EtherNID GE
Ethernet Services Demarcation Point

Key features

The growing demand for Ethernet Services is exploding everywhere.

Carriers contending in this competitive market space are faced with several challenges:

- **Setting a clear Demarcation Point between the Customers' and the Carriers' Ethernet Network**
- **Implementing Operations, Administration and Maintenance (OAM), to reduce OPEX and minimize truck-roll**
- **Assuring End-to-End Service Level Agreement (SLA) parameters**
- **Offering Carrier-Grade Reliability**

All of this while avoiding any impact on network performance and keeping CAPEX at a minimum

The Accedian EtherNID™ GE Ethernet Demarcation Device (EDD) offers the solution to these challenges by implementing standards-based OAM and loop-back capabilities. Providing a Performance Assurance Agent™ (PAA™) allows measuring and tracking End-to-End SLA parameters such as Latency, Jitter, Packet Loss and Availability in a continuous manner, while the service is running.

The EtherNID™ GE can also be used as a last-mile delivery vehicle by providing an optical or electrical port extension to Metro Ethernet Access Platforms. With 2 SFP receptacles, and 2 tri-rate RJ-45s, the EtherNID™ GE's Universal Architecture allows the user to mix and match medias and upgrade last-mile fiber from 100M to GigE with no truck-roll.

Furthermore, the EtherNID™ GE's high-performance Fast-Thru™ engine minimizes intrinsic packet-jitter and latency of the device (0.6 microsecond), thus allowing the deployment of multiple units along an End-to-End Ethernet Service Path without introducing any significant latency or jitter to the service itself.

The EtherNID™ GE's ports can also be configured for Monitoring where external test devices can be connected to perform non-intrusive, in-service troubleshooting, thus offering Layer 1 to 4 visibility in each direction independently or combined, a function that carriers are used-to with traditional demarcation devices but lacking from current Ethernet service delivery methods. Furthermore, intelligent wire-speed filters can be applied to selectively monitor specific traffic.

Additionally, the EtherNID™ GE can be optionally line-powered using Power over Ethernet (PoE) and offers a fail-over bypass circuitry (electrical) for added reliability.

The EtherNID™ GE interacts seamlessly with Ethernet OAM compliant devices, supports SNMP, comes with an embedded Web GUI and can be optionally managed via a Management VLAN.

Designed very cost effectively for volume deployment, the EtherNID™ GE unlocks the business-case for High-Performance, manageable Metro Ethernet service delivery in the last-mile.
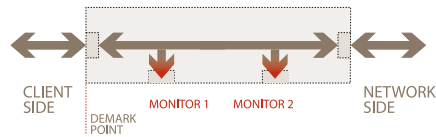
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Features and Benefits

Ethernet OAM & loop-backs

Better visibility, easier maintenance, reduced truck-rolls
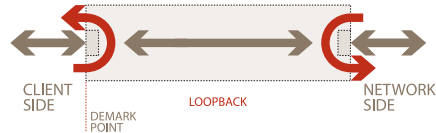
Dual Tap/Monitoring ports

Allows non-intrusive Monitoring Access to live traffic, avoids chasing "ghosts"

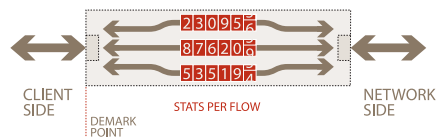

Traffic Filtering/Policing

Allows blocking unwanted traffic types (e.g. BPDU/STP/L2CP) and controlling which VLANs are allowed

Per-Flow Statistics

Allows tracking bandwidth utilization of every stream/EVC delivered

Applications

- Customer Premises Located Intelligent Ethernet Demarcation Device
- Inter-Carrier Handoff Demarcation
- End-to-End SLA-Meter™
- Intelligent extension to Metro Access Platforms
- Intelligent Ethernet Optical Repeater (SFP to SFP)
- Wire-speed Remote Loop-back responder to Portable or Centralized Ethernet Test-sets
- Intelligent Wire-speed Ethernet Monitor/Tap troubleshooting device

