



Revision Change Notice #1508071

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PCN Date: 8/7/2015		Effective Date: 9/11/2015	
Title: EFM8UB1x Revision C			
Originator: Kafai Leung		Phone: +1-512-532-5232	Dept: Marketing
Customer Contact: Kathy Haggar		Phone: +1-512-532-5261	Dept: Sales
PCN Type:			
<input checked="" type="checkbox"/> Datasheet			
<input checked="" type="checkbox"/> Product Revision			
PCN Details			
Description of Change:			
Silicon Labs is pleased to announce revision C of the EFM8UB1x devices and revision 1.0 of the corresponding datasheet for these products.			
For customers using Revision B the change to Revision C eliminates a potential issue in USB device missing a token from the host and not responding to a transaction. This revision allows USB Low Energy Mode settings to be used with any power-saving options.			
Revision C resolves the momentary current spike upon entering Shutdown mode.			
In addition, for customers using Revision B the change to Revision C eliminates a potential issue with the Timer 3/4 32-bit counter not switching to the low frequency oscillator (LFOSC0) after entering Suspend mode if the system clock divider is set to a value of divide-by-4 or greater. This revision allows system clock divider to be at any value when entering Suspend mode.			
Datasheet revision 1.0 updates the orderable part number to revision C along with other spec table edits in Table 4.1. Port I/O spec in Figure 4.6 and Figure 4.7 together with Table 4.13.			
After the effective date of this PCN, Silicon Labs reserves the right to deliver EFM8UB1xFxG-C (Revision C) for customers ordering EFM8UB1xFxG-B (Revision B).			
Reason for Change:			
EFM8UB1x Revision C release			
EFM8UB1x Datasheet revision 1.0 release			



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

There is no impact to form, fit, quality or reliability.

The following functions are impacted:

- The reset value of REVID SFR will read 0x03 for revision C instead of 0x02 for revision B or 0x01 for revision A.
- Behavior with USB Low Energy mode has been addressed.
- Behavior with momentary current spike upon entering Shutdown mode has been addressed.
- Behavior with Timer 3/4 at system when system clock divider value of divide-by-4 or greater has been addressed.

Product Identification:

Existing Part Number	Replacement Part Number	Drop in Compatible Indicator
EFM8UB10F8G-B-QFN20	EFM8UB10F8G-C-QFN20	Yes
EFM8UB10F8G-B-QFN20R	EFM8UB10F8G-C-QFN20R	Yes
EFM8UB10F16G-B-QFN28	EFM8UB10F16G-C-QFN28	Yes
EFM8UB10F16G-B-QFN28R	EFM8UB10F16G-C-QFN28R	Yes
EFM8UB10F16G-B-QFN20	EFM8UB10F16G-C-QFN20	Yes
EFM8UB10F16G-B-QFN20R	EFM8UB10F16G-C-QFN20R	Yes
EFM8UB11F16G-B-QSOP24	EFM8UB11F16G-C-QSOP24	Yes
EFM8UB11F16G-B-QSOP24R	EFM8UB11F16G-C-QSOP24R	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: 9/11/2015

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.



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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.haggard@silabs.com

Qualification Data:

See below.

EFM8UB1*/BB2* AEC-Q100 Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

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C8051F870 A2/A3/A4 HHGrace Fabrication, ASECL and UTL Assembly							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group A - Accelerated Environment Stress Tests -20QFN -CuPd Wire ASECL							
HAST	AEC JESD22-A110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q07190	0/77	1	3 lots 0/237	Pass
			Q07191	0/80			
			Q07192	0/80			
Temp Cycle	AEC JESD22-A104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q07196	0/80	1	3 lots 0/240	Pass
			Q07197	0/80			
			Q07198	0/80			
HTSL	AEC JESD22-A103 150°C, 1000hr	3 lots, N=>25	Q07193	0/30	1	3 lots 0/140	Pass
			Q07194	0/30			
			Q07195	0/30			
UHAST	AEC JESD22-A118 130°C, 85%RH 96hrs	3 lots, N=>77	Q07199	0/81	1	3 lots 0/243	Pass
			Q07200	0/80			
			Q07202	0/82			
Test Group A - Accelerated Environment Stress Tests -28QFN -CuPd Wire UTL							
HAST	AEC JESD22-A110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q05792	0/80	1	3 lots 0/237	Pass
			Q05788	0/77			
			Q05789	0/80			
Temp Cycle	AEC JESD22-A104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q07160	0/80	1	3 lots 0/240	Pass
			Q07161	0/80			
			Q07162	0/80			
HTSL	AEC JESD22-A103 150°C, 1000hr	3 lots, N=>25	Q05682	0/30	1,2	4 lots	
			Q05790	1/30			
			Q07159	0/30			
UHAST	AEC JESD22-A118 130°C, 85%RH 96hrs	3 lots, N=>77	Q06555	0/30	1	1/120	
			Q07163	0/80			
			Q07164	0/80			
UHAST	AEC JESD22-A118 130°C, 85%RH 96hrs	3 lots, N=>77	Q07165	0/80	1	3 lots 0/240	Pass
			Q07164	0/80			
			Q07165	0/80			
Test Group A - Accelerated Environment Stress Tests -24QOP-CuPd Wire UTL							
HAST	AEC JESD22-A110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q06513	0/80	1	3 lots 0/240	Pass
			Q06515	0/80			
			Q06519	0/80			
Temp Cycle	AEC JESD22-A104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q06523	0/80	1	3 lots 0/240	Pass
			Q06524	0/80			
			Q06525	0/80			
HTSL	AEC JESD22-A103 150°C, 1000hr	3 lots, N=>25	Q06520	0/28	1	3 lots 0/84	Pass
			Q06521	0/28			
			Q06522	0/28			
UHAST	AEC JESD22-A118 130°C, 85%RH 96hrs	3 lots, N=>77	Q06526	0/80	1	3 lots 0/240	Pass
			Q036527	0/80			
			Q036528	0/80			
Test Group B - Accelerated Lifetime Simulation Tests							
HTOL	AEC JESD22-A108 125°C, Dynamic Vcc=3.6V, 1000 hours	3 lots, N=>77	Q05684	0/84		3 lots 0/248	Pass
			Q05685	0/84			
			Q07250	0/80			
LTOL	JA 108						

