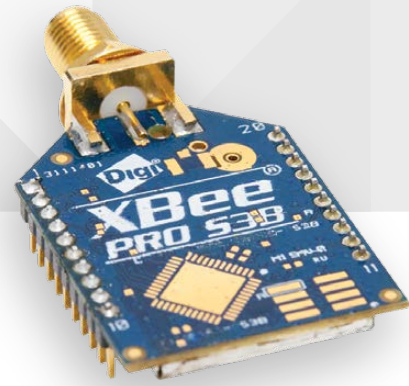# XBEE-PRO® 900HP

Best-in-class range RF module features software-complete mesh or multipoint topologies with advanced sleep modes

XBee-PRO 900HP embedded modules provide best-in-class range wireless connectivity to devices. They take advantage of the DigiMesh® networking protocol, featuring dense network operation and support for sleeping routers, and are also available in a point-to-multipoint configuration. Supporting RF line-of-sight ranges up to 28 miles (with high-gain antennas), and data rates of up to 200 Kbps, these modules are ideal for extended-range applications requiring increased data throughput.

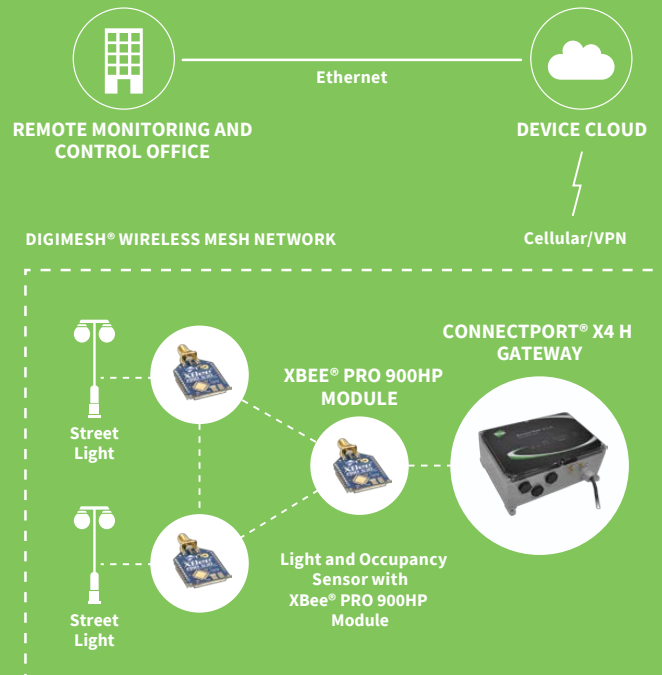The XBee-PRO 900HP requires no programming and can be configured easily using Digi's free XCTU software or via a simplified AT command set. XBee® modules are pre-certified for use in multiple countries, further reducing development costs and time to market.

The programmable version of the XBee-PRO 900HP module makes customizing long-range wireless applications easy. Programming directly on the module eliminates the need for a separate host processor. Because the wireless software is isolated, applications can be developed with no risk to RF performance, security or additional certifications.

BENEFITS

- Superior outdoor LOS range of up to 28 miles with high-gain antenna
- Over-the-air firmware updates via other XBee-PRO 900HP modules or Digi Device Cloud℠
- Software-selectable channel mask for interference immunity
- Programmable versions of the XBee-PRO 900HP enable custom application development
  - 8-bit Freescale™ S08 microprocessor brings custom intelligence to the module
  - XBee-specific CodeWarrior® development tools for easy programming
- RF data rate up to 200 Kbps
- Patented channel selectivity algorithm allows for more dense networks

RELATED PRODUCTS

Gateways   Modules   Digi XLR PRO™   XCTU   Development Kits

APPLICATION EXAMPLE

REMOTE MONITORING AND CONTROL OFFICE

Ethernet

DEVICE CLOUD

DIGIMESH® WIRELESS MESH NETWORK

Cellular/VPN

Street Light

XBEE® PRO 900HP MODULE

CONNECTPORT® X4 H GATEWAY

Street Light

Light and Occupancy Sensor with XBee® PRO 900HP Module

HARDWARE

PROCESSOR	ADF7023 transceiver, Cortex-M3 EFM32G230 @ 28 MHz; Programmable includes: Freescale MC9S08QE32	
FREQUENCY BAND	902 to 928 MHz, software selectable channel mask for interference immunity	
ANTENNA OPTIONS	Wire, U.FL and RPSMSA	

