

GSA.40

GNSS Field Testing



Outcomes and Deliverables

- Measurements of Open-Sky Signal Strength.
- Static Location Testing.
- Technical Report detailing Field Test results.

Duration

3 weeks (this is a typical estimated duration – actual duration on quote may differ).

What We Need

- 2 fully functioning samples.
- Instructions for operating device.

What is the problem or concern we are addressing?

To ensure confidence in your product when it is used in real world settings, testing on the full device should be performed.

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 static open-sky scenarios.

The Process

Part 1 – Field Testing

Taoglas will work with you to ensure your device is ready for our testing. This typically involves accessing the GNSS receiver (or using your antenna as an input to our own

permanently mounted receivers) and assessing power and mounting requirements. If the GNSS antenna in your device has never been characterized passively, passive testing will be performed before any live field test. See the CSA.20 service for further details on this process.

We will then test the device in a static, open-sky scenario. Taoglas engineering, in consultation with the your design team 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 Acquisition & Tracking Sensitivity Testing service (GSA.30) to investigate further.

What does Taoglas need?

In all cases Taoglas will require two complete functioning devices. The devices need to be functional enough to enable the GNSS modem and enable AT command access to the modem. The devices should include as many of the final components as possible. Batteries, displays, and metallic sub-assemblies will impact the test results and should be included.

One complete set of any support devices such as spare battery packs, battery charger, interface cables, etc.

Instructions on how to connect the device, power on the device, and connect to the AT command interface, if applicable. If the battery will need to be charged or replaced, include instructions on how to do so. This electrical interface should produce NMEA strings.

It is critical that the GNSS receiver is powered on when power is applied to the device and that the host processor does not interfere with or “talk” to the receiver or take any other action that affects the GNSS during testing.

If RTK or Assisted GNSS are utilized in your device, Taoglas will work with you to ensure these are available for testing.

Alternatively, Taoglas can perform the same test on an inactive device by measuring the antenna directly with our permanently mounted receivers.

Part 2 – Reporting

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
- 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)

Part 3 – Next Steps

Taoglas offers a number of services which would typically follow on from this service. These services are intended to optimize the RF performance and maximize likelihood of certification for your design.

If you are interested in a mobile/roaming GNSS test in an urban canyon environment, please contact Taoglas for more information.

Next services:

- **GSA.30:** GPS Acquisition & Tracking Sensitivity
- **CSA.70:** Failure Mode Mitigation
- **CSA.20:** Passive Antenna Testing, Matching and Fine Tuning

Visit [Taoglas Website](#) or contact [Taoglas sales](#) for further information.

Please note - devices, systems and equipment falling within the scope of Annex I of the EU Dual Use Regulation 821/2021 are not eligible for this service. For queries, please consult your legal department or contact exportcompliance@taoglas.com.