SILICONMICROGRAVITY

sensing the world

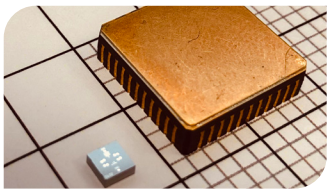
DATASHEET

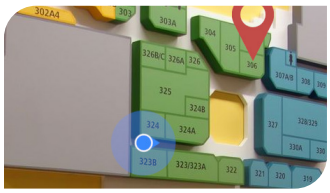
MEMS Accelerometers

- State of the art MEMS inertial sensors
- Gen 1 current technology (25g to 100g range) and Gen 2 in development for ranges between 5g and 100g

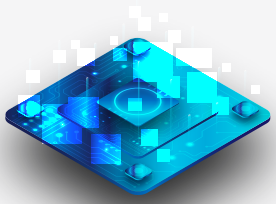
Application Examples

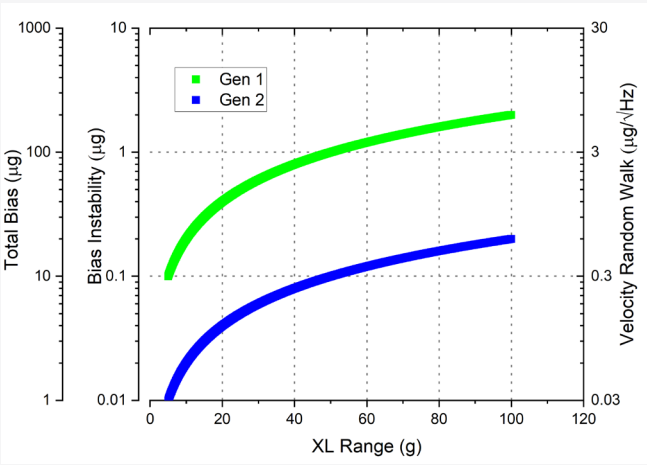
- Autonomous vehicles
- Augmented reality
- Robotics
- Aerospace
- Agriculture
- Sensor fusion
- Search and rescue

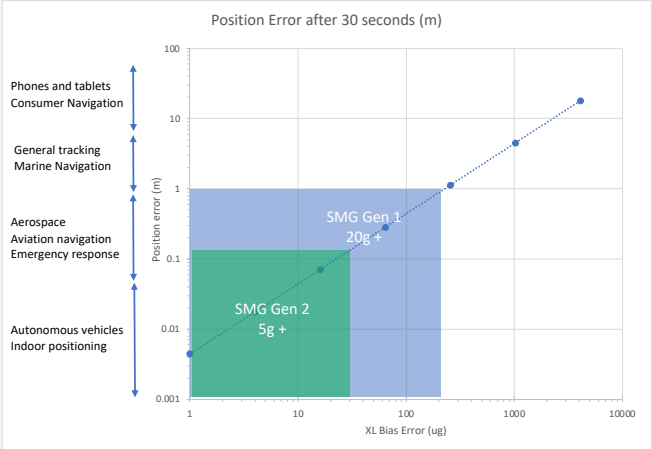




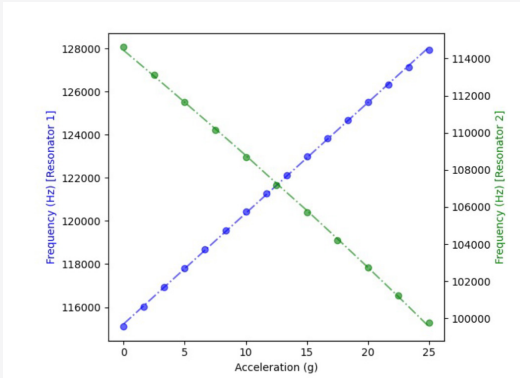
	Gen 1 XL			Gen 2 XL		
Range (g)	25	...	100	5	...	100
Bias Repeatability (µg)	50	...	200	1	...	20
Scale Factor Repeatability (ppm)	50			25		
Velocity Random Walk (µg/√Hz)	1.5	...	6	0.03	...	0.6
Bias Instability (µg)	0.5		2	0.01		0.2
Shock Survivability (g l ms)	20|11	..	80|11	4|11	...	80|11
Temperature Range (°C)	-40 to +85			-40 to +85		





