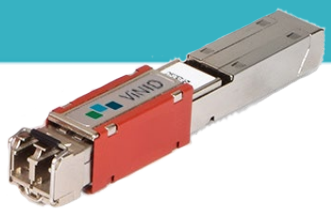
VB-NID

Vibicom Communications Inc.

Miniature Programmable Network Interface Device



- Field-programmable network interface device (NID) for service providers, wholesalers, and mobile operators
- Patent-protected design for seamless integration and enhancement of any existing network device
- Service demarcation, SLA assurance, and diagnostic tools at Layers 2, 3, and 4

The patent-protected VB-NID is a field-programmable miniature L2/L3 network interface device (NID), available in an SFP sleeve form factor or in an SFP form factor with integrated optics. VB-NID offers software-defined network functionalities, including enhanced demarcation, remote monitoring, and fault isolation. VB-NID programmability is based on a powerful FPGA that enables field updates to the product software and application.

The SFP sleeve is a revolutionary platform for service providers seeking to upgrade their networks to deliver reliable bandwidth with end-to-end SLA assurance. The innovative patent-based design of VB-NID breaks through the barriers of cost and complexity to make Carrier Ethernet available to everyone, everywhere. The patent-protected SFP sleeve design is easily pluggable into standard SFP ports, eliminating the use of external power, and reducing space and cabling expenses.

VB-NID provides instant Carrier Ethernet functionality for switches, routers, DSLAMs, and mobile base stations. It offers comprehensive tools for service activation, performance monitoring, and fault diagnostics, providing ongoing SLA reports while reducing costs associated with fault isolation.

VB-NID transparently envelops a large variety of SFPs, enabling full reuse of customer equipment and seamless deployment over multiple access infrastructure types, such as short-haul and long-haul fiber connections, bidirectional single-fiber links, and copper lines.

VB-NID is also available as an SFP with an integrated optical module.

VB-NID is a true plug-and-play solution. Its zero-touch provisioning capabilities enable easy installation by anyone.

MARKET SEGMENTS AND APPLICATIONS

VB-NID is the perfect solution for service assurance in residential and mobile backhauling networks, small cells, business services, and wholesale services.

As a service demarcation device, VB-NID ensures proper service handling throughout the service provider's network by policing customer traffic, attaching service VLANs, and adding priority marking to multiple services at the customer premises.

Simultaneously, VB-NID offers multi-layer performance monitoring tools for every service. At Layer 2, it offers OAM and PM tools that actively measure key performance indicators, including delay, jitter, and packet loss rate. At Layer 3, its integrated TWAMP Light controller/responder and UDP echo responder allow seamless monitoring across any packet network and in multi-vendor environments.

For mobile backhauling, VB-NID can offer Sync-E support, including transparent ESMC message forwarding.

ETHERNET

VB-NID can be ordered as an FE or FE/GbE device. The GbE option features auto-negotiation and supports both rates.

For service demarcation, VB-NID provides:

- Port-based and flow-based classification of multiple services
- Flow classification per VLAN, 2 VLANs, VLAN range, P-bits, DSCP, EtherType, or source/destination MAC address
- Per-flow MEF 10.3 policing
- VLAN or 2-VLAN addition, and VLAN replacement per flow with priority marking per P-bits and DSCP
- Layer-2 control protocol tunneling (L2PT) with optional MAC change

VB-NID

Vibicom Communications Inc.

Miniature Programmable Network Interface Device

MONITORING AND DIAGNOSTICS

OAM

VB-NID provides the following OAM tools per EVC.CoS or untagged traffic:

- IEEE 802.1ag (CFM) for continuity check, loopback, and link trace
- ITU-T Y.1731 for loss (synthetic and real traffic), delay, and delay variation measurements, as well as fault propagation (AIS/RDI)
- MEF 36-based MIBs for PM reports
- IEEE 802.3-2005 link OAM and dying gasp trap
- RFC 5357 TWAMP Light controller and responder with multiple session reflectors offering hardware-based time stamping

Loopback Tests

VB-NID can perform on-demand intrusive and non-intrusive Layer-2/3/4 loopbacks at wire speed, with optional MAC, IP, and UDP port swap per flow. VB-NID also offers UDP echo responder functionality.

Service Activation Tests

VB-NID responds to RFC 2544 and Y.1564 service activation tests at wire speed. It can also initiate Layer-3 SAT with its own generator.

