

XBee Wi-Fi



Platform	XBee Wi-Fi (S6B)
Features	
Serial Data Interface	UART up to 1 Mbps, SPI up to 6 Mbps
Configuration Method	API or AT commands
Frequency Band	ISM 2.4 GHz
ADC Inputs	4 (12-bit)
Digital I/O	10
Form Factor	Through-Hole, Surface Mount
Antenna Options	Through-Hole: PCB (Embedded), U.FL, RPSMA, Integrated Wire SMT: PCB (Embedded), U.FL, RF Pad
Operating Temperature	-30° C to +85° C
Dimensions (L x W)	Through-Hole: 0.960 in x 1.297 in (2.438 cm x 3.294 cm) SMT: 0.87 in x 1.33 in x 0.12 in (2.20 cm x 3.40 cm x 0.30 cm)
Networking & Security	
Security	WPA-PSK, WPA2-PSK and WEP
Channels	13 channels
Wireless LAN	
Standard	802.11b/g/n
Data Rates	1 Mbps to 72 Mbps
Modulation	802.11b: CCK, DSSS 802.11g/n: OFDM with BPSK, QPSK, 16-QAM, 64-QAM
Transmit Power	Up to +16 dBm
Receiver Sensitivity	-93 to -71 dBm
Power Requirements	

Supply Voltage	3.14 - 3.46 VDC
Transmit Current	Up to 309 mA
Receive Current	100 mA
Power-Down Current	<6 μ A @ 25° C
Regulatory Approvals	
FCC (USA)	Yes
IC (Canada)	Yes
CE/ETSI (Europe)	Yes
C-TICK (Australia)	Yes
Telec (Japan)	Yes
Anatel (Brazil)	Yes

XBee® ZB SMT



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) and Weight	0.87 in x 1.33 in x 0.12 in (2.20 cm x 3.40 cm x 0.30 cm); 1.40 oz (40.00g)			
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/Acknowledgments			
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	

XBee® ZB



Platform	XBee® ZB	XBee-PRO® ZB	Programmable XBee-PRO® ZB
Performance			
RF Data Rate	250 Kbps		
Indoor/Urban Range	133 ft (40 m)	300 ft. (90 m)	
Outdoor/RF Line-of-Sight Range	400 ft (120 m)	2 miles (3200 m)/ Int'l 5000 ft (1500 m)	
Transmit Power	1.25 mW (+1 dBm) / 2 mW (+3 dBm) boost mode	63 mW (+18 dBm) / Int'l 10 mW (+10 dBm)	
Receiver Sensitivity (1% PER)	-96 dBm in boost mode	-102 dBm	
Features			
Adjustable Power	Yes		
I/O Interface	3.3V CMOS UART, ADC, DIO	3.3V CMOS UART, SPI, I2C, PWM, DIO, ADC	
Configuration Method	API or AT commands, local or over-the-air		
Frequency Band	2.4 GHz		
Interference Immunity	DSSS (Direct Sequence Spread Spectrum)		
Serial Data Rate	1200 bps - 1 Mbps		
ADC Inputs	(4) 10-bit ADC inputs		
Digital I/O	10		
Antenna Options	Chip, Wire Whip, U.FL, RPSMA	PCB Embedded Antenna, Wire Whip,	

		U.FL, RPSMA	
Operating Temperature & Humidity	-40° C to +85° C, 0-95% humidity non-condensing		
Programmability			
Memory	N/A	32 KB Flash / 2 KB RAM)	
CPU/Clock Speed	N/A	HCS08 / Up to 50.33 MHz	
Networking & Security			
Encryption	128-bit AES		
Reliable Packet Delivery	Retries/Acknowledgments		
IDs and Channels	PAN ID, 64-bit IEEE MAC, 16 channels	PAN ID, 64-bit IEEE MAC, 15 channels	
Power Requirements			
Supply Voltage	2.1 - 3.6VDC	2.7 - 3.6VDC	
Transmit Current	40 mA (@3.3 V)	205 mA	220 mA
Receive Current	38 mA / 40 mA boost mode @ 3.3VDC	47 mA	62 mA
Power-Down Current	<1 uA @ 25° C	3.5 uA @ 25° C	4 uA @ 25° C
Regulatory Approvals			
FCC (USA)	Yes		
IC (Canada)	Yes		
ETSI (Europe)	Yes		
C-TICK (Australia)	Yes		
TELEC (Japan)	Yes	Yes (int'l unit only)	

