

# Loea



*With Enterprise LANs standardizing on Fast Ethernet and Gigabit Ethernet, network traffic is overwhelming the typical connections that bridge buildings today. The traffic bottleneck is not inside the building – it is outside.*

## Applications

- Building-to-Building Connectivity
- LAN Extensions
- Temporary Network Connections
- Telco Bypass
- Network Redundancy
- Video Conferencing
- Video Surveillance

## Benefits

- High bandwidth up to and exceeding 1Gbps
- Rapid installation and deployment
- Enterprise-wide network access
- Reduced costs

# Application Brief

## The Problem

Enterprises today are experiencing a rising tide of network traffic. Gigabit Ethernet LANs now make up over 20 percent of all corporate networks. Bandwidth-intensive video, graphics and data files are becoming widespread. And access to these files is becoming mission critical.

Unfortunately, in most Enterprises today, low-capacity leased lines are often used to connect remote building locations. At T1 or E1 data rates of 1.5Mbps and 2.0 Mbps, respectively, it becomes obvious that the network traffic bottleneck is not inside the building – it is outside, connecting the buildings.

While higher-bandwidth leased lines are an option, the high recurring cost (up to \$20K per month for Gigabit Ethernet leased lines in some locations) can easily outweigh the need.

Some Enterprises have resorted to pulling their own fiber. But, time-consuming trenching, environmental concerns, rights-of-way issues and high cost, eliminate this as a viable alternative for the majority of companies. In New York City, for example, trenching across Manhattan's Fifth Avenue can cost upwards of \$1M.

As a result, wireless technologies typically based on microwave, free space optics or unlicensed radio frequencies are often deployed. These provide an easy-to-install alternative to conventional land lines.

But, bandwidth constraints, the possibility of interference or spectrum saturation and weather impact are major concerns. Backhaul links between buildings – often carrying critical data – cannot be susceptible to these potential issues.

The need for a high-bandwidth, high-availability, highly-secure yet highly-cost effective wireless network solution becomes apparent.

# Enterprise Solutions

## The Loea Solution

Loea's millimeter wave radio products are the ideal solution for enterprises needing campus connectivity between remote buildings, annex locations and other distant sites.

Instead of using traditional leased lines, these buildings can now be linked with a high-capacity wireless point-to-point solution.

With data throughput of 1.25Gbps, Loea's solutions are more than capable of handling the ever-increasing, bandwidth-intensive data traffic seen in the Enterprise. Gigabit Ethernet LANs in offices today coupled with increasing use of video, graphics and images are driving the need for higher capacity. Files that would typically take several minutes to transmit can now be transferred in a couple of seconds.

Based on proven millimeter wave technology used by the military, Loea's products are also highly secure and unaffected by most weather occurrences such as fog.

Transmission is at the upper radio frequencies (70/80GHz) – bands recently approved for commercial use. A simple, web-based licensing process reduces the potential for interference and spectrum saturation issues facing lower, unlicensed frequencies. And, a very narrow beamwidth (0.4 degrees) ensures that data transmission cannot be easily intercepted.

From a cost savings standpoint, Loea's solutions are one of the most cost-effective wireless solutions today. Installation can take place in the matter of a few hours – a significant reduction compared to fiber trenching. Costly monthly leased lines (approaching several thousands of dollars per month depending on location) are virtually eliminated. And since the technology is wireless, networks can be easily redeployed to new locations.

