

## ABOUT CAMBIUM NETWORKS

Cambium Networks is a leading global wireless communications technology provider that connects the unconnected with an extensive portfolio of reliable, scalable, and secure narrowband, WiFi, and broadband point-to-point (PTP) and point-to-multipoint (PMP) platforms managed by cloud-based software. Cambium Networks solutions enable enterprises; oil, gas and utility companies; Internet service providers; and public safety organizations to build powerful communications networks that surpass distance and geographic obstacles to reach users from across mountain tops to the last meter. Cambium Networks empowers network operators to intelligently manage their infrastructure through end-to-end network visibility and actionable analytics. Headquartered outside Chicago and with R&D centers in the U.S. Ashburton, U.K. and Bangalore, India, Cambium Networks sells through a range of trusted global distributors. For more information,

visit:

[www.cambiumnetworks.com](http://www.cambiumnetworks.com)

[www.connectingtheunconnected.org](http://www.connectingtheunconnected.org)

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# High-Resiliency IIoT Wireless Communications

BRINGING THE PROMISE OF A CONNECTED  
WORLD TO LIFE.





## High-Resiliency IIoT Wireless Communications



**Communications infrastructure is the key to enabling IIoT.** Rapidly deployable wireless architecture can cover ranges up to 245 kilometers with end-to-end connectivity for cloud-based applications. Our experience across multiple markets ensures that each solution interoperates with field equipment and operations systems to deliver results that transform your business.

The Industrial Internet of Things (IIoT) promise is delivery of real-time monitoring, measurement, and analytics that optimize performance while establishing sustainable competitive advantage. IIoT's true potential will be realized by the transformation of accumulated and real-time data into insightful knowledge and critical actions, which demands highly reliable underlying communications infrastructure and resilient systems that interconnect sensors and controls across large-scale field area networks.

Without end-to-end communications, valuable data is stranded, isolated by even short distances. Cambium Networks' proven wireless solutions can surpass the limitations of fiber or wired systems, providing connectivity from the field sensor to the operation center - in an affordable, ruggedized, sustainable platform that offers rapid deployment, reliability, and security - with an attractive return on investment compared with wired or fiber alternatives.

Smart Metering, substation switch and circuit control, SCADA telemetry, remote office connectivity, video surveillance, and asset tracking are all vital wireless connectivity functions that can be consolidated into one cost-effective IP network. Wireless solutions are optimal for mission critical applications because fiber isn't everywhere, and 3G/4G data services offer fewer essential features at a higher cost.

*"We were able to connect the entire system: Narrowband to meters and sensors, and broadband for database and Internet. Communications were running in weeks with equipment and support from Cambium Networks."*

*- Carlos Mena, Technology Leader, Aguakan, Wireless Utility in Mexico*

### Benefits

- Integrate and digitize the entire end-to-end operation
- Make data actionable based on business needs.
- Ensure real-time visibility, total security and long-term scalability

### Coverage

Communication coverage is customizable for individual business needs. Operators and Planners can quickly and confidently design networks that reach urban, suburban, rural, and remote locations with the throughput, reliability, and security required to support necessary applications - with minimal investment in communications infrastructure.

### Integration & Migration to all IP

Cambium solutions integrate voice, video, email, and web traffic alongside SCADA data from RTU's, sensors, and control points - on a single all-IP network featuring centralized end-to-end administration.

### Field Communications with Wireless Broadband

Maximize efficiency and minimize costs with a private IP network tailored to meet the specific needs of your business. Wireless narrowband is rapidly deployable and enables utilities to connect people and things within operational range. Private wireless networks provide steadfast communications for concurrent applications and maximize connectivity while minimizing cost.

### Long Range Point-to-Point Wireless Backhaul

- Licensed Microwave
- Unlicensed Backhaul

### Wide-Area Point-to-Multipoint Wireless Access and Sensor Data Aggregation

- Licensed Wide Area Networks
- Unlicensed Wide Area Networks

### WiFi Access Layer Networks

- Indoor Enterprise Class WiFi Networks
- Outdoor Hotspot and Enterprise Class WiFi Networks

### Narrowband Control Systems

- Unlicensed and licensed solutions
- Support for optional second radio provides enhanced repeater functionality and multi-frequency operations

### Single Pane of Glass Network Management

- Rapid on-boarding and provisioning of new nodes
- End-to-end performance and fault management



