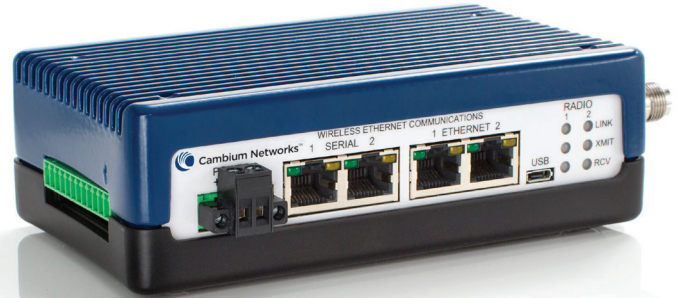


cnReach™ N500 900 MHz Radio

For outdoor critical infrastructure operations, *cnReach* transports process monitoring and control data from the remote sensor back to the operations center supporting real-time automated decision making and on-going analytics. Covering large geographic areas, hard to reach terrain and challenging spectrum environments, *cnReach* delivers reliable, secure connectivity to the petrochemical, electric utility, water/wastewater/stormwater and transportation industries. *cnReach* eases the migration to modern networks by combining legacy serial and analog/digital I/O with TCP/IP and Ethernet connectivity. Fully integrated into a 'single pane-of-glass' management platform (*cnMaestro™*) *cnReach* helps bridge the IT/OT sides of complex organizations. Combining *cnReach*'s licensed and unlicensed narrow-band radios with Cambium Networks' broadband technologies, industrial organizations are delivering end-to-end Industrial Internet of Things solutions today.



cnReach N500 900 MHz Radio

- Licensed and unlicensed 900 MHz (*cnReach* is also available in 700 MHz licensed)
- Secure communications with AES 128/256-bit encryption with password authentication
- Highly reliable communications with access point synchronization and adaptive modulation
- Single and dual radio configurations for advanced relay and store-and-forward applications.
- Extensive I/O capabilities easing the transition from serial to all-IP networks with multiple serial ports, Ethernet ports and analog/digital I/O built-in.
- Sophisticated network planning with LINKPlanner, a no-charge planning tool enabling network designers to predict both capacity and availability of networks crossing all of Cambium's technologies.
- Supported by *cnMaestro* software for monitoring the status of entire networks carrying traffic across sensors

PRODUCT	PRODUCT DESCRIPTION	MODEL NUMBERS
	N500 900 MHz Single	NB-N500910A-US
	N500 900 MHz Single with IO	NB-N500911A-US
	N500 900 MHz Dual	NB-N500920A-US
	N500 900 MHz Dual with IO	NB-N500921A-US
	N500 IO Expander	NB-N500001A-US

DEPLOYMENT TOPOLOGIES

Point to Point (PTP)
Point to Multipoint (PMP)
Repeater (REP) - Single or Dual Radio
Stand-alone IO Expander

RADIO PERFORMANCE		ISM MODE				MAS MODE			
Frequency Range		902 - 928 MHz				928 - 960 MHz			
Output Power		10 mW to 1 W (10 dBm to 30 dBm)				10 mW to 3 W (10 dBm to 34.8 dBm)			
Step Size		10 mW				10 mW			
Modulations		MSK / 2FSK / BPSK / QPSK / 8PSK / 16PSK / 16QAM / 32QAM				MSK / 4FSK / QPSK / 8PSK / 16QAM / 32QAM / 64QAM			
Capacity		57 kbps up to 4.4 Mbps				10 kbps up to 210 kbps			
Channel Bandwidths		FHSS: 76 / 154 / 207 / 310 kHz DTS: 600 / 1200 kHz				12.5 / 25 / 50 kHz			
Range		Up to 70 miles				Up to 70 miles			
RECEIVE SENSITIVITY (MAS MODE)		12.5 KHZ CHANNEL		25 KHZ CHANNEL		50 KHZ CHANNEL			
	Rx Sensitivity (dBm)	Capacity (kbps)	Rx Sensitivity (dBm)	Capacity (kbps)	Rx Sensitivity (dBm)	Capacity (kbps)			
MSK	-114	10	-115	19	-112	39			
4FSK	-106	19	-101	39					
QPSK	-108	23	-110	36	-108	71			
8PSK	-101	34	-105	52	-101	101			
16QAM	-97	45	-100	70	-98	137			
32QAM	-91	57	-96	87	-93	175			
64QAM			-91	105	-84	210			
RECEIVE SENSITIVITY (ISM MODE)		76 KHZ CHANNEL		154 KHZ CHANNEL		207 KHZ CHANNEL		310 KHZ CHANNEL	
	Receive Sensitivity (dBm)	Capacity (kbps)	Receive Sensitivity (dBm)	Capacity (kbps)	Receive Sensitivity (dBm)	Capacity (kbps)	Receive Sensitivity (dBm)	Capacity (kbps)	
MSK	-111	57	-109	114	-108	153	-106	229	
600 KHZ CHANNEL				1200 KHZ CHANNEL					
	Rx Sensitivity (dBm)		Capacity (kbps)		Rx Sensitivity (dBm)		Capacity (kbps)		
BPSK	-101		530		-99		884		
QPSK	-98		1061		-97		1768		
8PSK	-93		1591		-91		2651		
16QAM	-90		2121		-88		3535		
32QAM	-84		2651		-82		4419		
DATA CAPABILITIES									
Packet handling	Layer 2 bridge								
	Layer 3 static routes								
	VLAN support								
Error Correction	Up to 32-bit CRC, Retransmit on error								
Data Encryption	128/256-bit AES								
I/O and Serial Data Access	Optional I/O allows seamless integration of Modbus RTU, Modbus TCP and DNP3 protocols								

MANAGEMENT

	Web-based Interface via HTTP/HTTPS
	Remote Management via SNMP
	cnMaestro integration (roadmap)
	Support for configuration files, remote software upgrades
	Built-in diagnostic tools via web interface such as RF Ping and RF Throughput

INTERFACES

Ethernet Interfaces	2 x RJ-45
	10/100BaseT, Full Duplex, rate auto negotiated (802.3 compliant)
Serial Interfaces	2 x RJ-45
	RS-232/422/485, up to 230.4 kbps
Analog/Digital I/O (optional)	8 pins for analog input/output and digital input/output
RF / Antenna	TNC RF connectors (1 or 2 depending on single or dual-radio configuration)

POWER

Input	10-32VDC with reverse polarity protection					
Power Consumption (12VDC average)	ISM (1W)			MAS (3W)		
	Transmit	Receive	Idle	Transmit	Receive	Idle
Single Radio Configuration (mA)	335	290	270	495	380	210
Dual Radio Configuration (mA)	385	300	292	580	421	293
IO Expander (mA)	293 mA					

PHYSICAL

Dimensions	6.625" x 3.45" x 1.835" (168 mm x 876 mm x 466 mm)	
Weight	Single Radio Configuration	1.54 lbs. (0.70 kg)
	Dual Radio Configuration	1.61 lbs. (0.73 kg)
DIN Rail Mount	optional	

ENVIRONMENTAL

Operating Temperature	-40C to +60C
Humidity	95% operating humidity @ 40C non-condensing
HAZLOC	UL-Approved to Class 1 / Div 2

REGULATORY

UL	Approved
FCC ID	Z8H89FT0025
IC ID	109W-0025