

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: 6/25/2014		Bulletin Effective Date: 6/25/2014	
Title: EFM32WG 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:			
<p>Silicon Labs is pleased to announce that version 1.40 of the EFM32WGxxx (Wonder Gecko family) datasheets are now available. The affected datasheets are: EFM32WG230, EFM32WG232, EFM32WG280, EFM32WG290, EFM32WG295, EFM32WG330, EFM32WG332, EFM32WG380, EFM32WG390, EFM32WG395, EFM32WG840, EFM32WG842, EFM32WG880, EFM32WG890, EFM32WG895, EFM32WG940, EFM32WG942, EFM32WG980, EFM32WG990, EFM32WG995.</p> <p>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.</p> <p>In addition, new min/max data has been added and other minor updates have been made as follows:</p> <ul style="list-style-type: none"> • Removed "preliminary" markings throughout • Updated Current Consumption information • Updated Power Management information • Updated GPIO information • Updated HFXO 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 • Added EBI chapter <p>See Table 1 at the end of this document for additional details.</p>			
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: EFM32WG230F64-QFN64 EFM32WG230F128-QFN64			

EFM32WG230F256-QFN64
EFM32WG232F64-QFP64
EFM32WG232F128-QFP64
EFM32WG232F256-QFP64
EFM32WG280F64-QFP100
EFM32WG280F128-QFP100
EFM32WG280F256-QFP100
EFM32WG290F64-BGA112
EFM32WG290F128-BGA112
EFM32WG290F256-BGA112
EFM32WG295F64-BGA120
EFM32WG295F128-BGA120
EFM32WG295F256-BGA120
EFM32WG330F64-QFN64
EFM32WG330F128-QFN64
EFM32WG330F256-QFN64
EFM32WG332F64-QFP64
EFM32WG332F128-QFP64
EFM32WG332F256-QFP64
EFM32WG380F64-QFP100
EFM32WG380F128-QFP100
EFM32WG380F256-QFP100
EFM32WG390F64-BGA112
EFM32WG390F128-BGA112
EFM32WG390F256-BGA112
EFM32WG395F64-BGA120
EFM32WG395F128-BGA120
EFM32WG395F256-BGA120
EFM32WG840F64-QFN64
EFM32WG840F128-QFN64
EFM32WG840F256-QFN64
EFM32WG842F64-QFP64
EFM32WG842F128-QFP64
EFM32WG842F256-QFP64
EFM32WG880F64-QFP100
EFM32WG880F128-QFP100
EFM32WG880F256-QFP100
EFM32WG890F64-BGA112
EFM32WG890F128-BGA112
EFM32WG890F256-BGA112
EFM32WG895F64-BGA120
EFM32WG895F128-BGA120
EFM32WG895F256-BGA120
EFM32WG940F64-QFN64
EFM32WG940F128-QFN64
EFM32WG940F256-QFN64
EFM32WG942F64-QFP64
EFM32WG942F128-QFP64
EFM32WG942F256-QFP64
EFM32WG980F64-QFP100
EFM32WG980F128-QFP100
EFM32WG980F256-QFP100
EFM32WG990F64-BGA112
EFM32WG990F128-BGA112
EFM32WG990F256-BGA112
EFM32WG995F64-BGA120



Bulletin #1406251

EFM32WG995F128-BGA120
EFM32WG995F256-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 Labs sales representative with any questions about this notification. A list of Silicon Labs sales representatives may be found at www.silabs.com

Customer Actions Needed:
None.

Table 1: EFM32WGxxx Datasheet Rev 1.40 - Summary of Key Changes

Table*	Symbol	Parameter	Condition	Datasheet Rev 1.31			Datasheet Rev 1.40			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 T _{AMB} = 25 °C	48 MHz		224.8			225	236	μA/MHz	
			28 MHz		226.1			226	238	μA/MHz	
			21 MHz		228.0			228	240	μA/MHz	
			14 MHz		230.4			230	243	μA/MHz	
			11 MHz		232.3			232	245	μA/MHz	
			6.6 MHz		237.5			238	250	μA/MHz	
	I _{EM1}	EM1 Current T _{AMB} = 25 °C	1.2 MHz		270.6			271	286	μA/MHz	
			48 MHz		63.3			63	75	μA/MHz	
			28 MHz		63.6			64	75	μA/MHz	
			21 MHz		64.7			65	76	μA/MHz	
			14 MHz		66.7			67	79	μA/MHz	
			11 MHz		68.4			68	81	μA/MHz	
	I _{EM2}	EM2 Current T _{AMB} = 25 °C	6.6 MHz		73.7			74	87	μA/MHz	
			1.2 MHz		106.0			106	120	μA/MHz	
	I _{EM3}	EM3 Current T _{AMB} = 85 °C	T _{AMB} = 25 °C		0.95			0.95	1.7	μA	
T _{AMB} = 85 °C				3.0			3.0	4.0	μA		
I _{EM4}	EM4 Current T _{AMB} = 25 °C	T _{AMB} = 25 °C		0.65			0.65	1.3	μA		
		T _{AMB} = 85 °C		2.65			2.65	4.0	μA		
3.6 Power Management	V _{BODexthrl-}	BOD threshold, falling external supply		1.82		1.85	1.74		1.96	V	
	V _{BODexthrl+}	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	
			Sinking 20 mA, V _{DD} = 3.0V			0.1V _{DD}			0.25V _{DD}	V	
I _{OLEAK}	Input leakage current				±25		±0.1	±100	nA		
3.11 LFRCO	I _{LFRCO}	Current consumption			190			300	nA		
3.12 HFRCO	I _{HFRCO}	Current consumption	28 MHz		106			165	215	μA	
			21 MHz		93			134	175	μA	
			14 MHz		77			106	140	μA	
			11 MHz		72			94	125	μA	
			6.6 MHz		63			77	105	μA	
			1.2 MHz		22			25	40	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 ksp/s, 12 bit NORMAL		38			17		μA	
3.16 OPAMP	I _{OPAMP}	Active current	BIASPROG=0xF, HALFBIAS=0x0		400			370	460	μA	
			BIASPROG=0x7, HALFBIAS=0x1		100			95	135	μA	
			BIASPROG=0x0, HALFBIAS=0x1		13			13	25	μA	
3.17 ACMP	V _{ACMPOFFSET}	Offset voltage	Unity Gain, V _{SS} < V _{IN} < V _{DD} , OPAXHCMDIS=0		6			-13	0	11	mV
					10			-12	0	12	mV
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	35	μA	
3.19 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	
3.27 Digital Peripherals	I _{USART}	USART current			7.5			4.0		μA/MHz	
	I _{UART}	UART current			5.63			3.8		μA/MHz	
	I _{LEUART}	LEUART current			150			194		nA	
	I _{I2C}	I2C current			6.25			7.6		μA/MHz	
	I _{TIMER}	TIMER current			8.75			6.5		μA/MHz	
	I _{LETIMER}	LETIMER current			150			85.8		nA	
	I _{PCNT}	PCNT current			100			91.4		nA	
	I _{RTC}	RTC current			100			54.6		nA	
	I _{LCD}	LCD current			100			72.7		nA	
	I _{AES}	AES current			2.5			1.8		μA/MHz	
	I _{GPIO}	GPIO current			5.31			3.4		μA/MHz	
	I _{EBI}	EBI current			1.56			6.5		μA/MHz	
I _{PRS}	PRS current			2.81			3.9		μA/MHz		
		I _{DMA}	DMA current			8.12			10.9	μA/MHz	

* Note: Table numbers may vary by datasheet. Numbers listed refer to EFM32WG995.