PERFORMANCE

RF DATA RATE	10 Kbps or 200 Kbps	
INDOOR/URBAN RANGE	10 Kbps: up to 2000 ft (610 m); 200 Kbps: up to 1000 ft (305 m)	
OUTDOOR/ LINE-OF-SIGHT RANGE	10 Kbps: up to 9 miles (15.5 km); 200 Kbps: up to 4 miles (6.5 km) (with 2.1dB dipole antennas)	
TRANSMIT POWER	Up to 24 dBm (250 mW) software selectable	
RECEIVER SENSITIVITY	-101 dBm @ 200 Kbps, -110 dBm @ 10 Kbps	

FEATURES

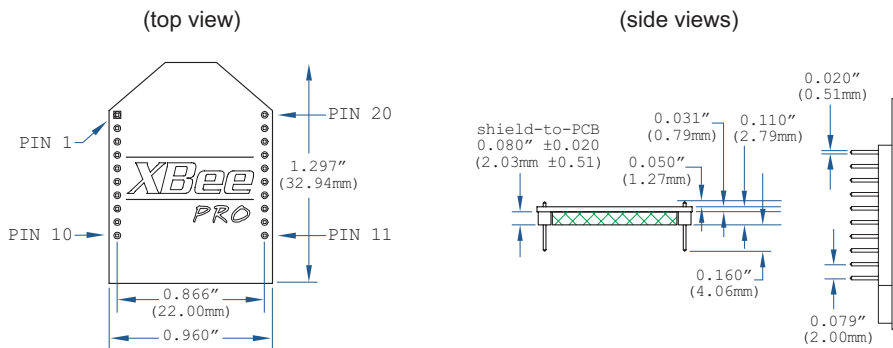|		
DATA INTERFACE	UART (3V), SPI	
GPIO	Up to 15 Digital I/O, 4 10-bit ADC inputs, 2 PWM outputs	
NETWORKING TOPOLOGIES	DigiMesh, Repeater, Point-to-Point, Point-to-Multipoint, Peer-to-Peer	
SPREAD SPECTRUM	FHSS (Software Selectable Channels)	

PROGRAMMABILITY

MEMORY	N/A	32 KB Flash / 2 KB RAM
CPU/CLOCK SPEED	N/A	HCS08 / Up to 50.33 MHz

POWER

SUPPLY VOLTAGE	2.1 to 3.6 VDC	2.4 to 3.6 VDC
TRANSMIT CURRENT	215 mA	229 mA
RECEIVE CURRENT	29 mA	44 mA
SLEEP CURRENT	2.5 uA	3 uA

REGULATORY APPROVALS

FCC (USA)	MCQ-XB900HP	
IC (CANADA)	1846A-XB900HP	
C-TICK (AUSTRALIA)	Yes	
ANATEL (BRAZIL)	Yes	
IDA (SINGAPORE)	Yes	

(top view)

(side views)

PIN 1
PIN 20
PIN 10
PIN 11

1.297"
(32.94mm)

0.866"
(22.00mm)

0.960"

shield-to-PCB
0.080" ±0.020
(2.03mm ±0.51)

0.031"
(0.79mm)

0.110"
(2.79mm)

0.020"
(0.51mm)

0.050"
(1.27mm)

0.160"
(4.06mm)

0.079"
(2.00mm)

