DIGI XBEE® S2C DIGIMESH® 2.4 KIT

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

Digi XBee S2C DigiMesh 2.4 Kit offers a great way to learn how to use Digi XBee RF modules for device connectivity and ZigBee-based mesh networking. Starting with very simple examples, we provide step-by-step guidance in assembling the kit components to create reliable wireless communications, working control systems, and sensing networks with incredible battery life and robust security. The kit is designed for anyone getting started in the world of XBee: hardware/software engineers, product managers, educators, students and even young inventors.

All examples are explained in-depth and include videos showcasing wireless communication in action. Some examples also incorporate the XBee Java Library, which can be used to integrate XBees modules into Java-based devices and applications. Each example is designed to be easy for anyone to use, and those with some programming background should find it simple to extend the examples to additional applications or use-cases.

Digi XBee S2C DigiMesh Included in the Kit

Digi XBee and Digi XBee-PRO S2C DigiMesh modules are embedded solutions providing wireless connectivity to devices. These modules use the proprietary Digi International, Inc. mesh networking protocol DigiMesh for peer-to-peer and mesh networking. DigiMesh is a robust mesh networking protocol designed to reduce power consumption and increase throughput by reducing the housekeeping chatter between modules. Module function is based on the tasks assigned to it rather than by the specific firmware sub-version loaded–making it a true peer to peer mesh network.

Digi XBee S2C modules are ideal for low-power, low-cost applications. These modules are easy-to-use, share a common footprint, and are fully interoperable with other Digi XBee utilizing the same technology. Module users have the ability to substitute one Digi XBee module for another with minimal development time and risk. The updated Digi XBee S2C DigiMesh module is built with the SiliconLabs EM357 SoC and offers improved power consumption, support for over-the-air firmware updates, adds SM capability, and provides a path to IEEE 802.15.4 or ZigBee® mesh protocols if desired.

The Kit Includes:

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

NUMBER	DESCRIPTION
XK-WDM	Digi XBee S2C DigiMesh Development Kit with two XB24CDMPIT-001 modules and one XB24DMPIS-001 module

SPECIFICATIONS	Digi XBee® S2C DigiMesh® 2.4	Digi XBee-PRO® S2C DigiMesh® 2.4
PERFORMANCE		
TRANSCEIVER CHIPSET	Silicon Labs EM357 SoC	Silicon Labs EM357 SoC
DATA RATE	RF 250 Kbps, Serial up to 1 Mbps	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	-101 dBm
FEATURES		
SERIAL DATA INTERFACE	UART, SPI	UART, SPI
CONFIGURATION METHOD	API or AT commands, local or over-the-air (OTA)	API or AT commands, local or over-the-air (OTA)
FREQUENCY BAND	ISM 2.4 GHz	ISM 2.4 GHz
FORM FACTOR	Through-Hole, Surface Mount	Through-Hole, Surface Mount
HARDWARE	S2C	S2C
ADC INPUTS	(4) 10-bit ADC inputs	(4) 10-bit ADC inputs
DIGITAL I/O	15	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	-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)
NETWORKING AND SECURITY		
PROTOCOL	XBee DigiMesh 2.4 (Proprietary 802.15.4 based mesh protocol)	XBee DigiMesh 2.4 (Proprietary 802.15.4 based mesh protocol)
UPDATABLE TO DIGI 802.15.4 PROTOCOL	Yes	Yes
UPDATABLE TO ZIGBEE PROTOCOL	Yes	Yes
INTERFERENCE IMMUNITY	DSSS (Direct Sequence Spread Spectrum)	DSSS (Direct Sequence Spread Spectrum)
ENCRYPTION	128-bit AES	128-bit AES
RELIABLE PACKET DELIVERY	Retries/Acknowledgements	Retries/Acknowledgements
IDS	PAN ID and addresses, cluster IDs and endpoints (optional)	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	120 mA @ 3.3 VDC
RECEIVE CURRENT	28 mA @ 3.3 VDC / 31 mA boost mode	31 mA @ 3.3 VDC
POWER-DOWN CURRENT	<1 µA @ 25° C	<1 µA @ 25° C
REGULATORY APPROVALS		
FCC, IC (NORTH AMERICA)	Yes	Yes
ETSI (EUROPE)	Yes	No
RCM (AUSTRALIA AND NEW ZEALAND)	Yes	Yes
TELEC (JAPAN)	Yes	No (Coming soon)

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

877-912-3444 | 952-912-3444

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