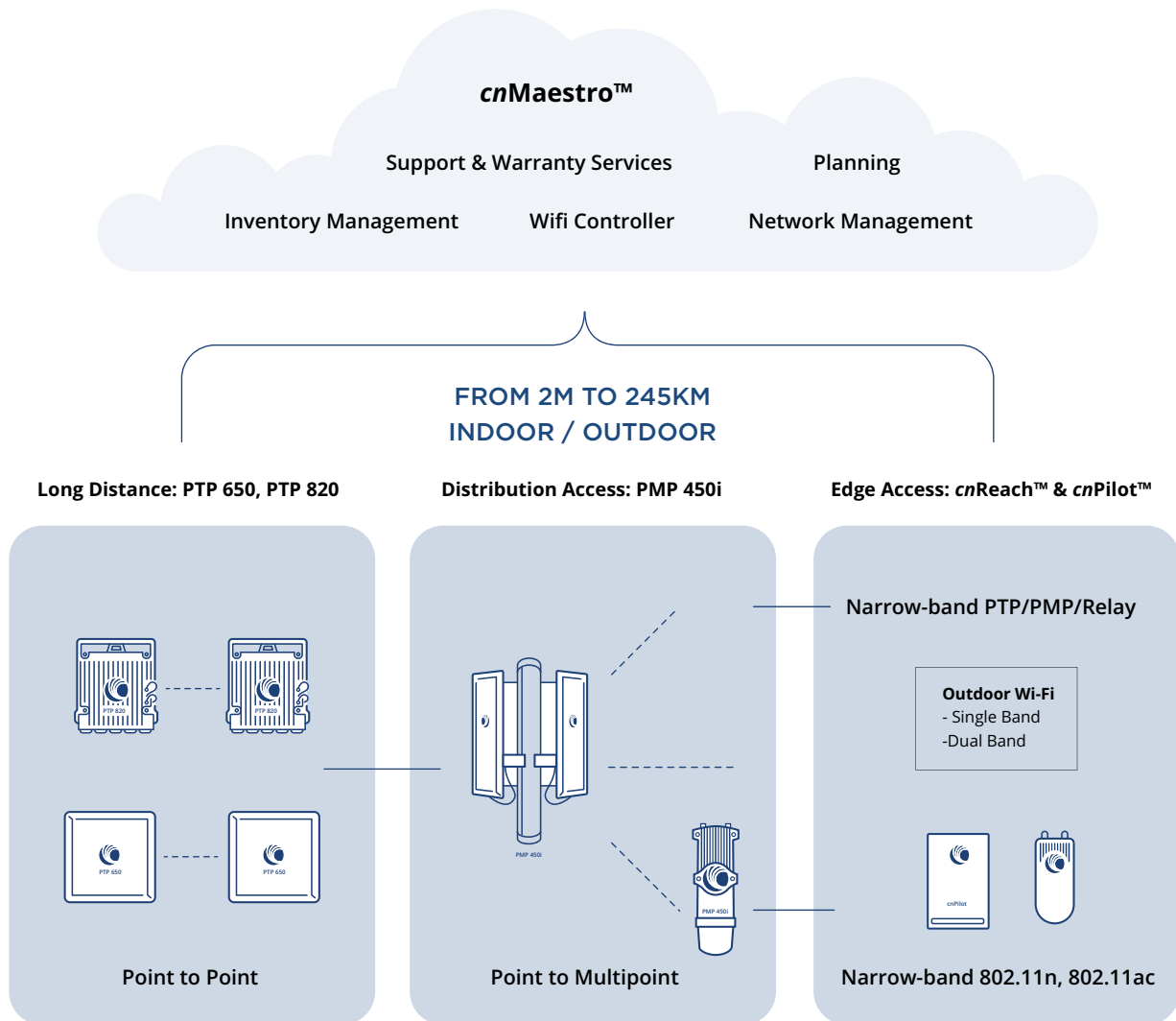
### The Cambium Difference

- **End-to-End Network** – Connect the entire field area network and manage the system from one dashboard.
- **Spectral Efficiency** – Provide the highest amount of information transfer in the least amount of scarce spectrum with industry award winning throughput.
- **Licensed and Unlicensed Spectrum** – Minimize total spectrum cost by leveraging both the licensed spectrum in populated areas and the unlicensed spectrum in remote locations.
- **Security** – Maintain system availability and minimize cyber threats with a rich set of features to encrypt traffic, secure management, and audit changes in your communications network.
- **Scalability** – Connect thousands of individual locations with a synchronized network that enables system-wide RF frequency reuse, maximizing connectivity in the least total amount of spectrum.
- **Reliability** – Deploy wireless narrowband with confidence that it'll launch and run smoothly, 24/7 in the harshest environments.
- **Total Cost of Ownership** – Minimize the total cost of network ownership with one IP-based wireless network including licensed and unlicensed backhaul and access components that can be rapidly deployed and perform reliably.



# LEVERAGE IP COMMUNICATIONS FOR MULTIPLE APPLICATIONS

Cambium Networks is experienced in implementing business critical connectivity solutions for industrial applications including:



- FIELD AREA NETWORKS (FAN) APPLICATIONS
- NARROWBAND CONNECTIVITY FOR METERS AND SENSORS
- REMOTE OFFICE CONNECTIVITY
- SMART METER AGGREGATION BACKHAUL
- WIFI COVERAGE IN SUBSTATIONS AND OPERATION CENTERS
- SUBSTATION AND DISTRIBUTION SCADA DATA
- VIDEO SURVEILLANCE
- REMOTE ACCESS CONTROL
- FAULT LOCATION, ISOLATION, AND SERVICE RESTORATION (FLISR)
- ANALOG CIRCUIT REPLACEMENT