# Loea App Brief

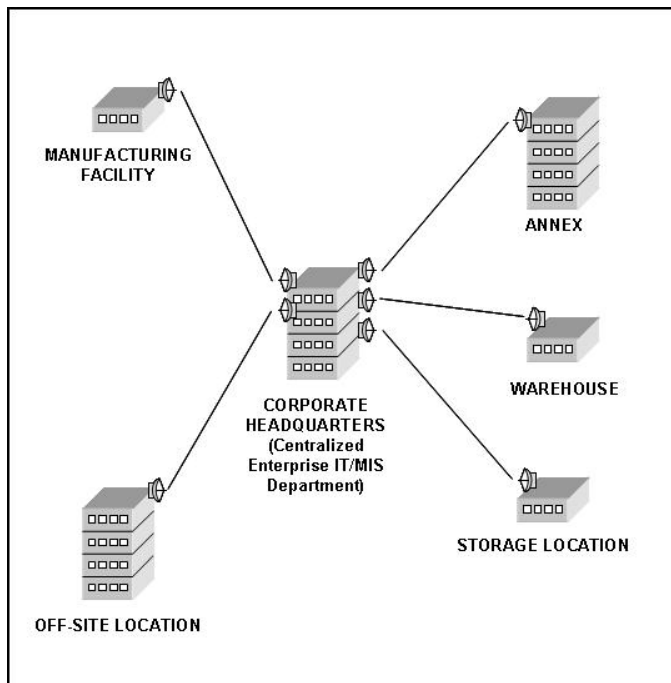
Enterprise  
Solutions

## Benefits

Loea's millimeter wave wireless solutions are helping Enterprises achieve the bandwidth of fiber with the flexibility of wireless. Benefits include:

- Rapid Installation – can be installed in hours.
- Reduced Costs – avoids monthly leased line fees and replaces need for expensive fiber trenching.
- Expanded Reach – easy deployment to locations where environmental or geographical obstacles make fiber runs or leased lines unavailable.
- Redundancy – acts as back-up or failover to ensure network availability.
- Improved Network Performance – removes throughput constraints and interference issues facing licensed microwave and unlicensed RF.
- Minimal Weather Impact – works in environments where FSO technology is impacted (fog).
- Enhanced Bandwidth – increases network capacity with Gigabit speeds.
- Greater Control – eliminates dependency on leased lines for connectivity.

## Configuration Example



## Loea Products

Loea products have been used as a vital communication link for some of the world's leading Enterprise, Carrier and Government customers.

Based on 70/80GHz millimeter wave technology (also referred to as E-Band), Loea offers the highest-performing, highest-availability wireless solutions available on the market today.

And by leading the successful petitioning of the FCC for commercial use of these frequencies and spectral bandwidth, Loea products will be able to reach up to 10Gbps throughput in the very near future.

Loea solutions are ideal for point-to-point connectivity between buildings, campuses and remote locations – eliminating the need for time-consuming and cumbersome fiber runs.

Unlike other wireless technologies that have performance limitations due to bandwidth, weather and distance, Loea's products provide full-duplex 1.25Gbps throughput with 99.999% availability at link distances exceeding 1km. And Loea's use of upper radio frequencies coupled with its narrow beam width (0.4 degrees) make it one of the most secure forms of wireless transmission today. No other wireless technology can make such a claim.

All Loea millimeter wave solutions include:

- 2 Radios
- 2 Antennas (2-foot diameter for maximum range)
- 2 Radio Mounts and Steering Mechanisms
- Installation and rooftop hardware are not included

## About Loea

Loea Corporation is the pioneer of the 70/80 GHz wireless domain and the product, quality and technology leader.

Loea was the first company to release and deploy successful product in the 71-76 and 81-86 GHz bands and has been on the leading edge of technology creation in this space for over 10 years. Loea successfully petitioned the FCC to gain access to this spectrum for commercial use in 2001 and was first to receive commercial FCC approval in July 2005.

Loea is headquartered in Honolulu, Hawaii. R&D and manufacturing locations are located in Kahului, Maui, Hawaii and West Hatfield, Massachusetts.



Loea Corporation  
Pacific Guardian Center  
733 Bishop Street, Suite 1717  
Honolulu, HI 96813

More info:  
[www.loeacom.com](http://www.loeacom.com)  
(858) 646-5543 or (808) 521-4908  
[loeainfo@loeacom.com](mailto:loeainfo@loeacom.com)