



## Product Change Notification - GBNG-18IDVA860

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**Date:**

19 Mar 2020

**Product Category:**

8-bit Microcontrollers; Capacitive Touch Sensors; Others

**Affected CPNs:****Notification subject:**

CCB 4181, 4181.001 and 4181.002 Initial Notice: Qualification of MMT as an additional assembly site for selected products available in 40L (5x5x0.5mm), 28L (4x4x0.55mm) and 16L UQFN (4x4x0.5mm) packages.

**Notification text:****PCN Status:**

Initial notification

**PCN Type:**

Manufacturing Change

**Microchip Parts Affected:**

Please open one of the icons found in the Affected CPNs section above.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

**Description of Change:**

Qualification of MMT as an additional assembly site for selected products available in 40L (5x5x0.5mm), 28L (4x4x0.55mm) and 16L UQFN (4x4x0.5mm) packages.

**Pre Change:**

Assembled at NSEB assembly site.

**Post Change:**

Assembled at NSEB assembly site or assembled at MMT assembly site.

**Pre and Post Change Summary:**

	Pre Change	Post Change	
Assembly Site	UTAC Thai Limited LTD (NSEB)	UTAC Thai Limited LTD (NSEB)	Microchip Technology Thailand (Branch) / MMT
Wire material	Au	Au	Au
Die attach material	8600	8600	8600
Molding compound material	G700LTD	G700LTD	G700LTD
Lead frame material	EFFECT 64T	EFFECT 64T	EFFECT 64T

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve on-time delivery performance by qualifying MMT as an additional assembly site.

**Change Implementation Status:**

In Progress

**Estimated Qualification Completion Date:**

June 2020



Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

**Time Table Summary:**

Workweek	March 2020					-->	June 2020				
	10	11	12	13	14		23	24	25	26	27
Initial PCN Issue Date			X								
Qual Report Availability									X		
Final PCN Issue Date									X		

**Method to Identify Change:**

Traceability code

**Qualification Plan:**

Please open the attachments included with this PCN labeled as PCN\_#\_Qual\_Plan.

**Revision History:**

**March 19, 2020:** Issued initial notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

**Attachment(s):**

[PCN\\_GBNG-18IDVA860\\_Qual\\_Plan.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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## **QUALIFICATION PLAN SUMMARY**

**PCN#: GBNG-18IDVA860**

**Date:  
March 5, 2020**

**Qualification of MMT as an additional assembly site for selected products available in 40L UQFN (5x5x0.5mm) package. The selected products available in 28L (4x4x0.55mm) and 16L (4x4x0.5mm) UQFN packages will qualify by similarity (QBS). This is a Q100 grade 1 qualification.**

**Purpose: Qualification of MMT as an additional assembly site for selected products available in 40L UQFN (5x5x0.5mm) package. The selected products available in 28L (4x4x0.55mm) and 16L (4x4x0.5mm) UQFN packages will qualify by similarity (QBS). This is a Q100 grade 1 qualification.**

<b><u>Misc.</u></b>	Assembly site	MMT
	BD Number	BDM-002381
	MP Code (MPC)	LEDC14S5XAXX
	Part Number (CPN)	PIC16F1777-E/MV
	MSL information	MSL-1 260C
	Assembly Shipping Media (T/R, Tube/Tray)	Tube
	Base Quantity Multiple (BQM)	73
	Reliability Site	MTAI
	CCB No.	4181, 4181.001, 4181.002
<b><u>Lead-Frame</u></b>	Paddle size	154x154
	Material	EFFECT 64T
	DAP Surface Prep	Bare Cu
	Treatment	BOT
	Process	Etched
	Lead-lock	No
	Part Number	10104014
	Lead Plating	Matte Tin
	Strip Size	250x70mm
	Strip Density	440 pads/strip
<b><u>Bond Wire</u></b>	Material	Au
<b><u>Die Attach</u></b>	Part Number	8600
	Conductive	Yes
<b><u>MC</u></b>	Part Number	G700LTD
<b><u>PKG</u></b>	PKG Type	UQFN
	Pin/Ball Count	40
	PKG width/size	5x5x0.5mm

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing.  Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	Grade 1: -40°C to +125°C (MCHP E Temp)	Grade 1: -40°C to +125°C (MCHP E Temp)	22	5	1	27	>95% lead coverage	5	MTAI	Standard Pb-free solderability is the requirement.  SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Backward Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hr steam aging for NiPdAu finish prior to testing.  Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.			22	5	1	27	>95% lead coverage	5	MTAI	
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0 fails after TC	5	MTAI/MMT	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5		5	MMT	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30		5	MMT	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5		
HTSL (High Temp Storage Life)	JESD22-A103 +125°C, +150°C or +175°C	Grade 1: 500 hrs (+175°C)	Grade 1: +25°C, +85°C, +125°C	45	5	1	50	0	21 + 83	MTAI	Spares should be properly identified.  <u>For E-temp qualifications:</u> If the device will be released as an I-temp part, then 85°C hot temp testing is required.
Preconditioning - Required for surface mount devices	J-STD-020/JESD22-A113+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedic-STD-020E for package type. MSL-1/260C		Grade 1: +25°C, +85°C, +125°C	231+ 45 (for devices requiring PTC)	15+ 5 (for devices requiring PTC)	3	738+ 50 (for devices requiring PTC)	0	15	MTAI	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test. 45 parts from one lot to be used for PTC test (for devices requiring PTC).