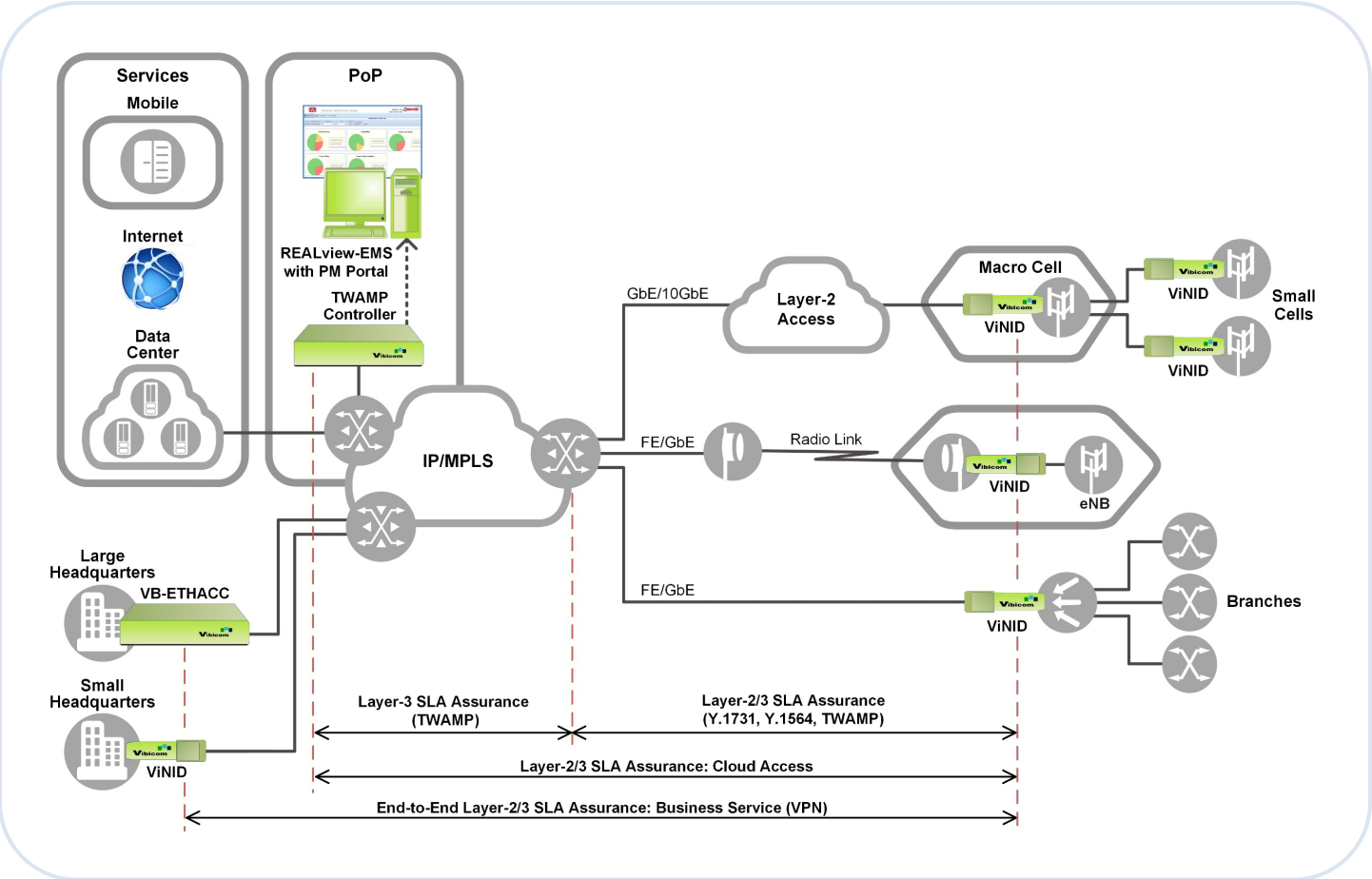
Within the Platinum package, VB-NID enables smart remote packet capturing. It can transport classified traffic to any standard Wireshark station for further analysis. For best efficiency, VB-NID can send truncated packets.

Digital Diagnostic Monitoring

Digital Diagnostic Monitoring (DDM) information read from an SFP plugged into a VB-NID is stored on the VB-NID. This information can be forwarded to the host and retrieved directly from the device via a remote management system.

Microburst Monitoring

Within the Platinum package, VB-NID can monitor network traffic on a per-flow or multiple-flow basis, and detect unexpected bursts of data in very short time intervals



VB-NID

Vibicom Communications Inc.

