Field Programmable Oscillator

Description

SiTime offers a wide range of field programmable (FP) MEMS oscillators including simple oscillators, differential oscillators, high temperature oscillators, VCXO and spread spectrum oscillators. These FP devices support the same specifications and performance as their factory-programmed counterparts.

They enable engineers to experiment with different configurations and generate customized samples in seconds for fast prototyping.

Figure 1 illustrates the simple programming setup required for programming SiTime FP devices by using the SiT6100DK, a field programming kit. Refer to SiT6100DK quick start guide and other documents for more information.

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

Applications

- Generic samples in seconds for prototype builds
- Experiment with different options for optimal timing margin
- Configure different drive strengths for best EMI and/or to drive larger loads
- Fast prototype builds

Features

- Support for 8 MEMS oscillator families
  - Low power (SiT1602, SiT8008, SiT8009)
  - Ultra-performance (SiT8208, SiT8209)
  - Ultra-performance differential (SiT9120, SiT9121, SiT9122)
  - High temp (SiT1618, SiT8918, SiT8919, SiT8920, SiT8921)
  - AEC-Q100 Automotive (SiT2024, SiT2025, SiT8924, SiT8925)
  - Clock Generators (SiT2001, SiT2002, SiT2018, SiT2019, SiT2020, SiT2021)
  - VCXO (SiT3807, SiT3808, SiT3809)
  - Differential VCXO (SiT3821, SiT3822)
  - Spread spectrum (SiT9005, SiT9003)
  - Differential spread spectrum (SiT9002)
- Wide variety of programmable options
  - Frequency from 1 – 625 MHz
  - Frequency stability from ±20 to ±50 ppm
  - Supply voltages of 1.8V or 2.5 to 3.3V
  - Operating temperature up to 125 °C and down to -55°C
  - Package sizes for 2.0 x 1.6 to 7.0 x 5.0 mm x mm
  - Pull ranges from ±25 to ±1600 ppm (VCXO only)
  - Spread percentage from ±0.25% to ±2% or -0.5% to -4% (Spread spectrum only)
  - Rise/fall time from 0.25 ns to 40 ns
- Pb-free, RoHS and REACH compliant

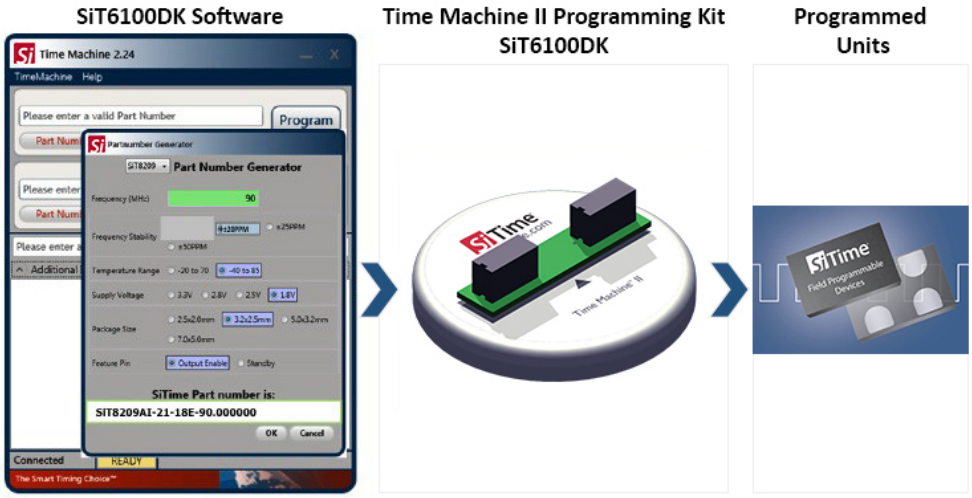

Figure 1. Field Programmable Software and Hardware

Field Programmable Device Ordering Information

A FP device works as a superset of its programmed counterpart. In certain cases, it can also be mapped to different programmed base products.

As an example, SiT8008BI-71-XXX-000.FP0000 is a field programmable device in the low power family. It comes in the 2.0 x 1.6 mm package, and can be programmed to support different combinations of the following:

- Frequency: 1 MHz to 110 MHz with 6 decimal places of accuracy
- Frequency stability: ±20 ppm, ±25 ppm, ±50 ppm
- Temperature range: -20°C to 70°C, -40°C to 85°C
- Supply voltages: 1.8V or 2.5V to 3.3V
- Output drive strength: 8 different options for different rise/fall time

In addition, the SiT8008BI-11--XXX-000.FP0000 can be used for either SiT1602 or SiT8008 in the 2.0 x 1.6 mm x mm package. The SiT1602 and the SiT8008 share similar electrical specs and the same field programmable devices, but they support different frequencies.

