

Astrocast Selects Keysight GNSS Simulator to Boost Productivity on the Ground and in Space

Using the Keysight GSS7000, Astrocast is Able to Perform More Efficient Testing so It Can Identify Issues on the Ground

Executive Summary

Astrocast, a provider of satellite networks to connected devices around the globe, was looking for a robust and fast testing solution. The company builds its own satellites with receivers on board, and there was a strong need to test these comprehensively.

The company was seeking a state-of-the-art global navigation satellite system (GNSS) simulation solution to replace the basic one it already had in place.

Astrocast selected the Keysight GSS7000, an easy-to-use, accurate solution that has met its needs perfectly. Using the GSS7000, Astrocast is able perform more efficient testing in the lab, so it can identify issues before they become a problem.

Background

Headquartered in Switzerland, Astrocast offers a cost-effective, bidirectional, and comprehensive satellite IoT service to tackle global connectivity challenges in remote areas for industries such as maritime, agriculture and livestock, environmental and utilities, land transport, mining, oil and gas, and industrial IoT devices. Its satellite IoT enables asset tracking and monitoring anywhere, regardless of blind spots without cellular coverage.

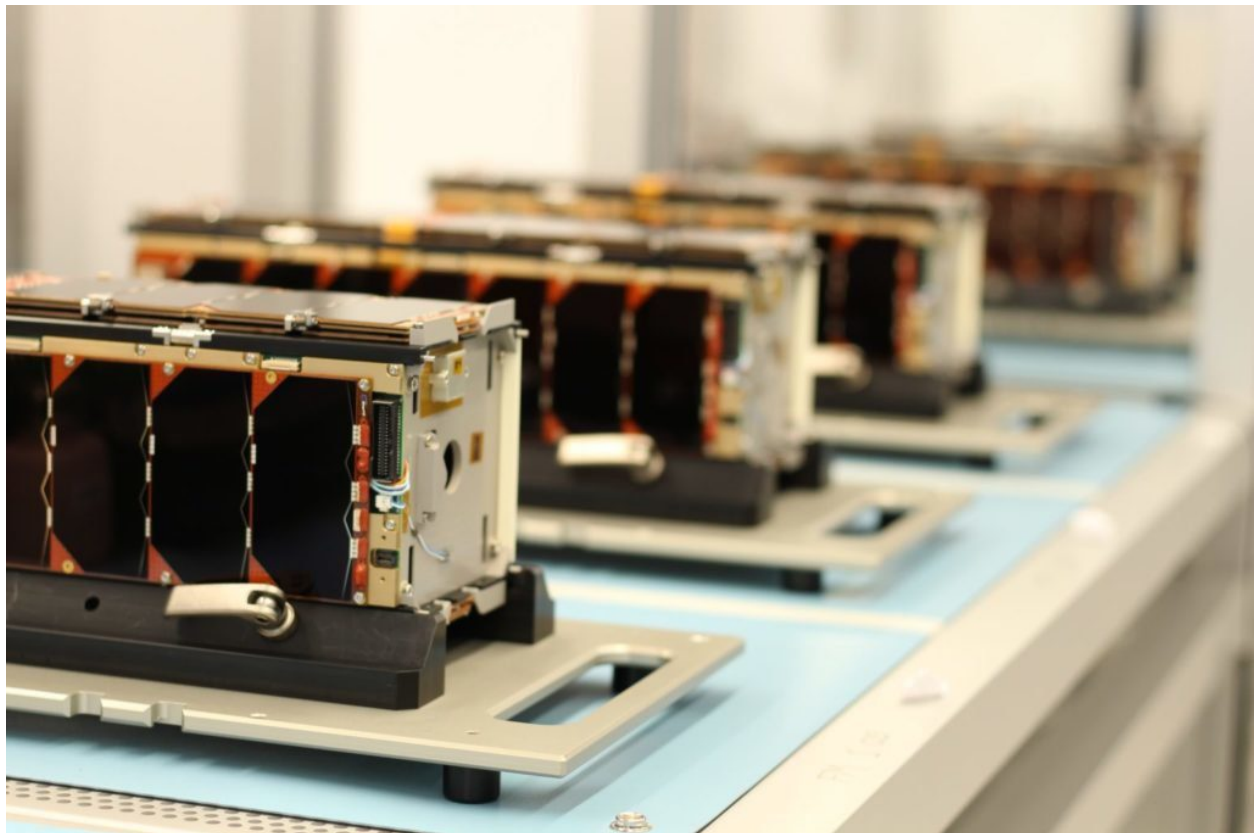


Figure 1. State-of-the-art Astrocast nanosatellites

Challenge

Astrocast's advanced nanosatellite IoT network is built on satellites produced in-house. Capabilities such as propulsion and deorbiting give greater control, enabling avoidance of collision with space debris, and tight onboard time synchronization allows for higher data speeds, greater precision, and low levels of loss.

Both time synchronization and position depend on GNSS receivers integrated by Astrocast. GNSS receivers are needed to provide time for on-board synchronization as well as precise positioning for orbit determination. Both are indispensable in the operation of the satellites, delivering the high-quality service Astrocast's customers expect. With the GNSS function so critical to its deliverables, the need for a robust and comprehensive test regime is a central concern.

Astrocast was previously reliant on a basic GNSS simulator solution, but this did not offer the consistency, flexibility, control, and speed required for next-gen product development.

Having a flexible environment such as the one that Keysight provides is a really fast way to test complex and challenging scenarios, helping us to identify the best products, and to refine our designs.

Joaquin Cabeza, Astrocast software engineer

Solution

Astrocast was seeking a state-of-the-art GNSS simulator that would enable it to gain access to a wider set of testing capabilities. Astrocast selected the GSS7000 GNSS simulator from Keysight. With a broad range of capabilities configurable according to user requirements, the GSS7000 is an ideal platform for a wide range of development, integration, and verification tasks. Above all, Astrocast needed a proven software and hardware solution that it could trust. "If we wanted to rerun the test on a different month and with different room temperature, we needed the test results to be perfectly comparable," says Joaquin Cabeza, software engineer at Astrocast.

Results

Implementation of the product was quick, easy, and efficient. The solution, which has been in place since February 2022, took one week to install including the time it took to get the people who were going to use it up to speed. Keysight's intuitive software interface and highly configurable hardware enabled use of the system by the wider team in a comparatively short period of time. The speed of setup and onboarding offers greater assurance of continuity, and the availability of Keysight support throughout implementation assures that costly downtime will always be minimized.

Since implementing the Keysight GSS7000, Astrocast has already increased the efficiency of its testing process. The previous solution took some time to generate the RF signal needed, and

Astrocast has saved about 30 minutes per test since upgrading its solution. "That's a productivity improvement as we can test, iterate, and test again much faster than we could before," says Cabeza.

The more detailed tests Astrocast can now perform have already yielded valuable results. Using the GSS7000, the firm was able to identify that some receivers were not as sensitive as others. "That's really great because otherwise we could have put them in space and had to figure out why some were performing worse than others," says Cabeza.

Another bonus is the Keysight solution allows Astrocast to test a range of performance indicators and capabilities of the receivers. "Having a flexible environment such as the one that Keysight provides is a really fast way to test complex and challenging scenarios, helping us to identify the best products, and to refine our designs."

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.



This information is subject to change without notice. © Keysight Technologies, 2026, Published in USA, June 1, 2026, 3126-1135