MANAGED SWITCH FOR SMART TRAFFIC MANAGEMENT SYSTEM

HIGHLIGHTS

✓ Smart traffic management systems continuously and automatically manage traffic via a centralised infrastructure comprised of fleets of devices, software, and engineers. However, such a system lives or dies on the reliability of its Internet connection.

✓ Ensuring an uninterrupted connection, effective data transmission, and remote monitoring and management capabilities are Teltonika's RUTX09 mobile router and TSW202 managed switch, making this a scalable and affordable IoT solution.

✓ The 4G router ensures secure and robust LTE Cat 6 connectivity, while the 10-port switch provides efficient data flow management superb PoE+ capabilities via eight of its ports.

## THE CHALLENGE – HOW SMART IS TRAFFIC, REALLY?

With buzz words like Smart City and Industry 4.0 being industry standards, the fact that we still get stuck in traffic and watch hours waste away is nothing short of appalling.

Fighting this good fight are smart traffic management systems—comprehensive and complex infrastructure comprised of fleets of devices, software, and engineers. These smart traffic systems continuously and automatically monitor traffic, manage smart traffic light intervals and lane availability based on real-time usage, inform drivers of congestion or accidents ahead, and so on.

This is achieved by the key feature of traffic management systems: centralisation. All moving parts are connected to a single network that enables effective telemetry and robust intercommunication.

In other words, the effectiveness of smart traffic systems, and your drive to and from work, lives or dies on the reliability of its Internet connection. And when collective sanity is at stake, your IoT solution requires the very cream of the crop. Enter: the RUTX09 mobile router and TSW202 managed switch.

TOPOLOGY
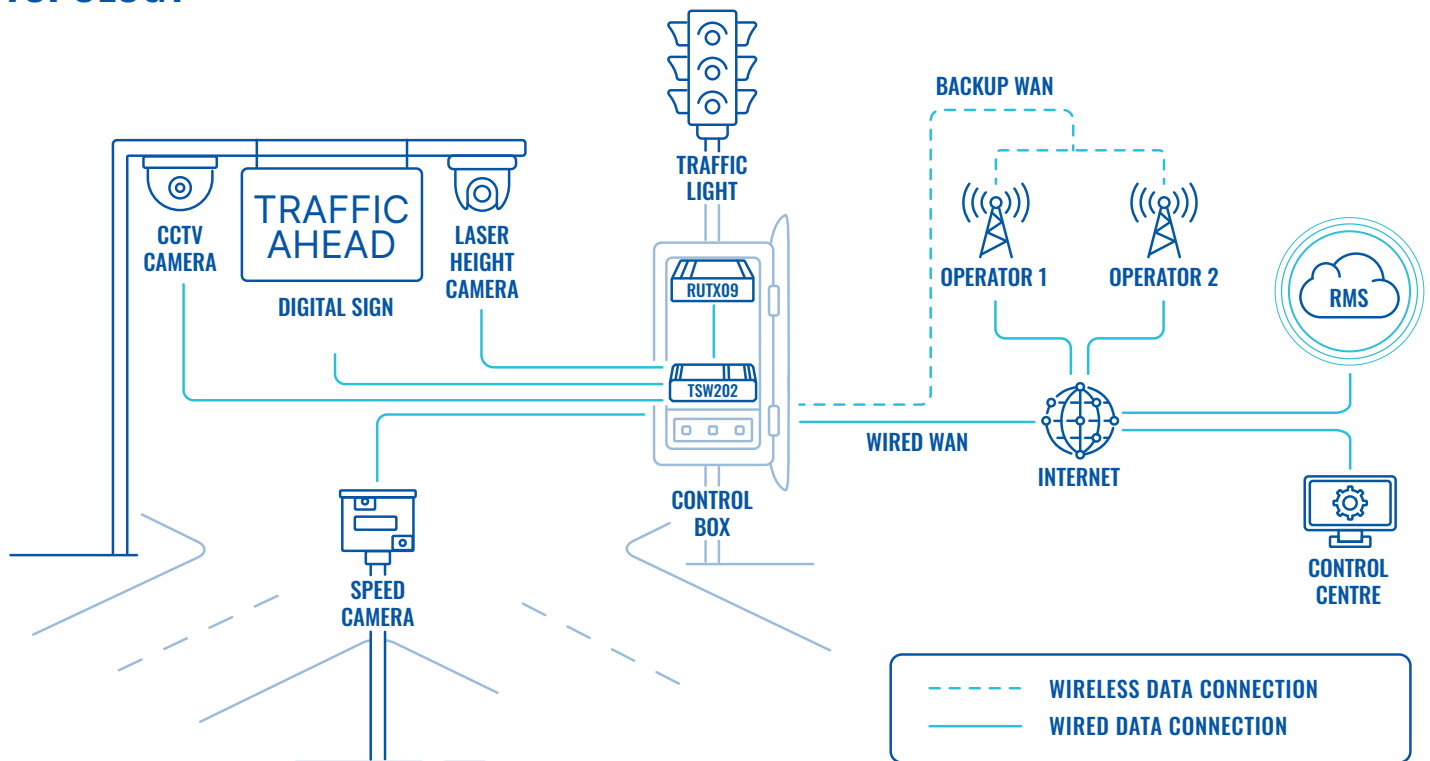
THE SOLUTION – MANAGED BY MANAGED SWITCHES

Enabling this smart traffic IoT solution are Teltonika's RUTX09 mobile router and TSW202 managed switch. The two are installed in a central control box and connected to one another via RJ45. This keeps this IoT solution scalable and affordable, as only two networking devices are needed per control box.

The managed switch is then connected to the suite of end devices of this smart traffic system, including a smart traffic light, CCTV, speed, and laser height cameras, and a digital screen. This is easily accomplished, as the TSW202 is a 10-port Ethernet switch, boasting eight RJ45 ports with PoE+ technology and two SFP ports.

Lastly, the RUTX09 mobile router is connected to a remote control centre via wired WAN, establishing smooth data transmission to and from the end devices via the managed switch. This telemetry is safeguarded by a host of security features, including firewall, staple authentication methods, and VPN services such as Stunnel, ZeroTier, WireGuard, and more.

The reason to use a managed switch in this industrial IoT solution is twofold. First, it allows for efficiently managing data flow across the end devices in the network, which is what the managed part of managed switch stands for. Secondly, the TSW202 is a PoE+ switch, enabling it to power the end devices using the same Ethernet cables used for providing connectivity.

The connectivity provided by the RUTX09 is LTE Cat 6, capable of cellular speeds up to 300Mbps with carrier aggregation. This 4G router has dual SIM slots with auto failover, backup WAN and other switching scenarios, keeping its connection uninterrupted. It also has four RJ45 ports, allowing it to connect to three additional devices on top of the PoE+ switch.

Of course, different end equipment may require different communication protocols. The TSW202 supports PROFINET for automated data processing, alongside other protocols, like MRP and EtherNet/IP. Meanwhile, the RUTX09 cellular router supports Modbus TCP, MQTT, SNMP, and many other key protocols.

A remote IoT solution also necessitates IoT remote monitoring and management capabilities. Luckily, both this 10-port Ethernet switch and indutrial cellular router are compatible with Teltonika's Remote Management System (RMS)—a user-friendly and customisable remote management tool. Using RMS Connect, you can even remotely access the end devices!

The key to an operational smart traffic management system is enabling its moving parts to communicate effectively in real time. Deploy the RUTX09 mobile router and TSW202 managed switch, and let traffic magic happen.