INTERSENSE
Sensing Every Move

NavChip™

ISNC01

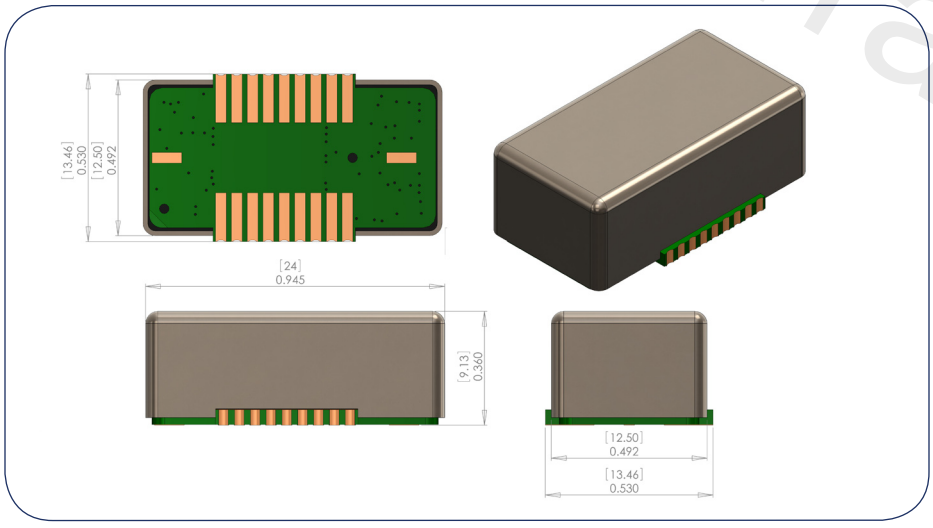
InterSense Inc., a market leader in precision motion technology, is proud to annouce the NavChip™ - the world's smallest IMU. In its miniature package, the NavChip employs groundbreaking MEMS technology to provide unprecedented noise and stability improvements. As the industry's first commercial IMU chip, the breakthrough NavChip represents a 12x improvement in noise, 4x improvement in size, and a 2x improvement in drift compared to competing commercial-grade MEMS IMUs.

Preliminary

Key benefits include:

- World's smallest IMU
- Unprecedented gyro and accel noise and stability
- Low power consumption
- Large dynamic range
- Factory calibration and temperature compensation
- LCC footprint incorporating castellated contacts for OEM integration
- Packaged for environmental ruggedness and long-term stability

NavChip dimensions
24.0 mm x 13.5 mm x 9.1 mm



NavChip with LCC (Leadless Chip Carrier)

Applications

- GPS/INS
- Robotics
- Unmanned Systems
- Aiming & Alignment
- Platform Stabilization
- Personnel Tracking

Contact us at **+1 781 541 7650** or **ISinfo@intersense.com** for more details on using InterSense technology or becoming a distribution partner.

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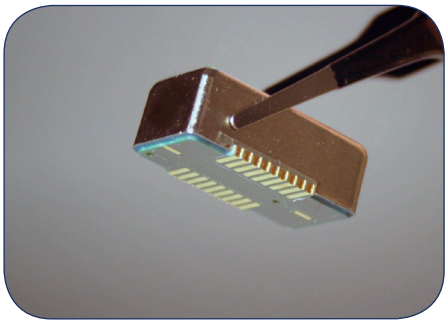
Typical Data*

