Programmable Silicon Timing Solutions

SiTime offers a comprehensive suite of MEMS-based, all-silicon, programmable timing solutions, including oscillators and clock generators that are designed to replace quartz-based products. SiTime's semiconductor products offer significant benefits in performance, integration, robustness, reliability, size and cost of ownership over quartz. OEMs, ODMs and design services firms can use SiTime's solutions in a wide variety of products and applications, some of which are listed below.

Low Power, Fast Startup Oscillators

SiT8003, SiT8033, SiT8003XT

Industry best 3.5 mA and 3 ms start-up time
1-110 MHz, thinnest (0.25 mm) package

High Stability, ±10 PPM Oscillators

SiT9102, SiT8102

TCXO-like performance
Improves system timing reliability

High Performance Oscillators

SiT8103, SiT8102, SiT8002

Frequencies up to 200 MHz
4 industry-standard packages

High Performance, Differential Oscillators

SiT9102

Frequencies up to 800 MHz
Supports LVPECL, LVDS, CML, HCSL

Spread Spectrum Oscillators

SiT9001, SiT9002, SiT9003

Best jitter, smallest package, lowest power
Up to 12 dB EMI reduction

Multi-PLL, Multi-Output Clock Generators

SiT9103, SiT9104

Embedded MEMS, no external quartz
Best jitter for 3-PLL device

Voltage Controlled Oscillators

SiT3701

Smallest package (2.5 x 2.0 mm)
Supports 1-110 MHz

Automotive Oscillator

SiT8002AA

-40°C to +125°C operation
Indestructible, 50K G shock, 70 G vibration

SiTime™
It's About Time

Select SiTime Device by Application, Frequency

		High Performance Programmable Oscillators				Low Power Programmable Oscillators		Programmable Spread Spectrum Oscillators			Program-mable VCO	Programmable Clock Generators	
Device		**SiT8102**	**SiT8103**	**SiT9102**	**SiT8002**	**SiT8003**	**SiT8033**	**SiT9001**	**SiT9002**	**SiT9003**	**SiT3701**	**SiT9103**	**SiT9104**
Frequency Range (MHz)		1 - 200	1 - 110	1 - 800	1 - 125	1 - 110	1 - 110	1 - 200	1 - 800	1 - 110	1 - 110	1 - 800	1 - 220
Number of Outputs		1	1	1	1	1	1, selectable	1	1	1	1	3	6
Single-Ended Output		●	●		●	●	●	●		●	●		●
Differential Output				●					●			●	
Spread Spectrum								●	●	●		Contact SiTime	Contact SiTime
Frequency Tolerance (± PPM)		10 - 100	25 - 100	10 - 100	30 - 500	25 - 100	25 - 100	50 - 100	25 - 50	50 - 100	25 - 100	25 - 50	25 - 50
Typical IDD (mA)		< 25	< 8	40 - 70	< 20	< 3.5	< 3.5	< 25	40 - 70	< 3.5	< 8	40 - 70 per CLK	25 per CLK
Application	**Key Frequencies (MHz)**												
Serial I/O Standards													
1394B (FireWire, i.Link)	24.576 49.152 98.304	●	●			●	●						●
Ethernet (10/100)	25	●	●			●	●						●
Ethernet (1G)	25, 50, 62.5	●	●	●		●	●					●	●
	125	●		●								●	●
	250			●								●	
Ethernet (10GBase-R)	161.1328	●		●								●	●
	322.2656 644.5313			●								●	
Ethernet (10GBase-X)	156.25	●		●								●	●
	312.5 625			●								●	
FB-DIMM / AMB	133.33 166.67 200	●		●				●	●			●	●
Fibre Channel	21.25 26.5625 53.125 106.25	●	●	●		●	●					●	●
	159.375	●		●								●	●
	212.5 318.75 425 637.5			●								●	
HDMI	13.513 27.027 74.25	●	●	●		●	●					●	●
	148.5	●		●								●	●
	222.75 297 340			●								●	
Infiniband	125	●		●								●	●
PCI Express (PCI-E)	100	●	●	●		●	●	●	●	●		●	●
	125, 200	●		●				●	●			●	●
RapidIO	100	●	●	●		●	●					●	●
SATA / SAS	37.5, 75, 100	●	●	●		●	●	●	●	●		●	●
	120, 150	●		●				●	●			●	●
	300, 600			●					●			●	
UART	1.8432 2.4576 3.6864 7.3728 11.0592 12.288 14.7456 18.432 29.4912	●	●		●	●	●						●
USB1.1 / USB-InterChip	12, 24, 48	●	●		●	●	●						●
USB2.0	12, 24, 48	●	●			●	●						●
USB3.0	125	●		●				●	●			●	●
	250 500			●					●			●	

