

1 WATT/900 MHZ STAND-ALONE **RADIO MODEMS** 

## **XTEND®-PKG RF MODEMS**



900 MHz radio modems offer long-range performance, advanced networking and simple out-of-the-box operation with multiple data interface options

Digi's XTend-PKG RF modems provide everything you need for out-of-the-box serial cable replacement, enabling quick wireless connectivity of electronic devices across a broad range of applications. Simply feed data into one modem and the data is transported to the other end of a long range wireless link. Data security is provided by 256-bit AES encryption (128-bit AES is available outside of North America). If more advanced functionality is needed, the modems support an extensive set of AT and binary commands.

Available in multiple interface options, including RS-232/422/485 and USB, XTend modems are ideally suited for remote monitoring, building automation/security, industrial automation/SCADA, fleet management/asset tracking and sensor data capture in embedded systems.

## **BENEFITS**

- Outdoor line-of-sight range up to 40 miles\* (with high gain antenna)
- Outstanding receiver sensitivity (-110 dBm @ 9600 bps)
- Adjustable power output from 100 mW to 1 W; up to 4 W EIRP (with 6 dB antenna)
- Low power consumption for power-sensitive applications
  - Pin, serial port and cyclic sleep modes available
- Streaming, acknowledged and multi-transmit modes supported
- Easy out-of-the box operation no configuration necessary
- Durable industrial grade enclosure

