

# Resilient Navigation All in one DATASHEET

The partnership between Honeywell and inifiniDome introduces a cutting-edge UAV navigation system, merging Honeywell's HCINS and HRVS with inifiniDome's Anti Jamming technology. This blend delivers steady, accurate navigation in GNSS-challenged conditions, making it the most robust UAV navigation solution globally.



## Alternative Navigation System for Autonomous and GNSS-Denied Operations

The Resilient Navigation All In One module seamlessly integrates Honeywell's advanced Compact Inertial Navigation System (HCINS), Radar Velocity System (HRVS), and inifiniDome's GPSdome Anti-Jamming technology into a compact, rugged, ready-to-install navigation solution. The Resilient Navigation AIO module ensures robust, accurate navigation in GPS challenged environments and simplifying integration with user devices.

### **Anti-Jamming (GPSdome SunStone)**

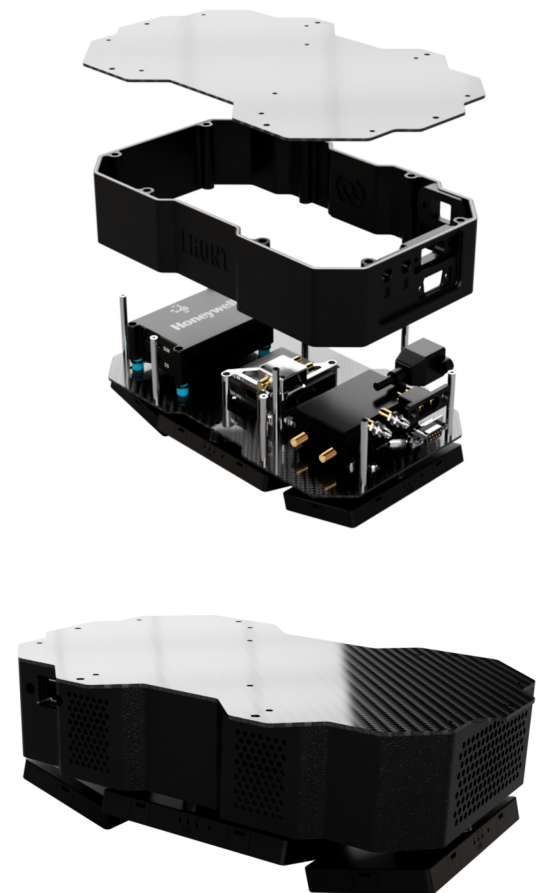
A small-sized, add-on device that provides protection against GNSS interference, making the GNSS input ~50x more resilient to attacks, boosting GNSS data availability and strengthening the UAV's navigation source even in highly challenged environments through integration with HCINS's advanced logic.

### **Compat Inertial Navigation System (HCINS)**

Leveraging Honeywell's inertial navigation sensors and algorithms, the HCINS fuses data from multiple sources with proprietary Kalman Filters to determine location, velocity, and heading in a compact, lightweight unit. With a MEMS-based IMU, it ensures accurate navigation even without external inputs.

### **Radar Velocity System (HRVS)**

A compact radar-based system, uses mmWave technology to provide range, velocity, and angle data, compensating for drift in the inertial system. Paired with HCINS, it achieves less than 3% error, even in full GNSS denial.

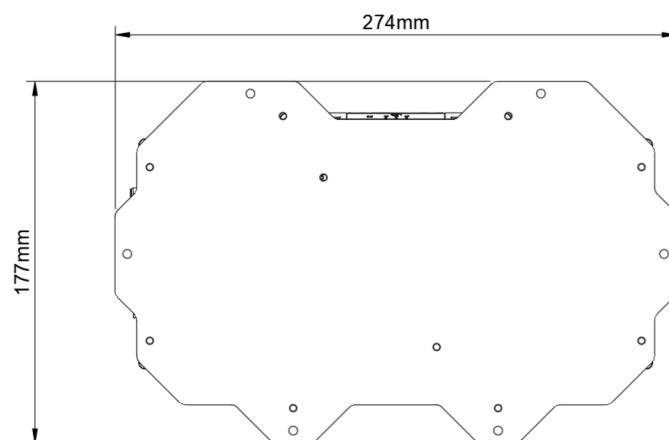
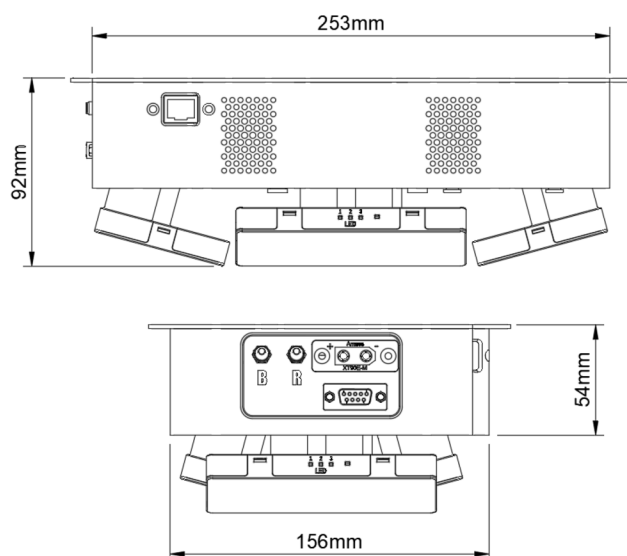




## Resilient Navigation AIO module

Layers of Protection	GPSdome-SunStone	HCINS	HRVS
	GNSS frequency protection	MEMS based Inertial Measurement Unit	Radar Velocity System
Supported FW	Arducopter   PX4*		
Weight	1200g (fully integrated module)		
Dimensions	274 x 177 x 92 mm		
Input Voltage	8-26 VDC	Power Consumption	7.8W
Mounting interface	6 x M4 Bolts		
Connectors	GNSS	Main Power	Serial UART
	GNSS:2 X SMA female	XT-90 Male	D-sub 9 pin Fe

\*PX4 FW with lose loop integration





## First Layer of Protection - Anti Jamming

### GPSdome-SunStone

#### \*Single Band

- Null Steering Technology
- Protected Frequency: L1 and E1/L2/L5/G1
- Optional Secondary: L1 and E1/L2/L5/G1
- Passthrough: Choose two of L1 and E1/L2/L5/G1
- Latency: 100ns  $\pm$  15ns (fixed)
- Waterproof Rating: IP65
- Operating Temperature Range: -40°C to +71°C
- Size: 80mmx78.5mmx28mm
- Weight: 180g
- Average Power Consumption: <2.7W



Scan for full datasheet  
of GPSdome-SunStone

## Second Layer of Protection

### Honeywell Compact Inertial Navigation System

- Small INS with dual GNSS receivers
- Horizontal drift after 30s GNSS outage with no aiding ~ 5m
- Navigation health monitor
- Latency: 100ns  $\pm$  15ns (fixed)
- Size: 104mmx60mmx28mm
- Weight: 140g
- Max power consumption: <3W
- Not export controlled (ECCN: 7A994)



Scan for full datasheet  
of HCINS

# Honeywell Radar Velocity System

- 3D velocity aiding system
- CEP error of 1-3% distance traveled when integrated with HCINS
- Navigation health monitor
- 60GHZ / 80GHZ
- Size: 113mmx65mmx31mm
- Weight: 63g
- Max power consumption: <2W
- Not export controlled (ECCN: 6A998.a)



Scan for full datasheet  
of HRVS

