

User Registration

Register today to create your account on Silabs.com. Your personalized profile allows you to receive technical document updates, new product announcements, “how-to” and design documents, product change notices (PCN) and other valuable content available only to registered users. <http://www.silabs.com/profile>

Bulletin Date: 5/30/2014		Bulletin Effective Date: 5/30/2014	
Title: EFM32GG Datasheet Revision Notification			
Originator: Ted Batey		Phone: 512-532-5279	Dept: Marketing
Customer Contact: Kathy Haggar		Phone: 512-532-5261	Dept: Sales
Bulletin Details			
Description:			
Version 1.30 of the EFM32GGxxx (Giant Gecko family) datasheets are now available. The affected datasheets are: EFM32GG230, EFM32GG232, EFM32GG280, EFM32GG290, EFM32GG295, EFM32GG330, EFM32GG332, EFM32GG380, EFM32GG390, EFM32GG395, EFM32GG840, EFM32GG842, EFM32GG880, EFM32GG890, EFM32GG895, EFM32GG940, EFM32GG942, EFM32GG980, EFM32GG990, EFM32GG995.			
The revision includes a number of key changes to existing min/max/typ values that more accurately reflect the performance of the part. These changes are summarized in Table 1 at the end of this document. In addition, Table 3.12 HFRCO has a new Footnote 3, ensuring frequency bands above 7MHz will always have some overlap across supply voltage and temperature.			
In addition, new min/max data has been added and other minor updates have been made as follows:			
<ul style="list-style-type: none"> • Removed "preliminary" markings throughout. • Updated Current Consumption information. • Updated Power Management information. • Updated GPIO information. • Updated LFRCO information. • Updated HFRCO information and figures. • Updated ULFRCO information. • Added AUXHFRCO chapter. • Updated ADC information. • Updated DAC information. • Updated OPAMP information. • Updated ACMP information. • Updated VCMP information. 			
See Table 1 at the end of this document for additional details.			
Reason:			
Updated specifications based on the results of additional silicon characterization. There are no changes to the devices delivered to the customer.			
Product Identification:			
The following orderable part numbers are affected:			
EFM32GG230F512-QFN64			
EFM32GG230F1024-QFN64			
EFM32GG232F512-QFP64			
EFM32GG232F1024-QFP64			
EFM32GG280F512-QFP100			
EFM32GG280F1024-QFP100			
EFM32GG290F512-BGA112			

EFM32GG290F1024-BGA112
EFM32GG295F512-BGA120
EFM32GG295F1024-BGA120
EFM32GG330F512-QFN64
EFM32GG330F1024-QFN64
EFM32GG332F512-QFP64
EFM32GG332F1024-QFP64
EFM32GG380F512-QFP100
EFM32GG380F1024-QFP100
EFM32GG390F512-BGA112
EFM32GG390F1024-BGA112
EFM32GG395F512-BGA120
EFM32GG395F1024-BGA120
EFM32GG840F512-QFN64
EFM32GG840F1024-QFN64
EFM32GG842F512-QFP64
EFM32GG842F1024-QFP64
EFM32GG880F512-QFP100
EFM32GG880F1024-QFP100
EFM32GG890F512-BGA112
EFM32GG890F1024-BGA112
EFM32GG895F512-BGA120
EFM32GG895F1024-BGA120
EFM32GG940F512-QFN64
EFM32GG940F1024-QFN64
EFM32GG942F512-QFP64
EFM32GG942F1024-QFP64
EFM32GG980F512-QFP100
EFM32GG980F1024-QFP100
EFM32GG990F512-BGA112
EFM32GG990F1024-BGA112
EFM32GG995F512-BGA120
EFM32GG995F1024-BGA120

This change is considered a minor change which does not affect form, fit, function, quality, or reliability. The information is being provided as a customer courtesy.

Please contact your local Silicon Laboratories sales representative with any questions about this notification. A list of Silicon Laboratories sales representatives may be found at www.silabs.com

Customer Actions Needed:

None. Please see your Silicon Labs sales representatives if you have questions. A list of Silicon Labs sales representatives is available at www.silabs.com