## APPLICATION EXAMPLE **RF Signal RADIO MODEM**

## **RELATED PRODUCTS**



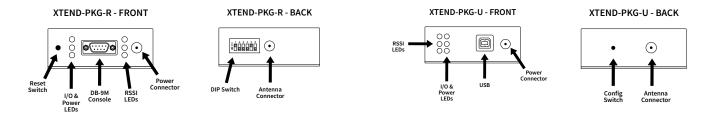








PREPORTANCE	SPECIFICATIONS	XTend®-PKG-R	XTend®-PKG-U	
My 2.1 DB   DPOLE ANTENNA *   Up to 1800 feet (309 m)	PERFORMANCE			
My 2.1 DB IPPOLE ANTENNA *   Up to 9 miles (24 km)	•	Up to 1000 feet (305 m)		
Op 16 d om locs (64 km)		Up to 9 miles (14 km)		
NOTERFACE DATA RATE   10 -330,400 bps (including non-standard baud rates)		Up to 40 miles (64 km)		
RE DATA RATE 10 Kbps to 125 Kbps  RECEIVER SENSITIVITY - 110 dBm (e95,600 bps throughput data rate), 100 dBm (e115,200 bps)  POWER REQUIREMENTS  SUPPLY VOLTAGE 7 - 28V 7 - 28V  RECEIVE CURRENT 100 mA (5elf Power)  TRANSMIT CURRENT Up to 580 mA 88 - 480 mA 100 mA (5elf Power)  TRANSMIT CURRENT Up to 580 mA 88 - 480 mA 17 mA 100 mA (5elf Power)  ILLE CURRENT UP TO MA 17 mA 17 mA 101 mA		100 mW - 1 W (20 - 30 dBm)		
### POWER REQUIREMENTS  ### SUPPLY VOLTAGE  7 - 28V  7 - 28V  ### RECEIVE CURRENT  10 mA  100 mA (Self Power)  ### TWAN SMIT CURRENT  10 than  10 the 589 mA  10 mA  10 mA (Self Power)  10 mA (Self Power)  10 mA  10 mA  10 mA (Self Power)  10 mA  10 mB (Self Power)  10 mA  10 ma (Self Power)  10 mA  10 mA  10 mA  10 mA  10 mA  10 ma (Self Power)  10 ma (Self p	INTERFACE DATA RATE	10 - 230,400 bps (including non-standard baud rates)		
POWER REQUIREMENTS           SUPPLY VOLTAGE         7 - 28V         RECEIVE CURRENT         110 mA         100 mA (Self Power)         11 mA (S	RF DATA RATE	10 Kbps to 125 Kbps		
SUPPLY VOLTAGE         7 - 28V         7 - 28V           RECEIVE CURRENT         110 mA         100 mA (Self Power)           TRANSMIT CURRENT         Up to 580 mA         88 - 480 mA           PIN SLEEP POWER-DOWN         18 mA         17 mA           DILE CURRENT (VARIOUS CYCLIC SLEEP INTERVALS)         19 - 39 mA         45 mA           SERIAL PORT SLEEP POWER-DOWN         45 mA         45 mA           GENERAL           CONNECTION OPTIONS         RS-23/242/485, D8-9         USB           DIMENSIONS (LX WX H)         (6,99 cm x 13.97 cm x 2.86 cm)         (6.99 cm x 13.97 cm x 2.86 cm)           WEIGHT         7.10 αz (200 g)         7.10 αz (200 g)           OPERATING TEMPERATURE         -40° C to 8° C (industrial)         0° C to 70° C (commercial)           ANTENNA OPTIONS         RPSMA (Reverse Polarity SMA)         RPSMA (Reverse Polarity SMA)           IMPEDANCE         50 ohms unbalanced         50 ohms unbalanced           NETWORKING & SECURITY           OPERATING FREQUENCY         ISM 902 - 928 MHz           SPRAD SPECTRUM         FHSS (Frequency Shift Keying)           SUPPORTED NETWORK TOPOLOGIES         Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint	RECEIVER SENSITIVITY	-110 dBm (@9,600 bps throughput data rate), -100 dBm (@115,200 bps)		
RECEIVE CURRENT         110 mA         100 mA (Self Power)           TRANSMIT CURRENT         Up to 580 mA         88 - 480 mA           PIN SLEEP POWER-DOWN         18 mA         17 mA           IDLE CURRENT (VARIOUS CYCLIC SLEEP INTERVALS)         19 - 39 mA         21 - 35 mA (Self Power)           SERIAL PORT SLEEP POWER-DOWN         45mA         45mA         45mA           GENERAL           CONNECTION OPTIONS         RS - 232/422/485, DB-9         USB           DIMENSIONS (LX W X H)         2.75 in x 5.50 in x 1.13 in (6.99 cm x 13.97 cm x 2.86 cm)         45mA         45mA           WEIGHT         7.10 oz (200 g)         7.10 oz (200 g)         7.10 oz (200 g)           OPERATING TEMPERATURE         40° C to 88° C (industrial)         0° C to 70° C (commercial)           ANTENNA OPTIONS         RPSMA (Reverse Polarity SMA)         RPSMA (Reverse Polarity SMA)           MPEDANCE         50 ohms unbalanced         50 ohms unbalanced           NETWORKING & SECURITY           OPERATING FREQUENCY         15M 902 - 928 MHz           SPREAD SPECTRUM         FHSS (Frequency Hopping Spread Spectrum)           MODULATION         FKS (Frequency Hopping Spread Spectrum)           MODULATION	POWER REQUIREMENTS			
