

6-DOF XYZ-Axis Gyroscope and XYZ-Axis Accelerometer with Digital SPI Interface for Industrial Applications

Features

- Single package 6DOF component
- Cross-axis calibration enables better than 0.15 ° orthogonality error
- Gyro bias instability down to 0.5 °/h level
- Gyro noise density level down to 0.0003 °/s/√Hz
- Stable offset and sensitivity over full temperature range
- Excellent linearity and vibration performance
- Extensive self-diagnostics features
- ±300 °/s angular rate measurement range
- ± 8 g acceleration measurement range
- 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 SOIC housing
- Size: 12 mm x 14 mm x 3 mm (l x w x h), 24 pins

Applications

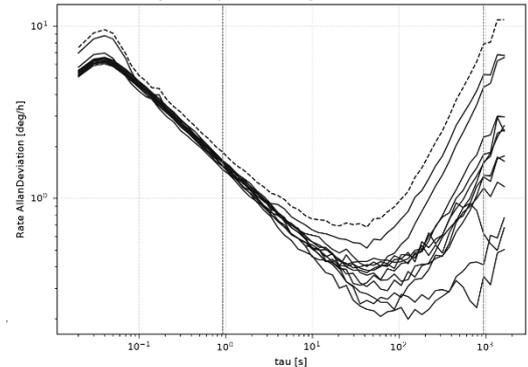
SCH16T is targeted at applications demanding high performance with tough environmental requirements.

Typical applications include:

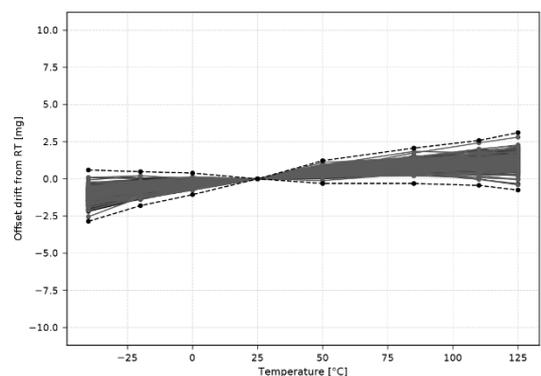
- Inertial Measurement Units (IMUs)
- Navigation and positioning
- Machine control and guidance
- Dynamic inclination
- Robotic control and UAVs



Gyroscope, Average Allan Deviation in °/h



Accelerometer, Offset Error Over Temperature in mg



Measurement characteristics	Ω xyz	Acc xyz
Range	±300 °/s	±8 g
User Selectable Low Pass Filter	13, 30, 68, 235, 280 or 370 Hz	13, 30, 68, 235, 280 or 370 Hz
Sensitivity	1600 LSB/°/s (2.25deg/h)	3200 LSB/m/s ²
Offset Temperature Dependency -40°C...+110°C (3σ)	±0.2 °/s	±7 mg
Noise Density (Typ)	0.0006 °/s/√Hz	80 μg/√Hz
Bias Instability (Typ)	0.5 °/h	20 μg

*Bottom of Allan Variance curve