Please see Supported Device column to figure out which product families can be programmed using the given FP part.

Contact SiTime for devices of your interest that are not covered here.

Table 1. Field Programmable Devices - MEMS XO[1]

Oscillator Product Family	Field Programmable (FP) Part Number	Supported Devices	Signaling Type	Frequency Range (MHz)	Frequency Stability (ppm)	Temp Range (°C)	Voltage (V)	Package Size (mm x mm)
Low Power Single-Ended Oscillator	SiT8008BI-71-XXX-000.FP0000	SiT1602, SiT8008	LVCMOS	1 to 110	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	2.0 x 1.6
	SiT8008BI-11-XXX-000.FP0000							2.5 x 2.0
	SiT8008BI-21-XXX-000.FP0000							3.2 x 2.5
	SiT8008BI-31-XXX-000.FP0000							5.0 x 3.2
	SiT8008BI-81-XXX-000.FP0000							7.0 x 5.0
	SiT8009BI-71-XXX-000.FP0000	SiT8009	LVCMOS	115 to 137	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	2.0 x 1.6
	SiT8009BI-11-XXX-000.FP0000							2.5 x 2.0
	SiT8009BI-21-XXX-000.FP0000							3.2 x 2.5
	SiT8009BI-31-XXX-000.FP0000							5.0 x 3.2
	SiT8009BI-81-XXX-000.FP0000							7.0 x 5.0
Ultra-Performance Single-Ended Oscillator	SiT8208AI-G1-XXX-000.FP0000	SiT8208	LVCMOS	1 to 80	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	3.2 x 2.5
	SiT8208AI-21-XXX-000.FP0000							5.0 x 3.2
	SiT8208AI-31-XXX-000.FP0000							7.0 x 5.0
	SiT8209AI-G1-XXX-000.FP0000	SiT8209	LVCMOS	80 to 220	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	3.2 x 2.5
	SiT8209AI-21-XXX-000.FP0000							5.0 x 3.2
	SiT8209AI-31-XXX-000.FP0000							7.0 x 5.0
High Performance Differential Oscillator	SiT9121AI-1B1-XXX000.FP0000	SiT9120, SiT9121	LVPECL	1 to 220	±20, ±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	3.2 x 2.5
	SiT9121AI-1C1-XXX000.FP0000							5.0 x 3.2
	SiT9121AI-1D1-XXX000.FP0000							7.0 x 5.0
	SiT9121AI-2B1-XXX000.FP0000		LVDS	1 to 220	±20, ±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	3.2 x 2.5
	SiT9121AI-2C1-XXX000.FP0000							5.0 x 3.2
	SiT9121AI-2D1-XXX000.FP0000							7.0 x 5.0
	SiT9122AI-1B1-XXX000.FP0000	SiT9122	LVPECL	220 to 625	±20, ±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	3.2 x 2.5
	SiT9122AI-1C1-XXX000.FP0000							5.0 x 3.2
	SiT9122AI-1D1-XXX000.FP0000							7.0 x 5.0
	SiT9122AI-2B1-XXX000.FP0000		LVDS	220 to 625	±20, ±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	3.2 x 2.5
	SiT9122AI-2C1-XXX000.FP0000							5.0 x 3.2
	SiT9122AI-2D1-XXX000.FP0000							7.0 x 5.0

Table 1. Field Programmable Devices - MEMS XO[1] (continued)

