



Cambium Wireless Broadband: Reliable, Cost-Saving Leased Line Alternatives

Cambium Networks' fixed wireless broadband solutions are a smart investment when balancing business needs with network performance and budget realities.

To deliver essential services, you have to employ shrewd strategies that will positively impact the bottom line. Your network has to deliver greater performance to allow users to be more productive. And, you need reliable, secure communications that deliver greater diversity, scalability, and capacity even as budgets tighten.



LEASED LINE CHALLENGES

- **Escalating Costs as Bandwidth Needs Expand:** Fees for leased-line services can cost from a few hundred dollars per month for a single T1/ E1 connection up to thousands of dollars per month for gigabit service. As a result, many organizations that have relied on leased lines are paying expensive lease charges every month with multi-year contractual commitments.
- **Loss of Control:** Leased lines essentially lessen internal control by making organizations dependent on an outside party for important business functions. Many IT organizations prefer to maintain local control over their network operations. In that way, problems can be quickly diagnosed and resolved, and upgrades can be performed without having to wait for an outside party to respond.
- **Reduced Reliability:** In many instances, the reliability of leased lines is not what it should be, especially in rural and remote areas. When a natural disaster such as an earthquake, wildfire, or hurricane hits, telephone lines are particularly vulnerable to service interruption at a time when communications are extremely critical. Fiber cable is often cut during construction or damaged by traffic and railroad mishaps, resulting in communication outages.
- **High TCO:** Typically, deployment of new services or upgrades in a leased-line environment is both expensive and slow. The cost and manpower required to manage and monitor contracts and service-level agreements, including verifying billing records, can be significant.

In many cases, leased lines are an expense not worth paying and a risk not worth taking.

CAMBIUM WIRELESS - A PROVEN ALTERNATIVE

A growing number of organizations are discovering the benefits of replacing leased lines with wireless broadband communications. With our Cambium Point-to-Point (PTP) and Point-to-Multipoint (PMP) Wireless Broadband solutions, the advantages can be substantial. First, you can eliminate or significantly reduce monthly lease fees. Second, overall network performance can be upgraded, which is especially important to support today's increasing demand for real-time applications such as Voice-over-IP, video surveillance, and video conferencing. Third, network reliability and security is improved and under your control.

In many networks, local access is the most problematic point of network congestion. Wireless broadband can provide a stable, high-performance platform to ease local-access bottlenecks. Wireless also enables agile and flexible bandwidth provisioning that can be easily and quickly scaled up or down to match dynamic traffic patterns. Our unique wireless technology is able to increase reliability and connect remote, hard-to-reach locations while offering exceptional quality of service.

CAMBIUM SOLUTIONS PROVE THEIR VALUE AND PERFORMANCE

| EXAMPLES OF LEASED LINE CHARGES | | | |
|---------------------------------|-------------------|----------------------------|------------------------------------------|
| TYPE | THROUGHPUT (MBPS) | TYPICAL MONTHLY COST (USD) | TYPICAL 2YR CONTRACTUAL COMMITMENT (USD) |
| T1/E1 Leased Line | 1.544/2.048 | \$100 - \$200 | \$2.4K - \$4.8K |
| 10Mbps x 10Mbps Symmetrical | 100 x 100 | 200 - \$300 | \$4.8K - \$7.2K |
| 100Mbps x 100Mbps Symmetrical | 100 x 100 | \$800 - \$1K | \$19.2K - \$24K |




PTP 650:

- Up to 450 Mbps
- Up to 124 mi (200 km)
- IP66/67 rated



PTP 450

- Up to 125 Mbps
- Up to 25 mi (40 km)



PMP 450

- Up to 125 Mbps serving multiple end points (up to 200)
- Up to 25 mi (40 km)

VERSATILITY

Our PTP and PMP wireless solutions can enable you to:

- Replace leased-line service with wireless broadband
- Extend fiber networks with wireless
- Deploy a wireless backup network to ensure business continuity
- Create private networks for file-sharing, credit card processing and point to point VoIP
- Replace up to 8 E1/T1 lines using TDM over the air technology.