TRANSMIT CURRENT         Up to 580 mA         88 - 480 mA           PIN SLEEP POWER-DOWN         18 mA         17 mA           IDLE CURRENT (VARIOUS CYCLIC SLEEP INTERVALS)         19 - 39 mA         21 - 35 mA (Self Power)           SERIAL PORT SLEEP POWER-DOWN         45mA         45mA         45mA           GENERAL         CONNECTION OPTIONS         RS - 232/422/485, DB-9         USB           DIMENSIONS (L X W X H)         2.75 in x 5.50 in x 1.13 in (6.99 cm x 13.97 cm x 2.86 cm)         2.75 in x 5.50 in x 1.13 in (6.99 cm x 13.97 cm x 2.86 cm)         (6.99 cm x 13.97 cm x 2.86 cm)           WEIGHT         7.10 oz (200 g)         7.10 oz (200 g)         7.10 oz (200 g)           OPERATING TEMPERATURE         -40° C to 85° C (industrial)         0° C to 70° C (commercial)           ANTENNA OPTIONS         RPSMA (Reverse Polarity SMA)         RPSMA (Reverse Polarity SMA)           IMPEDANCE         50 ohms unbalanced         50 ohms unbalanced           NETWORKING & SECURITY         55 M 902 - 928 MHz           SPPEAD SPECTRUM         FHSS (Frequency Hopping Spread Spectrum)           MODULATION         FSK (Frequency Shift Keying)           SUPPORTED NETWORK TOPOLOGIES         Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint           CHANNEL CAPACITY         10 hop sequences share 50 frequencies           ENCRY	SUPPLY VOLTAGE	7 - 28V	7 - 28V	
PIN SLEEP POWER-DOWN 18 mA 17 mA  IDLE CURRENT (NARIOUS CYCLIC SLEEP INTERVALS) 19 - 39 mA 21 - 35 mA (Self Power)  SERIAL PORT SLEEP POWER-DOWN 45 mA 45 mA  GENERAL  CONNECTION OPTIONS RS-232/422/485, DB-9 USB  DIMENSIONS (L X W X H) (6.99 cm x 13.97 cm x 2.86 cm) (6.99 cm x 13.97 cm x 2.86 cm) (6.99 cm x 13.97 cm x 2.86 cm)  WEIGHT 7.10 oz (200 g) 7.10 oz (200 g) 7.10 oz (200 g)  OPERATING TEMPERATURE 40° C to 85° C (industrial) 0° C to 70° C (commercial)  ANTENNA OPTIONS RPSMA (Reverse Polarity SMA) RPSMA (Reverse Polarity SMA)  IMPEDANCE 50 ohns unbalanced 50 ohns unbalanced 50 ohns unbalanced  NETWORKING & SECURITY  OPERATING FREQUENCY ISM 525 (Frequency Hopping Spread Spectrum)  MODULATION FSK (Frequency Hopping Spread Spectrum)  MODULATION FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY 10 hop sequences share 50 frequencies  ENCRYPTION 256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247 MCQ-XBPSX  INDUSTRY CANADA (IC) 1446A-XBPSX	RECEIVE CURRENT	110 mA	100 mA (Self Power)	
DILE CURRENT (NARIOUS CYCLIC SLEEP INTERVALS)   19 - 39 mA	TRANSMIT CURRENT	Up to 580 mA	88 - 480 mA	
19-39 mA   21-35 mA (Self Power)	PIN SLEEP POWER-DOWN	18 mA	17 mA	
GENERAL  CONNECTION OPTIONS  RS-232/422/485, DB-9  USB  DIMENSIONS (L X W X H)  2.75 in x 5.50 in x 1.13 in (6.99 cm x 13.97 cm x 2.86 cm)  (6.99 cm x 13.97 cm x 2.86 cm)  WEIGHT  7.10 oz (200 g)  7.10 oz (200 g)  OPERATING TEMPERATURE  40° C to 85° C (industrial)  ANTENNA OPTIONS  RPSMA (Reverse Polarity SMA)  IMPEDANCE  50 ohms unbalanced  50 ohms unbalanced  50 ohms unbalanced  NETWORKING & SECURITY  OPERATING FREQUENCY  SPREAD SPECTRUM  FHSS (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX		19 - 39 mA	21 - 35 mA (Self Power)	
CONNECTION OPTIONS  RS-232/422/485, DB-9  DIMENSIONS (L X W X H)  2.75 in x 5.50 in x 1.13 in (6.99 cm x 13.97 cm x 2.86 cm)  (6.99 cm x 13.97 cm x 2.86 cm)  WEIGHT  7.10 oz (200 g)  7.10 oz (200 g)  7.10 oz (200 g)  OPERATING TEMPERATURE  -40° C to 85° C (industrial)  NETWORKING & SECURITY  OPERATING FREQUENCY  ISM 902 - 928 MHz  SPREAD SPECTRUM  FHSS (Frequency Hopping Spread Spectrum)  MODULATION  FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1276 in x 5.50 in x 1.13 in (6.99 cm x 2.85 in x 5.50 in x 1.13 in (6.99 cm x 2.86 cm)  2.75 in x 5.50 in x 1.13 in (6.99 cm x 2.86 cm)  (6.99 cm x 13.97 cm x 2.86 cm)  (6.90 cm x 10.97 cm)	SERIAL PORT SLEEP POWER-DOWN	45mA	45mA	
DIMENSIONS (L X W X H)  2.75 in x 5.50 in x 1.13 in (6.99 cm x 13.97 cm x 2.86 cm)  (6.99 cm x 13.97 cm x 2.86 cm)  WEIGHT  7.10 oz (200 g)  7.10 oz (200 g)  7.10 oz (200 g)  OPERATING TEMPERATURE  40° C to 85° C (industrial)  O° C to 70° C (commercial)  ANTENNA OPTIONS  RPSMA (Reverse Polarity SMA)  RPSMA (Reverse Polarity SMA)  IMPEDANCE  50 ohms unbalanced  50 ohms unbalanced  NETWORKING & SECURITY  OPERATING FREQUENCY  ISM 902 - 928 MHz  SPREAD SPECTRUM  FHSS (Frequency Hopping Spread Spectrum)  MODULATION  FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	GENERAL			
