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Cost-effective Wireless Alternatives to
Corporate Leased-line Connectivity

White Paper

Built-in ROI

Effective communication is the life-blood of every business. Broadband wireless point-to-point connectivity provides an efficient and secure solution for bridging communications between buildings across the street or up to 30 miles apart. It is an ideal alternative to expensive leased lines. Alvarion has developed the BreezeNET B100 to provide businesses with better communication for less money and with less hassle.

- Communicate with speeds up to 45 times an E1/T1 leased line
- Building-to-building connectivity up to 30 miles (50 km)
- Make up to 1,000 simultaneous voice calls
- Deliver high-quality, full-screen video applications
- Secure your network with hardware-based encryption
- Save money through easy installation and network management
- No recurring fees

The BreezeNET B100 offers a secure wireless connection between two remote locations, yet is easier and more cost-effective to deploy than leasing an E1/T1 or T3 connection. There's no need to obtain city permits, run long cable lines or dig up streets in order to provide full network access to a remote office, warehouse or other installation.

Connecting Your Business

BreezeNET B100 vs. E1/T1

- **Network Ownership vs. Ongoing Costs**

E1/T1 leased lines encumber business with monthly service fees up to $1,500 or more. There are no recurring fees for a fast, secure wireless network enabled by the BreezeNET B100.

- **70 Mbps vs. 1.5-2 Mbps**

Once considered adequate, E1/T1 leased lines provide a consistent data throughput rate of 1.5-2 Mbps. But today's graphics and media-intensive applications demand the over 70 Mbps net throughput delivered by the BreezeNET B100.

- **Wireless Security vs. Physical Line Vulnerability**

E1/T1 and other cabled solutions offer a physical infrastructure that can be damaged or attacked and potentially penetrated in multiple points. The BreezeNET B100 provides wireless 128-bit AES encryption built-in without access point vulnerabilities.

- **Flexible & Expandable vs. Building Landline Infrastructure**

Adding E1/T1 or other leased lines typically require service contracts and often long term commitments. Running your own cable requires city permits and digging up the street, which is expensive, time consuming and disruptive. The BreezeNET B100 offers flexibility and easy installation and operation by providing a fast and secure wireless point-to-point network between buildings as close as half a block or up to a distance of 30 miles (50 km).

How to Select the Right Point-to-point Wireless Solution for Your Business

- **Security**

Choose the security that's right for you. Software-based encryption significantly slows performance in wireless networks, exchanging encryption for data processing time. The BreezeNET B100 features built-in AES (Advanced Encryption Standard) security, providing 128-bit encryption that is inherent to the link and does not require additional processing. In addition, IP filtering enables you to assign specific IP addresses for network management and create Virtual Local Area Network (VLAN) groups with access to restricted sectors of the network. The proprietary protocol enables you to easily create an IP allow list and keep unwanted users out of your system.

- **Throughput**

Select the net data throughput rate for efficient communication. The BreezeNET B100 offers a net data throughput of 70 Mbps, fast enough to handle even bandwidth-taxing applications like video. Businesses that do not anticipate high volumes of data traffic may choose a lower throughput offered by the BreezeNET B14 or B28. Whatever your requirement, plan ahead and ensure that the solution you choose will be able to address your organization's future needs as well as its current requirements.

- **Latency**

Low latency makes a network system suitable for streaming applications like video and voice which are time-sensitive. High jitter, a measure of variability in packet delay, can cause noticeably low-quality communication. The BreezeNET B100 is a high-capacity wireless solution capable of seamlessly delivering voice and video with a low latency of 5 – 7 milliseconds, and low jitter of 2 milliseconds. This ensures that your voice and video applications will function flawlessly.

- **Non-Line-Of-Sight (NLOS)**

It's sometimes difficult to determine if line-of-sight is available between the buildings you need to connect. Many factors affect line-of-sight that may not be immediately recognized or may change with the seasons. The BreezeNET B100 incorporates Alvarion NLOS technologies to ensure reliability when line-of-sight is not available, as foliage and terrain changes, and in spite of poor weather. An adaptive modulation algorithm automatically adjusts the signal to accommodate new or temporary conditions. This gives you more flexibility to choose the location for deploying your point-to-point link. Installation is made easy by an innovative LED alignment feature that gives installers a clear indicator when an optimal connection is achieved.

- **Range**

Choose the solution that will reach your remote facility. The BreezeNET B100 will securely and easily connect two locations at distances from a few hundred feet to up to 30 miles (50 km).