Output format	3V TTL UART & SPI
Default message format	Compensated **ΔΘ, ΔV**
Supply voltage range	3.25 - 5.5 V
Power consumption	65 mA @ 3.25 V
Operating temperature range	-40°C to +85°C
Start-up time	< 1s
Output data rate	up to 1000 Hz
Weight	6 grams
Dimensions	24.0 mm x 13.5 mm x 9.1 mm
RoHS Compliant	Yes
Angular Rate	
Rate range (***ISNC01-000/020***)	+/- 2000°/s (+/- 35 rad/s)
Rate range (***ISNC01-010/030***)	+/- 480°/s (+/- 8.5 rad/s)
Angular random walk	0.18°/√hr
Noise density	0.003°/s/√Hz
Bias in-run stability @ 25°C	10°/hr
Bandwidth (-3dB)	100 Hz
Linearity over +/- 300°/s	0.1%
Linearity over FS	0.5%
Linear Acceleration	
Acceleration range (***ISNC01-000/010***)	+/- 8 g
Acceleration range (***ISNC01-020/030***)	+/-16 g
Velocity random walk	0.045 m/s/√hr
Noise density	70 µg/√Hz
Bias in-run stability @ 25°C	0.1 mg
Bandwidth (-3dB)	100 Hz
Linearity over +/- 1 g	0.1%
Linearity over FS	1%

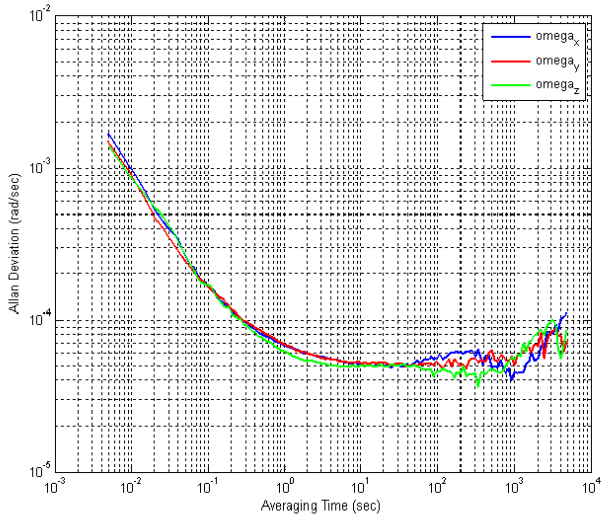


InterSense NavChip™

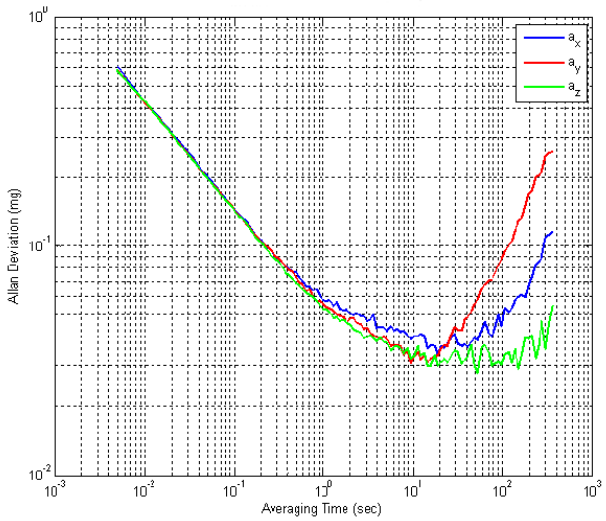
Pin #	Signal Name	Signal Description
1	NC	Reserved for factory use
2	NC	Reserved for factory use
3	NC	Reserved for factory use
4	NC	Reserved for factory use
5	SPI_DR	SPI data ready output
6	SPI_CS	SPI chip select input
7	NC	Reserved for factory use
8	NC	Reserved for factory use
9	V_{Logic}	3V logic refernce output
10	NC	Reserved for factory use
11	V_{IN}	Power supply
12	Rx	UART receive input
13	Tx	UART transmit output
14	Vss	Power supply return
15	Sync	TTL sync input
16	SPI_SCK	SPI serial clock input
17	SPI_SDO	SPI data output
18	SPI_SDI	SPI data input
19	NC	Reserved for factory use
20	NC	Reserved for factory use
NC = Not Connected		

NavChip pin connections

NavChip Gyro Root Allan Variance Chart



NavChip Accel Root Allan Variance Chart



* All specifications are preliminary and subject to change

Preliminary