

6-DOF High Measurement Range Gyroscope and Accelerometer for Industrial Applications

Features

- Single package 6DOF component
- Cross-axis calibration enables better than 0.15 ° orthogonality error
- Gyro bias instability down to 2 °/h
- Gyro noise density level down to 0.006 (°/s)/√Hz
- Stable offset and sensitivity over full temperature range
- Excellent linearity and vibration performance
- Extensive self-diagnostics features utilizing over 200 monitoring signals
- ±2000 °/s angular rate measurement range
- ±16 g acceleration measurement range with default dynamic range of ±26 g
- −40 °C...+110 °C operating temperature range
- 3.0 V...3.6 V supply voltage
- SafeSPI2.0 interface with 20-bit data frame
- Data ready, timestamp index and SYNC functions for clock domain synchronization
- RoHS compliant robust 24-pin SOIC housing
- 11.8 mm x 13.4 mm x 2.9 mm (l x w x h) SOIC-24

Applications

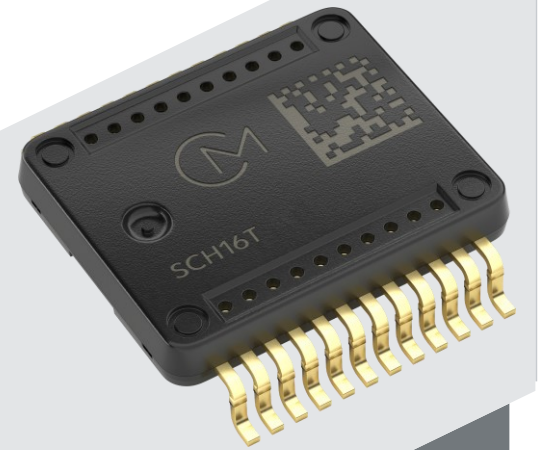
SCH16T is targeted at applications demanding high performance with tough environmental requirements.

Typical applications include:

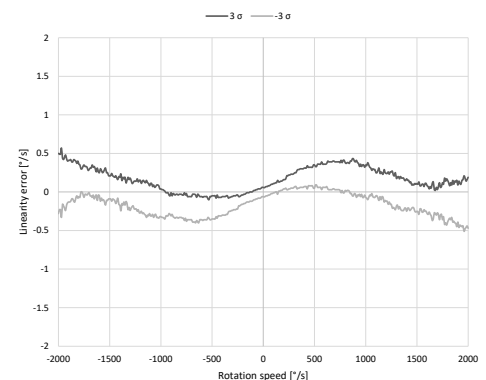
- Drone flight controller inertial navigation and positioning
- Inertial measurement units (IMUs) needing high dynamic range



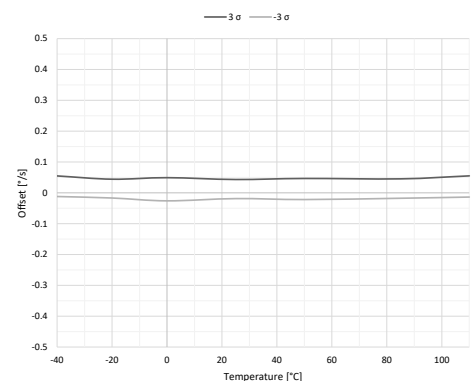
Measurement characteristics	Ω xyz	Acc xyz
Measurement range	±2000 °/s	±16 g
Dynamic range	±2600 °/s	±26 g
User selectable low pass filter	13, 30, 68, 235, 280, 370 Hz	
Offset (3 σ) −40°C...+110°C	±0.3 °/s	±6 mg
Noise density (typ)	0.006 (°/s)/√Hz	80 µg/√Hz
Bias instability (typ)	2 °/h	15 µg
Allan deviation minimum divided by 0.664		



Gyroscope, Linearity °/s



Gyroscope, Offset °/s



Accelerometer, Sensitivity error over temperature in %

