

Nano IP Series IPn2420



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.

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

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 long range, high speed communications.



Weighs only 25grams!

2" X 1.25" X 0.5"

World's Smallest Ethernet//Serial/USB Gateway!

Features of the IPn2420

- Low Power Consumption
- Up to 1.2 Mbps Wireless Link Rate*
- Multicast Support
- Master, Slave, Repeater operation in a single unit
- HV Option provides a quick wiring solution with Ethernet and Serial Levels and Power (7-30 VDC)
- 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

*** For Faster Link Rates Contact Microhard**

Interface Options

Enclosed Solution



Motherboard Solution



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

IPn2420

Specifications

Frequency	2.4000 - 2.4835 GHz	Input Voltage	OEM Enclosed Interface Card	3.3VDC Nominal (+/- 0.3V) 7-30VDC 7-30VDC
Spread Method	Frequency Hopping / DTS	Connectors:	OEM Antenna Data Enclosed Antenna Data	OEM - MMCX OEM - 60 Pin OEM Header x2 RPSMA Female Bulkhead RJ-45 (Ethernet) Female DB9 Mini-USB
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 15+ miles (25+ km) @ 1.2Mbps Up to 30+ miles (50+ km) @ 172kbps	Environmental	Temperature Humidity	-40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing
Sensitivity	-107 @ 172kbps link rate -97 @ 1.2Mbps link rate	Weight (Including Radio)	OEM Enclosed w/ Interface Board	Approx. 25 grams Approx. 250 grams Approx. 70 grams
Output Power	100mW - 1W (20-30dBm)	Dimensions	OEM Enclosed	Approx. 1.25" x 2.0" x .50" (32mm x 51mm x 13mm) Approx. 2.25" x 3.85" x 1.50" (57mm x 98mm x 38mm)
Serial Interface	RS232, RS485, RS422			
Serial Baud Rate	300bps to 921kbps	Approvals	FCC Part 15.247 IC RSS210	
USB	USB 2.0 USB Console Port USB to Serial Data Routing USB to Ethernet Data Routing	Order Options		
Ethernet	10/100 BaseT, Auto - MDI/X IEEE 802.3	-C1D2	Class 1 Div 2 (for use in hazardous environments)	
Network Protocols	TCP, UDP, TCP/IP, TFTP, ARP, ICMP, DHCP, HTTP, HTTPS*, SSH*, SNMP, FTP, DNS, Serial over IP, QoS (* Only available in -AES)	-AES	128/256-bit AES Encryption, Secure Shell, HTTPS (Canada & USA only. NOT AVAILABLE for export)	
Operating Modes	Point-to-Point, Point-to-Multipoint, Store & Forward Repeater, Peer-to-Peer	-EXP	Export Version, removes encryption	
Management	Local Serial Port Console, Telnet, WebUI, SNMP, FTP & Wireless Upgrade, RADIUS authentication, VLAN	IPn2420F IPn2420T	115kbps - 230kbps 1.2Mbps	
Diagnostics	Battery Voltage, Temperature, RSSI, and remote diagnostics			
Rejection	Excellent strong signal interference & rejection characteristics			
Input IP3 (Antenna Connector)	+12 dBm			

Contact Information

Copyright 2020 Microhard Systems Inc.
Specifications subject to change without notice.

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca



www.microhardcorp.com

1W 900 MHz Wireless Ethernet/Serial/USB Gateway

The Nano IP Turbo Series delivers a high power (1W) wireless link with speeds of up to 1.2 Mbps. The IPn920T operates in the license free 900 MHz Frequency Band, offering an off the shelf solution for reliable wireless communications. This robust and compact Ethernet Bridge and Serial Gateway provides simultaneous serial data and Ethernet communication to extend Serial & IP networks.

Up to 1.2 Mbps

900 MHz

Up to 1 Watt

RS232/485 Serial Data

10/100 Ethernet Data



IPn920T Features

- Supports up to 1.2 Mbps
- Up to 1W transmit power (Adjustable)
- Point-to-Point, Point-to-Multipoint, Repeater, Peer-to-Peer
- Master, Remote & Repeater Modes
- 2 Series Data Ports, 1 USB Port, and 1 Ethernet Port
- Industrial Temperature (-40°C to +85°C)
- Low Power consumption
- Radius Authentication
- Full VLAN Support
- Local and remote management & diagnostics through local console, telnet, WebUI, SNMP (v1,2,3)
- Local and remote firmware updates
- Compact & Robust Design



