

## LICENSED MICROWAVE CONNECTIVITY FOR

# Freight rail transportation



Secure, reliable, 24/7 communications are essential to efficient, safe, profitable rail freight operations. The expense of building new railroad track has leading railroad companies racing to find ways to increase the capacity of existing tracks. Accomplishing that increase while minimizing capital investment is vital for business, but safety is always job #1. Insufficient communications infrastructure poses a major threat to operations – to the safety of rail employees and the public, and all essential activities associated with transportation. Freight rail transportation providers are finding that increasing the amount and speed of data available through their communications infrastructure improves operational agility, capacity, and safety.

Cost controls are vital to the business. End customers have choices in selecting their transportation provider, and priority is given to the transportation system that consistently delivers goods intact, on time, and at a competitive price. Because transportation of fossil fuels is declining, railroads must improve the cost model to compete with other freight methods, primarily the trucking industry. Integration of technology that increases efficiency of the existing rail is of paramount importance for cost control, and offers advantages against trucking and other competitive railroads. Increased communications gives freight rail transportation a sustainable advantage over trucking alternatives.

Safety is always the top concern. Railroads also share lines, making communications between operators essential for personnel safety.

## PRIVATE NETWORKS

Leading rail transportation providers are migrating away from leased lines, and service contracts that offered low throughput and low priority from their ISPs, as they see the business benefits of communications solutions that give them total control of their networks. Freight railroads are moving away from public cellular networks for data communications due to operational costs and reliability. Cambium Networks' proven wireless communications platforms are an affordable enhancement to the business case and economics for private networks. With more than 7 million modules deployed in thousands of networks around the world, these solutions give freight rail operators the ability to plan, monitor, and expand their networks as needed.

## PTP 820 LICENSED MICROWAVE SOLUTION

There are tens of thousands of miles of track in a typical linear rail system. Due to the critical nature of the information carried, network operators prefer the exclusive right to use licensed frequencies to ensure continuous availability of that bandwidth. The economics of microwave technology favor the 6 GHz frequency band for reliability over longer distances because it's less susceptible to rain fade than higher frequencies.

In the past, lower throughput of a few megabits was generally designed in, since most traffic carried across the microwave networks was for low data intense applications such as those used for signaling or telemetry. Today, more

## MORE THAN MEGABITS

While high throughput at an attractive price point is where most start evaluating the array of available communications solutions, the Cambium Networks PTP 820 licensed microwave technology provides many more confidence-inspiring features for connecting vital operations 24/7.

- Flexible configuration – the PTP 820 is available to support different configuration requirements:
  - PTP 820S is an all-outdoor point-to-point licensed microwave unit.
  - PTP 820C is an all-outdoor, multi-core unit. The PTP 820C's dual-core functionality enables the system to operate up to 2 Gbps via software upgrades
  - PTP 820G is a split-Mount / All-Indoor unit, with Multi-Carrier Options
- Our free LINKPlanner software guides network designers to input the GPS coordinates of the link source and destination to ascertain the exact throughput that the link will deliver. Accuracy in planning ensures that installations are successful the first time, eliminating rework and delays.
- Cambium networks offers 24/7 technical support with tiered support levels, providing access to technical support information and Tier 2 and 3 certified technicians. Support offerings are tailored to the needs of the network operator.

numerous and higher bandwidth-intense applications – such as streaming video, HD video from UAV track inspections, wayside messaging servers, and enterprise voice – are traversing the network, creating demand for high 500 Mbps capacity network planning for new applications and 'big data' on the rail.

The PTP 820 is a transport only licensed microwave radio that supports external routers and switches for MPLS, enabling deployment as an IP backhaul transport system for any routers or switches that are used as a standard configuration by the rail transportation company.



- cnMaestro™ monitors ePMP distribution and cnPilot™ WiFi access devices to provide a real time view of network health. The controller makes it easy to onboard additional network components securely, audit firmware, upgrade prior to allowing devices on the network, and manage remote passwords across all radios on the network, and enforcing policy control and reporting requirements.
- Cambium Networks offers technical certification training to support proficiency amongst network managers and their telecommunications teams, enabling them to efficiently and responsibly design, maintain, and operate their networks.

## ABOUT CAMBIUM NETWORKS

Cambium networks is a world leader in Wireless technology with over 7 million radios sold and deployed around the world. Cambium is a channel focused company that sell through a world-wide network of distributors, VARs and System Integrators to diverse verticals including education, government and industrial sectors. For more details please visit: <http://www.Cambiumnetworks.com>.



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