- **Reliability**

When it comes to effective communication, there's nothing worse than a malfunctioning connection. In choosing your point-to-point link, select one that will function in all expected weather conditions, is capable of outdoor deployment and has quality components expected to last for a long period of time without maintenance. The BreezeNET B100 is ruggedly designed to withstand harsh weather conditions and provides nearly 100% uptime with an expected Mean Time Between Failure (MTBF) of 11 years.
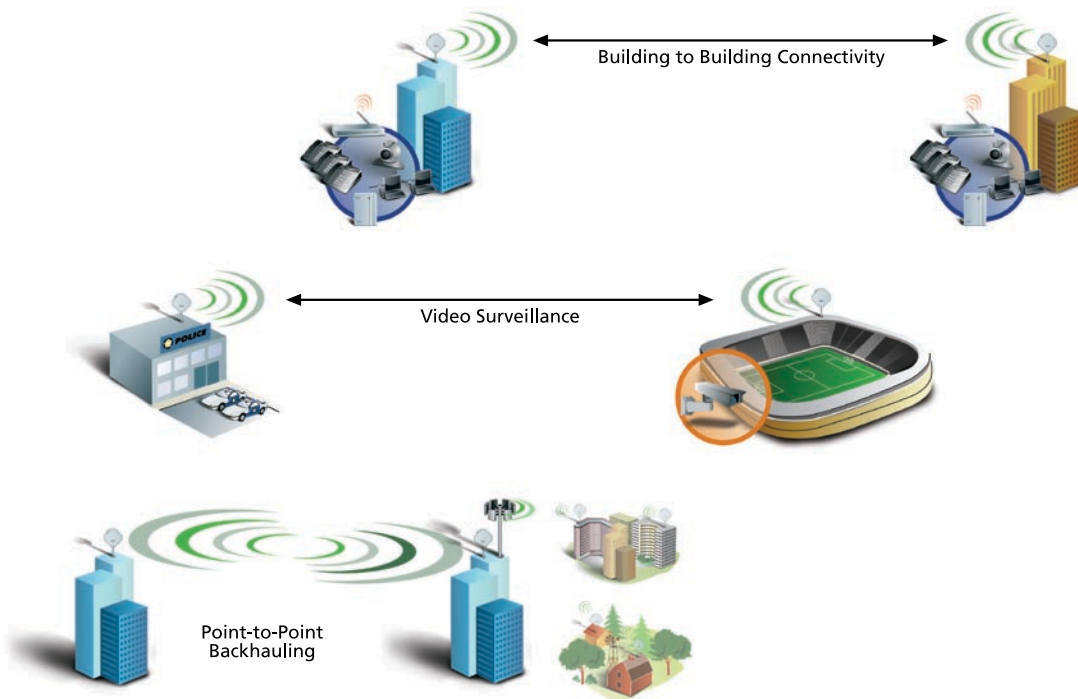
- **Cost**

Select a solution that will be the most cost effective for your business. The cost metrics to consider include (i) cost per Mbps of throughput capacity; (ii) cost and simplicity of installation; (iii) cost of maintenance and management; (iv) cost for licensed frequency bands. The BreezeNET B100 is aggressively priced and is an excellent choice on all four metrics listed above.

The Cost-effective Solution

Cost-effectiveness and ROI are both critical for any business. The BreezeNET B100 operates in the 5.3 GHz and 5.8 GHz unlicensed bands, so there are no licensing requirements or registration fees. Installation is easy, and eliminates the need to add servers in a remote location as well as the high cost of building landline infrastructure. And because the corporation owns the network there are no recurring service fees.

Eliminate the costs of installing additional servers and multiple instances of the same applications by wirelessly and securely connecting two remote locations operating on a single network. Applications and databases can be managed remotely by the company's IT staff, saving time and money. In addition, activities such as video surveillance can be easily centralized at the corporate office.

Leased line fees can range from several hundred to $1,500 per month and more, depending on the capacity and competition in each geographical market. The investment in a wireless point-to-point link can be completely re-couped within a matter of months, simply by eliminating recurring lease charges. And the cost benefits of a wireless point-to-point link extend far beyond this cost reduction.

Building to Building Connectivity

Video Surveillance

Point-to-Point
Backhauling

Corporation

Getting corporate facilities connected can be a costly challenge, with speed, security and reliability all being major considerations. The communication requirements of a corporation include secure data transfer, video and voice conferencing, video surveillance and corporate phone traffic which are all supported by the BreezeNET B100.

