

Honeywell

RESILIENT NAVIGATION SYSTEMS

Safe and secure navigation for Land Vehicles in GNSS denied environments



RESILIENT NAVIGATION SYSTEM

Safe and secure navigation for Land Vehicles in GNSS denied environments

Resilient Navigation System is a low size, weight and power navigation system that combines GNSS, INS, anti-jammer and alternative navigation technologies to provide **three layers of resilience for safe navigation**.



GPSdome 1

Ensures GPS availability during low power jamming conditions



Honeywell Compact Inertial Navigation System (HCINS)

Enables safe navigation for land vehicles during intermittent GNSS disruptions



Honeywell Radar Velocity System (HRVS)

Enables safe navigation for land vehicles during continuous GNSS disruptions



Safe and reliable navigation in challenging environment is essential for GNSS denied missions

Mission failure results in loss of the asset

Multi-Layer Resiliency

GNSS + anti-jammer + INS + Alternative Navigation

Enables **GNSS-Denied Missions**

1-3 %
Distance Traveled CEP

Works in **Degraded Visual Environments**

< 500 g
Total system weight including accessories

No Dependency
on maps or environment

LAYER 1 GPSDOME 1

Industry's only non-ITAR GPS anti-jammer



**Low Size, Weight
and Power**

GPS L1
Protected frequency

20 dB
Attenuation

**Low
Latency**

GPSdome 1 is a small-sized, add-on device that provides protection against GPS jamming, ensuring continuity of autonomous navigation and operation during jamming conditions. No other solution that offers the same protection is as small, light, affordable or as easily installed as GPSdome 1.

FEATURES



- GPS anti-jammer
- Protected frequency: GPS L1 (C/A Code)
- Nominal 20dB attenuation of hostile signal
- Protection from 1 jamming signal



- IP67, -40°C to +85°C (enclosed)
- Minimal latency: 100ns ±15ns (constant)
- Compatible with most off-the-shelf active GNSS antennas



- Null steering technology in tiny form factor
- Dual use (non-ITAR) (ECCN: 7A005.b)



- Size: 74x47x25 mm (LxBxH)
- Weight: 150g
- Maximum power consumption: <1W



LAYER 2 HONEYWELL COMPACT INERTIAL NAVIGATION SYSTEM

Combined GNSS and inertial navigation system for Land Vehicles



The Honeywell compact inertial navigation system (HCINS) is a low size, weight and power (SWaP) inertial navigation system that is suitable for all types of land vehicles. It enables safe navigation for land vehicles during intermittent GNSS disruptions.

FEATURES



- Small inertial navigation system with dual GNSS receivers
- Tactical grade redundant inertial sensors
- Horizontal drift after 30s GNSS outage with no aiding ~ 5m



- SD card for data storage
- Navigation health monitor
- Ethernet interface



- Easy integration with aiding systems (radar, vision)
- Not export controlled (ECCN: 7A994)



- Size: 104x60x28 mm (LxBxH)
- Weight: 140g
- Maximum power consumption: <3W



LAYER 3 HONEYWELL RADAR VELOCITY SYSTEM

Range and velocity without GNSS

1-3%

Distance traveled error
when used with HCINS

**Low Size, Weight
and Power**

**Performs on
all surfaces**

Available in two variants
60 GHz | 80 GHz



The Honeywell Radar Velocity System (HRVS) is a low size, weight and power (SWaP) millimeter radar-based navigation aiding system.



FEATURES



- 3D velocity aiding system
- Only 1 radar for surface applications
- CEP error of 1-3% distance traveled when integrated with HCINS
- Two variants - 60GHz and 80GHz



- Works over all surfaces
- Impervious to environmental conditions



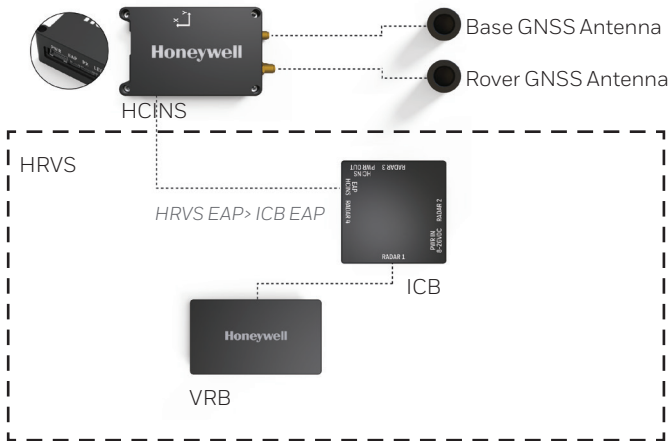
- Not export controlled (ECCN: 6A998.a)
- Needs FCC waiver for US



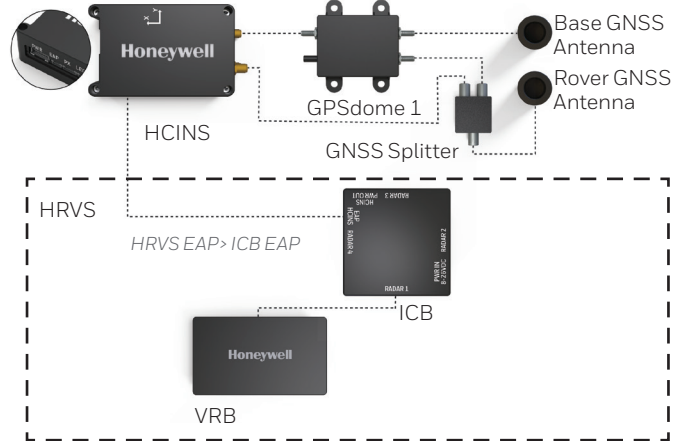
- Size: 113x65x31 mm (LxBxH)
- Weight: 63g
- Maximum power consumption: <2W

INTERCONNECTIONS DIAGRAM

WITHOUT GPSDOME 1



WITH GPSDOME 1



RESILIENT NAVIGATION SYSTEM

PART NUMBER	QUANTITY	DESCRIPTION
68013252-1	01	GPSdome 1
88003175	01	HCINS Packaging Content (HCINS + Cables + Damping Platform + SD Card)
88003168	01	Honeywell Compact Inertial Navigation System (HCINS) 2.4
88003160	01	Power Cable for HCINS
88003161-001	01	Ethernet Cable for HCINS
88003162	01	External Aiding Port (EAP) Cable for HCINS
88003163	01	Pixhawk Cable for HCINS
53700092-2	01	SD card - inserted in HCINS
88004275 88004276 88004277-001/002/003/004	01	Damping Platform for HCINS
88003444	01	HRVS packaging content (4xVRB+ICB+15cm flat cables)
88003442	04	Velocity Radar Board (VRB) 3.3
88003436	01	Interconnection Board (ICB)
88003432	04	VRB-ICB Cable flat 1.5 cm cable

OPTIONAL

PART NUMBER	QUANTITY	DESCRIPTION
88003445	04	VRB-ICB Cable rounded 25 cm cable
88003445-001/002/003/004	04	VRB-ICB Cable rounded 35 cm / 40 cm / 50 cm / 100 cm cable
53700060 - 2	02	GNSS Antenna Maxtena M7h
53700144-1	01	GPS Splitter