Miniature Programmable Network Interface Device

measured in microseconds. It provides a clear indication of traffic and bursts passed, dropped, or exceeding thresholds based on CIR/CBS and EIR/EBS. In addition, it helps facilitate bandwidth on demand.

Auto Responder

VB-NID can automatically detect and respond to L2, L3, and L4 loopbacks and OAM traffic with minimal installation effort and no configuration. The auto-responder mode is transparent to user traffic and provides a smooth introduction of service visibility into the network.

MANAGEMENT AND SECURITY

Management Options

VB-NID can be managed via the following interfaces:

- Web-based and menu-driven interface in English and Chinese
- Command line interface (CLI) via secured Telnet (SSH)
- SNMPv2
- Inband management (VLAN-based)
- Out-of-band management and software configuration from any Ethernet port in the host device

VB-NID supports secure management using TACACS+ (client authentication, authorization, and accounting).

VB-NID is equipped with two MAC addresses: one for management and one for services. This enables the device to work and be managed in a Layer-2 untagged environment, as well as in VLAN and double VLAN-tagged environments.

VB-NID acquires Time of Day through NTP.

Access Control List (ACL)

The ACL enables permission/denial of management access to specified IP addresses for increased security.

Software Download

Application software can be downloaded to VB-NID via the following:

- SFTP or TFTP for remote software download
- SFP-CA.2 unit, using the YMODEM protocol

Zero Touch Provisioning

The host IP address and configuration files can be obtained automatically using standard DHCP client functionality.

Loaned IP

VB-NID can be managed without a dedicated IP address, by loaning the IP address of the hosting device.

Specifications

CAPACITY

Max. Frame Size	12,000 bytes

ETHERNET INTERFACES

SFP Sleeve	SFP-based, MSA-compliant edge connectors, 100BASE-FX/1000BASE-FX
SFP Transceivers for VB-NID SFP	Electrical: 100BASE-T/1000BASE-T
	Optical: Dual/single, multimode/single-mode fiber:
	FE: 100BASE-FX/LX/BX
	GbE: 1000BASE-SX/LX/ZX/BX and CWDM

DIAGNOSTICS

Syslog	Supported
Loopback Tests	Intrusive and non-intrusive L2/L3/L4 loopbacks, with optional MAC, IP, and UDP port swap per flow
Service Activation Tests	RFC 2544 responder
	ITU-T Y.1564 responder
	L3 SAT generator

GENERAL

Compliance	IEEE 802.3, MEF CE 2.0

POWER

SFP Sleeve	1.2W without SFP
	1.65W (including standard 10 km SFP)

PHYSICAL

	SFP Sleeve	VB-NID SFP
Height	12.7 mm (0.50 in)	12.7 mm (0.50 in)
Width	14.3 mm (0.56 in)	14.3 mm (0.56 in)
Depth	81.1 mm (3.19 in)	81.1 mm (3.19 in)
Weight	30.0 g (1.0 oz)	40.0 g (1.4 oz)

ENVIRONMENTAL

Case/Ambient Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Humidity	Up to 90%, non-condensing

VB-NID

Vibicom Communications Inc.

Miniature Programmable Network Interface Device

Note: *Reaching the operating temperature of -20/-40 to 65°C (-4/-40 to 149°F) requires the use of industrial SFPs.*

Ordering

The information below represents examples of supported configurations. For additional configuration options, please contact Vibicom.

Hardware

VB-NID/SLV/GE

Software

VB-NID-SW/DEMARC
Service demarcation application software

VB-NID-SW/PLATINUM
Platinum application software, includes demarcation application software and additional features

Note: *Order a hardware and a software option.*

ORDERING OPTIONS

Some options are not supported by all models. Some option combinations are invalid or may require a minimum order. To determine the BOM for your application, please contact Vibicom.

Enclosure	SLV	SFP sleeve enclosure
	SFP	SFP enclosure
Speed	FE	Fast Ethernet
	GE	Gigabit Ethernet
Fiber Type	5DH	850 nm, 300 m (984 ft) 62.5/125 multimode, 550 m (1804 ft) 50/125 multimode
	6DH	1310 nm, 10 km (6.2 mi) 62.5/125 single mode
Sync-E	Default	No Sync-E
	SYE	Sync-E

SPECIAL CONFIGURATIONS

Please contact Vibicom for configuration options.

©2026 Vibicom Communications Inc.
All other trademarks are property of their respective holders.

Vibicom
www.vibicom.com
market@vibicom.com