

Sony's Altair Ultra-Low Power Chipset Opens New Opportunities in the Vehicle Telematics Market



Situation

Recent studies show that vehicle telematics adoption is close to 50% today and was as high as 78% in the utility fleet industry in 2016.

Emerging in the late 1990s, following the international adoption of GPS, the first vehicle tracking systems enabled fleet managers and leasing agencies to keep an eye on the location of their fleets. Today, modern IoT technologies allow Telematics businesses to serve new markets and develop new use cases through data-driven insights.

With connectivity options becoming increasingly efficient over the last decade, financing companies are searching for new technologies to track and manage financed vehicles. Real-time information allows them to better manage assets and confidently secure their investments.

Thanks to Sony's Altair ultra-low power chipset, device developers wanted to incorporate it in a way that would simplify vehicle asset management.

Challenge

Auto leasing companies, primarily in North America, lease out vehicles for an average of two years. The inability of financing companies to track and recover many of these vehicles has a significant impact on their financial results.

Current tracking solutions were dependent on professional installation since they required a wired connection to the vehicle. This resulted in logistical challenges and increased costs.

In addition, telematics devices could be easily disconnected or removed, making the vehicle untraceable and a potential write-off for the financing company.

Customers needed a solution which would enable them to choose the reporting frequency they desired, while balancing the battery life options to meet their business objectives.

The challenge at Sony Semiconductor IL (Sony) was to develop an autonomous, tamper-proof solution that could connect GPS and relevant sensors within the vehicles while sending live notifications to fleet managers throughout the 2-year period of vehicle use.

Vehicle Telematics device manufacturers needed a solution that would remain continuously connected while being low power, compact and free of in-vehicle wiring.

At a Glance

Situation

Auto leasing companies and car dealerships need a reliable, long-lasting vehicle telematics solution to track, and potentially recover financed vehicles during the financing period. Legacy solutions that require wiring telematics devices to the car's power source make installation expensive and devices vulnerable to tampering.

Challenge

The challenge was to develop an install-and-forget vehicle telematics solution that would provide reliable, autonomous operation for the entire two-year leasing period – eliminating the need for device wiring to the car's battery and minimizing the risk of removal.

Solution

Sony's Altair cellular IoT chipsets provide ultra-low power consumption, enabling vehicle telematics devices to operate autonomously on small batteries for over two years, cutting installation costs dramatically.

Results

By providing location pinpointing, speed notifications, pattern tracking, and much more, in a low-power, small, easy to install and conceal vehicle telematics device, financing companies now have a cost-effective & tamper-proof way to accurately track and recover vehicles when necessary.

For a device to be considered, it would need to operate autonomously without the additional expense of hardwiring or routine maintenance. As the device would need to operate autonomously for up to 2 years without charging, a low power, battery-operated solution was required. The hardware also needed to be small enough so that it could be discreetly hidden anywhere inside the vehicle, to prevent sabotage by vehicle users.

Solution

Based upon a deep understanding of the pain points and specific needs of vehicle management industries, we developed a cellular IoT solution that enabled the powering of a small-form, wire-free vehicle telematics device.

The compact device could be placed in a vehicle in minutes, in a variety of locations, while still being easily moved when needed – reducing the risk of vandalism or removal by vehicle users. With its low power, it provided uninterrupted updates for up to two years – eliminating the need for charging or maintenance by the auto leasing provider. And with no need for professional installation, logistical challenges and the overall cost of the solution were reduced.

Sony's Altair chipset incorporates all the key capabilities needed to quickly build functional Cellular IoT applications. The chipset comes integrated with a best in class CAT-M and NB-IoT modem alongside a low-power Cortex M4 MCU, dedicated for application execution. Network credentials are securely stored on the built-in integrated SIM (iUICC). A battery and antenna are all that is needed to launch the device.

Throughout the development process, our internal teams worked closely with our clients' engineers to overcome implementation barriers. By providing our clients with access to full reference design and tier-1 approved suppliers and by developing a focused ecosystem, we were able to reduce their products' time to market.

The ALT1250's ability to deliver low power consumption as well as its ability to enable gateways to effortlessly connect shock sensors, location services, and vehicle insights for over two years, was the key to successful device development.

"As installation costs continue to rise in comparison to hardware prices, Sony's Altair unparalleled low power figures and extended battery life means we can provide on-board solutions with minimal installation requirements that are able to remain in the field for up to two years. This will usher in a new dawn for IoT and asset management, opening up a whole new market of applications for a wide range of automotive IoT scenarios."

Kfir Lavi, Senior VP and Deputy CEO at ERM Advanced Telematics



Results

As the only solution capable of meeting the ultra-low power requirements of these deployments, Sony's Altair chipsets now provide connectivity for vehicle telematics globally. With our unique solution, vehicle telematics vendors are now able to open new opportunities for finance and leasing companies, equipping them with real-time data needed to make informed decisions and protect their valuable assets.