Actelis Networks™

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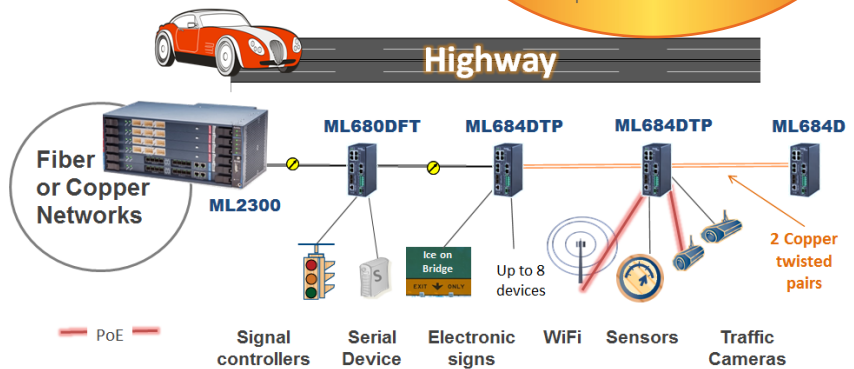
INFONETICS
RESEARCH

No. **1**
2009
2010
2011
2012
2013

Reliable, Cost Effective Transport
For ITS Networks Using Copper or Fiber

Applications

Legacy and IP-based Traffic Controllers
Dynamic Message Signs
HD Video Cameras & Streaming
Vehicle Detection
Emergency Response
Smart Parking
Complements Wi-Fi Access

Actelis offers a reliable flexible, and cost effective high speed Ethernet transport solution that is designed to get all the bandwidth you need wherever you need it, while seamlessly integrating into the ITS networks of State, Federal, and Municipal DOTs.

Leveraging fiber where you have it or a mere two copper pairs where you do not, the Actelis solution provides compact, hardened and fanless standard Layer-2 switch with low power draw, provides up to 30 mbps over 2 pairs or 60 mbps over 4 pairs, and supports multiple Ethernet and legacy interfaces at each node in a Drop and Continue, full mesh RSTP as well as ERPSv2 ring topologies on any interfaces - bonded copper (G.SHDSL) or/and fiber.

Highway

Fiber or Copper Networks

ML2300   **ML680DFT**   **ML684DTP**   **ML684DTP**   **ML684D**

Ice on Bridge   Up to 8 devices   **2 Copper twisted pairs**

— PoE —

Signal controllers   **Serial Device**   **Electronic signs**   **WiFi**   **Sensors**   **Traffic Cameras**

Quickly and cost effectively accommodate the bandwidth requirements of new HD cameras, advanced sensors, electronic signs, legacy and new controllers, surveillance devices and WiFi as well as enabling higher speed communication and information streaming across the network.

The Main Challenges	The Actelis Solution
• Leverage the existing fiber or copper network • Cost optimize the network • Support Legacy Devices	• Hybrid fiber and copper Ethernet switches • Cost optimizes with copper Leverages fiber when and where you have it
• Get more bandwidth to more locations • Support HD cameras, controllers, sensors • Support network specific devices - kiosks, electronic signs • Future proof the network	• Uses ubiquitous copper using G.SHDSL EFM - high bandwidth transport • Extended reach for remote locations • Offers 30 Mbps over 2 pairs, 60 Mbps over 4 pairs and up to 100 Mbps over 8 pairs
• Implement ultra-reliable low maintenance solutions • Survive environmentally challenging installations	• Hardened solution: -40⁰C to +75⁰C / -40⁰F to +165⁰F • Highest link and equipment reliability • Best in class transmission over copper
• Minimize field maintenance costs	• Hardened, fanless, field proven performance • Full Remote management Advanced trouble shooting • Easy and quick to install • Automated provisioning and management
• Fit into space constrained cabinets or vaults	• Extremely compact, fanless • Full front access (ML68xDx) • Easy DIN rail mounting that can easily fit within existing locations
• Support various network topologies and interfaces • Integrate existing and legacy devices • Support Ethernet or serial interfaces • PoE to power remote devices	• Ring, full mesh RSTP, daisy chain architecture with drop & continue • Repeaters for extra distance where needed • Fiber, Copper or hybrid solutions • Multiple Ethernet interfaces • Serial Interface to support legacy equipment [1] • Multiple PoE interfaces [2]

