

Features

- Instant programming of 1 MHz to 625 MHz frequencies
- Low power single-ended field programmable oscillators
 - SiT8008FP (supports SiT1602FP)
- Ultra performance field programmable oscillators
 - Single-Ended: SiT8208FP, SiT8209FP
 - Differential: SiT9121FP (supports SiT9120FP), SiT9122FP
- Voltage controlled field programmable oscillators (VCXO)
 - Single-Ended: SiT3808FP, SiT3809FP, SiT3807FP
 - Differential: SiT3821FP, SiT3822FP
- Spread spectrum field programmable oscillators
 - Single-Ended: SiT9001FP, SiT9003FP (low power)
 - Differential: SiT9002FP
- Programming kit
 - Time Machine II (SiT6100DK)

Benefits

- Generating samples in seconds
- Custom frequencies for improving system performance
- Fast time to market
- Fast prototype builds
- Frequency margining
- Short lead time
- 40X more reliable than quartz solutions

EXPRESS SAMPLES GREEN SOLUTIONS QUARTZ FREE

Description

SiTime offers a wide range of programmable timing solutions such as, oscillators, VCXO, TCXO, clock generators and spread spectrum MEMS Oscillators. SiTime offers Field Programmable (FP) devices that enable engineers to configure SiTime's Oscillators by using a field programmable kit, SiT6100DK, for fast prototyping or generating any custom frequencies in seconds. This document summarizes all the field programmable devices that SiTime has to offer. For any

devices that are not covered here contact your SiTime representative.

Figure 1 shows a simple setup required for programming SiTime FP devices using SiT6100DK.

Please refer to SiT6100DK quick start guide for more information (<http://www.sitime.com/time-machine>).

For production volume, SiTime offers factory programming of its entire portfolio with the shortest lead time available in the industry.

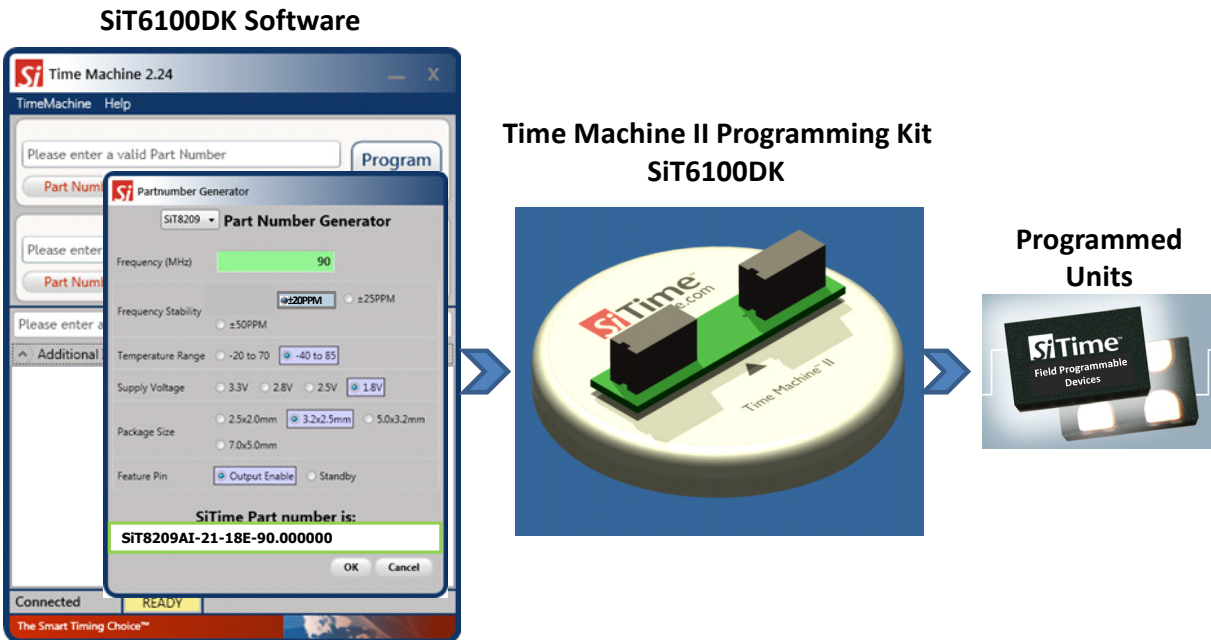


Figure 1. Field Programmable Devices Software and Hardware

Ordering Information

Field Programmable Oscillators

In this family of products SiTime offers low power, high performance field programmable devices with single-ended and differential outputs.

