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Bulletin Date: 3/16/2015		Bulletin Effective Date: 3/16/2015	
Title: EFM32TG 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: Silicon Labs is pleased to announce that version 1.40 of the EFM32TG (Tiny Gecko family) datasheets are now available. The affected datasheets are: EFM32TG108, EFM32TG110, EFM32TG210, EFM32TG222, EFM32TG225, EFM32TG230, EFM32TG232, EFM32TG822, EFM32TG825, EFM32TG840, EFM32TG842. The datasheet 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, new min/max data has been added and other minor updates have been made as follows: <ul style="list-style-type: none">• Updated Block Diagram.• Updated Energy Modes current consumption.• Updated Power Management section.• Updated LFRCO and HFRCO sections.• Added AUXHFRCO to block diagram and Electrical Characteristics.• Corrected unit to kHz on LFRCO plots y-axis.• Updated ADC section and added clarification on conditions for INL_{ADC} and DNL_{ADC} parameters.• Updated DAC section and added clarification on conditions for INL_{DAC} and DNL_{DAC} parameters.• Updated OPAMP section.• Updated ACMP section and the response time graph.• Updated VCMP section.• Updated Digital Peripherals section. 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 physical or software changes to the devices.			
Product Identification:			
Affected Part Numbers		Affected Part Numbers	
EFM32TG108F4-QFN24		EFM32TG108F4-QFN24T	
EFM32TG108F8-QFN24		EFM32TG108F8-QFN24T	
EFM32TG108F16-QFN24		EFM32TG108F16-QFN24T	
EFM32TG108F32-QFN24		EFM32TG108F32-QFN24T	

EFM32TG110F4-QFN24	EFM32TG110F4-QFN24T
EFM32TG110F8-QFN24	EFM32TG110F8-QFN24T
EFM32TG110F16-QFN24	EFM32TG110F16-QFN24T
EFM32TG110F32-QFN24	EFM32TG110F32-QFN24T
EFM32TG210F8-QFN32	EFM32TG210F8-QFN32T
EFM32TG210F16-QFN32	EFM32TG210F16-QFN32T
EFM32TG210F32-QFN32	EFM32TG210F32-QFN32T
EFM32TG222F8-QFP48	EFM32TG222F8-QFP48T
EFM32TG222F16-QFP48	EFM32TG222F16-QFP48T
EFM32TG222F32-QFP48	EFM32TG222F32-QFP48T
EFM32TG225F8-BGA48	EFM32TG225F8-BGA48T
EFM32TG225F16-BGA48	EFM32TG225F16-BGA48T
EFM32TG225F32-BGA48	EFM32TG225F32-BGA48T
EFM32TG230F8-QFN64	EFM32TG230F8-QFN64T
EFM32TG230F16-QFN64	EFM32TG230F16-QFN64T
EFM32TG230F32-QFN64	EFM32TG230F32-QFN64T
EFM32TG232F8-QFP64	EFM32TG232F8-QFP64T
EFM32TG232F16-QFP64	EFM32TG232F16-QFP64T
EFM32TG232F32-QFP64	EFM32TG232F32-QFP64T
EFM32TG822F8-QFP48	EFM32TG822F8-QFP48T
EFM32TG822F16-QFP48	EFM32TG822F16-QFP48T
EFM32TG822F32-QFP48	EFM32TG822F32-QFP48T
EFM32TG825F8-BGA48	EFM32TG825F8-BGA48T
EFM32TG825F16-BGA48	EFM32TG825F16-BGA48T
EFM32TG825F32-BGA48	EFM32TG825F32-BGA48T
EFM32TG840F8-QFN64	EFM32TG840F8-QFN64T
EFM32TG840F16-QFN64	EFM32TG840F16-QFN64T
EFM32TG840F32-QFN64	EFM32TG840F32-QFN64T
EFM32TG842F8-QFP64	EFM32TG842F8-QFP64T
EFM32TG842F16-QFP64	EFM32TG842F16-QFP64T
EFM32TG842F32-QFP64	EFM32TG842F32-QFP64T

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.

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Customer Actions Needed:
None.

Table 1: EFM32TGxxx Datasheet Rev 1.40 - Summary of Key Changes				Datasheet Rev 1.30			Datasheet Rev 1.40			
Table*	Symbol	Parameter	Condition	Min	Typ	Max	Min	Typ	Max	Unit
3.3 Current Consumption	I _{EM0}	EM0 Current	32 MHz		157			157		μA/MHz
			28 MHz		150	195		150	170	μA/MHz
			21 MHz		153	199		153	172	μA/MHz
			14 MHz		155	202		155	175	μA/MHz
			11 MHz		157	204		157	178	μA/MHz
			6.6 MHz		162	210		162	183	μA/MHz
			1.2 MHz		210			200	240	μA/MHz
	I _{EM1}	EM1 Current	32 MHz		53			53		μA/MHz
			28 MHz		51	66		51	57	μA/MHz
			21 MHz		55	71		55	59	μA/MHz
			14 MHz		56	73		56	61	μA/MHz
			11 MHz		58	75		58	63	μA/MHz
			6.6 MHz		63	82		63	68	μA/MHz
			1.2 MHz		140			100	122	μA/MHz
	I _{EM2}	EM2 Current	T _{AMB} = 25 °C		1			1.0	1.2	μA
			T _{AMB} = 85 °C		2.4	5		2.4	5.0	μA
	I _{EM3}	EM3 Current	T _{AMB} = 25 °C		0.59			0.59	1.0	μA
			T _{AMB} = 85 °C		2	4.5		2.0	4.5	μA
	I _{EM4}	EM4 Current	T _{AMB} = 25 °C		0.02			0.02	0.055	μA
			T _{AMB} = 85 °C		0.25	0.7		0.25	0.70	μA
3.10 LFRCO	I _{LFRCO}	Current consumption			190			210	380	nA
3.11 HFRCO	I _{HFRCO}	Current consumption	28 MHz		106			160	190	μA
			21 MHz		93			125	155	μA
			14 MHz		77			104	120	μA
			11 MHz		72			94	110	μA
			6.6 MHz		63			63	90	μA
			1.2 MHz		22			22	32	μA
3.14 ADC	I _{ADC}	Active current	1 Msps, 12-bit, external reference		351			377		μA
			10 ksps, 12-bit, 1.25V ref, WARMUP-MODE=00		67			67		μA
			10 ksps, 12-bit, 1.25V ref, WARMUP-MODE=01		63			68		μA
			10 ksps, 12-bit, 1.25V ref, WARMUP-MODE=10		64			71		μA
3.15 DAC	I _{DAC}	Active current	1 ksps, 12 bit NORMAL		38			17	25	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	I _{ACMPREF}	Current consumption of internal voltage reference	Internal voltage reference		5			2.15	3.00	μA
3.18 VCMP	I _{VCMP}	Active current	BIASPROG=0b0000, HALFBIAS=1		0.1			0.3	0.6	μA
			BIASPROG=0b1111, HALFBIAS=0		14.7			22	30	μA
3.23 Digital Peripherals	I _{LETIMER}	LETIMER current			150			75		nA
	I _{PCNT}	PCNT current			100			60		nA
	I _{RTC}	RTC current			100			40		nA
	I _{LCD}	LCD current			100			50		nA

* Note: Table numbers may vary by datasheet. Numbers listed refer to EFM32TG842.