



Revision Change Notice #1601201

Approval Page - Do Not Distribute

Title: EFM32HG Transition to Product Revision B	
Product Line:	MCUs--32-bit
Product Family:	Happy Gecko <small>Enter additional Product Families here.</small>
Distribution:	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Restricted (List end customer/s): (All Customers)
Affected Depts:	
<input type="checkbox"/> Design Engineering	<input type="checkbox"/> Mfg. Tech
<input checked="" type="checkbox"/> Logistics	<input checked="" type="checkbox"/> Marketing
<input checked="" type="checkbox"/> Mfg. Engineering	<input type="checkbox"/> Purchasing
<input checked="" type="checkbox"/> Mfg. Planning	<input type="checkbox"/> Other (list below)
	<input checked="" type="checkbox"/> Quality & Reliability
	<input checked="" type="checkbox"/> Sales
	<input checked="" type="checkbox"/> Test/Product Engr
	<input checked="" type="checkbox"/> Other (list below) Applications Engineering
CR151028-693CAB # (See PQE in Product Quality Engineering . Verify status is at “Change Approved and Customer Notification Required”.)	
Originator: Alf Petter Mossevig	
Approvers:	
<ul style="list-style-type: none"> • Identify approver’s by name, from each affected dept checked above • All identified approvers must approve the PCN ❖ Approvers required for every PCN 	
Discipline	
Design: <small>Click here to enter text.</small>	❖ Mktg: Alf Petter Mossevig
Logistics: <small>Click here to enter text.</small>	❖ Mktg Director: Tom Pannell
Mfg Eng: Fong Yee Lai	Purch: <small>Click here to enter text.</small>
Mfg Planning: Duc Tran	❖ Q&R: Kathy Torres
Mfg Tech: <small>Click here to enter text.</small>	❖ Sales: Kathy Haggar
Test/Prod Eng: Vu Do	

Revision Control Instructions:

Post Hardcopy Revisions: Yes

Items for Hardcopy Release: All pages except Rev History

Location: Silicon Labs Internal Web Quality PCN page-PCN Create/Approval Library(1)



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Checklist - Do Not Distribute

Title: EFM32HG Transition to Product Revision B			
Automotive PCN: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, PPAP#			
Requirements	Completion Status	Target Date	Assigned To:
Qualification Completion	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	11/30/2015	Tingting Tang
Jedec Timing (i.e. 90 days)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.
Master Data Requirements	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.
AOS	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.
Datasheet	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	12/4/2015	Tabitha Parker
Recipes	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.
PPAP	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.
Other Click here to enter text.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.
Samples	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Click here to enter a date.	Click here to enter text.

Part Number	QTY	CFG #	Available Y/N	BE Lot #	F/G Available	Cust Restriction in Place Y/N
EFM32HG108F64G-B-QFN24	200		Y			
EFM32HG110F64G-B-QFN24	200		Y			
EFM32HG210F64G-B-QFN32	200		Y			
EFM32HG222F64G-B-QFP48	200		Y			
EFM32HG308F64G-B-QFN24	200		Y			
EFM32HG309F64G-B-QFN24	200		Y			
EFM32HG310F64G-B-QFN32	200		Y			
EFM32HG321F64G-B-QFP48	200		Y			
EFM32HG322F64G-B-QFP48	200		Y			
EFM32HG350F64G-B-CSP36	200		Y			

[+ To add row(s), Tab out of last cell on right]

Please complete below blue sections for deviations to above Requirements : <input checked="" type="checkbox"/> N/A
Deviation Request (Be Specific):
Click here to enter text.



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What is the Risk(s) Associated with this deviation? (Examples, 1. If qualification is not complete, then a possible risk would be delay of qualification completion due to qualification failures. 2. If 90 day's approval is not provided, then a possible risk would be insufficient time allowed for customer evaluation / qualification / approval.)
[Click here to enter text.](#)

Business Case (Why should this deviation be considered by Silicon Labs?)
[Click here to enter text.](#)

Customer Special PCN Requirements: Check **CSR POS Report**. If the Cisco and IBM part numbers are found, a restricted PCN is required with a cross reference to their part number(s) in the part identification section.

