



*Take high performance, reliable Carrier Ethernet services out to small and medium business customer's buildings more quickly and cost effectively with Actelis' EFM over Copper. Stop cable operators from stealing customers by offering high quality 10 Mbps and Nx10 Mbps symmetrical services and future scalability using fewer pairs with Actelis' cost optimized solution for one or multiple customers per building .*

## Carrier Ethernet to the Small and Medium Business

N x 10 Mbps Ethernet services are in great demand with small and medium business (SMB) customers, but getting enough bandwidth to the buildings where they are located can be difficult. Actelis gives service providers a high performance, reliable solution to reaching SMBs with Carrier Ethernet services that can scale into the 100s of Mbps – at a more attractive cost and faster time to market than fiber, and with greater transmission efficiency and fewer pairs than competing copper solutions.

### **Bandwidth When and Where You Need It – Quickly and Cost Effectively**

Deploy service to the buildings where SMBs are located very quickly with copper. Whether a service provider owns their own copper plant or leases it inexpensively, copper is the quickest and least expensive way to get the bandwidth SMEs want to them without delays for permitting, building owner permission to construct entrance facilities, trenching, or waiting for capital availability for a fiber build.

### **High Quality Transmission – Meet Customer Demand For Carrier Ethernet In Support of The Cloud**

Copper provides the high performance and availability required for the most demanding of applications and services. Actelis' superior standards-based copper transmission technology provides high reliability with very low latency and jitter....allowing copper to be engineered at or near "5 nines" depending on the service provider's objectives. Some of the world's leading providers use Actelis' EFM over Copper solutions to provide Ethernet services, support SLAs, and achieve a very high quality of experience.

### **Greater Reach – Superior Transmission Performance Means More Customers, More Revenues**

Telecom service operators can use Actelis to offer service over 200 Mbps to buildings close to the fiber ring, and can provide up to 100 Mbps of bandwidth to building out to over 3 kft (1 km) and take N x 10 Mbps services out as far as 18 kft (6 km) without the need for repeaters. Reach more customers, gain more revenues with Actelis.

### **Flexible Layer 2 Technology – Differentiated Services, Efficient OAM**

Provide differentiated services with flexible rate limiting and QoS options per EVC or port, and ensure efficient operations with advanced features like Y.1731 performance monitoring, Y.1588 traffic generators, and MAC loopbacks.

### **Cost Effective Scalability – Suitable For Mass Deployment, Cost Optimized For the Requirement**

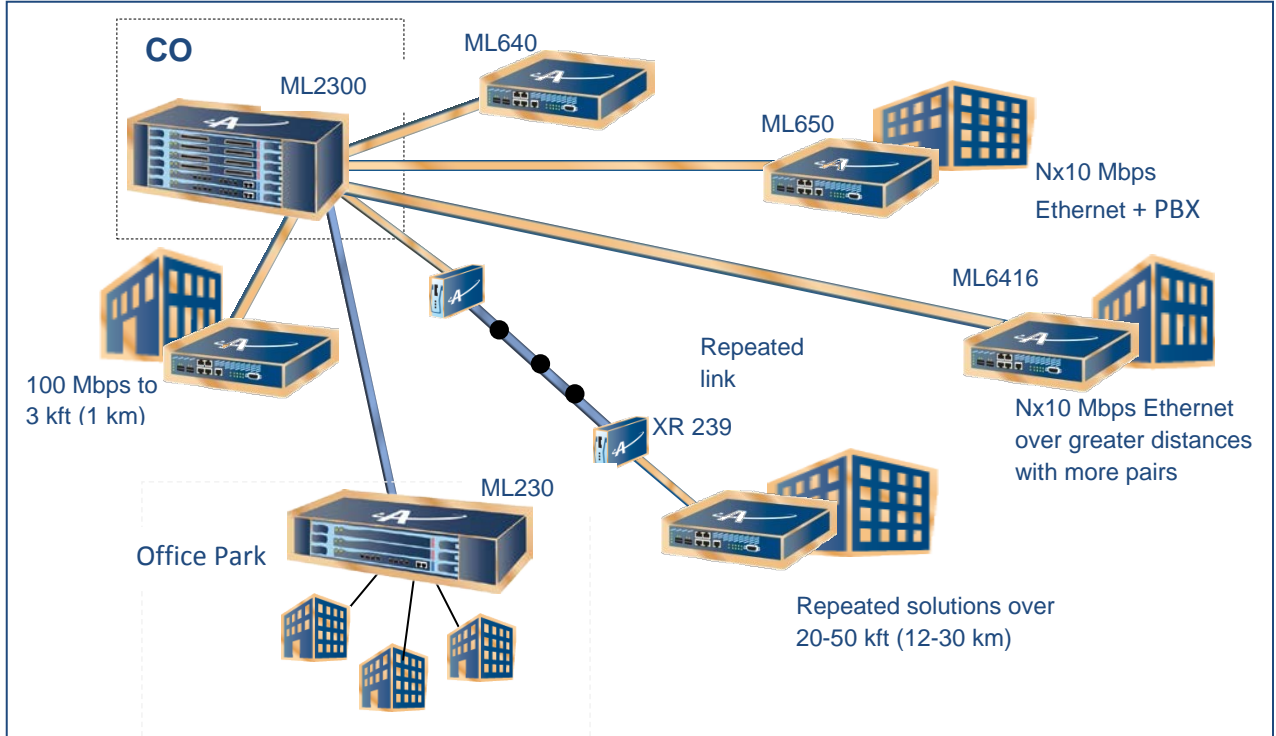
Take bandwidth to a building, and scale service revenues easily. Sell a customer a 10 Mbps service profitably and turn up more bandwidth to that customer in future remotely without requiring a truck roll. Or bring bandwidth to a building and sell services to multiple customers very cost effectively using a single Ethernet access device.

