



# NT600-EFM

## Hardened G.SHDSL.bis EFM Ethernet Extender/Repeater



The NT600-EFM Network Extender is designed to provide bonded high-speed Ethernet in the First Mile services using g.SHDSL.bis on existing copper infrastructure. It is a bridge mode modem that delivers Ethernet services with symmetrical bandwidth at rates up to 15.3 Mbps/ pair.

The NT600-EFM ensures high reliability, low OPx and maximum throughput. EFM copper bonding technology enables the delivery of higher bandwidth at longer distances over multiple copper pairs, an excellent alternative where fiber is not economically feasible and other technology such as T1 is not able to meet bandwidth requirements.

This "Ethernet-pure" solution provides a seamless integration today and for tomorrow's networks. The NT600 extends the reach of Ethernet services using bonded copper pairs for an aggregate bandwidth of over 61Mbps (TC-PAM128) using only 4 pairs. 8-pairs can be used in the drop and continue repeater configuration. Designed using standards-based EFM technology (2BASE-TL), deployment of Ethernet services using the NT600 is quick and simple.

### Features:

- Extending Ethernet Services to sites with existing copper infrastructure
- EFM Bonding up to 61 Mbps (4 pairs, TC-PAM 128)
- Flexible and Rapid Service Deployment
- Flexible configuration as CPE or CO
- Low Delay, Jitter and Packet Loss for delay sensitive applications
- Comprehensive and easy OAM & P functions in provisioning and management
- QoS feature for guaranteed Ethernet service Future-proof Ethernet traffic management

Typically used in point-to-point and drop/continue connections between offices, the NT600 provides symmetrical connectivity that is ideal for enterprise to deliver business-class Ethernet service. User-friendly Ethernet makes it possible to save unnecessary truck rolls and minimize training costs leading to reduced risk and quick ROI.

The NT600 operates in either EFM mode or ATM mode. It is designed to deliver business class Ethernet Service under EFM mode while providing the flexibility to be compatible with an existing DSLAM infrastructure under ATM mode. The NT600 management is by a comprehensive industrial command-line interface (ICLI), Telnet, user-friendly GUI-based Web Browser and SNMP. The NT600 provides future-proof features meeting Ethernet Quality of Service (QoS) and Class of Service (CoS) requirements by utilizing 802.1q VLAN capabilities, four levels of priorities, traffic flow control and rate control. This traffic management and QoS features enable service providers to offer highly profitable and value-added services to a vast majority of business and institutional sites.

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### Specifications:

#### Standards:

ITU-T G.991.2  
IEEE 802.3ah PAF  
IEEE 802.3 10/100Base-T  
IEEE 802.1q VLAN

#### Interface:

2- WAN (G.SHDSL.bis) Ports (8-pairs)  
4- LAN Ports  
1- 10/100M Fiber Port  
2- Management Ports  
2- Console Ports  
1- Power Input Barrier Jack

#### Protocols:

802.1d Transparent Bridging  
Up to 2K MAC Address learning bridge

#### LAN features:

4-port switching Hub  
10/100BASE-T auto-negotiation & sensing  
Auto MDI/MDI-X

#### WAN features:

ITU-T G.991.2.(2004)  
2BASE-TL  
EFM bonding (IEEE 802.3ah PAF)  
Support of Annex

#### Data Rate:

N x 64 Kpbs using TC-PAM 16/32  
5.696Mbps (1-Pair)  
11.392Mbps (2-Pairs)  
22.784Mbps (4-Pairs)  
N x 64 Kbps using TC-PAM 64/128  
15.296 Mbps (1-Pair)  
30.592 Mbps (2-Pairs)  
61.184 Mbps (4-Pairs)

#### Management:

Easy to use web-based GUI for quick setup, configuration and management  
Menu-driven Industrial Command line interface (ICLI) for local console and telnet access  
Password protected management and access control list for administration  
SNMP v1/v2 (RFC1157/1901/1905) agent and MIB II (RFC1213/1493)  
EFM OAM (IEEE 802.3ah)  
Software upgrade via web-browser/TFTP

#### ATM Mode:

Framing ATM, 64B/65B  
1 PVC  
AAL5  
VC multiplexing and SNAP/LLC  
Ethernet over ATM (RFC 2684/1483)

#### VLAN Support:

IEEE 802.1q VLAN Tagging  
Port Based VLAN  
Up to 8 802.1q VLANs (ID Range1~4094)  
VLAN Stacking (Q-in-Q)

#### QoS Support:

Rate limiting by rule-based/port-based  
Traffic classification based on port/802.1p/DSCP  
WRR (Weighted Round Robin)/ SPQ (Strict Priority Queuing) scheduling algorithm

#### Application:

Metro Ethernet Extensions  
Transparent LAN Services  
Fast Internet Access  
Leased Lines Replacement  
Point-to-Point (EFM Extender)  
Drop and Continue (EFM Repeater)  
Cellular/Mobile Backhaul

#### LED Indicators:

LAN : Link/Act, 10/100 per port  
WAN: Link per loop  
System: Power, Alarm, MGMT

#### Power Supply

-40/-60 VDC, 12/24 VDC

#### Dry Contact Alarm Indication:

Critical or Major fault (power input failure)  
activates (closes) the dry contact alarm output.

#### Environment:

Operating Temperature: -40°C ~ 74°C  
Operating Humidity: 98% (Non-Condensing)

#### Dimension:

8.75 x 1.68 x 9.24 inches (WxHxD); 1U High,  
1/2 Rack Width

#### Certifications:

FCCA

Specifications subject to change without notice

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