Revision Change Notice #1601052

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PCN Date: 1/5/2016	**Effective Date: 9/11/2015**	
Title: Addendum to 1508071 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: ☒ **Datasheet** ☒ **Product Revision**		
PCN Details		

Description of Change:

This Addendum is being issued to correct typos in PCN #1508071. The following sentence in the Form, Fit, Function, Quality, Reliability section:

- The reset value of REVID SFR will read 0x03 for revision C instead of 0x02 for revision B or 0x01 for revision A

Is being changed to read:

- The reset value of REVID SFR will read 0x04 for revision C instead of 0x03 for revision B or 0x02 for revision A.

The original PCN with the correction is listed below:

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

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 0x04 for revision C instead of 0x03 for revision B or 0x02 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.

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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.

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.

EFM8UB1x AEC-Q100 Qualification Report

W7101F1 - Product Qualification Report Record Rev. H

EFM8UB1x Rev A2/A3/A4, HHGrace Fabrication, ASECL and UTACTH 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	JA110		Q037190	0/77	1		
	130°C, 85%RH	3 lots, N=>77	Q037191	0/80	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q037192	0/80	1	0/237	
UHAST	JA110		Q037199	0/81	1		
	130°C, 85%RH	3 lots, N=>77	Q037200	0/80	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q037202	0/82	1	0/243	
Temp Cycle	JA104		Q037196	0/80	1		
	Cond C: -65°C to 150°C	3 lots, N=>77	Q037197	0/80	1	3 lots	Pass
	500 cycles		Q037198	0/80	1	0/240	
HTSL	JA103		Q037193	0/30	1		
	150°C, 1000hr	1 lot, N=>45	Q037194	0/30	1	3 lots	Pass
			Q037195	0/30	1	0/90	
Test Group A – Accelerated Environment Stress Tests - 28QFN - CuPd Wire UTACTH							
HAST	JA110		Q035792	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q035788	0/77	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q035789	0/80	1	0/237	
UHAST	JA110		Q037163	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q037164	0/80	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q037165	0/80	1	0/240	
Temp Cycle	JA104		Q037160	0/80	1		
	Cond C: -65°C to 150°C	3 lots, N=>77	Q037161	0/80	1	3 lots	Pass
	500 cycles		Q037162	0/80	1	0/240	
HTSL	JA103		Q035682	0/30	1		
	150°C, 1000hr		Q037977	0/80	1		
		1 lot, N=>45	Q037159	0/30	1	4 lots	Pass
			Q037806	0/45	1	0/185	
Test Group A – Accelerated Environment Stress Tests - 24QSOP - CuPd Wire UTACTH							
HAST	JA110		Q036513	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q036515	0/80	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q036519	0/80	1	0/240	
UHAST	JA110		Q036526	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q036527	0/80	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q036528	0/80	1	0/240	
Temp Cycle	JA104		Q036523	0/80	1		
	Cond C: -65°C to 150°C	3 lots, N=>77	Q036524	0/80	1	3 lots	Pass
	500 cycles		Q036525	0/80	1	0/240	
HTSL	JA103		Q036520	0/28	1		
	150°C, 1000hr	1 lot, N=>45	Q036521	0/28	1	3 lots	Pass
			Q036522	0/28	1	0/84	