Multi-carrier Performance Assurance Agent™ (PAA™) Application

- Assures in-service , End-to-End SLA across Multi-Vendor/Multi-Carrier and Layer 1-2-3 networks
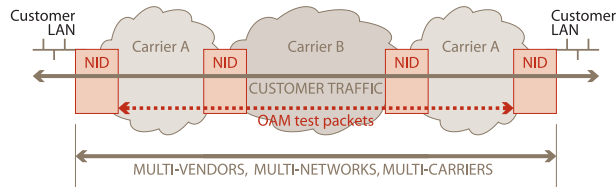
Business Multi-Tenant Building Application

NID

Accedian

EtherNID™

CPE

Customer

Provided

Equipment

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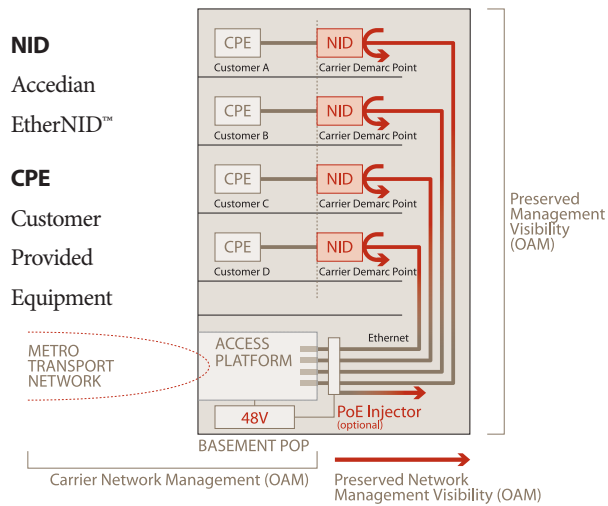
Specifications

Network-side interface
10/100/1000BaseTX/FX/LX/SX
(depends if SFP is used)

Connector: SFP module or RJ-45
(Auto-negotiation/Auto MDIX)

Client-side interface
10/100/1000BaseTX/FX/LX/SX
(depends if SFP is used)

Connector: SFP module or RJ-45
(Auto-negotiation/Auto MDIX)

NID features

IEEE 802.3ah Ethernet OAM

Implements a Two-Port MAC Relay (TPMR) function aligned with IEEE's 802.1aj, 802.1ad, and 802.1ag/ITU-T Y.1731 drafts

Loop-backs:
– Layer 1, Layer 2 (MAC Swap), Layer 3 (IP Swap), Layer 4 (TCP/UDP Port Swap)
– Automatically reacts to in-band loop-back commands of industry-popular Ethernet test-sets
– Individual VLAN loop-backs
– Loop-back on specific MAC source and/or destination address
– Loop-back on specific IP source and/or desti-nation address

Thru-Traffic Per-flow statistics (per VLAN, per Ethertype, per ToS, per CoS, per MAC, per IP, etc.)

VLAN Tagging/De-tagging

VLAN Stacking (.1Q in .1Q)

Through Traffic Wire-Speed Filtering (L2CP, BPDU, per-VLAN, Ethertype, Protocol type,MAC, IP,User Defined)

Dual Monitor Access Ports providing individual access to both signal directions, combined access to both directions, Layer 1 tapping and intelligent filtering

Integrated Copper TDR cable integrity testing

Dying Gasp (via 802.3ah or SNMP traps)

Supports packet sizes up to 1800 bytes

Fault Propagation

Link Loss Return

Performance Assurance Agent™ (PAA™)

Constant in-service monitoring of SLA param-eters including:
Packet loss
– Two-way delay (Round-trip Latency)
– Two-way delay variation (Round-trip Jitter)
– One-way delay variation (One-way Jitter)
– Continuous End-to-End path Continuity Check

High Precision measurements: 1 microsecond accuracy

Works at Layer 2 and Layer 3

Assures SLAs per VLAN/per CoS/per ToS/per EVC

Can work in point-to-point or point-to-multi-point

Multiple Instance capable (Multi-SLA™)