For example, The filed programmable single-ended oscillator, SiT8008AI-11-XXX-000.FP000, allows user to program any frequency between 1 to 110 MHz with any stability of ± 20 , ± 25 , or ± 50 PPM over industrial or extended commercial temperature range and any voltage supply of 1.8V, 2.5V, 2.8V, 3.3V, in a 2.5 x 2.0 (mmxmm) standard 4-pin oscillator package.

Oscillator Product Family	Field Programmable (FP) Part Number	Package Size (mm x mm)	Frequency Range (MHz)	Frequency Stability (PPM)	Temp Range (°C)	Voltage (V)	Other Supported Devices/Features
Low Power Single-Ended Oscillator SiT8008FP	SiT8008AI-71-XXX-000.FP000	2.0 x 1.6	1 to 110	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT1602
	SiT8008AI-11-XXX-000.FP000	2.5 x 2.0	1 to 110	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT1602
	SiT8008AI-21-XXX-000.FP000	3.2 x 2.5	1 to 110	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT1602
	SiT8008AI-31-XXX-000.FP000	5.0 x 3.2	1 to 110	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT1602
	SiT8008AI-81-XXX-000.FP000	7.0 x 5.0	1 to 110	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT1602
Ultra Performance Single-Ended Oscillator SiT8208FP SiT8209FP	SiT8208AI-G1-XXX-000.FP000	2.5 x 2.0	1 to 80	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT8208AI-11-XXX-000.FP000	3.2 x 2.5	1 to 80	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT8208AI-31-XXX-000.FP000	5.0 x 3.2	1 to 80	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT8208AI-81-XXX-000.FP000	7.0 x 5.0	1 to 80	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT8209AI-G1-XXX-000.FP000	2.5 x 2.0	80 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT8209AI-21-XXX-000.FP000	3.2 x 2.5	80 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT8209AI-31-XXX-000.FP000	5.0 x 3.2	80 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
SiT8209AI-81-XXX-000.FP000	7.0 x 5.0	80 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA	
High Performance Differential Oscillator SiT9121FP SiT9122FP	SiT9121AI-1C1-XXX000.FP000	5.0 x 3.2	1 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	SiT9120 LVPECL
	SiT9121AI-1D1-XXX000.FP000	7.0 x 5.0	1 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	SiT9120 LVPECL
	SiT9121AI-2C1-XXX000.FP000	5.0 x 3.2	1 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	SiT9120 LVDS
	SiT9121AI-2D1-XXX000.FP000	7.0 x 5.0	1 to 220	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	SiT9120 LVDS
	SiT9122AI-1C1-XXX000.FP000	5.0 x 3.2	220 - 625	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	LVPECL
	SiT9122AI-1D1-XXX000.FP000	7.0 x 5.0	220 - 625	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	LVPECL
	SiT9122AI-2C1-XXX000.FP000	5.0 x 3.2	220 - 625	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	LVDS
	SiT9122AI-2D1-XXX000.FP000	7.0 x 5.0	220 - 625	± 20 , ± 25 , ± 50	-40 to 85, -20 to 70	2.5V, 3.3V	LVDS

Ordering Information (continued)

VCXO Field Programmable Devices

In this family of products SiTime offers high performance field programmable Voltage Controlled devices with single-ended and differential outputs.

VCXO Product Family	Field Programmable (FP) Part Number	Package Size (mm x mm)	Frequency Range (MHz)	Frequency Stability (PPM)	Temp Range (°C)	Voltage (V)	Other Supported Devices/Features
High Performance Single-Ended VCXO SiT3808FP SiT3809FP	SiT3808AI-G2-XXXX-000.FP000	2.5 x 2.0	1 to 80	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT3807
	SiT3808AI-22-XXXX-000.FP000	3.2 x 2.5	1 to 80	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT3807
	SiT3808AI-C2-XXXX-000.FP000	5.0 x 3.2	1 to 80	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT3807
	SiT3808AI-D2-XXXX-000.FP000	7.0 x 5.0	1 to 80	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	SiT3807
	SiT3809AI-G2-XXXX-000.FP000	2.5 x 2.0	80 to 220	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT3809AI-22-XXXX-000.FP000	3.2 x 2.5	80 to 220	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT3809AI-C2-XXXX-000.FP000	5.0 x 3.2	80 to 220	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
	SiT3809AI-D2-XXXX-000.FP000	7.0 x 5.0	80 to 220	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	NA
High Performance Differential VCXO SiT3821FP SiT3822FP	SiT3821AI-1C2-XXXX000.FP000	5.0 x 3.2	1 to 220	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVPECL
	SiT3821AI-1D2-XXXX000.FP000	7.0 x 5.0	1 to 220	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVPECL
	SiT3821AI-2C2-XXXX000.FP000	5.0 x 3.2	1 to 220	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVDS
	SiT3821AI-2D2-XXXX000.FP000	7.0 x 5.0	1 to 220	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVDS
	SiT3822AI-1C2-XXXX000.FP000	5.0 x 3.2	220 -625	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVPECL
	SiT3822AI-1D2-XXXX000.FP000	7.0 x 5.0	220 -625	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVPECL
	SiT3822AI-2C2-XXXX000.FP000	5.0 x 3.2	220 -625	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVDS
	SiT3822AI-2D2-XXXX000.FP000	7.0 x 5.0	220 -625	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	LVDS

Spread Spectrum Field Programmable Oscillators

In this family of products SiTime offers field programmable spread spectrum devices with single-ended and differential outputs.

