Passenger expectations for increased convenience and comfort are rapidly reshaping the landscape across all modes of transportation, creating new challenges and opportunities to enhance customer satisfaction, build loyalty, and stand out from the competition by providing compelling new services and experiences.

VIA provides the fast track for smart in-vehicle innovation with our robust and scalable IoT systems and IoT acceleration platforms that can be rapidly customized for a plethora of fleet management, infotainment, and security applications that increase operational efficiency, boost passenger loyalty, and generate new revenue streams. Combining ruggedized designs optimized for the specific power and reliability demands of on-the-road operation with seamless I/O and wireless connectivity, VIA In-Vehicle Solutions include an unrivaled selection of scalable systems and platforms that can be rapidly customized for a wide variety of demanding commercial applications.
VIA In-Vehicle Solutions enable you to enhance passenger convenience and safety while simultaneously boosting fleet efficiency and reducing costs through the following core applications:

**Data Collection:**
Rich wireless and I/O connectivity options for capturing and transmitting route-tracking, fuel consumption, traffic, and accident data from vehicles.

**Data Analysis:**
Real-time data processing and analysis to optimize route planning and navigation and minimize journey times and fuel costs.

**Monitoring and Control:**
Remote 24/7 monitoring and control to optimize vehicle utilization and increase ROI.

**Infotainment:**
Advanced multimedia features for the delivery of news and entertainment services to boost passenger satisfaction and generate additional income streams.

**360° Video Monitoring and Recording:**
Real-time in-vehicle monitoring and recording for up to eight individual HD camera streams to track driver behavior and boost vehicle safety.
VIA has developed a growing range of IoT acceleration platforms for commercial fleets and vehicles, including taxis, trucks, buses, and trains, that enhance safety management, driver monitoring, vehicle maintenance & diagnostics, and vehicle tracking. A wealth of flexible hardware and software customization options are available to meet your exact deployment requirements.

VIA Mobile360 Surround View IoT Acceleration Platform

The VIA Mobile360 Surround View IoT Acceleration Platform delivers real-time in-vehicle 360° video monitoring and recording for up to eight individual HD camera streams to provide the most effective solution for driver monitoring, safety, and vehicle tracking.

It utilizes VIA Multi-Stitch technology to seamlessly combine the camera feeds on the fly to create an encompassing real-time spherical view of a vehicle’s surroundings that can be viewed locally or remotely. With its sophisticated 3D imaging algorithms, the technology not only ensures sharp and clear panoramic images but also supports dynamic multidirectional monitoring around the vehicle from an almost unlimited range of easily-configurable perspectives, including birds-eye view, front-view, rear-view, and side-view. The VIA Mobile360 Surround View IoT Acceleration Platform includes the following key components:

VIA Mobile360 Surround View

With its ruggedized chassis, extended temperature support, and flexible voltage input, VIA Mobile 360 Surround View has been specifically designed to withstand the rigors of the road. Combining support for up to eight CSI cameras with advanced video processing capabilities, including video encoding for remote viewing, the system has all the performance and scalability required for recording and delivering stunning real-time 360° spherical images from even the most demanding environments.

VIA Multi-Stitch Technology

VIA Multi-Stitch Technology supports advanced graphics and video processing features, including Source Calibration, Culling, De-fisheye, Perspective Transform, Orientation, Repositioning, and Side View Geometric calibration, in order to ensure the highest-quality real-time 360° video streams.
VIA Mobile360 ELog
- Route tracking
- Event data recording
- 360° Video records of events
- Real-time remote monitoring with event notifications

VIA Mobile360 ELog (Electronic Logbook) collects and organizes engine and driver data to provide fleet owners real-time vehicle tracking, driver monitoring and asset management. Customizable event triggers keep managers informed of critical situations so they can respond immediately, while a user-friendly graphical interface makes analysis of trip reports a breeze.

VIA Mobile360 ADAS
- Driver monitoring
- Lane departure warning
- Forward collision warning
- Blind spot detection
- Pedestrian detection
- Vehicle detection and classification
- Speed Limit Detection
- Rear-end collision Avoidance

VIA Mobile360 ADAS (Advanced Driver Assistance System) is a road-safety-enhancing solution with an intuitive HMI interface that takes driver assistance to the next level. Utilizing a sophisticated proprietary image processing algorithm, VIA Mobile360 ADAS keeps drivers alerted to the constantly changing road variables under a wide array of conditions to make their journey as safe and efficient as possible.
The VIA BLISS (Bus Line In-Seat System) IoT Acceleration Platform provides a seamless end-to-end Android solution to ensure passengers remain in-touch, informed and entertained throughout their coach journey. With its scalable design and flexible development environment, the platform also provides operators with the ability to further boost their competitiveness and generate additional revenue streams by creating new applications and services such as destination experience programs in partnership with leading hotels, restaurants, museums, and entertainment venues. The VIA BLISS IoT Acceleration Platform comprises the following key components:

**VIA Video-on-Demand Server**
- Wide input voltage range supporting 9V~36V DC-in
- Extended operating temperature range from -20°C up to 65°C
- Gigabit Ethernet, 3G, Wi-Fi, and Bluetooth LE
- Full anti-vibration protection

The VIA Video-on-Demand Server enables the storage, management, and delivery of high-resolution video and media content in the most popular formats such as H.264 across the entire in-bus entertainment system from a single platform.

