



GL800x

PRODUCT FAMILY

Fiber-Grade Multi Gbps over Existing Infrastructure

Actelis® GL800x delivers fiber-grade, multi-gigabit Ethernet over your existing infrastructure, cutting build-out cost and time to deploy.

The family spans four models — GL850x, GL830x, GL820x, and the drop-and-continue GL880x — so operators can match the feature set and pair count to each deployment. Using the existing fiber or copper network to enable rates of up to 1Gbps per pair, it supports various VDSL profiles including 35B, as well as G.fast 106 and 212 MHz; the GL800x bonds up to 16 pairs / 8 HSLs for 5 Gbps of Ethernet traffic at fiber quality, with SFP interfaces supporting 2.5GE and 1GE ports. All GL800x family members deliver CE 2.0 services on every port and HSL.

The GL800x can be deployed as a point-to-point backhauling solution for Smart Cities/ITS, Federal, MDU/MTU, or business/residential connectivity. It can also be used as a Remote Terminal unit (RT or CPE) hanging off a GL800x aggregator or a 3rd party DSLAM/DPU. The GL800x can be connected over fiber to any standard Ethernet switch.

New: GL820x & GL880x. Two new models extend the family's reach: the **GL820x**, deployable as a PTMP aggregator or as a remote/CPE unit under any of the GL800x family aggregators, and the **GL880x**, which introduces a Drop & Continue architecture enabling an immediate migration solution over the existing infrastructure along streets and highways. The GL880x can be effectively used to migrate an existing ML600D Drop & Continue link, offering up to 10x–100x higher bandwidth to support new applications and connectivity at the street cabinet. See the Family at a Glance table below and the full Capabilities Matrix on page 2 for model-by-model details.

In addition to best-in-class rate and reach capabilities, GL800x offer the highest link resilience and best-in-class customer Quality of Experience (QoE) through their unique implementation of SRA (Seamless Rate Adaptation) and Impulse Noise Protection (INP), complying with G.inp for unsurpassed bonded link reliability. All GL800x are hardened devices.

256-bit MACsec encryption is available on the GL850x, and now also on specific GL820x models, to ensure high-end cybersecurity. With its superior performance, extensive functionality and low cost, the GL800x offers immediate CE 2.0 service delivery, and allows for further utilization of the existing network infrastructure.

The GL800x is interoperable with any standard Ethernet switch, router or hub, and is compliant with Metro Ethernet Forum (MEF) CE 2.0 specifications for seamless integration into carrier Ethernet networks. Interface counts and HSL capacities vary by model — see the Family at a Glance table below. The GL800x allows assignment of a service/customer per port.

Operators can offer advanced CE 2.0 based services with comprehensive bandwidth control, using Ethernet Virtual Connections (EVCs) and Hierarchical QoS (H-QoS) to maximize access-bandwidth efficiency and easily enforce SLAs per subscriber. For higher density, two GL800x can be stacked in one RU 19" sleeve.

GL800x provides 802.1q VLAN-aware wire-speed bridging, double tagging (VLAN stacking), VLAN translation, L2/L3/L4 classification with eight traffic classes, RSTP/STP, ERPS, bandwidth monitoring, Multicast/Broadcast limiting, and IGMP snooping for video distribution applications.

The GL800x provides proactive, carrier-class OAM (EFM OAM per 802.3ah, CFM 802.1ag, Y.1731) for both physical-link and service-level end-to-end troubleshooting.

The GL800x is managed In- and Out-of-Band via the MetaASSIST™ View craft application or the multi-platform MetaASSIST EMS, using standard CLI, Telnet and SNMP for third-party NMS integration.

GL800x Family Unit

One platform, four models — fiber-grade speed over the network you already own.



GL800x Family at a Glance

Model	Deployment	Pairs	Max HSLs (Bandwidth)	Advanced Features
GL850x (GA)	PTMP aggregation; GL820x as a remote unit	16 pairs	8 HSLs – up to 2.5G	Advanced L2, MACsec, SyncE
GL830x (GA)	PTMP aggregation; GL820x as a remote unit	16 pairs	8 HSLs – up to 2.5G	Advanced L2
GL820x (New)	Aggregator or remote unit (CPE)	2 or 4 pairs	Up to 4 HSLs – up to 2.5G	Advanced L2, MACsec*, SyncE*, PoE+*
GL880x (New)	Drop & Continue	2+2 (D&C)	2 HSLs – up to 2.5G	Advanced L2, MACsec*, SyncE*, PoE+*

* Model-based availability | See the full GL800x Family Capabilities Matrix and detailed specifications on page 2

Highlights

- Expanded product family: GL850x, GL830x, GL820x and GL880x (Drop & Continue)
- Up to 2.5Gbps, Bonding up to 16 pairs VDSL2/G.fast
- High density switch - 10 Ethernet and 8 HSLs ports.
- MEF CE 2.0 compliant, H-QoS
- Cutting-edge 256bit encryption - MACsec, multiport
- Rapid Service Deployment
- Superior Rate, Reach & Reliability
- Synchronous Ethernet over multiple ports
- Low Delay and Jitter for Voice and Video Transmission
- Carrier Class OAM, including Y.1731, CFM, EFM OAM
- Hardened, Extended Temp to +65°C
- Worldwide Spectral Compliancy
- FCC, UL, CE

