



Altaeros Chooses RuggON Tablet for Manual Control of its Aerostats

An aerostat is a lighter-than-air tethered balloon that gains its lift by using a buoyant gas. New England-based Altaeros recently developed and built the world's first autonomous aerostats. Altaeros autonomous aerostats require zero on-site crew for flight operations, as opposed to traditional aerostats that require 4 to 10 trained personnel on-site to operate them.

Altaeros calls its aerostats SuperTowers, because they can be used like super-tall communications towers when they are flying 1000 feet high. Primary uses for Altaeros SuperTowers are: 1) Telecommunications. In emergencies they are used to rapidly reestablish connectivity over widespread disaster areas to help first responders save lives by providing mission-critical LTE, Wi-Fi, or other wireless coverage. 2) Government Operations. They are also used by governments around the world to protect borders and persistently monitor for military threats on the ground, air, or coastal waters.

The Challenge

Altaeros SuperTowers are fully autonomous and designed to control and perform all operations independent of human assistance. But during initial set-up and in rare occasions when system faults interfere with the autonomous system, it may be necessary to allow a human operator to act as a backup to ensure safe operation and recover the system. For this reason, the aerostat features a Mobile Operating System (MOS). This MOS was originally designed with only joysticks and the necessary programming to land the SuperTower's more flexible version – the ST-Flex – in an emergency. The company realized that even the most experienced aerostat operators would need to have information such as wind direction, wind speed, and atmospheric pressure at their fingertips to efficiently complete their mission.



The Solution

Altaeros wanted a computing device that is portable, easy to carry, extremely rugged, and capable of performing without glitches in heavy rain and high winds that blow sand and water particles. The device would also need to have the type of connectors required by the aerostat's MOS. After testing several RuggON models, Altaeros decided RuggON's fully rugged 10.1" tablet was the perfect solution to manage its MOS. This rugged tablet provides a superior operating experience while also being cost effective. Altaeros liked the tablet's powerful processor, its expansion-friendly design for adding data-capture scanners, and its numerous I/O ports that provide exceptional connectivity options. On top of that, Altaeros also valued the tablet's extension-friendly array of programmable-function buttons. The rugged tablet weighs only 2.93 lbs, making it portable and easy to carry. Its IP65 rating means it is dustproof and rainproof. The tablet also meets the MIL-STD-810G standard, meaning it can withstand a broad range of tough environmental conditions that include: low atmospheric pressure; exposure to high and low temperatures (including temperature shock); rain (including windblown and freezing rain); high humidity; sand and dust exposure, as well as random vibrations. Plus, it can withstand 5-foot drops. The rugged tablet offers a superb viewing experience. Its very bright 1000-nits display ensures clear viewing in bright sunlight, while it can be quickly adjusted to low brightness for darker conditions. At the same time, its tough Gorilla Glass prevents scratches and resists external damage. RuggON's advanced touch technology ignores unintended inputs – such as those made by palm touches, vapor and rain drops – to ensure smooth touch control even in rainy conditions. Another great advantage for Altaeros was that the rugged tablet's connector pin matched perfectly with Altaeros's own proprietary connector pin.

The Results

Altaeros says it is very satisfied with the RuggON rugged tablet. The company now has a manual control solution that clearly displays critical live data even in rainy and windy conditions, which helps human operators to safely land the device. The tablet's screen upgraded the MOS's ease of use exponentially, even for experienced aerostat operators. The company has also found the screen to be very bright and clear, making all visuals easy to see at a glance, no matter the lighting conditions. Since the autonomous aerostat's MOS was designed for emergency use, having a bright screen is very important, as things happen quickly and unexpectedly during such occasions. Having as much "flight data" as possible makes the operator's job easier and safer.

