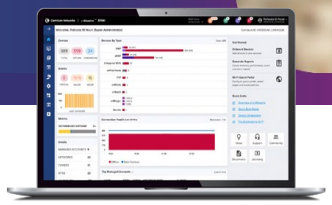
cnReach N550 A-Block Radio (896/935 MHz)

N550 896/935 MHz Radio Quick Look:

- Compatible with 896/935 MHz A-block deployments by Class 1 Freight Rail Operators (also available: 900 MHz ISM/MAS, 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
- Compliant with AREMA C&S Manual Section 11.5.1 Class A (roadbed) for shock and vibration
- Manufactured in the United States



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 ongoing analytics.

Manufactured in the United States, the cnReach A-Block radio is designed specifically for telco and signaling applications in the North American rail industry. cnReach A-Block has a tailored UI to make it easy to align the configuration to the national A-block channel plan and has been tested to AREMA standards for shock and vibration roadbed environments.

Covering large geographic areas, hard-to-reach terrain, and challenging spectrum environments, 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:

- Compatible with licensed 896/935 MHz A-block deployments by Class 1 freight rail operators and other license holders
- Long-range connectivity with 3W Tx power and flexible channel bandwidths.
- 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
- Support for MQTT and Data Concentrator feature for IOT applications
- 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

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Radio Specifications (Lower A-Block Mode)

Frequency Range	896–901 MHz and 935–940 MHz
Output TX Power	10mW to 5W (10 dBm to 37 dBm)
Step Size	50mW
Modulations	MSK / QPSK / 8PSK / 16QAM / 32QAM / 64QAM
Capacity*	10 Kbps up to 105 Kbps
Channel Bandwidths	12.5 kHz / 25 kHz (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

Receive Sensitivity (A-Block Mode)

	12.5 kHz Channel		25 kHz Channel	
	Rx Sensitivity (dBm)	**Capacity* (Kbps)**	**Rx Sensitivity (dBm)**	**Capacity* (Kbps)**
MSK	-115	10	-114	15
QPSK	-104	22	-107	36
8 PSK	-100	32	-101	52
16 QAM	-95	43	-98	70
32 QAM	-91	54	-95	87
64 QAM	-90	65	-89	105

*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 human-readable 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 1 Mbps		
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)	A-Block (5W)		
	Transmit	**Receive**	**Idle**
Single Radio Configuration (mA)	395	280	196
Dual Radio Configuration (mA)	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	Part 90		

Ordering Information

	US/Canada (FCC/IC)
N550 896/935 MHz Single	NB-N550810B-US
N550 896/935 MHz Single with IO	NB-N550811B-US
N550 896/935 MHz Dual	NB-N550820B-US
N550 900 896/935 Dual with IO	NB-N550821B-US

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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