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DIGI

PART NUMBERS	DESCRIPTION
XBP9B-DMWT-002	XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, Wire Antenna, 200 Kbps
XBP9B-DMST-002	XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, RPSMA, 200 Kbps
XBP9B-DMUT-002	XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, U.FL, 200 Kbps
XBP9B-DPWT-001	XBee-PRO 900HP (S3B) Point2Multipoint, 900 MHz, 250 mW, Wire Antenna, 10 Kbps
XBP9B-DPST-001	XBee-PRO 900HP (S3B) Point2Multipoint, 900 MHz, 250 mW, RPSMA, 10 Kbps
XBP9B-DPUT-001	XBee-PRO 900HP (S3B) Point2Multipoint, 900 MHz, 250 mW, U.FL, 10 Kbps
XBP9B-DMWTB002	XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, Wire Antenna, 200 Kbps, 32 K Programmable
XBP9B-DMSTB002	XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, RPSMA, 200 Kbps, 32 K Programmable
XBP9B-DMUTB002	XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, U.FL, 200 Kbps, 32 K Programmable
XBP9B-DMWT-022	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, Wire Antenna, 200 Kbps
XBP9B-DMST-022	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, RPSMA, 200 Kbps
XBP9B-DMUT-022	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, U.FL, 200 Kbps
XBP9B-DPWT-021	XBee-PRO 900HP (S3B) Point2Multipoint, 920 MHz (Australia), 250 mW, Wire Antenna, 10 Kbps
XBP9B-DPST-021	XBee-PRO 900HP (S3B) Point2Multipoint, 920 MHz (Australia), 250 mW, RPSMA, 10 Kbps
XBP9B-DPUT-021	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, Wire Antenna, 200 Kbps, 32K Programmable
XBP9B-DMSTB022	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, RPSMA, 200 Kbps, 32K Programmable
XBP9B-DMUTB022	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, U.FL, 200 Kbps, 32K Programmable
XBP9B-DMWT-012	XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, Wire Antenna, 200 Kbps (Brazil)
XBP9B-DMST-012	XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, RPSMA Antenna, 200 Kbps (Brazil)
XBP9B-DMUT-012	XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, U.FL Antenna, 200 Kbps (Brazil)
XBP9B-DPWT-011	XBee-PRO 900HP (S3B) Point2Multipoint, 905/920 MHz, 250 mW, Wire Antenna, 10 Kbps (Brazil)
XBP9B-DPST-011	XBee-PRO 900HP (S3B) Point2Multipoint, 905/920 MHz, 250 mW, RPSMA Antenna, 10 Kbps (Brazil)
XBP9B-DPUT-011	XBee-PRO 900HP (S3B) Point2Multipoint, 905/920 MHz, 250 mW, U.FL Antenna, 10 Kbps (Brazil)
XBP9B-DMSTB012	XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, RPSMA, 200 Kbps, 32K Programmable (Brazil)
XBP9B-DMUTB012	XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, Wire Antenna, 200 Kbps, 32K Programmable (Brazil)
XBP9B-DMWT-042	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Singapore), 250 mW, Wire Antenna, 200 Kbps
XBP9B-DMST-042	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Singapore), 250 mW, RPSMA, 200 Kbps
XBP9B-DMUT-042	XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Singapore), 250 mW, U.FL, 200 Kbps
XBP9B-DPWT-041	XBee-PRO 900HP (S3B) Point2Multipoint, 920 MHz (Singapore), 250 mW, Wire Antenna, 10 Kbps
XBP9B-DPST-041	XBee-PRO 900HP (S3B) Point2Multipoint, 920 MHz (Singapore), 250 mW, RPSMA, 10 Kbps
XBP9B-DPUT-041	XBee-PRO 900HP (S3B) Point2Multipoint, 920 MHz (Singapore), 250 mW, U.FL, 10 Kbps
XKP9-DM-0	XBee-PRO 900HP S3B Dev Kit (Domestic)
XKP9-DMB0	XBee-Pro 900HP (S3B) Development Kit 32K Programmable
XKP9-DM-2	XBee-PRO 900HP S3B 920 MHz Dev Kit (Australia)
XKP9-DM-1	XBee-PRO 900HP S3B 920 MHz Dev Kit (Brazil)
XKP9-DM-4	XBee-PRO 900HP S3B 920 MHz Dev Kit (Singapore)

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