

# cnReach™ N550 450 MHz Radio

## QUICK LOOK:

- **Licensed 450 MHz (406–430 and 450–470 MHz); (also available in an ETSI RED model)**
- **Up to 8W transmit (39 dBm) in FCC**
- **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**



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.
- 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 450 MHz radios.

## cnReach™ N550 450 MHz Radio

### Radio Specifications

<b>UL</b>	Approved
<b>FCC</b>	406–430 MHz: Z8H89ft0033 450–470 MHz: Z8H89ft0034
<b>Frequency Range</b>	406–430 MHz and 450–470 MHz
<b>Output Power</b>	50mW to 8W (10 dBm to 39 dBm) for FCC
<b>Step Size</b>	10mW
<b>Modulations</b>	MSK / QPSK / 8PSK / 16QAM / 32QAM
<b>Capacity*</b>	9.6 kbps to 56.7 kbps RF data rate; up to 30 kbps UDP throughput in 12.5 kHz channels
<b>Channel Bandwidths</b>	12.5 kHz (25 / 50 / 100 kHz available regulations permitting)
<b>Range</b>	Up to 110 km / 70 miles
<b>Packet Handling</b>	Layer 2 bridge, Layer 3 static routes, VLAN support
<b>Error Correction</b>	Up to 32-bit CRC, Retransmit on error
<b>Data Encryption</b>	128/256-bit AES
<b>I/O and Serial Data Access</b>	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.

### Receive Sensitivity - BER = 10E-4; (for 10E-6 reduce sensitivities by 2 dB)

#### 12.5 KHz Channel

	Rx Sensitivity (dBm)	Capacity* (kbps)
<b>MSK</b>	-116	9.6
<b>QPSK</b>	-106	23
<b>8PSK</b>	-101	34
<b>16 QAM</b>	-98	45
<b>32 QAM</b>	-94	57

### 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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### Hardware Specifications

<b>Ethernet Interfaces</b>	2 x RJ-45 10/100BaseT, Full Duplex, rate auto negotiated (802.3 compliant)					
<b>Serial Interfaces</b>	2 x RJ-45 RS-232/422/485, up to 230.4 kbps					
<b>Analog/Digital I/O (optional)</b>	8 pins for analog input/output and digital input/output					
<b>RF / Antenna</b>	TNC RF connectors (1 or 2 depending on single or dual-radio configuration)					
<b>Input Power</b>	10–32VDC with reverse polarity protection					
<b>Power Consumption (12VDC average)</b>	<b>3W Output</b>			<b>5W** Output</b>		
	Transmit	Receive	Idle	Transmit	Receive	Idle
<b>Single Radio Configuration (mA)</b>	593	430	292	750	544	369
<b>Dual Radio Configuration (mA)</b>	620	467	311	784	591	393
<b>Dimensions</b>	168 mm x 876 mm x 466 mm (6.625 x 3.45 x 1.835in)					
<b>Weight</b>	Single Radio Configuration: 0.70 kg (1.54 lbs) Dual Radio Configuration: 0.73 kg (1.61 lbs)					
<b>DIN Rail Mount</b>	Optional					
<b>Operating Temperature</b>	-40°C to 75°C (-40°F to 167°F)					
<b>Humidity</b>	95% operating humidity @ 60°C non-condensing					
<b>HAZLOC</b>	UL-Approved to Class 1 / Div 2					
<b>Deployment Topologies</b>	Point-to-Point (PTP), Point-to-Multipoint (PMP), Repeater (REP) - Single or Dual Radio					

\*\*At 8W, output transmit duty cycles are reduced depending on operating conditions.

### Ordering Information

<b>N550 450 MHz Single</b>	NB-N550410A-US
<b>N550 450 MHz Single with IO</b>	NB-N550411A-US
<b>N550 450 MHz Dual</b>	NB-N550420A-US
<b>N550 450 MHz Dual with IO</b>	NB-N550421A-US
<b>N550 I/O Expander</b>	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.