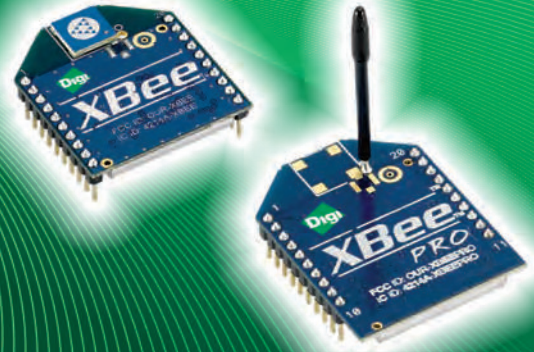# XBee® & XBee-PRO® DigiMesh® 2.4

Mesh Networking Embedded RF Modules for OEMs

Embedded RF modules deliver wireless connectivity using the innovative and easy-to-deploy DigiMesh protocol.
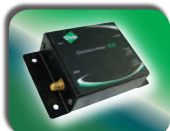
Overview

XBee and XBee-PRO DigiMesh 2.4 embedded RF modules provide wireless connectivity to electronic devices using a globally deployable 2.4 GHz transceiver. These modules use the DigiMesh networking protocol. This innovative, peer-to-peer network offers users added network stability through self-healing, dense network operation and support for sleeping routers, extending the operational life of battery dependent networks.

XBee modules are ideal for low-power, low-cost applications. XBee-PRO modules are power-amplified versions of XBee modules for extended-range applications. Products in the XBee family are easy to use, share a common hardware footprint, and are fully interoperable with other XBee products utilizing the same technology. They are available in a variety of different protocols to suit different applications, enabling users to substitute one XBee module for another with minimal development time and risk.

Digi's unsurpassed offering of Drop-in Networking products provide users with seamless communication between devices. XBee adapters deliver wireless connectivity to electronic devices in wired networks. ConnectPort® X gateways enable users to access and configure remote devices in a network.

Related Products

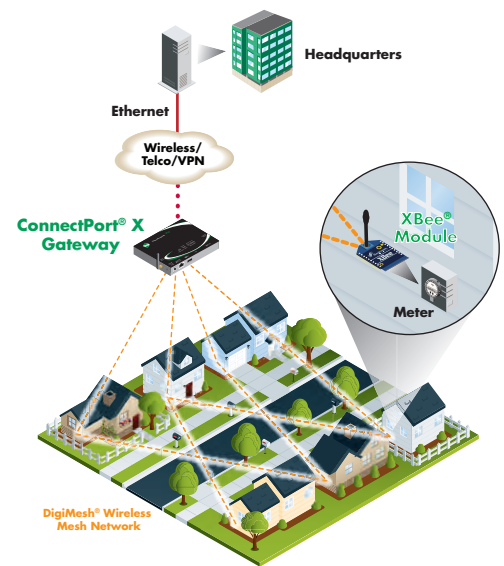|		
Gateways	Modules	Adapters
Dev Kits	Range Extenders	Sensors

Application Highlight

- Headquarters
- Ethernet
- Wireless/Telco/VPN
- ConnectPort® X Gateway
- XBee® Module
- Meter
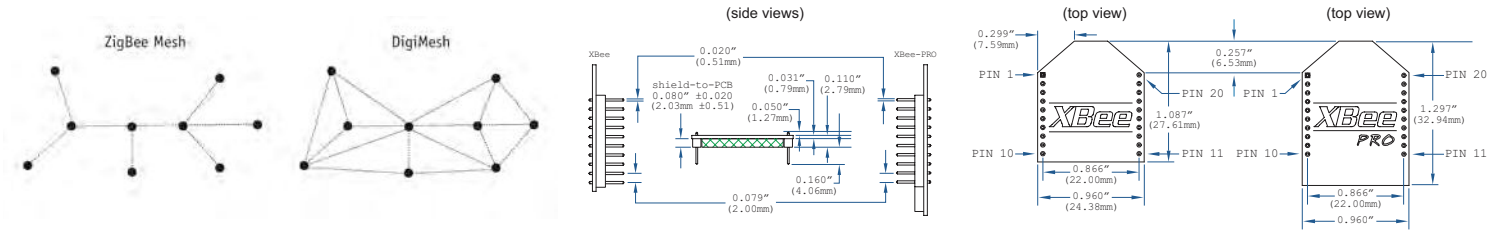- DigiMesh® Wireless Mesh Network

Features/Benefits

- **No configuration needed for out-of-the-box RF communications**
- **Common XBee footprint for a variety of RF modules**
- **Simple topology to deploy and grow**
- **2.4 GHz for worldwide deployment**
- **Low-power XBee or extended-range XBee-PRO (pin/over-the-air compatible)**
- **Multiple antenna options**
- **Outdoor RF line-of-sight range up to 1 mile (1.6 km) with high-gain antennas**
- **DigiMesh peer-to-peer mesh networking protocol**
    - **Self-healing and discovery for network stability**
    - **Sleeping routers supported for long battery life**

Platform	XBee® DigiMesh® 2.4	XBee-PRO® DigiMesh® 2.4	XBee-PRO® DigiMesh® 2.4 (Int'l)
Performance			
RF Data Rate	250 Kbps		
Indor/Urban Range	100 ft (30 m)	300 ft (90 m)	200 ft (60 m)
Outdoor/RF Line-of-Sight Range	300 ft (90 m)	1 mile (1.6 km)	2500 ft (750 m)
Transmit Power	1 mW (+0 dBm)	63 mW (+18 dBm)	10 mW (+10 dBm)
Receiver Sensitivity (1% PER)	-92 dBm	-100 dBm	
Features			
Serial Data Interface	3.3V CMOS serial UART		
Configuration Method	AT & API		
Frequency Band	2.4 GHz ISM		
Interference Immunity	DSSS (Direct Sequence Spread Spectrum)		
Serial Data Rate	Up to 115.2 Kbps		
ADC Inputs	(6) 10-bit ADC inputs		
Digital I/O	13		
Antenna Options	Chip, Wire Whip, U.FL, RPSMA		
Networking & Security			
Encryption	128-bit AES		
Reliable Packet Delivery	Retries/Acknowledgments		
Addressing Options	PAN ID, channel, 64-bit address		
Channels	16	12	
Power Requirements			
Supply Voltage	2.8 – 3.4VDC		
Transmit Current	45 mA	250 mA (Wire, Chip, U.FL), 340 mA (RPSMA)	150 mA (Wire, Chip, U.FL), 180 mA (RPSMA)
Receive Current	50 mA	55 mA	
Power-Down Current	<50 uA		
Regulatory Approvals			
FCC (USA)	Yes		
IC (Canada)	Yes		
ETSI (Europe)	Yes	Yes (Max Tx 10 mW)	Yes
C-TICK Australia	Yes		
Telec (Japan)	Yes	No	Yes

ZigBee Mesh   DigiMesh   (side views)   (top view)   (top view)

Visit www.digi.com for part numbers.

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