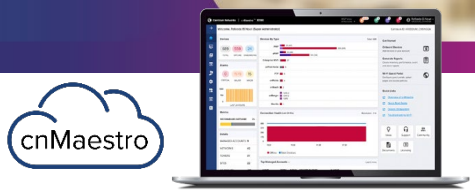
cnReach N550 900 MHz Radio

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 AP synchronization and adaptive modulation
- Single- and dual-radio configurations for advanced back-to-back relay and store-and-forward applications.





For outdoor critical infrastructure operations, cnReach™ transports process monitoring and control data from remote sensors or RTU/PLCs 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 the single-pane-of-glass cnMaestro™ Network Management platform, 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 (IIoT) solutions today.

Features:

- 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 Network Management 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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cnReach N550 896/935 MHz

Radio Specifications

Frequency Range	896–901 MHz and 935–940 MHz
Output TX Power	10mW to 3W (10 dBm to 34.7 dBm)
Step Size	50mW
Modulations	MSK / QPSK / 8PSK / 16QAM / 32QAM / 64QAM
Capacity*	10 Kbps up to 105 Kbps
Channel Bandwidths	12.5 / 25 (contact Cambium Networks for 50 kHz and 100 kHz options)
Range	Up to 110 km / 70 mi
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

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 mi	Up to 110 km / 70 mi
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

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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

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

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

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

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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)	293 mA
Dimensions	168 x 876 x 466 mm (6.625 x 3.45 x 1.835 in)
Weight	Single-radio configuration: 0.70 kg (1.54 lb) Dual-radio configuration: 0.73 kg (1.61 lb)
DIN Rail Mount	Optional
Operating Temperature	-40°C to 75°C (-40°F to 167°F)
Humidity	95% operating humidity at 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
UL	Approved
FCC ID	Z8H89FT0025
IC ID	109W-0025

Ordering Information

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

ABOUT CAMBIUM NETWORKS

Cambium Networks enables service providers, enterprises, industrial organizations, and governments to deliver exceptional digital experiences and device connectivity with compelling economics. Our ONE Network platform simplifies management of Cambium Networks' wired and wireless broadband and network edge technologies. Our customers can focus more resources on managing their business rather than the network. We make connectivity that just works.

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