Digital gyroscopes for enhanced motion-control realism and image stabilization

ST's new digital gyroscopes are the perfect synthesis of accuracy and design flexibility

ST's latest gyroscopes feature excellent accuracy as a result of their unique and patented mechanical structure based on a single driving mass.
The L3GD20HTR and L2G2ISTR boast superior output stability over time and temperature, removing the need for any further calibration on the customer`s side.
They offer user-selectable full scales, ranging from ±100 to ±2000 dps, to cater for gaming, navigation, and OIS applications.

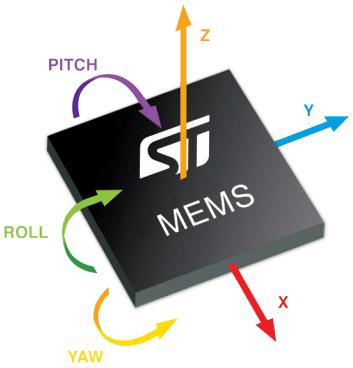
L3GD20HTR

Features

- Full scale (245/±500/±2000 dps)
- I²C/SPI digital output interface
- 16-bit rate data output
- 8-bit temperature data output
- Wide supply voltage: 2.4 to 3.6 V
- Low-voltage compatible IOs (1.8 V)
- Embedded power-down and sleep modes
- Embedded temperature sensor
- Fast turn-on and wake-up
- 2 dedicated lines (1 interrupt, 1 data ready)
- User-enabled integrated high-pass filters
- Embedded 32 levels of 16 -bit data output FIFO
- ECOPACK® RoHS and "Green" compliant
- High shock survivability

Benefits

- High performance in terms of accuracy, stability
- Design flexibility
- Extremely low power consumption lengthens battery life
- Embedded FIFO for smart data storage and power saving
- Temperature detection for advanced thermal drift compensation
- Enables faster system wake up



L2G2ISTR

Features

- ±100 dps / ±200 dps full-scale range
- 3- and 4- wire SPI digital interface
- Embedded temperature sensor
- Integrated low- and high-pass filters with user-selectable bandwidth
- Wide supply voltage range: 1.71 V to 3.6 V
- Embedded self-test
- Power-down and sleep modes for smart power saving
- ECOPACK®, RoHS and “Green” compliant

Benefits

- Low noise and low latency device
- High stability in temperature reducing OIS algorithm complexity
- Embedded temperature sensor data can be accessed through SPI digital interface by application
- Robustness for Ultra Sonic cleaning process

DEVICE SUMMARY

Features	L3GD20HTR	L2G2ISTR
Angular rate range (FS) typ (dps)	±245/500/2000	±100/200
Driving frequency (kHz)	20	20
Angular rate noise density (°/s/√Hz)	0.011	0.006
ODR (Hz)	up to 800	9090
Programmable interrupts	2	N/A
Embedded FIFO	32 levels of 16-bit data output	N/A
Current consumption typ (mA)	5	3.8
Supply voltage range (V)	2.2 to 3.6	1.71 to 3.6
Operating temperature range (°C)	-40 to +85	-40 to +85
Applications	Gaming, pointing devices, navigation and motion control	Optical image stabilization (OIS)
Digital interfaces	I²C/SPI	SPI (3/4 W)
Size (mm)	3 x 3 x 1	2.3 x 2.3 x 0.7

COMMERCIAL PRODUCTS

Part number	Package	Packing type
L3GD20HTR	LGA-16 3 x 3 x 1 mm	Tape and reel
L2G2ISTR	LGA-16 2.3 x 2.3 x 0.7	Tape and reel

For detailed operating conditions, parameters and more information about MEMS product catalogue and datasheets, see www.st.com/mems

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