi configured gateways)
- Cellular - 7" dipole

Connector Type (on Gateway)

- 50 ohm SMA
- Female for ZigBee & Wi-Fi
- Male for cellular

ENVIRONMENTAL

- Operating temperature: -20° C to 60° C (-4° F to 140° F)
- Relative humidity: 5% to 95% (non-condensing)
- Ethernet isolation: 1500VAC min per IEEE802.3/ANSI X3.263
- Serial port protection (ESD): +15 kV Air Gap and +8 kV contact discharge per IEC 1000-4-2

python™