aoptix™

AOptix Intellimax™



The Performance of Fiber, the Flexibility of Wireless

Keeping people safe and connected.

Executive summary

AOptix Intellimax is transforming the telecommunications industry with the first true multi-gigabit wireless fiber alternative. AOptix Intellimax provides a breakthrough in wireless capacity covering longer distances with carrier class availability, comparable to fiber.

By combining advanced optical technology with millimeter wave technology, AOptix Intellimax delivers the performance of fiber with the flexibility and lower cost of wireless. AOptix proprietary curvature adaptive optics technology has been proven in defense applications for transmitting mission-critical data over long distances at ultra high data rates. Now it's available to service providers and other industries that have growing capacity demands.

Challenge:

Fiber versus wireless





Telecommunication service providers trying to choose between fiber or wireless transport solutions face a dilemma: Fiber delivers the high capacity, reach, and availability required by most modern telecom applications. By contrast, wireless transport offers greater deployment flexibility, time-to-service, and lower equipment and installation costs. Each option has its drawbacks: fiber is expensive and far from ubiquitous. Fiber deployment, where feasible, can take months, partially because obtaining rights of way can be challenging. Traditional wireless solutions do not deliver nearly the same high capacity and have other constraints such as limited distance or lack of carrier grade availability.

Solution:

Fiber performance through wireless transport



With AOptix Intellimax, service providers don't have to choose between high capacity, distance, carrier grade availability, or deployment flexibility. AOptix Intellimax is the first truly viable alternative to fiber that delivers fiber-like performance with the flexibility of a wireless solution.

Designed for telecommunication service providers, enterprises, and government entities, the AOptix Intellimax family of products delivers multigigabit capacity with carrier grade availability in all weather conditions up to 10km for a single hop. It can reach unlimited distances when deployed in a daisy-chained repeater configuration without compromising capacity or availability.

AOptix Intellimax delivers the capacity required by today's telecom applications by:

- Transmitting multi-gigabits of data up to 10km/hop
- Operating at full capacity under all weather conditions

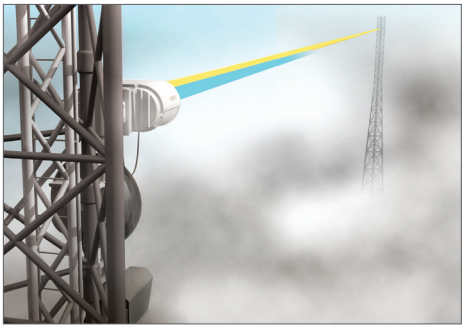
At the same time, AOptix Intellimax simplifies installation and alignment to significantly reduce deployment time and cost of ownership. Its software driven link alignment and tracking not only enable a complete link installation in less than 20 minutes but also ensure real-time precision tracking for maximal link performance.

Extraordinary performance through advanced hybrid technology

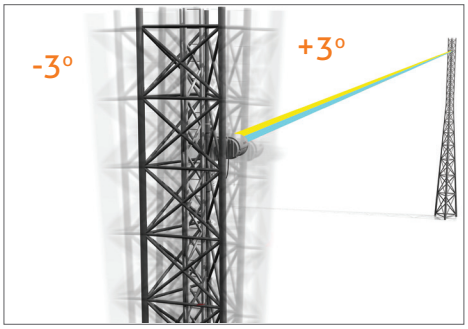
At the core of AOptix Intellimax is advanced optical technology that leverages the company's extensive research and defense history in curvature adaptive optics. Curvature adaptive optics technology has been used by astronomers to see deeper into space by correcting for atmospheric scintillation. The same technology has been used in defense applications for creating a network in the sky supporting 10-80 Gbps data rate over distances of hundreds of kilometers.

Now available for commercial applications, AOptix Intellimax leverages the same core technology capabilities to offer a unique wireless communications solution with breakthrough fiber-like performance. AOptix Intellimax is the first truly integrated hybrid wireless solution that provides the benefits of fiber without the constraints of conventional wireless technology.