Applications

- High-speed Network Terminator
- Traffic/Street Cabinet Connectivity (Camera & IoT Backhaul)
- MDU/MTU Backhaul
- DSLAM Backhaul
- WiFi and Cellular Backhaul (Radio Access Network)
- Enterprise or Residential high-speed connectivity
- Fast Internet Access
- Metro Ethernet Extension
- Private Campus Network Intra-Connection
- Leased Lines Replacement

Markets Served

- ILECs, CLECs, IOCs, PTTs, and Alternative Carriers
- Federal, State and Local Government Agencies
- Education, Health Care, Utilities, and Private Campuses

Instant fiber-grade, multi-gigabit speed over your existing infrastructure.

GL800x Family Capabilities Matrix

Model	Unit Type	Pairs	Max # of HSLs Up to 2.5G, 1G	Advanced L2	SFPs 2.5G+1G*	Ethernet (RJ45)	MACsec (256-bit)	SyncE	PoE
GL850x (GA)	PTMP aggregation; GL820x as a remote unit	16 pairs	8 HSLs 2x 2.5G + 6x 1G	Yes	2+2*	6	Yes	Yes	—
GL830x (GA)	PTMP aggregation; GL820x as a remote unit	16 pairs	8 HSLs 2x 2.5G + 6x 1G	Yes	2	4	—	—	—
GL820x (New)**	Compact PTMP Aggregation	2 or 4 pairs	2p: 2 HSLs – 1+1 (2.5G/1G) 4p: 4 HSLs – 2+2 (2.5G/1G) Optional LAG between HSLs	Yes	2+2*	4	Yes*	Yes*	2x 30W*
	Remote unit (CPE)								
GL880x (New)**	Drop & Continue	2+2 (D&C)	2 HSLs – 2.5G	Yes	2	4	Yes*	Yes*	2x 30W*

GL800x units implement G.fast / VDSL 35b / 17a | * Model-based availability • **MACsec**: Encrypted Ethernet transport for critical infrastructure links • **SyncE**: Network synchronization support for timing-sensitive services • **PoE**: PoE+ (IEEE 802.3at), up to 30W

** Availability per Actelis roadmap

Specification

Interfaces

Ethernet (Network/User)

- 10/100/1000 Base-T: Connector: RJ45, Auto-MDIX. Please see table above for port counts per model
- 100/1000Base-FX, 1000/2500Base-FX: Connector: SFP based, MSA compliant. Please see table above for SFP counts per model.

High Speed Link (Bonded Copper Pairs)

- Protocol: IEEE 802.3ah, ITU-T G.998.2 G.bond, G.993.5 Vectoring
- G.fast profile: up to 212 MHz with fallback to VDSL2
- DMT Multimode: G.993.2 (VDSL2) supporting multiple VDSL profiles including 35B (annex Q) with auto line code selection, ITU-T G.9700 and G.9701 (G.fast)
- Impulse Noise Protection: G.INP (ITU-T G.998.4) and Interleaved modes for bonded links
- Bandwidth: Up to 2.5Gbps per HSL — for number of HSLs per unit type, please see table above
- Number of Copper Pairs per unit: up to 16 (varies per model — see table above). Connector: RJ45 (per modem/pair); for the 16 pairs, 2 pairs per connector
- End-to-end Delay: 2-4 ms (Fast mode)

Synchronization (per model)

- Clock Source: Synchronous Ethernet per G.8261, G.8262 (6 ports)
- Clock Quality: EEC-option1, EEC-option2
- Clock APS: Automatic Protection Switch from Primary to Secondary per GR-1244-CORE

Management (Out-of-Band)

- One of the RJ45 ports can be used for management
- Craft EIA RS-232 (DCE) Connector: DB9

Ethernet Bridge Features

- Bridging: IEEE 802.1q
- Forwarding Database size: 16K MAC addresses
- MTU: 1518 – 2048K Bytes (configurable per system)
- TPID: up to 4 settable per inner/outer tag
- Aging: Configurable
- MAC Limiting and Filtering
- Multicast/Broadcast Control
- Port based VLAN Stacking (Q-in-Q)
- Conditional VLAN Stacking
- VLANs: 4K, supports VLAN translations
- RSTP, STP: IEEE 802.1d/w
- Link Aggregation: IEEE 802.3, L2/L3 balancing
- Provider Bridges: IEEE 802.1ad
- LLDP: IEEE 802.1ab
- IGMP Snooping: RFC 4541, V1/V2 RFC 1112/2236
- ERPS: ITU-T G.8032
- EFM OAM: IEEE 802.3ah clause 57 inc. Dying Gasp
- CFM/MEF OAM: IEEE 802.1ag, ITU Y.1731
- MACsec: IEEE 802.1ae (per model)

