DATA SHEET

XTM SERIES

NETWORK INTERFACE DEVICE

Cost-efficient Ethernet Service Demarcation and Media Conversion

The Network Interface Device (NID-GE) is part of a range of port devices used with Infinera packet-optical transport switches (EMXP IIe) to extend their capabilities to remote locations or to add functionality to that specific port. The NID-GE's highly capable Ethernet operations, administration and management (OAM) feature set provides carrier-class gigabit Ethernet demarcation and media conversion.

Through the use of small form-factor pluggable (SFP) transceivers it supports a wide range of electrical and optical interfaces, including dense wavelength-division multiplexing (DWDM), coarse wavelength-division multiplexing (CWDM) and colorless self-tuning SFPs for use in the Infinera Intelligent WDM (iWDM®)-passive optical network (PON) solution.

Ideal in Large-scale Deployments

The NID-GE is managed as an integral part of the EMXP62/IIe and EMXP48/IIe via Digital Network Administrator for XTM Series (DNA-M), the Infinera multi-layer management suite, and the device acts as a remote port for the EMXP IIe.

All provisioning is performed on the EMXP IIe-NID-GE simply takes its configuration from that unit. This enables highly scalable management and allows operators to monitor alarms without the need for individual simple network management protocol (SNMP) agents per customer.

The port device management architecture allows automatic discovery of new devices as they are connected. All relevant parameters are downloaded from the connected EMXP IIe, providing fast and easy service commissioning.

Furthermore, feature growth is easily provided through remote software upgrade from the EMXP IIe without the need to replace the hardware.

Altogether, the easy configuration, provisioning and commissioning make the NID-GE ideal in large-scale deployments.

Key benefits:

- Allows large-scale deployments through "remote port" architecture
- Saves valuable IP addresses as the NID-GE doesn't need one
- Provides Carrier Ethernet 2.0 (CE2.0)-compliant E-Line, E-LAN, E-Access and E-Tree services through EMXP IIe integration
- Plug-and-play deployment through automatic discovery and configuration
- Superior synchronization – ideal for connecting mobile cell sites
- Client flexibility with optical and copper interfaces for smooth media conversion

Saves Valuable IP Addresses

As the NID-GE is managed as part of the EMXP IIe, the need to allocate separate management IP addresses per customer is eliminated. One single IP address is required for the XTM Series chassis containing one or more EMXP IIe units and all subtended NID-GE units; hence, no extra management of IP addresses is needed.

Compact and Low Power

Thanks to its compact and fanless, design as well as its low power consumption, the NID-GE fits well in locations with space and dissipation restrictions. The base unit draws only 6 W, resulting in a solution with very low power consumption.

Easy Monitoring of Service Level Agreements

The NID-GE performs standards-based measurement of the performance monitoring parameters defined in Y.1731. Y.1731 defines the methods used to measure performance monitoring parameters such as frame loss, frame delay and frame delay variation.

The measurement data from the NID-GE is reported to the DNA-M and made available to the DNA-M Portal for visibility of service quality to operators and their end customers.

The real-time service performance data provided by the NID is of significant value when monitoring service level agreements (SLAs).

The NID-GE also supports IEEE 802.1ag connectivity fault management (CFM) OAM, allowing monitoring of service availability to end customers. Furthermore, digital diagnostics monitoring (DDM) is supported to enable remote verification of additional parameters, such as optical power levels.

Business Ethernet and Mobile Backhaul Applications

In combination with the EMXP IIe, the NID-GE is ideal for business Ethernet and mobile backhaul applications with single uplink. Services can be monitored at the customer premises, where either electrical or optical client ports can be used.

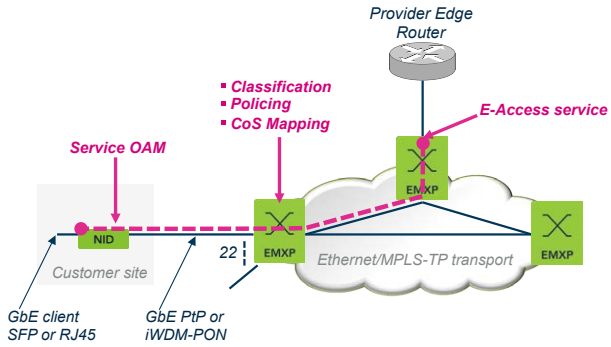

Fig 1. NID and EMXP IIe Providing E-Access Service Between Provider Edge (PE) Router and Customer Site.

Part of the iAccess Solution

Used in the Infinera iAccess solution – which also encompasses the iWDM-PON solution and the TNM Portal – the NID-GE provides an access solution with self-tuning optics that automatically tune to the correct wavelength, removing any provisioning or commissioning activities.

Offers CE2.0 Services

In combination with the EMXP IIe, the full MEF range of CE2.0-compliant services can be delivered, including E-Line, E-Tree, E-LAN and E-Access services. Service creation is done in the EMXP IIe, and the NIG-GE acts as a remote port to that unit.

This allows the EMXP IIe to deliver CE2.0 services both locally at the EMXP IIe site and at remote sites using the NID-GE.

Specifications

Interfaces	GbE network interface (SFP) GbE customer interface (SFP or RJ45) Supported SFP types: • Uncolored multi mode or single mode • CWDM or DWDM • Single-strand fiber solution • Colorless, self-tuning (used in iWDM-PON)
Ethernet and OAM	IEEE 802.1ag/MEF Ethernet Service OAM Y.1731 loss, delay and delay variation measurements with SLA reporting Jumbo frames (up to 9600 bytes) Loopback responder for RFC2544 and Y.1564 tests Auto-negotiation and MDIX Two Port MAC Relay (TPMR) IEEE 802.1aj Link pass through, aka link loss forwarding Dying gasp message Forwarding performance is full line rate according to RFC2544 Latency < 3 microseconds
Synchronization	Transparent to Synchronous Ethernet ITU-T G.8261/G.8262/Y.1362
Management	Remote management from EMXP62/IIe or EMXP48/IIe node using in-band communication (uses no own IP address)
Mechanical	Locking mechanism for all power connectors Height x Width x Depth: 20 x 124 x 153 mm / 0.79 x 4.88 x 6.02 in Mounting bracket for up to three units in 19 inch width and 1U height
Power	Redundant power input range 20 to 72 VDC Two telecom grade power connectors with locking mechanism One 5.5 mm DC barrel connector Power consumption: max 6 W excl. SFPs External AC adapter 100-240 VAC
Environmental	Operating temperature: -5 °C to +55 °C / 23 °F to 131 °F Hardened operating temperature: -40 °C to +65 °C / -40 °F to 149 °F Humidity: 5% to 95%, non-condensing NEBS level 3, type 2 compliance MTBF: 60 years

Specifications and Features Are Subject to Change

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