<input type="checkbox"/> Alcatel-Lucent	<input type="checkbox"/> FoxConn Technology Co	<input type="checkbox"/> IBM	<input type="checkbox"/> Sumitomo
<input type="checkbox"/> Canon	<input type="checkbox"/> Fujitsu	<input type="checkbox"/> LGE	<input type="checkbox"/> Varian
<input type="checkbox"/> Cisco	<input type="checkbox"/> Honeywell	<input type="checkbox"/> Nokia	<input type="checkbox"/> Zhen Ding Technology
<input type="checkbox"/> Delphi	<input type="checkbox"/> Hon Hai Precision	<input type="checkbox"/> Panasonic	
<input type="checkbox"/> Epcos	<input type="checkbox"/> HongFu Jin Precision Industry	<input type="checkbox"/> Pirelli	
<input type="checkbox"/> Epson	<input type="checkbox"/> HongFuTai Precision Electrons (Yantal)	<input type="checkbox"/> Porter	
<input type="checkbox"/> Foxconn International Holdings	<input type="checkbox"/> Huawei	<input checked="" type="checkbox"/> Samsung	

Closed Loop Customers: Check **CSR POS Report**. If the Cisco and IBM part numbers are found, a restricted PCN is required with a cross reference to their part number(s) in the part identification section.

<input type="checkbox"/> Alcatel-Lucent	<input type="checkbox"/> Foxconn International Holdings	<input type="checkbox"/> HongFu Jin Precision Industry	<input type="checkbox"/> Panasonic
<input type="checkbox"/> Canon	<input type="checkbox"/> FoxConn Technology Co	<input type="checkbox"/> HongFuTai Precision Electronics (Yantai)	<input type="checkbox"/> Porter
<input type="checkbox"/> Cisco	<input type="checkbox"/> Fujitsu	<input type="checkbox"/> Huawei	<input checked="" type="checkbox"/> Samsung
<input type="checkbox"/> Delphi	<input type="checkbox"/> Honeywell	<input type="checkbox"/> IBM	<input type="checkbox"/> Sumitomo
<input type="checkbox"/> Epson	<input type="checkbox"/> Hon Hai Precision	<input type="checkbox"/> LGE	<input type="checkbox"/> Zhen Ding Technology

POS Checked-none shipped to CSR Customer. **Note:** See Inside Sales for ship history of products acquired through acquisition where ship history from Silicon Labs is less than two years.

Customer List (if applicable):
 (embed a file of all customers who were shipped parts at end of form)

WIP Disposition:

- Distributor Inventory: Use Re-Process Scrap None Other N/A

Comments: [Click here to enter text.](#)

- RMA Material: Use Re-Process Scrap None Other N/A

Comments: [Click here to enter text.](#)



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<ul style="list-style-type: none">• EVAL/Dev Kits: <input checked="" type="checkbox"/> Use <input type="checkbox"/> Re-Process <input type="checkbox"/> Scrap <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> N/A <p>Comments: Click here to enter text.</p>
<p>3rd Party Certifications: <input type="checkbox"/> Released <input type="checkbox"/> In Process <input type="checkbox"/> Not Required <input checked="" type="checkbox"/> N/A</p> <p>Assigned To: Click here to enter text. Target Completion date: Click here to enter text.</p>
<p>Cancellation: <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Cancelled (Add "Cancelled" watermark to the form before submit)</p> <p>Comments: Click here to enter text.</p>



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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>

PCN Date: 1/20/2016		Effective Date: 4/26/2016	
Title: EFM32HG Transition to Product Revision B			
Originator: Alf Petter Mossevig		Phone: +47 476 33 646	Dept: Marketing
Customer Contact: Kathy Haggar		Phone: 512-532-5261	Dept: Sales
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 EFM32HG (Happy Gecko) devices and revision 1.00 of the corresponding datasheet for these products.

The following datasheets are updated to version 1.00:

EFM32HG108
EFM32HG110
EFM32HG210
EFM32HG222
EFM32HG308
EFM32HG309
EFM32HG310
EFM32HG321
EFM32HG322
EFM32HG350

Rev B Errata documents and updated Errata History documents are available for:

EFM32HG108
EFM32HG110
EFM32HG210
EFM32HG222
EFM32HG308
EFM32HG309
EFM32HG310
EFM32HG321
EFM32HG322
EFM32HG350

Revision B eliminates the following errata in product revision A:

EMU_E108
GPIO_E102
PKG_E101
RMU_E101

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

Reason for Change:

Die revision to correct errata. Also updated specifications based on the results of additional silicon characterization.



