



### What Our Customers Are Saying...

“We looked at fiber as an alternative solution, but with the results we observed with Actelis, a fiber-optic network could not be justified. With Actelis’ ITS solution, I am getting the speeds and reliability I need, so why would I want to spend that kind of money on fiber? It just didn’t make sense.”

Jerry Downs, State Electrical Engineer for Operations  
Wyoming DOT

“The ability to install and auto-manage the network allows the traffic engineers to focus on their core competency: improving the overall efficiency and effectiveness of the county’s traffic system.”

Michael Kinney, Senior Engineer  
Montgomery County DOT

“When evaluating our options for upgrading to an all-IP network, we found that utilizing the City’s existing copper interconnect in combination with fiber-optic cable backbones was the most beneficial and cost-effective solution. With the Actelis solution, we were able to leverage our existing copper without sacrificing our need to implement a wide breadth of emerging applications over our new IP network.”

Ho Nguyen, Associate Engineer  
Transportation Operations System Management Group  
The City of San Jose (California)

Corporate Headquarters  
Actelis Networks, Inc.  
47800 Westinghouse Drive  
Fremont, CA 94539  
t. +1 510-545-1045 or  
toll-free in U.S. 1-866-ACTELIS  
f. +1 510-545-1075

Company and General Information: [info@actelis.com](mailto:info@actelis.com)  
Asia Pacific Sales: [apacsales@actelis.com](mailto:apacsales@actelis.com)  
Central and Latin America Sales: [calasales@actelis.com](mailto:calasales@actelis.com)  
Europe, Middle East and Africa Sales: [emeasales@actelis.com](mailto:emeasales@actelis.com)  
North America Sales: [nasales@actelis.com](mailto:nasales@actelis.com)

# ITS Networks

## Leveraging Ethernet Over Copper and Fiber for Next-Generation ITS Networks



Actelis Networks® is the leading global supplier of IP-based, Ethernet over Copper broadband solutions, which enable cities, counties and other local government agencies to quickly and cost effectively upgrade to a more efficient and flexible next-generation ITS network. 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 ©2013. All Rights Reserved. Learn more at [www.actelis.com](http://www.actelis.com).

# No. 1 Ranked Products for Next-Generation ITS Networks

Deliver More High-Bandwidth, Ethernet-based ITS Applications Faster and Farther With Greater Resiliency and Reliability.

## Is Your Transportation Network in the Slow Lane?

The need for Intelligent Transportation Systems (ITS) networks, which support applications managing next-generation, IP-based traffic controllers, has become a top priority for municipalities wanting to improve traffic monitoring and public safety.

Most municipalities today are at a crossroad, looking for long-term, IP-based Ethernet solutions that will enable them to quickly and cost effectively upgrade to a more efficient and flexible telecommunications network.

## The Challenge: Upgrading To A More Efficient, Reliable and Flexible Network

Cities and counties have traditionally relied on a network that leveraged copper outside plant to interconnect their traffic control signaling systems. However, these centralized traffic management systems have become outdated, creating bandwidth limitations that impose constraints as well as being subject to power surges and failures.

## The Solution: Ethernet for Next-Generation ITS Networks

Advancements in Ethernet technology from Actelis are enabling traffic network operators to achieve data rates in excess of 15 Mbps per pair over the same copper network. By leveraging our product portfolio of Ethernet Access Devices (EADs) and Ethernet Aggregation Switches, traffic network operators can significantly increase their broadband rate, reach and reliability over the same copper or hybrid-fiber networks.

## Patented, Field-Proven and Award-winning Technology

Actelis exceeds performance and reliability requirements with our EFMplus™ technology, a powerful combination of several patented techniques that enhance standardized Ethernet in the First Mile (EFM), and turns ordinary copper pairs into the most high-performing, highly reliable solution for ITS networks. Actelis' EFMplus overcomes the problems of traditional copper plant, such as the variable quality and reliability of individual copper pairs, including the effect of external interference and other electrical and physical interruptions to the signal.

