



Revision Change Notice #1610101

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PCN Date: 10/10/2016	Effective Date: 1/13/2017
Title: EFM8UB2 Revision B PCN	
PCN Type:	
<input checked="" type="checkbox"/> Datasheet	
<input checked="" type="checkbox"/> Product Revision	
PCN Details	



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Description of Change:

Silicon Labs is pleased to announce revision B of the EFM8UB2 devices, version 0.4 of the errata, and version 1.3 of the corresponding datasheet for these products.

Overview and major changes:

Addition of a USB Bootloader:

A "Bootloader Signature Byte" has been added to the EFM8UB2 to support a factory programmed bootloader.

- Each device will use the byte immediately before the Lock Byte as a Bootloader Signature Byte to determine if the bootloader is present in flash.

-Setting the Bootloader Signature Byte to a value of 0xA5 indicates the presence of the bootloader in the system. Any other value in this location indicates that the bootloader is not present in flash.

External oscillator pins:

-The external oscillator pins on the 32 pin packages are non-functional.

Datasheet version 1.3:

-Added information on the included bootloader described above.

-All part numbers in the datasheet now reflect the revision change with a 'B'.

-Added a section describing the typical connection for debugging EFM8UB2. This includes pin sharing techniques of the C2 interface, refer to section 5.4 of the datasheet for more information.

-In the introduction section a line was added to mention the reference manual where an individual can find more technical information on registers and blocks.

-Added Power-On Reset Threshold and Power-On Reset Delay specifications for a finite Vdd value and delay times.

-Added typical Cyclic Redundancy Check (CRC) Calculation Time for a read or write of a 256 byte block of flash at 48 MHz.

-Added VBUS Detection Input Low and Input High Voltage on the USB transceiver.

-Added a table on SMBus timing and operating frequency in master mode. The table details minimum and maximum operating frequency for each class, hold times, start times, clock low and clock high periods, and start and stop conditions.

-Added a note to the QFN32 and QFP32 devices that the external oscillator pins are non-functional.

-Updated the recommended capacitor values attached to the power pins of a USB connected device with a voltage regulator.

-Added a recommended setup when using the EFM8UB2 as a USB connected device without the use of a voltage regulator.

Errata version 0.5:

-Added information on the bootloader described above.

After the effective date of this PCN, Silicon Labs reserves the right to deliver EFM8UB2 Rev B for customers ordering EFM8UB2 Rev A.

Reason for Change:

EFM8UB2 datasheet version 1.3 release

EFM8UB2 Revision B release

EFM8UB2 version 0.4 errata

Impact on Form, Fit, Function, Quality, Reliability:

This change is considered a minor change which does not affect form, fit, function, quality, or reliability.



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Product Identification:

Existing Part Number	Replacement Part Number	Drop in Compatible Indicator
EFM8UB20F32G-A-QFN32	EFM8UB20F32G-B-QFN32	Yes
EFM8UB20F32G-A-QFN32R	EFM8UB20F32G-B-QFN32R	Yes
EFM8UB20F32G-A-QFP48	EFM8UB20F32G-B-QFP48	Yes
EFM8UB20F32G-A-QFP48R	EFM8UB20F32G-B-QFP48R	Yes
EFM8UB20F32G-A-QFP32	EFM8UB20F32G-B-QFP32	Yes
EFM8UB20F32G-A-QFP32R	EFM8UB20F32G-B-QFP32R	Yes
EFM8UB20F64G-A-QFN32	EFM8UB20F64G-B-QFN32	Yes
EFM8UB20F64G-A-QFN32R	EFM8UB20F64G-B-QFN32R	Yes
EFM8UB20F64G-A-QFP48	EFM8UB20F64G-B-QFP48	Yes
EFM8UB20F64G-A-QFP48R	EFM8UB20F64G-B-QFP48R	Yes
EFM8UB20F64G-A-QFP32	EFM8UB20F64G-B-QFP32	Yes
EFM8UB20F64G-A-QFP32R	EFM8UB20F64G-B-QFP32R	Yes

Note: The part numbers above include tape and reel variants which are denoted with an "R" at the end of the orderable part number.