Table 1: EFM32GGxxx Datasheet Rev 1.30 - Summary of Key Changes

Table*	Symbol	Parameter	Condition	Datasheet Rev 1.21			Datasheet Rev 1.30			Unit
				Min	Typ	Max	Min	Typ	Max	
3.2 General Operating Conditions	V _{DDOP}	Operating Supply Voltage		1.85		3.8	1.98		3.8	V
3.4 Current Consumption	I _{EM0}	EM0 Current	48 MHz					219	240	µA/MHz
			28 MHz		201	261		214	261	µA/MHz
			21 MHz		203	263		220	263	µA/MHz
			14 MHz		204	270		223	270	µA/MHz
			11 MHz		207	273		225	273	µA/MHz
			6.6 MHz		212	282		230	282	µA/MHz
			1.2 MHz		244			283	338	µA/MHz
	I _{EM1}	EM1 Current	48 MHz					80	90	µA/MHz
			28 MHz		52	69		80	90	µA/MHz
			21 MHz		53	71		81	91	µA/MHz
			14 MHz		56	77		83	99	µA/MHz
			11 MHz		57	80		85	100	µA/MHz
	I _{EM2}	EM2 Current	T _{AMB} = 25 °C		1.1			1.1	1.8	µA
			T _{AMB} = 85 °C		4.0	8.0		6.0	10.0	µA
	I _{EM3}	EM3 Current	T _{AMB} = 25 °C		0.9			0.8	1.3	µA
			T _{AMB} = 85 °C		3.8	7.8		5.8	9.8	µA
I _{EM4}	EM4 Current	T _{AMB} = 25 °C		0.02			0.02	0.055	µA	
		T _{AMB} = 85 °C		0.25	0.7		0.5	0.9	µA	
3.6 Power Management	V _{BODextthr}	BOD threshold, falling external supply		1.82		1.85	1.74		1.96	V
	V _{BODextthr+}	BOD threshold, rising external supply			1.85			1.85	1.98	V
3.7 Flash	V _{FLASH}	Flash erase/write supply voltage		1.8		3.8	1.98		3.8	V
3.8 GPIO	V _{IOOH}	Output high voltage	Sourcing 6 mA, V _{DD} = 1.98V		0.75V _{DD}			0.75V _{DD}		V
			Sourcing 6 mA, V _{DD} = 3.0V		0.95V _{DD}			0.85V _{DD}		V
			Sourcing 20 mA, V _{DD} = 1.98V		0.7V _{DD}			0.6V _{DD}		V
			Sourcing 20 mA, V _{DD} = 3.0V		0.9V _{DD}			0.8V _{DD}		V
	V _{IOOL}	Output low voltage	Sinking 6 mA, V _{DD} = 1.98V				0.25V _{DD}		0.3V _{DD}	V
			Sinking 6 mA, V _{DD} = 3.0V				0.05V _{DD}		0.2V _{DD}	V
			Sinking 20 mA, V _{DD} = 1.98V				0.3V _{DD}		0.35V _{DD}	V
I _{IDLEAK}	Input leakage current	Sinking 20 mA, V _{DD} = 3.0V				0.1V _{DD}		0.2V _{DD}	V	
						±25		±100	nA	
3.11 LFRCO	I _{LFRCO}	Current consumption		190			300		nA	
3.12 HFRCO	I _{HFRCO}	Current consumption	28 MHz		106		165	190	µA	
			21 MHz		93		134	155	µA	
			14 MHz		77		106	120	µA	
			11 MHz		72		94	110	µA	
			6.6 MHz		63		77	90	µA	
			1.2 MHz		22		25	32	µA	
3.13 ULFRCO	f _{ULFRCO}	Oscillation frequency		0.8		1.5	0.7		1.75	kHz
3.15 DAC	I _{DAC}	Active current	1 kspcs, 12 bit NORMAL		38		17		µA	
3.16 OPAMP	I _{OPAMP}	Active current	BIASPROG=0xF, HALFBIAS=0x0		400		350	405	µA	
			BIASPROG=0x7, HALFBIAS=0x1		100		95	115	µA	
			BIASPROG=0x0, HALFBIAS=0x1		13		13	17	µA	
3.17 ACMP	V _{ACMPOFFSET}	Offset voltage	Unity Gain, V _{SS} < V _{DD} , OPAXHCMDIS=0		6		-13	0	11	mV
3.18 VCMP	V _{VCMP}	Active current	BIASPROG=0b0000, HALFBIAS=1		0.1		0.3	0.6	µA	
	V _{VCMPHYST}	VCMP hysteresis	BIASPROG=0b1111, HALFBIAS=0		14.7		22	30	µA	
3.24 LCD	V _{BOOST}	Boost voltage	LEVEL0		3.0			3.02		V
			LEVEL1		3.08			3.15		V
			LEVEL2		3.17			3.28		V
			LEVEL3		3.26			3.41		V
			LEVEL4		3.34			3.54		V
			LEVEL5		3.43			3.67		V
			LEVEL6		3.52			3.73		V
			LEVEL7		3.6			3.74		V
3.30 Digital Peripherals	I _{USART}	USART current			7.5			5.0		µA/MHz
	I _{UART}	UART current			5.63			3.5		µA/MHz
	I _{LEUART}	LEUART current			150			150		nA
	I _{I2C}	I2C current			6.25			6.25		µA/MHz
	I _{TIMER}	TIMER current			8.75			7.0		µA/MHz
	I _{LETIMER}	LETIMER current			150			150		nA
	I _{PCNT}	PCNT current			100			100		nA
	I _{RTC}	RTC current			100			100		nA
	I _{LCD}	LCD current			100			100		nA
	I _{AES}	AES current			2.5			3.2		µA/MHz
	I _{GPIO}	GPIO current			5.31			4.0		µA/MHz
I _{EBI}	EBI current			1.56			12.0		µA/MHz	
I _{PRS}	PRS current			2.81			3.5		µA/MHz	
I _{DMA}	DMA current			8.12			11.0		µA/MHz	

* Note: Table numbers may vary by datasheet. Numbers listed refer to EFM32GG995.