

# NCL900

## 900 MHz Unlicensed, Non-Line-of-Sight Point-to-Point Outdoor Wireless Bridge

[www.vecimanetworks.com](http://www.vecimanetworks.com)



Vecima Networks continues its leadership in the 900 MHz market with the newest member of the WaveRider Enterprise Backhaul family, the NCL900 Outdoor Wireless Bridge. It is designed for networks which require the propagation advantages of the 900 MHz license-exempt spectrum to establish robust high-speed point-to-point links.

Vecima Networks has assembled a kit with the components required for a fully configured “out of the box” solution for a wireless point-to-point link. The NCL900 also supports a full suite of IP management, Airlink encryption and radio configuration tools.

### NCL900 Point-to-Point Kit includes:

- One NCL900 Master station with integrated 10 dBi antenna
- One EUM3006 Subscriber station with integrated 10 dBi antenna
- Two PoE lightning arrestors
- One MDB1000 antenna alignment tool
- Two 48 VDC PoE injectors/power supplies

*Suggested List Price  
\$1,295 (USD)*

*Order SKU WR150-0902*

### NCL900 Features:

#### Integrated Smart Diversity Antenna

- Superior performance in non-line-of-sight environments
- High-gain (10 dBi) antenna enables the NCL900 to generate a maximum permissible +36 dBm transmitted power.

#### Weatherproof Package

- Tested to meet ETSI 300-019 environmental standards for outdoor installations, with an extended temperature range of -40 °C to 50 °C

#### Power over Ethernet (PoE)

- Powered by standard 48 VDC PoE (802.3af Mode B)

### NCL900 Advantages:

- Over-the-air data rates of 2.75 Mbps and access speeds of 2 Mbps
- Packet Prioritization — supports VoIP, video and data communications
- Extended temperature range of -40° C to 50° C
- Superior 900 MHz non-line-of-sight performance
- No spectrum license required
- Line of sight range of 50 miles (80 km)
- Non-line-of-sight range of 5 miles (8 km)
- Airlink Encryption—TKIP with 256 bit keys
- 27.3 dBm PEAK transmit power
- -89 dBm (BER<10<sup>-6</sup>) receiver sensitivity



## Radio Specifications

Link Type	Point-to-Point, Master connects to EUM3006 Station (see EUM3006 specifications)
Operating Frequency	902 to 928 MHz
Radio Access	DSSS w/ Dynamic Polling MAC & ARQ
Radio Modulation	Complementary Code Keying (CCK)
Peak Output Power	-27 to +16 dBm at antenna port (software selectable)
RF Rx Threshold	-89 dBm (BER<10 <sup>-6</sup> ) at antenna port, not including antenna gain
Minimum/Maximum Center Channel Frequency	905/925 MHz
Channel Bandwidth	5.5 MHz
Number of Channels / Center Frequency Spacing Increment	101 / 0.2 MHz
Orthogonal Channels	4
Orthogonal Channel Separation	6.6 MHz
Channel Selection	Static (Station will auto-discover master, can deny unauthorized access)
LED Indication with MDB1000	Power On, Signal Level, Signal Quality, Ethernet Link, Master (A)
Data Type	TCP/IP with QoS for VoIP
User Access Protocols	Telnet w/ Password
Management Protocols	RADIUS, DHCP, SNMP, NTP, ftp, Telnet

## Radio Performance

Maximum Over-the-Air Raw Data Rate	2.75 Mbps
User Data Rate	Up to 2.0 Mbps (user-definable)
Over-the-Air Encryption	User selectable - TKIP with 256 bit keys
Maximum Link Path Distance	Up to 50 miles (80 km) LOS First Fresnel Clearance

## Antenna Specification

Antenna Package	Integrated with modem in single outdoor package
Antenna Gain	10 dBi
Antenna Beam width	45 degrees for both Horizontal and Vertical Polarization
Front-Back Min. Ratio	15 dB
Diversity	Automatic Diversity Selection of Horizontal and Vertical Polarization per packet or User Selectable through CLI

## Power Specifications

Supply Type	48 VDC 802.3af Mode B compatible Power over Ethernet (PoE)
PoE Power Injector Input	Auto-sensing 100-240 VAC, 47-63 Hz
PoE Power Injector Output	48 VDC, 350 mA max
PoE Power Consumption (typical)	10 W with AC adapter; 6 W Radio Only

## Interface Specifications

Physical Interface	10BaseT RJ-45 HDX Ethernet Jack (TIA - T568A)
Power Over Ethernet	+48 VDC on pins 4 & 5 (pair 1) / 0 VDC on pins 7 & 8 (pair 4)
Max. Ethernet Cable Length	330 feet (100 m)

## Dimensions

L x W x H	16.25" x 8.25" x 3.5" (41.5 cm x 21 cm x 9 cm)
Weight	6.4 lb (2.9 kg)
Materials	Aluminum base, Plastic uV Protected Radome

## Environmental Specifications

Operating Temperature	-40 °C to 50 °C plus solar loading
Storage Temperature	-40 °C to 70 °C
Operating Humidity	0% to 95% RH (non-condensing @ 50 °C)
Standards	Compliant with ETSI-300-019-1-4, Class 4.1 with extended temp. range
Wind Loading	Better than 110 mph (180 kph) - maintains alignment to better than 56 mph (90 kph)
Ice Loading	Better than 1.25" (32 mm)
Mounting Interface	Mounts to any secure pole from 1" to 3" (2.5 cm to 7.6 cm)
Orientation	Mounts horizontally or vertically

## Approvals

Radio Transmitter	FCC Class A, CFR 47 Part 15. FCC IC: RSS210
Safety	UL, CSA

Vecima Networks' Continuous Improvement Policy means that specifications are subject to change without notice.



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