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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:

- Updated device revision information in ROM Table (PID0 - PID3 registers):
 - o Minor Revision will now read 0x01 (Rev B) instead of 0x00 (Rev A).
- Eliminated errata:
 - o EMU_E108
 - o GPIO_E102
 - o PKG_E101
 - o RMU_E101



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Product Identification:

Existing Part Number	Replacement Part Number	Drop In Compatible?
EFM32HG108F32G-A-QFN24	EFM32HG108F32G-B-QFN24	Yes
EFM32HG108F64G-A-QFN24	EFM32HG108F64G-B-QFN24	Yes
EFM32HG110F32G-A-QFN24	EFM32HG110F32G-B-QFN24	Yes
EFM32HG110F64G-A-QFN24	EFM32HG110F64G-B-QFN24	Yes
EFM32HG210F32G-A-QFN32	EFM32HG210F32G-B-QFN32	Yes
EFM32HG210F64G-A-QFN32	EFM32HG210F64G-B-QFN32	Yes
EFM32HG222F32G-A-QFP48	EFM32HG222F32G-B-QFP48	Yes
EFM32HG222F64G-A-QFP48	EFM32HG222F64G-B-QFP48	Yes
EFM32HG308F32G-A-QFN24	EFM32HG308F32G-B-QFN24	Yes
EFM32HG308F64G-A-QFN24	EFM32HG308F64G-B-QFN24	Yes
EFM32HG309F32G-A-QFN24	EFM32HG309F32G-B-QFN24	Yes
EFM32HG309F64G-A-QFN24	EFM32HG309F64G-B-QFN24	Yes
EFM32HG310F32G-A-QFN32	EFM32HG310F32G-B-QFN32	Yes
EFM32HG310F64G-A-QFN32	EFM32HG310F64G-B-QFN32	Yes
EFM32HG321F32G-A-QFP48	EFM32HG321F32G-B-QFP48	Yes
EFM32HG321F64G-A-QFP48	EFM32HG321F64G-B-QFP48	Yes
EFM32HG322F32G-A-QFP48	EFM32HG322F32G-B-QFP48	Yes
EFM32HG322F64G-A-QFP48	EFM32HG322F64G-B-QFP48	Yes
EFM32HG350F32G-A-QFP48	EFM32HG350F32G-B-QFP48	Yes
EFM32HG350F64G-A-QFP48	EFM32HG350F64G-B-QFP48	Yes
EFM32HG108F32G-A-QFN24R	EFM32HG108F32G-B-QFN24R	Yes
EFM32HG108F64G-A-QFN24R	EFM32HG108F64G-B-QFN24R	Yes
EFM32HG110F32G-A-QFN24R	EFM32HG110F32G-B-QFN24R	Yes
EFM32HG110F64G-A-QFN24R	EFM32HG110F64G-B-QFN24R	Yes
EFM32HG210F32G-A-QFN32R	EFM32HG210F32G-B-QFN32R	Yes
EFM32HG210F64G-A-QFN32R	EFM32HG210F64G-B-QFN32R	Yes
EFM32HG222F32G-A-QFP48R	EFM32HG222F32G-B-QFP48R	Yes
EFM32HG222F64G-A-QFP48R	EFM32HG222F64G-B-QFP48R	Yes
EFM32HG308F32G-A-QFN24R	EFM32HG308F32G-B-QFN24R	Yes
EFM32HG308F64G-A-QFN24R	EFM32HG308F64G-B-QFN24R	Yes
EFM32HG309F32G-A-QFN24R	EFM32HG309F32G-B-QFN24R	Yes
EFM32HG309F64G-A-QFN24R	EFM32HG309F64G-B-QFN24R	Yes
EFM32HG310F32G-A-QFN32R	EFM32HG310F32G-B-QFN32R	Yes
EFM32HG310F64G-A-QFN32R	EFM32HG310F64G-B-QFN32R	Yes
EFM32HG321F32G-A-QFP48R	EFM32HG321F32G-B-QFP48R	Yes
EFM32HG321F64G-A-QFP48R	EFM32HG321F64G-B-QFP48R	Yes
EFM32HG322F32G-A-QFP48R	EFM32HG322F32G-B-QFP48R	Yes
EFM32HG322F64G-A-QFP48R	EFM32HG322F64G-B-QFP48R	Yes



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EFM32HG350F32G-A-QFP48R	EFM32HG350F32G-B-QFP48R	Yes
EFM32HG350F64G-A-QFP48R	EFM32HG350F64G-B-QFP48R	Yes
Last Date of Unchanged Product: 4/26/2016		
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.hagggar@silabs.com		
Qualification Data: Please see below.		