MEIGHT   C1.00 x (2.00 g)   C1	CONNECTION OPTIONS	RS-232/422/485, DB-9	USB	
OPERATING TEMPERATURE  -40° C to 85° C (industrial)  O° C to 70° C (commercial)  RPSMA (Reverse Polarity SMA)  RPSMA (Reverse Polarity SMA)  IMPEDANCE  50 ohms unbalanced  50 ohms unbalanced  50 ohms unbalanced  NETWORKING & SECURITY  OPERATING FREQUENCY  ISM 902 - 928 MHz  SPREAD SPECTRUM  FHSS (Frequency Hopping Spread Spectrum)  MODULATION  FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	DIMENSIONS (L X W X H)			
ANTENNA OPTIONS  RPSMA (Reverse Polarity SMA)  RPSMA (Reverse Polarity SMA)  RPSMA (Reverse Polarity SMA)  SO ohms unbalanced  50 ohms unbalanced	WEIGHT	7.10 oz (200 g)	7.10 oz (200 g)	
IMPEDANCE 50 ohms unbalanced 50 ohms unbalanced  NETWORKING & SECURITY  OPERATING FREQUENCY ISM 902 - 928 MHz  SPREAD SPECTRUM FHSS (Frequency Hopping Spread Spectrum)  MODULATION FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY 10 hop sequences share 50 frequencies  ENCRYPTION 256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247 MCQ-XBPSX  INDUSTRY CANADA (IC) 1846A-XBPSX	OPERATING TEMPERATURE	-40° C to 85° C (industrial)	0° C to 70° C (commercial)	
NETWORKING & SECURITY  OPERATING FREQUENCY  ISM 902 - 928 MHz  SPREAD SPECTRUM  FHSS (Frequency Hopping Spread Spectrum)  MODULATION  FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	ANTENNA OPTIONS	RPSMA (Reverse Polarity SMA)	RPSMA (Reverse Polarity SMA)	
OPERATING FREQUENCY  SPREAD SPECTRUM  FHSS (Frequency Hopping Spread Spectrum)  MODULATION  FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	IMPEDANCE	50 ohms unbalanced	50 ohms unbalanced	
SPREAD SPECTRUM  FHSS (Frequency Hopping Spread Spectrum)  FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	NETWORKING & SECURITY			
MODULATION FSK (Frequency Shift Keying)  SUPPORTED NETWORK TOPOLOGIES Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY 10 hop sequences share 50 frequencies  ENCRYPTION 256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247 MCQ-XBPSX  INDUSTRY CANADA (IC) 1846A-XBPSX	OPERATING FREQUENCY	ISM 902 - 928 MHz		
SUPPORTED NETWORK TOPOLOGIES  Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint  CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	SPREAD SPECTRUM	FHSS (Frequency Hopping Spread Spectrum)		
CHANNEL CAPACITY  10 hop sequences share 50 frequencies  ENCRYPTION  256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247  MCQ-XBPSX  INDUSTRY CANADA (IC)  1846A-XBPSX	MODULATION	FSK (Frequency Shift Keying)		
ENCRYPTION 256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))  AGENCY APPROVALS  FCC PART 15.247 MCQ-XBPSX  INDUSTRY CANADA (IC) 1846A-XBPSX	SUPPORTED NETWORK TOPOLOGIES	Peer-to-Peer (no master/slave dependencies), Point-to-Point, Point-to-Multipoint		
AGENCY APPROVALS  FCC PART 15.247 MCQ-XBPSX INDUSTRY CANADA (IC) 1846A-XBPSX	CHANNEL CAPACITY	10 hop sequences share 50 frequencies		
FCC PART 15.247 MCQ-XBPSX INDUSTRY CANADA (IC) 1846A-XBPSX	ENCRYPTION	256-bit AES Encryption (AES algorithm meets Federal Information Processing Standard-197 (FIPS-197))		
INDUSTRY CANADA (IC) 1846A-XBPSX	AGENCY APPROVALS			
	FCC PART 15.247	MCQ-XBPSX		
AUSTRALIA RCM	INDUSTRY CANADA (IC)	1846A-XBPSX		
	AUSTRALIA	RCM		



<sup>\*</sup>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.



PART NUMBERS	DESCRIPTION
XTP9B-PKI-R	XTend Replacement, PKG, Serial, North America
XTP9B-PKI-RA	XTend Replacement, PKG, Serial, w/ Accessories, North America
XTP9B-PKI-RA-NL	XTend Replacement, PKG, Serial, w/ Accessories, No label, North America
XTP9B-PKI-RA-NA	XTend Replacement, PKG, Serial, w/ Accessories, 128-bit AES, North America
XTP9B-PKC-UA	XTend Replacement, PKG, USB, w/ Accessories, North America
XTPH9B-PKI-RA-NA	XTend Replacement, PKG, RS232/485, Includes Accessories, 128-bit AES, Australia



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