DIGI XBEE-PRO® 900HP

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

Digi 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.

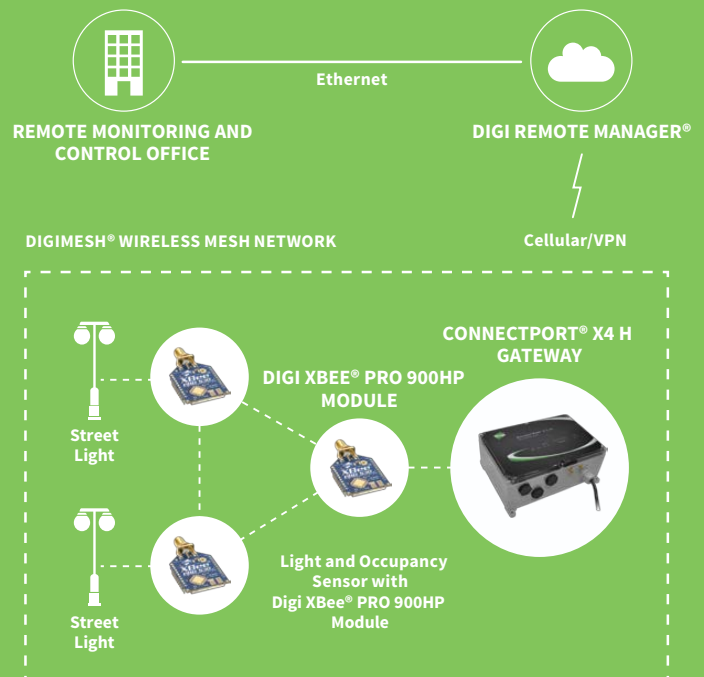The Digi XBee-PRO 900HP requires no programming and can be configured easily using Digi's free XCTU software or via a simplified AT command set. Digi XBee® modules are pre-certified for use in multiple countries, further reducing development costs and time to market.

The programmable version of the Digi 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 Digi XBee-PRO 900HP modules or Digi Remote Manager®
– Software-selectable channel mask for interference immunity
– Programmable versions of the Digi XBee-PRO 900HP enable custom application development
  - 8-bit Freescale™ S08 microprocessor brings custom intelligence to the module
  - Digi 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®
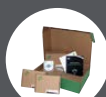
XCTU

Development Kits

APPLICATION EXAMPLE

REMOTE MONITORING AND CONTROL OFFICE

Ethernet

DIGI REMOTE MANAGER®

Cellular/VPN

DIGIMESH® WIRELESS MESH NETWORK

Street Light

DIGI XBEE® PRO 900HP MODULE

CONNECTPORT® X4 H GATEWAY

Street Light

Light and Occupancy Sensor with Digi XBee® PRO 900HP Module

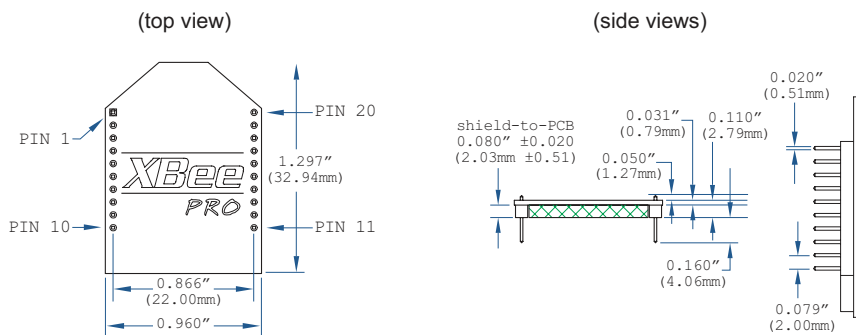| SPECIFICATIONS	Digi XBee-PRO® 900HP	Programmable Digi XBee-PRO® 900HP
HARDWARE		
PROCESSOR	ADF7023 transceiver, Cortex-M3 EFM32G230 @ 28 MHz; Programmable includes: Freescale MC9S08QE32	
FREQUENCY BAND	902 to 928 MHz, software selectable channel mask for interference immunity	
ANTENNA OPTIONS	Wire, 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"

XBee PRO

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)

*Range figure estimates are based on free-air terrain with limited sources of interference. Actual range will vary based on transmitting power, orientation of transmitter and receiver, height of transmitting antenna, height of receiving antenna, weather conditions, interference sources in the area, and terrain between receiver and transmitter, including indoor and outdoor structures such as walls, trees, buildings, hills, and mountains.