[1] Supporting RS232/V.24/RS422/RS485   [2] 2x PoE+ ports, Up to 60W per port

High Performance Broadband Over Copper

Type	Platform	Description	High Level Details
Ethernet Aggregation Switch	**ML2300**	**Point-to-Multipoint** scenarios using bonded copper (G.SHDSL) as well as fiber	Large aggregation platform, Modular, plug in cards Up to 256 pairs and 128 links Equipment Redundancy for high availability
	ML230		Medium aggregation platform, Modular, plug in cards Up to 128 pairs and 128 links Equipment Redundancy for high availability
All-In-One Ethernet Switches and Extenders with Drop and Continue	**ML684D ML684DT ML684DTP**	**Drop-and-continue**, **Fast Healing ERPSv2** ring and Full **Mesh RSTP** topologies on any interfaces - bonded copper (G.SHDSL) or/and fiber Din Railing	**ML684Dxx:** drop and continue over copper (2+2) or fiber **ML680DFxx:** fiber only, No bonded copper extension Very compact, Fanless DIN railing unit. 24/48V or AC 6 x Ethernet 10/100BaseT; 2 x Fiber SFPs 100/1000BaseFX **DT / DFT:** 1x **Serial interface** RS232/V.24/RS-422/RS485 **DTP/DFTP**: **Serial Interface** (as above) + 2 x **Passive PoE** **ML622D:** 2 x 10/100BaseT, (1+1 / 2 pair bonded), Up to 20M per link **ML624D:** 2 x 10/100BaseT, (2+2) up to 20M per link **ML604D** - Extender only bonding 4 pairs - Up to 60Mbps
	ML680DF ML680DFT ML680DFTP		
	ML622D ML624D		
	ML604D		
	ML680	**Drop-and-continue** over bonded copper (G.SHDSL) or fiber	½ 19", 1U high unit. 48 VDC or AC ML688: 4+4 drop and continue ML684: 2+2 drop and continue 5 x Ethernet 10/100BaseT; 1 x Fiber SFPs 100/1000BaseFX
	ML690	**Small Aggregation.** PTMP or drop-and-continue over copper (G.SHDSL) or fiber	½ 19", 1U high unit. 48 VDC or AC ML698: 8 pairs, up to 4 links 5 x Ethernet 10/100BaseT; 1 x Fiber SFPs 100/1000BaseFX
Ethernet Switch and Extender - Termination unit	**ML620**	**Copper** (G.SHDSL) **and fiber switch**	½ 19", 1U high unit. 48 VDC or AC ML628/ML624/ML622: 2-4-8 pair variants,Single Link 5 x Ethernet 10/100BaseT; 1 x Fiber SFPs 100/1000BaseFX (some models)
	ML620i	**Copper** (G.SHDSL) **switch**	½ 19", 1U high unit. 12/24 VDC or AC ML624i/ML622i: 2-4 pair variants, Single Link 5 x Ethernet 10/100BaseT
Extended Reach	**XR-239**	**Repeater** (G.SHDSL)	Up to 9 hops; 2 pair in-2 pair out Remotely powered
Management	**MetaASSIST EMS**	**Full set of management and OAM capabilities** allowing full remote access and easy integration into other management systems	Scalable EMS. Core management capabilities, including fault, configuration, performance, and security Management
	MetaASSIST View (MAV)		An intuitive Graphical User Interface (GUI) for complete Operation, Administration, Maintenance and Provisioning (OAM&P) of Actelis systems