DIGI XBEE 3 ZIGBEE MESH KIT

Explore hands-on mesh networking and connectivity with Digi XBee 3 RF modules

The **Digi XBee® 3 Zigbee Mesh Kit** offers a great way to learn how to use Digi XBee 3 RF modules for device connectivity and Zigbee-based mesh networking. Zigbee is one of the most popular open standard mesh networking protocols, specifically designed for low-data rate and low-power applications. With simple examples and step-by-step guidance, you can quickly assemble 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.

Digi XBee 3 Zigbee Modules Included in the Kit

Digi XBee 3 and XBee 3-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 DIGI 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 building automation applications.

The Kit includes:

✓ 3 Digi XBee Grove Development Boards

✓ 3 Digi XBee ZigBee SMT Modules, programmable to 802.15.4 and DigiMesh

✓ 3 Micro-USB cables

✓ 3 antennas

✓ Comprehensive web and video-based instruction

NUMBER	DESCRIPTION
XK3-Z8S-WZM	Digi XBee 3 Zigbee Mesh Kit, worldwide

Our modules are available in the popular Digi XBee through-hole, surface mount and now micro-mount form factors, providing customers the flexibility to substitute one Digi XBee technology for another with minimal development time and risk. Using the long-range Digi XBee 3-PRO variant, customers can get up to two miles (3200 meters) LoS range.

SPECIFICATIONS	Digi XBee® 3 Zigbee 3.0		Digi XBee® 3 PRO Zigbee 3.0
PERFORMANCE			
TRANSCEIVER CHIPSET	Silicon Labs® EFR32MG SoC		
DATA RATE	RF 250 Kbps, Serial up to 1 Mbps		
INDOOR/URBAN RANGE	60 m (200 ft)		90 m (300 ft)
OUTDOOR/RF LINE-OF-SIGHT RANGE	1200 m (4000 ft)		3200 m (2 miles)
TRANSMIT POWER	+8 dBm		+19 dBm
RECEIVER SENSITIVITY (1% PER)	-103 dBm Normal Mode		
FEATURES			
SERIAL DATA INTERFACE	UART, SPI, I²C		
CONFIGURATION METHOD	API or AT commands, local or over-the-air (OTA)		
FREQUENCY BAND	ISM 2.4 GHz		
FORM FACTOR	Micro, Through-Hole, 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 SMT: RF Pad, PCB Antenna, or U.FL Connector Micro: U.FL Antenna, RF Pad, Chip Antenna		
OPERATING TEMPERATURE	-40º C to 85º C (-40º F to 185º F)		
DIMENSIONS (L X W X H)	Through-Hole: 2.438 x 2.761 cm (0.960 x 1.087 in) SMT: 2.199 x 3.4 x 0.305 cm (0.866 x 1.33 x 0.120 in) Micro: 13 x 19 x 2 mm (0.533 x 0.76 x 0.087 in)		
PROGRAMMABILITY			
MEMORY	1 MB / 128 KB RAM		
CPU/CLOCK SPEED	HCS08 / up to 50.33 MHz		
NETWORKING AND SECURITY			
PROTOCOL	Zigbee 3.0		
ENCRYPTION	128/256 bit AES		
RELIABLE PACKET DELIVERY	Retries/Acknowledgements		
IDS	PAN ID and addresses, cluster IDs and endpoints (optional)		
CHANNELS	16 channels		
POWER REQUIREMENTS			
SUPPLY VOLTAGE	2.1 to 3.6 V		
TRANSMIT CURRENT	40 mA @ 8 dBm		135 mA @ 19 dBm
RECEIVE CURRENT	15 mA		
POWER-DOWN CURRENT	1.7 micro Amp @ 25º C (77º F)		
REGULATORY APPROVALS			
FCC, IC (NORTH AMERICA)	Yes		Yes
ETSI (EUROPE)	Yes		No