

AUTOMOTIVE-FRIENDLY COMMUNICATION SYSTEM IN FIRE TRUCKS

HIGHLIGHTS

- ✔ Providing uninterrupted network connectivity in a fire truck is a highly complex challenge. But it gets even more complicated when you need to power all in-vehicle devices without overcrowding the solution with wires and adapters.
- ✔ The challenge is overcome with the simple yet assured duet of the RUTX11 cellular router and the TSW101 unmanaged switch.
- ✔ The TSW101 is particularly suited to this scenario, providing network connectivity and power to in-vehicle devices via four of its five Ethernet ports supporting PoE+.

THE CHALLENGE – ZERO TOLERANCE FOR INTERFERENCE

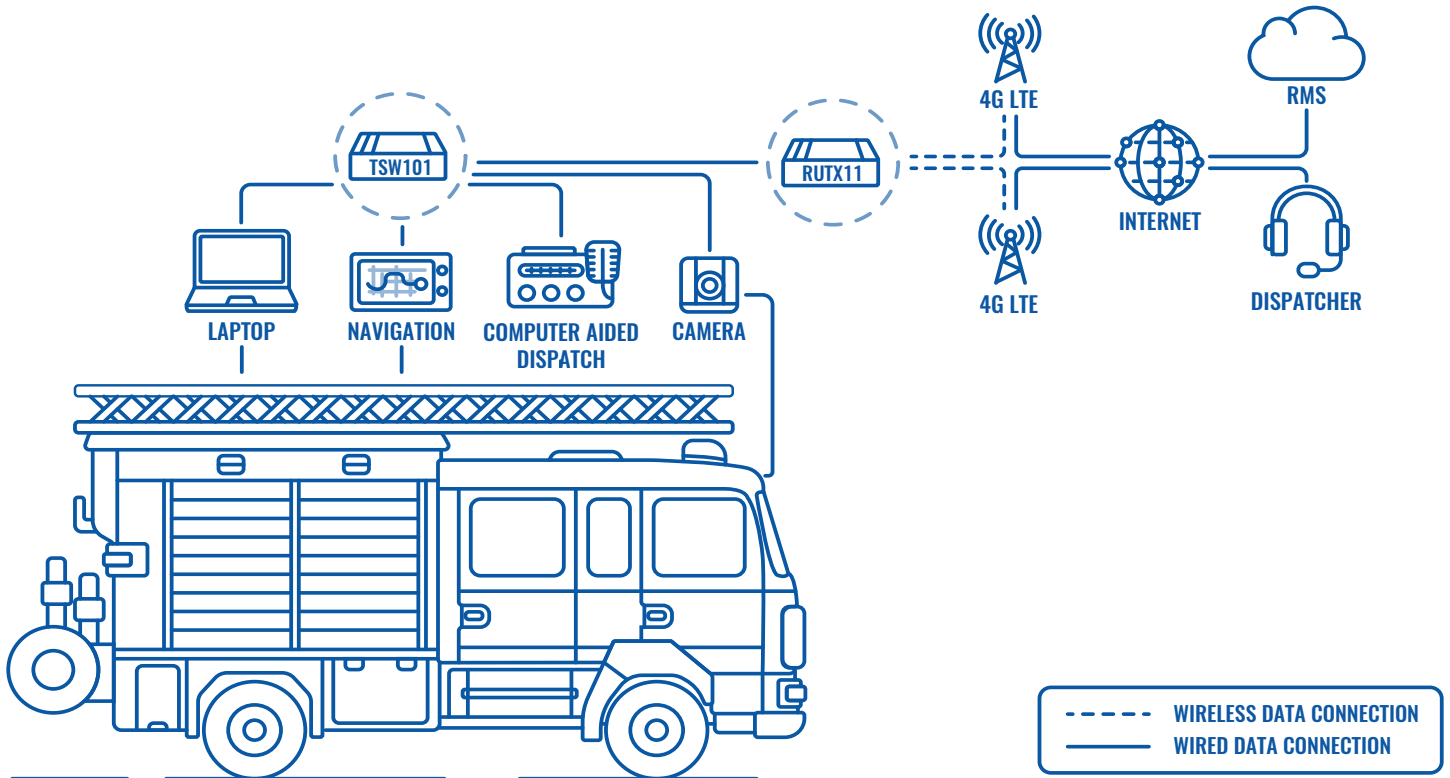
Whether it's for fires or medical emergencies, firefighters are known for reacting to the problem instantly. While their incredible response speed is the result of their competence, we shouldn't forget the network connectivity that helps them achieve even quicker reaction.

Since firefighters have to maintain mobility, the need for reliable and uninterrupted wireless communication between the fire crew and dispatchers is critical. Not to mention that other fire truck equipment like cameras and computers need connectivity to obtain additional information about the incident and record instances, like the truck's maneuvering through streets or crowds, to let the dispatcher monitor the entire process. Each second matters for a successful rescue operation, so none can be wasted on slow or interrupted network connectivity.

To provide the fire crew with the necessary equipment, we have to keep in mind that a significant number of the devices require fast and robust connectivity. Cameras, navigation systems, and computers necessitate the transmission of massive amounts of data in a short period of time. Not only that, but long-distance connectivity is especially necessary when the fire truck must reach rural areas.

The most significant challenge is in-vehicle device energy maintenance – how can we supply power from the fire truck itself while preventing entanglement with a pile of wires and power adapters? In other words, how do we minimize setup complexity?

TOPOLOGY



THE SOLUTION – SIMPLICITY WINS

Since laptops, cameras, and navigation devices need network connectivity and power to forward collected data to, for example, a computer-aided dispatch system, the devices are plugged into the TSW101 automotive switch, which ticks all the boxes on the requirement list. Wonder how?

Since the TSW101 is wired to the RUTX11 router, all in-vehicle devices receive strong and uninterrupted network connectivity. With 5 Gigabit Ethernet ports, this switch can support fast data transmission and ensure smooth connectivity to multiple devices.

What's even greater – 4 out of these 5 Gigabit Ethernet ports support PoE+, allowing it to supply other devices with up to 30 watts of power per port. With durable aluminum housing, rugged design, and temperature and vibration resistance, the device is not affected by the in-vehicle environment.

These features allow mission-critical applications to communicate with command-and-control teams and send real-time information like situation updates, navigation, and videos of the truck's exterior.

The TSW101 meets the vehicle's technical requirements and ensures that all components complement each other. That's why its simplicity is so great.

