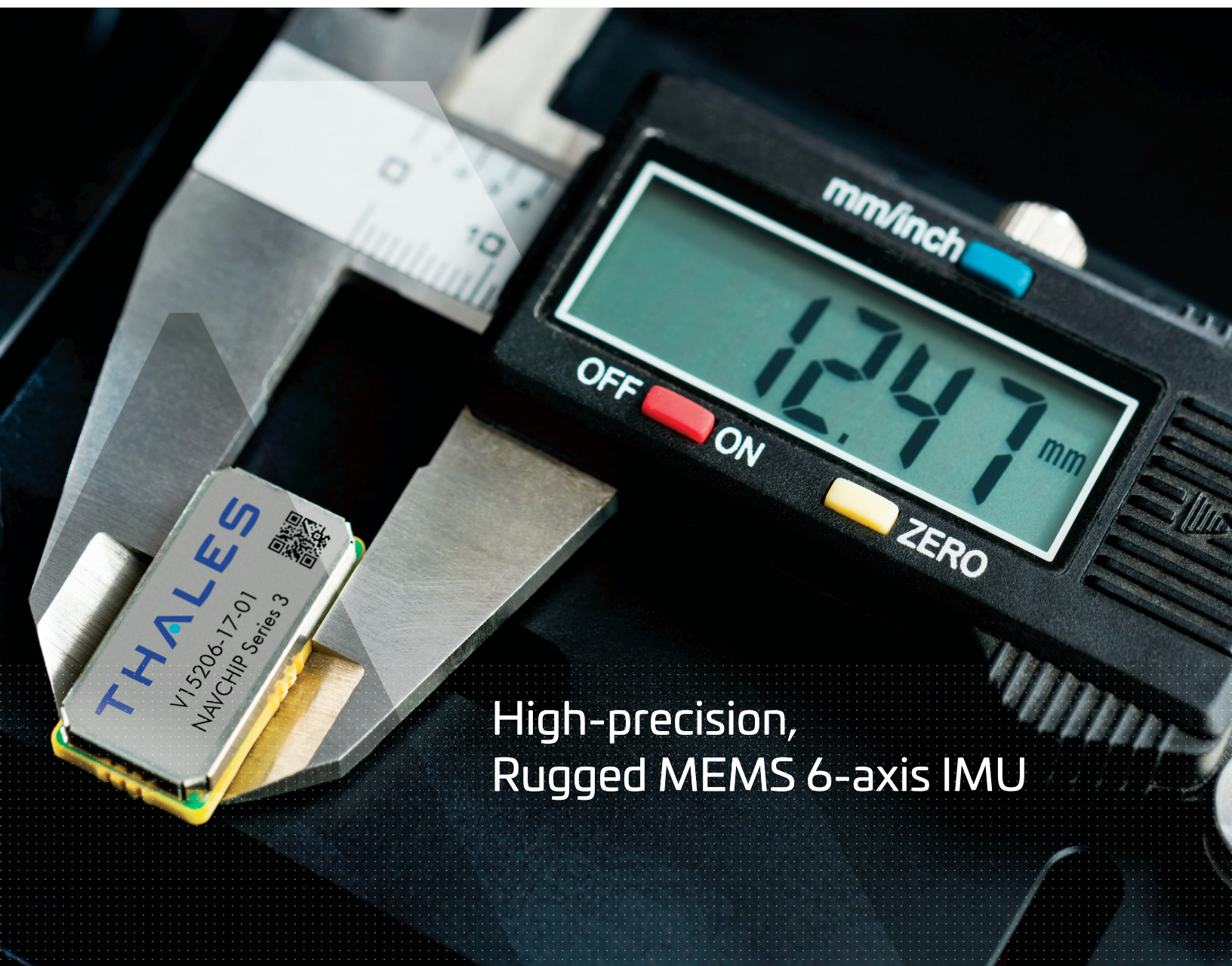
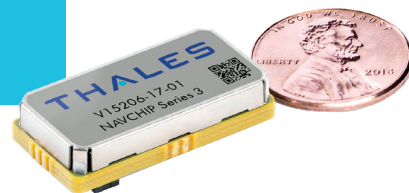


InterSense® NavChip™ Inertial Measurement Unit (IMU)



High-precision,
Rugged MEMS 6-axis IMU

InterSense® NavChip™ IMU



The NavChip is a high precision MEMS 6-axis Inertial Measurement Unit (IMU). Using proprietary technologies and advanced signal processing techniques, the NavChip achieves a level of performance, miniaturization, and environmental ruggedness superior to competing IMUs using standard off-the-shelf MEMS sensors. The NavChip is a very low drift IMU with a full-scale acceleration range of $\pm 16g$ and a full-scale angular rate of $2,000^\circ/s$. It is fully factory-calibrated and temperature compensated over an operating range of -40° to $+85^\circ C$.

Technical Specifications		Typical values	
		NavChip	NavChip Series 3 Class B NavChip Series 3 Class A
Gyros	Δ bias, scale, misalignment	Factory calibrated and temperature compensated over full temperature range	
	In-run bias stability	$5^\circ/hr$	$4^\circ/hr$
	Bias accuracy over temp range	$\pm 0.2^\circ/s$	
	g sensitive bias	$0.004^\circ/s/g$	
	Angle random walk	$0.18^\circ/\sqrt{hr}$	
	Scale factor accuracy	$\pm 0.05\%$	
	Scale factor linearity	0.01%	
	Axis alignment accuracy	$\pm 0.03^\circ$	
Accels	ΔV bias, scale, misalignment	Factory calibrated and temperature compensated over full temperature range	
	In-run bias stability	$0.04 mg$	$0.006 mg$
	Velocity random walk	$0.03 m/s/\sqrt{hr}$	$0.02 m/s/\sqrt{hr}$
	Bias accuracy over temp range	$\pm 3 mg$	
	Scale factor accuracy	$\pm 0.09\%$	
	Scale factor linearity	0.06%	
	Axis alignment accuracy	$\pm 0.03^\circ$	
Limits	Operating & storage temp	-40° to $+85^\circ C$	
	Full scale acceleration range	$\pm 16g$	
	Full scale angle rate	$2000^\circ/s$	
	Vdd to GND	$-0.3 V$ to $+6.0 V$	
	In/out to GND	$-0.3 V$ to $3.3 V$	
SWaP	Size	$12.5mm \times 24.5mm \times 5.4mm$	$12.5mm \times 24.5mm \times 6.1mm$
	Weight	3 grams	
	Power consumption @ 3.3 V	135mW (scales linearly with voltage)	
Output	Interfaces	UART, SPI	UART, SPI, I2C
	Data	Compensated ΔV and $\Delta \Theta$	Compensated ΔV and $\Delta \Theta$, AHRS
	$\Delta V, \Delta$ output rate	Up to 200 Hz	Up to 1000 Hz
	Adapters	RS-422, USB/TTL serial, ADIS	
	Default sampling rate/period	1000 Hz/1 ms	
	UART data rate	38,400 to 921,600 baud, configurable	
Input	Voltage	$3.25 V$ – $5.5 V$ (typical 3.3 V)	
	Current	40 mA	
	Optional external sync pin	1-1000 ms period (integer)	

Specifications are subject to change without notice.

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