cnReach™ N550 900 MHz Radio

QUICK LOOK:

- **Licensed 900 MHz (also available: 220 MHz, 450 MHz, 700 MHz and 1400 MHz licensed options)**
- **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 back-to-back relay and store-and-forward applications.**

cnMaestro READY

For outdoor critical infrastructure operations, cnReach transports process monitoring and control data from remote sensors or RTU/PLC's 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.

- 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
- Fully compatible and interoperable with N500 900 MHz radios.

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Radio Specifications

	ISM Mode	MAS Mode
Frequency Range	902–928 MHz (915–928 MHz in Australia)	928–960 MHz
Output TX Power	10mW to 1W (10 dBm to 30 dBm)	10mW to 4W (10dBm to 36dBm)
Step Size	50mW	50mW
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 110 km / 70 miles	Up to 110 km / 70 miles
Packet Handling	Layer 2 bridge, Layer 3 static routes, VLAN support	Layer 2 bridge, Layer 3 static routes, VLAN support
Error Correction	Up to 32-bit CRC, Retransmit on error	Up to 32-bit CRC, Retransmit on error
Data Encryption	128/256-bit AES	128/256-bit AES

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
QPSK	-108	23	-110	36	-108	71
8 PSK	-101	34	-105	52	-101	101
16 QAM	-97	45	-100	70	-98	137
32 QAM	-91	57	-96	87	-93	175
64 QAM	–	_	-91	105	-84	210

Receive Sensitivity (ISM Mode)

	76 KHz Channel		154 KHz Channel		207 KHz Channel		310 KHz Channel	
	Rx Sensitivity (dBm)	Capacity* (kbps)	Rx Sensitivity (dBm)	Capacity* (kbps)	Rx Sensitivity (dBm)	Capacity* (kbps)	Rx Sensitivity (dBm)	Capacity* (kbps)
MSK	-114	10	-115	19	-112	39	-106	229

Receive Sensitivity (ISM Mode)

	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
8 PSK	-93	1591	-91	2651
16 QAM	-90	2121	-88	3535
32 QAM	-84	2651	-82	4419

*Capacities are over-the-air signalling rates. Usable throughput varies based on payload size, uplink/downlink ratio and protocol. UDP traffic is typically 55-60% of the over-the-air signalling rate.

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Management

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

Hardware Specifications

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)					
Input Power	10–32VDC with reverse polarity protection					
Power Consumption (12VDC average)	ISM (1W)			MAS (3W)		
	Transmit	Receive	Idle	Transmit	Receive	Idle
Single Radio Configuration (mA)	611	266	194	495	380	210
Dual Radio Configuration (mA)	860	380	215	580	421	293
I/O Expander (mA)	293mA					
Dimensions	168 mm x 876 mm x 466 mm (6.625 x 3.45 x 1.835in)					
Weight	Single Radio Configuration: 0.70 kg (1.54 lbs) Dual Radio Configuration: 0.73 kg (1.61 lbs)					
DIN Rail Mount	Optional					
Operating Temperature	-40°C to 75°C (-40°F to 167°F)					
Humidity	95% operating humidity @ 60°C non-condensing					
HAZLOC	UL-Approved to Class 1 / Div 2					
Deployment Topologies	Point-to-Point (PTP), Point-to-Multipoint (PMP), Repeater (REP) - Single or Dual Radio					

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Hardware Specifications

UL	Approved
FCC ID	Z8H89FT0025
IC ID	109W-0025

Hardware Specifications

	US/Canada (FCC/IC)	Australia
N550 900 MHz Single	NB-N550910B-US	NB-N550910B-AUS
N550 900 MHz Single with IO	NB-N550911B-US	NB-N550911B-AUS
N550 900 MHz Dual	NB-N550920B-US	NB-N550920B-AUS
N550 900 MHz Dual with IO	NB-N550921B-US	NB-N550921B-AUS
N550 IO Expander	NB-N550001A-US	NB-N550001A-AUS

ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.

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