EFM8UB1x AEC-Q100 Qualification Report

W7101F1 - Product Qualification Report Record Rev. H

EFM8UB1x Rev A2/A3/A4, HHGrace Fabrication, ASECL and UTACTH Assembly							
Test Name	**Test Condition**	**Qualification**	**Lot ID or Start**	**Fail/Pass or End**	**Notes**	**Summary**	**Status**
Test Group A – Accelerated Environment Stress Tests - 24QFN - CuPd Wire UTACTH							
HAST	JA110		Q035792	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q035788	0/77	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q035789	0/80	1	0/237	
UHAST	JA110		Q037163	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q037164	0/80	1	3 lots	Pass
	Vcc=3.6V, 96 hours		Q037165	0/80	1	0/240	
Temp Cycle	JA104		Q038520	0/80	1		
	Cond C: -65°C to 150°C	3 lots, N=>77	Q038521	0/80	1	3 lots	Pass
	500 cycles		Q038522	0/80	1	0/240	
HTSL	JA103		Q035682	0/30	1		
	150°C, 1000hr	1 lot, N=>45	Q037977	0/80	1	3 lots	Pass
			Q037159	0/30	1	0/140	
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108		Q035684	0/84			
	$T_J \geq 125°C$, Dynamic	3 lots, N=>77	Q035685	0/84		3 lots	Pass
	Vcc=3.6V, 1000 hours		Q037250	0/80		0/248	
LTOL	JA108						
	-40°C, Dynamic	1 lot, N=>32	Q036550	0/35		1 lots	Pass
	Vcc=3.6V, 1000 hours					0/35	
ELFR	AEC-Q100-008		Q035681	0/839			
	$T_J \geq 125°C$, Dynamic	3 lots, N=>800	Q036910	0/839			
	Vcc=3.6V, 48 hours		Q037251	0/836		4 lots	Pass
			Q036509	0/840		0/3354	
Data Retention	AEC Q100-005		Q035781	0/45			
High Temp	150°C, 1000hrs	3 lots, N=>39	Q035783	0/44		3 lots	Pass
			Q037252	0/45		0/134	
Data Retention	AEC Q100-005		Q035784	0/45			
Low Temp	25°C, 1000hrs	3 lots, N=>38	Q035786	0/45		3 lots	Pass
			Q037253	0/45		0/135	
NVM P/E Cycling	AEC Q100-005		Q035787	0/84			
High Temp	85°C, 1000hrs	3 lots, N=>77	Q035782	0/84		3 lots	Pass
			Q037254	0/84		0/252	
NVM P/E Cycling	AEC Q100-005		Q035791	0/80			
Lowtemp	55°C, 1000hrs	3 lots, N=>77	Q035785	0/80		3 lots	Pass
			Q037255	0/84		0/244	

EFM8UB1x AEC-Q100 Qualification Report

W7101F1 - Product Qualification Report Record Rev. H

EFM8UB1x Rev A2/A3/A4, HHGrace Fabrication, ASECL and UTACTH Assembly							
Test Name	**Test Condition**	**Qualification**	**Lot ID or Start**	**Fail/Pass or End**	**Notes**	**Summary**	**Status**
Test Group C – Package Assembly Integrity Tests							
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 20QFN	Q037487	0/5	2	1 lots 0/5	Pass
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 28QFN	Q037489	0/5	3	1 lots 0/5	Pass
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 24QSOP	Q037707	0/5	4	1 lots 0/5	Pass
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30 24QFN	Q038577	0/5	5	1 lots 0/5	Pass
Test Group E – Electrical Verification							
ESD-HBM	AEC-Q100-002	1 lot, N=>3	Q036561 Q035689 Q037643		6 6 6		2 kV 2 kV 2 kV
ESD-CDM	AEC-Q100-011	1 lot, N=>3	Q036705 Q035688 Q037648 Q036558 Q036512 0		2 3 3 3 4 5		1500 V 1250 V 1250 V 1500 V 1500 V
Latch Up	AEC-Q100-004 ±200mA	1 lot, N=>6	Q037647 Q037674	125 °C 25 °C			Pass Pass
Electromagnetic Compatibility	SAE J1752	1 lot, N=>1	Q038023				Pass

Notes:
1. Parts are Pre-conditioned at MSL2/260°C
2. 20-QFN
3. 28-QFN
4. 24-QSOP
5. 24-QFN
5. Five USB-related pins passed 8 kV. They are D+, D-, VBUS, VSS, VREGIN.

This report applies to the following part numbers:	
EFM8UB10F16G-C-QFN20	EFM8UB11F16G-C-QSOP24
EFM8UB10F16G-C-QFN28	EFM8UB11F8G-C-QFN24
EFM8UB10F8G-C-QFN20	
EFM8UB11F16G-C-QFN24	