EFM32HG* Qualification Report



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Part Rev A1, TSMC Fabrication, ASEKR Assembly except as noted							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group A - Accelerated Environment Stress Tests - CSP - ASECL							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q37113	0/25	1	4 lots 1/97	Pass
			Q37378	0/26	1		
			Q37419	1/26	1		
			Q37744	0/20	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q37114	0/27	1	3 lots 0/80	Pass
			Q37377	0/26	1		
			Q37418	0/27	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q37111	0/27		3 lots 0/79	Pass
			Q37374	0/25			
			Q37415	0/27			
Test Group A - Accelerated Environment Stress Tests - QFP							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q37011	0/30	2	3 lots 0/90	Pass
			Q37006	0/30	2		
			Q36990	0/30	2		
uHAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q37014	0/30	2	3 lots 0/90	Pass
			Q37009	0/30	2		
			Q37005	0/30	2		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q37013	0/30	2	3 lots 0/90	Pass
			Q37008	0/30	2		
			Q37000	0/30	2		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q37012	0/30	2	3 lots 0/90	Pass
			Q37007	0/30	2		
			Q36999	0/30	2		
Test Group A - Accelerated Environment Stress Tests - QFN							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q37246	0/30	2	3 lots 0/90	Pass
			Q37242	0/30	2		
			Q36986	0/30	2		
uHAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q37247	0/30	2	3 lots 0/90	Pass
			Q37243	0/30	2		
			Q36987	0/30	2		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q37248	0/30	2	3 lots 0/90	Pass
			Q37244	0/30	2		
			Q36988	0/30	2		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q36989	0/30	2	3 lots 0/90	Pass
			Q37245	0/30	2		
			Q37249	0/30	2		

EFM32HG* Qualification Report



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Part Rev A1, TSMC Fabrication, ASEKR Assembly except as noted								
Test Group B - Accelerated Lifetime Simulation Tests								
HTOL	JA108	3 lots, N=>77	Q36985	0/80		3 lots	Pass	
	125°C, Dynamic		Q34509	0/80				
	Vcc=3.8V, 1000 hours		Q35572	0/80				
LTOL	JA108	1 lot, N=>32	Q34510	0/40		1 lots	Pass	
	-10°C, Dynamic							
ELFR	JA108	3 lots, N=>500	Q36939	0/508		3 lots	Pass	
	125°C, Dynamic		Q34886	0/520				
M/M HTDR	JESD22-A117	3 lots, N=>39	Q34894	0/503		3 lots	Pass	
			150°C, 1000 hours	Q34896				0/39
				Q34888				0/40
M/M LTDR	JESD22-A117	3 lots, N=>38	Q34513	0/39		3 lots	Pass	
			25°C, 500 hours	Q34895				0/40
				Q34887				0/40
	Q34514	0/39				3 lots		
Test Group E - Electrical Verification								
ESD-HBM	JA114	1 lot, N=>3	Q37025				±2500 V	
ESD-CDM	JC101	1 lot, N=>3	Q37115		3		±500 V	
			Q36943		4		±1500 V	
			Q36934		5		±1500 V	
			Q37105		6		±1500 V	
Latch Up	JESD78	1 lot, N=>3	Q37022	85 °C			±150mA	
	Overvoltage = 3.8V		Q3/U2U	25 °C			±200mA	

Notes:

1. Parts are Pre-conditioned at MSL1/260°C
2. Parts are Pre-conditioned at MSL3/260°C
3. WLCSP Package
4. 7x7 48 QFN
5. 6x6 32 QFN
6. 5x5 24 QFN

This report applies to the following part numbers:		
EFM32HG108F32G-B-QFN24	EFM32HG222F64G-B-QFP48	EFM32HG321F32G-B-QFP48
EFM32HG108F64G-B-QFN24	EFM32HG308F32G-B-QFN24	EFM32HG321F64G-B-QFP48
EFM32HG110F32G-B-QFN24	EFM32HG308F64G-B-QFN24	EFM32HG322F32G-B-QFP48
EFM32HG110F64G-B-QFN24	EFM32HG309F32G-B-QFN24	EFM32HG322F64G-B-QFP48
EFM32HG210F32G-B-QFN32	EFM32HG309F64G-B-QFN24	EFM32HG350F32G-B-CSP36
EFM32HG210F64G-B-QFN32	EFM32HG310F32G-B-QFN32	EFM32HG350F64G-B-CSP36
EFM32HG222F32G-B-QFP48	EFM32HG310F64G-B-QFN32	