

# 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.

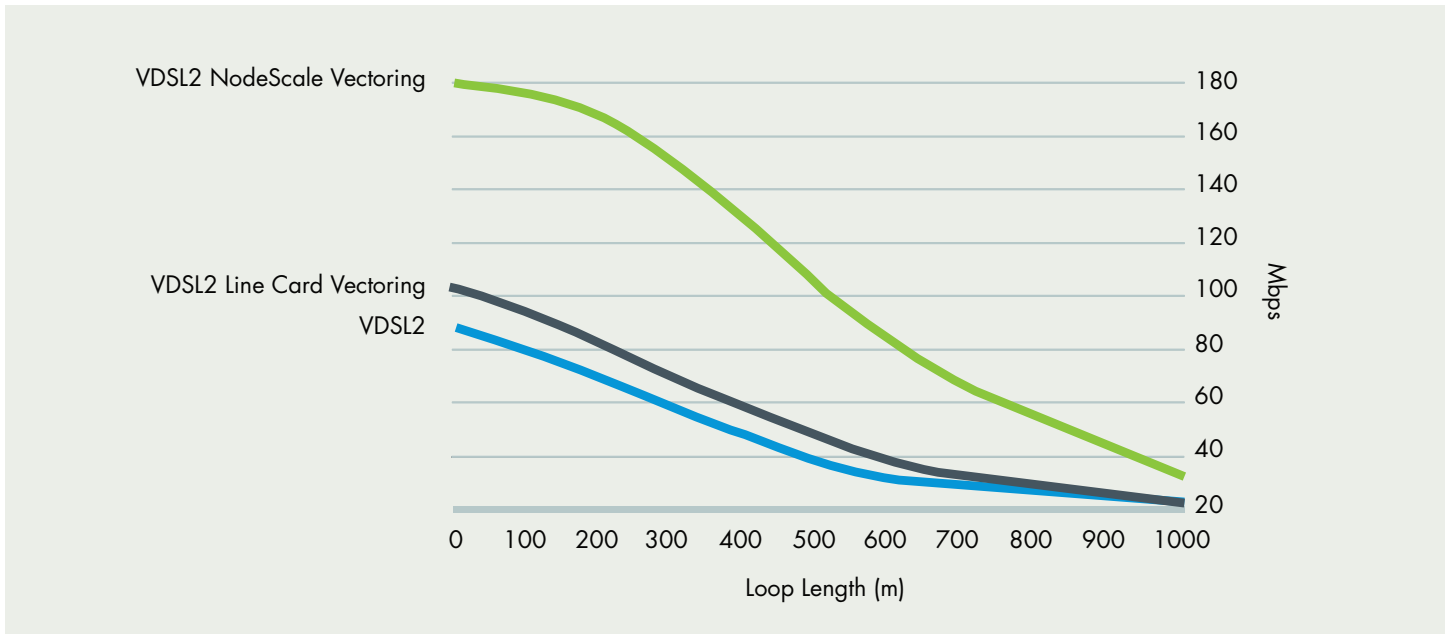
#### Scalable and Upgradable

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-by-line 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.

## NodeScale vs. Line Card Vectoring



### 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.

© 2010 Ikanos Communications, Inc. All Rights Reserved. Ikanos Communications, Ikanos, the Ikanos logo, the "Bandwidth without boundaries" tagline, Fusiv, Fx, FxS, iQV and Ikanos Accelity, Ikanos Capri, Ikanos ISOS, Ikanos Maxtane, Ikanos NodeScale Vectoring, Ikanos Orion, Ikanos Solos, Ikanos Velocity, Ikanos Vulcan are among the trademarks or registered trademarks of Ikanos Communications. All other trademarks mentioned herein are properties of their respective holders. This information is protected by copyright and distributed under licenses restricting, without limitation, its use, reproduction, copying, distribution, and de-compilation. No part of this information may be reproduced in any form by any means electronic, mechanical, magnetic, optical, manual, or otherwise, without prior written authorization of an authorized officer of Ikanos Communications, Inc (Ikanos).

#### Disclaimer

This information is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Ikanos. Ikanos assumes no responsibility or liability for any errors or inaccuracies that may appear in this material. Ikanos makes no representations or warranties with respect to the design and documentation herein described and especially disclaims any implied warranties of merchantability or fitness for any particular purpose. References in this document to an industry or technology standard should not be interpreted as a warranty that the product or feature described complies with all aspects of that standard. In addition, standards compliance and the availability of certain features will vary according to software release version. For further information regarding the standards compliance of a particular software release, and the features included in that release, refer to the release notes for that product.

Ikanos reserves the right to revise the design and associated documentation and to make changes from time to time in the content of this document without obligation of Ikanos to notify any person of such revisions or changes. Use of this document does not convey or imply any license under patent or other rights. Ikanos does not authorize the use of its products in life-support systems where a malfunction or failure may result in injury to the user. A manufacturer that uses Ikanos products in life-support

For more information, contact Ikanos.

Ikanos Communications, Inc.  
47669 Fremont Boulevard  
Fremont, California 94538

[www.ikanos.com](http://www.ikanos.com)

+1 510.979.0400

+1 510.979.0500

[sales@ikanos.com](mailto:sales@ikanos.com)