Oscillator Product Family	Field Programmable (FP) Part Number	Supported Devices	Signaling Type	Frequency Range (MHz)	Frequency Stability (ppm)	Temp Range (°C)	Voltage (V)	Package Size (mm x mm)
High Temperature Single-Ended Oscillator	SiT8920BM-71-XXX-000.FP0000	SiT1618, SiT8918, SiT8920	LVCMOS	1 to 110 Refer "Supported Frequencies" tables in SiT1618, SiT8918 and SiT8920 datasheets	±20, ±25, ±30, ±50	-40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.0 x 1.6
	SiT8920BM-11-XXX-000.FP0000							2.5 x 2.0
	SiT8920BM-21-XXX-000.FP0000							3.2 x 2.5
	SiT8920BM-31-XXX-000.FP0000							5.0 x 3.2
	SiT8920BM-81-XXX-000.FP0000							7.0 x 5.0
	SiT8921BM-71-XXX-000.FP0000	SiT8919, SiT8921	LVCMOS	115.194001 to 137 Refer "Supported Frequencies" tables in SiT8919 and SiT8921 datasheets	±20, ±25, ±30, ±50	-40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.0 x 1.6
	SiT8921BM-11-XXX-000.FP0000							2.5 x 2.0
	SiT8921BM-21-XXX-000.FP0000							3.2 x 2.5
	SiT8921BM-31-XXX-000.FP0000							5.0 x 3.2
	SiT8921BM-81-XXX-000.FP0000							7.0 x 5.0
AEC-Q100 Automotive Oscillator	SiT2024BM-S1-XXX-000.FP0000	SiT2024	LVCMOS	1 to 110 Refer "Supported Frequencies" table in SiT2024 datasheet	±20, ±25, ±30, ±50	-40 to 85, -40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.9 x 2.8 (SOT23-5)
	SiT2025BM-S1-XXX-000.FP0000	SiT2025	LVCMOS	115.2 to 137 Refer "Supported Frequencies" table in SiT2025 datasheet	±20, ±25, ±30, ±50	-40 to 85, -40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.9 x 2.8 (SOT23-5)
	SiT8924BM-71-XXX-000.FP0000	SiT8924	LVCMOS	1 to 110 Refer "Supported Frequencies" table in SiT8924 datasheet	±20, ±25, ±30, ±50	-40 to 85, -40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.0 x 1.6
	SiT8924BM-11-XXX-000.FP0000							2.5 x 2.0
	SiT8924BM-21-XXX-000.FP0000							3.2 x 2.5
	SiT8924BM-31-XXX-000.FP0000							5.0 x 3.2
	SiT8924BM-81-XXX-000.FP0000							7.0 x 5.0
	SiT8925BM-71-XXX-000.FP0000	SiT8925	LVCMOS	115.2 to 137 Refer "Supported Frequencies" table in SiT8925 datasheet	±20, ±25, ±30, ±50	-40 to 85, -40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.0 x 1.6
	SiT8925BM-11-XXX-000.FP0000							2.5 x 2.0
	SiT8925BM-21-XXX-000.FP0000							3.2 x 2.5
	SiT8925BM-31-XXX-000.FP0000							5.0 x 3.2
	SiT8925BM-81-XXX-000.FP0000							7.0 x 5.0
Clock Generator Oscillator	SiT2001BI-S1-XXX-000.FP0000	SiT2001	LVCMOS	1 to 110	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	2.9 x 2.8 (SOT23-5)
	SiT2002BI-S1-XXX-000.FP0000	SiT2002	LVCMOS	115 to 137	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	2.9 x 2.8 (SOT23-5)
	SiT2020BM-S1-XXX-000.FP0000	SiT2018, SiT2020	LVCMOS	1 to 110 Refer "Supported Frequencies" tables in SiT2018 and SiT2020 datasheets	±20, ±25, ±30, ±50	-40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.9 x 2.8 (SOT23-5)
	SiT2021BM-S1-XXX-000.FP0000	SiT2019, SiT2021	LVCMOS	115.194001 to 137 Refer "Supported Frequencies" tables in SiT2019 and SiT2021 datasheets	±20, ±25, ±30, ±50	-40 to 105, -40 to 125, -55 to 125	1.8V, 2.5-3.3V	2.9 x 2.8 (SOT23-5)

Note:

1. Revision number which is placed right after SiTXXXX in the part number is fixed and not programmable. For instance, SiT8008A cannot be programed to SiT8008B.

