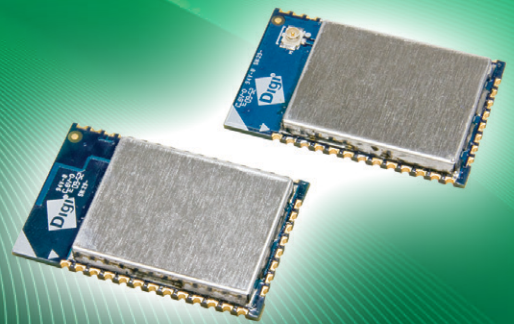


Preliminary

# XBee<sup>®</sup> and XBee-PRO<sup>®</sup> ZB

ZigBee<sup>®</sup> Embedded SMT RF Modules for OEMs

Embedded SMT RF modules provide low-cost, low-power wireless connectivity and feature Surface Mount Technology and Serial Peripheral Interface.



## Overview

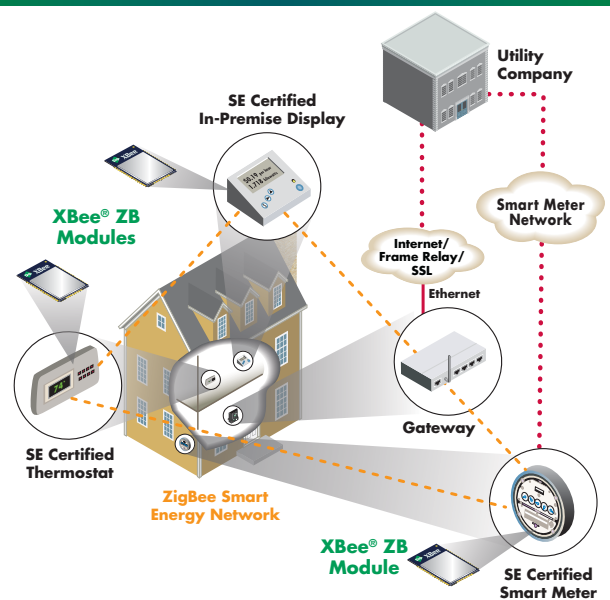
XBee and XBee-PRO ZB embedded SMT RF modules provide cost-effective wireless connectivity to end-point devices in ZigBee mesh networks. They are interoperable with other ZigBee PRO feature set devices, including devices from other vendors\*. They require no configuration or additional development; users can have their network up and running in a matter of minutes.

Utilizing Surface Mount Technology (SMT), XBee and XBee-PRO ZB modules are ideal for applications in the energy and controls markets where manufacturing efficiencies are critical. The Serial Peripheral Interface (SPI) provides a high-speed interface and optimizes integration with embedded microcontrollers, lowering development costs and reducing time to market.

Digi's unsurpassed offering of Drop-in Networking products provides seamless communication between devices. As a leading-edge wireless connectivity solution provider, Digi is continually expanding the products, features and functions available in this dynamic family of wireless communication products.

\*Interoperability requires the ZigBee Feature Set or ZigBee PRO Feature Set to be deployed on all devices. Contact Digi Support for details.

## Application Highlight



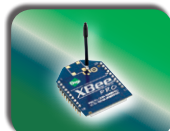
## Features/Benefits

- Interoperability with ZigBee devices from other vendors\*
- No configuration needed for out-of-the-box RF communications
- Advanced configuration options available via simple AT or API commands
- SMT form factor with side Castellations for easy soldering
- 24 general-purpose I/O lines
- Link budgets of 110 dB for XBee and 120 dB for XBee-PRO
- Industry leading sleep current of sub 1uA
- Firmware upgrades via UART, SPI or over the air

## Related Products



Gateways



Modules



Adapters



Development Kits



Network Extenders



Sensors



Platform	XBee® ZB	XBee-PRO® ZB
<b>Performance</b>		
RF Data Rate	250 Kbps	
Indoor/Urban Range	200 ft (60 m)	300 ft (90 m)
Outdoor/RF Line-of-Sight Range	4000 ft (1200 m)	2 miles (3200 m)
Transmit Power	3.1 mW (5 dBm) / 6.3 mW(+8 dBm) boost mode	63 mW (+18 dBm)
Receiver Sensitivity (1% PER)	-102 dBm	-101 dBm
<b>Features</b>		
Adjustable Power	Yes	
Serial Data Interface	UART, SPI	
Configuration Method	API or AT commands	
Frequency Band	ISM 2.4 GHz	
Interference Immunity	DSSS (Direct Sequence Spread Spectrum)	
Serial Data Rate	Up to 1 Mbps	
ADC Inputs	(4) 12-bit ADC inputs	
Digital I/O	Up to 16 configurable GPIO pins depending on module configuration	
Antenna Options	PCB (embedded), U.FL and RF PAD	
Programmability	Yes, 32k running at 20 MHz (available in programmable variant)	
Dimensions (L x W)	0.87 in x 1.33 in (2.20 cm x 3.40 cm)	
<b>Networking and Security</b>		
Encryption	128-bit AES	
Reliable Packet Delivery	Retries/Acknowledgements	
Addressing Options	PAN ID and addresses, cluster IDs and endpoints (optional)	
Network Channels	11 - 26	
Network Topologies	Mesh	
<b>Power Requirements</b>		
Power Input	2.1 to 3.6V	2.7 to 3.6V
Power Consumption	(approx) 150 mW at Pout = +8 dBm and 3.3V	330 mW at Pout = +18 dBm when VCC = 3.3V
Transmit Current	45 mA @ +8 dBm	100 mA @ +18 dBm
Receive Current	30 mA in boost mode	
Power-Down Current	>1 uA @ 25° C	<1 uA @ 25° C
Sleep Current	0.3 uA - 0.4 uA	
<b>Regulatory Approvals</b>		
FCC (USA)	Yes	
IC (Canada)	Yes	
ETSI (Europe)	Yes	No
C-TICK (Australia)	Yes	
TELEC (Japan)	Yes	No

Visit [www.digi.com](http://www.digi.com) for part numbers.

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