

GPSdome – T

GPS Anti-jammer & Anti-spoofers for Timing Systems



GPSdome – T is a standalone, mountable antenna module which provides protection against jamming and spoofing of GPS systems.



Features

- CRPA null steering technology
- Small form factor
- Minimal & constant latency added to GPS signal (<100ns)
- Supports GPS L1 1575.42Mhz
- Protects against any single jamming or spoofing disruption source
- Qualified by Israeli National Physics Laboratory
- Requires only 0.8W fed from receiver on the antenna line
- IP67
- -40°C to 85°C
- Includes two high-end timing antennas with internal amplification for a total gain of 35dB

Applications

Time, Phase and Frequency Accuracy Requirements Continue to Grow

In **Telecom** synchronization, supporting LTE-A and 5G, requirements are ever more stringent and must comply with < 1uS to UTC from core to edge.

In the **Finance** sector, standards like SEC Rule 613 and MIFID II dictate IT networks to be synced within 100uS of UTC.

In the **Utilities & Critical Infrastructure** challenging timing requirements have to be met without straying from stricter cyber security regulations than ever.

In the **Defense** sector, whether for HLS applications or intricate ComInt, ElInt and other such applications time accuracy and stability is crucial.

GPS Dependency is Not Going Away

In order to meet the growing need for coherence, accuracy and unanimous time worldwide, all synchronization applications today depend on GPS and GNSS – be it NTP based time servers syncing financial institutes or power stations, PTP 1588v2 GrandMasters syncing telecom networks or military grade TCGs syncing radar stations.

Although such dependency on an external source was always considered as vulnerability, the massive cost reduction and incredible accuracy GPS enables cannot and will not be replaced.



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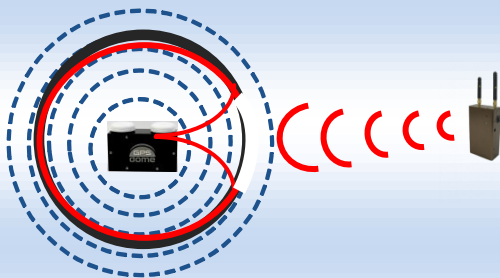
How Does it Work

The Vulnerable GNSS Signal

Orbiting at 20,000 KM above sea level, the GPS satellites emit a signal which is incredibly weak when received by GPS receivers (~ -125dBm). To jam or spoof this signal all one has to do is to overpower it, either with a simple “white noise generator” which completely blocks the GPS reception, or with a complicated, synthesized, GPS-like signal which deceives the GPS system with erroneous timing data.

The Null Steering Antenna

Taken from military applications, **Null Steering** is an algorithm which reshapes the antenna pattern in a way that nullifies a disruption source. Although it is not a “bullet-proof” solution, a null steering antenna makes your GPS-based timing system significantly more robust.



As Easy as Replacing the Antenna

Installation of GPSdome-T only requires a different antenna to be installed. Simply install GPSdome-T with its dedicated mounting kit and connect your 50 Ω RF cable from the receiver.

What's In the Box

Integrated with dual Tallysman GPS L1 antennas, GPSdome-T provides a high-end GPS source for timing systems. Internal amplification allows for longer cable deployments without the need of an extra in line amplifier. If 0.8W could not be provided from the GPS receiver, a small, secondary unit could be installed next to the timing server which provides the extra power over the existing RF cable.



Specifications

RF GPS Output

- 1575.42MHz (GPS L1 C/A Code)
- 50 Ω
- TNC female connector

Anti-jamming Anti-spoofing Performance

- 25dBm compression point
- Adds a constant latency <100ns, nominal 50ns (could be calibrated out using antenna delay parameter)

Mechanical

- Size (mm): 180 (w) X 68 (d) X 120 (h)
- Weight: 1.1Kg
- Mounting: 3/4" Pole (not included)

Environmental

- Protection: IP67
- Operating temperature range: -40°C to 85°C

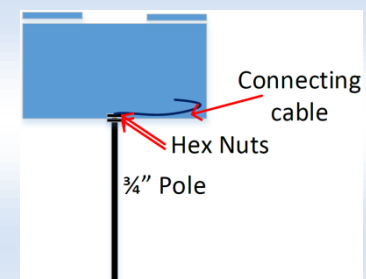
Input Power Requirements

- 3-12VDC
- 0.8W *
- * If 0.8W could not be supplied, an optional “Bias-Tee” kit could be installed next to the server which supplies the required power

Safety & Compliance

- 1575.42 MHz (GPS L1 C/A Code)
 - R&TTE 1999/5/EC: EN60950-1
 - EN301489-1
 - EN301489-3
 - EN300440-2
- RoHS comply

Mounting Diagram



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