Table 2. Field Programmable Devices - MEMS VCXO[2]

Oscillator Product Family	Field Programmable (FP) Part Number	Supported Devices	Signaling Type	Frequency Range (MHz)	Frequency Stability (ppm)	Temp Range (°C)	Voltage (V)	Pull Range (ppm)	Package Size (mm x mm)
High Performance Single-Ended VCXO	SiT3808AI-G2-XXXX-000.FP0000	SiT3807, SiT3808	LVCMOS	1 to 80	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	±25 to ±1600	3.2 x 2.5
	SiT3808AI-22-XXXX-000.FP0000								5.0 x 3.2
	SiT3808AI-32-XXXX-000.FP0000								7.0 x 5.0
	SiT3809AI-G2-XXXX-000.FP0000	SiT3809	LVCMOS	80 to 220	±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	±25 to ±1600	3.2 x 2.5
	SiT3809AI-22-XXXX-000.FP0000								5.0 x 3.2
	SiT3809AI-32-XXXX-000.FP0000								7.0 x 5.0
High Performance Differential VCXO	SiT3821AI-1C2-XXXX000.FP0000	SiT3821	LVPECL	1 to 220	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	±25 to ±1600	5.0 x 3.2
	SiT3821AI-1D2-XXXX000.FP0000								7.0 x 5.0
	SiT3821AI-2C2-XXXX000.FP0000		LVDS	1 to 220	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	±25 to ±1600	5.0 x 3.2
	SiT3821AI-2D2-XXXX000.FP0000								7.0 x 5.0
	SiT3822AI-1C2-XXXX000.FP0000	SiT3822	LVPECL	220 to 625	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	±25 to ±1600	5.0 x 3.2
	SiT3822AI-1D2-XXXX000.FP0000								7.0 x 5.0
	SiT3822AI-2C2-XXXX000.FP0000		LVDS	220 to 625	±25, ±50	-40 to 85, -20 to 70	2.5V, 3.3V	±25 to ±1600	5.0 x 3.2
	SiT3822AI-2D2-XXXX000.FP0000								7.0 x 5.0

Note:

2. Revision number which is placed right after SiTXXXX in the part number is fixed and not programmable. For instance, SiT8008A cannot be programed to SiT8008B.

Table 3. Field Programmable Devices - MEMS Spread Spectrum XO[3]

Oscillator Product Family	Field Programmable (FP) Part Number	Supported Devices	Signaling Type	Frequency Range (MHz)	Frequency Stability (ppm)	Temp Range (°C)	Voltage (V)	Spread Range (%)	Package Size (mm x mm)
Spread Spectrum Single-Ended Oscillator	SiT9005AI-71-XXXX000.FP0000	SiT9005	LVCMOS	1 to 141 Refer to Table 4: SiT9005 FP Oscillator unsupported frequencies	±20, ±25, ±50	-40 to 85, -20 to 70	1.8V, 2.5-3.3V	±0.125 to ±2, -0.25 to -4	2.0 x 1.6
	SiT9005AI-11-XXXX000.FP0000								2.5 x 2.0
	SiT9005AI-21-XXXX000.FP0000								3.2 x 2.5
Spread Spectrum Single-Ended Oscillator	SiT9003AI-33-33XX-000.FP000	SiT9003	LVCMOS	1 to 110	±50, ±100	-40 to 85, -20 to 70	2.5V, 2.8V, 3.3V	±0.25 to ±0.5, -0.5 to -1	5.0 x 3.2
	SiT9003AI-83-33XX-000.FP000								7.0 x 5.0
	SiT9003AI-33-18XX-000.FP000						1.8V		5.0 x 3.2
	SiT9003AI-83-18XX-000.FP000								7.0 x 5.0
Spread Spectrum Differential Oscillator	SiT9002AI-X32XXXXX000.FP000	SiT9002	LVPECL, LVDS, HCSL, CML	1 to 220 Refer to Table 5 : SiT9002 FP Oscillator unsupported frequencies	-20 to 70: ±25, ±50 -40 to 85: ±50	-40 to 85, -20 to 70	1.8V, 2.5V, 3.3V	±0.25 to ±2, -0.5 to -4	5.0 x 3.2
	SiT9002AI-X82XXXXX000.FP000								7.0 x 5.0

Note:

3. Revision number which is placed right after SiTXXXX in the part number is fixed and not programmable. For instance, SiT8008A cannot be programed to SiT8008B.