Quality of Service Features

- Classes of Service (queues per port): 8
- Two Levels Hierarchical Scheduler (H-QOS), up to 64 queues per port, WFQ, SP, Hybrid
- Bandwidth Control: 32 profiles, 2 rate, 3 color metering (CIR, CBS, EIR, EBS)
- EVCs: 32 Services
- Classification: 128 rules (Port/VLAN/L2/L3/L4)
- Shaping: per queue/port
- Color Mode Awareness by COS or DEI
- CoS Marking: by COS or DEI, per Service

Management

Applications

- EMS: MetaASSIST EMS
- Craft GUI: MetaASSIST View

Protocols

- IPv4 and IPv6
- DHCP Client: RFC 2132
- ACS Client, CWM: TR-069
- Command Line Interface: TL1, CLI
- Remote Access: Telnet
- SNMP: V3, V2C, V1
- Radius Authentication: RFC 2865
- Secure Access (option): SSH v2
- Time Synchronization: SNTP v3
- Web Access: HTTP
- File transfer: FTP, TFTP
- Syslog: RFC 3164
- FIPS 140-3 (Model specific)

Front Panel Indicators (LEDs)

- Power, Status, Alarm
- MLP per modem/pair
- HSL per model
- ACT (Activity) - per Ethernet port
- LNK (Link) per Ethernet port

Alarm Contacts

- Terminal Block: 2 Input, 1 Output Physical

Physical — All GL800x

- Dimensions Height: 1.6" / 40 mm (1U); Depth: 9.5" / 240 mm; Width: 8.4" / 213 mm
- Weight: 3.75 lbs / 1.7 Kg
- Mounting Rack: 2 units in 19", 23" or ETSI racks; Desktop, Wall Mount

Power

- Power DC: 48-60 Vdc nominal, up to 45 Watt (per model)
- Power AC: 90-264 VAC, 47-63 Hz, up to 45 Watt
- PoE: 2 x PoE+, IEEE 802.3at, up to 30W (per model)

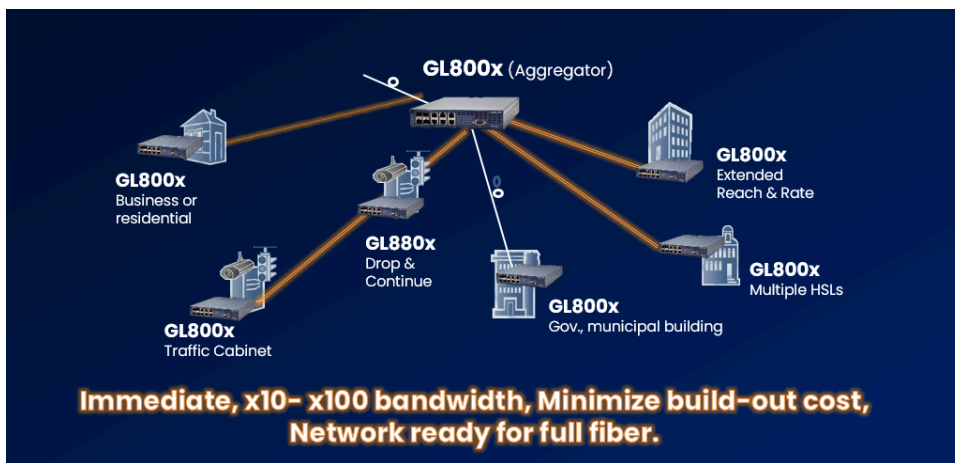
Environmental — All GL800x

- Operating Temp: -40° to +65°C
- Storage Temp: -40° to +74°C
- Relative humidity: Up to 95%, non-cond.

Regulatory and Compliance

- Metro Ethernet Forum: CE 2.0
- Safety: UL 60950, CSA C22.2 60950; EN 60950-1, IEC 60950-1
- EMC: FCC Part 15 Class B; ICES-003 Class B; ETSI EN 300 386 Class B; ETSI ETS 300 132-2; ITU-T K.20, K.21
- CE: EMC and Safety
- Environmental: GR-63-CORE; ETSI ETS 300 019
- Security - NIST: FIPS 140-3

Typical GL800x Family Deployment



Actelis Networks® is a market leader in cyber-hardened, rapid deployment networking solutions for wide-area IoT networks. Our hybrid fiber-copper technology is proven worldwide, enabling and extending instant fiber-grade connectivity for government, military, industrial, smart city, rail, energy, telecommunications and educational network applications. All content included in this document is the exclusive property of Actelis Networks, Inc., and protected by U.S. and international copyright laws. Specifications are subject to change without notice. Actelis® and Actelis Networks® are registered trademarks. EFMplus™ and MetaASSIST™ are trademarks of Actelis. Any other trademarks used herein are the property of their respective owners. Copyright ©2026 All Rights Reserved. Learn more at www.Actelis.com.

Corporate Headquarters

Actelis Networks, Inc.
710 Lakeway Drive, Ste 200
Sunnyvale, CA 94085
t. +1 510-545-1045 or toll-free in U.S. 1-866-ACTELIS

Company and General Information: info@actelis.com

Asia Pacific Sales: apacsales@actelis.com
Central and Latin America Sales: calasales@actelis.com
Europe, Middle East and Africa Sales: emeasales@actelis.com
North America Sales: nasales@actelis.com