**VIA In-Seat Android System**

The VIA In-Seat Android System provides a flexible and reliable solution for jumpstarting the development of seat-back and seat-side touch-screen installations. Based on a high-performance dual ARM Cortex-A9-powered platform with advanced HD video playback and multimedia capabilities, the systems are available in a choice of 7" and 10.1" display configurations and can be paired with the appropriate mounting components based on customer requirements.

**VIA Network System**

At the center of the VIA Network System is a 9-port main hub (1-in, 8-out) which connects to the onboard VOD server and bus power system, allowing for the delivery of internet access, media content and power to in-seat devices through a single CAT 6 cable. The in-bus network can be extended to support up to fifty-six in-seat devices through the inclusion of up to eight 8-port side hubs (1-in, 7-out).
Combining the VIA AMOS-825 system with an LCD monitor, the VIA Smart Taxi IoT Acceleration Platform has been designed from the ground up to provide a flexible and ultra-rugged system for enabling smart taxi applications and services such as navigation, route tracking, driver notifications, passenger pickups, and electronic payments that not only increase customer satisfaction but also enhance driver productivity and safety. Already deployed by one of the leading taxi companies in Japan, the platform provides the reliability and scalability required by operators worldwide to boost their competitiveness against disruptive new entrants into the market.

VIA Smart Taxi IoT Acceleration Platform

- Varying power supply requirements
- Wide operating temperature ranges
- Extreme vibration conditions
- Flexible expansion options
- Supports up to 120 users per train car

The VIA Train Wi-Fi Server IoT Acceleration Platform has been specifically engineered to provide a fanless, ruggedized solution that withstands the demanding operating conditions of rail travel and delivers optimum reliability and performance.
VIA Systems

Optimized for exacting on-the-road power, temperature, and vibration requirements, VIA Systems have been adopted by a growing number of transportation and logistics organizations throughout the world, including the leading taxi company in Japan. They include a broad array of robust and scalable systems with multiple customization options.

VIA AMOS-825
This robust fanless small form factor system has been specifically designed for demanding in-vehicle applications with support for wide voltage input, a wide operating temperature range, sophisticated power management, and ignition-controlled quick boot.

- 1.0GHz NXP i.MX 6Quad Cortex-A9 quad-core SoC
- Intelligent vehicle power management: ACC/IGN on/off delay & power protection
- Built-in Wi-Fi, Bluetooth and GPS
- SCSI 50-pin D-sub connector for a single video, audio, and peripheral cable
- Legacy I/O support including dual CAN bus, COM, and GPIO

VIA AMOS-820
This rugged ultra-compact fanless system is a highly-integrated solution for a variety of in-vehicle fleet management applications with multiple hardware and software customization options.

- 1.0GHz NXP i.MX 6QuadPlus or i.MX 6Quad Cortex-A9 SoC
- Power over Ethernet (PoE) option
- Wide operating temperature range from -20°C up to 65°C
- Legacy I/O support including dual CAN bus, dual COM, and GPIO
- Linux and Android BSPs, including VIA Smart ETK

VIA AMOS-3005
This ruggedized fanless system provides an ultra-reliable high-performance solution for data-intensive in-vehicle monitoring and control scenarios as well as multimedia infotainment applications.

- 1.2 GHz VIA Eden® X4 processor with VIA PadLock® Security Engine
- Wide input voltage range supporting 9V~36V DC-in
- Wide operating temperature range from -40°C up to 60°C
- Dual Gigabit Ethernet, optional Wi-Fi and 3G/4G modules
- Rich I/O feature set including lockable USB, COM and GPIO
VIA In-Vehicle Solutions are based on a modular design philosophy that speeds up system hardware and software optimization and customization for demanding commercial applications. Key customization options include:

Peripheral integration:

With a wide selection of RS-232, USB, GPIO, and HDMI ports and CAN bus support, VIA In-Vehicle Solutions provide flexible connections to modern and legacy in-vehicle systems and devices. Gigabit Ethernet, Wi-Fi, 4G, and GPS options ensure high-speed network connections for real-time navigation and vehicle monitoring and control applications.

In-vehicle environment optimization:

With their ruggedized form factors, low power consumption, wide operating temperature ranges, 9-36V voltage input options, and the ability to withstand 70G shock and 7Grms vibration, VIA In-Vehicle Solutions can be fine-tuned to meet even the most demanding in-vehicle operation requirements.

Software customization:

With a wealth of Android, Linux and Windows software development expertise and easy-to-use BSPs and SDKs, including the VIA Smart ETK, we provide a comprehensive range of software customization services for optimizing the compatibility, performance, I/O connectivity, and peripheral integration of VIA In-Vehicle Solutions across multiple platforms.