

# XBee® and XBee-PRO® ZB

ZigBee® Embedded SMT RF Modules for OEMs

Embedded ZigBee modules provide OEMs with a simple way to integrate mesh technology into their application.



## 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. Features like binding and multicasting also allow for simple integration into a Home Automation device.

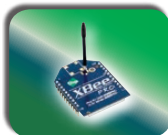
Products in the XBee family require no configuration or additional development. Programmable versions of the XBee-PRO ZB module make customizing applications easy. Programming directly on the module eliminates the need for a separate processor. Because the wireless software is isolated, applications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

### Related Products



Gateways



Modules



Adapters



Development Kits

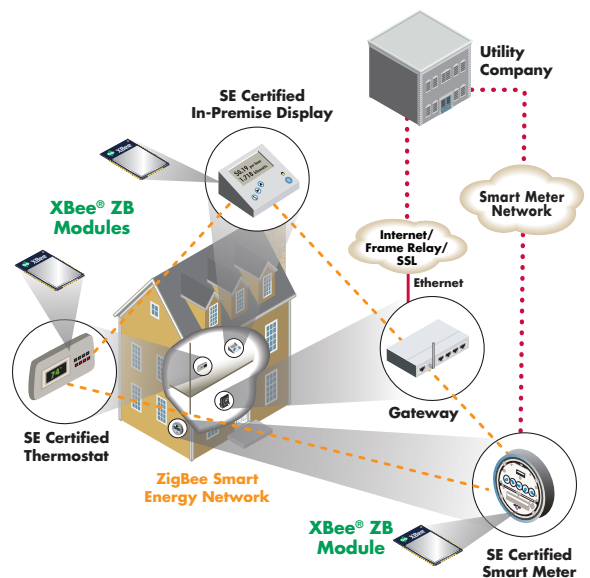


Network Extenders



Device Cloud Solutions

### Application Highlight

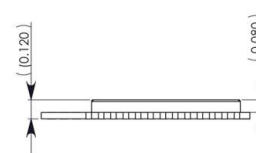
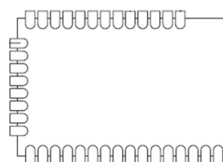
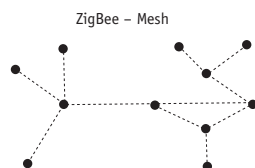


### Features/Benefits

- Interoperable with other ZigBee compliant devices\*
- Programmable versions of the XBee-PRO ZB enable custom ZigBee application development
- Supports binding and multicasting, for easy integration into a Home Automation platform
- 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



Platform	XBee® ZB SMT		XBee-PRO® ZB SMT	
	Standard	Programmable	Standard	Programmable
Performance				
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	
Features				
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)			
Programmability				
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
Networking and Security				
Protocol	ZigBee PRO 2007, HA-Ready with support for binding/multicasting			
Encryption	128-bit AES			
Reliable Packet Delivery	Retries/Acknowledgements			
IDs	PAN ID and addresses, cluster IDs and endpoints (optional)			
Channels	16 channels		15 channels	
Power Requirements				
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
Regulatory Approvals				
FCC, IC (North America)	Yes			
ETSI (Europe)	Yes		No	
C-TICK (Australia)	Yes			
TELEC (Japan)	Yes		No	



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