User settable SLA threshold crossing alerts using SNMP traps

Inline transparent performance

Throughput: wire-speed (100Mb/s at 100% utilization)

Intrinsic Passthrough Traffic Latency: <8 micro-second (at all packet sizes)

Intrinsic Passthrough Traffic Jitter: <1 microsec-ond (at all packet sizes)

Intrinsic Latency for Intelligent Loopback: <8 microsecond (at all packet sizes)

Intrinsic Jitter for Intelligent Loopback: <1 microsecond (at all packet sizes)

Optional Network-Client Power Fail-over bypass mode

Physical

1.60" H x 5.34" W x 5.80" D
Mounting:
– Desktop
– Wall-mount
– Rack-mount (2 units side-by-side in 1U)
– 12 position, high-density, 19" central office shelf (4U): EtherSHELF™

Management

In-band remote management over the Ethernet customer line via Network-side inter-face

Local Management craft port: 10/100BaseT, RJ-45 connector

Serial RS-232 Management port: RJ-45 con-nector

Secure Web GUI via SSL

Secure CLI command prompt via SSH

SNMP V1,V2C

Management VLAN

802.3ah EFM OAM

NTP client

Remote and Local Syslog

Radius Authentication

DNS Client

DHCP Client

Config. import/export

FTP,TFTP, SFTP, HTTP

Power options all included as standard and redundant between each other

External AC/DC adapter (120-240 Vac auto-sensing, 50-60 Hz), 5 Vdc input to unit

Dual (A/B) -48 Vdc Central Office Supply inputs

PoE from RJ-45 (802.3af)

Power Consumption: 5 watts

Cooling: convection cooled (no fans)

Regulatory

IEC 60950

FCC Part 15 Class A

Industry Canada CS-03

CE Mark

Operating Temperature

0-50 degree C

Storage Temperature

-40 to 70 degree C

Humidity

5-95% non-condensing

EtherNID GE

EtherNID EE

EtherNID OE

Model number	Product name	Description
ACC703-000	EtherNID™ GE	10/100/1000Mb/s Ethernet Demarcation Device.

SFP modules

Model number	Product name	Description
ACC7SM-000	SFP 1000Mb/s MM	1000Mb/s SFP module for use with EtherNID™ GE, MM, 850 nm, VCSEL, 550 m, LC connector.
ACC7SN-000	SFP 1000Mb/s 10 km	1000Mb/s SFP module for use with EtherNID™ GE, SM, 1310 nm, FP, 10 km, LC connector.
ACC7SO-000	SFP 1000Mb/s 30 km	1000Mb/s SFP module for use with EtherNID™ GE, SM, 1310 nm, DFB, 30 km, LC connector.
ACC7SP-000	SFP 1000Mb/s 50 km	1000Mb/s SFP module for use with EtherNID™ GE, SM, 1550 nm, DFB, 50 km, LC connector.
ACC7SA-000	SFP 100Mb/s 16 DB	100Mb/s SFP module for use with EtherNID™ OE, SM, 1310 nm, FP, 16 dB budget, LC connector.
ACC7SB-000	SFP 100Mb/s 30 DB	100Mb/s SFP module for use with EtherNID™ OE, SM, 1310 nm, FP 30 dB budget, LC connector.

Accessories

Model number	Product name	Description
ACC704-000	EtherSHELF™	Rackmount 4U Vertical Mounting Shelf, fits 12 EtherNID™ units individually fused, -48V (A/B) redundant power feeds, can mix and match EE, OE, and GE models.
ACC706-000	2 Unit Rackmount Bracket	Rackmount 1U Horizontal Mounting Bracket, fits 2 EtherNID™ units.
ACC705-000	1 Unit Rackmount Bracket	Rackmount 1U Horizontal Mounting Bracket, fits 1 EtherNID™ unit.

Related products

Model number	Product name	Description
ACC701-000	EtherNID™ EE	10/100Mb/s Electrical-to-Electrical Ethernet Demarcation Device.
ACC702-000	EtherNID™ OE	10/100Mb/s Optical to Electrical Ethernet Demarcation Device.

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