RUGGEDCOM WIN for Intelligent Transportation Systems

End-to-end wireless connectivity solutions for today and tomorrow

On highways, down inner-city streets, and through tunnels and railway crossings, an endless stream of cars, trains, and buses provides a complex, nonstop challenge for major city centers and small communities alike.

In urban areas, aging infrastructure and shoestring budgets complicate the task of managing pedestrians, cyclists, cars, trucks, light rail, and transit vehicles. Growing populations mean more vehicles which means greater congestion, longer commutes, and an even more pressing need for timely traffic data.

In inter-urban areas, communication networks are geographically dispersed, covering many hundreds of miles of roadway, and serve as a critical information backbone for the entire transportation infrastructure. Ensuring there is

significant bandwidth to connect thousands of devices and support hundreds of real-time video feeds, along with data gathered from roadway sensors, is paramount.

In bridges and tunnels, accidents and closures can present unique safety challenges as well as severely disrupt your city's transportation systems. To protect public safety, improve availability and lower operational costs, your network subsystems must be able to detect incidents early, maximize operational uptime, and interact seamlessly.

Designed with these considerations in mind, Siemens' RUGGEDCOM WIN is the first broadband wireless portfolio designed for private networks, delivering the benefits of carrier-grade 4G product technology to Intelligent Transportation Systems.

With its rugged construction designed especially for outdoor harsh environments, RUGGEDCOM WIN can support the most challenging intelligent 24/7 transportation networks, ranging from complex transportation systems in sprawling urban centers to the traffic control systems in smaller communities.

siemens.com/ruggedcom/its

Siemens RUGGEDCOM WIN is the first broadband wireless portfolio designed for private networks, delivering the benefits of carrier-grade 4G product technology to Intelligent Traffic Systems.

RUGGEDCOM WIN Features

Standards based
- Based on the IEEE 802.16e family of standards and third party validated to support vendor interoperability.

Range
- Ranges up to 10 miles Line-Of-Sight (LOS) and some Non-Line-Of-Sight (NLOS) without repeaters are typical.

Throughput
- Supports up to 40 Mbps with built-in mechanisms to ensure the system is delivering maximum bandwidth for a given distance/coverage requirement at all times.

Scale
- Additional base stations and subscribers are easily added and embedded GPS or IEEE1588 synchronization options help reduce self-interference and maximize frequency reuse to cover large areas.

Security
- Designed with a security architecture that includes components such as over-the-air AES Encryption and Radius Authentication and a feature set to enable organizations that provide critical infrastructure to be compliant with legal mandates and security guidelines.

Mobility
- Capable of maintaining session persistence with real time applications in a mobility environment at vehicular speeds.

Quality of Service
- Built-in Quality of Service (QoS) enable operators to guarantee latency for critical applications while providing multiple services on a common air interface.

## RUGGEDCOM WIN Benefits for ITS Applications

- Extends IP networks over long distances to fixed and mobile users

- Mobile subscribers can roam between base stations with seamless handoff

- Secure remote access for maintenance and troubleshooting no matter where the solutions are located

- Highest level of network security keeping unwanted visitors out

- Outstanding reliability and scalability for future needs

- Exceeds environmental conditions as defined by the NEMA TS 2 industry standard, ranging from -40°C to +70° C

- Eliminates needless trenching of conduit and expensive capital outlays associated with fiber networks

- Eliminates recurring OpEx fees associated with carriers and leased lines

- Available in several licensed and unlicensed frequencies including 1.8Ghz, 2.5Ghz, 3.5-3.65Ghz, 4.9Ghz, and 5.8Ghz
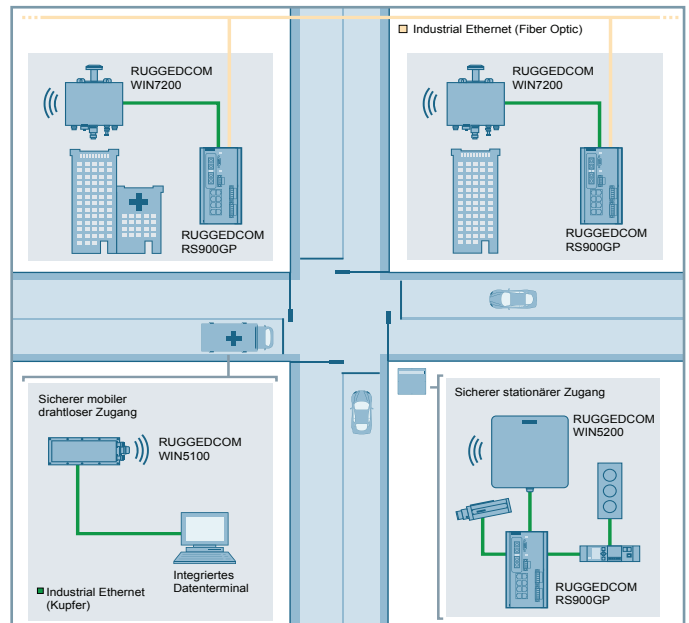
Ensuring there is the significant bandwidth required to support hundreds of real-time video feeds across miles of geographically dispersed roadway is paramount.

Typical ITS Use Cases for RUGGEDCOM WIN
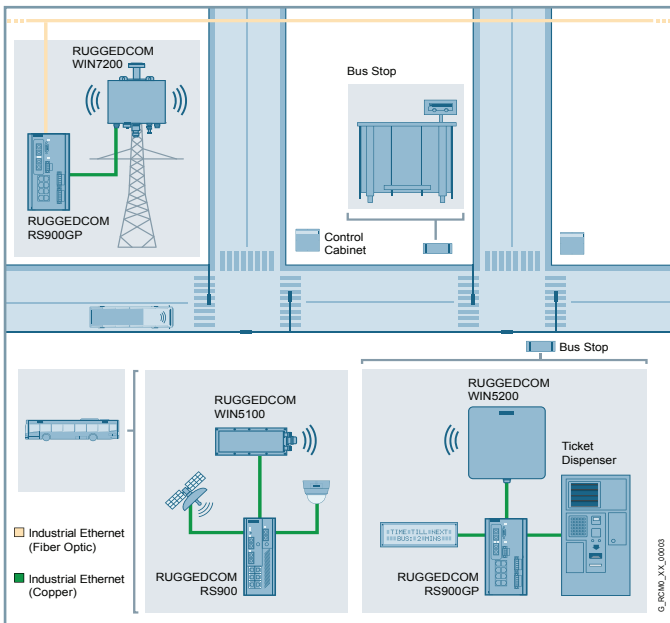
Communication system for traffic corridor optimization

Secure wireless broadband coverage for mobile and stationary applications

- Track critical assets through use of subscribers with integrated GPS

- Use of dedicated public safety spectrum (4.9 GHz) for higher reliability

- True mobility with standards based, private 4G technology

- Manage end-to-end security without relying on carrier infrastructure

- Available in several licensed and unlicensed frequencies including 1.8Ghz, 2.5Ghz, 3.5-3.65Ghz, 4.9Ghz, and 5.8Ghz

- Configurable upstream data rates for heavy bandwidth applications such as CCTV

- Easily expand existing wireline network with ubiquitous wireless coverage

- Eliminates last mile connectivity issues

Further information

> **More about RUGGEDCOM:**
> usa.siemens.com/ruggedcom

> **More about RUGGEDCOM**
> **WIN: Check out the video!**
>
> **www.youtube.com/**
> **watch?v=stjQeiiEOwg**