

# XBee<sup>®</sup> & XBee-PRO<sup>®</sup> DigiMesh<sup>®</sup> 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<sup>®</sup> 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



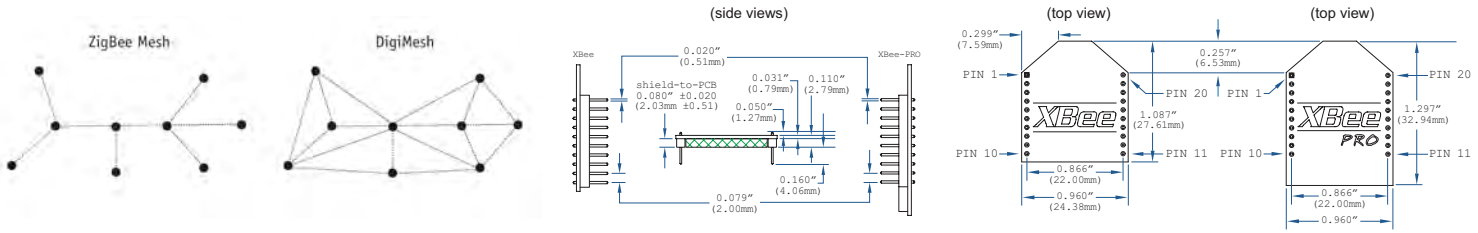
### Features/Benefits

- 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



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Platform	XBee® DigiMesh® 2.4		XBee-PRO® DigiMesh® 2.4	XBee-PRO® DigiMesh® 2.4 (Int'l)
<b>Performance</b>				
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		
<b>Features</b>				
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			
<b>Networking &amp; Security</b>				
Encryption	128-bit AES			
Reliable Packet Delivery	Retries/Acknowledgments			
Addressing Options	PAN ID, channel, 64-bit address			
Channels	16	12		
<b>Power Requirements</b>				
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			
<b>Regulatory Approvals</b>				
FCC (USA)	Yes			
IC (Canada)	Yes			
ETSI (Europe)	Yes	Yes (Max Tx 10 mW)	Yes	
C-TICK Australia	Yes			
Telec (Japan)	Yes	No	Yes	



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