DIGI®

PART NUMBERS	DESCRIPTION
KITS	
XKB9-DMT-UHP	Digi XBee-PRO 900HP DigiMesh Kit (US/Canada)
XKB9-DMT-AHP	Digi XBee-PRO 900HP DigiMesh Kit (Australia)
NORTH AMERICA	
XBP9B-DMWT-002	Digi XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, Wire Antenna, 200 Kbps
XBP9B-DMST-002	Digi XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, RPSMA, 200 Kbps
XBP9B-DMUT-002	Digi XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, U.FL, 200 Kbps
XBP9B-DPWT-001	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 900 MHz, 250 mW, Wire Antenna, 10 Kbps
XBP9B-DPST-001	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 900 MHz, 250 mW, RPSMA, 10 Kbps
XBP9B-DPUT-001	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 900 MHz, 250 mW, U.FL, 10 Kbps
XBP9B-DMWTB002	Digi XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, Wire Antenna, 200 Kbps, 32 K Programmable
XBP9B-DMSTB002	Digi XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, RPSMA, 200 Kbps, 32 K Programmable
XBP9B-DMUTB002	Digi XBee-PRO 900HP (S3B) DigiMesh, 900 MHz, 250 mW, U.FL, 200 Kbps, 32 K Programmable
AUSTRALIA	
XBP9B-DMWT-022	Digi XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, Wire Antenna, 200 Kbps
XBP9B-DMST-022	Digi XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, RPSMA, 200 Kbps
XBP9B-DMUT-022	Digi XBee-PRO 900HP (S3B) DigiMesh, 920 MHz (Australia), 250 mW, U.FL, 200 Kbps
XBP9B-DPWT-021	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 920MHz (Australia), 250mW, Wire Antenna, 10Kbps
XBP9B-DPST-021	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 920MHz (Australia), 250mW, RPSMA, 10Kbps
XBP9B-DPUT-021	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 920MHz (Australia), 250mW, U.FL, 10Kbps
XBP9B-DMWTB022	Digi XBee-PRO 900HP (S3B) DigiMesh, 920MHz (Australia), 250mW, Wire Antenna, 200Kbps, 32K Programmable
XBP9B-DMSTB022	Digi XBee-PRO 900HP (S3B) DigiMesh, 920MHz (Australia), 250mW, RPSMA, 200Kbps, 32K Programmable
XBP9B-DMUTB022	Digi XBee-PRO 900HP (S3B) DigiMesh, 920MHz (Australia), 250mW, U.FL, 200Kbps, 32K Programmable
BRAZIL	
XBP9B-DMWT-012	Digi XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, Wire Antenna, 200 Kbps (Brazil)
XBP9B-DMST-012	Digi XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, RPSMA Antenna, 200 Kbps (Brazil)
XBP9B-DMUT-012	Digi XBee-PRO 900HP (S3B) DigiMesh, 905/920 MHz, 250 mW, U.FL Antenna, 200 Kbps (Brazil)
XBP9B-DPWT-011	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 905/920 MHz, 250 mW, Wire Antenna, 10 Kbps (Brazil)
XBP9B-DPST-011	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 905/920 MHz, 250 mW, RPSMA Antenna, 10 Kbps (Brazil)
XBP9B-DPUT-011	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 905/920 MHz, 250 mW, U.FL Antenna, 10 Kbps (Brazil)
XBP9B-DMSTB012	Digi XBee-PRO 900HP (S3B) DigiMesh, 905/920MHz, 250mW, RPSMA, 200Kbps, 32K Programmable (Brazil)
XBP9B-DMUTB012	Digi XBee-PRO 900HP (S3B) DigiMesh, 905/920MHz, 250mW, U.FL, 200Kbps, 32K Programmable (Brazil)
XBP9B-DMWTB012	Digi XBee-PRO 900HP (S3B) DigiMesh, 905/920MHz, 250mW, Wire Antenna, 200Kbps, 32K Programmable (Brazil)
SINGAPORE	
XBP9B-DMWT-042	Digi XBee-PRO 900HP (S3B) DigiMesh, 920MHz (Singapore), 250mW, Wire Antenna, 200Kbps
XBP9B-DMST-042	Digi XBee-PRO 900HP (S3B) DigiMesh, 920MHz (Singapore), 250mW, RPSMA, 200Kbps
XBP9B-DMUT-042	Digi XBee-PRO 900HP (S3B) DigiMesh, 920MHz (Singapore), 250mW, U.FL, 200Kbps
XBP9B-DPST-041	Digi XBee-PRO 900HP (S3B) Point2Multipoint, 920MHz (Singapore), 250mW, RPSMA, 10Kbps

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