Bus Connectivity Compliant with ITxPT Standards

The VG814 builds a reliable, compatible and interoperable network for public transport vehicles, improves the stability of networking and reduces the cost of troubleshooting.

Background

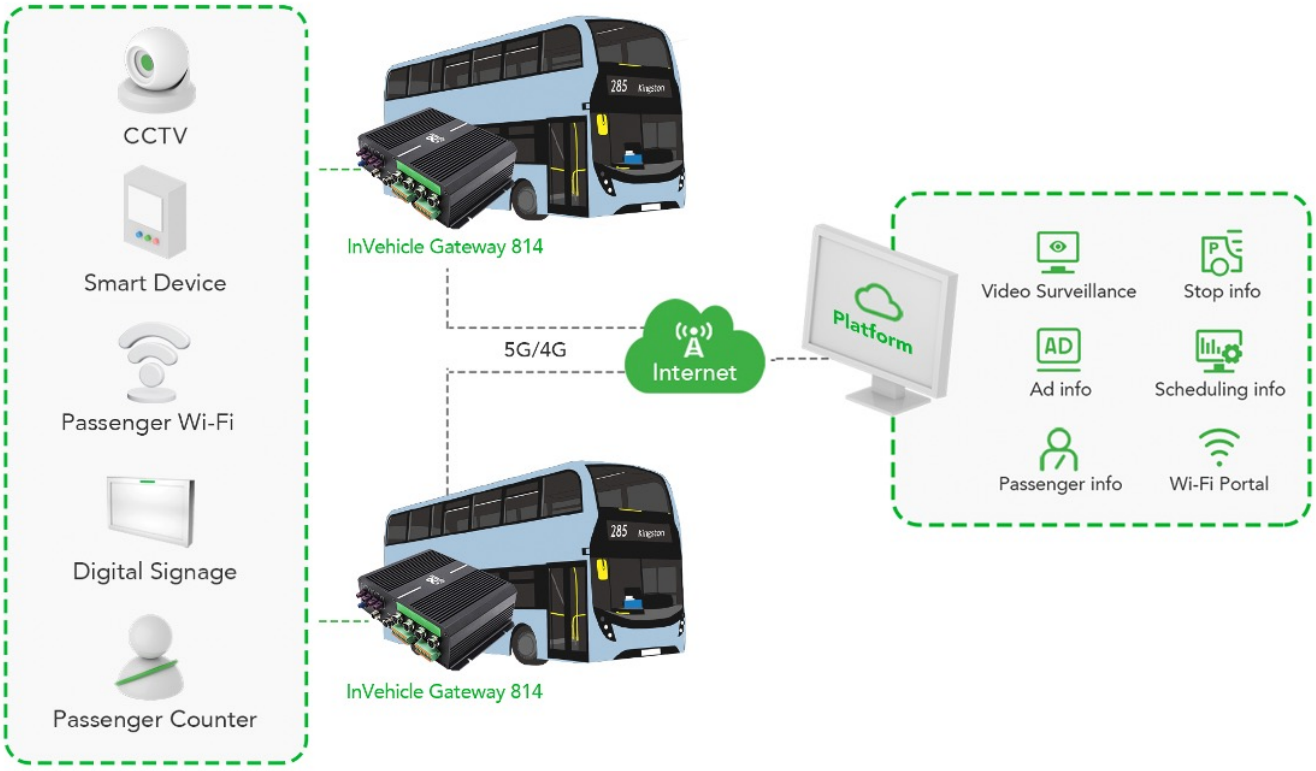
Buses are among the most widely used means for urban transportation, especially with accelerating population growth and expansion of urban areas. This means higher requirement
for vehicle operation and management, which involves not only remote monitoring and maintenance, but also better passenger experience.

A variety of on-board devices, such as cameras, monitors, controllers, etc., imply greater demand for networking reliability and speed. As each device is embedded with a separate module for Internet access, different standards and uneven performance make it challenging to manage them all and tap more applications. Thus, it is urgent to have an integrated solution for communications and management.

Information Technology for Public Transport (ITxPT) is a standard that supports the implementation of standards and procedures for integrated "plug-and-play" IT systems
for public transport and the relevant back-office functions. It is now a widely recognized and used standard for public transport.

InHand's Bus Connectivity Solution Compliant with

ITxPT Standard



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Cameras, payment systems, security devices and other terminals on board are all connected to the Internet via the VG814. Data collected from them are then transmitted
to the cloud over high-speed 4G/5G networks. Thus, whatever happens within the vehicle can be easily seen from the management platform. Through data analysis, efficiency of fleet operation can be improved, preventive maintenance conducted, and passengers can enjoy better experience on the move.

Advantages

1. **Multi-network Connectivity**
   Available with high-speed 5G or 4G cellular connectivity, Gigabit Ethernet, Wi-Fi 5, Bluetooth, RS485, etc., the VG814 vehicle gateway offers various means of Internet access.
   The QoS feature prioritizes and allocates bandwidth regarding business demands so that network resources are made best use of.

2. **Extension to Peripherals**
   Extensive interfaces on the VG814 gateway connect to different devices on board. With uniform communication standards managing and controlling everything in the vehicle area network,
   different devices can be better interconnected and communicate with each other.

3. **Passenger Wi-Fi**
   The Wi-Fi portal which is specially designed for buses delivers passengers quality experience despite long hours on the road. The Wi-Fi portal which is specially designed
   for buses delivers passengers quality experience despite long hours on the road.

4. **Developer features**
   With support for Python and Docker, the VG814 offers a flexible

development environment, which allows custom applications to be installed and operated.

5. **Real-time Monitoring**
   The VG814 gateway is specially built for vehicles. Integrating FMS connector, it monitors the operation status of the vehicle and battery in real time, uploads data
   to the management platform for diagnostics. With statistical analysis, the VG814 helps identify abnormalities and conduct preventive maintenance, which reduces faults during service.

6. **Driving Behavior Monitoring**
   Driving behavior is constantly monitored. Dangerous behaviors such as acceleration, hard brake and sharp turns, as well as collision are detected and warned in case of traffic accidents.
   With high-precision and sensitive GNSS, the VG814 keeps track of vehicle location, helps navigate and plan for the best route.

7. **Easy Integration to Clouds**
   With simple configuration, the VG814 can be integrated to 3rd party clouds such as Azure IoT Edge, AWS IoT, MQTT and TCP server. The built-in app automatically sends
   information of gateways, interfaces, GNSS, etc. to the cloud, so that on-board devices can be better managed for value-added business.

8. **Designed for the IoV Market**
   CE certified and compliant with vehicle standards such as ECE R10, ECE R118, E-Mark and ITxPT, the VG814 is built for the IoV market.