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 R1 (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)
- Latency: 100ns ±15ns (fixed)
- Compression Point: 25dBm
- Insertion Loss: 6.5dB ±2dB

Environmental

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

Mechanical

- Dimensions (hwd): 70x48x24mm (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?

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