Spread Spectrum Product Family	Field Programmable (FP) Part Number	Package Size (mm x mm)	Frequency Range (MHz)	Frequency Stability (PPM)	Temp Range (°C)	Voltage (V)	Spread Percentage		
Spread Spectrum Single-Ended Oscillator SiT9001FP SiT9003FP	SiT9001AI-13-XXXX-000.FP000	2.5 x 2.0	1 to 220	±50, ±100	-40 to 85, -20 to 70	1.8V, 2.5V, 3.3V	±0.25% to ±1% -0.5% to -2%		
	SiT9001AI-23-XXXX-000.FP000	3.2 x 2.5	1 to 220	±50, ±100	-40 to 85, -20 to 70	1.8V, 2.5V, 3.3V			
	SiT9001AI-33-XXXX-000.FP000	5.0 x 3.2	1 to 220	±50, ±100	-40 to 85, -20 to 70	1.8V, 2.5V, 3.3V			
	SiT9001AI-83-XXXX-000.FP000	7.0 x 5.0	1 to 220	±50, ±100	-40 to 85, -20 to 70	1.8V, 2.5V, 3.3V			
	SiT9003AI-13-33XX-000.FP000	2.5 x 2.0	1 to 110	±50, ±100	-40 to 85, -20 to 70	2.5V, 3.3V	±0.25% to ±0.5% -0.5% to -1%		
	SiT9003AI-23-33XX-000.FP000	3.2 x 2.5	1 to 110	±50, ±100	-40 to 85, -20 to 70	2.5V, 3.3V			
	SiT9003AI-33-33XX-000.FP000	5.0 x 3.2	1 to 110	±50, ±100	-40 to 85, -20 to 70	2.5V, 3.3V			
	SiT9003AI-83-33XX-000.FP000	7.0 x 5.0	1 to 110	±50, ±100	-40 to 85, -20 to 70	2.5V, 3.3V			
	SiT9003AI-13-18XX-000.FP000	2.5 x 2.0	1 to 110	±50, ±100	-40 to 85, -20 to 70	1.8V			
	SiT9003AI-23-18XX-000.FP000	3.2 x 2.5	1 to 110	±50, ±100	-40 to 85, -20 to 70	1.8V			
	SiT9003AI-33-18XX-000.FP000	5.0 x 3.2	1 to 110	±50, ±100	-40 to 85, -20 to 70	1.8V			
	SiT9003AI-83-18XX-000.FP000	7.0 x 5.0	1 to 110	±50, ±100	-40 to 85, -20 to 70	1.8V			
	Spread Spectrum Differential Oscillator SiT9002FP	SiT9002AI-X32XXXXX000.FP000	5.0 x 3.2	1 to 220	±50, ±100	-40 to 85, -20 to 70		1.8V, 2.5V, 3.3V	±0.25% to ±2% -0.5% to -4%
		SiT9002AI-X82XXXXX000.FP000	7.0 x 5.0	1 to 220	±50, ±100	-40 to 85, -20 to 70		1.8V, 2.5V, 3.3V	

Programmer Kit Ordering Information

Device Name	Part Number	Description
Time Machine II Programming Kit	SiT6100DK	Supported Devices: SiT1602, SiT8008, SiT8208, SiT8209, SiT3807, SiT3808, SiT3809, SiT9120, SiT9121, SiT9122, SiT3821, SiT3822, SiT9001, SiT9003
Programmer Base	SiT6150DK	The base programmer with no sockets
Socket Card	SiT6161DK	2.0x1.6 and 2.5x2.0 packages programming sockets to program all 6-in and 4-pin filed programmable devices
Socket Card	SiT6162DK	2.7x2.4 (2.5x2.0 compatible, "G" code in part #) and 3.2x2.5 packages programming sockets to program all filed programmable 4-pin devices
Socket Card	SiT6160DK	5.0x3.2 and 7.0x5.0 packages programming sockets to program all 6-in and 4-pin field programmable devices

