IPn920

Miniature OEM Wireless Ethernet/Serial/USB Gateway

The Nano IP Series adds Ethernet capability to the miniature, yet powerful Nano platform. This incredibly small Ethernet Bridge and Serial Gateway provides robust wireless communication of simultaneous serial data and IP/Ethernet packets to extend serial data and IP networks.

Applications

- *IP/Ethernet Wireless Extension*
- *Legacy Networks/Devices Migration*
- *Video/Voice over IP*
- *SCADA (PLCs, Modbus, HART)*
- *GPS Vehicle Data/Tracking, DGPS*

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

Weighs only 25 grams!

2" X 1.25" X 0.5"

World's Smallest Ethernet /Serial/USB Gateway!

The Nano IP platform is the smallest form factor (2" x 1.25" x .5", weighing only 25 grams) available which offers a full Ethernet/ Serial/USB bridge and routing functionality. The Nano IP OEM module can be directly integrated into OEM systems or applications using a variety of interface options. With the LAN out interface ready to wire directly to CAT5 cable OEMs can integrate this unit quickly and efficiently. The Nano IP Series also features flexible maintenance utilities, secure firewall features and network management facilities. Robust Frequency Hopping with excellent receiver sensitivity and interference rejection allow for

Features of the Nano IP Series

- Low Power Consumption
- Up to 1.2 Mbps Wireless Link Rate
- Master, Slave, Repeater operation in a single unit
- 2 Serial Com Ports, 1 USB Port, and 1 Ethernet Port
- Supports Point-to-Point, Point-to-Multipoint, Repeater, Peer-to-Peer
- Adjustable transmit power (100mW - 1W)
- Radius Server Support
- Full VLAN Support (for separate management and Data networking)
- User interface through local console, telnet, and web browser
- Network management capability with SNMP V1, V2, V3
- Local and remote wireless firmware upgrading through FTP
- QoS Routing on Serial, IP, or Logic Ports

Interface Options

Enclosed Solution

Motherboard Solution

◆ VLAN ◆ RADIUS ◆ QoS ◆ HTTPS ◆ USB ◆ Firewall

IPn920 Specifications

Frequency	902 - 928 MHz
Spread Method	Frequency Hopping / DTS
Link Rate	Up to 1.2Mbps (See Order Options)
Error Detection	32 bits of CRC, ARQ
Encryption	128-bit WEP/WPA (Canada & USA only. NOT AVAILABLE for export, see –AES option)
Range	Up to 30+ miles (50+ km) @ 1.2Mbps Up to 60+ miles (100+ km) @ 172kbps
Sensitivity	-108dBm@172kbps link rate -106dBm @ 230kbps link rate -97dBm @ 1.2Mbps link rate
Output Power	100mW - 1W (20-30dBm)
Serial Interface	RS232, RS485, RS422
Serial Baud Rate	300bps to 921kbps
USB	USB 2.0 USB Console Port USB to Serial Data Routing USB to Ethernet Data Routing
Ethernet	10/100 BaseT, Auto - MDI/X IEEE 802.3
Network Protocols	TCP, UDP, TCP/IP, TFTP, ARP, ICMP, DHCP, HTTP, HTTPS*, SSH*, SNMP, FTP, DNS, Serial over IP, QoS (* Only available in –AES)
Operating Modes	Point-to-Point, Point-to-Multipoint, Store & Forward Repeater, Peer-to-Peer
Management	Local Serial Port Console, Telnet, WebUI, SNMP, FTP & Wireless Upgrade, RADIUS authentication, VLAN
Diagnostics	Battery Voltage, Temperature, RSSI, and remote diagnostics
Rejection	Excellent strong signal interference & rejection characteristics
Input IP3 (Antenna Connector)	+12 dBm

Input Voltage	
OEM	3.3VDC Nominal (+/- 0.3V)
Enclosed	7-30VDC
Interface Card	7-30VDC
Power Consumption (Typical with n920F @ 12V with Motherboard)	Sleep: < 1mA Idle: 35mA Rx: 110mA to 145mA Tx: 350mA to 500mA
Connectors:	
OEM	
Antenna	OEM - MMCX
Data	OEM - 60 Pin OEM Header x2
Enclosed	
Antenna	RPSMA Female Bulkhead
Data	RJ-45 (Ethernet) Female DB9 Mini-USB
Environmental	
Temperature	-40°F to 185°F (-40°C to +85°C)
Humidity	5-95%, non-condensing
Weight (Including Radio)	
OEM	Approx. 25 grams
Enclosed	Approx. 250 grams
w/ Interface Board	Approx. 70 grams
Dimensions	
OEM	Approx. 1.25” x 2.0” x .50” (32mm x 51mm x 13mm)
Enclosed	Approx. 2.25” x 3.85” x 1.50” (57mm x 98mm x 38mm)
Approvals	FCC Part 15.247 IC RSS210

Order Options

-C1D2	Class 1 Div 2 (for use in hazardous environments)
-AES	128/256-bit AES Encryption, Secure Shell, HTTPS (Canada & USA only. NOT AVAILABLE for export)
-EXP	Export Version, removes encryption
IPn920T **IPn920X2**	345kbps - 1.2Mbps 19.2kbps - 345kbps

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