XBee® 802.15.4



Platform	XBee	XBee-PRO
Performance		
Power output	1mW (+0 dBm) North American & International version	63 mW (+18 dBm) North American version 10 mW (+10 dBm) International version
Indoor/Urban range	Up to 100 ft (30 m)	Up to 300 ft (90 m)
Outdoor/RF line-of-sight range	Up to 300 ft (90 m)	Up to 1 mile (1.6 km) RF LOS
Receiver sensitivity	-92 dBm	-100 dBm (all variants)
RF data rate	250 Kbps	250 Kbps
Operating frequency	2.4 GHz	2.4 GHz
Interface data rate	Up to 115.2 Kbps	Up to 115.2 Kbps
Networking		
Spread spectrum type	DSSS (Direct Sequence Spread Spectrum)	
Supported network topologies	Point-to-point, point-to-multipoint, & peer-to-peer	
Error handling	Retries & acknowledgements	
Filtration options	PAN ID, Channel, and 64-bit addresses	
Channel capacity	16 Channels	12 Channels
Addressing	65,000 network addresses available for each channel	
Power		
Supply voltage	2.8 - 3.4 VDC XBee Footprint Recommendation: 3.0 -	2.8 - 3.4 VDC XBee Footprint

	3.4 VDC	Recommendation: 3.0 - 3.4 VDC
Transmit current	45 mA (@ 3.3 V) boost mode 35 mA (@ 3.3 V) normal mode	215 mA (@ 3.3 V)
Receive current	50 mA (@ 3.3 V)	55 mA (@ 3.3 V)
Power-down sleep current	<10 ÅµA at 25Å° C	<10 ÅµA at 25Å° C
General		
Frequency band	2.4000 - 2.4835 GHz	
Interface options	3V CMOS UART	
Physical Properties		
Size	0.960 in x 1.087 in (2.438 cm x 2.761 cm)	0.960 in x 1.297 in (2.438 cm x 3.294 cm)
Weight	0.10 oz (3g)	
Antenna options	U.FL, Reverse Polarity SMA (RPSMA), chip antenna or wired whip antenna	
Operating temperature	-40Å° C to 85Å° C (industrial)	
Certifications		
FCC	Yes	
IC	Yes	
Europe/ETSI	Yes	
Australia/Ctick	Yes	
RoHS	Compliant	

XStream®

900 MHz and 2.4 GHz embedded RF modules for OEMs



Platform	9XStream 900 MHz	24XStream 2.4 GHz
Performance		
Power output	100 mW (20 dBm)	50 mW (17 dBm)
Indoor/Urban range	Up to 1500 ft (450 m)	Up to 600 ft (180m)
Outdoor/RF line-of-sight range	Up to 20 miles (32 km)	Up to 10 miles (16 km)
Receiver sensitivity	-110 dBm (@ 9600 bps)	-105 dBm (@ 9600 bps)
RF data rate	9.6 or 19.2 Kbps	9.6 or 19.2 Kbps
Interface data rate	Up to 57.6 Kbps	Up to 57.6 Kbps
Networking		
Spread spectrum type	FHSS (Frequency Hopping Spread Spectrum)	
Supported network topologies	Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint, Multidrop	
Error handling	Retries & acknowledgements	
Filtration options	VID (Vendor ID Number), channels and addressing	
Channel capacity	7 hop sequences share 25 frequencies	
Addressing	65,000 network addresses available for each channel	
Error handling	Retries & acknowledgements	
Encryption	N/A	
Power		
Supply voltage	5 VDC regulated (\pm 0.25 V)	

Transmit current	150 mA	
Receive current	50 mA power-down	
Sleep current	26 μ A	
General		
Frequency Band	902 - 928 MHz	2.4000 - 2.4835 GHz
Serial Data Interface	5V CMOS UART - No configuration required	5V CMOS UART - No configuration required
Physical Properties		
Size	1.60 in x 2.83 in x 0.35 in (4.06 cm x 7.17 cm x 0.89 cm)	
Weight	0.80 oz (24 g)	
Antenna options	RPSMA, MMCX or integrated whip antenna	
Operating temperature	Commercial (0° C to 70° C), Industrial (-40° C to 85° C) or Tested	
Certifications		
United States (FCC)	OUR9XSTREAM	OUR-24XSTREAM
Canada (IC)	4214A-9XSTREAM	4214A 12008
Europe (CE)	N/A	ETSI
Class I Division 2	Approved (Contact Digi for availability)	Approved (Contact Digi for availability)