2 week lead time for production volumes. 500 Million Hours MTBF (2 FIT). 50,000G shock resistance and 70G vibration resistance. All products have an embedded resonator. Standby and Output Enable modes are available on most devices. Please contact SiTime for other custom variations. Subject to change without notice. Please refer to product data sheet for exact specifications.

Select SiTime Device by Application, Frequency

		High Performance Programmable Oscillators				Low Power Programmable Oscillators		Programmable Spread Spectrum Oscillators			Program-mable VCO	Programmable Clock Generators	
	Device	SiT8102	SiT8103	SiT9102	SiT8002	SiT8003	SiT8033	SiT9001	SiT9002	SiT9003	SiT3701	SiT9103	SiT9104
	Frequency Range (MHz)	1 - 200	1 - 110	1 - 800	1 - 125	1 - 110	1 - 110	1 - 200	1 - 800	1 - 110	1 - 110	1 - 800	1 - 220
	Number of Outputs	1	1	1	1	1	1, selectable	1	1	1	1	3	6
	Single-Ended Output	●	●		●	●	●	●		●	●		●
	Differential Output			●					●			●	
	Spread Spectrum							●	●	●		Contact SiTime	Contact SiTime
	Frequency Tolerance (± PPM)	10 - 100	25 - 100	10 - 100	30 - 500	25 - 100	25 - 100	50 - 100	25 - 50	50 - 100	25 - 100	25 - 50	25 - 50
	Typical IDD (mA)	< 25	< 8	40 - 70	< 20	< 3.5	< 3.5	< 25	40 - 70	< 3.5	< 8	40 - 70 per CLK	25 per CLK
Application	**Key Frequencies (MHz)**												
Processors / Memory													
DDR1, DDR2, DDR3	< 200	●		●				●	●	●		●	●
	> 200			●				●	●			●	
Microprocessor / Microcontroller / DSP / PCI / PCI-X	1 - 110 (e.g. 14.318, 33.333, 66.666, 100)	●	●	●	●	●	●	●	●	●		●	●
	110 - 200 (e.g. 133.33, 166.67, 200)	●		●				●	●			●	●
	200 - 800 (e.g. 266.66, 400, 533.33, 800)			●					●			●	
Audio / Video													
Audio (32kHz Standard)	2.048, 3.072, 4.096, 6.144, 8.192, 12.288, 16.384, 24.576, 32.768, 49.152, 65.536	●	●			●	●						●
Audio (44.1kHz standard)	2.8224, 4.2336, 5.6448, 8.4672, 11.2896, 16.9344, 22.5792, 33.8688, 45.1584, 67.738, 90.317	●	●			●	●						●
Audio (48kHz standard)	3.072, 4.608, 6.144, 9.216, 12.288, 18.432, 24.576, 36.864, 49.152, 73.728, 98.304	●	●			●	●						●
Television (NTSC)	3.579545, 13.5, 14.31818, 27		●			●	●				●		
Television (PAL)	3.57611, 3.58205, 4.43367, 8.86724, 13.5, 13.875, 17.73447, 27		●			●	●				●		
Video, HDTV, 1080i, 720p	74.25	●	●	●		●	●				●	●	●
	74.17582418	●	●	●		●	●				●	●	●
Video, HDTV, 1080p	148.5	●		●								●	●
	148.3516484	●		●								●	●
Video, MPEG-2	13.5, 27, 27.027, 54, 54.054, 108, 108.108		●			●	●				●		
Communications													
ADSL, VDSL2	35.328 70.656		Contact SiTime			Contact SiTime	Contact SiTime				Contact SiTime		
E1, E2, E3	2.048, 4.096, 8.192, 16.384, 32.768, 8.448, 34.368		●										
J1, J2, J3, J4	1.544, 6.312, 7.786, 32.064, 97.728		●										
T1, T2, T3	1.544, 3.088, 6.312, 44.736		●										

2 week lead time for production volumes. 500 Million Hours MTBF (2 FIT). 50,000G shock resistance and 70G vibration resistance. All products have an embedded resonator. Standby and Output Enable modes are available on most devices. Please contact SiTime for other custom variations. Subject to change without notice. Please refer to product data sheet for exact specifications.