Table 4. List of SiT9005 FP Oscillator Unsupported Frequencies

SiT9005 FP Oscillator Unsupported Frequency Range (MHz)					
±2.06% center spread		-4.01% down spread		-4.28% center spread	
Min.	Max.	Min.	Max.	Min.	Max.
120.100000	121.100000	121.000000	121.300000	120.100000	122.300000
				122.900000	123.100000
				123.500000	124.000000
				124.9000000	125.200000

Table 5. List of SiT9002 FP Oscillator Unsupported Frequencies

SiT9002 FP Oscillator Unsupported Frequency Range (MHz)							
±0.25% center spread		±0.5% center spread		±1.0% center spread		±2.0% center spread	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1.04200	1.07000	1.04000	1.07400	1.03600	1.07800	1.02600	1.09000
1.19200	1.22400	1.19000	1.22600	1.18400	1.23400	1.17200	1.24600
1.39000	1.42800	1.38800	1.43200	1.38000	1.43800	1.36800	1.45400
2.08600	2.14200	2.08200	2.14600	1.65600	1.66600	1.64000	1.68200
4.17000	4.28000	2.84200	2.84600	2.07000	2.15800	1.86800	1.87000
8.35000	8.57000	2.85000	2.86200	2.83000	2.87800	2.05000	2.17800
16.69000	17.13000	4.16000	4.29000	4.14000	4.31000	2.46200	2.49000
33.40000	34.25000	5.70000	5.73000	5.66000	5.75000	2.80200	2.90600
66.81000	68.51000	8.33000	8.59000	8.28000	8.63000	4.10000	4.36000
133.61000	137.11000	11.37000	11.45000	11.31000	11.51000	4.92000	4.98000
160.31000	164.61000	16.65000	17.19000	16.57000	17.27000	5.60000	5.81000
200.41000	205.71000	22.85000	22.90000	22.65000	23.00000	7.47000	7.48000
		33.30000	34.35000	33.15000	34.55000	8.20000	8.72000
		45.50000	45.55000	45.30000	46.05000	9.85000	9.97000
		45.60000	45.65000	66.31000	69.11000	11.21000	11.63000
		45.70000	45.80000	90.51000	92.11000	16.41000	17.45000
		66.61000	68.71000	132.61000	138.21000	19.69000	19.93000
		91.01000	91.11000	159.11000	165.81000	32.80000	34.90000
		91.21000	91.31000	181.21000	186.61000	39.40000	39.85000
		91.41000	91.61000	198.91000	207.31000	44.85000	46.50000
		133.21000	137.51000			65.61000	69.81000
		159.91000	165.01000			78.71000	79.71000
		182.11000	182.21000			89.71000	93.01000
		182.41000	182.71000			131.31000	139.61000
		182.81000	183.71000			157.61000	167.51000
		184.01000	184.21000			179.41000	188.51000
		185.11000	185.21000			197.01000	209.41000
		199.91000	206.21000				

Table 5. List of SiT9002 FP Oscillator Unsupported Frequencies (continued)

SiT9002 FP Oscillator Unsupported Frequency Range (MHz)							
-0.5% down spread		-1.0% down spread		-2.0% down spread		-4.0% down spread	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1.04461	1.07268	1.04520	1.07937	1.04636	1.08878	1.04652	1.11180
1.19498	1.22706	1.19595	1.23213	1.19584	1.24634	1.19544	1.27092
1.39348	1.43157	1.39494	1.43916	1.39380	1.45238	1.39536	1.48308
2.09122	2.14736	2.09241	2.15673	1.67256	1.68266	1.67280	1.71564
4.18043	4.29070	2.85621	2.86023	2.09070	2.17958	1.90536	1.90740
8.37088	8.59143	2.86425	2.87631	2.85830	2.90678	2.09100	2.22156
16.73173	17.17283	4.18080	4.31145	4.18140	4.35310	2.51124	2.53980
33.48350	34.33563	5.72850	5.75865	5.71660	5.80750	2.85804	2.96412
66.97703	68.68128	8.37165	8.63295	8.36280	8.71630	4.18200	4.44720
133.94403	137.45278	11.42685	11.50725	11.42310	11.62510	5.01840	5.07960
160.71078	165.02153	16.73325	17.27595	16.73570	17.44270	5.71200	5.92620
200.91103	206.22428	22.96425	23.01450	22.87650	23.23000	7.61940	7.62960
		33.46650	34.52175	33.48150	34.89550	8.36400	8.89440
		45.72750	45.77775	45.75300	46.51050	10.04700	10.16940
		45.82800	45.87825	66.97310	69.80110	11.43420	11.86260
		45.92850	46.02900	91.41510	93.03110	16.73820	17.79900
		66.94305	69.05355	133.93610	139.59210	20.08380	20.32860
		91.46505	91.56555	160.70110	167.46810	33.45600	35.59800
		91.66605	91.76655	183.02210	188.47610	40.18800	40.64700
		91.86705	92.06805	200.89910	209.38310	45.74700	47.43000
		133.87605	138.19755			66.92220	71.20620
		160.70955	165.83505			80.28420	81.30420
		183.02055	183.12105			91.50420	94.87020
		183.32205	183.62355			133.93620	142.40220
		183.72405	184.62855			160.76220	170.86020
		184.93005	185.13105			182.99820	192.28020
		186.03555	186.13605			200.95020	213.59820
		200.90955	207.24105				

Tape & Reel Options

FP devices are shipped with standard Tape & Reel options. An additional letter is affixed to the end of the FP device part numbers in Tables 6 to 8 to specify the tape size and the reel quantity.

