5600N Series

2BASE-TL EFM Network Extender

Overview

5600N series EFM Network Extender is designed to provide bonded high-speed Ethernet First Mile services over SHDSL 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 (TC-PAM 128). Implemented based on IEEE 802.3ah EFM standards for advanced performance and management features, 5600I Series ensures high reliability, low expense and maximum throughput. The introduction of EFM copper bonding technology allows delivery of higher bandwidth to longer distances over multiple copper pairs, enabling a good alternative in place where fiber is not economical to deploy. This “Ethernet-pure” solution provides a seamless integration into today and tomorrow’s networks.

5600N series extends the reach of Ethernet services to the sites by using bonded copper pairs. Up to 4 pairs can be bonded together for aggregated bandwidth over 61Mbps (TC-PAM 128). Designed with standard-based EFM technology (2BASE-TL), deployment of Ethernet services with 5600N is quick and simple on the existing copper plant. It operates mainly in Point-to-Point connection between remote offices and enterprise headquarter, providing symmetrical high-speed connectivity that is ideal for large and small-to-medium enterprises to deliver business-class Ethernet service.

With the 5600N series, network performance is significantly enhanced by eliminating unnecessary conversion of packet formats when transiting between Ethernet (LAN) and legacy ATM network (WAN). User-friendly Ethernet also make it possible to save unnecessary truck roll costs and training costs. It leads to minimized risk bearing and quick return on investment for both service providers and enterprises.

5600N Series operates the SHDSL link 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 the existing DSLAM infrastructure under ATM mode. The unit can be managed by different ports and applications including comprehensive command-line interface (CLI), Telnet, user-friendly GUI-based Web Browser Interface and SNMP.

5600N Series 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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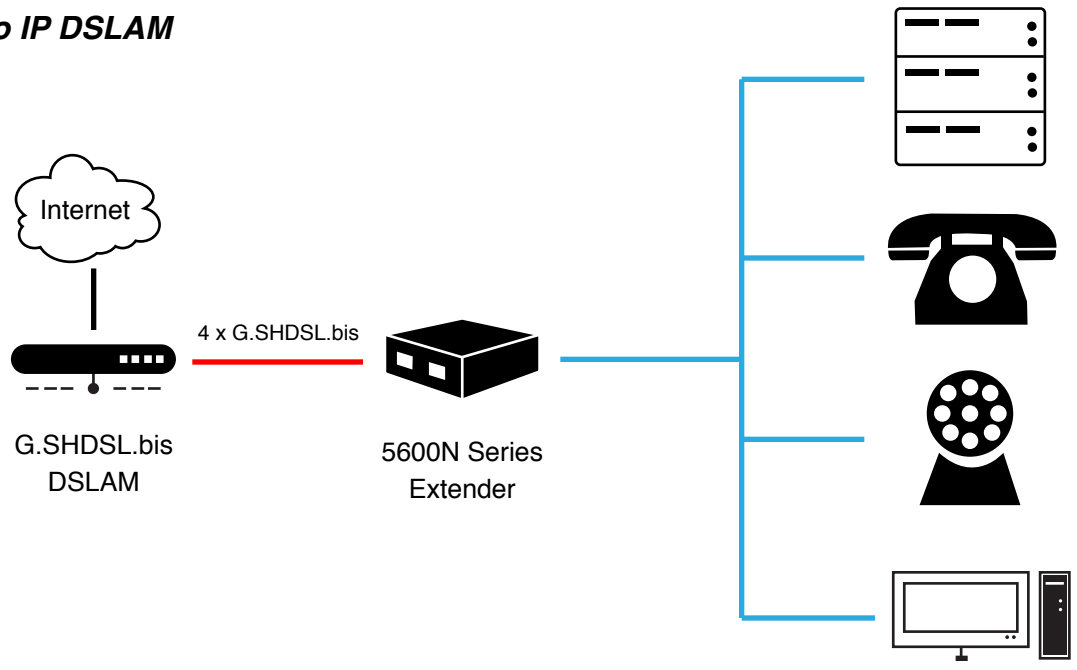
Key Features

- Extending Ethernet Services to sites with existing copper infrastructure
- EFM Bonding up to 61 Mbps (4 pairs, TC-PAM 128)
- Support both EFM mode and ATM mode
- Flexible and Rapid Service Deployment
- Flexible configuration as CPE or CO
- Support EFM OAM complying IEEE 802.3ah
- 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 and QoS features

Applications

- Metro Ethernet Extension
- Transparent LAN Services
- Fast Internet Access
- Leased Lines Replacement
- Point to Point Connectivity
- Mobile Backhaul

Connection to IP DSLAM



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Specifications

Network Interface

LAN	• 4- Port switching hub • 10/100BASE-T auto-negotiation & sensing • Auto MDI/MDI-X
WAN	• ITU-T G.991.2.(2004) • 2BASE-TL • EFM bonding (IEEE 802.3ah PAF) • Data Rate: N x 64 Kpbs (N=3~89) using TC-PAM 16/32 - Max. 5.696Mbps (1-Pair) - Max. 11.392Mbps (2-Pair) - Max. 22.784Mbps(4-Pair) N x 64 Kbps (N=3~213) using TC-PAM 64/128 - Max. 15.296 Mbps (1-Pair) - Max. 30.592 Mbps (2-Pair) - Max. 61.184 Mbps(4-Pair) • Support of Annex A , Annex B , Annex AF & Annex BG • Support TC-PAM 16/32/64/128 • Impedance: 135 ohms
LAN Protocols	• 802.1d Transparent Bridging • Up to 2K MAC Address learning bridge

Hardware Interface

WAN (DSL)	• 1 x RJ-45
LAN	• 4 x RJ-45
Management Port	• 1 x RJ-45
Console Port	• 1 x RJ-45

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Reset Button	• Load Factory Default
DC Power Jack	• 1

Indicator

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

Features

Management Interface	• Easy to use web-based GUI for quick setup, configuration and management • Menu-driven interface/Command line interface (CLI) 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 Range 1 ~ 4094) • VLAN Stacking (Q-in-Q)

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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

Environment

Operating Temperature	• -20 to 40ºC
Storage Temperature	• -20 to 85ºC
Relative Humidity	• 98%, non-condensing

Regulatory

Regulations	• ISO 9001 Quality Management • CE Approval & EN60950 Certificate • FCC Part 15 Subpart B

Physical / Electrical

Dimension	• 195 x 48 x 168 mm
AC Power Adapter	• 100~240VAC with 50~60Hz
Weight	• 5610N: 1300g • 5620N: 1320g • 5640N :1340g
Memory	• 2MB Flash Memory , 16MB SDRAM

Ordering Information

5610N	*5620N*	*5640N*
1-pair 2BASE-TL EFM Network Extender (5.7 Mbps TC-PAM 32, 15.3 Mbps TC-PAM 128)	**2-pair 2BASE-TL EFM Network Extender** (11.4 Mbps TC-PAM 32, 30.6 Mbps TC-PAM 128)	**4-pair 2BASE-TL EFM Network Extender** (22.8 Mbps TC-PAM 32, 61.2 Mbps TC-PAM 128)

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