Typical Applications for SiTime Timing Devices

Consumer

DEVICES

SiT8103
SiT8102
SiT9001
SiT8002
SiT3701
SiT9104

APPLICATIONS

- 1394B Bus (FireWire, i.Link)
- Audio Cards (e.g. Sound Blaster)
- Blu-Ray DVD Player / Recorder
- Digital Video Recorder (DVR)
- Display Panel
- Document Camera
- Fax Modem
- Game Console
- High Definition Media Interface (HDMI)
- High Definition Television (HDTV)
- Home Theatre
- IP and Security Camera
- Karaoke Electronics
- Multimedia
- Projector
- Set Top Box (STB)
- Television (NTSC, PAL, SECAM)
- USB Card Reader / Flash Drive
- Video Processor
- Voice Conferencing Systems
- Voice Over IP (VOIP) Phone

Low Power and Portable

DEVICES

SiT8003
SiT8033
SiT9003
SiT3701

APPLICATIONS

- Barcode Scanner
- Camcorder
- Digital Still Camera (DSC)
- GPS Tracker
- Handheld Gaming
- Handheld Point Of Sale (POS)
- Low Power DSP
- Low Power Wireless Control (e.g. ZigBee)
- Mobile Phone
- Mobile TV Tuner
- Mobile Video Projector
- Notebook, Netbook and EEE PC
- Portable Media Player (PMP, MP3)
- Portable Navigation Device (PND)
- Secure Token

Miniaturized Electronics

DEVICE

SiT8003XT
(0.25mm Height)

APPLICATIONS

- High Density SIM Card
- Multi Chip Module (MCM)
- Near Field Communication (NFC)
- Secure Digital (SD) Card
- Smart Card
- System in Package (SiP)

Computing and Peripherals

DEVICES

SiT8103
SiT8102
SiT9001
SiT9002
SiT9102

APPLICATIONS

- CPU Bus and PCI Bus
- Desktop and Server PC
- DSP Clocking
- Ethernet Gateway
- Graphics Card
- Hard Disk Drive (HDD)
- I/O Cards (SATA, SAS, PCI Express, Fibre Channel)
- Memory Clocking (e.g. DDRx)
- Multi Function Peripheral (MFP)
- PC Sharing Box
- Printer, Copier, Scanner
- Server / Blade Server
- Solid State Disk (SSD)

Networking and Communications

DEVICES

SiT9102
SiT9002
SiT9103
SiT8102
SiT8103
SiT3701

APPLICATIONS

- 10 Gigabit Ethernet (10G)
- Base Station
- Broadband Router
- Cable Modem (DOCSIS)
- Fiber To The Home (FTTH)
- Gigabit Ethernet (1G)
- Network Bridge
- Network Router / Switch
- Network Storage (e.g. NAS, SAN)
- Optical Network Unit (ONU)
- Passive Optical Network (PON)
- PBX Controller
- Power Over Ethernet (POE)
- RAID Controller
- WiMax Processor Clocking

Industrial, Medical and Automotive

DEVICES

SiT8102
SiT8103
SiT8002AA

APPLICATIONS

- Car Infotainment
- Car Navigation
- Industrial Automation
- Industrial PC
- Instrumentation
- Medical Imaging System
- Point Of Sale (POS) Terminals
- Pulse Oximeter
- Rear View Camera
- Ruggedized Equipment
- Security / Surveillance Camera
- Sensors and Actuators
- Space, Satellite and Avionics
- Test Equipment
- Turbine Generator
- White Goods

There are many more electronic applications that can use SiTime solutions. Please contact SiTime for more information.

SiTime™
It's About Time

SiTime Corporation • 990 Almanor Avenue • Sunnyvale, CA 94085 USA • Main: +1-408-328-4400 • Fax: +1-408-328-4439 • **www.sitime.com**