

# Technology that Makes Business Sense



“We operate in a competitive market where customers want reliable service at an attractive price. ePMP™ beat the performance of our current wireless solutions, and enabled us to offer a consistent service offering to our customers regardless of technology.”

**DENIO LINDO, CEO, DESKTOP INTERNET SERVICES**

## Overview

Brazil has almost 24 million broadband users, and the number is increasing daily. The 5,000 cities where these users live are served by 3,500 Internet Service Providers, and competition is tough. As a result, business and residential subscribers have their choice of providers. No different from any other market, end users choose their service provider based on services, reliability and price.

Desktop Internet Services is one of the fast growing ISPs who consistently exceeds customer expectations. They focus on providing Internet and VoIP services to business and residential customers in the Campinas metropolitan area. While the Desktop network is comprised of fiber, cable and wireless, they find that customers are most focused on reliability and price. As a result, Desktop has the ability to select the technology that best meets their business plan.

## Challenge

The increasing demand for connectivity and service plans with VoIP and high throughput data transfer was outstripping the existing wireless network comprised of older wireless solutions. End customers wanted reliable broadband at a competitive price, and were indifferent to whether the connectivity was delivered over fiber, cable or wireless. To respond quickly to meet demand, Desktop needed a wireless solution to complement their fiber network.

Wireless access connectivity with more throughput would enable them to rapidly respond to customer demand, but also enable them to offer a common broadband service offering and “equalize” service plans.

### PROFILE

#### DESKTOP INTERNET SERVICES

Internet Service Provider in Brazil serving data and VoIP services to business and residential customers in the Campinas area.

### CHALLENGE

Equalize service offerings to end customers regardless of whether the delivery technology is fiber, cable or wireless. Desktop needed to perform a field comparison of data to ensure that wireless could provide data transfer and VoIP services equal to fiber or cable.

### SOLUTION

- ePMP wireless access network to complement other technologies

“By having one service plan regardless of technology, we can communicate one message to our market,” says Denio Lindo, CEO of Desktop services. “Our customers immediately understand the speed and price of the offering, and the business grows faster by consistently satisfying customer expectations. It makes us stand out in the marketplace.”

## Requirements

To provide an “equalized” service offering, Desktop determined that the wireless network would have to:

- Provide high throughput in a noisy RF environment
- Perform reliably to reduce customer trouble reports and maintenance costs
- Provide affordable connectivity so that customer offerings would be preferred in a highly competitive market
- Provide Quality of Service (QoS) reporting to support VoIP applications
- Perform well when co-located with existing wireless platforms

## Solution

To be sure that these goals were achieved, Desktop needed to prove the solution performance in the field alongside their current deployment of almost 10,000 modules installed at customer locations.

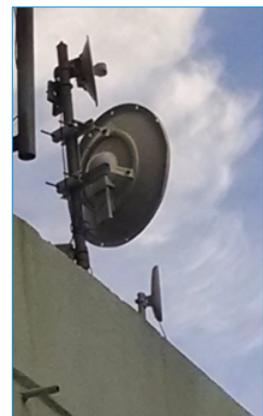
Desktop selected the ePMP 1000 to deploy for a live field comparison to determine the exact performance in the current environment. The platform will enable Desktop to:

- Offer higher level service plans that customers wanted
- Offer VoIP services that customers were willing to pay for
- Provide a fiber-like experience with high throughput
- Reduce deployment lead time to quickly establish revenue
- Offer services at competitive pricing

Specific representative locations were selected and the ePMP equipment was installed on the same tower with the current wireless technology.

### Why Desktop chose Cambium Networks:

- **High Throughput** – up to 200 Mbps for high speed data transfer.
- **Affordability** – Customer Premise Equipment (CPE) that is cost-effective to enable competitive pricing for service offerings.
- **QoS Management** – enable VoIP applications.
- **Ability to Co-Locate equipment** – manage operating frequency for smooth migration to new technology.
- **GPS Synchronization** – reduce self-interference and enable frequency re-use in densely populated urban areas.
- **High Reliability** – maximize customer satisfaction, reduce system down time, and reduce maintenance costs



Side by Side installation with other equipment (left) and ePMP (right)

## Results

The field test installation was completed quickly. In each of the four locations tested, the ePMP system provided more than 97 Mbps of throughput. This greatly exceeded the throughput of the other systems which had a highest speed of 39 Mbps.



Desktop Field Test Scenario)

Station	Distance (m)	Current Throughput	ePMP Throughput
A	2100	7 MBPS	97 MBPS
B	200	39 MBPS	99 MBPS
C	1300	24 MBPS	99 MBPS

Field Speed Test Comparison

In addition, Desktop performed a field validation test of a VoIP connection using the Cambium Networks C3VoIP-150 Gateway. This test was performed at a field location with two way traffic operating at maximum throughput. The service was found to provide perfect VoIP quality and the performance was clear and stable.

## Next Steps

Now that Desktop has a field proven solution, they can offer the high throughput services that their customers are demanding. They can also manage the migration by doing RF planning and selecting frequencies for the new equipment as the existing network continues to operate.

“We can now offer the speeds and voice services that our customers are asking for,” says Lindo. “This provides us the ability to win the customer first, and then select the technology that serves them best.”