SCALABILITY AND FAST DEPLOYMENT

You can deploy a fixed wireless network that supports the convergent requirements of voice, video, and data in a fraction of the time it would take to order and provision new leased-line services. In addition, adding new services and upgrades can normally be accomplished in a day or less.

EXTENSIONS WITHOUT TRENCHING

Expansion or extension of a wired network to add capacity or new locations can be a major undertaking that carries a high price tag. The biggest contributing factor is trenching to accommodate new wire lines. Cost estimates can range from \$30,000 to \$40,000 per mile.

The next issue is time. Fiber network extensions that involve major trenching efforts typically take months, and in some cases, even years. In areas where water and challenging terrain are present, trenching along water boundaries or through dense foliage or rocky terrain may not be an option.

Our fixed wireless networks are significantly more cost-effective and faster-to-deploy solutions. Systems can be planned and deployed in a matter of days rather than months or years. Equally important, cost of expansion is significantly reduced.

ALWAYS-ON NETWORKS

No organization can afford to have communications interrupted by a network failure when a natural disaster strikes.

It can take hours or even days for wired networks to be repaired. For service providers and vital institutions such as healthcare agencies, schools, and universities, as well as for municipalities dependent on

- More than 4.5 million PMP Units Installed
- Over 100,000 PTP systems deployed something similar since they are both worldwide stats

public safety communications, interruptions of even a few minutes are unacceptable.

Fixed wireless broadband solutions offer you the ability to plan and deploy redundant networks in a matter of days... and at a cost that is a fraction of a wired backup.

SECURITY

Meeting the cyber security requirements of IT departments in corporations as well as public safety organizations is essential for carrying private information and critical communications. Cambium solutions utilize over-the-air encryption and secure management interfaces to prevent 3rd party intrusions.

COST-EFFICIENCY AND ROI

Perhaps the most important advantage is that wireless broadband can virtually eliminate expensive monthly lease costs and provide significant savings. When you choose wireless broadband to replace leased-line connectivity and backhaul, ROI is typically measured in months.

BETTER RESULTS WITH LESS COST

There are two major reasons to replace leased-line service with Cambium Wireless Broadband – eliminate or reduce leased-line charges and improve network performance.

As requirements for bandwidth continue to increase and budgets continue to shrink, our wireless broadband solutions can offer you significant bottom-line benefits.

LET US SHOW YOU WHAT YOUR LEASED LINE-REPLACEMENT ROI CAN BE

*All values are in USD.
Actual costs and savings may vary based on individual usage, application, environmental, and network requirements

| ROI #1 - PTP LEASED-LINE REPLACEMENT* | | |
|-------------------------------------------------------------------------|---------------------------------|-----------|
| ROI FACTOR | 100x100 MBS SYMMETRICAL SERVICE | PMP 650 |
| Throughput (Mbps) | 100x100 | Up to 450 |
| Estimated Monthly Fee | \$600 | \$0 |
| Installation/Equipment Fees | \$1,000 | \$5,000 |
| First Year Total Cost | \$8,200 | \$5,000 |
| Ongoing Annual Fees | \$12,000 | \$0 |
| 4 TO 6 MONTH ROI + ANNUAL SAVINGS OF \$7,200 + HIGHER THROUGHPUT | | |

| ROI #2 - PMP 450 LEASED-LINE REPLACEMENT* (Using One A Pand Three SMI's to Replace Three T1/E1 Lines) | | |
|----------------------------------------------------------------------------------------------------------|---------------------------|-------------------------|
| ROI FACTOR | 3-T1 LEASED LINES | PMP 450 |
| Max Throughput (Mbps) | 1.5 per T1 (full duplex) | 125Mbps shared capacity |
| Estimated Monthly Fee | \$600 (3 at \$200 each) | \$0 |
| Installation/Equipment Fees | \$1,050 (3 at \$350 each) | \$4,500 |
| First Year Total Cost | \$8,250 | \$4,500 |
| Ongoing Annual Fees | \$7,200 | \$0 |
| 6 MONTH ROI + ANNUAL SAVINGS OF \$7,200 + HIGHER THROUGHPUT | | |