EFM8UB1*/BB2* AEC-Q100 Qualification Report



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C8051F870 A2/A3/A4 HHGrace Fabrication, ASECL and UTL Assembly							
	-40°C, Dynamic Vcc=3.6V, 1000 hours	1 lot, N=>32	Q06550	0/35		1 lots 0/35	Pass
ELFR	AEC Q100-008 125°C, Dynamic Vcc=3.6V, 48 hours	3 lots, N=>800	Q05681 Q06910 Q07251 Q06509	0/839 0/839 0/836 0/840		4 lots 0/3354	Pass
Data Retention High Temp	AEC Q100-005 150°C, 1000hrs	3 lots, N=>39	Q05781 Q05783 Q07252	0/45 0/44 0/45		3 lots 0/134	Pass
Data Retention Low Temp	AEC Q100-005 25°C, 1000hrs	3 lots, N=>38	Q05784 Q05786 Q07253	0/45 0/44 0/45		3 lots 0/134	Pass
NVM P/E Cycling High Temp	AEC Q100-005 85°C, 1000hrs	3 lots, N=>77	Q05787 Q05782 Q07254	0/84 0/84 0/84		3 lots 0/252	Pass
NVM P/E Cycling Low temp	AEC Q100-005 55°C, 1000hrs	3 lots, N=>77	Q05791 Q05785 Q07255	0/80 0/80 0/84		3 lots 0/244	Pass
Test Group C - Package Assembly Integrity Tests							
Wire Bond Pull	AEC Q003 Mil Std Method 2011	5 units, N=>30 28 QFN	Q07489	0/5		1 lot 0/5	Pass
Wire Bond Pull	AEC Q003 Mil Std Method 2011	5 units, N=>30 20 QFN	Q07487	0/5		1 lot	Pass
Wire Bond Pull	AEC Q003 Mil Std Method 2011	5 units, N=>30 24 QSCP	Q037707	0/5		1 lot 0/5	Pass
Test Group E - Electrical Verification							
ESD-HBM	AEC Q100-002	1 lot, N=>3	Q06561 Q05689 Q07643				2KV 2KV 2KV
ESD-MM	AEC Q100-003	1 lot, N=>3	Q07644 Q05690				250 V 250 V
ESD-CDM	AEC Q100-011	1 lot, N=>3	Q06705 Q05688 Q07648 Q06558 Q06512		3 4 4 4 5		1500 V 1250 V 1250 V 1500 V 1500 V
Latch Up	AEC Q100-004 ±200mA	1 lot, N=>6	Q07647 Q07674	125C 25C			Pass Pass

Notes:

1. Parts are Pre-conditioned at MSL 2/260°C
2. 1 unit Failure
3. 20 QFN

Approved by: Ramon Ponsones

2 of 3

Prepared on: 16-Jun-15

EFM8UB1*/BB2* AEC-Q100 Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

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C8051F870 A2/A3/A4 HHGrace Fabrication, ASECL and UTL Assembly

- 4. 28 QFN
- 5. 24 QSOP

This report applies to the following part numbers:
EFM8UB11F16G-B-QSOP24
EFM8UB11F16G-C-QFN24
EFM8UB10F16G-B-QFN28
EFM8UB10F16G-B-QFN20
EFM8UB10F8G-B-QFN20
EFM8BB22F16G-B-QFN28
EFM8BB21F16G-B-QSOP24
EFM8BB21F16G-B-QFN20