### **Reliability and Reputation – Actelis Is the Leader in High Performance EFM over Copper**

Actelis has over 350 customers worldwide and has been named the #1-ranked Ethernet Access Device vendor for the past 5 years (Infonetics Research). We are known for offering the most rugged and reliable high performance EFM over Copper solutions available.

## Actelis Business Ethernet Solutions

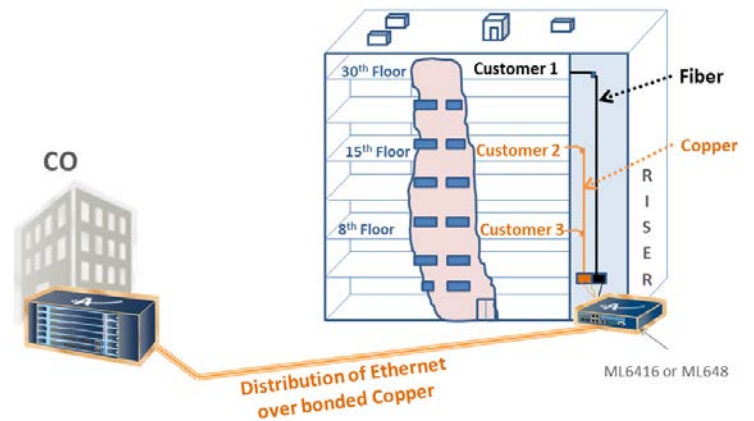
Actelis provides cost-optimized choices in scalable, high-density aggregation switches for the CO, and cost-optimized Ethernet Access devices ranging from 2 – 32 pairs that can serve multiple customers per building.



### Highlights

- Up to 200 Mbps of symmetrical bandwidth using G.SHDSL
- Cost optimized choices in aggregation and access platforms
- Support for hub and spoke and ERPS ring architectures
- 100 Mbps to 3 kft (1 km) and N x 10 Mbps to 18 kft (6 km) without repeaters
- Enhanced QoS per EVC and ability to provide multiple differentiated streams per customer
- Efficient OpEx with OAM tools including MAC loopbacks, Y.1564 traffic generators, Y.1731 PM

Serve multiple customers in an MTU with N x 10 Mbps Carrier Ethernet Services using one Ethernet Access Device and **10/100Base-TX copper** or **100/1000Base-FX fiber** customer interfaces



## The Portfolio

Actelis offers a wide portfolio offering a flexible selection of NTUs and Aggregation to fit various deployment scenarios.

- Most rugged and reliable customer-proven EFM over Copper solutions on the market
- Highest rate and reach with Actelis' EFMplus™ and DRB advanced technologies
- Purpose-built design scales for most efficient strategic builds of EFM over Copper for SMEs
- Flexible service creation features
- High performance
- Faster time to market at lower cost than fiber
- More bandwidth over greater distance with fewer pairs

### The NTUs – Hardened EoC Devices for Cost Effective High Speed Backhaul

Product	# pairs	Traffic	EFM Bonding	Features	BW & Growth	Extended Reach
ML620i	2,4	Ethernet	Symmetric (G.shdsl)	4x10/100Base T, Basic QoS	Up to 240Mbps	XR239 9 hops 8 repeaters / loop Existing 239 (T1) enclosures
ML630	8	Ethernet	Symmetric (G.shdsl)	4x10/100Base T, 1x 100/1000BaseFX		
ML640	4,8,16	Ethernet	Symmetric (G.shdsl)	4x10/100M BaseT, Advanced QoS features (CIR/EIR, EVCs), 2x100/1000BaseFX SFP		
ML230	32	Ethernet	Symmetric (G.shdsl)	Enhanced capabilities. Advanced QoS, 8 SFP ports	Up to 480Mbps	BBA 2 hops, Various enclosures
	8	Ethernet	Asymmetric (DMT) *		Up to 260Mbps DS Up to 160Mbps US	
ML740	4,8	Ethernet	Asymmetric (DMT)	4x10/100Base T, Advanced QoS features (CIR/EIR, EVC), 2x100/1000BaseFX SFP		
ML650S	4,8	Ethernet + TDM (PWE) + SYNC	Symmetric (G.shdsl)	4x10/100Base T, 4x E1/T1, Advanced Sync, I/E, Advanced QoS features (CIR/EIR per EVCs) Opt. 2 x 100/1000BaseFX SFP	Same as ML6xx	
ML750 *			Asymmetric (DMT)		Same as ML7xx	

### The Aggregation Platforms – Cost Effective Aggregation the traffic from multiple small cells locations

Feature	ML2300B	ML230	ML600	ML700
Chassis	CHS-2000B	CHS-200	NA	NA
Height/Width	4U, 19"	2U, 19"	1U, ½ 19"	1U, ½ 19"
DMT ready	Yes	Yes	N/A	Yes
# of slots	6	3	N/A	N/A
Max # of SDUs	2	1	N/A	N/A
Max # of Service/Modem Cards/Slots	4	2	N/A	N/A
Max # of copper pairs (G.shdsl)	256	128	16	8
Max # of HSLs	128	64	1 (ML600) 4 (ML698)	1
Eth. SFP ports 100/1000FX or 1000/2500FX (SDU-450 only)	4 or 8	4 or 8	1	2
Eth. copper ports / SDU 10/100BaseT or 10/100/1000BaseT	2	2	4	4