



# ePMP: The New Standard In Wireless Broadband

Cambium Networks' ePMP wireless broadband solutions are the first to bring field-proven reliability, GPS-sync-enabled scalability and high-quality service performance to under- and unconnected communities.

# Delivering What's Been Missing In Wireless Broadband



**TODAY'S FAST-PACED GLOBAL** economy requires reliable connectivity for everyone everywhere. There is an acute need for high-quality, scalable broadband solutions, which are becoming the gold standard of connectivity for businesses and consumers in order to succeed in an ever-changing and demanding globalized society. The ePMP platform from Cambium Networks meets this challenge head on. It is a breakthrough connectivity solution with innovative GPS sync technology, offering scalability, high-quality performance and reliable access to under and unconnected communities. Built on a legacy of field-proven technology, ePMP is a groundbreaking, state-of-the-art platform assuring optimal long-term performance for all.

With ePMP, we're leveraging our global expertise and leadership in wireless broadband products to set a new standard of what an economical connectivity solution can offer. Our ePMP networks combine accessibility, quality of service, reliability and scalability to build strong and sustainable business models, even with low ARPU customers. At the same time, our ePMP solutions enable connectivity for your most remote users, allowing them to benefit from and contribute to the global economy.

## Vertical Markets and Solutions

### WIRELESS SERVICE PROVIDERS (WISPS)



Rural Connectivity



Municipal Connectivity



Remote Office Connectivity



Primary or Redundant Connectivity

### ENTERPRISES



Video Surveillance Backhaul



Site Monitoring



LAN Extension



Leased Line Replacement

# Higher Levels of Performance

WITH CAMBIUM NETWORKS' ePMP solutions, you no longer have to sacrifice performance for accessibility. Our ePMP platform delivers the critical features that service providers, enterprises and their customers desire.



**GPS SYNCHRONIZATION.** Cambium Networks' globally field-proven GPS synchronization capabilities minimize self-interference to offer industry-leading performance and scalability as well as an exceptionally low latency. ePMP's timing synchronization to the GPS pulse allows for extensive frequency reuse. Our solution is able to handle more subscribers per unit without service degradation so you can add new customers and grow your business.

**RELIABILITY.** Our ePMP solutions are developed by the same industry-leading experts that engineered the exceptional reliability of our PTP and PMP wireless broadband solutions, successfully deployed in hundreds of networks worldwide for a decade. Our products undergo rigorous testing and are made from high-quality components.

**QUALITY OF SERVICE (QoS).** ePMP provides superior QoS with three levels of support for VoIP, high-speed data and video services. The auto VoIP feature on the GUI enables automatic voice prioritization, delivering clear and uninterrupted audio. Prioritization ensures maximum performance, consistently delivering high data quality and guarding against garbled speech and choppy video transmissions.

**SECURITY.** Cambium Networks' robust security assures the integrity of critical information and helps defend against cyber-attacks. Our 128-bit AES encryption, L2 and L3 firewall settings and anti-cloning software mechanisms support the numerous requirements for data security.

**EASE OF USE.** With our ePMP product portfolio, technology has never been easier to install, use and manage. The plug-and-play set-up is fast and simple, and the platform's integrated management software features a simplified GUI and a powerful, intuitive Element Management System (EMS).

**RETURN ON INVESTMENT.** As many service providers quickly discover, first generation networks can be difficult to scale, making businesses challenging to expand. Our revolutionary ePMP platform allows you to grow and sustain your business, and to serve exceptional performance to a higher density of subscribers, leading to a faster and better ROI.

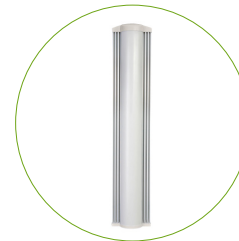
## ePMP Product Portfolio:



**ePMP 1000 Integrated Radio**



**ePMP 1000 Connectorized Radio Synchronized and Unsynchronized models**



**Sector antennas: 90 and 120 degrees**

### Top Line Specifications

- 2x2 MIMO for Line of Sight (LOS) and near Line of Sight (nLOS) connectivity
- Throughput: up to 200+ Mbps
- Secure Over-the-Air Communications (128-bit AES Encryption)
- Available in 5 GHz unlicensed frequency bands
- 20/40 MHz channel bandwidths
- All radios configurable for Access Point (AP), Customer Premise Equipment (CPE) and Point-to-Point (PTP) operation
- Frequency reuse due to GPS sync
- Built in QoS for VoIP and video prioritization
- Long range – up to 13 miles/21 km Maximum Deployment Range
- Up to 120 units configured for PMP

# ePMP's Innovative Features Outstrip the Competition



**HIGH PERFORMANCE.** Cambium Networks' ePMP platform is optimized to go beyond basic connectivity. It confidently delivers triple-play services – VoIP (Voice over IP), video and data – regardless of environment, allowing your subscribers to take full advantage of awaiting opportunities in the global economy. Our powerful GPS synchronization delivers the spectral efficiency, extended range, high throughput and low latency to provide reliable transfer of data, voice and video.

