



Firetruck Management: In-vehicle Connectivity & Fleet Management

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When our previous supplier of Wi-Fi AVL modems could not make delivery one year after we placed our orders, MRF had to search for another supplier. We are very pleased that we found InHand Networks – a team that is highly motivated and made delivery within six weeks.”

Gary Zhang,

President, MRF GeoSystems Corporation



Founded in 1992, [MRF GeoSystems](#) is a system integrator that specializes in GIS technologies. Their products & services range from WebGIS platform, mobile GIS apps, sensor integration to GIS consulting. Over the past three decades, they have delivered industry-leading spatial solutions to more than 6,000 customers in over 40 countries worldwide.

Background

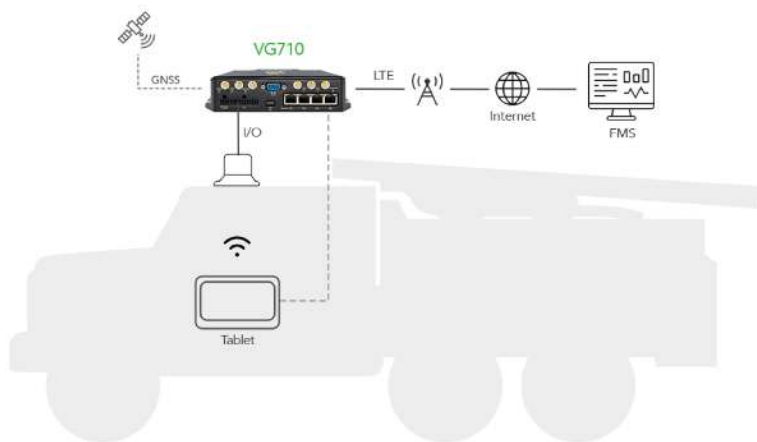
Fire protection is always among the top priorities of government administration. Those who have been caught off guard understand well how necessary it is that each firetruck be precisely and constantly tracked and monitored. Keeping vehicles in service, operating properly and safely is crucial to the operation, as vehicle failure only makes matter worse when an emergency already happens. Another must-have quality for firetruck fleets is efficient dispatch — after all, every second counts when it comes to life and property.

A county in the western Canadian province of Alberta is committed to better fire protection and hence safety of its residents. The fire department is looking for a solution that helps better manage its 50 firetrucks. On each truck there are two status inputs, i.e. emergency lights and siren, that show if the vehicle is on duty. The firetrucks constantly report their location data to the platform, so that fleet managers can track them and dispatch them within the shortest time and distance. Within the vehicle, the driver works with a navigation tablet that automatically receives dispatch routes and helps communicate with the outside.

Challenges

- Reliable and uninterrupted in-vehicle Wi-Fi
- Fast and reliable 4G cellular connectivity to communicate with the fleet management center
- High-precision and reliable GNSS location tracking function
- Extensive interfaces such as I/Os to connect to vehicles' status inputs and upload data
- Easy integration to the customer's fleet management cloud

Solution



To provide the connectivity and performance needed by the customer, MRF GeoSystems deployed InHand Networks' **InVehicle G710** vehicle gateway, helping the firetruck fleet managers collect and upload vehicle status data, track each truck's location, and dispatch them with greater efficiency.

The solution is a typical IoV architecture of "edge + communications + cloud". Emergency lights and siren of each firetruck is connected to the **VG710** via I/O. The **VG710** also offers fast and reliable on-board Wi-Fi to the navigation tablet which helps the driver receive dispatch routes from the management center. Built with 72-channel GNSS, the **VG710** keeps locating each firetruck and sends the data back to the fleet management system.

Data collected by the **VG710** include time, location, speed, vehicle battery voltage, etc. While parked in the fire hall, firetrucks need to report their location to the FMS once per hours, and every few seconds in motion. Everything can be seen from the management center, so that staff can locate each vehicle and dispatch them when emergencies occur. Technicians also monitor the vehicle status for troubleshooting purposes and adjust configuration settings if needed.

Features



InVehicle G710

- High-speed 4G LTE CAT6 connectivity
- Link redundancy, dual SIM for carrier failover, ensuring uninterrupted communications
- High reliability, link detection, auto redial when disconnected
- Multiple GNSS systems supported, e.g. GPS, Beidou, Galileo, GLONASS
- Multiple Gigabit Ethernet ports, delivering high-speed in-vehicle network, RS232/RS485 serial ports, multiple I/Os that can be connected to many sensors
- Available with OBD-II and J1939, real-time collection of vehicle diagnostic data
- Gyroscope and inertial navigation system supported

Benefits

Strong in-vehicle Wi-Fi, uninterrupted communications on board

The **VG710** delivers high-speed and reliable Wi-Fi for on-board devices, which enables the driver to receive dispatch routes from the fleet managers at the earliest possible time and hence better carry out their fire protection duties.

Fast, reliable and uninterrupted 4G connectivity for continuous communication with the management center

The **VG710** delivers continuous access to high speed LTE CAT6 networks. With multi-layer auto link detection and recovery, the **VG710** ensures that all the firetrucks remain online 24/7.

Constant status tracking gives customer peace of mind

Built with extensive interfaces like I/O, the **VG710** keeps collecting the status of the firetruck; high-precision 72-channel GNSS keeps tracking the position of each truck so that fleet managers can always locate their vehicles and dispatch them with ease and efficiency.

Easy integration to clouds, "cloud + edge" smart management

With simple configuration, the **VG710** can be connected to the customer's own platform through MQTT and HTTP standard protocol, so that users can custom their applications for enhanced performance.



The InVehicle G710 has superior Wi-Fi speed when compared with other Wi-Fi AVL modems. Many of our customers use it as an emergency response command unit. Every customer loves it!"

Glen Goodwin,

AVL Specialist, MRF GeoSystems Corporation

More Applications

The **VG710** is a new vehicle LTE gateway developed specially for the Vehicle Area Network. It provides high-speed and secure connectivity for mission critical applications in a wide range of scenarios, such as police cars, heavy equipment, ambulances, and logistics. Equipped with cloud-based remote fleet management platform, it offers ubiquitous networking and uninterrupted monitoring for logistics management, asset tracking, mobile office and public security.

Learn more at:

<https://inhandnetworks.com/products/invehicle710-vehicle-gateway.html>



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