NodeScale™ Vectoring

Breakthrough Broadband DSL Access Technology

Target Applications

- Multi-tenant and Multi-dwelling Unit (MxU)
- Fiber to the Building (FTTB), Fiber to the Node (FTTN) architectures
- Remote Terminal (RT) and Central Office (CO) DSLAMs

Features

- Architecture scalable from 8 ports to 384 ports
- Pay-as-you-go upgrades
- Efficient use of backplane resources
- Low latency (<1 sync symbol)
- Maximum flexibility and upgradability
- Lowest power consumption
- Low component count approach

Ikanos NodeScale™ Vectoring technology enables fiber-class performance over copper. Service providers can optimize the performance of their VDSL networks through the implementation of DSM-3 compliant, noise mitigation equipment.

NodeScale Vectoring is a comprehensive and scalable approach for both legacy and next-generation network deployments. By utilizing NodeScale Vectoring, service providers can significantly exceed previously attainable performance levels, enabling throughput speeds of 100 Mbps.

Performance Advantages

NodeScale Vectoring enables dramatic benefits. By identifying and canceling crosstalk interference, independent of binder, cable or chassis, NodeScale Vectoring increases robustness and reliability. Since it works over an entire node, it dramatically increases broadband.

Utilizing the existing copper plant to deliver broadband speeds equivalent to and in many cases exceeding fiber, NodeScale Vectoring provides significant cost advantages in the last mile. In addition, Ikanos' advanced broadband DSL chipsets consume the lowest power in the industry (<1W per port) and are compliant with European Code of Conduct (CoC) power consumption standards, providing for state-of–the-art power savings and efficiencies.
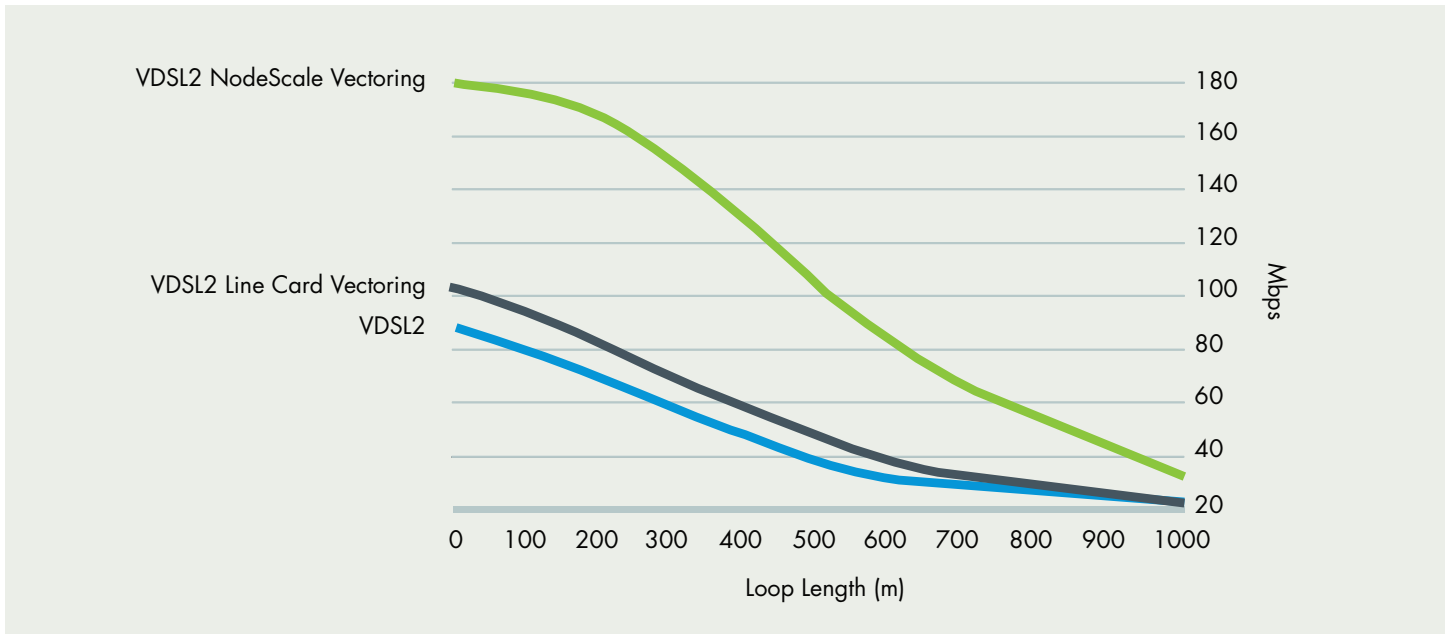
Scalable and Upgradable

Ikanos' NodeScale Vectoring architecture is scalable — up to 384 ports. This scalability enables service providers to address all nodes in their network, regardless of the number of customers that each node is servicing. This helps the carrier realize the benefit of NodeScale Vectoring across their entire FTTN network. In addition, the architecture of Ikanos' central office solution allows carriers to use a single line card to support upgrades on a line-byline basis for a pay-as-you-go vectored network deployment.

Compliance with Industry Standards

Ikanos' NodeScale Vectoring complies with the International Telecommunication Union standards group G.vector (ITU-T G.993.5) standard, which provides for dynamic spectrum management level 3 (DSM-3) through the use of advanced crosstalk cancellation techniques. DSM-3 aims at identifying, diagnosing and reducing or eliminating downstream and upstream crosstalk phone line interference, as well as increasing the stability of DSL lines. Service providers can optimize the performance of their VDSL networks through the implementation of DSM-3 compliant, noise mitigation equipment.

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NodeScale vs. Line Card Vectoring

VDSL2 NodeScale Vectoring

VDSL2 Line Card Vectoring

VDSL2

Mbps: 180, 160, 140, 120, 100, 80, 60, 40, 20

Loop Length (m): 0 100 200 300 400 500 600 700 800 900 1000

Complementary Technologies for Higher Quality Bandwidth Coverage

NodeScale Vectoring is designed to be used in combination with other innovative technologies from Ikanos. Technologies such as Ikanos Quality Video (iQV) – an innovative line stabilizing technology – allow for the dynamic adjustment of data rates to provide for optimal quality regardless of line condition. The combination of these innovative technologies enables service providers to deliver high-speed broadband performance with best in industry robustness and stability to a significantly higher percentage of subscribers.

For more information, contact Ikanos.

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