XBEE® ZIGBEE MESH KIT

Provides a hands-on way to learn how to use XBee RF modules for device connectivity and mesh networking

Digi's XBee ZigBee Mesh Kit offers a great way to learn how to use XBee RF modules for device connectivity and ZigBee-based mesh networking. Starting with simple examples, we provide step-by-step guidance as you assemble the kit components to create reliable, low-power device communications and sensor networks.

Mesh networking is a powerful way to route data. Range is extended by allowing data to hop from node to node, and reliability is increased by "self-healing," the ability to create alternate paths when one node fails or a connection is lost. ZigBee is one of the most popular mesh networking protocols, specifically designed for low-data rate and low-power applications. ZigBee is an open standard, enabling interoperability between different device manufacturers.

This kit is designed for anyone interested in getting started in the world of ZigBee. Hardware and software engineers, corporate technologists, or educators and students can quickly learn more about ZigBee technology through hands-on examples in the kit, utilizing XBee ZigBee modules.

XBee ZigBee Modules Included in the Kit

XBee and XBee-PRO® ZigBee modules are ideal for applications in the energy and controls markets where time-to-market and reliability are critical. With Digi's extensive and easy-to-use XBee API framework, customers can get their ZigBee product to market faster than any other module available in the industry. Features like binding and multicasting also allow for simple integration for Home Automation applications.

Our modules are available in the popular XBee through-hole and surface mount form factors, providing customers the flexibility to substitute one XBee technology for another with minimal development time and risk. Using the long range XBee-PRO variant, customers can get up to two miles (3200 meters) LoS range.

The Kit Includes:

- ✓ 3 XBee Grove Development Board
- ✓ 3 XBee ZigBee Modules (TH and SMT)
- ✓ 3 Micro-USB Cables
- ✓ 2 XBee Stickers
- ✓ Comprehensive Web and Video-Based Instruction

NUMBER	DESCRIPTION
XKB2-Z7T-WZM	XBee S2C ZigBee Mesh Kit, worldwide
ZKB2-Z7T-WTZM	XBee S2D ZigBee Mesh Kit, worldwide

SPECIFICATIONS	XBee® S2C ZigBee Standard | Programmable		XBee-PRO® S2C ZigBee Standard | Programmable		XBee® S2D ZigBee Thread Ready Standard
PERFORMANCE					
TRANSCEIVER CHIPSET	Silicon Labs EM357 SoC				Silicon Labs EM3587 Soc
DATA RATE	RF 250 Kbps, Serial up to 1 Mbps				
INDOOR/URBAN RANGE	200 ft (60 m)		300 ft (90 m)		200 ft (60 m)
OUTDOOR/RF LINE-OF-SIGHT RANGE	4000 ft (1200 m)		2 miles (3200 m)		4000 ft (1200 m)
TRANSMIT POWER	3.1 mW (+5 dBm) / 6.3 mW (+8 dBm) boost mode		63 mW (+18 dBm)		3.1 mW (+5 dBm) / 6.3 mW (+8 dBm) boost mode
RECEIVER SENSITIVITY (1% PER)	-100 dBm / -102 dBm boost mode		-101 dBm		-100 dBm / -102 dBm boost mode
FEATURES					
SERIAL DATA INTERFACE	UART, SPI				
CONFIGURATION METHOD	API or AT commands, local or over-the-air (OTA)				
FREQUENCY BAND	ISM 2.4 GHz				
FORM FACTOR	Through-Hole, Surface Mount				Surface Mount
INTERFERENCE IMMUNITY	DSSS (Direct Sequence Spread Spectrum)				
ADC INPUTS	(4) 10-bit ADC inputs				
DIGITAL I/O	15				
ANTENNA OPTIONS	Through-Hole: PCB Antenna, U.FL Connector, RPSMA Connector, or Integrated Wire SMT: RF Pad, PCB Antenna, or U.FL Connector				
OPERATING TEMPERATURE	-40° C to +85° C				
DIMENSIONS (L X W X H) AND WEIGHT	Through-Hole: 0.960 x 1.087 in (2.438 x 2.761 cm) SMT: 0.866 x 1.33 x 0.120 in (2.199 x 3.4 x 0.305 cm)		Through-Hole: 0.960 x 1.297 in (2.438 x 3.294 cm) SMT: 0.866 x 1.33 x 0.120 in (2.199 x 3.4 x 0.305 cm)		SMT: 0.866 x 1.33 x 0.120 in (2.199 x 3.4 x 0.305 cm)
PROGRAMMABILITY					
MEMORY	N/A	32 KB Flash / 2 KB RAM	N/A	32 KB Flash / 2 KB RAM	N/A
CPU/CLOCK SPEED	N/A	HCS08 / up to 50.33 MHz	N/A	HCS08 / up to 50.33 MHz	N/A
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		16 channels
POWER REQUIREMENTS					
SUPPLY VOLTAGE	2.1 to 3.6V		2.7 to 3.6V		2.1 to 3.6V
TRANSMIT CURRENT	33 mA @ 3.3 VDC / 45 mA boost mode	47 mA @ 3.3 VDC / 59 mA boost mode	120 mA @ 3.3 VDC	120 mA @ 3.3 VDC	33 mA @ 3.3 VDC / 45 mA boost mode
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	28 mA @ 3.3 VDC / 31 mA boost mode
POWER-DOWN CURRENT	<1 µA @ 25° C	1.5 µA @ 25° C	<1 µA @ 25° C	1.5 µA @ 25° C	<3 µA at 25° C
REGULATORY APPROVALS					
FCC, IC (NORTH AMERICA)	Yes		Yes		Yes
ETSI (EUROPE)	Yes		No		Yes
RCM (AUSTRALIA AND NEW ZEALAND)	Yes		Yes		No (Coming Soon)

It's the easy and fast way to build a wireless mesh network using Digi's XBee modules. To learn more visit docs.digi.com.

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