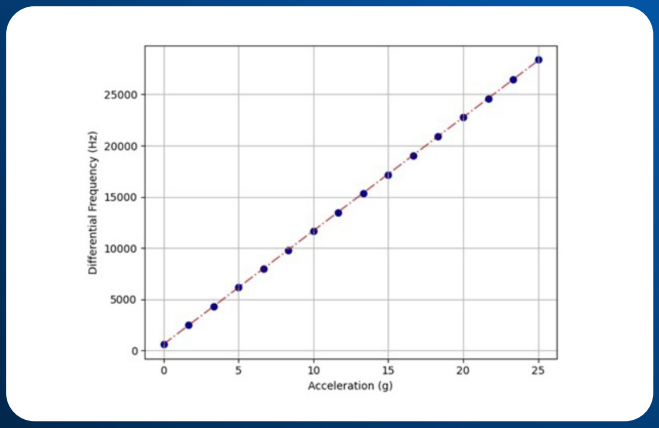


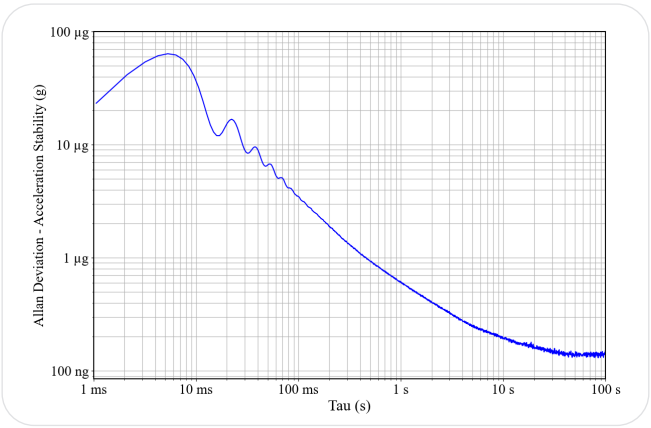
MEMS Accelerometers (cont.)

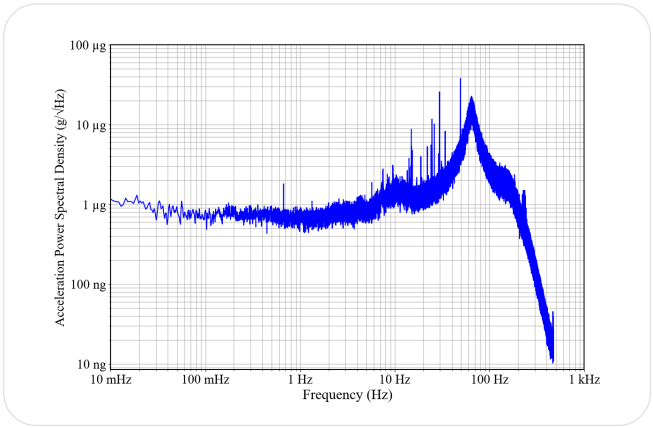


- UK based company based near Cambridge
- European manufacturing
- Expertise in MEMS design for gravity and inertial sensors
- Proprietary resonant MEMS technology

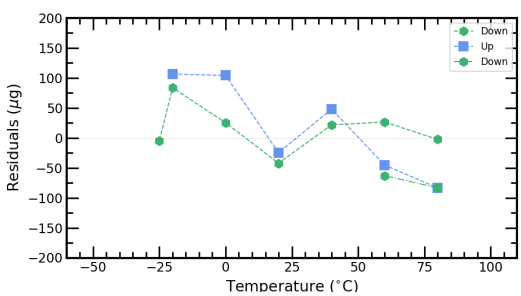
- Example dataset from 25g range resonant MEMS accelerometer
- Excellent linearity (<0.1%) over a measurement range between 0 to 25G
- Results of scale factor characterization demonstrating the variation in individual resonance frequencies and differential output frequency with changes in acceleration loading along the sensitive axis







Allan Variation showing a bias instability of 0.125 µg and Power spectral density showing a velocity random walk of 0.7 µg/√Hz



Residual acceleration after temperature compensation (showing <50ppm scale factor and 50 µg bias)