INTERSENSE
Sensing Every Move

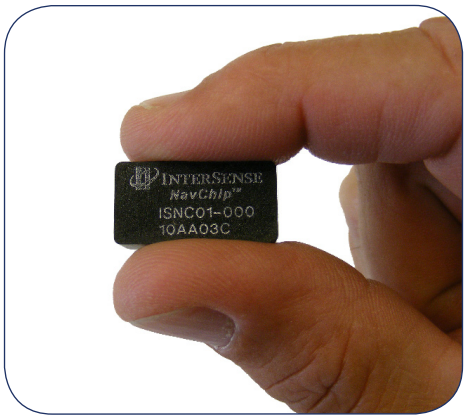
NavChip™

The world's smallest IMU

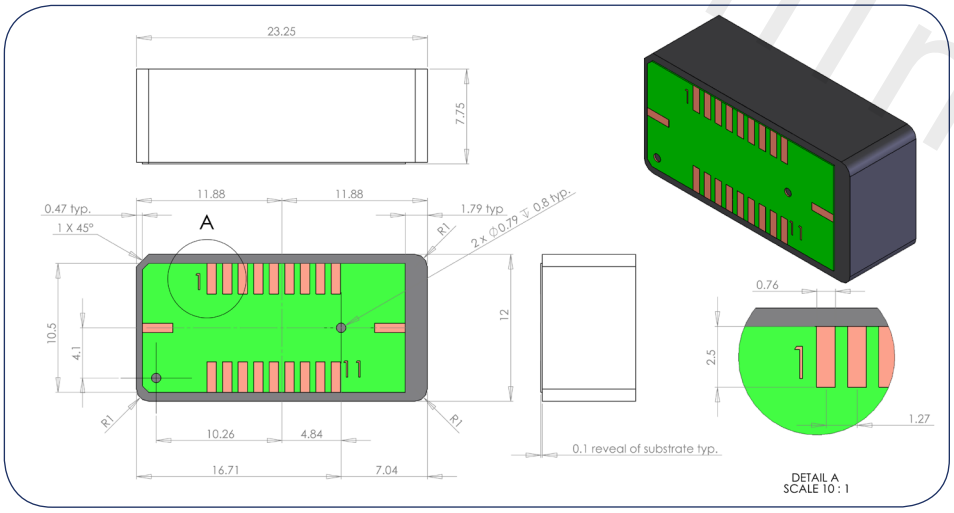
InterSense Inc., a market leader in precision motion technology, is proud to annouce the NavChip™ - the world's smallest IMU. At roughly the size of a penny, the NavChip employs groundbreaking MEMS technology to provide unprecedented noise and stability improvements. As the industry's first commercial IMU chip, the breakthrough NavChip represents a 12-fold improvement in noise and a six-fold improvement in drift compared to previous commercial-grade MEMS IMUs.

Key benefits include:

- World's smallest IMU
- Unprecedented gyro and accel noise and stability approaching FOG-grade performance
- Low power consumption
- Large dynamic range
- Factory calibration and temperature compensation
- Surface mountable for easy OEM integration
- Epoxy encapsulated for environmental ruggedness and long-term stability



NavChip dimensions
12.00 mm x 23.25 mm x 7.75 mm



Applications

- GPS/INS Integration
- Robotics
- UAVs
- Aiming & Alignment
- Agriculture
- Platform Stabilization

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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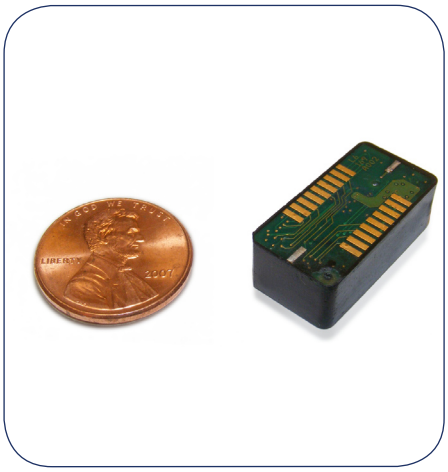
Typical Data*

