DRONE
PROTECTION
DATASHEET
1.01

GPS DOME

GPS DOME is a small sized add on device that provides protection against GPS jamming and spoofing

GPS DOME ensures continuity of autonomous navigation and enables operation during jamming and spoofing conditions. No other solution that offers such protection is as small, light, affordable and easy to install as GPS DOME

APPLICATIONS

With GPS being the cornerstone of aerial navigation, Unmanned Aerial Systems (UAS) are completely disabled in the precence of a simple GPS jammer that is available for less than 50$. Designed with drones and small UAVs applications in mind, GPS DOME is suitable for a wide variety of UASs as well as other GPS-dependent applications. It is a small sized, light weight, low powered solution suitable to be retrofitted to protect any navigation system. With this protection, any UAV or drone immediately becomes more robust and protected against wireless attacks.

FEATURES

- CRPA null steering technology
- Small form factor: 70 x 48 x 24mm, 150g
- Minimal power consumption: <0.75W
- IP67, -40C to +85C

HOW DOES IT WORK

The Vulnerability of GPS is well known. Orbiting at 20,000KM 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 overpower it. Either with a simple jammer bought online which blocks it completely or with a bit more sophisticated HW which can trick it with erroneous data.
The Null Steering Algorithm was originally developed for military applications to protect wireless signals. By combining the patterns from both antennas, GPSdome detects where the interference is coming from and creates a new antenna pattern which nullifies the power of the interference.
Installation Couldn't Be Easier - After mounting both antennas on a flat, sky facing base at least half a wave-length apart (10cm minimum, 20cm is optimal), connect antennas to GPSdome, connect it to the antenna input on your GPS receiver, feed it with power and you're set to go.
Jamming / Spoofing Detection is available from an LED on the GPSdome itself or via an externalwire that could be integrated into the UAS computer.

HEIGHT TECHNOLOGIES

Height Technologies | De Iepenwei 14C | 4191PD Geldermalsen | The Netherlands
Chamber of commerce nr. 62938495 | VAT nr. NL855023685B01

WIRELESS
SECURITY
SOLUTIONS

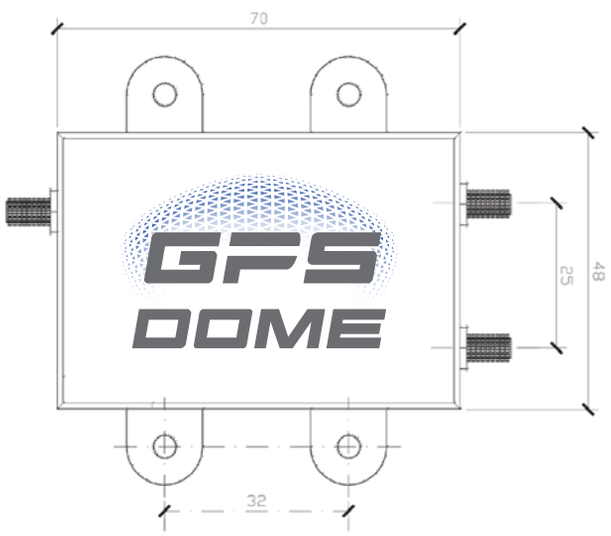
+31 344 60 79 68
info@gpsdome.nl
www.gpsdome.nl

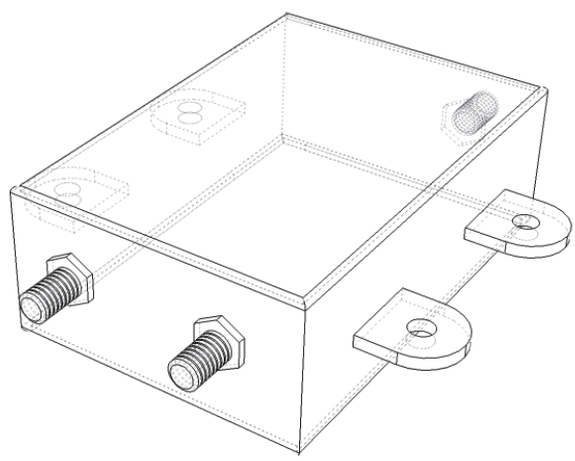
DRONE
PROTECTION
DATASHEET
1.01

GPS DOME

Specifications Summary

Dimensions





Physical	
	70mm x 48mm x 24mm
Weight	150g
Mounting	4 x M3 bolts (not supplied)

Environmental	
Operating Temp. Range	-40°C to 85°C
Protection	IP67

RF Interfaces	
Primary Antenna Input (P)	50Ω SMA 2.75VDC designed for 26dB ±2dB gain
Auxiliary Antenna Input (A)	50Ω SMA 2.75VDC designed for 26dB ±2dB gain
Power Input	50Ω SMA *3.3VDC - 32VDC 0.75W

*not for EPS option

Performance	
Protected Signal	1575.42 MHz (GPS L1 C/A Code)
Latency	100ns ±15ns (fixed)
Compression Point	25dBm
Insertion Loss	±2dB

Safety & Compliance	
R&TTE 1999/5/EC : EN60950-1 EN301 489-1 EN301 489-3 EN300 440-2	1575.42 MHz (GPS L1 C/A Code)
RoHS compliant	CE Compliant (PPS Version)
WEEE registration numer WEE/GK2929WW	

EPS Product Wire Connection	
Red:	3.3 VDC - 32 VDC
Black:	GND
Brown & White:	Dry contact NO interference Indication
Power Supply Voltage:	3.5 VDC - 32 VDC

ORDERING INFORMATION

CAT NO	Description
GPS DOME V1.3-EPS	GPS L1 Protection, R1 & L2 Passthrough. External Power & Interference Indication Over 3 Wire Cable. Loss Compensation.
GPS DOME V1.3 PPS	GPS L1 Protection, R1 & L2 Passthrough. Phantom Power Supply Over (R) RF connector. Loss Compensation.

HEIGHT TECHNOLOGIES

Height Technologies | De Iepenwei 14C | 4191PD Geldermalsen | The Netherlands
Chamber of commerce nr. 62938495 | VAT nr. NL855023685B01

WIRELESS SECURITY SOLUTIONS

+31 344 60 79 68
info@gpsdome.nl
www.gpsdome.nl