Providing net data throughput rates of 70 Mbps, the BreezeNET B100 provides a seamless connection between two locations to simultaneously deliver voice, video and data services, or any combination of these services. A standard E1/T1 line provides 1.5-2 Mbps which is adequate for email and basic data but is unable to handle today's advanced graphic-intensive applications and real-time services like video and voice.

Security is a fundamental of business. Built-in, hardware-based Advanced Encryption Standard (AES) encryption uses 128-bit security to prevent unauthorized access to the network. Optional encryption software supports Federal Information Processing Standards (FIPS) 197 for an additional layer of security.

Point-to-point wireless connectivity spans up to 30 miles (50 km) without the need for line-of-site deployment. This is particularly important in dense urban and industrial environments where clear line-of-site is not always available. In addition, the use of advanced modulation and error correction technologies mitigate signal interference and attenuation.

Quality of Service (QoS) features include Alvarion's Wireless Link Prioritization (WLP) technology to control latency in real-time interactive applications such as VoIP and video conferencing. This enables the seamless, reliable communication required by corporations to maintain productivity. The BreezeNET B100 supports up to 1,000 simultaneous voice calls; a capability that meets the needs of corporations handling even the highest call volume.

Law Enforcement, Emergency Services and Municipalities

Efficient communication is essential to providing law enforcement and emergency services to communities. The BreezeNET B100 supports large file data transfer, video surveillance, and VoIP for digital telephony.

There is a need to exchange large amounts of data between remote fixed locations within municipalities. Data often includes high-resolution photographs and streaming video. The BreezeNET B100 enables high-capacity connectivity between two points around the corner or up to 30 miles (50 km).

Video surveillance for traffic control and "hot spot" monitoring can be sent wirelessly to a dispatch or command and control center. Building wireline infrastructure for video is cost prohibitive and not possible in many cases. The BreezeNET B100 presents a wireless alternative that integrates into IP networks and is inherently flexible.

Emergency and security planning centralized around efficient communication is made easy through the use of a reliable, high-speed wireless network. And with built-in 128-bit AES security, plus, the option of additional FIPS 197 encryption, communications are secure.

Education

Budget constraints and the need for fast, effective communication within school districts make wireless broadband an ideal alternative to traditional leased lines. The BreezeNET B100 reduces communication costs while increasing capacity by as much as 45 times, when compared to a E1/T1 connection. Eliminating the expensive recurring costs of a leased line can free up valuable resources needed to educate students.

Connecting facilities through a secure wireless point-to-point link enables school districts to efficiently address all their communication needs without long-term contracts or ongoing costs. Institutions can share applications and resources over the network and take advantage of a single Internet connection that serves both facilities.

The BreezeNET B100 offers high-capacity wireless point-to-point connectivity for fast data transfer, instant voice and data notification, video and voice conferencing and real-time video surveillance between remote school district locations. Video, voice and data can be delivered wirelessly and in real time up to 30 miles (50 km).

Protecting students, faculty and employees is a number-one priority. And connectivity is the key. The remote video surveillance and broadband communication capabilities of the BreezeNET B100 present a cost-effective way to achieve a robust safety system. Creating an effective and comprehensive emergency and disaster plan is simplified through the use of a high-capacity wireless network.

In addition, each classroom, office and facility within a remote building can have access to the network for effective daily communication. Educational programs that use curriculum including data, voice and multi-media can be seamlessly delivered across the network.

Manufacturing and Warehousing

Manufacturing and warehousing facilities can be vast. Maintaining easy communication for effective team management can be challenging, as a business expands across industrial zones. Wireless broadband offers a simple, cost-effective way to connect a factory or shop to the head office.

The BreezeNET B100 provides a remote facility with direct access to office network resources. Transfer of information is fast and secure. Personnel working in the remote location can be equipped with a robust digital telephony system (VoIP) capable of handling up to 1,000 simultaneous calls. Conversely, video monitoring and data collection from the warehouse or factory floor can be received by office management in real-time.

Video cameras can be installed in remote parking lots and surrounding areas without the need for trenching and easily monitored from the main office.

Buildings can be wirelessly connected as close as a few hundred feet or as distant as up to 30 miles (50 km) without the need for line-of-sight. Advanced error correction technology compensates for potential signal interference in industrial areas where heavy radio noise is likely, while adaptive modulation maximizes data rate to take advantage of the higher communication rates available.

Your Business

Considering all the factors that contribute to effective communication within your business, wireless broadband is an excellent option for expanding your network. The added speed, security, flexibility, reliability, easy installation, easy management and low-cost offer key reasons to choose the BreezeNET B100 to expand your network to a remote facility across the street or up to 30 miles (50 km) away.

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