# 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.



# **Application Highlight**

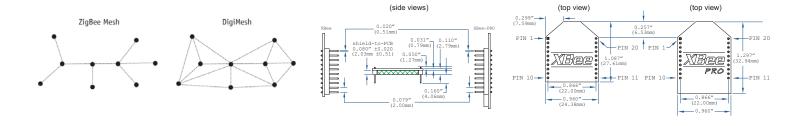


#### **Features/Benefits**

- 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



Platform	XBee® DigiMesh® 2.4	XBee-PRO® DigiMesh® 2.4	XBee-PRO® DigiMesh® 2.4 (Int'l)
Performance	- Smith		
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



You can purchase with confidence knowing that Digi is always available to serve you with expert technical support and our industry leading warranty. For detailed information visit www.digi.com/support

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