Actelis Networks

ML620

Accelerate Everything

The ML620 Ethernet Access Devices (EADs) from Actelis Networks® enable delivery of high-speed carrier Ethernet services over the existing copper and fiber infrastructure. The ML620s are intelligent, compact EADs that deliver up to 100 Mbps of symmetrical Ethernet traffic with fiber quality over existing copper pairs.

Available in either 2, 4 or 8 copper pairs with optional SFP fiber configurations*, the ML622/ML624/ML628 EADs can be deployed in a Point-to-Point configuration, optional copper Add-Drop chain, or as the CPE in a Point-to-Multi-Point configuration with Actelis' EFM switches. With its superior performance, extensive functionality and low cost, the ML620 EAD platforms offer rapid service delivery and allow for complete utilization of the existing network infrastructure.

The ML620 EAD platforms are interoperable with any standard Ethernet switch, router or hub. Compliant with Metro Ethernet Forum (MEF) specifications, ML620 EAD systems seamlessly integrate into carrier Ethernet networks. Equipped with four 10/100Base-T Ethernet interfaces and an optional 100Base-FX Small Form Factor (SFP) port, the ML620 EAD platforms allow assignment of a service or a customer per port. A DS3/E3 uplink can be used to connect to legacy networks instead of the 100Base-FX SFP.

The ML620 EAD models let service providers create an intelligent Ethernet access edge with bandwidth limiting per ingress port and traffic shaping on the Ethernet Access uplink (HSL). The ML620 is fully compliant with the MEF 9 and 14 specifications.

Powered by Actelis Networks' award-winning EFM*plus*™ technology, the rate, reach and reliability are increased significantly using advanced Dynamic Spectrum Management (DSM) and Dynamic Rate Boost (DRB) techniques. This technology doubles the rate/reach in real-world field deployments. Combined with Actelis industry-leading XR239 EFM Repeaters, the reach can be extended even further. All ML620 EAD models provide 802.1q VLAN-aware wire-speed bridging, double tagging (VLAN stacking) for end-user VLAN transparency, L2 (Ethernet priority) and L3 (ToS/Diff-Serv) classification with four traffic classes, RSTP/STP, bandwidth monitoring, and Multicast/Broadcast limiting.

The ML620 EADs provide proactive and dynamic tools for enhanced trouble shooting and monitoring capabilities. Advanced Carrier-class EFM OAM, including 802.3ah, CFM (802.1ag) and Y.1731 (ITU), are incorporated, offering both physical link as well as service level end-to-end advanced troubleshooting mechanisms.

The ML620 EAD platforms can be managed In- and Out-of-Band by the MetaASSIST™ View graphical craft application and via the multi-platform Element Management System, MetaASSIST EMS. The management protocols include standard command line interface and SNMP using standard MIBs for seamless integration with third-party Network Management Systems (NMS).

Highlights

- IEEE 802.3ah Ethernet in the First Mile (EFM) 2Base-TL Solution
- MEF Certified Ethernet Capabilities
- Rapid Service Deployment
- Superior Rate, Reach & Reliability
- Low Delay and Jitter for Voice and Video Transmission
- Worldwide Spectral Compliancy
- OSMINE, NEBS III, FCC, UL, CE
- Environmentally Hardened

Applications

- Transparent LAN Service
- Fast Internet Access
- Metro Ethernet Extension
- Private Campus Network Intra-Connection
- MDU/MTU Backhaul
- DSLAM Backhaul
- WiFi and Cellular Backhaul (Radio Access Network)
- Leased Lines Replacement

Markets Served

- RBOCs, PTTs, Independent Operators, Competitive Operators
- Federal, State and Local Government Agencies
- Education, Health Care, Utilities, Private Campuses

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XLR8.

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MOBILITY & TRAFFIC EXPERTS

ML620

Specifications

Interfaces

Ethernet (Network/User)
- 10/100Base-T   4 ports
  - Connector: RJ45, Auto-MDIX
- 100Base-FX
  - Connector*:   1 port (option) SFP Based MSA compliant

High Speed Link (Bonded Copper Pairs)
- Protocol   IEEE 802.3ah 2Base-TL
- Line code   ITU-T G.991.2 rev. 2
- Bandwidth   Up to 100 Mbps (symmetrical)
- Number of Copper Pairs   2-8
  - Connector: RJ45 (per modem/pair)
- End-to-end Delay   2-4 ms (typical)
- Spectral Compliance   ITU-T G.991.2 (Annex A, B, F, G)
  - ETSI TS 101 524 (Annex E)
  - ANSI T1.417, T1.426
  - Per-country regulatory compliant spectral modes
- Spectral Friendliness   Dynamic Spectral Shaping (DSS)
- Cross-talk Cancellation   Dynamic Rate Boost (DRB)
- Sealing Current   48VDC/1.5mA nominal

Management (Out-of-Band)
- 10/100Base-T
  - Connector: RJ45, Auto-MDIX
- Craft   EIA RS-232 (DCE)
  - Connector: DB9

LAN Protocols
- Dynamic Bridging   IEEE 802.1, 8K MAC addresses
- Discovery Mechanisms   LLDP
- VLAN Tagging   IEEE 802.1Q
- Double Tagging   Q-in-Q
- RSTP, STP   IEEE 802.1d
- Link Aggregation   IEEE 802.3ad
- Provider Bridges   IEEE 802.1ad
- OAM   IEEE 802.3ah clause 57 (EFM OA&M)
  - IEEE 802.1ag, ITU Y.1731

Management
Protocols
- SNMP   SNMP v1 and v2c
- Command Line Interface   TL1, Industry Standard CLI
- Remote Access   Telnet
- Secure Access (option)   SSH v2
- Time Synchronization   SNTP v3
- Web Access   HTTP
- File transfer   FTP, TFTP
- IEEE 802.3ah EFM OAM   Dying Gasp
- User Authentication   RADIUS and/or local passwords

Metro Ethernet Forum – Advanced Service Provisioning and Traffic Management
Quality of Service
- Classes of Service   4
- Scheduler   WFQ, SP
- Classification   L2 802.1p/Q priorities
  - L3 ToS/DiffServ

Applications
- EMS   MetaASSIST EMS
- Craft GUI   MetaASSIST View

Front Panel Indicators (LEDs)
- Power
- Status
- Alarm
- MLP per modem/pair
- ACT (Activity)   • LNK (Link) per Ethernet/HSL port

Alarm Contacts
- Terminal Block   2 Input, 1 Output

Physical
- Dimensions   Height: 1.6" / 40mm (1U)
  - Depth: 11.0" / 280mm
  - Width: 8.4" / 213mm
- Weight   3.75 lbs / 1.7 Kg
- Mounting   Rack: 2 units in 19", 23" or ETSI racks Desktop, Wall Mount
- Power   DC: -48/-60 VDC nominal, 13.5-17 Watt (per model)
  - AC: 90-264 VAC, 47-63 Hz, 17-21 Watt (per model)

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

Regulatory Approval/Certifications
Metro Ethernet Forum
- MEF 9, 14

Safety
- UL 60950, CSA C22.2 60950
- EN 60950, IEC 60950

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

NEBS
- Level III (GR-1089-CORE, GR-63-CORE)

CE
- EMC and Safety

Environmental
- GR-63-CORE
- ETSI ETS 300 019

* Tested in accordance with NEMA requirements.

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