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs or +110°C/85%RH for 264 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C, +85°C, +125°C	77	5	3	246	0	10 - 14	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.  <u>For E-temp qualifications:</u> If the device will be released as an I-temp part, then 85°C hot temp testing is required.
UHAST	JESD22-A102, A118, or A101 +130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22-A104 and Appendix 3 -55°C to +125°C, -55°C to +150°C or -65°C to +150°C	Grade 1: 500 cycles (-65°C to 150°C)	Grade 1: +85°C, +125°C	77	5	3	246	0	15 - 60	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.  <u>For E-temp qualifications:</u> If the device will be released as an I-temp part, then 85°C hot temp testing is required.

GBNG-18IDVA860 - CCB 4181 4181.001 : 28L (4x4x0.55mm) and 16L UQFN (4x4x0.5mm) packages

Affected Catalog Part Numbers(CPN)

PIC18LF47K40-E/MV  
PIC18F47K40-I/MV  
PIC18LF47K40-I/MV  
PIC18F47K40T-I/MV  
PIC18LF47K40T-I/MV  
PIC18F45K40-E/MV  
PIC18F46K40-E/MV  
PIC18LF45K40-E/MV  
PIC18LF46K40-E/MV  
PIC18LF46K40-I/MVC02  
PIC18F45K40-I/MV  
PIC18F46K40-I/MV  
PIC18LF45K40-I/MV  
PIC18LF46K40-I/MV  
PIC18LF46K40T-I/MVC02  
PIC18F45K40T-I/MV  
PIC18F46K40T-I/MV  
PIC18LF45K40T-I/MV  
PIC18LF46K40T-I/MV  
PIC18F45K40T-E/MV  
PIC18LF46K40T-E/MV  
PIC16F15375-E/MV  
PIC16F15376-E/MV  
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PIC16F15375-I/MV  
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PIC16F15375T-I/MV  
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PIC16LF15375T-I/MV  
PIC16LF15376T-I/MV  
PIC16F19175-E/MV  
PIC16F19176-E/MV  
PIC16LF19175-E/MV  
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PIC16F19175T-I/MV

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PIC16LF19175T-I/MV  
PIC16LF19176T-I/MV  
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PIC18F45K42-E/MV  
PIC18LF46K42-E/MV  
PIC18F46K42-E/MV  
PIC18LF45K42-I/MV  
PIC18F45K42-I/MV  
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PIC16LF1902-E/MV  
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PIC16LF1902T-I/MV  
PIC16LF1903T-I/MV  
PIC16LF1903T-E/MV  
PIC16LF1906-I/MV  
PIC16LF1906T-I/MV  
PIC16LF1566-E/MV  
PIC16LF1566-I/MV  
PIC16LF1566T-I/MV  
PIC18F23K20-I/MV  
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PIC16LF726-I/MV  
PIC16LF723-I/MV  
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PIC16LF1827T-I/MV  
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PIC16LF1826T-I/MV  
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PIC16F1933-I/MV  
PIC16F1933T-I/MV  
PIC16LF1933-I/MV  
PIC16F1938-E/MV  
PIC16F1938-I/MV  
PIC16F1938T-I/MV  
PIC16F1938T-I/MVPAX  
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PIC16LF1938-I/MVC02  
PIC16LF1938T-I/MV  
PIC16LF1938T-I/MVC02  
PIC16LF1938T-I/MVC03  
PIC16LF1938T-I/MVPAX  
PIC16LF1938T-E/MV  
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MTCH6102T-I/MV  
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PIC16LF1518T-I/MVC03  
PIC16LF1518T-I/MV  
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PIC16F1783T-I/MV  
PIC16F1783T-E/MV  
PIC16F1782-E/MV  
PIC16F1782-I/MV  
PIC16F1782T-I/MV  
PIC16LF1783-I/MV  
PIC16LF1782-I/MV  
PIC16F1512-E/MV  
PIC16F1513-E/MV  
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PIC16LF1907T-I/MV  
PIC16LF1567-E/MV  
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PIC16F1939-I/MV  
PIC16F1939T-I/MV  
PIC16F1939T-E/MV  
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PIC18F46K22T-E/MV032  
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HA7621T-I/MV  
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PIC16F18876-E/MV  
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