OtoSphere™ V2

GNSS Jamming Protection

Industry's only commercial GNSS protection solution

The innovative device is a small, add-on module to any GNSS-based system that protects it from GNSS jamming attacks.
OtoSphere™ ensures continuity of autonomous navigation and timing signals. OtoSphere™ enables normal operation during jamming conditions. No other solution offers such protection and is as small, light, affordable and easy to install.
OtoSphere™ is unregulated by export control.

Key Features

- Proprietary Interference Filtering Algorithm
- Small form factor: < 70x48x24mm, 150g
- Minimal power consumption: <0.8W (nominal)
- IP67 waterproof rating
- Automotive temperature grade compliant
- Protected frequency: GPS L1 (C/A Code)
- Passthrough frequencies: GPS L5 & Glonass G1 (BeiDou Optional)
- Latency: 100ns ± 15ns (fixed)
- Insertion loss: ±2dB
- Not designed for aerial applications
- Not designed for highly dynamic platforms (< 150km/h)

How does it work?

The Vulnerability of GNSS is well known. Orbiting at 20,000km, the GNSS satellites emit a signal which is incredibly weak when received by GNSS receivers (~-125dBm). To jam or spoof this signal all that is needed is to overpower it. This can be done with a simple jammer bought online to completely block the signal or with a slightly more sophisticated device which can trick the receiver with erroneous data.
Our unique interference filtering algorithm combines the patterns from two omni-directional antennas. OtoSphere™ analyses where the interference is coming from and feeds it into its algorithm to filter out the jamming / spoofing signals.

Installation Couldn't Be Easier

After mounting the 2 antennas on a flat, sky-facing, base with at least 10cm separation (optimally >25cm), connect the antennas to OtoSphere™ and connect it to the antenna input on your GNSS receiver. Feed it with power and the system is defended.

Jamming/Spoofing Detection is available from a LED on the unit itself or via a data output from the device which can be directly integrated to external systems. Completely Standalone OtoSphere™ is compatible with any GNSS receiver on the market and off-the-shelf GNSS antennas. OtoSphere™ can be supplied with GPS receiver and/or antennas as per customer demand.

Specifications

RF Interfaces

- Antenna Connectors (P/A): 50Ω SMA 2.75VDC designed for 26dB ±2dB gain
- Receiver Connector (R): 50Ω SMA Requires *3.3VDC – 32VDC 0.75W

Performance

- Protected Signal: 1575.42 MHz (GPS L1 C/A Code)
- Passthrough frequencies: GPS L5 & Glonass G1 (BeiDou Optional)
- Latency: 100ns ±15ns (fixed)
- Compression Point: 25dBm
- Insertion Loss: ±2dB

Environmental

- Operating Temperature: -40°C to +85°C
- IP Rating: IP67

Mechanical

- Dimensions (hwd): 74x47x25mm (excluding mounting lugs)
- Net Weight: About 150g
- Mounting: 4 x M3 bolts (not supplied)

Regulatory Compliance

- R&TTE 1999/5/EC : EN60950-1, EN301 489-1 EN301 489-3, EN300 440-2
- RoHS compliant
- CE Compliant (PPS Version)
- WEEE registration number WEE/GK2929WW

Ordering Information:

OtoSphere v2 EPS Part no. 6415 - External Power feed (3.3–32VDC) & interference indication over 3 wire cable (2.15m)
OtoSphere v2 PPS Part no. 6416 - Phantom Power Supply (3.3VDC – 32VDC) supplied from (R) connector

About Focus Telecom

Focus Telecom is a global provider of time synchronization solutions since 1995, offering consulting, cyber defence and synchronization solutions. Our end-to-end timing solutions generate, distribute and apply precise time for multiple industries: Communications, Government & Security, Finance & IT, Industry & Infrastructure. We enable our customers to build more reliable networks and systems supporting today's precise timing standards.

Want to learn more?

Contact Focus Telecom to find the right products and technologies for your timing and synchronization needs.

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