



**eToAccess -
2BASE-TL EFM Network
Extender
Model No : GH5600**

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EFM Extender Description

The GH5600 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 delivery Ethernet services with symmetrical bandwidth at rates up to 22.8Mbps. Implemented based on IEEE 802.3ah EFM standards for advanced performance and management features GH5600 Series ensures high reliability , low expense and maximum throughput.

The introduction of EFM copper bonding technology allows delivery of higher bandwidth to longer distance 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 network.



GH5600 EFM Modem

GH5600 series extends the reach of Ethernet services to the sites by using bonded copper pairs. Up to 4 pair can be bonded together for aggregated bandwidth over 22Mbps. Designed with standard-base EFM technology bandwidth (2BASE-TL), deployment of Ethernet services with GH5600 is quick and simple on the existing copper plant. It operates mainly in Point-to-Point connection between remote office and enterprise headquarters, providing symmetrical high-speed connectivity that is ideal for large and small-to-medium enterprise to deliver business-class Ethernet service.

With **GH5600** EFM Network Extender , Network performance is significantly enhanced by eliminating unnecessary conversion of packet formats when transiting between Ethernet (LAN) and legacy ATM network (WAN). Services provides and enterprise should see lower capital expenditures because their networks won`t need equipment to convert between the ATM and the Ethernet protocol. User-friendly Ethernet also make it possible to save unnecessary trunk roll costs and training costs. It leads to minimized risk bearing and quick return on investment for both services and enterprise.

GH5600 LAN port is interoperable with any standard Fast Ethernet interfaces from switches,routers,and NG-SONET/SDH equipment. The management interface include comprehensive command-line interface(CLI), user-friendly GUI base Web Browser interface, SNMP and Telnet.

GH5600 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.

Application

- **Metro Ethernet Extension**
- **Fast Internet Access**
- **Transparent LAN Service**
- **Leased Lines Replacement**



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EFM Extender Feature

- Extending Ethernet Services to sites with existing copper infrastructure
- EFM bonding (PAF, PME, Aggregation Function) up to 22.8Mbps(4 pairs)
- 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



GH5600 EFM Modem

EFM Extender Specification

Network Interface

LAN

- 4 Port switching hub
- 10/100 BAST-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 : Nx 64Kbps (N=3~89) as 2 wire model
Nx 128Kbps (N=3~89) as 4 wire model
Nx 256Kbps (N=3~89) as 8 wire model
- Support of Annex A, Annex B, Annex AF & Annex BG
- Impedance: 135 ohms

LAN Protocols

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

Hardware Interface

- DSL : RJ-45 x 1
- LAN : RJ-45 x 4
- MGMT: RJ-45 x 1
- Console Port x 1
- Reset Button: Load Factory Default
- DC Power Jack x 1

Indicator

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

Management Interface

- Easy to use web-base 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 (RFC 1213/1493)
- EFM OAM (IEEE 802.3ah)
- software upgrade via web-browser/TFTP

VLAN Support

- IEEE 802.q VLAN Tagging
- Port Based VLAN
- Up to 4K 802.1Q VLANs
- 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

Environment

- Operation Temperature : 0 - 50 Degree C
- Extended Operation Temperature: -20 - 45 Degree C
- Storage Temperature : -40 - 85 Degree C
- Relative Humidity: 98% ,non-condensing

Regulatory

- ISO 9001 Quality /Management
- CE Approval & EN60950 Certificate

Physical / Electrical

- Dimension(mm):195 x 48 x 168
- AC Power Adapter (90-240VAC with 50~60Hz)
- Weight GH5610 1300g
GH5620 1320g
GH5640 1340g

Memory

- 2MB Flash Memory, 4MB SDRAM

Ordering Information

- GH5610: 1 pair 2BASE-TL EMF Network Extender
- GH5620: 2 pair 2BASE-TL EMF Network Extender
- GH5640: 4 pair 2BASE-TL EMF Network Extender