

# 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 a Serial Peripheral Interface.



## Overview

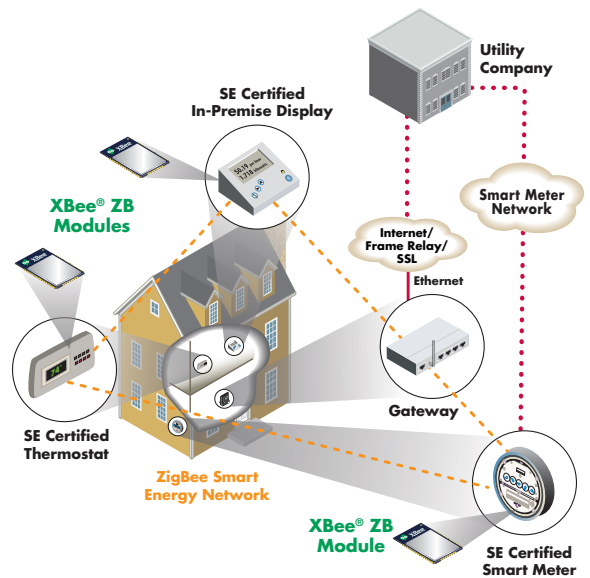
XBee and XBee-PRO ZB embedded SMT RF modules provide cost-effective wireless connectivity to electronic devices. They are interoperable with other ZigBee PRO feature set devices, including devices from other vendors\*. They share a common hardware footprint and are available in a variety of protocols and frequencies.

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.

Products in the XBee family require no configuration or additional development. Programmable versions of the XBee-PRO ZB module make customizing applications easy. Programming directly on the module eliminates the need for a separate processor. Because the wireless software is isolated, applications can be developed with no risk to RF performance or security.

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

## Application Highlight



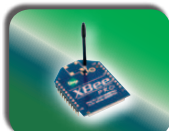
## Features/Benefits

- Interoperable with other ZigBee compliant devices\*
- Programmable versions of the XBee-PRO ZB enable custom ZigBee application development
- Advanced configuration options available via simple AT or API commands
- SMT form factor with side castellations for easy soldering
- 15 general-purpose I/O lines
- Link budgets of 110 dB for XBee and 119 dB for XBee-PRO ZB
- Industry leading sleep current of sub 1uA
- Firmware upgrades via UART, SPI or over the air

## Related Products



Gateways



Modules



Adapters



Development Kits



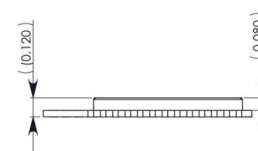
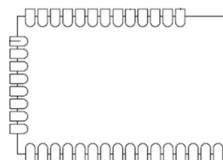
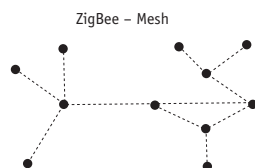
Network Extenders



iDigi Solutions



Platform	XBee® ZB SMT		XBee-PRO® ZB SMT	
	Standard	Programmable	Standard	Programmable
<b>Performance</b>				
Data Rate	RF 250 Kbps, Serial up to 1 Mbps			
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)	-100 dBm / -102 dBm boost mode		-102 dBm	
<b>Features</b>				
Serial Data Interface	UART, SPI			
Configuration Method	API or AT commands, local or over-the-air			
Frequency Band	ISM 2.4 GHz			
Interference Immunity	DSSS (Direct Sequence Spread Spectrum)			
ADC Inputs	(4) 10-bit ADC inputs			
Digital I/O	15			
Antenna Options	PCB (embedded), U.FL and RF pad			
Operating Temperature	-40° C to +85° C			
Dimensions (L x W x H) and Weight	0.87 in x 1.33 in x 0.12 in (2.20 cm x 3.40 cm x 0.30 cm); 0.14 oz (4 g)			
<b>Programmability</b>				
Memory	N/A	32 KB Flash / 2 KB RAM	N/A	32 KB Flash / 2 KB RAM
CUP/Clock Speed	N/A	HCS08 / up to 50.33 MHz	N/A	HCS08 / up to 50.33 MHz
<b>Networking and Security</b>				
Encryption	128-bit AES			
Reliable Packet Delivery	Retries/Acknowledgements			
IDs	PAN ID and addresses, cluster IDs and endpoints (optional)			
Channels	16 channels		15 channels	
<b>Power Requirements</b>				
Supply Voltage	2.1 to 3.6V		2.7 to 3.6V	
Transmit Current	33 mA @ 3.3 VDC / 45 mA boost mode	47 mA @ 3.3 VDC / 59 mA boost mode	100 mA @ 3.3 VDC	114 mA @ 3.3 VDC
Receive Current	28 mA @ 3.3 VDC / 31 mA boost mode	42 mA @ 3.3 VDC / 45 mA boost mode	31 mA @ 3.3 VDC	45 mA @ 3.3 VDC
Power-Down Current	<1 uA @ 25° C	1.5 uA @ 25° C	<1 uA @ 25° C	1.5 uA @ 25° C
<b>Regulatory Approvals</b>				
FCC, IC (North America)			Yes	
ETSI (Europe)	Yes		No	
C-TICK (Australia)			Yes	
TELEC (Japan)	Yes		No	



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