



Designing mobile devices for extreme working conditions in the transportation industry

They came, they saw, they conquered. Smart devices and the mobile revolution have literally transformed how people work in every industry.

In the transportation vertical, a vast ecosystem that includes road, rail, marine and air transport, new mobile applications have changed the way fuel is purchased, how routes are navigated and how freight shipments are invoiced. In fact, the global consulting firm Frost & Sullivan has deemed mobile apps among the biggest disrupters within the transportation industry, where mobile app expenditures in trucking alone are expected to reach [over \\$35.4 billion per year by 2025](#).

Android-based tablets seem to be the dominant mobile device in the transportation arena, particularly in logistics and fleet management, where they far outnumber smartphones. Today's truck drivers often keep an electronic logbook, receive routing updates from the dispatcher and plan their journeys all on a dash-mounted tablet.

These tablets must be rugged—long-haul truckers cover over 100,000 miles in a year, travelling in different climates and terrains with roads of varying smoothness. Their mobile devices are exposed to thousands of hours of small vibrations, speed bumps and weather extremes. The tablets drivers rely on need to withstand shocks and adverse conditions so they can stay connected with the fleet managers and dispatchers back at headquarters.



Tablets tough enough for the trucking industry

Samsung designs mobile devices that perform well in difficult environments. The critically acclaimed Samsung Galaxy Tab Active tablets, for example, are rugged mobile devices built to withstand the elements so users can continue to operate in extreme environments. The built-in, hard rubber case is water, dust and shock resistant, and provides screen protection, making it ideal for use in rough, demanding work settings.

The tablets have also been tested for reliability in a variety of extreme conditions. They passed 21 of the U.S. Military Standards (MIL-STD) 810G tests and also earned an impressive Ingress Protection (IP) 68 rating.

What the ratings mean

US MIL-STD-810G refers to a set of certifications developed by the U.S. military and Department of Defense. They cover a variety of conditions under which products must perform:

- Low pressure (altitude)
- High temperature
- Low temperature
- Temperature shock
- Contamination by fluids
- Solar radiation (sunshine)
- Rain
- Humidity
- Fungus
- Salt fog
- Sand and dust
- Explosive atmosphere
- Immersion
- Acceleration
- Vibration
- Acoustic noise
- Shock
- Pyroshock
- Acidic atmosphere
- Gunfire shock
- Temperature, humidity, vibration and altitude
- Icing/freezing rain
- Ballistic shock
- Vibro-acoustic/temperature
- Freeze/thaw
- Time waveform replication
- Rail impact
- Multi-exciter
- Mechanical vibrations of shipboard equipment



IP (Ingress Protection) ratings are a set of standards published by the International Electrotechnical Commissions focused on a mechanical casing and/or electrical enclosure's ability to resist intrusion from dust and water.

To be considered "fully rugged," a mobile device must be rated at a minimum of IP54, which means that it offers a tough layer of water and dust protection. But in more adverse work environments, it's recommended that a device have at least an IP65 rating. This ensures that it's completely protected against dust contact and will withstand the impact of normal water exposure—which is usually sufficient for most working conditions. For users who anticipate more extreme water contact, a device with an IP68 rating is recommended.

Engineered to triumph over the elements

Galaxy Tab Active tablets have been proven to withstand almost any kind of weather or environmental conditions—in temperatures as cold as -40 degrees Fahrenheit and as hot as 176 degrees Fahrenheit, as well as intense humidity.

High altitudes aren't a problem either. The tablets were tested at 15,000 ft. with no adverse effect on performance. They're also resistant to salt fog, dust and extreme icy conditions. From severe vibrations to ballistic shocks to being dropped in transit, nothing seems to rattle their core performance.

For maintaining productivity in wet, inclement weather, the Galaxy Tab Active Pro also includes an IP68-certified water and dust resistant S Pen, which can be used on a wet display. Additionally, the tablet provides settings for greater flexibility by enabling touchscreen interaction when the user is wearing work gloves.

A replaceable, fast-charging battery can power the tablet for up to 15 hours. The Galaxy Tab Active Pro features a removable back panel, so a fully-charged backup battery can easily be inserted while working in the field or to support shift-based jobs.

Built-in security and IT support

Galaxy Tab Active tablets are protected by [Samsung Knox](#), a defense-grade security platform built from the hardware level that offers protection across all deployed devices. Additionally, the tablet supports Knox services that provide a business IT administrator with tools to deploy, configure and manage the Tab Active Pro across a business. Using cloud-based Knox Configure, for instance, administrators can set up and customize devices in bulk. Knox Manage provides an MDM solution to give IT administrators a cloud-based command center to remotely manage devices across multiple operating systems.

Another advantage for truckers travelling in the middle of nowhere is that work can continue even without Wi-Fi—an LTE version of the Galaxy Tab Active Pro is available for added connectivity. There are also a high-resolution 12MP AF back camera and 8MP front camera for recording detailed field reports, scanning documents and sharing them with colleagues.

Samsung has made a concerted effort to design tablets to address the rigors of the transportation industry, and everyone from fleet operators to airline executives are taking note. (Durable tablets are also ideal for the entertainment systems affixed to passenger seats on commercial airlines, which get a lot of use and abuse.)

To learn more about Samsung's innovative tablets and other products, contact Carl Conte at carl.conte@ingrammicro.com.