For example, the last letter "G" in the SiT8008AI-71-XXX-000.FP0000G indicates 250 pieces of SiT8008AI FP devices shipped in 8 mm tape.

The complete list of T&R options for different device package sizes are shown in tables below.

Table 6. Ordering Codes for Supported Tape & Reel Packing Method

Supported FP Device: SiT8008, SiT8009, SiT8920, SiT8921, SiT8924, SiT8925, SiT9005

Tape & Reel	8 mm Tape		12 mm Tape		16 mm Tape	
Package Size (mm x mm)	**250 pcs reel**	**1ku reel**	**250 pcs reel**	**1ku reel**	**250 pcs reel**	**1ku reel**
2.0 x 1.6	G	E	–	–	–	–
2.5 x 2.0	G	E	–	–	–	–
3.2 x 2.5	G	E	–	–	–	–
5.0 x 3.2	–	–	X	Y	–	–
7.0 x 5.0	–	–	–	–	X	Y

Table 7. Ordering Codes for Supported Tape & Reel Packing Method

Supported FP Device: SiT3808, SiT3809, SiT3821, SiT3822, SiT8208, SiT8209, SiT9002, SiT9003, SiT9121, SiT9122

Tape & Reel	12 mm Tape		16 mm Tape	
Package Size (mm x mm)	**250 pcs reel**	**1ku reel**	**250 pcs reel**	**1ku reel**
2.5 x 2.0	X	Y	–	–
3.2 x 2.5	X	Y	–	–
5.0 x 3.2	X	Y	–	–
7.0 x 5.0	–	–	X	Y

Table 8. Ordering Codes for Supported Tape & Reel Packing Method

Supported FP Device: SiT2024, SiT2025, SiT9201, SiT2001, SiT2002, SiT2020, SiT2021

Tape & Reel	8mm Tape	
Package Size (mm x mm)	**250 pcs reel**	**1ku reel**
2.9 x 2.8	G	E

Time Machine II Programmer Kit

FP devices are programmed with SiTime's oscillator programmer. Time Machine II is a complete programming kit. It comes with the programmer base unit and three socket cards, each of which accommodates two different oscillator package sizes. The ordering codes for the programming kit and the socket cards are shown in the table below.

Note that earlier versions of the programming kit was shipped with the SiT6162DK socket card that accommodates 2.7 x 2.4 mm x mm (2.5 x 2.0 compatible) and 3.2 x 2.5 mm x mm 4-pin packages. The SiT6162DK has since been replaced with SiT6165DK, which supports the 2.9 x 2.8 mm x mm (SOT23-5) packages in addition to 3.2 x 2.5 mm x mm packages.

Table 9. Programmer Kit Description and Ordering Codes

Device Name	Part Number	Description
Programming Kit	SiT6100DK	The complete kit that includes the programmer base (SiT61650DK) and three socket cards (SiT6160DK, SiT6161 and SiT6165).
Programmer Base	SiT6150DK	The base programmer with no sockets.
Programming Socket	SiT6160DK	5.0x3.2 and 7.0x5.0 packages programming sockets to program all 6-in and 4-pin field programmable devices.
Programming Socket	SiT6161DK	2.0x1.6 and 2.5x2.0 packages programming sockets to program all 6-in and 4-pin field programmable devices.
Programming Socket	SiT6165DK	3.2x2.5 package programming sockets to program all 6-in and 4-pin field programmable devices. 2.9x2.8 (SOT23-5) package supports 5-pin field programmable devices

Socket Card Selection for Programming

Each socket card for the Time Machine II programmer comes with two sockets, each of which accommodates a particular package size. In addition, some sockets are designed to work with 4-pin devices only whereas other sockets can accommodate both 4-pin and 6-pin devices.

