cnReach™ N550 700 MHz Radio

QUICK LOOK:

- **Licensed 700 MHz (cnReach is also available in 900 MHz licensed and unlicensed in a single radio)**
- **Point-to-point, Point-to-multipoint and Back-to-back Relay configurations (dual radios)**
- **Adds higher performance with reduced headers, low overhead mode, QoS support and payload compression**
- **Secure communications with AES 128/256-bit encryption and password authentication**

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.

- Highly reliable communications with access point synchronization and adaptive modulation Single and dual radio configurations for advanced back-to-back relay topologies. See Cambium for optional board-only configurations.
- Extensive I/O capabilities easing the transition from serial to all-IP networks with two serial ports, two Ethernet ports and optional 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.
- Fully compatible and interoperable with N500 700 MHz radios.

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Radio Specifications

UL	Approved
FCC	Z8H89ft0026
Frequency Range	757–758 MHz and 787–788 MHz
Output TX Power	Up to 610mW (27.85 dBm)
Step Size	10mW
Modulations	MSK / QPSK / 8PSK / 16QAM / 32QAM
Capacity*	10 kbps to 1 Mbps; up to 550 kbps UDP throughput
Channel Bandwidths	12.5 / 25 / 50 / 100 / 200 / 250 kHz
Range	Up to 110 km / 70 miles
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 and Modbus TCP protocols

*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.

Management

Web-based Interface via HTTP/HTTPS
LINKPlanner integration (capacity and availability planning)
Remote Management via SNMP
cnMaestro™ integration
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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Receive Sensitivity

	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	-113	10	-113	19	-110	39
QPSK	-109	23	-107	36	-108	71
8 PSK	-104	34	-102	52	-99	101
16 QAM	-100	45	-98	70	-93	137
32 QAM	-94	57	-93	87	-93	175
64 QAM	–	_	-93	105	–	–

Receive Sensitivity

	100 KHz Channel		200 KHz Channel		250 KHz Channel	
	Rx Sensitivity (dBm)	Capacity* (kbps)	Rx Sensitivity (dBm)	Capacity* (kbps)	Rx Sensitivity (dBm)	Capacity* (kbps)
MSK	-108	76	-108	153	-104	194
QPSK	-103	160	-102	320	-101	403
8 PSK	-97	240	-94	480	-95	605
16 QAM	-91	320	-91	640	-91	806
32 QAM	-87	400	-87	800	-87	1008

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)	3W Output			5W** Output		
	Transmit	Receive	Idle	Transmit	Receive	Idle
Single Radio Configuration (mA)	593	430	292	750	544	369
Dual Radio Configuration (mA)	620	467	311	784	591	393

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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Ordering Information

N550 700 MHz Single	NB-N550710A-US
N550 7000 MHz Single with IO	NB-N550711A-US
N550 700 MHz Dual	NB-N550720A-US
N550 700 MHz Dual with IO	NB-N550721A-US
N550 I/O Expander	NB-N550001A-US

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.

cambiumnetworks.com

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