

- Up to 30 dBm EMI reduction
- Programmable for instant validation
- Drop-in replacement, no PCB change



System designers can achieve emissions compliance without changing the PCB layout or use of mechanical shielding by using SiTime's programmable MEMS timing solutions. These devices reduce EMI through either spread spectrum clocking or use of the FlexEdge™ feature, or the combination of both. By using SiTime's Time Machine II programmer, designers can program EMI reduction oscillators in their lab and experiment with different levels and techniques of EMI reduction to achieve the optimal balance of EMI and system performance.

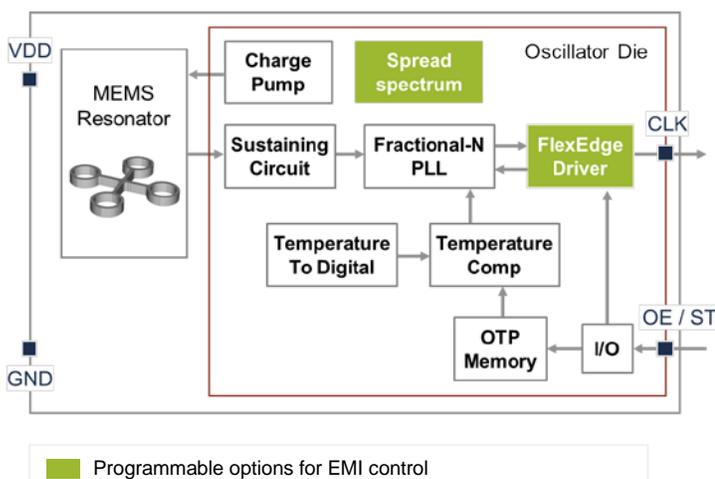
Benefits

- Reduce EMI without board design changes
- Eliminate expensive mechanical shielding
- Ensure fastest time-to-market
- Get "peace of mind" for emissions compliance testing

Applications

- IPCAM
- Car cameras modules
- SSD
- Motor servo
- DDR memory clocking
- PCI-Express clocking
- MCU clocking
- High speed SerDes (FlexEdge)

Architecture



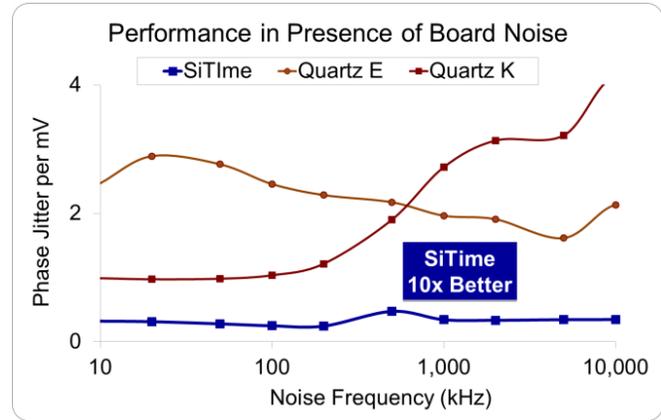
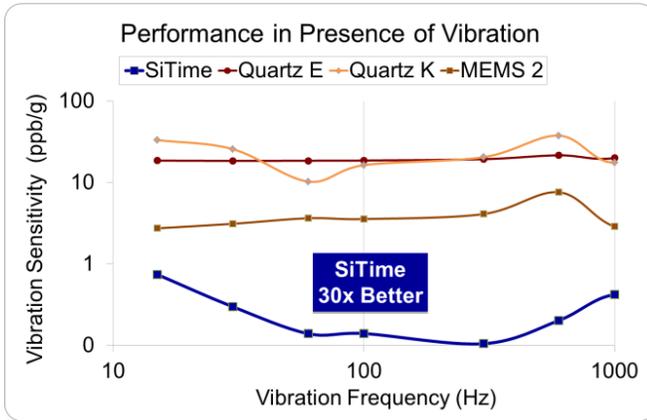
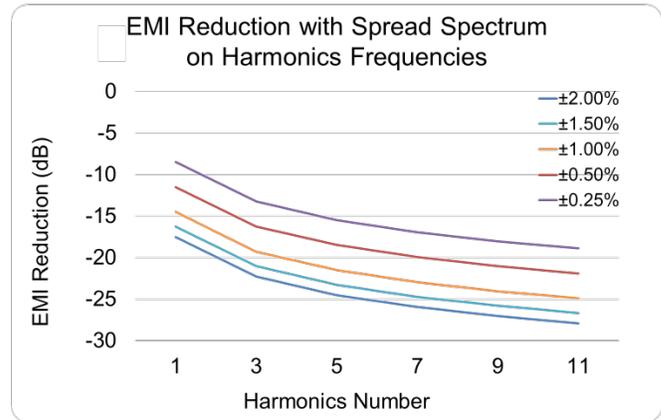
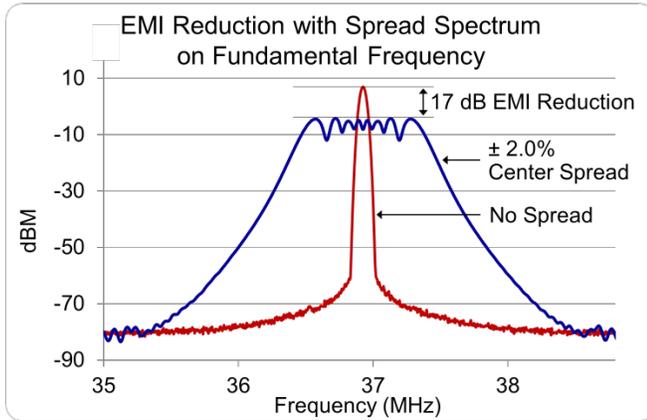
Features