Output format	3V TTL UART & SPI
Default message format	Compensated **ΔΘ, ΔV**
Supply voltage range	3.25 - 5.5 V
Power consumption	120 mW
Operating temperature range	-40°C to +85°C
Start-up time	< 1s
Output data rate	up to 1000 Hz
Weight	6 grams
Dimensions	12.00 mm x 23.25 mm x 7.75 mm
Angular Rate	
Rate range	+/- 2000°/s (+/- 35 rad/s)
Angular random walk	0.25°/√hr
Noise density	0.004°/s/√Hz
Bias in-run stability	12°/hr
Bandwidth (-3dB)	200 Hz
Linearity over +/- 300°/s	0.1%
Linearity over FS	0.5%
Linear Acceleration	
Acceleration range	+/- 11 g
Velocity random walk	0.045 m/s/√hr
Noise density	70 µg/√Hz
Bias in-run stability	0.05 mg
Bandwidth (-3dB)	200 Hz
Linearity over +/- 2 g	0.1%
Linearity over FS	1%
RoHS compliant	Yes

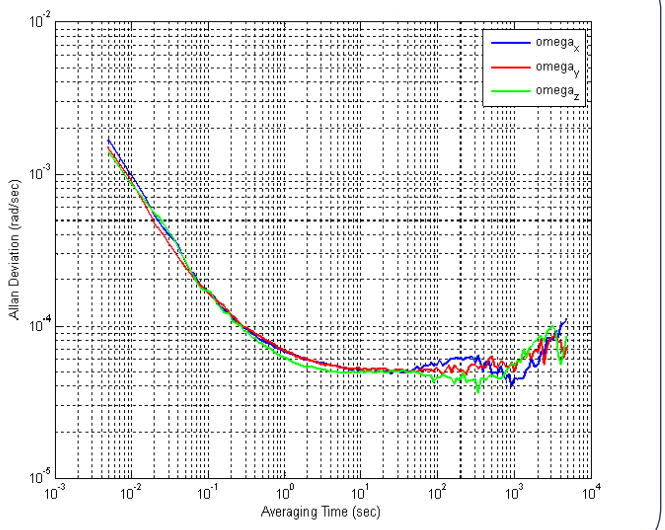


InterSense NavChip

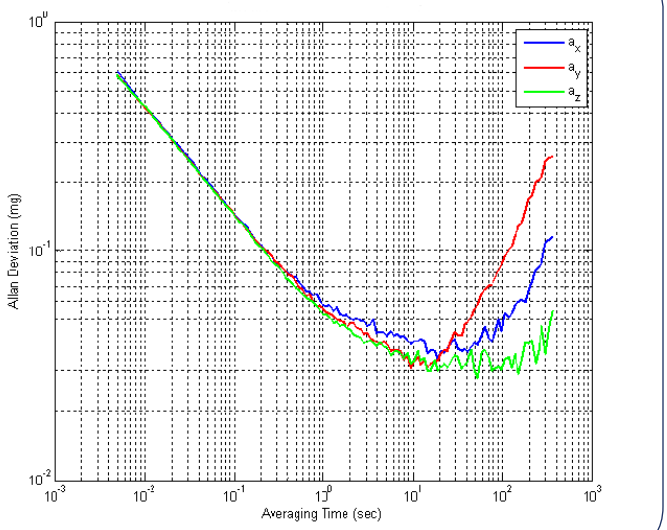
Pin #	Signal Name	Comment
1	NC	Reserved for Factory Use
2	NC	Reserved for Factory Use
3	NC	Reserved for Factory Use
4	NC	Reserved for Factory Use
5	SPI_DR	SPI data ready output
6	NC	Reserved for Factory Use
7	NC	Reserved for Factory Use
8	NC	Reserved for Factory Use
9	V_{LOGIC}	3V logic reference output
10	Vss	Power supply return
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	SPI_CS	SPI chip select input
20	Vss	Power supply return

NavChip pin connections

NavChip Gyro Root Allan Variance Chart



NavChip Accel Root Allan Variance Chart



* All specifications are preliminary and subject to change