## Maximize Your Greatest Strategic Asset

By maximizing the existing copper and fiber infrastructure with Actelis' industry-leading product portfolio, traffic network operators can accelerate wide-scale delivery of scalable, Ethernet-based ITS applications across the entire network. Only Actelis' delivers the best-performing ITS networking solution at the lowest cost per bit. Our best-in-class resiliency and broadband rates provide greater flexibility in service deployment options, helping to eliminate additional costs typically associated with other less robust solutions. And since transportation applications are usually operated by municipalities, which typically own or have inexpensive access to existing copper plant, this makes Actelis the ideal choice for next-generation ITS networks.

### Highlights

- High Performance, Low Cost Solution
- Quick and Easy to Deploy
- Utilize Existing Facilities with Secure Transport
- 15 Mbps per Copper Pair
- Multi-Hop for Longer Distances
- Drop & Continue to Multiple Traffic Controllers
- Environmentally Hardened
- Simplified Network Management

### Applications

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



**ML600 EADs**

Actelis' award-winning product family of EADs that delivers ITS applications over existing copper networks using G.SHDSL transmission technology.



**ML680D EAD**

Delivers fully managed ITS applications over Drop-and-Continue topologies in Copper and fiber networks.



**ML230 & ML2300 Aggregation Switches**

TOC switches that deliver ITS applications over Point-to-Multipoint scenarios in existing copper networks using G.SHDSL.



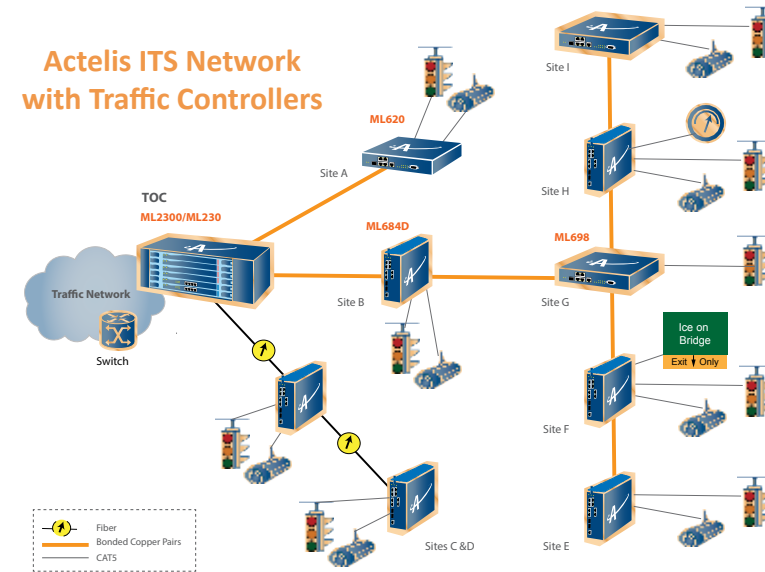
**ML698 Aggregation Switch**

Small-density TOC switch that deliver ITS applications over Point-to-Multipoint scenarios in existing copper networks using G.SHDSL.

## Actelis' Portfolio for ITS Networking

Actelis' EADs and Aggregation Switches deliver high-performance, highly reliable Ethernet services over existing copper and fiber infrastructures. Providing a low cost per bit with speeds at 15 Mbps per copper pair, these platforms utilize G.SHDSL transport technologies and are built on Actelis' award-winning EFMplus technology. The ML600 EADs can be deployed in a Point-to-Point configuration, fiber/copper Add-Drop Chain, or in a Point-to-Multipoint configuration with Actelis' Aggregation Switches.

### Actelis ITS Network with Traffic Controllers



### MetaASSIST EMS

For real-time planning, provisioning, monitoring, performance analysis, and management of networks with multiple Actelis EADs, and Aggregation Switches.

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*Montgomery County DOT*



Photo Courtesy of Montgomery County DOT