Table below shows how to select the proper socket card for the desired FP device package size. Note that the package sizes are also printed right next to the sockets on the socket cards for visual identification during device programming.

Table 10. Supported Packages

Package Size	2.0 x 1.6 (4-pin)	2.5 x 2.0 (4-pin)	2.9 x 2.8 (5-pin)	3.2 x 2.5 (4-pin & 6-pin)	5.0 x 3.2 (4-pin & 6-pin)	7.0 x 5.0 (4-pin & 6-pin)
Socket to use	SiT6161DK		SiT6165DK		SiT6160DK	
Supported Field Programmable Devices	SiT8008 SiT8009 SiT8920 SiT8921 SiT8924 SiT8925 SiT9005	SiT8008 SiT8009 SiT8920 SiT8921 SiT8924 SiT8925 SiT9003 SiT9005	SiT2024 SiT2025 SiT9201 SiT2001 SiT2002 SiT2020 SiT2021	SiT8008 SiT8009 SiT8208 SiT8209 SiT8920 SiT8921 SiT8924 SiT8925 SiT3808 SiT3809 SiT9121 SiT9122 SiT9003 SiT9005	SiT8008 SiT8009 SiT8208 SiT8209 SiT8920 SiT8921 SiT8924 SiT8925 SiT3808 SiT3809 SiT9121 SiT9122 SiT3821 SiT3822 SiT9002 SiT9003	SiT8008 SiT8009 SiT8208 SiT8209 SiT8920 SiT8921 SiT8924 SiT8925 SiT3808 SiT3809 SiT9121 SiT9122 SiT3821 SiT3822 SiT9002 SiT9003

Table 11. Revision History

Revision	Release Date	Change Summary
0.8	04/01/2013	First release
1.0	02/27/2014	Added more field programmer devices Updated Time Machine Socket Card information Formatted enhancement
1.01	03/12/2014	Corrected the ordering code for High Temperature, Single-Ended devices
1.1	03/30/2015	Updated revision from A to B for SiT8008/8009/8920/8921 Corrected frequency stability of SiT9002
1.2	07/21/2015	Added supports for AEC-Q100 automotive products;SiT2024, SiT2025, SiT8924,SiT8925 Added supports for clock generators products;SiT9201, 2001, 2002, SiT2018, SiT2019, SiT2020, SiT2021 Corrected frequency range and frequency stability of the high temperature products (SiT8920/SiT8921) in Table.1 Updated the part number of the program kits in Table.6
1.3	09/15/2015	Added ±25 ppm frequency stability option to AEC-Q100 family Revised spread percentage of SiT9001 Added 2.8 V voltage option to SiT9003
1.4	03/14/2016	Corrected and added one more “0” at the end of all part numbers except for SiT900x”
1.5	02/01/2018	Added SiT9005 Added SiT9002 unsupported frequencies list Took out 2520 and 3225 package options from SiT9003 Took out 2520 package option from SiT8208, SiT8209, SiT3807 and SiT3808 Took out SiT9001 Updated logo and company address, other page layout changes

SiTime Corporation, 5451 Patrick Henry Drive, Santa Clara, CA 95054, USA | **Phone:** +1-408-328-4400 | **Fax:** +1-408-328-4439

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SiT9121AI-2C2-XXX000.FP000 SiT8208AI-31-XXX-000.FP0000 SiT9122AI-2D2-XXX000.FP000 SiT9121AI-1C2-XXX000.FP000 SiT8208AI-21-XXX-000.FP0000 SiT8209AI-31-XXX-000.FP0000 SiT9122AI-1D2-XXX000.FP000 SiT9001AI-83-XXXX-000.FP000 SiT9003AI-13-18XX-000.FP000 SiT9001AI-33-XXXX-000.FP000 SiT9003AI-33-18XX-000.FP000 SiT9122A-2C2-XXX000.FP000 SiT9003AI-83-18XX-000.FP000 SiT8208AI-81-XXX-000.FP0000 SiT9121AI-1D2-XXX000.FP000 SiT9122AI-1C2-XXX000.FP000 SiT8209AI-G1-XXX-000.FP0000 SiT9003AI-23-18XX-000.FP000 SiT8209AI-21-XXX-000.FP0000 SiT9001AI-13-XXXX-000.FP000 SiT9001AI-23-XXXX-000.FP000 SiT8209AI-81-XXX-000.FP0000 SiT8208AI-G1-XXX-000.FP0000 SiT9121AI-2D2-XXX000.FP000