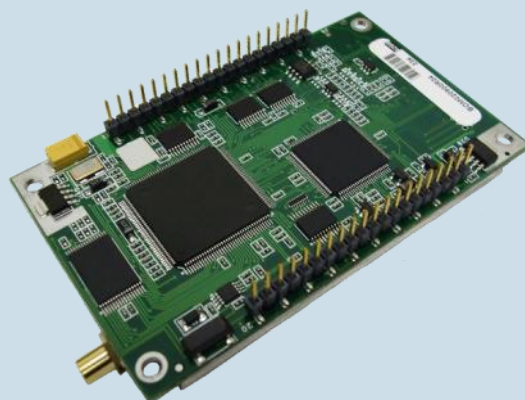# MHX920A

microhard SYSTEMS INC.

900 MHz OEM Industrial Wireless Modem

The MHX920A is a 902 - 928 MHz Frequency Hopping Spread Spectrum Modem, which can be optimized for long distance communication over 60 miles (100km). MHX920A radios offer the fastest communication over the longest distances

Applications

- *SCADA (PLCs, MODBUS), Telemetry*
- *Commercial Communications*
- *GPS Vehicle Data/Tracking, DGPS*
- *Electric, Oil & Gas Sensors/Detection*
- *Display Signs*
- *Transparent Low Latency Communication*

Microhard Systems Inc.'s proprietary radio technology excels in the most demanding RF and physical environments.

The MHX920A features robust, low latency, secure data communications. It has full serial port and separate diagnostics port for real-time diagnostics without interrupting data communications. Excellent noise figure, superior interference rejection, very agile frequency synthesis, digital modulation, and matched filter detection, are among the many advantages to using the MHX920A.

Features of the MHX920A

- Transparent, low latency link, providing 230 kbps continuous throughput to support protocols such as MODBUS
- Communicates with virtually all PLCs, RTUs, and serial devices
- Industrial Grade - extended temperature specification
- Supports Point-to-Point, Point-to-Multipoint, Peer-to-Peer, Store and Forward Repeater, TDMA, Multimaster
- Maximum allowable transmit power (1W)
- Low power consumption in Sleep Mode and High Voltage Option
- 32 bits of CRC, selectable Forward Error Correction with retransmission
- Separate diagnostics port - transparent remote diagnostics and online network control
- Footprint backwards compatible with MHX910 and MHX920

MHX920A HV Option

MHX920A

Specifications

microhard SYSTEMS INC.

Frequency	902 - 928 MHz
Spreading Method	Frequency Hopping
Band Segments	Selectable via Freq. Restriction
Error Detection	32 bits of CRC, ARQ
Encryption	Optional (Canada & USA only. NOT AVAILABLE for export, see –AES option)
Range	60+ miles (100+ km) (dependant on link rate and line of sight)
Sensitivity	-108dBm @ 172kbps link rate -116dBm @ 19.2kbps link rate (also see –SL/-SL1 options)
System Gain	142dB (w/rubber duck antennas)
Serial Interface	RS232/RS485/RS422 TTL Driver Level (see –HV option)
Serial Baud Rate	300bps to 230.4kbps
Link Rate	19.2 kbps - 230.4kbps (See Order Options)
Operating Modes	Point-to-Point, Point-to-Multipoint, Store & Forward Repeater, Peer-to-Peer, TDMA, Multimaster
Signals Interface	RxD1, TxD1, RTS, CTS, DCD, DSR, DTR, RxD2, TxD2, RSSI LEDs, Tx/Rx LEDs, Reset, Config, Wake-up, RSmode
Diagnostics	Battery Voltage, Temperature, RSSI, and remote diagnostics
Rejection	Excellent strong signal interference & rejection characteristics
Core Voltage	4.0VDC to 5.5VDC, 7VDC to 30VDC (see –HV option)
I/O Voltage (user selectable)	3.3VDC to 5.5VDC; RS232/485/422 levels (See –HV option)

Antenna Connector	MCX
Environmental	-40°F - +185°F (-40°C - +85°C) 5-95% humidity, noncondensing
Weight	Approx. 2oz. (55 grams)
Dimensions	Approx. 3.5" x 2.1" x .7" (89mm x 53.4mm x 17.8mm)
Approvals	FCC Part 15.247 IC RSS210

Order Options

-FT	Standard FAST Mode 115kbps - 230.4kbps
-FT1	Extended FAST mode 115kbps - 345.6kbps
-SL	Extended sensitivity / SLOW Mode 19.2kbps - 230.4kbps
-SL1	Extended sensitivity / SLOW Mode + Removes fast receiver 19.2 kbps operation only
-C1D2	Class 1 Div 2 (for use in hazardous environments)
-AES	128-AES Encryption (Canada & USA only. NOT AVAILABLE for export)
-AU	Australian Hop Tables (915 - 928MHz)
-NZ	New Zealand Hop Tables (921 - 929MHz)
-HV	HV Option - High input voltage (12V to 30V) with RS232/485/422 Drivers

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