Specifications

Frequency	902 - 928 MHz	Input Voltage	7-30VDC
Spread Method	Frequency Hopping / DTS	Power Consumption (Typical@ 12V)	Sleep: < 1mA Idle: 35mA Rx: 110mA to 145mA Tx: 350mA to 500mA
Link Rate	276 kbps / 345 kbps / 1.2 Mbps (User Selectable)		
Error Detection	32 bits of CRC, ARQ	Connectors:	Antenna: RPSMA Female Bulkhead Ethernet: RJ-45 Serial: 2x Female DB9 USB: Mini
Encryption	128-bit WEP/WPA (Canada & USA only. NOT AVAILABLE for export, see -AES option)		
Range	Up to 30+ miles (50+ km) @ 1.2Mbps	Environmental	Temperature: -40°F to 185°F (-40°C to +85°C) Humidity: 5-95%, non-condensing
Sensitivity	-97dBm @ 1.2Mbps link rate	Weight	Approx. 250 grams
Output Power	100mW - 1W (20-30dBm)	Dimensions	Approx. 2.25" x 3.85" x 1.50" (57mm x 98mm x 38mm)
Serial Interface	RS232, RS485, RS422	Approvals	FCC / Industry Canada
Serial Baud Rate	300bps to 921kbps		
USB	USB 2.0 USB Console Port USB to Serial Data Routing USB to Ethernet Data Routing	Order Options	
Ethernet	10/100 BaseT, Auto - MDI/X IEEE 802.3	-UL	UL HazLoc (for use in hazardous environments)
Network Protocols	TCP, UDP, TCP/IP, TFTP, ARP, ICMP, DHCP, HTTP, HTTPS*, SSH*, SNMP, FTP, DNS, Serial over IP, QoS (* Only available in -AES)	-AES	128/256-bit AES Encryption, Secure Shell, HTTPS (Canada & USA only. NOT AVAILABLE for export)
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		

Contact Information

Copyright 2020 Microhard Systems Inc.
Specifications subject to change without notice.

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca



www.microhardcorp.com

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

IPn920

Specifications

Frequency	902 - 928 MHz	Input Voltage	OEM Enclosed Interface Card	3.3VDC Nominal (+/- 0.3V) 7-30VDC 7-30VDC
Spread Method	Frequency Hopping / DTS	Power Consumption (Typical with n920F @ 12V with Motherboard)		Sleep: < 1mA Idle: 35mA Rx: 110mA to 145mA Tx: 350mA to 500mA
Link Rate	Up to 1.2Mbps (See Order Options)	Connectors:	OEM Antenna Data Enclosed Antenna Data	OEM - MMCX OEM - 60 Pin OEM Header x2 RPSMA Female Bulkhead RJ-45 (Ethernet) Female DB9 Mini-USB
Error Detection	32 bits of CRC, ARQ	Environmental	Temperature Humidity	-40°F to 185°F (-40°C to +85°C) 5-95%, non-condensing
Encryption	128-bit WEP/WPA (Canada & USA only. NOT AVAILABLE for export, see -AES option)	Weight (Including Radio)	OEM Enclosed w/ Interface Board	Approx. 25 grams Approx. 250 grams Approx. 70 grams
Range	Up to 30+ miles (50+ km) @ 1.2Mbps Up to 60+ miles (100+ km) @ 172kbps	Dimensions	OEM Enclosed	Approx. 1.25" x 2.0" x .50" (32mm x 51mm x 13mm) Approx. 2.25" x 3.85" x 1.50" (57mm x 98mm x 38mm)
Sensitivity	-108dBm@172kbps link rate -106dBm @ 230kbps link rate -97dBm @ 1.2Mbps link rate	Approvals		FCC Part 15.247 IC RSS210
Output Power	100mW - 1W (20-30dBm)	Order Options		
Serial Interface	RS232, RS485, RS422	-C1D2		Class 1 Div 2 (for use in hazardous environments)
Serial Baud Rate	300bps to 921kbps	-AES		128/256-bit AES Encryption, Secure Shell, HTTPS (Canada & USA only. NOT AVAILABLE for export)
USB	USB 2.0 USB Console Port USB to Serial Data Routing USB to Ethernet Data Routing	-EXP		Export Version, removes encryption
Ethernet	10/100 BaseT, Auto - MDI/X IEEE 802.3	IPn920T IPn920X2		345kbps - 1.2Mbps 19.2kbps - 345kbps
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			

Contact Information

Copyright 2020 Microhard Systems Inc.
Specifications subject to change without notice.

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca



www.microhardcorp.com