



CR-HN Series Serial Radio Modems



CR-HN04
Integrated antenna

Serial Radio solution

AUTOMATIONDIRECT's CR-HN series serial radios are versatile, low cost, 2.4 GHz frequency-hopping spread spectrum wireless data modems. The CR-HN radios are ideal for SCADA applications as remote modems in multipoint configurations and are an extremely cost-effective solution for point-to-point installations.

A DIN-rail mounted Serial Adapter Box, one of the major components of the CR-HN series, resides in the control panel while the NEMA 4X radio module is mounted externally to the control panel to achieve the best line-of-sight link to the other radio antennas in the system. For most purposes, the CR-HN radio module incorporates an integral 6dB antenna, creating a "single piece" modem. The integral 6dB patch antenna provides a line-of-sight range of several miles. For extended distances or in obstructed environments, higher gain and/or directional antennas are available. A standard serial cable connects the communicating device to the CR-HN serial adapter. Similar "serial-quality" cabling is used for the link between the serial adapter and radio module. In most cases, no expensive, troublesome RF quality cabling is required. The CR-HN radio module simply installs on the side of a building or attaches to a mast where the antenna would normally be mounted.

When using a specialty antenna, a short, pre-manufactured, RF cable connects the antenna to the radio module. The Serial Adapter Box accepts 10-30 VDC via a removable screw terminal plug. An adapter is provided for connection to a standard 120 VAC receptacle. The radio module is powered over the cable linking the radio module to the serial adapter.

The CR-HN series has exceptional multipath fade rejection as well as immunity to jamming. Up to 16 networks can be grouped together with 63 remotes (slaves) per network. The HN series radios have a unique "Frequency Skip" feature to avoid the standard 802.11 wireless WI-FI Ethernet channels. This means your control radios will not interfere with or suffer interference from PC wireless networks that may be grouped together. Selectable transmit power levels of 10 mW and 100 mW allow the CR-HN series to be used worldwide even with the gain of the patch antenna. The CR-HN series radios communicate over the air at 460.8 kbps and support both point-to-point and point-to-multipoint networks.

They are field proven performers that deliver robust, reliable performance in hostile industrial environments. The CR-HN series is UL, FCC and CE marked.

Features:

- 2.4 GHz Frequency Hopping Spread Spectrum Technology
- Unique "Frequency Skip" setting to avoid 802.11 Wireless Ethernet LANs
- 460 kbps over the air and 115 kbps I/O data rates
- 64 hopping patterns
- FCC Certified and CE marked
- Integral 6dB patch antenna
- RS-232 asynchronous serial interface
- Transparent and Modbus support modes

Benefits:

- Exceptional immunity to multipath fading and jamming
- Grouping of multiple networks
- No interference with/from 802.11 Wireless Ethernet networks
- License-free applications
- Cost-effective, simple installation
- Connects to PC Serial ports
- Point to point and point to multipoint

CR-HN Series Serial Radio Modems		
Part Number	Description	Price
CR-HN50	Hop-Net radio with 50ft cable and integral antenna	<--->
CR-HN50X	Hop-Net radio with 50ft cable and external antenna connector	<--->
CR-HN04	Hop-Net radio with 4ft cable and integral antenna	<--->
CR-HN04X	Hop-Net radio with 4ft cable and external antenna connector	<--->
CR-HNSA	Replacement Serial Adapter for all CR radios	<--->
CR-OMN2402	Replacement Dipole Antenna, 2.4GHz, 2dB, right angle	<--->
CR-OMN2409	9dB, 2.4 GHz, Omni Antenna	<--->
CR-CRN2409	9dB, 2.4 GHz, Corner Reflector Antenna	<--->
CR-PAR2418	18dB, 2.4 GHz, Parabolic Dish Antenna	<--->
CR-CBL24N	24" RF Cable, Reverse TNC to N connects an external antenna to a CR radio	<--->
CR-CBL60N	60" RF Cable, Reverse TNC to N connects an external antenna to a CR radio	<--->
CR-REPETR	Dual radio repeater with rechargeable lead-acid battery. Requires two CR series antennas and two series CR-CBLxxN RF cables. Non-stock item, 3 week delivery.	<--->

Serial Radio Modem Specifications



CR-HN04X

Reverse TNC male connector
requires CR series antenna



CR-HN04

Integrated
antenna

CR-HN Series Specification	
Electrical Specifications	
Frequency Band	2.4 GHz
Licensing	Unlicensed under FCC Part 15, ETSI 300.328
Number of Channels	75 or 25
Hopping Patterns	User configurable, 64 patterns (networks) available
I/O Data Rate	Up to 115.2 Kbps Asynchronous
RF Channel Rate	460 Kbps
Line of Sight Range	> 5 Miles
RF Bandwidth	750 KHz
Modulation Type	GFSK
Output Impedance	50 Ω
Network Protocol	Dynamically Assigned TDMA with ARQ
Transmit Power	EIRP: +16dBm/+24dBm
Receive Sensitivity	-99dBm
Power Requirements	10 - 30 VDC, 160 mA typical, 750 mA surge
Serial Data Interface	Asynchronous RS-232
Mechanical Specifications	
Antenna	CR-HN50 & CR-HN04: Integrated 6dB Patch CR-HN50X & CR-HN04X: Reverse TNC Male Connector, requires CR series antenna
Case Materials	Polycarbonate, NEMA 4X
Dimensions: in(mm)	5.13 (130) x 3.13 (79) x 1.38 (35) (excl. flange)
Weight excl. cable	235g
Data Connector	9-Pin D
Power Connector	2 Pin, plug-in, screw terminal
Cables	CR-HN04 comes with 4 feet of cable CR-HN50 comes with 50 feet of cable
LED Indicator	Power, Tx, Rx, Carrier Detect
Environmental Specifications	
Temperature Range	-30°C to 70°C (radio enclosure)
Humidity	95% at 40°C, Non-condensing
Approvals	
UL 508	
CE	