**SCALABILITY.** Our ePMP broadband platform provides the scalability you need to expand your networks, enabling you to take advantage of growth opportunities and create a sustainable business model. ePMP's scalability is driven by leading-edge GPS synchronization that reduces interference and enables a high degree of frequency reuse.

**SPECTRAL EFFICIENCY.** Cambium Networks' ePMP technology provides high spectral efficiency, enabling it to successfully operate within smaller channel widths and limited amounts of spectrum. Our ePMP solutions can comfortably accommodate more users on the same channel than comparable systems.

CHANNEL WIDTH	CAPACITY
20 MHz	8.8 b/Hz
40 MHz	9.4 b/Hz

**THROUGHPUT.** Our ePMP platform delivers the high throughput your subscribers need to support meaningful use: more than 200 Mbps of real user throughput. With ePMP, your customers can enjoy seamless delivery of bandwidth-intensive services such as high-speed data, VoIP and video.

**LONG RANGE.** Cambium Networks' ePMP solutions provides a range of up to 13 miles, helping you connect and serve your most remote subscribers more easily and more profitably.

**FLEXIBLE PRODUCT CONFIGURATION.** ePMP products can be configured within PMP or PTP architectures using integrated or connectorized units, offering outstanding flexibility. Our wireless manager ensures easy and intuitive network management control and provides a comprehensive view of network topology and performance characteristics.

**CUSTOMER SUPPORT.** Cambium Networks provides an unprecedented level of customer service for its ePMP network operators: call center support with toll-free or local telephone access in 22 countries; a centralized three-tier troubleshooting team for maintenance questions and more in-depth issue investigation and resolution; and e-mail support.

## All GPS Synchronizations Are Not Created Equal

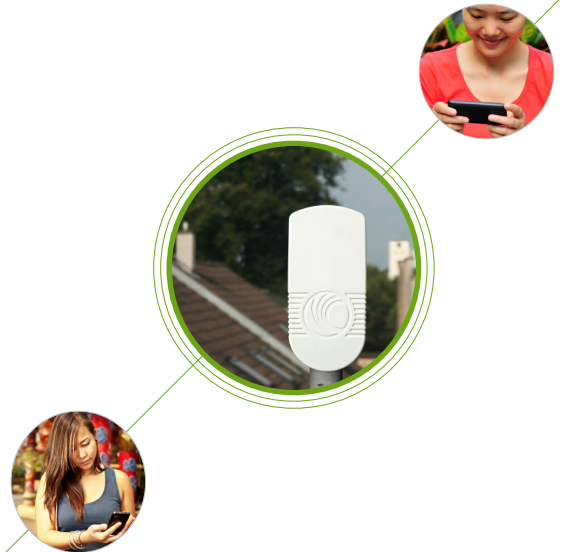
As users of broadband solutions explore using GPS synchronization to improve their network scalability and performance, they are discovering that not all GPS sync systems are the same. The most powerful and successful GPS synchronization provides three essential components:

- **A synchronized MAC (media access control) layer**
- **Automatic CPE transmit power control**
- **High Front-back AP and CPE antenna isolation**

Cambium Networks' ePMP GPS sync solutions offer all three, while other systems in the comparable broadband space typically offer only a synchronized MAC layer. As a consequence, these systems are unable to eliminate or mitigate second order self-interference, resulting in sub-optimal reliability, scalability and performance.

## ePMP Equalizes Opportunities

The e in ePMP stands for equalize: Cambium Networks' vision is to connect the under or unconnected, and our dream is to make a difference, equalize is our call to action. Our ePMP platform levels the global economic playing field by facilitating Internet connections in places where connectivity was once impossible.



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# Connecting the unconnected is just the beginning

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## **Cambium Networks' global vision and actionable blueprint for transforming communities with powerful, innovative and affordable wireless broadband technology and solutions**

At Cambium Networks, our vision is a world where no one is left unconnected to the economic and social power of the Internet. No matter how far the distances, how difficult the terrain and how limited the resources, Cambium Networks develops and provides leading-edge technology that connects the citizens of the world. Lives are transformed. Communities are empowered. Regions and countries are able to participate in the global economy to help them grow and prosper.

As the global leader in wireless point-to-point (PTP) and point-to-multipoint (PMP) network technology, Cambium Networks is dedicated to making it possible for Internet service providers and enterprises to build sustainable businesses by connecting the unconnected and the underconnected of the world. Our industry leading portfolio of products—including PMP, PTP and ePMP technology—offers communications solutions that make it feasible and economical to unite the world and build a truly global society that leaves no one behind.

**AT CAMBIUM NETWORKS, CONNECTING THE UNCONNECTED IS OUR VISION—AND OUR MISSION.**

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