



CASE STUDY

Asset Security

Queclink Enables Safe and Efficient Operations in Antarctica



Queclink GV300W & GL300W

In response to the needs of those who work every day in unimaginably harsh conditions, ItegoGPS, Queclink’s partner and master distributor in Argentina, has been entrusted with the important mission of installing tracking and telematics solutions at the Esperanza Antarctic Base, which is located at the northernmost tip of Antarctica.

By using Queclink’s **GV300W** and **GL300W**, the advanced vehicle and asset trackers, ItegoGPS was able to deploy different telematics solutions to optimize critical operations and make tasks safer for operatives, despite extreme weather conditions at the South Pole.

Highlights:

INDUSTRY

Antarctica Expedition

SERVICE AREA

Antarctica

Challenges

Antarctica is one of the most remote and coldest regions on the planet, with an annual average temperature of -25°C across the continent and the lowest temperature ever reaching -89.8°C. The average altitude of the polar region is at 2,350 meters, making it the highest average altitude continent in the world. It is also the windiest place on earth, with peak wind speed clocked at 58 miles mph. Under such extreme environments, scientific expeditions, construction, and even survival are all facing severe challenges.

The expedition team who works at the Esperanza Antarctic Base relies on a submersible pump installed 1,300 meters away for essential water sources. To maintain the water supply, the ventilation cabin which houses the pump will have to be kept within a certain temperature range so that the water system does not fail due to frozen pipes.

The operating conditions in Antarctica are challenging as well. The harsh weather often leads to equipment breakdown, and the vehicles in the base suffer from serious battery drain due to low temperature and extended periods of parking. The safety of workers is also oftentimes at risk, especially in the case of hazardous cargo being unloaded during the operations in the Base Discharge Port in Antarctica, as any accident or mishap could have severe consequences. There is no denying that the team and the base are all in dire need of an effective solution to help monitor the operation of equipment and track the location and safety status of the crew in real-time.

Solution

In face of all the challenges above, Queclink, together with ItegoGPS, provides a solution with multiple devices and accessories made available for the expedition team to keep track of surrounding temperature, running status, and positioning information of different assets, enabling immediate alarms for anomalies and all-time traceability for further operations. These devices have been strictly tested and proven stable in even the extreme environment of Antarctica, and are capable of providing reliable support for scientific research and expedition activities.

The major two devices, **GV300W** and **GL300W**, have both demonstrated excellent performance and stability in the harsh Antarctica.

GV300W is an advanced tracker that functions properly in the freezing environment and supports a wide operating temperature from -30°C to 70°C . Coupled with a **temperature sensor**, the device can accurately monitor the ambient temperature and send a real-time warning to notify the crew before the low temperature disturbs the water supply.

In case of power failure or when the pump is turned off, an alert will be generated, indicating a possible problem in the power network or the pump operation. When the temperature drops below the freezing point, the sensor will also give an early warning for potential heating system problems. Operators can then take proactive measures to prevent water from freezing in the pipes before the supply fails.



Besides, GV300W can monitor the vehicle's battery in real-time. This ensures the well-functioning of vehicles for outdoor work, and effectively avoids the risk of unexpected battery failures, which could be detrimental especially when the vehicle is in need of immediate use.

The **GL300W**, on the other hand, is a portable tracker that a team can carry along whenever they set off to conduct research or expeditions outside the base's boundaries. For the team themselves, the device helps define waypoints or locations with the exact positioning of different routes, with which the crew can keep track of important locations, such as supply depots, research stations, or other areas of interest. For people back at the base, the tracker also informs them about the exact location of the team and ensures the team's safety at all times.

The GL300W portable tracker is also applicable as a safety and traceability tool for operators who carry out risky operations, including activities such as ice drilling, climbing, or other hazardous actions. While the device's built-in 3-axis accelerometer detects any sudden changes in motion or orientation, providing valuable data as needed; the SOS alarm via pressing the function button also comes in handy for sending immediate alerts to the base in case of an emergency or eventuality, allowing for faster and easier rescue operation.

In addition, Queclink has provided various accessories, including external battery kits and magnetic holders, which offer GL300W an extended battery life and waterproof capabilities, making it an essential tool for the expedition team exploring the Antarctica continent.

The mission has been a success for the researchers and operators, as summed up by Sebastian Cason, CEO of ItegoGPS and a major participant of the mission:

We came to them to facilitate their [the expedition team's] work. They are anonymous heroes, with names and life stories, for whom we were able to meet, and for whom their operations are now more efficient and safe. After this first successful stage, new projects and solutions will come to the white continent, which our development team is already working on.

— Sebastian Cason
CEO of ItegoGPS

About Queclink

Since 2009 Queclink Wireless Solutions has been "Driving Smarter IoT".

Queclink is a pure play IoT hardware designer and manufacturer working with many well-known industrial and consumer companies to bring innovative IoT solutions to market. Its business units span transportation, asset and mobility, networks and agriculture. With 52 million IoT products delivered to over 140 countries, Queclink inspires data-driven solutions for its worldwide customers.

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