Last Date of Unchanged Product: 1/13/2017

Qualification Samples:

Samples are available now. Please contact your Silicon Labs sales representative to order samples. A list of Silicon Labs sales representatives is available at www.silabs.com.

Specific conditions of acceptance of this change will be considered on a case by case basis if written notice is submitted within 30 days of this notice. To request further data or inquire about this notification, please contact your local Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at www.silabs.com.

In some cases rejection of a change notice may impact Silicon Labs product pricing, delivery, quality, or reliability.

Customer Early Acceptance Sign Off:

Customers may approve early PCN acceptance by completing the information below:

Early Acceptance: Date: _____

Name: _____

Company: _____

Email your early Acceptance approval to: katherine.haggar@silabs.com

Qualification Data:

See below.

EFM8UB20Fxxx Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

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EFM8UB20Fxxx Rev B, GSMC Fabrication							
Test Name	Test Condition	Qualification	Lot ID or Start	FatID/Pass or End	Notes	Summary	Status
Test Group A - Accelerated Environment Stress Tests - SPIL LQFP							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>25	Q26065	0/80	1	3 lots 0/240	Pass
			Q25565	0/80	1		
			Q25562	0/80	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q26067	0/80	1	3 lots 0/240	Pass
			Q26127	0/80	1		
			Q25560	0/80	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q26064	0/80		3 lots 0/240	Pass
			Q25563	0/80			
			Q25566	0/80			
Test Group A - Accelerated Environment Stress Tests - ASECL QFN							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>25	Q29241	0/77	2	3 lots 0/237	Pass
			Q29246	0/80	2		
			Q30240	0/80	2		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q29243	0/78	2	3 lots 0/237	Pass
			Q29248	0/80	2		
			Q30237	0/79	2		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q29244	0/78	2	3 lots 0/237	Pass
			Q29249	0/79	2		
			Q30239	0/80	2		
Test Group A - Accelerated Environment Stress Tests - SPIL TQFP							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>25	Q25572	0/80	3	3 lots 0/187	Pass
			Q25669	0/80	3		
			Q26807	0/27	3		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q26438	0/82	3	3 lots 0/193	Pass
			Q26443	0/80	3		
			Q27775	0/31	3		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q25573	0/80	3	3 lots 0/187	Pass
			Q25663	0/80	3		
			Q26805	0/27	3		

EFM8UB20Fxxx Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

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EFM8UB20Fxxx Rev B, GSMC Fabrication							
Test Group B - Accelerated Lifetime Simulation Tests							
HTOL	JA108	3 lots, N=>77	Q29645	0/80		3 lots	Pass
	125°C, Dynamic		Q28080	0/91			
	Vcc=5.5V, 1000 hours		Q27686	0/82			
LTOL	JA108	1 lot, N=>32				1 lots	Pass
	-10°C, Dynamic		Q26491	0/41			
ELFR	JA108	3 lots, N=>500	Q29593	0/505		3 lots	Pass
	125°C, Dynamic		Q29898	0/520			
	Vcc=5.5V, 48 hours		Q31030	0/504			
Test Group E - Electrical Verification							
ESD-HBM	JA114	1 lot, N=>3	Q29448				2000 V
ESD-MMM	JA115	1 lot, N=>3	Q29449				225 V
ESD-CDM	JC101	1 lot, N=>3	Q30041 Q30039 Q29447				2000 V
Latch Up	JE5D78 ±200mA	1 lot, N=>3	Q29445 Q29446	25 C 85 C			Pass

Notes:

1. Parts are Pre-conditioned at MSL3/260°C
2. Parts are Pre-conditioned at MSL1/260°C
3. Parts are Pre-conditioned at MSL2/260°C

This report applies to the following part numbers:	
EFW8UB20F64G-B-QFP48	EFW8UB20F64G-B-QFN32
EFW8UB20F32G-B-QFP48	EFW8UB20F32G-B-QFN32
EFW8UB20F64G-B-QFP32	
EFW8UB20F32G-B-QFP32	