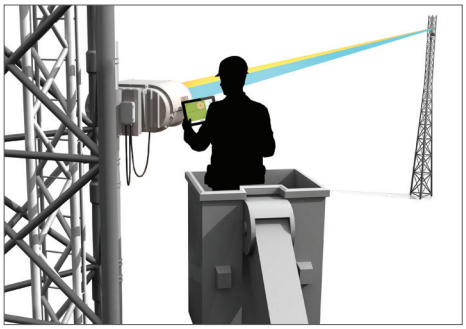
Key Technology Innovations:



Works in all weather conditions



Compensates for tower twist and sway



Aligns and operates within minutes

Advanced Wavelength Diversity

Advanced Wavelength Diversity (AWD) combines the capabilities of advanced optical and millimeter wave technologies to compensate for weather vulerabilities. AWD enables carrier grade availability and constant (non-adaptive) multi-gigabit throughput.

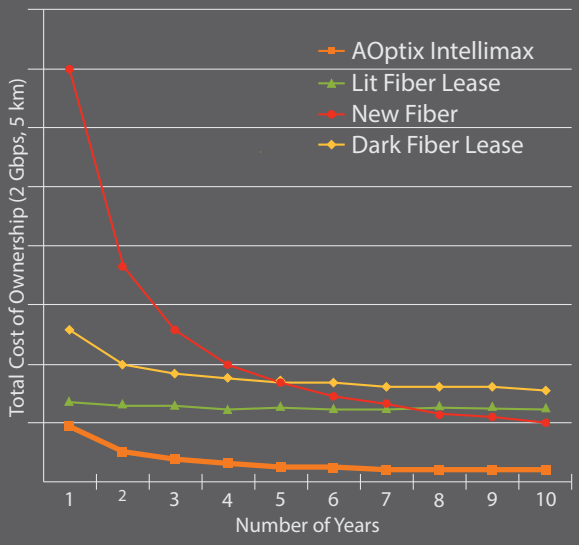
At the heart of AWD is the Dynamic Packet Resourcing (DPR) algorithm which relies on dual frequency transmission and real time packet selection across the two frequencies to produce an output data stream with high fidelity. Through fog, rain, or snowstorms, AWD enables data to be transported error-free over long distances at a constant multi-gigabit capacity.

Active Beam Steering

Active Beam Steering (ABS), allows for real-time automated steering up to +/- 3 degrees to compensate for tower twist and sway caused by heavy wind, sun loading, ice and snow build up. This fully integrated beam steering technology keeps the link aligned at all times ensuring maximum performance. Real-time automated beam steering enables AOptix Intellimax to be deployed on any type of tower or other structure without the stringent structural stability requirements typical of other wireless solutions. ABS also removes constraints on tower placement without compromising performance. This in turn opens up more deployment opportunities and enables more flexibility in network planning.

Point, Acquire, and Track

Point, Acquire, and Track (PAT) is a software driven link alignment technology that dramatically simplifies the installation and alignment process. The software driven PAT process utilizes sophisticated beam profiling and lobe tracking techniques to ensure precision tracking of the main lobe with repeatable results every time for maximum performance. PAT automates a complete link installation in less than twenty minutes, which significantly reduces the cost for deploying wireless links.



Total cost of ownership

Cost is a critical component for service providers trying to stay ahead of the capacity demand curve by upgrading their transport infrastructure. When determining total cost of ownership (TCO), organizations need to account for capital expenditure (CAPEX) and operational expenditure (OPEX). The biggest challenge to using fiber is the TCO, whether it is high recurring OPEX for leased fiber or high upfront CAPEX for new fiber deployment.

AOptix Intellimax offers dramatic breakthroughs in bandwidth, distance, and availability, at a fraction of the cost of an equivalent fiber solution. AOptix Intellimax delivers rapid return on investment (ROI) of typically less than a year.

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Market applications

AOptix Intellimax revolutionizes wireless transport, providing a massive increase in capacity for a wide range of market applications. It is the ideal transport solution for markets with growing capacity demands driven by high-bandwidth markets, in either the private or public sector. The range of potential market applications includes the following:

- Macrocell backhaul
- Enterprise last mile access
- Datacenter connectivity
- Campus connectivity
- Path diversity to fiber
- Fiber extension
- Ad hoc mobile networks

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