GSA.40 GNSS Field Testing





Service name:

GSA.40 GNSS Field Testing

Deliverables

Report

Duration:

3 Weeks

Service Delivery Objectives:

- A. Measurement of open-sky signal strengths
- B. Static and mobile locating tests
- C. Recommendations to maximize performance and next steps



What is the problem or concern we are addressing?

Before you ship your product, you need to test your entire device — not just the antenna — so you can be confident when you deliver your product.

Consistent "field" or "live" testing of your GNSS-enabled device can be a challenging task to get right. Performance is dependent on surroundings, the time of day, sample size, and other factors. Performing these tests consistently and against known references is key to their success.

Taoglas has developed a series of GNSS test systems at their offices around the world. This provides a unique opportunity to test your device in a range of scenarios, including static, open-sky testing and deep urban-canyon mobile routes.

The Process

Taoglas will work with you to set up your device for our testing. This typically involves accessing the GNSS receiver, working out power details, and mounting details. If the GNSS antenna in your device has never been characterized passively, we'll do that before testing. See the GSA.10 service for further details on this process.

We will then test the device in a static, open-sky scenario. If the signal strength and pattern are acceptable to you and Taoglas, we'll proceed with mobile testing. If the receiver can support an elevation mask, then the results of the static testing are used to create this elevation mask.

For the mobile testing, we'll move the device through established mobile test scenarios to check its locating consistency across a variety of sky environments. Taoglas engineering in consultation with the customer on the final report will determine if the measured performance factors are sufficient for the product to meet its performance requirements.

If the device performance is not acceptable, Taoglas sales and engineering can make recommendations to improve the antenna performance and/or engage in a GPS Device Active Mode Radiated Receive Sensitivity Testing service (GSA.30) to investigate further.

What does Taoglas need?

To perform this service, Taoglas needs the following:

- At least 2 samples of your device
- An electrical interface which brings out NMEA strings and the GNSS
 receiver control
- Methods to power the device. If the device is battery-powered, we will need extra batteries and two battery chargers.
- Functionality: it is critical that:
 - the GNSS receiver is powered on when power is applied to the device;
 - the host processor does not interfere with or "talk" to the receiver or take any other action that affects the GNSS during testing. Testing will take > 6 hours.
- If RTK or Assisted GNSS are utilized in your device, Taoglas will work with you to ensure these are available for testing.

Deliverables

The output from this effort will be presented in a written report with major sections covering:

- The test setup
- DUT modifications made
- Antenna passive performance (if required)
- Static accuracy performance
- Mobile accuracy performance
- Signal strength "pattern" plots for all supported bands
- Elevation mask (if applicable)
- Recommendations to maximize performance
- Issues identified (if any)
- Suggestions on next steps to resolve identified issues (if any)

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