

Nano Series - n920



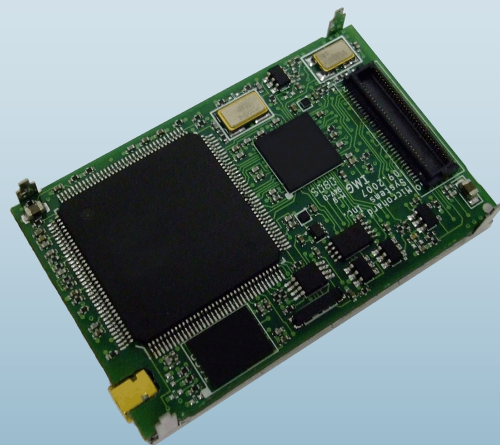
Miniature 900 MHz Wireless Modem

For size conscious consumers, consider the Nano Series with its small footprint and design flexibility. The Nano Series offers the reliability, features, and performance of our larger modems, yet can fit almost anywhere! Fully compatible with MHX series radio modems!

Applications

- Robotics
- Remote Telemetry, DGPS
- Electric, Oil & Gas Sensors/Detection
- Display Signs
- Small Enclosure Communication Devices
- Industrial Communications

Weights only 18 grams!



2" X 1.25" X 0.25"

**Features an Input IP3
with more linearity
than most spectrum
analyzers!**

The Nano Series features robust, high speed, low latency, secure data communications. The n920 has full serial and diagnostics data capabilities and is 'radio compatible' with 910/910A and 920/920A modems! The n920 offers excellent noise figure, superior interference rejection, agile frequency synthesis, digital modulation, and matched filter detection. The n920 can support 1.2Mbps and higher!

Features of the n920

- Supports up to 1.2Mbps (higher rates available, contact Microhard for details)
- Quad Filter Stage provides Extreme Noise & Interference Rejection
- Supports Point-to-Point, Point-to-Multipoint, Store and Forward Repeater, TDMA
- Maximum allowable transit power (1W)
- Low Power consumption in Sleep and Sniff modes
- 32 bits of CRC, selectable Forward Error Correction with retransmit
- Separate diagnostics port—transparent remote diagnosis and online network control
- Very Small Footprint
- MHX910 and MHX920A compatible interface card available

Interface Options

Enclosed Solution



Motherboard Solution

Nano n920

Specifications

Frequency	902-928 MHz	Power Consumption (3.3V +/- 0.3V)	Sleep	< 1mA
Spreading Method	Frequency Hopping / DTS		Idle	20mA
Band Segments	Selectable via Freq Restriction		Rx:	140mA to 280mA
Forward Error Detection	Hamming BCH Golay Reed-Solomon		Tx :	1000mA to 1500mA
Error Detection	32 bits of CRC, ARQ	(12V with Development board/Enclosed Unit)	Sleep	< 1mA
Encryption	Optional (see -AES option)		Rx:	50mA to 95mA
Range	60+ miles (100+ km)	Connectors:	Master Avg Tx/Rx:	140mA
Sensitivity	n920T -100 dBm @ 10 ⁻⁴ n920F -108 dBm @ 10 ⁻⁶		OEM Antenna Data	Slave Avg Tx/Rx:
Output Power	100mW - 1W (20-30dBm)	Enclosed Antenna Data	Tx :	300mA to 450mA
Serial Interface	TTL	Environmental	MMCX 60 Pin OEM Header	
Serial Baud Rate	- Up to 230.4 kbps asynchronous - Up to 3.2 Mbps synchronous		RP-SMA Female Bulkhead Female DB9 x2	
Link Rate	Up to 1.3824 Mbps (higher rates available, contact Microhard for details)	Weight		-40°C - +85°C (All units are fully tested over the entire temperature Range)
Operating Modes	Point-to-Point, Point-to-Multipoint, Store & Forward Repeater, Peer-to-Peer	OEM	Approx. 18 grams	
Signals Interface	RxD1, TxD1, RTS, CTS DCD, DSR, DTR, RxD2, TxD2, RSSI LEDs, Tx/Rx LEDs, Reset, Config, Wake-up, RSmode	Enclosed	Approx. 210 grams	
Input IP3 (Antenna Connector)	+12 dBm	Dimensions		OEM Approx. 1.25" x 2.0" x .25" (32mm x 51mm x 6.35mm) Enclosed Approx. 2.25" x 3.85" x 1.50" (57mm x 98mm x 38mm)
RF Selectivity	Adjacent Channel 60 dB Alternate Channel 75 dB Out of Band >90 dB	Approvals		FCC Part 15.247 IC RSS210 RoHS Compliant
Remote Diagnostics	VSWR, Battery Voltage, Temperature, RSSI, Packet Statistics	Order Options		
Core Voltage	OEM 3.3VDC Nominal (+/- 0.3V) Enclosed 7-30VDC	MHS113060(OEM)/MHS114060(ENC)	n920LC - Low Cost (115 kbps)	
		MHS113020(OEM)/MHS114020(ENC)	n920F - Fast	
		MHS113040(OEM)	n920T - Turbo	
		-AES	128-bit AES Encryption (requires permit for export outside of Canada and USA.)	
		-AES256	256-bit AES Encryption (requires permit for export outside of Canada and USA.)	
		-C1D2	Class 1 Div 2 (for use in hazardous environments) (<i>Enclosed models only</i>)	
		-869	869.4 MHz - 869.65 MHz Operation	
		-865	865 MHz - 867 MHz Operation	

Contact Information

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