- Flexible spread spectrum options
 - Center spread: ± 0.125 to $\pm 2\%$
 - Down spread: -0.25% to -4.0%
- Up to 20 FlexEdge configurable rise/fall time options
 - 0.25 ns to 40 ns slew rates (load dependent)
- Triangular or Hershey Kiss spread profile
- Any frequency between 1 to 220 MHz
- LVCMOS, LVPECL, LVDS, CML and HCSL output types
- ± 20 ppm frequency stability from -55°C to 125°C
- AEC-Q100 qualified, Grade 1 to 3
- 5 standard oscillator packages, smallest in 2.0 x 1.6 mm
- Best jitter: 8 ps cycle-to-cycle
- Instant programing with Time Machine II programmer

EMI Source	EMI Reduction with Oscillators	
	Spread spectrum	FlexEdge Slew Rate
	✓	—
	✓	✓

Spread spectrum: Reduction of harmonics from SOC and/or clock traces. For jitter insensitive applications.

FlexEdge: Reduction of harmonics from clock traces only. No jitter impact.



Device Type	Device	Frequency (MHz)	Temp. Range (°C)	Stability (ppm)	Output Type	Package Size (mm)	EMI Reduction Features
Spread Spectrum Oscillators	SiT9005	1 to 141	-20 to 70, -40 to 85	±20, ±25, ±30, ±50	LVC MOS	QFN: 2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5	32 spread % options 0.25 to 4.0% pk-to-pk; 8 rise/fall options with 0.25 to 40 ns slew rates
	SiT9025 -55°C to 125°C	1 to 141		±20, ±25, ±30, ±50	LVC MOS	QFN: 2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5	32 spread % options 0.25 to 4.0% pk-to-pk; 8 rise/fall options with 0.25 to 40 ns slew rates
	SiT9003	1 to 110		±25, ±50	LVC MOS	QFN: 5.0 x 3.2, 7.0 x 5.0	4 spread % options 0.5 to 1.0% pk-to-pk; 4 rise/fall options with 0.6 to 12.1 ns slew rates
	SiT9002	1 to 220		±25, ±50	LVPECL, CML, LVDS, HCSL	QFN: 5.0 x 3.2, 7.0 x 5.0	8 spread % options 0.5 to 4.0% pk-to-pk;

SiTime, a MEMS and analog semiconductor company, is the leader in MEMS-based frequency-control solutions. We combine innovative MEMS and programmable analog technologies with our systems expertise to break through the limitations of legacy quartz products and deliver the industry's best timing solutions. Our configurable products provide the most stable timing that enables customers to differentiate their systems with higher performance, small size and better reliability.