How to Select the Right Socket

Package Size (mm x mm)	2.0 x 1.6 (4-pin)	2.5 x 2.0 (4-pin)	2.7 x 2.4 (4-pin) (2.5x2.0 compatible)	3.2 x 2.5 (4-pin)	5.0 x 3.2 (4-pin & 6-pin)	7.0 x 5.0 (4-pin & 6-pin)
Socket to use	SiT6161DK	SiT6161DK	SiT6162DK	SiT6162DK	SiT6160DK	SiT6160DK
Supported Field Programmable Devices	SiT8008	SiT8008, SiT9001, SiT9003	SiT8208, SiT8209, SiT3807, SiT3808, SiT3809	SiT8008, SiT8208, SiT8209, SiT3807, SiT3808, SiT3809, SiT9001, SiT9003	SiT8008, SiT8208, SiT8209, SiT3807, SiT3808, SiT3809, SiT9120, SiT9121, SiT9122, SiT3821, SiT3822, SiT9001, SiT9003	SiT8008, SiT8208, SiT8209, SiT3807, SiT3808, SiT3809, SiT9120, SiT9121, SiT9122, SiT3821, SiT3822, SiT9001, SiT9003

Tape and Reel Options (Last Chracter of the Part Number)

Package Size (mm x mm)	2.0 x 1.6		2.5 x 2.0		3.2 x 2.5		5.0 x 3.2		7.0 x 5.0	
Tape size	8 mm		8 mm		8 mm		12 mm		16 mm	
Parts per Reel	250 pcs	1000 pcs	250 pcs	1000 pcs	250 pcs	1000 pcs	250 pcs	1000 pcs	250 pcs	1000 pcs
SiT8008FP	G	E	G	E	G	E	X	Y	X	Y

Package Size (mm x mm)	2.5 x 2.0		3.2 x 2.5		5.0 x 3.2		7.0 x 5.0	
Tape size	12 mm		12 mm		12 mm		16 mm	
Parts per Reel	250 pcs	1000 pcs	250 pcs	1000 pcs	250 pcs	1000 pcs	250 pcs	1000 pcs
SiT8208FP, SiT8209FP SiT3808FP, SiT3809FP SiT9001FP, SiT9003FP	X	Y	X	Y	X	Y	X	Y
SiT9121FP, SiT9122FP SiT3821FP, SiT3822FP SiT9002FP	-	-	-	-	X	Y	X	Y

Example: The SiT8008AI-71-XXX-000.FP000G ordering code indicates 250 pcs of SiT8008FP device in an 8 mm tape.

© SiTime Corporation 2013. The information contained herein is subject to change at any time without notice. SiTime assumes no responsibility or liability for any loss, damage or defect of a Product which is caused in whole or in part by (i) use of any circuitry other than circuitry embodied in a SiTime product, (ii) misuse or abuse including static discharge, neglect or accident, (iii) unauthorized modification or repairs which have been soldered or altered during assembly and are not capable of being tested by SiTime under its normal test conditions, or (iv) improper installation, storage, handling, warehousing or transportation, or (v) being subjected to unusual physical, thermal, or electrical stress.

Disclaimer: SiTime makes no warranty of any kind, express or implied, with regard to this material, and specifically disclaims any and all express or implied warranties, either in fact or by operation of law, statutory or otherwise, including the implied warranties of merchantability and fitness for use or a particular purpose, and any implied warranty arising from course of dealing or usage of trade, as well as any common-law duties relating to accuracy or lack of negligence, with respect to this material, any SiTime product and any product documentation. Products sold by SiTime are not suitable or intended to be used in a life support application or component, to operate nuclear facilities, or in other mission critical applications where human life may be involved or at stake. All sales are made conditioned upon compliance with the critical uses policy set forth below.

CRITICAL USE EXCLUSION POLICY

BUYER AGREES NOT TO USE SITIME'S PRODUCTS FOR ANY APPLICATION OR IN ANY COMPONENTS USED IN LIFE SUPPORT DEVICES OR TO OPERATE NUCLEAR FACILITIES OR FOR USE IN OTHER MISSION-CRITICAL APPLICATIONS OR COMPONENTS WHERE HUMAN LIFE OR PROPERTY MAY BE AT STAKE.

SiTime owns all rights, title and interest to the intellectual property related to SiTime's products, including any software, firmware, copyright, patent, or trademark. The sale of SiTime products does not convey or imply any license under patent or other rights. SiTime retains the copyright and trademark rights in all documents, catalogs and plans supplied pursuant to or ancillary to the sale of products or services by SiTime. Unless otherwise agreed to in writing by SiTime, any reproduction, modification, translation, compilation, or representation of this material shall be strictly prohibited.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[SiTime:](#)

[SiT6100DK](#)